Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
AIR QUALITY				
Initial Study Impact Air Quality b: The proposed project would result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. (Potentially Significant)				
ConnectMenlo Mitigation Measure AQ-2a: Prior to issuance of building permits, development project applicants that are subject to CEQA and exceed the screening sizes in the Bay Area Air Quality Management District's (BAAQMD) CEQA Guidelines shall prepare and submit to the City of Menlo Park a technical assessment evaluating potential project operation-phase-related air quality impacts. The evaluation shall be prepared in conformance with the BAAQMD methodology in assessing air quality impacts. If operational-related criteria air pollutants are determined to have the potential to exceed the BAAQMD thresholds of significance, as identified in BAAQMD's CEQA Guidelines, the City of Menlo Park Community Development Department shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during operational activities.	Preparation of the operation-related air quality technical assessment. The assessment determined that the project would not exceed BAAQMD criteria, so additional mitigation measures are not required.	During the building permit and site development review process and prior to permit issuance. This has been completed.	Project sponsor	City of Menlo Park Community Development Department (CDD)

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
ConnectMenlo Mitigation Measure AQ-2b1: Prior to building permit issuance, the City shall require applicants for all development projects in the city to comply with the current Bay Area Air Quality Management District's (BAAQMD) basic control measures for reducing construction emissions of PM10 (Table 8-1, Basic Construction Mitigation Measures Recommended for All Proposed Projects, of the BAAQMD CEQA Guidelines. • All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day. • All haul trucks transporting soil, sand, or other loose material off-site shall be covered. • All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited. • All vehicle speeds on unpaved roads shall be limited to 15 mph. • All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used. • Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of California Code of Regulations). Clear signage shall be provided for construction workers at all access points. • All construction equipment shall be maintained and properly tuned in accordance with manufacturer specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation. • Post a publicly visible sign with the telephone number and person to contact at the City of Menlo Park regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number for BAAQMD shall also be visible to ensure compliance with applicable regulations.	Demonstrate compliance with the current BAAQMD basic control measures for reducing construction emissions of PM10. Implement required measures.	During the building permit and site development review process and prior to permit issuance. During demolition and construction.	Project sponsor	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
ConnectMenlo Mitigation Measure AQ-2b2: Prior to issuance of building permits, development projects in the City that are subject to CEQA and exceed the screening sizes in BAAQMD's CEQA Guidelines shall prepare and submit to the City of Menlo Park a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with the BAAQMD methodology for assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the BAAQMD thresholds of significance, as identified in the BAAQMD CEQA Guidelines, the City of Menlo Park shall require that applicants for new development projects incorporate mitigation measures to reduce air pollutant emissions during construction activities to below the thresholds (e.g., Table 8-2, Additional Construction Mitigation Measures Recommended for Projects with Construction Emissions above the Threshold of the BAAQMD CEQA Guidelines, or applicable construction mitigation measures subsequently approved by BAAQMD). These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans) submitted to the City and shall be verified by the City's Building Division and/or Planning Division.	Preparation of the construction-related air quality technical assessment. The assessment determined that the BAAQMD Additional Construction Mitigation Measures are not required.	During the building permit and site development review process and prior to permit issuance. This has been completed.	Project sponsor	CDD
Project Mitigation Measure AIR-1: During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board Tier 2 emissions standards with Level 3 diesel particulate filters or equivalent.	Demonstrate compliance with CARB Tier 2 emissions standards for diesel powered equipment that is 50 horsepower or more.	During demolition and project construction.	Project sponsor	CDD
Initial Study Impact Air Quality c: Implementation of the proposed project would expose sensitive receptors to substantial pollutant concentrations. (Potentially Significant)				
ConnectMenlo Mitigation Measure AQ-2b1: Implement ConnectMenlo Mitigation Measure AQ-2b1.	See above.	See above.	See above.	See above.
Project Mitigation Measure AIR-1: Implement Project Mitigation Measure AIR-1.	See above.	See above.	See above.	See above.

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
BIOLOGICAL RESOURCES				
Initial Study Impact Biological Resources a: The proposed project could have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service. (Potentially Significant)				
ConnectMenlo Mitigation Measure BIO-1: Prior to individual project approval, the City shall require project applicants to prepare and submit project-specific baseline biological resources assessments on sites containing natural habitat with features such as mature and native trees or unused structures that could support special-status species and other sensitive biological resources, and common birds protected under Migratory Bird Treaty Act (MBTA). The baseline biological resources assessment shall be prepared by a qualified biologist. The biological resource assessment shall provide a determination on whether any sensitive biological resources are present on the property, including jurisdictional wetlands and waters, essential habitat for special-status species, and sensitive natural communities. If sensitive biological resources are determined to be present, appropriate measures, such as preconstruction surveys, establishing no-disturbance zones during construction, and applying bird-safe building design practices and materials, shall be developed by the qualified biologist to provide adequate avoidance or compensatory mitigation if avoidance is infeasible. Where jurisdictional waters or federally and/or State-listed special-status species would be affected, appropriate authorizations shall be obtained by the project applicant, and evidence of such authorization provided to the City prior to issuance of grading or other construction permits. An independent peer review of the adequacy of the biological resource assessment may be required as part of the CEQA review of the proposed project, if necessary, to confirm its adequacy.	Prepare a biological resource assessment. The assessment identified potential impacts and recommended Project Mitigation Measure BR-1.	Prior to project discretionary approval. This has been completed.	Qualified wildlife biologist retained by project sponsor	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
Project Mitigation Measure BR-1: In accordance with ConnectMenlo Mitigation Measure BIO-1, implement the following additional, project-specific measures recommended by the BRA: A. Roosting and Breeding Bats • If activities occur during the breeding season for bats (March 1 through August 31), young bats that cannot fly could be killed or injured during vegetation and building demolition. • Preconstruction surveys should be completed by a qualified bat biologist if the structure or trees are scheduled to be removed during the breeding season. At least two weeks prior to tree removal or demolition activities a qualified bat biologist with demonstrated bat survey experience shall conduct a focused survey for bats and potential roosting sites within trees and the building to be removed through visual surveys and emergence acoustic surveys. o If no roosting sites or bats are found the biologist shall submit a letter report confirming the absence and no further measures are required. o If roosting bats are found during the above survey and roosts will be affected, an avoidance and minimization plan shall be developed by the qualified bat biologist in consultation with CDFW. Avoidance measures may include no-disturbance buffer zones during construction, temporal avoidance during the maternity season, or other measures deemed necessary based on the survey results.	Complete all mitigation measures identified in the BRA.	Prior to and during construction.	Project sponsor; and qualified wildlife biologist retained by project sponsor.	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
B. Nesting Raptors and Migratory Birds • For project activities occurring during the nesting bird breeding season (February 1 through August 31) a preconstruction survey is required from a qualified biologist with demonstrated experience conducting surveys for nesting birds, including raptors. The survey shall be conducted for birds in all habitats within the project site, including all disturbance, staging and access areas and a 250-foot buffer. This survey should be conducted no more than fourteen days prior to the initiation of project activities during the breeding season. If there is a lapse in construction related activities for more than seven (7) days, a new survey should be conducted. o If an active nest is identified during preconstruction surveys, the qualified biologist shall establish species and site-specific no disturbance buffer zones for each nest using high-visibility fencing, flagging or other method deemed appropriate by the biologist. No construction activities shall be allowed to occur within the buffer zones. The size of the buffer shall be determined based on the species sensitivity to disturbance and the planned activities within the vicinity. The qualified biologist shall develop a schedule for monitoring and evaluating the status of the nest(s). The buffer shall remain in effect until the nest is no longer active as determined by the qualified biologist. o If determined necessary by the qualified biologist, consultation with the USFWS and/or CDFW may be required depending upon the species and the circumstances. The results of the preconstruction surveys and/or nest disturbance activities shall be provided in a memorandum detailing the survey results.				

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
C. Special Status Plants • Fourteen days prior to the initiation of project activities during the breeding season. If there is a lapse in construction related activities for more than seven (7) days, a new survey should be conducted. o Install bird perching deterrents along suitable perching sites to deter avian predators. Such deterrents may include bird spikes, netting, sound deterrents or perching deterrents approved by USFWS and CDFW. o Landscaping used on the rooftop garden should consist of species that do not exceed 30 feet in height and may include native or non-invasive ornamental species. Species with broad canopies are preferred. Trees that are planted on the rooftop garden should be located away from the edge of the roof. o Reduce large areas transparent or reflective glass. o Locate water features, trees and bird habitat away from building exteriors to reduce reflection. o Reduce or eliminate the visibility of landscaped areas behind glass. o Turn non-emergency lighting off at night, especially during the bird migration season (February to May and August to November). o Include window coverings that adequately block light transmission from rooms where interior lighting is used at night and installation motion sensors or controls to extinguish lights in unoccupied spaces. o Design or install lighting fixtures that minimize light pollution including light trespass, over-illumination, glare, light clutter, and skyglow while using bird-friendly colors for lighting when possible. San Francisco's Standards for Bird-Safe Buildings (City and County of San Francisco, 2011) provides a good overview of building design and lighting guidelines to minimize bird/building collision.				
Initial Study Impact Biological Resources b: The proposed project would have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or US Fish and Wildlife Service. (Potentially Significant)				
ConnectMenlo Mitigation Measure BIO-1: Implement ConnectMenlo Mitigation Measure BIO-1.	See above.	See above.	See above.	See above.
Project Mitigation Measure BR-1: Implement Project Mitigation Measure BR-1.	See above.	See above.	See above.	See above.

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
Initial Study Impact Biological Resources c: The proposed project would have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means. (Potentially Significant)				
ConnectMenlo Mitigation Measure BIO-1: Implement ConnectMenlo Mitigation Measure BIO-1.	See above.	See above.	See above.	See above.
Project Mitigation Measure BR-1: Implement Project Mitigation Measure BR-1.	See above.	See above.	See above.	See above.
Initial Study Impact Biological Resources d: The proposed project would interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites. (Potentially Significant)				
ConnectMenlo Mitigation Measure BIO-1: Implement ConnectMenlo Mitigation Measure BIO-1.	See above.	See above.	See above.	See above.
Project Mitigation Measure BR-1: Implement Project Mitigation Measure BR-1.	See above.	See above.	See above.	See above.
Initial Study Impact Biological Resources e: The proposed project would conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. (Potentially Significant)				
Project Mitigation Measure BR-1: Implement Project Mitigation Measure BR-1.	See above.	See above.	See above.	See above.

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
CULTURAL RESOURCES				
Initial Study Impact Cultural Resources a: The proposed project would cause a substantial adverse change in the significance of a historic resource pursuant to § 15064.5. (Potentially Significant)				
ConnectMenlo Mitigation Measure CULT-2a: If a potentially significant subsurface cultural resource is encountered during ground disturbing activities on any parcel in the city, all construction activities within a 100-foot radius of the find shall cease until a qualified archeologist determines whether the resource requires further study. All developers in the study area shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. Any previously undiscovered resources found during construction activities shall be recorded on appropriate California Department of Parks and Recreation (DPR) forms and evaluated for significance in terms of the California Environmental Quality Act (CEQA) criteria by a qualified archeologist. If the resource is determined significant under CEQA, the qualified archaeologist shall prepare and implement a research design and archaeological data recovery plan that will capture those categories of data for which the site is significant. The archaeologist shall also perform appropriate technical analyses; prepare a comprehensive report complete with methods, results, and recommendations; and provide for the permanent curation of the recovered resources. The report shall be submitted to the City of Menlo Park, Northwest Information Center (NWIC), and State Historic Preservation Office (SHPO), if required.	If any archaeological artifacts are discovered during demolition/construction, all ground disturbing activity within 100 feet shall be halted immediately. A qualified archaeologist shall inspect any archaeological artifacts found during construction and if determined to be a resource shall prepare a plan meeting the specified standards which shall be implemented by the project sponsor(s).	Ongoing during construction	Project sponsor; and qualified archaeologist retained by the project sponsor	CDD
Initial Study Impact Cultural Resources b: The proposed project would cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5. (Potentially Significant)				
ConnectMenlo Mitigation Measure CULT-2a: Implement ConnectMenlo Mitigation Measure CULT-2a.	See above.	See above.	See above.	See above.

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
Project Mitigation Measure CR-1: Mitigation Measure CR-1: Worker Environmental Training. Because of the potential for discovery of unknown buried cultural and paleontological resources, prior to the commencement of the first phase, the general contractor and those engaged in ground-disturbing activities shall be given environmental training regarding cultural and paleontological resource protection, resource identification and protection, and the laws and penalties governing such protection. This training may be administered by the project archaeologist and/or paleontologist as stand-alone training or included as part of the overall environmental awareness training required by the project. The training shall include, at minimum, the following: • The types of cultural resources and human remains, that are likely to be encountered. • The procedures to be taken in the event of an inadvertent cultural resource or human discovery. • The penalties for disturbing or destroying cultural resources and human remains. • The types of fossils that could occur at the project site. • The types of lithologies in which the fossils could be preserved. • The procedures that should be taken in the event of a fossil discovery. • The penalties for disturbing paleontological resources or human remains.	Provide worker environmental training.	Once prior to the start of issuance of grading permit As needed during duration of soil-disturbing or excavating activities and throughout ground-disturbing activities	Qualified archaeologist and/or paleontologist (retained by the Project Sponsor)	CDD
Project Mitigation Measure CR-2:: On-site Licensed Archaeologist. During the demolition and excavation phases, the applicant shall hire a licensed archaeologist to be on-site and monitoring work activities to immediately handle and assess any archaeological resources encountered, along with engagement with tribal leadership.	Hire a licensed archaeologist and keep them on site and available to assist with archaeologoical resource discovery and engagement with tribal leadership.	Retained prior to issuance of grading permit. On-site as needed during duration of demolition, and throughout ground-disturbing or excavating activities.	Project sponsor; and Qualified archaeologist and/or paleontologist (retained by the Project Sponsor)	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
Initial Study Impact Cultural Resources c: The proposed project would disturb any human remains, including those interred outside of formal cemeteries. (Potentially Significant)				
ConnectMenlo Mitigation Measure CULT-4: Procedures of conduct following the discovery of human remains have been mandated by Health and Safety Code Section 7050.5, Public Resources Code Section 5097.98 and the California Code of Regulations Section 15064.5(e) (CEQA). According to the provisions in CEQA, if human remains are encountered at the site, all work in the immediate vicinity of the discovery shall cease and necessary steps to ensure the integrity of the immediate area shall be taken. The San Mateo County Coroner shall be notified immediately. The Coroner shall then determine whether the remains are Native American. If the Coroner determines the remains are Native American, the Coroner shall notify the NAHC within 24 hours, who will, in turn, notify the person the NAHC identifies as the Most Likely Descendant (MLD) of any human remains. Further actions shall be determined, in part, by the desires of the MLD. The MLD has 48 hours to make recommendations regarding the disposition of the remains following notification from the NAHC of the discovery. If the MLD does not make recommendations within 48 hours, the owner shall, with appropriate dignity, reinter the remains in an area of the property secure from further disturbance. Alternatively, if the owner does not accept the MLD's recommendations, the owner or the descendent may request mediation by the NAHC.	Initiated after a find is made during construction.	During construction, and regularly scheduled site inspections that would be initiated after a find is made during construction.	San Mateo County Coroner and Project Sponsor	CDD
Project Mitigation Measure CR-1: Implement Project Mitigation Measure CR-1.	See above.	See above.	See above.	See above.

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
GEOLOGY AND SOILS				
Initial Study Impact Geology and Soils f: The proposed project would directly or indirectly destroy a unique paleontological resource or site or unique geological feature. (Potentially Significant)				
ConnectMenlo Mitigation Measure CULT-3: In the event that fossils or fossil bearing deposits are discovered during ground disturbing activities anywhere in the city, excavations within a 50-foot radius of the find shall be temporarily halted or diverted. Ground disturbance work shall cease until a City-approved qualified paleontologist determines whether the resource requires further study. The paleontologist shall document the discovery as needed (in accordance with Society of Vertebrate Paleontology standards [Society of Vertebrate Paleontology 1995]), evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. The paleontologist shall notify the appropriate agencies to determine procedures that would be followed before construction activities are allowed to resume at the location of the find. If avoidance is not feasible, the paleontologist shall prepare an excavation plan for mitigating the effect of construction activities on the discovery. The excavation plan shall be submitted to the City of Menlo Park for review and approval prior to implementation, and all construction activity shall adhere to the recommendations in the excavation plan.	If any fossils or fossil bearing deposits are discovered during demolition/construction, all ground disturbing activity within 50 feet shall be halted immediately. A qualified paleontologist shall inspect any paleontological artifacts found during construction and if determined to be a resource shall prepare an excavation plan meeting the specified standards which shall be implemented by the project sponsor(s). If a fossil is determined to be significant and avoidance is not feasible, the paleontologist will develop and implement an excavation and salvage plan in accordance with SVP standards.	Ongoing during construction	Project sponsor; and Qualified paleontologist retained by the project sponsor	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
GREENHOUSE GAS EMISSIONS				
Initial Study Impact Greenhouse Gas Emissions a: The proposed project woulf generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment. (Potentially Significant)				
ConnectMenlo Mitigation Measure AQ-2b1: Implement ConnectMenlo Mitigation Measure AQ-2b1.	See above.	See above.	See above.	See above.
HAZARDS AND HAZARDOUS MATERIALS				
Initial Study Impact Hazards and Hazardous Materials b: The proposed project would create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. (Potentially Significant)				
ConnectMenlo Mitigation Measure HAZ-4a: Construction at any site in the City with known contamination shall be conducted under a project-specific Environmental Site Management Plan (ESMP) that is prepared in consultation with the Regional Water Quality Control Board (RWQCB) or the Department of Toxic Substances Control (DTSC), as appropriate. The purpose of the ESMP is to protect construction workers, the general public, the environment, and future site occupants from subsurface hazardous materials previously identified at the site and to address the possibility of encountering unknown contamination or hazards in the subsurface. The ESMP shall summarize soil and groundwater analytical data collected on the project site during past investigations; identify management options for excavated soil and groundwater, if contaminated media are encountered during deep excavations; and identify monitoring, irrigation, or other wells requiring proper abandonment in compliance with local, State, and federal laws, policies, and regulations. The ESMP shall include measures for identifying, testing, and managing soil and groundwater suspected of or known to contain hazardous materials. The ESMP shall: 1) provide procedures for evaluating, handling, storing, testing, and disposing of soil and groundwater during project excavation and dewatering activities, respectively; 2) describe required worker health and safety provisions for all workers potentially exposed to hazardous materials in accordance with State and federal worker safety regulations; and 3) designate personnel responsible for implementation of the ESMP.	Prepare an Environmental Site Management Plan (ESMP). Implement measures identified by the ESMP.	Prior to site excavation. During demolition, excavation and construction.	Qualified consultant (retained by the Project Sponsor; and Project Sponsor)	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
ConnectMenlo Mitigation Measure HAZ-4b: For those sites throughout the city with potential residual contamination in soil, gas, or groundwater that are planned for redevelopment with an overlying occupied building, a vapor intrusion assessment shall be performed by a licensed environmental professional. If the results of the vapor intrusion assessment indicate the potential for significant vapor intrusion into an occupied building, project design shall include vapor controls or source removal, as appropriate, in accordance with regulatory agency requirements. Soil vapor mitigations or controls could include vapor barriers, passive venting, and/or active venting. The vapor intrusion assessment and associated vapor controls or source removal can be incorporated into the ESMP (Mitigation Measure HAZ-4a).	Prepare a vapor intrusion assessment.	Prior to site excavation.	Qualified consultant (retained by the Project Sponsor).	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
Project Mitigation Measure HM-1: Implement the following additional, project-specific measures, as recommended by the Phase I ESA and RMP: • Prior to issuance of a building permit, the applicant shall prepare a site-specific Health and Safety Plan (HASP), in accordance with California Occupational Safety and Health Administration (CAL-OSHA) Construction Safety Orders within Title 8 of the California Code of Regulations (CCR). The general contractor for the proposed project shall be responsible for notifying subcontractors and visitors of pertinent environmental conditions to ensure adequate protection for workers and visitors while on site, and subcontractors shall adopt the general contractor's HASP or prepare their own. • Prior to issuance of a building permit, the general contractor shall document and provide training for all workers involved with contact and/or management of contaminated soil or groundwater, in accordance with California Code of Regulations, Title 29, Part 1910.120 (Hazardous Waste Operations and Emergency Response [HAZWOPER] standards). • During excavation and construction, the applicant shall implement additional dust control measures when there is the potential for contaminated soil to affect the nearby community. It is anticipated that following placement of fill, hardscapes, and building pads, air monitoring will not be required, as there will not be exposed soil surfaces with concentrations exceeding residential and shallow soil exposure concentrations (if present).	Implement all additional mitigations per the Phase I ESA and RMP.	Prior to issuance of a building permit, prior to issuance of a demolition permit or prior to soil disturbance, and during excavation and construction.	Qualified consultant (retained by the Project Sponsor).	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
• Prior to issuance of a demolition permit or any other actions involving soil disturbance, the general contractor and subcontractors shall read the Risk Management Plan for the proposed project and sign the Agreement and Acknowledgement Statement to certify that they have read, understood, and agreed to abide by its provisions. • During demolition and throughout the construction process, the applicant shall notify the RWQCB, and other agencies, where applicable, of all site development activities in accordance with the following protocols: o The applicant shall notify the RWQCB within 24 hours of discovery of: . Releases, spills, or releases of hazardous substances or petroleum hydrocarbons to soil or water that are considered, based on best professional judgement and/or physical evidence (including but not limited to olfactory, visual, field instrument, and laboratory data), to be an immediate threat to human health and the environment; and/or . Discovery of unknown conditions (underground storage tanks. sumps, vaults, piping, etc.) or newly found contamination. In this latter case, the applicant shall notify Menlo Park Fire Protection District within 24 hours of discovery as well. o The applicant shall notify the RWQCB 72 hours prior to any ground disturbing activities in areas of known or suspected contamination. o All notification to the RWQCB and the Menlo Park Fire Protection District shall be via email and phone. • Prior to issuance of a building permit, the applicant shall confirm and update all agency contacts provided in the RMP accordingly, and provide an agency contact sheet to the general contractor, which shall be posted in an accessible and suitable location at the project site.				

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
• During the construction period, if necessary, the general contractor and/or environmental consultant shall document any groundwater removal or soil excavation and disposal in daily field reports, which shall be kept at the project site and be made available to the RWQCB upon request. Documentation will include at a minimum the following, as applicable: o Groundwater: Groundwater is at approximately five feet below ground surface. Based on the current construction design, it is not expected to be encountered in excavations during construction activities. However, building support piers shall be advanced through groundwater. If groundwater is encountered, documentation shall include the location, volume of groundwater that is removed, characterization, treatment, and destination (transported to temporary holding tanks, used as dust suppression, and/or disposed of off-Site); o Underground Structures: type, contents, characterization, and destination (abandoned in place or disposed of off-site) of any underground structures discovered during site development activities; o Impacted Soil: origin, volume, characterization, and destination of any contaminated soil removed from the project site; o Imported Soil: origin, volume, characterization, and destination (location used on-site) of imported fill if obtained from a non-commercial quarry; o Disposal Records: date, time, trucking company, drivers and vehicles used for the trip, equipment decontamination and tarping, waste/material type, volume, copies of bills-of-lading, and hazardous waste manifests; o Dust Complaint Logs: time, name and contact information, compliant description, earthwork activities associated with complaint, and measures taken to mitigate dust;				

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
o Analytical Reports: laboratory analytical reports of samples of soil, groundwater, dust, and soil vapor, if samples are collected. • Prior to any soil disturbance, the applicant shall confirm with the RWQCB whether the requirement to continue sampling groundwater from the remaining monitoring well MW-8 (located on site) is still necessary, and if this well could instead be destroyed in compliance with applicable regulations and procedures of the RWQCB. • Prior to any soil disturbance, the applicant shall evaluate the following additional soil details and demonstrate that no further measures are needed for soil disturbance: o The quality of soil gas and potential risks to indoor air at the subject properties. o The amount of lead in the soil due to lead-based paint.				
Initial Study Impact Hazards and Hazardous Materials d: The proposed project would be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment. (Potentially Significant)				
ConnectMenlo Mitigation Measure HAZ-4a: Implement ConnectMenlo Mitigation Measure HAZ-4a.	See above.	See above.	See above.	See above.
ConnectMenlo Mitigation Measure HAZ-4b: Implement ConnectMenlo Mitigation Measure HAZ-4b.	See above.	See above.	See above.	See above.

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
NOISE				
Initial Study Impact Noise a: The proposed project would result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies. (Potentially Significant)				
ConnectMenlo Mitigation Measure NOI-1a: To meet the requirements of Title 24 and General Plan Program N1.A, project applicants shall perform acoustical studies prior to issuance of building permits for citywide development of new noise-sensitive uses. New residential dwellings, hotels, motels, dormitories, and school classrooms must meet an interior noise limit of 45 dBA CNEL or Ldn. Developments in areas exposed to more than 60 dBA CNEL must demonstrate that the structure has been designed to limit interior noise in habitable rooms to acceptable noise levels. Where exterior noise levels are projected to exceed 60 dBA CNEL or Ldn at the façade of a building, a report must be submitted with the building plans describing the noise control measures that have been incorporated into the design of the project to meet the 45 dBA noise limit. Project applicants for all new multi-family residential projects subject to the review and approval of the Community Development Department, prior to building permit issuance, must perform acoustical studies within the projected Ldn 60 dB noise contours, so that noise mitigation measures can be incorporated into project design and site planning, subject to the review and approval of the Community Development Department.	Interior noise exposure assessed by qualified acoustical engineer and results submitted to City showing conceptual window and wall assemblies necessary to meet City standards.	Prior to the issuance of construction permits.	Project sponsors(s) and contractor(s)	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
ConnectMenlo Mitigation Measure NOI-1c: Project applicants shall minimize the exposure of nearby properties to excessive noise levels from construction-related activity through CEQA review, conditions of approval and/or enforcement of the City's Noise Ordinance. Prior to issuance of demolition, grading, and/or building permits for development projects, a note shall be provided on development plans indicating that during on-going grading, demolition, and construction, the property owner/developer shall be responsible for requiring contractors to implement the following measures to limit construction- related noise: • Construction activity is limited to the daytime hours between 8:00 a.m. to 6:00 p.m. on Monday through Friday, as prescribed in the City's Municipal Code. • All internal combustion engines on construction equipment and trucks are fitted with properly maintained mufflers, air intake silencers, and/or engine shrouds that are no less effective than as originally equipped by the manufacturer. • Stationary equipment such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses. • Stockpiling is located as far as feasible from nearby noise-sensitive receptors. • Limit unnecessary engine idling to the extent feasible. • Limit the use of public address systems. • Construction traffic shall be limited to the haul routes established by the City of Menlo Park.	Limit all construction activities to minimize noise.	Prior to the issuance of construction permits.	Project sponsors(s) and contractor(s)	CDD
Project Mitigation Measure NOI-1: The construction contractor shall ensure that a minimum 16-foot-high barrier, such as a plywood structure or flexible sound control curtain that has a density of 2 lb/ft2 or is sound rated with a minimum Sound Transmission Class (STC) rating of 28 or higher, shall be erected on the western project site boundary adjacent to the sensitive receptors to minimize the amount of noise during construction.	Construct a noise barrier on site.	Prior to any excavation or construction.	Project Sponsor	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
Project Mitigation Measure NOI-2: The following mitigation measure is required to reduce heating, ventilation, and air conditioning (HVAC) operational noise levels: • Once specifications of the rooftop HVAC equipment are determined, an analysis shall be prepared and submitted to the satisfaction of the City Planning Director to confirm that the operation of rooftop equipment would meet the City's nighttime 50 dBA equivalent continuous sound level (Leq) noise level standard. This can be achieved by the following design features: 1. Choosing rooftop mechanical equipment that has a reference noise level of 68 dBA Leq at 5 feet or less, or 2. Installation of silencers or enclosures capable of reducing noise levels by a minimum of 4 dBA.	Complete an analysis of the rooftop equipment and implement the design features outlined in this measure.	During construction.	Project Sponsor	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
Initial Study Impact Noise b: The proposed project would result in generation of excessive groundborne vibration or groundborne noise levels. (Potentially Significant)				
ConnectMenlo Mitigation Measure NOI-2a: To prevent architectural damage as a result of construction-generated vibration: • Prior to issuance of a building permit for any development project requiring pile driving or blasting, the project applicant/developer shall prepare a noise and vibration analysis to assess and mitigate potential noise and vibration impacts related to these activities. The maximum levels shall not exceed 0.2 inch/second, which is the level that can cause architectural damage for typical residential construction. If maximum levels would exceed these thresholds, alternative methods such static rollers, non-explosive blasting, and drilling piles as opposed to pile driving shall be used. To prevent vibration-induced annoyance as a result of construction-generated vibration: • Individual projects that involve vibration-intensive construction activities, such as blasting, pile drivers, jack hammers, and vibratory rollers, within 200 feet of sensitive receptors shall be evaluated for potential vibration impacts. A vibration study shall be conducted for individual projects where vibration-intensive impacts may occur. The study shall be prepared during the project's approval process and by an acoustical or vibration engineer holding a degree in engineering, physics, or allied discipline and who is able to demonstrate a minimum of two years of experience in preparing technical assessments in acoustics and/or groundborne vibrations. The study shall be submitted to and approved by the City prior to issuance of building permits.	A noise and vibration analysis shall be prepared to assess and mitigate potential noise and vibration impacts. A vibration study shall also be required for vibration-intensive activities occurring within 200 feet of sensitive receptors, to further evaluate vibration-related impacts. All vibration activities shall be required to not exceed specified vibration annoyance levels.	Prior to the issuance of construction permits	Project sponsors(s) and contractor(s)	CDD

Mitigation Monitoring and Reporting Program				
Mitigation Measure	**Action**	**Timing**	**Implementing Party**	**Monitoring Party**
Vibration impacts to nearby receptors shall not exceed the vibration annoyance levels (in RMS inches/second) as follows: • Workshop = 0.126 • Office = 0.063 • Residential Daytime (7AM–10PM) = 0.032 • Residential Nighttime (10PM to 7 AM) = 0.016 If construction-related vibration is determined to be perceptible at vibration-sensitive uses, additional requirements, such as use of less-vibration-intensive equipment or construction techniques, shall be implemented during construction (e.g., nonexplosive blasting methods, drilled piles as opposed to pile driving, preclusion for using vibratory rollers, use of small- or medium-sized bulldozers, etc.). Vibration reduction measures shall be identified as mitigation measures in the environmental document and/or incorporated into the site development plan as a component of the proposed project .				
TRIBAL CULTURAL RESOURCES				
Initial Study Impact Tribal Cultural Resources a: The proposed project would cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: Listed or eligible for listing in the California Register of Historical Resources, or in the local register of historical resources as defined in Public Resources Code Section 5020.1(k), or ii. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subsection (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe. (Potentially Significant)				
ConnectMenlo Mitigation Measure CULT-2a: Implement ConnectMenlo Mitigation Measure CULT-2a.	See above.	See above.	See above.	See above.
ConnectMenlo Mitigation Measure CULT-4: Implement ConnectMenlo Mitigation Measure CULT-4.	See above.	See above.	See above.	See above.
Project Mitigation Measure CR-1: Implement Project Mitigation Measure CR-1.	See above.	See above.	See above.	See above.
Project Mitigation Measure CR-2: Implement Project Mitigation Measure CR-2.	See above.	See above.	See above.	See above.

AIR QUALITY AND GREENHOUSE GAS ANALYSIS

HOTEL MOXY PROJECT

MENLO PARK, CALIFORNIA

LSA

September 2022

AIR QUALITY AND GREENHOUSE GAS ANALYSIS

HOTEL MOXY PROJECT

MENLO PARK, CALIFORNIA

Submitted to:

City of Menlo Park
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Menlo Park, California 94025

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September 2022

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LIST OF ABBREVIATIONS AND ACRONYMS

µg/m^3	micrograms per cubic meter
°C	degrees Celsius
ºF	degrees Fahrenheit
AAQS	ambient air quality standards
AB	Assembly Bill
ABAG	Association of Bay Area Governments
BAAQMD	Bay Area Air Quality Management District
BMPs	Best Management Practices
CAAQS	California Ambient Air Quality Standards
CAFE	corporate average fuel economy
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CALGreen Code	California Green Building Standards Code
CAP	Climate Action Plan
CARB	California Air Resources Board
CARE	Community Air Risk Evaluation
CAT	Climate Action Team
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEC	California Energy Commission
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
City	City of Menlo Park
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
CPUC	California Public Utilities Commission
EIR	Environmental Impact Report

EIS	Environmental Impact Statement
EO	Executive Order
EV	electric vehicle
FCAA	Federal Clean Air Act
GHG	greenhouse gas
GWh	gigawatt-hour
GWP	global warming potential
H_2S	hydrogen sulfide
HFC	hydrofluorocarbons
hp	horsepower
HRA	Health Risk Assessment
IPCC	International Panel on Climate Change
kWh	kilowatt-hour
LCFS	Low Carbon Fuel Standard
LEED	Leadership in Energy and Environmental Design
MEI	maximally exposed individual
MMT	million metric tons
mph	miles per hour
MPOs	Metropolitan Planning Organization
MT	metric tons
MTC	Metropolitan Transportation Commission
N_2O	nitrous oxide
NAAQS	National Ambient Air Quality Standards
NHTSA	National Highway Traffic Safety Administration
NO_2	nitrogen dioxide
NO_x	nitrogen oxide
O_3	ozone
OPR	Governor's Office of Planning and Research
Pb	lead
PFC	perfluorocarbons
PM	particulate matter

PM_{10}	particulate matter less than 10 microns in diameter
$PM_{2.5}$	particulate matter less than 2.5 microns in diameter
POTW	publicly owned treatment works
ppb	parts per billion
ppm	parts per million
PRC	Public Resources Code
project	Hotel Moxy Project
ROCs	reactive organic compounds
ROGs	reactive organic gases
RPS	Renewables Portfolio Standard
RTP	Regional Transportation Plan
SAFE	Safer Affordable Fuel-Efficient
SAFE Vehicles Rule	Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks
SB	Senate Bill
SCS	Sustainable Communities Strategy
SF_6	sulfur hexafluoride
SMCWPPP	San Mateo Countywide Water Pollution Prevention Program
SO_2	sulfur dioxide
SO_x	sulfur oxides
TACs	toxic air contaminants
TIA	Transportation Impact Analysis
TRU	truck refrigeration unit
UNFCCC	United Nations Framework Convention on Climate Change
USEPA	United States Environmental Protection Agency
VMT	vehicle miles traveled
VOCs	volatile organic compounds
ZEVs	zero emission vehicles

INTRODUCTION

This air quality and greenhouse gas (GHG) impact analysis for the proposed Hotel Moxy Project (project) in the City of Menlo Park (City), California has been prepared using methods and assumptions recommended by the Bay Area Air Quality Management District (BAAQMD) *California Environmental Quality Act (CEQA) Air Quality Guidelines* and the recently adopted BAAQMD *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans* document.[1, 2] This report includes a description of existing regulatory framework, an assessment of project construction and operation-period air quality and GHG emissions, and an evaluation of the project's compliance with adopted plans related to the reduction of clean air and GHG emissions.

PROJECT LOCATION AND DESCRIPTION

The 0.76-acre project site is located at 3723 Haven Avenue in the City of Menlo Park, San Mateo County, California. The project site is shown in Figure 1, Project Location, and is currently developed with an existing office building and associated parking lot. The project site is located within a developed urban setting, surrounded by primarily commercial and industrial uses.

The proposed project would include the demolition of the existing office building and the construction of a 163-room hotel, totaling 58,014 square feet. The proposed project would provide 124 parking spaces largely contained in the first three floors of the new structure as podium parking, including 40 electric vehicle (EV) parking spaces. The building would contain three stories of podium parking, five stories of hotel rooms, a ground floor lobby space and coffee shop, which would be open to the public, and a fourth floor bar and restaurant area, which would include an outdoor rooftop garden and would also be publicly accessible (regardless of coffee shop and bar/lounge patronage) from 6:00 a.m. to 10:00 p.m. See Figure 2, Site Plan.

Based on the project's Transportation Impact Analysis[3], operation of the proposed project would generate 957 net new average daily trips. The proposed project would be built to Leadership in Energy and Environmental Design (LEED) Silver standards, would include solar panels, and would be 12 percent more energy efficient than the 2019 Title 24 standards. In addition, the proposed project would not increase the demand for natural gas as the City's reach codes would require the buildings to be all electric.[4] The proposed project would also include a 625 kilovolt-amp (670 horsepower [HP]) diesel backup generator.

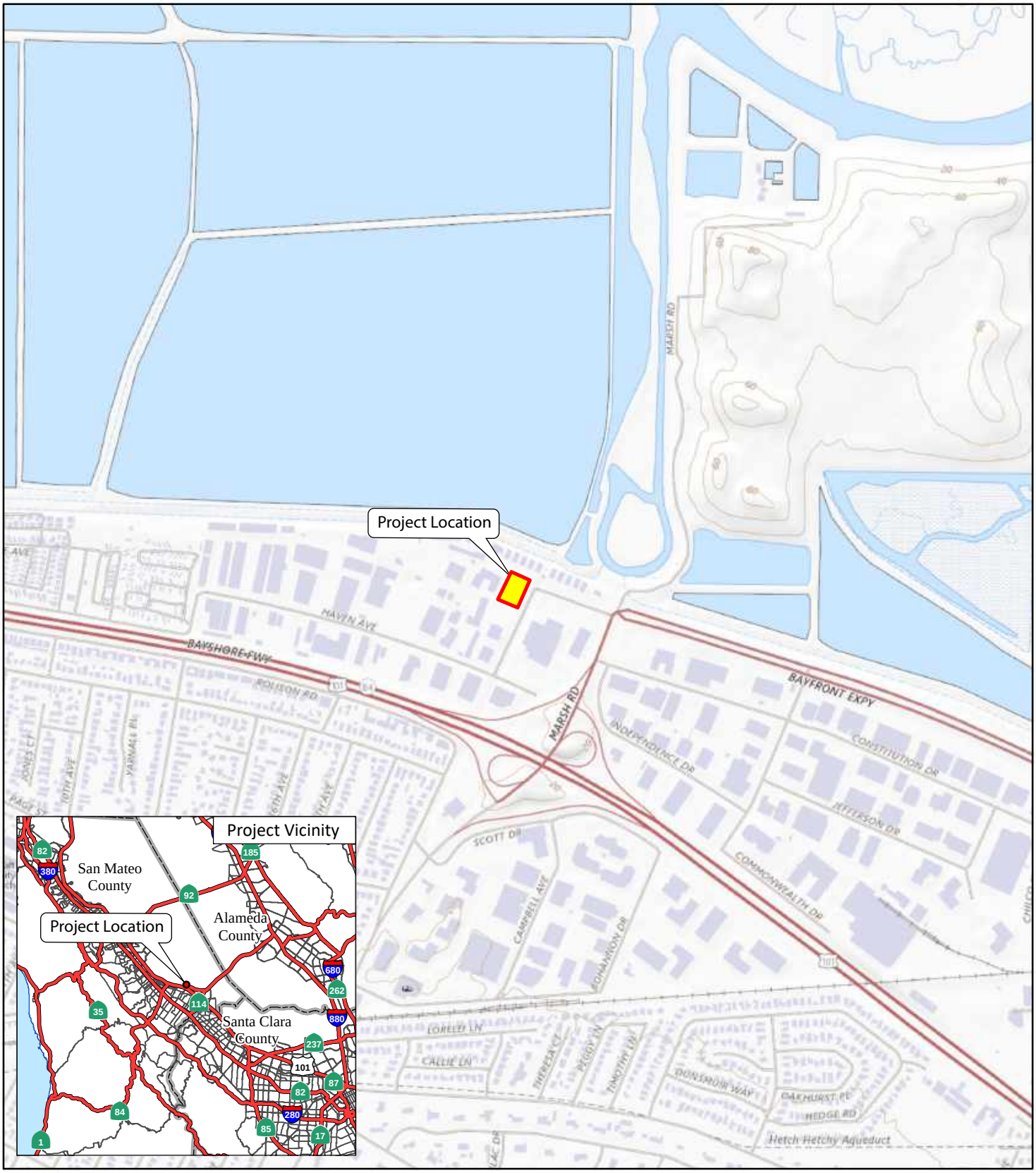
Construction of the proposed project is anticipated to begin in January 2023 and end in January 2025. In addition, construction activities would include the demolition of the existing building and

1 Bay Area Air Quality Management District (BAAQMD). 2017. *CEQA Air Quality Guidelines.* May.
2 BAAQMD. 2022. *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans*. April.
3 Hexagon Transportation Consultants, Inc. 2021. *3723 Haven Avenue Hotel Development Draft Transportation Impact Analysis*. May 20.
4 Menlo Park, City of. n.d. Reach codes. Website: https://www.menlopark.org/1583/Reach-codes (accessed August 2022).

surface parking lot on the project site and would include the net import of approximately 439 cubic yards of soil.

The proposed project's hotel room count is within the maximum amount of hotel room development potential identified in the City's General Plan Land Use and Circulation Elements Update (referred to herein as ConnectMenlo). ConnectMenlo identifies the potential for 400 new hotel rooms in the Bayfront Area, located in an area historically developed with industrial, warehousing, and office uses north of U.S. Highway 101 and south of State Route 84 (Bayfront Expressway), adjacent to the San Francisco Bay. This project, in combination with all other previously submitted hotel projects since ConnectMenlo was approved, is within the total net new hotel rooms studied under the ConnectMenlo Environmental Impact Report (EIR). As such, the analysis and mitigations in this report comply with ConnectMenlo EIR Mitigation Measures AQ-2a, AQ-2b1, AQ-2b2, and AQ-5.[1]

[1] ConnectMenlo EIR Mitigation Measure AQ-5 requires implementation of Mitigation Measures AQ-2a through AQ-3b to reduce criteria air pollutant emissions, as applicable. The ConnectMenlo EIR identified Mitigation Measure AQ-3a for projects that would generate 100 or more diesel truck trips or have 40 or more trucks with diesel-powered truck refrigeration units (TRUs) and Mitigation Measure AQ-3b to reduce health risk impacts to new residential and other sensitive land use projects. The proposed project would not generate 100 diesel truck trips or 40 diesel-powered TRUs and is not considered a sensitive land use; therefore, these mitigation measures would not apply. In addition, ConnectMenlo EIR Mitigation Measures GHG-1 and GHG-2 require that the City update the City of Menlo Park Climate Action Plan; therefore, this mitigation measure would not apply.



LSA

LEGEND

Project Location

FIGURE 1

N

0 500 1000

FEET

SOURCE: USGS The National Map (2018)

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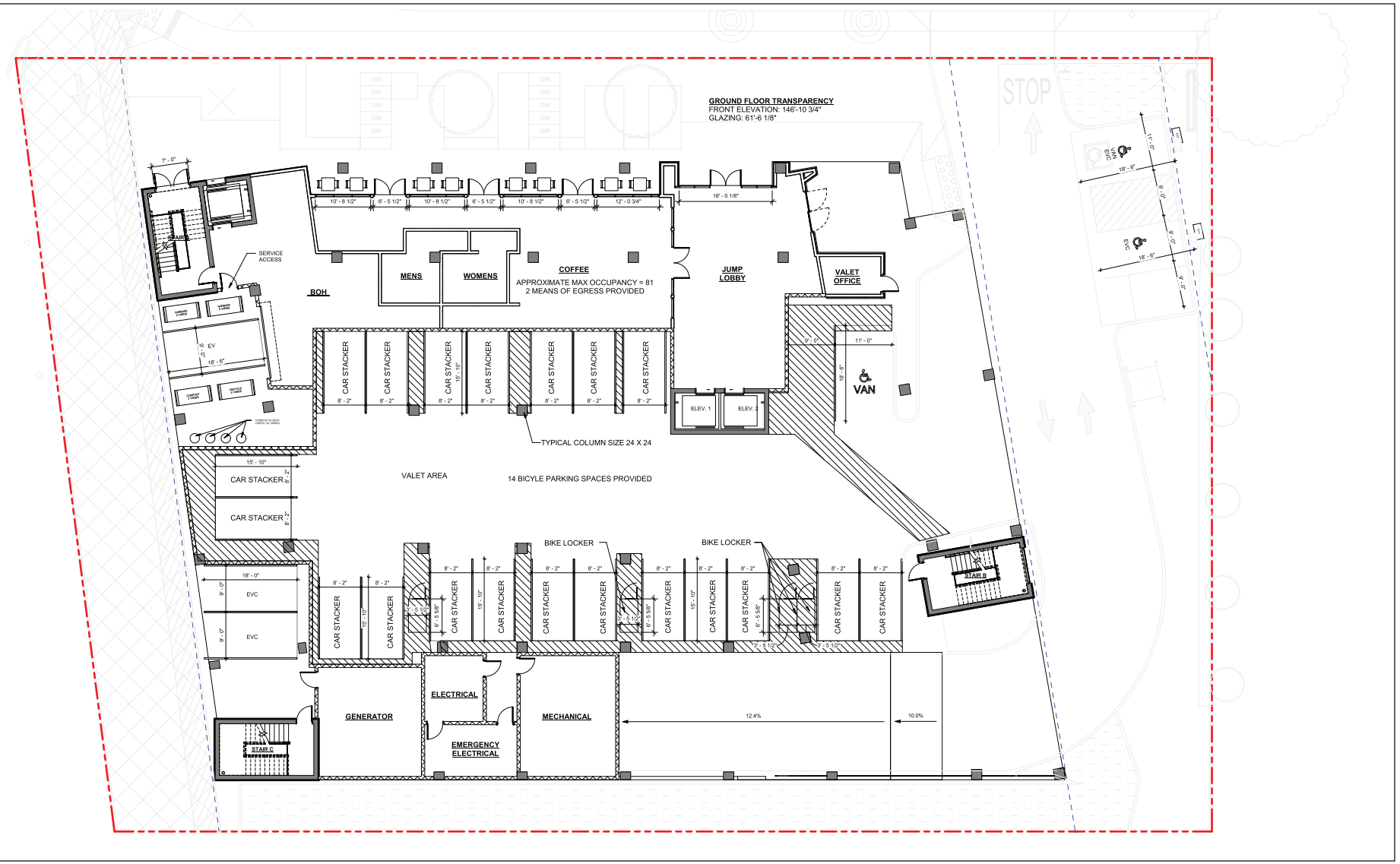
Hotel Moxy Project

Project Location



LSA

FIGURE 2

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0 16 32

FEET

Hotel Moxy Project

Site Plan

SOURCES: FPG Development Group; Elevate Architecture Studio, 5/13/2022

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Existing Sensitive Land Uses in the Project Area

For the purposes of this analysis, sensitive receptors are areas of population that have an increased sensitivity to air pollution or environmental contaminants. Sensitive receptor locations include residences, schools, daycare centers, hospitals, parks, and similar uses that are sensitive to air quality. Impacts on sensitive receptors are of particular concern because they are the population most vulnerable to the effects of air pollution. The closest sensitive receptors to the project site would include the Elan Menlo Park Apartments located adjacent to the project's western boundary.

BACKGROUND

This section provides background information on air pollutants and their health effects. It also provides regulatory background information, including information from the California Air Resources Board's (CARB) Air Quality and Land Use Handbook[1] (CARB Handbook), a description of the general health risks of toxics, and the significance criteria for project evaluation.

AIR POLLUTANTS AND HEALTH EFFECTS

Both State and federal governments have established health-based ambient air quality standards (AAQS) for six criteria air pollutants:[2] carbon monoxide (CO), ozone (O_3), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), lead (Pb), and suspended particulate matter (PM). In addition, the State has set standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. These standards are designed to protect the health and welfare of the populace with a reasonable margin of safety. Long-term exposure to elevated levels of criteria pollutants may result in adverse health effects. However, emission thresholds established by an air district are used to manage total regional emissions within an air basin based on the basin's attainment status for criteria pollutants. These emission thresholds were established for individual projects that would contribute to regional emissions and pollutant concentrations and could adversely affect or delay the projected attainment target year for certain criteria pollutants.

Because of the conservative nature of the thresholds and the basin-wide context of individual project emissions, there is no known direct correlation between a single project and localized air quality-related health effects. One individual project that generates emissions exceeding a threshold does not necessarily result in adverse health effects for residents in the project vicinity. This condition is especially true when the criteria pollutants exceeding thresholds are those with regional effects, such as ozone precursors like nitrogen oxides (NO_x) and volatile organic compounds (VOC).

Occupants of facilities such as schools, daycare centers, parks and playgrounds, hospitals, and nursing and convalescent homes are considered to be more sensitive than the general public to air pollutants because these population groups have increased susceptibility to respiratory disease. Persons engaged in strenuous work or exercise also have increased sensitivity to poor air quality. Residential areas are considered more sensitive to air quality conditions, compared to commercial and industrial areas, because people generally spend longer periods of time at their residences, with greater associated exposure to ambient air quality conditions. Recreational uses are also considered sensitive compared to commercial and industrial uses due to greater exposure to ambient air quality conditions associated with exercise.

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1 California Air Resources Board (CARB). 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* May.

2 Criteria pollutants are defined as those pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations in order to protect public health.

Ozone

Rather than being directly emitted, ozone (smog) is formed by photochemical reactions between NO_x and VOC. Ozone is a pungent, colorless gas. Elevated ozone concentrations result in reduced lung function, particularly during vigorous physical activity. This health problem is particularly acute in sensitive receptors such as the sick, elderly, and young children. Ozone levels peak during the summer and early fall months.

Carbon Monoxide

CO is formed by the incomplete combustion of fossil fuels, almost entirely from automobiles. It is a colorless, odorless gas that can cause dizziness, fatigue, and impairments to central nervous system functions. CO passes through the lungs into the bloodstream, where it interferes with the transfer of oxygen to body tissues.

Particulate Matter

Particulate matter is the term used for a mixture of solid particles and liquid droplets found in the air. Coarse particles are those that are 10 microns or less in diameter, or PM_{10}. Fine, suspended particulate matter with an aerodynamic diameter of 2.5 microns or less, or $PM_{2.5}$, is not readily filtered out by the lungs. Nitrates, sulfates, dust, and combustion particulates are major components of PM_{10} and $PM_{2.5}$. These small particles can be directly emitted into the atmosphere as byproducts of fuel combustion; through abrasion, such as tire or brake lining wear; or through fugitive dust (wind or mechanical erosion of soil). They can also be formed in the atmosphere through chemical reactions. Particulates may transport carcinogens and other toxic compounds that adhere to the particle surfaces and can enter the human body through the lungs.

Nitrogen Dioxide

NO_2 is a reddish brown gas that is a byproduct of combustion processes. Automobiles and industrial operations are the main sources of NO_2. Aside from its contribution to ozone formation, NO_2 also contributes to other pollution problems, including a high concentration of fine particulate matter, poor visibility, and acid deposition. NO_2 may be visible as a coloring component on high pollution days, especially in conjunction with high ozone levels. NO_2 decreases lung function and may reduce resistance to infection.

Sulfur Dioxide

SO_2 is a colorless, irritating gas formed primarily from incomplete combustion of fuels containing sulfur. Industrial facilities also contribute to gaseous SO_2 levels in the region. SO_2 irritates the respiratory tract, can injure lung tissue when combined with fine particulate matter, and reduces visibility and the level of sunlight.

Lead

Leaded gasoline (phased out in the United States beginning in 1973), paint (on older houses and cars), smelters (metal refineries), and the manufacture of lead storage batteries have been the primary sources of lead released into the atmosphere. Lead has multiple adverse neurotoxic health effects, and children are at special risk. Some lead-containing chemicals cause cancer in animals.

Lead levels in the air have decreased substantially since leaded gasoline was eliminated. Ambient lead concentrations are only monitored on an as-warranted, site-specific basis in California. On October 15, 2008, the United States Environmental Protection Agency (USEPA) strengthened the national ambient air quality standard for lead by lowering it from 1.5 to 0.15 micrograms per cubic meter ($\mu g/m^3$). The USEPA revised the monitoring requirements for lead in December 2010. These requirements focus on airports and large urban areas, resulting in an increase in 76 monitors nationally.

Volatile Organic Compounds

VOCs (also known as reactive organic gases [ROGs] and reactive organic compounds [ROCs]) are formed from the combustion of fuels and the evaporation of organic solvents. VOCs are not defined as criteria pollutants, however, because VOCs accumulate in the atmosphere more quickly during the winter, when sunlight is limited and photochemical reactions are slower, they are a prime component of the photochemical smog reaction. There are no attainment designations for VOCs.

Toxic Air Contaminants

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are injurious in small quantities and are regulated by the USEPA and the CARB. Some examples of TACs include benzene, butadiene, formaldehyde, and hydrogen sulfide. The identification, regulation, and monitoring of TACs is relatively recent compared to that for criteria pollutants.

TACs do not have ambient air quality standards, but are regulated by the USEPA, CARB, and the BAAQMD. In 1998, the CARB identified particulate matter from diesel-fueled engines as a TAC. The CARB has completed a risk management process that identified potential cancer risks for a range of activities using diesel-fueled engines.[1] High-volume freeways, stationary diesel engines, and facilities attracting heavy and constant diesel vehicle traffic (e.g., distribution centers and truck stops) were identified as posing the highest risk to adjacent receptors. Other facilities associated with increased risk include warehouse distribution centers, large retail or industrial facilities, high-volume transit centers, and schools with a high volume of bus traffic. Health risks from TACs are a function of both concentration and duration of exposure.

Unlike TACs emitted from industrial and other stationary sources noted above, most diesel particulate matter is emitted from mobile sources—primarily "off-road" sources such as construction and mining equipment, agricultural equipment, and truck-mounted refrigeration units, as well as "on-road" sources such as trucks and buses traveling on freeways and local roadways.

Although not specifically monitored, recent studies indicate that exposure to diesel particulate matter may contribute significantly to a cancer risk (a risk of approximately 500 to 700 in 1,000,000) that is greater than all other measured TACs combined.[2] The technology for reducing diesel particulate matter emissions from heavy-duty trucks is well established, and both State and federal

[1] CARB. 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

[2] Ibid.

agencies are moving aggressively to regulate engines and emission control systems to reduce and remediate diesel emissions. The CARB anticipates that by 2020, average statewide diesel particulate matter concentrations will decrease by 85 percent from levels in 2000 with full implementation of the CARB's Diesel Risk Reduction Plan,[1] meaning that the statewide health risk from diesel particulate matter is expected to decrease from 540 cancer cases in 1,000,000 to 21.5 cancer cases in 1,000,000.

Table A summarizes the sources and health effects of air pollutants discussed in this section. Table B presents a summary of State and federal AAQS.

Table A: Sources and Health Effects of Air Pollutants

Pollutants	Sources	Primary Effects
Carbon Monoxide (CO)	● Incomplete combustion of fuels and other carbon-containing substances, such as motor exhaust ● Natural events, such as decomposition of organic matter	● Reduced tolerance for exercise ● Impairment of mental function ● Impairment of fetal development ● Death at high levels of exposure ● Aggravation of some heart diseases (angina)
Nitrogen Dioxide (NO_2)	● Motor vehicle exhaust ● High temperature stationary combustion ● Atmospheric reactions	● Aggravation of respiratory illness ● Reduced visibility ● Reduced plant growth ● Formation of acid rain
Ozone (O_3)	● Atmospheric reaction of organic gases with nitrogen oxides in sunlight	● Aggravation of respiratory and cardiovascular diseases ● Irritation of eyes ● Impairment of cardiopulmonary function ● Plant leaf injury
Lead (Pb)	● Contaminated soil	● Impairment of blood functions and nerve construction ● Behavioral and hearing problems in children
Suspended Particulate Matter ($PM_{2.5}$ and PM_{10})	● Stationary combustion of solid fuels ● Construction activities ● Industrial processes ● Atmospheric chemical reactions	● Reduced lung function ● Aggravation of the effects of gaseous pollutants ● Aggravation of respiratory and cardiorespiratory diseases ● Increased cough and chest discomfort ● Soiling ● Reduced visibility
Sulfur Dioxide (SO_2)	● Combustion of sulfur-containing fossil fuels ● Smelting of sulfur-bearing metal ores Industrial processes	● Aggravation of respiratory diseases (asthma, emphysema) ● Reduced lung function ● Irritation of eyes ● Reduced visibility ● Plant injury ● Deterioration of metals, textiles, leather, finishes, coatings, etc.

Source: California Air Resources Board (2016).

[1] CARB. 2000. Stationary Source Division and Mobile Source Control Division. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles.* October.

Table B: Federal and State Ambient Air Quality Standards

Pollutant	Averaging Time	California Standards[a]		Federal Standards[b]		
		Concentration[c]	Method[d]	Primary[c,e]	Secondary[c,f]	Method[g]
Ozone (O_3)[h]	1-Hour	0.09 ppm (180 µg/m³)	Ultraviolet Photometry	–	Same as Primary Standard	Ultraviolet Photometry
	8-Hour	0.07 ppm (137 µg/m³)		0.070 ppm (137 µg/m³)		
Respirable Particulate Matter (PM_{10})[i]	24-Hour	50 µg/m³	Gravimetric or Beta Attenuation	150 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	20 µg/m³		–		
Fine Particulate Matter ($PM_{2.5}$)[i]	24-Hour	-		35 µg/m³	Same as Primary Standard	Inertial Separation and Gravimetric Analysis
	Annual Arithmetic Mean	12 µg/m³	Gravimetric or Beta Attenuation	12.0 µg/m³		
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m³)	Non-Dispersive Infrared Photometry (NDIR)	9 ppm (10 mg/m³)	–	Non-Dispersive Infrared Photometry (NDIR)
	1-Hour	20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
	8-Hour (Lake Tahoe)	6 ppm (7 mg/m³)		–	–	
Nitrogen Dioxide (NO_2)[j]	Annual Arithmetic Mean	0.03 ppm (57 µg/m³)	Gas Phase Chemi-luminescence	53 ppb (100 µg/m³)	Same as Primary Standard	Gas Phase Chemi-luminescence
	1-Hour	0.18 ppm (339 µg/m³)		100 ppb (188 µg/m³)	-	
Lead (Pb)[l,m]	30-Day Average	1.5 µg/m³	Atomic Absorption	–	–	High-Volume Sampler and Atomic Absorption
	Calendar Quarter	–		1.5 µg/m³ (for certain areas)[l]	Same as Primary Standard	
	Rolling 3-Month Average[i]	–		0.15 µg/m³		
Sulfur Dioxide (SO_2)[k]	24-Hour	0.04 ppm (105 µg/m³)	Ultraviolet Fluorescence	0.14 ppm (for certain areas)	–	Ultraviolet Fluorescence; Spectro-photometry (Pararosaniline Method)
	3-Hour	–		–	0.5 ppm (1300 µg/m³)	
	1-Hour	0.25 ppm (655 µg/m³)		75 ppb (196 µg/m³)[k]	–	
	Annual Arithmetic Mean	–		0.030 ppm (for certain areas)[k]	–	
Visibility-Reducing Particles[l]	8-Hour	See footnote n	Beta Attenuation and Transmittance through Filter Tape.	No Federal Standards		
Sulfates	24-Hour	25 µg/m³	Ion Chromatography			
Hydrogen Sulfide	1-Hour	0.03 ppm (42 µg/m³)	Ultraviolet Fluorescence			
Vinyl Chloride[j]	24-Hour	0.01 ppm (26 µg/m³)	Gas Chromatography			

Source: California Air Resources Board (2016) (Website: https://www.arb.ca.gov/research/aaqs/aaqs2.pdf, accessed August 2022).

Table notes are provided on the following page.

[a] California standards for ozone, carbon monoxide (except 8-hour Lake Tahoe), sulfur dioxide (1- and 24-hour), nitrogen dioxide, and particulate matter (PM_{10}, $PM_{2.5}$, and visibility reducing particles), are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than ozone, particulate matter, and those based on annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over three years, is equal to or less than the standard. For PM_{10}, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m^3 is equal to or less than one. For $PM_{2.5}$, the 24-hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact USEPA for further clarification and current national policies.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] Any equivalent measurement method which can be shown to the satisfaction of the CARB to give equivalent results at or near the level of the air quality standard may be used.

[e] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

[f] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[g] Reference method as described by the USEPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the USEPA.

[h] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m^3 to 12.0 µg/m^3. The existing national 24- hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m^3, as was the annual secondary standard of 15 µg/m^3. The existing 24-hour PM_{10} standards (primary and secondary) of 150 µg/m^3 also were retained. The form of the annual primary and secondary standards is the annual mean, averaged over 3 years.

[j] To attain the 1-hour national standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 ppb. Note that the national 1-hour standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the national 1-hour standard to the California standards the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[k] On June 2, 2010, a new 1-hour SO_2 standard was established and the existing 24-hour and annual primary standards were revoked. To attain the 1-hour national standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 SO_2 national standards (24-hour and annual) remain in effect until one year after an area is designated for the 2010 standard, except that in areas designated nonattainment for the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

Note that the 1-hour national standard is in units of parts per billion (ppb). California standards are in units of parts per million (ppm). To directly compare the 1-hour national standard to the California standard the units can be converted to ppm. In this case, the national standard of 75 ppb is identical to 0.075 ppm.

[l] The CARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[m] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m^3 as a quarterly average) remains in effect until one year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

[n] In 1989, the CARB converted both the general statewide 10-mile visibility standard and the Lake Tahoe 30-mile visibility standard to instrumental equivalents, which are "extinction of 0.23 per kilometer" and "extinction of 0.07 per kilometer" for the statewide and Lake Tahoe Air Basin standards, respectively.

°C = degrees Celsius
µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
mg/m^3 = milligrams per cubic meter
ppb = parts per billion
ppm = parts per million
USEPA = United States Environmental Protection Agency

GREENHOUSE GASES AND GLOBAL CLIMATE CHANGE

Global climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans in recent decades. The Earth's average near-surface atmospheric temperature rose 0.6 ± 0.2° Celsius (°C) or 1.1 ± 0.4° Fahrenheit (°F) in the 20th century. The prevailing scientific opinion on climate change is that most of the warming observed over the last 50 years is attributable to human activities. The increased amounts of carbon dioxide (CO_2) and other GHGs are the primary causes of the human-induced component of warming. GHGs are released by the burning of fossil fuels, land clearing, agriculture, and other activities, and lead to an increase in the greenhouse effect.[1]

GHGs are present in the atmosphere naturally, are released by natural sources, or are formed from secondary reactions taking place in the atmosphere. The gases that are widely seen as the principal contributors to human-induced global climate change are:

- Carbon dioxide (CO_2)
- Methane (CH_4)
- Nitrous oxide (N_2O)
- Hydrofluorocarbons (HFCs)
- Perfluorocarbons (PFCs)
- Sulfur hexafluoride (SF_6)

Over the last 200 years, humans have caused substantial quantities of GHGs to be released into the atmosphere. These extra emissions are increasing GHG concentrations in the atmosphere, and enhancing the natural greenhouse effect, which is believed to be causing global warming. While manmade GHGs include naturally-occurring GHGs such as CO_2, methane, and N_2O, some gases, like HFCs, PFCs, and SF_6 are completely new to the atmosphere.

Certain gases, such as water vapor, are short-lived in the atmosphere. Others remain in the atmosphere for significant periods of time, contributing to climate change in the long term. Water vapor is excluded from the list of GHGs above because it is short-lived in the atmosphere and its atmospheric concentrations are largely determined by natural processes, such as oceanic evaporation. For the purposes of this air quality analysis, the term "GHGs" will refer collectively to the six gases listed above only.

These gases vary considerably in terms of Global Warming Potential (GWP), which is a concept developed to compare the ability of each GHG to trap heat in the atmosphere relative to another gas. The global warming potential is based on several factors, including the relative effectiveness of a gas to absorb infrared radiation and length of time that the gas remains in the atmosphere

[1] The temperature on Earth is regulated by a system commonly known as the "greenhouse effect." Just as the glass in a greenhouse lets heat from sunlight in and reduces the heat escaping, greenhouse gases like carbon dioxide, methane, and nitrous oxide in the atmosphere keep the Earth at a relatively even temperature. Without the greenhouse effect, the Earth would be a frozen globe; thus, although an excess of greenhouse gas results in global warming, the naturally occurring greenhouse effect is necessary to keep our planet at a comfortable temperature.

("atmospheric lifetime"). The GWP of each gas is measured relative to carbon dioxide, the most abundant GHG; the definition of GWP for a particular GHG is the ratio of heat trapped by one unit mass of the GHG to the ratio of heat trapped by one unit mass of CO_2 over a specified time period. GHG emissions are typically measured in terms of pounds or tons of "CO_2 equivalents" (CO_2e). Table C shows the GWP for each type of GHG. For example, sulfur hexafluoride is 22,800 times more potent at contributing to global warming than carbon dioxide.

Table C: Global Warming Potential of Greenhouse Gases

Gas	Atmospheric Lifetime (Years)	Global Warming Potential (100-Year Time Horizon)
Carbon Dioxide	50-200	1
Methane	12	25
Nitrous Oxide	114	298
HFC-23	270	14,800
HFC-134a	14	1,430
HFC-152a	1.4	124
PFC: Tetrafluoromethane (CF_4)	50,000	7,390
PFC: Hexafluoromethane (C_2F_6)	10,000	12,200
Sulfur Hexafluoride (SF_6)	3,200	22,800

Source: *Climate Change 2007: The Physical Science Basis. Contribution of Working Group I to the Fourth Assessment Report of the IPCC* (Intergovernmental Panel on Climate Change, 2007).

The following discussion summarizes the characteristics of the six GHGs and black carbon.

Carbon Dioxide

In the atmosphere, carbon generally exists in its oxidized form, as CO_2. Natural sources of CO_2 include the respiration (breathing) of humans, animals and plants, volcanic out gassing, decomposition of organic matter and evaporation from the oceans. Human caused sources of CO_2 include the combustion of fossil fuels and wood, waste incineration, mineral production, and deforestation. Natural sources release approximately 150 billion tons of CO_2 each year, far outweighing the 7 billion tons of man-made emissions of CO_2 each year. Nevertheless, natural removal processes, such as photosynthesis by land- and ocean-dwelling plant species, cannot keep pace with this extra input of man-made CO_2, and consequently, the gas is building up in the atmosphere.

In 2019, total annual CO_2 accounted for approximately 83 percent of California's overall GHG emissions.[1] Transportation is the single largest source of CO_2 in California, which is primarily comprised of on-road travel. Electricity production, industrial and residential sources also make important contributions to CO_2 emissions in California.

Methane

Methane (CH_4) is produced when organic matter decomposes in environments lacking sufficient oxygen. Natural sources include wetlands, termites, and oceans. Decomposition occurring in landfills

[1] CARB. 2021. GHGs Descriptions & Sources in California. Website: ww2.arb.ca.gov/ghg-descriptions-sources (accessed May 2022).

accounts for the majority of human-generated CH_4 emissions in California and in the United States as a whole. Agricultural processes such as intestinal fermentation, manure management, and rice cultivation are also significant sources of CH_4 in California. Total annual emissions of CH_4 accounted for approximately 9 percent of GHG emissions in California.[1]

Nitrous Oxide

Nitrous oxide (N_2O) is produced naturally by a wide variety of biological sources, particularly microbial action in soils and water. Tropical soils and oceans account for the majority of natural source emissions. Nitrous oxide is a product of the reaction that occurs between nitrogen and oxygen during fuel combustion. Both mobile and stationary combustion emit N_2O, and the quantity emitted varies according to the type of fuel, technology, and pollution control device used, as well as maintenance and operating practices. Agricultural soil management and fossil fuel combustion are the primary sources of human-generated N_2O emissions in California. Nitrous oxide emissions accounted for approximately 3 percent of GHG emissions in California in 2019.[2]

Hydrofluorocarbons, Perfluorocarbons, and Sulfur Hexafluoride

HFCs are primarily used as substitutes for ozone-depleting substances regulated under the Montreal Protocol.[3] PFCs and SF_6 are emitted from various industrial processes, including aluminum smelting, semiconductor manufacturing, electric power transmission and distribution, and magnesium casting. There is no aluminum or magnesium production in California; however, the rapid growth in the semiconductor industry leads to greater use of PFCs. HFCs, PFCs, and SF_6 accounted for about 5 percent of GHG emissions in California in 2019.[4]

Black Carbon

Black carbon is the most strongly light-absorbing component of PM formed by burning fossil fuels such as coal, diesel, and biomass. Black carbon is emitted directly into the atmosphere in the form of $PM_{2.5}$ and is the most effective form of PM, by mass, at absorbing solar energy. Per unit of mass in the atmosphere, black carbon can absorb one million times more energy than CO_2.[5] Black carbon contributes to climate change both directly, such as absorbing sunlight, and indirectly, such as affecting cloud formation. However, because black carbon is short-lived in the atmosphere, it can be difficult to quantify its effect on global-warming.

Most U.S. emissions of black carbon come from mobile sources (52 percent), particularly from diesel fueled vehicles. The other major source of black carbon is open biomass burning, including wildfires,

1 CARB. 2021. GHGs Descriptions & Sources in California. Website: ww2.arb.ca.gov/ghg-descriptions-sources (accessed May 2022).

2 Ibid.

3 The Montreal Protocol is an international treaty that was approved on January 1, 1989, and was designated to protect the ozone layer by phasing out the production of several groups of halogenated hydrocarbons believed to be responsible for ozone depletion.

4 CARB. 2021, op. cit.

5 United States Environmental Protection Agency (USEPA), 2015. Black Carbon, Basic Information. February 14, 2017. Website: 19january2017snapshot.epa.gov/www3/airquality/blackcarbon/basic.html (accessed May 2022).

although residential heating and industry also contribute. The CARB estimates that the annual black carbon emissions in California have decreased approximately 70 percent between 1990 and 2010 and are expected to continue to decline significantly due to controls on mobile diesel emissions.

Effects of Global Climate Change

Effects from global climate change may arise from temperature increases, climate-sensitive diseases, extreme weather events, and air quality. There may be direct temperature effects through increases in average temperature leading to more extreme heat waves and less extreme cold spells. Those living in warmer climates are likely to experience more stress and heat-related problems. Heat-related problems include heat rash and heat stroke. In addition, climate-sensitive diseases may increase, such as those spread by mosquitoes and other disease-carrying insects. Such diseases include malaria, dengue fever, yellow fever, and encephalitis. Extreme events such as flooding and hurricanes can displace people and agriculture. Global climate change may also contribute to air quality problems from increased frequency of smog and particulate air pollution.[1]

Additionally, according to the 2006 California Climate Action Team (CAT) Report,[2] the following applicable climate change effects, which are based on trends established by the United Nations Intergovernmental Panel on Climate Change (IPCC), can be expected in California over the course of the next century:

- The loss of sea ice and mountain snow pack, resulting in higher sea levels and higher sea surface evaporation rates with a corresponding increase in tropospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures.[3]

- Rise in global average sea level, primarily due to thermal expansion and melting of glaciers and ice caps in the Greenland and Antarctic ice sheets.[4]

- Changes in weather that include widespread changes in precipitation, ocean salinity, wind patterns, and more energetic aspects of extreme weather, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones.[5]

- Decline of the Sierra snowpack, which accounts for approximately one-half of the surface water storage in California by 70 percent to as much as 90 percent over the next 100 years.[6]

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1 USEPA. 2016. Climate Impacts on Human Health. April. Website: https://19january2017snapshot.epa.gov/climate-impacts/climate-impacts-human-health_.html, last updated on February 24, 2017 (accessed May 2022).

2 California Environmental Protection Agency (CalEPA). 2006. *Climate Action Team Report to Governor Schwarzenegger and the Legislature*. March.

3 Ibid.

4 Ibid.

5 Intergovernmental Panel on Climate Change (IPCC). 2007. *Climate Change 2007: The Physical Science Basis, Summary for Policymakers*. February.

6 CalEPA. 2006, op. cit.

- Increase in the number of days conducive to O_3 formation by 25–85 percent (depending on the future temperature scenario) in high O_3 areas by the end of the 21st century.[1]

- High potential for erosion of California's coastlines and seawater intrusion into the Delta and levee systems due to the rise in sea level.[2]

A summary of these potential effects is identified in Table D.

Table D: Potential Impacts of Global Warming and Expected Consequences for California

Potential Water Resource Impacts	Anticipated Consequences Statewide
Reduction of the State's average annual snowpack	● Specifically, the decline of the Sierra snowpack would lead to a loss in half of the surface water storage in California by 70% to 90% over the next 100 years ● Potential loss of 5 million acre-feet or more of average annual water storage in the State's snowpack ● Increased challenges for reservoir management and balancing the competing concerns of flood protection and water supply ● Higher surface evaporation rates with a corresponding increase in tropospheric water vapor
Rise in average sea level	● Potential economic impacts related to coastal tourism, commercial fisheries, coastal agriculture, and ports ● Increased risk of flooding, coastal erosion along the State's coastline, seawater intrusion into the Delta and levee systems
Changes in weather	● Changes in precipitation, ocean salinity, and wind patterns ● Increased likelihood for extreme weather events, including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones
Changes in the timing, intensity, location, amount, and variability of precipitation	● Potential increased storm intensity and increased potential for flooding ● Possible increased potential for droughts ● Long-term changes in vegetation and increased incidence of wildfires ● Changes in the intensity and timing of runoff ● Possible increased incidence of flooding and increased sedimentation ● Sea level rise and inundation of coastal marshes and estuaries ● Increased potential for salinity intrusion into coastal aquifers (groundwater) ● Increased potential for flooding near the mouths of rivers due to backwater effects
Increased water temperatures	● Increased environmental water demand for temperature control ● Possible increased problems with foreign invasive species in aquatic ecosystems ● Potential adverse changes in water quality, including the reduction of dissolved oxygen levels ● Possible critical effects on listed and endangered aquatic species
Changes in urban and agricultural water demand	● Changes in demand patterns and evapotranspiration
Increase in the number of days conducive to O_3 formation	● Increased temperatures ● Potential health effects, including adverse impacts to respiratory systems

Source: United States Department of the Interior, Environmental Water Account, Draft Supplemental EIS/EIR to the Environmental Water Account Final EIS/EIR, Bureau of Reclamation Mid-Pacific Region, Sacramento, California (October 2007).
EIR = Environmental Impact Report
EIS = Environmental Impact Statement
O_3 = ozone

1 CalEPA. 2006, op. cit.
2 Ibid.

REGULATORY SETTING

This section provides regulatory background information for air quality and GHGs.

AIR QUALITY REGULATORY SETTING

The USEPA and the CARB regulate direct emissions from motor vehicles. The BAAQMD is the regional agency primarily responsible for regulating air pollution emissions from stationary sources (e.g., factories) and indirect sources (e.g., traffic associated with new development), as well as monitoring ambient pollutant concentrations.

Federal Clean Air Act

The 1970 Federal Clean Air Act authorized the establishment of national health-based air quality standards and also set deadlines for their attainment. The Federal Clean Air Act Amendments of 1990 changed deadlines for attaining national standards as well as the remedial actions required of areas of the nation that exceed the standards. Under the Clean Air Act, State and local agencies in areas that exceed the national standards are required to develop State Implementation Plans to demonstrate how they will achieve the national standards by specified dates.

California Clean Air Act

In 1988, the California Clean Air Act (CCAA) required that all air districts in the State endeavor to achieve and maintain State ambient air quality standards for carbon monoxide, ozone, sulfur dioxide, and nitrogen dioxide by the earliest practical date. The California Clean Air Act provides districts with authority to regulate indirect sources and mandates that air quality districts focus particular attention on reducing emissions from transportation and area-wide emission sources. Each nonattainment district is required to adopt a plan to achieve a 5 percent annual reduction, averaged over consecutive 3-year periods, in district-wide emissions of each nonattainment pollutant or its precursors. A Clean Air Plan shows how a district would reduce emissions to achieve air quality standards. Generally, the State standards for these pollutants are more stringent than the national standards.

California Air Resources Board

The CARB is the State's "clean air agency." The CARB's goals are to attain and maintain healthy air quality, protect the public from exposure to toxic air contaminants, and oversee compliance with air pollution rules and regulations.

Assembly Bill 2588 Air Toxics "Hot Spots" Information and Assessment Act

Under Assembly Bill (AB) 2588, stationary sources of air pollutants are required to report the types and quantities of certain substances their facilities routinely released into the air. The goals of the Air Toxics "Hot Spots" Act are to collect emission data, identify facilities having localized impacts, determine health risks, and notify nearby residents of significant risks.

The California Air Resources Board Handbook

The CARB has developed an Air Quality and Land Use Handbook[1] which is intended to serve as a general reference guide for evaluating and reducing air pollution impacts associated with new projects that go through the land use decision-making process. According to the CARB Handbook, recent air pollution studies have shown an association between respiratory and other non-cancer health effects and proximity to high traffic roadways. Other studies have shown that diesel exhaust and other cancer-causing chemicals emitted from cars and trucks are responsible for much of the overall cancer risk from airborne toxics in California. The CARB Handbook recommends that county and city planning agencies strongly consider proximity to these sources when finding new locations for "sensitive" land uses such as homes, medical facilities, daycare centers, schools, and playgrounds.

Land use designations with air pollution sources of concern include freeways, rail yards, ports, refineries, distribution centers, chrome plating facilities, dry cleaners, and large gasoline service stations. Key recommendations in the CARB Handbook include taking steps to avoid siting new, sensitive land uses:

- Within 500 feet of a freeway, urban roads with 100,000 vehicles/day or rural roads with 50,000 vehicles/day;
- Within 1,000 feet of a major service and maintenance rail yard;
- Immediately downwind of ports (in the most heavily impacted zones) and petroleum refineries;
- Within 300 feet of any dry cleaning operation (for operations with two or more machines, provide 500 feet); and
- Within 300 feet of a large gas station (defined as a facility with a throughput of 3.6 million gallons per year or greater).

The CARB Handbook specifically states that its recommendations are advisory and acknowledges land use agencies have to balance other considerations, including housing and transportation needs, economic development priorities, and other quality of life issues.

The recommendations are generalized and do not consider site-specific meteorology, freeway truck percentages, or other factors that influence risk for a particular project site. The purpose of this guidance is to further examine project sites for actual health risk associated with the location of new sensitive land uses.

Regional Regulations

The BAAQMD seeks to attain and maintain air quality conditions in the San Francisco Bay Area Air Basin through a comprehensive program of planning, regulation, enforcement, technical innovation, and education. The clean air strategy includes the preparation of plans for the attainment of

[1] CARB. 2005. *Air Quality and Land Use Handbook: A Community Health Perspective.* April.

ambient air quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. The BAAQMD also inspects stationary sources and responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements programs and regulations required by law.

BAAQMD Clean Air Plan

The Clean Air Plan guides the region's air quality planning efforts to attain the State ambient air quality standards.[1] The BAAQMD 2017 Clean Air Plan, which was adopted on April 19, 2017, by the BAAQMD Board of Directors, is the current Clean Air Plan which contains district-wide control measures to reduce ozone precursor emissions (e.g., ROG and NO_x), particulate matter and GHG emissions.

The Bay Area 2017 Clean Air Plan:

- Describes the BAAQMD plan towards attaining all State and federal air quality standards and eliminating health risk disparities from exposure to air pollution among Bay Area communities;
- Defines a vision for transitioning the region to a post-carbon economy needed to achieve ambitious GHG reduction targets for 2030 and 2050;
- Provides a regional climate protection strategy that will put the Bay Area on a pathway to achieve GHG reduction targets; and
- Includes a wide range of control measures designed to decrease emissions of air pollutants that are most harmful to Bay Area residents, such as particulate matter, ozone, and toxic air contaminants; to reduce emissions of methane and other "Super-GHGs" that are potent climate pollutants in the near term; and to decrease emissions of carbon dioxide by reducing fossil fuel combustion.

BAAQMD CARE Program

The Community Air Risk Evaluation (CARE) program was initiated in 2004 to evaluate and reduce health risks associated with exposures to outdoor TACs in the Bay Area. The program examines TAC emissions from point sources, area sources, and on-road and off-road mobile sources with an emphasis on diesel exhaust, which is a major contributor to airborne health risk in California. The CARE program is an on-going program that encourages community involvement and input. The technical analysis portion of the CARE program is being implemented in three phases that include an assessment of the sources of TAC emissions, modeling and measurement programs to estimate concentrations of TACs, and an assessment of exposures and health risks. Throughout the program, information derived from the technical analyses will be used to focus emission reduction measures in areas with high TAC exposures and a high density of sensitive populations. Risk reduction

[1] BAAQMD. 2017. *Final 2017 Clean Air Plan*. April 19, 2017. Website: www.baaqmd.gov/~/media/files/planning-and-research/plans/2017-clean-air-plan/attachment-a_-proposed-final-cap-vol-1-pdf.pdf?la=en (accessed May 2021).

activities associated with the CARE program are focused on the most at-risk communities in the Bay Area.

For commercial and industrial sources, the BAAQMD regulates TACs using a risk-based approach. This approach uses a Health Risk Assessment (HRA) to determine what sources and pollutants to control as well as the degree of control. An HRA is an analysis in which human health exposure to toxic substances is estimated and considered together with information regarding the toxic potency of the substances, in order to provide a quantitative estimate of health risks.[1] As part of ongoing efforts to identify and assess potential health risks to the public, the BAAQMD has collected and compiled air toxics emissions data from industrial and commercial sources of air pollution throughout the Bay Area. The BAAQMD has identified seven impacted communities;[2] the City of Menlo Park has not been identified as an affected community.[3]

BAAQMD CEQA Air Quality Guidelines

The BAAQMD CEQA Air Quality Guidelines were prepared to assist in the evaluation of air quality impacts of projects and plans proposed within the Bay Area. The guidelines provide recommended procedures for evaluating potential air impacts during the environmental review process, consistent with CEQA requirements, and include recommended thresholds of significance, mitigation measures, and background air quality information. They also include recommended assessment methodologies for air toxics, odors, and GHG emissions.

In June 2010, the BAAQMD adopted its updated draft CEQA Air Quality Guidelines and finalized them in May 2011. These guidelines superseded previously adopted agency air quality guidelines of 1999 and were intended to advise lead agencies on how to evaluate potential air quality impacts.

In May 2017, the BAAQMD published an updated version of the CEQA Guidelines. The BAAQMD CEQA Guidelines include thresholds to evaluate project impacts in order to protectively evaluate the potential effects of the project on air quality. These protective thresholds are appropriate in the context of the size, scale, and location of the proposed project.

City of Menlo Park

The City of Menlo Park addresses air quality in the General Plan and in the ConnectMenlo EIR, as discussed below.

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1 In general, a health risk assessment is required if the BAAQMD concludes that projected emissions of a specific air toxic compound from a proposed new or modified source suggests a potential public health risk. Such an assessment generally evaluates chronic, long-term effects, including the increased risk of cancer as a result of exposure to one or more TACs.

2 The seven impacted communities include Richmond/San Pablo; eastern San Francisco, including Treasure Island; San Jose; western Alameda County; Concord, Vallejo; and Pittsburg/Antioch.

3 BAAQMD. 2014. *Identifying Areas with Cumulative Impacts from Air Pollution in the San Francisco Bay Area Version 2*. March. Available online at: www.baaqmd.gov/~/media/Files/Planning% 20and%20 Research/CARE%20Program/Documents/ImpactCommunities_2_Methodology.ashx?la=en (accessed May 2021).

General Plan

The City of Menlo Park addresses air quality in the Open Space, Conservation, Noise and Safety Elements of the General Plan.[1] The Open Space, Conservation, Noise and Safety Elements set goals, policies, and implementing programs that work to ensure healthy air quality. The following policies are applicable to the proposed project.

- **Policy OSC5.1: Air and Water Quality Standards.** Continue to apply standards and policies established by the BAAQMD, San Mateo Countywide Water Pollution Prevention Program (SMCWPPP), and City of Menlo Park Climate Action Plan through the CEQA process and other means as applicable.

- **Policy OSC5.2: Development in Industrial Areas.** Evaluate development projects in industrial areas for impacts to air and water resources in relation to truck traffic, hazardous materials use and production-level manufacturing per CEQA and require measures to mitigate potential impacts to less-than-significant levels.

ConnectMenlo EIR

The proposed project's hotel room count is within the maximum amount of hotel room development potential identified in ConnectMenlo. The ConnectMenlo EIR identified the following mitigation measures that would apply to the proposed project and that would help to reduce and avoid potential impacts related to air quality:

- **Mitigation Measure AQ-2a:** Prior to issuance of a building permits, all development projects in the city that are subject to CEQA and exceed the screening sizes in the Bay Area Air Quality Management District (BAAQMD) CEQA Guidelines shall prepare and submit to the City's Planning Division a technical assessment evaluating potential project-related operational air quality impacts. The evaluation shall be prepared in conformance with the BAAQMD methodology for assessing air quality impacts. If operational-related criteria air pollutants are determined to have the potential to exceed the BAAQMD thresholds of significance, as identified in BAAQMD's CEQA Guidelines, the project applicant is required to incorporate mitigation measures into the development project to reduce air pollutant emissions during operation. The identified measures shall be incorporated into all appropriate construction documents, subject to the review and approval of the Planning Division prior to building permit issuance.

- **Mitigation Measure AQ-2b1:** Prior to building permit issuance, the City shall require applicants for all development projects in the city to comply with the current Bay Area Air Quality Management District's (BAAQMD) basic control measures for reducing construction emissions of PM_{10} (Table 8-1, Basic Construction Mitigation Measures Recommended for All Proposed Projects, of the BAAQMD CEQA Guidelines).

[1] Menlo Park, City of. 2013. *City of Menlo Park General Plan, Open Space Conservation, Noise and Safety Elements*. May 21.

- **Mitigation Measure AQ-2b2:** Prior to issuance of a building permit, development projects in the City that are subject to CEQA and exceed the screening sizes in the BAAQMD's CEQA Guidelines shall prepare and submit to the City of Menlo Park a technical assessment evaluating potential project construction-related air quality impacts. The evaluation shall be prepared in conformance with the BAAQMD methodology for assessing air quality impacts. If construction-related criteria air pollutants are determined to have the potential to exceed the BAAQMD thresholds of significance, as identified in the BAAQMD CEQA Guidelines, the project applicant is required to incorporate mitigation measures to reduce air pollutant emissions during construction activities to below these thresholds (e.g., Table 8-2, Additional Construction Mitigation Measures Recommended for projects with Construction Emissions Above the Threshold of the BAAQMD CEQA Guidelines, or applicable construction mitigation measures subsequently approved by BAAQMD). These identified measures shall be incorporated into all appropriate construction documents (e.g., construction management plans), subject to the review and approval of the Planning Division prior to building permit issuance.

- **Mitigation Measure AQ-3a:** As part of the discretionary review process for development applications, applicants for all non-residential projects within the City that: 1) have the potential to generate 100 or more diesel truck trips per day or have 40 or more trucks with operating diesel-powered TRUs, and 2) are within 1,000 feet of a sensitive land use (e.g., residential, schools, hospitals, nursing homes), as measured from the property line of a proposed project to the property line of the nearest sensitive use, shall submit a health risk assessment (HRA) to the City's Planning Division. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment and the Bay Area Air Quality Management District. If the HRA shows that the incremental cancer risk exceeds 10 in one million (10E-06), $PM_{2.5}$ concentrations exceed 0.3 $\mu g/m^3$, or the appropriate noncancer hazard index exceeds 1.0, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and noncancer risks to an acceptable level, including appropriate enforcement mechanisms. Mitigation measures may include but are not limited to:

    - Restricting idling on-site beyond Air Toxic Control Measures idling restrictions, as feasible.
    - Electrifying warehousing docks.
    - Requiring use of newer equipment and/or vehicles.
    - Restricting off-site truck travel through the creation of truck routes.

    Mitigation measures identified in the project-specific HRA shall be incorporated into the site development plan as a component of a proposed project, subject to the review and approval of the Community Development Department.

- **Mitigation Measure AQ-3b:** As part of the discretionary review process, applicants for all residential and other sensitive land use projects (e.g., hospitals, nursing homes, day care centers) anywhere in the City within 1,000 feet of a major sources of toxic air contaminants (TACs) (e.g., warehouses, industrial areas, freeways, and roadways with traffic volumes over

10,000 vehicle per day), as measured from the property line of the project to the property line of the source/edge of the nearest travel lane, shall submit a health risk assessment (HRA) to the City's Planning Division. The HRA shall be prepared in accordance with policies and procedures of the State Office of Environmental Health Hazard Assessment (OEHHA) and the Bay Area Air Quality Management District. The latest OEHHA guidelines shall be used for the analysis, including age sensitivity factors, breathing rates, and body weights appropriate for children ages 0 to 16 years. If the HRA shows that the incremental cancer risk exceeds ten in one million (10E-06), $PM_{2.5}$ concentrations exceed 0.3 µg/m^3, or the appropriate noncancer hazard index exceeds 1.0, the applicant will be required to identify and demonstrate that mitigation measures are capable of reducing potential cancer and non-cancer risks to an acceptable level (i.e., below ten in one million or a hazard index of 1.0), including appropriate enforcement mechanisms. Measures to reduce risk may include but are not limited to:

- Air intakes located away from high volume roadways and/or truck loading zones.
- Heating, ventilation, and air conditioning systems of the buildings provided with appropriately sized maximum efficiency rating value (MERV) filters.

Measures identified in the HRA shall be incorporated into the site development plan as a component of the proposed project subject to the review and approval of the Community Development Department. The air intake design and MERV filter requirements shall be noted and/or reflected on all building plans submitted to the City, subject to the review and approval of the Community Development Department.

- **Mitigation Measure AQ-5**: Implementation of Mitigation Measures AQ-2a through AQ3b.

GREENHOUSE GAS REGULATORY SETTING

This section describes regulations related to Global Climate Change at the federal, State, and local level.

Federal Regulations

The United States has historically had a voluntary approach to reducing GHG emissions. However, on April 2, 2007, the United States Supreme Court ruled that the USEPA has the authority to regulate CO_2 emissions under the federal Clean Air Act. While there currently are no adopted federal regulations for the control or reduction of GHG emissions, the USEPA commenced several actions in 2009 to implement a regulatory approach to global climate change.

This includes the 2009 USEPA final rule for mandatory reporting of GHGs from large GHG emission sources in the United States. Additionally, the USEPA Administrator signed an endangerment finding action in 2009 under the Clean Air Act, finding that six GHGs (CO_2, CH_4, N_2O, HFCs, PFCs, SF_6) constitute a threat to public health and welfare, and that the combined emissions from motor vehicles cause and contribute to global climate change, leading to national GHG emission standards.

In October 2012, the USEPA and the National Highway Traffic Safety Administration (NHTSA), on behalf of the U.S. Department of Transportation, issued final rules to further reduce GHG emissions

and improve corporate average fuel economy (CAFE) standards for light-duty vehicles for model years 2017 and beyond (77 *Federal Register* 62624). The NHTSA's CAFE standards have been enacted under the Energy Policy and Conservation Act since 1978. This national program requires automobile manufacturers to build a single light-duty national fleet that meets all requirements under both federal programs and the standards of California and other states. This program would increase fuel economy to the equivalent of 54.5 miles per gallon, limiting vehicle emissions to 163 grams of CO_2 per mile for the fleet of cars and light-duty trucks by model year 2025 (77 *Federal Register* 62630).

On March 21, 2020, the USEPA and NHTSA finalized the *Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule for Model Years 2021–2026 Passenger Cars and Light Trucks* (SAFE Vehicles Rule). The SAFE Vehicles Rule amends certain existing CAFE and tailpipe CO_2 emissions standards for passenger cars and light trucks and establish new standards, all covering model years 2021 through 2026. More specifically, NHTSA set new CAFE standards for model years 2022 through 2026 and amended its 2021 model year CAFE standards, and the USEPA amended its CO_2 emissions standards for model years 2021 and later. On May 12, 2021, the NHTSA published a notice of proposed rulemaking in the *Federal Register*, proposing to repeal key portions of the SAFE Vehicles Rule that would have reduced CAFE standards. The final rule repealing portions of the SAFE Vehicles Rule was published on December 29, 2021. The repeal will allow California to set its own GHG standards if it chooses, even if the emissions standards conflict with CAFE standards enacted by the U.S. Department of Transportation.

State Regulations

The CARB is the lead agency for implementing climate change regulations in the State. Since its formation, the CARB has worked with the public, the business sector, and local governments to find solutions to California's air pollution problems. Key efforts by the State are described below.

Assembly Bill 1493 (2002)

In a response to the transportation sector's significant contribution to California's CO_2 emissions, AB 1493 was enacted on July 22, 2002. AB 1493 requires the CARB to set GHG emission standards for passenger vehicles and light duty trucks (and other vehicles whose primary use is noncommercial personal transportation in the State) manufactured in 2009 and all subsequent model years. These standards (starting in model years 2009 to 2016) were approved by the CARB in 2004, but the needed waiver of CAA Preemption was not granted by the USEPA until June 30, 2009. The CARB responded by amending its original regulation, now referred to as Low Emission Vehicle III, to take effect for model years starting in 2017 to 2025. The Trump administration revoked California's waiver in 2019, but the Biden administration restored California's waiver in 2021

Executive Order S-3-05 (2005)

Governor Arnold Schwarzenegger signed Executive Order (EO) S-3-05 on June 1, 2005, which proclaimed that California is vulnerable to the impacts of climate change. To combat those concerns, the executive order established California's GHG emissions reduction targets, which established the following goals:

- GHG emissions should be reduced to 2000 levels by 2010;
- GHG emissions should be reduced to 1990 levels by 2020; and
- GHG emissions should be reduced to 80 percent below 1990 levels by 2050.

The Secretary of the California Environmental Protection Agency (CalEPA) is required to coordinate efforts of various State agencies in order to collectively and efficiently reduce GHGs. A biannual progress report must be submitted to the Governor and State Legislature disclosing the progress made toward greenhouse emission reduction targets. In addition, another biannual report must be submitted illustrating the impacts of global warming on California's water supply, public health, agriculture, the coastline, and forestry, and report possible mitigation and adaptation plans to address these impacts.

The Secretary of CalEPA leads this CAT made up of representatives from State agencies as well as numerous other boards and departments. The CAT members work to coordinate statewide efforts to implement global warming emission reduction programs and the State's Climate Adaptation Strategy. The CAT is also responsible for reporting on the progress made toward meeting the statewide GHG targets that were established in the executive order and further defined under AB 32, the "Global Warming Solutions Act of 2006." The first CAT Report to the Governor and the Legislature was released in March 2006, which it laid out 46 specific emission reduction strategies for reducing GHG emissions and reaching the targets established in the Executive Order. The most recent report was released in December 2020.

Assembly Bill 32 (2006), California Global Warming Solutions Act

California's major initiative for reducing GHG emissions is AB 32, passed by the State legislature on August 31, 2006. This effort aims at reducing GHG emissions to 1990 levels by 2020. The CARB has established the level of GHG emissions in 1990 at 427 million metric tons (MMT) of CO_2e. The emissions target of 427 MMT requires the reduction of 169 MMT from the State's projected business-as-usual 2020 emissions of 596 MMT. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The Scoping Plan was approved by the CARB on December 11, 2008, and contains the main strategies California will implement to achieve the reduction of approximately 169 MMT CO_2e, or approximately 30 percent, from the State's projected 2020 emissions level of 596 MMT CO_2e under a business-as-usual scenario (this is a reduction of 42 MMT CO_2e, or almost 10 percent from 2002–2004 average emissions). The Scoping Plan also includes CARB-recommended GHG reductions for each emissions sector of the State's GHG inventory. The Scoping Plan calls for the largest reductions in GHG emissions to be achieved by implementing the following measures and standards:

- Improved emissions standards for light-duty vehicles (estimated reductions of 31.7 MMT CO_2e);
- The Low-Carbon Fuel Standard (15.0 MMT CO_2e);
- Energy efficiency measures in buildings and appliances and the widespread development of combined heat and power systems (26.3 MMT CO_2e); and

- A renewable portfolio standard for electricity production (21.3 MMT CO_2e).

The Scoping Plan identifies 18 emission reduction measures that address cap-and-trade programs, vehicle gas standards, energy efficiency, low carbon fuel standards, renewable energy, regional transportation-related GHG targets, vehicle efficiency measures, goods movement, solar roof programs, industrial emissions, high speed rail, green building strategies, recycling, sustainable forests, water, and air. The measures would result in a total reduction of 174 MMT CO_2e by 2020.

On August 24, 2011, the CARB unanimously approved both the new supplemental assessment and reapproved its Scoping Plan, which provides the overall roadmap and rule measures to carry out AB 32. The CARB also approved a more robust CEQA equivalent document supporting the supplemental analysis of the cap-and-trade program. The cap-and-trade took effect on January 1, 2012, with an enforceable compliance obligation that began January 1, 2013.

CARB has not yet determined what amount of GHG reductions it recommends from local government operations and local land use decisions; however, the Scoping Plan states that land use planning and urban growth decisions will play an important role in the State's GHG reductions because local governments have primary authority to plan, zone, approve, and permit how land is developed to accommodate population growth and the changing needs of their jurisdictions (meanwhile, CARB is also developing an additional protocol for community emissions). CARB further acknowledges that decisions on how land is used will have large impacts on the GHG emissions that will result from the transportation, housing, industry, forestry, water, agriculture, electricity, and natural gas emission sectors. The Scoping Plan states that the ultimate GHG reduction assignment to local government operations is to be determined. With regard to land use planning, the Scoping Plan expects an approximately 5.0 MMT CO_2e reduction due to implementation of Senate Bill 375 (SB 375).

In addition to reducing GHG emissions to 1990 levels by 2020, AB 32 directed the CARB and the CAT to identify a list of "discrete early action GHG reduction measures" that could be adopted and made enforceable by January 1, 2010. On January 18, 2007, Governor Schwarzenegger signed EO S-1-07, further solidifying California's dedication to reducing GHGs by setting a new Low Carbon Fuel Standard. The Executive Order sets a target to reduce the carbon intensity of California transportation fuels by at least 10 percent by 2020 and directs the CARB to consider the Low Carbon Fuel Standard as a discrete early action measure. In 2011, U.S. District Court Judge Lawrence O'Neil issued an injunction preventing implementation of the Low Carbon Fuel Standard, ruling that it is unconstitutional. In 2012, the Ninth Circuit Court of Appeal stayed the District Court's injunction, allowing implementation of the Low Carbon Fuel Standard. The Ninth Circuit decided to uphold the Low Carbon Fuel Standard.

In June 2007, the CARB approved a list of 37 early action measures, including three discrete early action measures (Low Carbon Fuel Standard, Restrictions on GWP Refrigerants, and Landfill CH_4 Capture).[1] Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety

[1] CARB. 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

Code Section 38560.5. The CARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce statewide GHG emissions by nearly 16 MMT.[1]

In June 2007, the CARB approved a list of 37 early action measures, including three discrete early action measures (a Low Carbon Fuel Standard [LCFS], Restrictions on GWP Refrigerants, and Landfill CH_4 Capture).[2] Discrete early action measures are measures that were required to be adopted as regulations and made effective no later than January 1, 2010, the date established by Health and Safety Code Section 38560.5. The CARB adopted additional early action measures in October 2007 that tripled the number of discrete early action measures. These measures relate to truck efficiency, port electrification, reduction of PFCs from the semiconductor industry, reduction of propellants in consumer products, proper tire inflation, and SF_6 reductions from the non-electricity sector. The combination of early action measures is estimated to reduce statewide GHG emissions by nearly 16 MMT.[3]

The CARB approved the First Update to the Climate Change Scoping Plan on May 22, 2014. The First Update identifies opportunities to leverage existing and new funds to further drive GHG emission reductions through strategic planning and targeted low carbon investments. The First Update defines CARB climate change priorities until 2020, and also sets the groundwork to reach long-term goals set forth in EOs S-3-05 and B-16-2012. The Update highlights California's progress toward meeting the "near-term" 2020 GHG emission reduction goals as defined in the initial Scoping Plan. It also evaluates how to align the State's "longer-term" GHG reduction strategies with other State policy priorities for water, waste, natural resources, clean energy, transportation, and land use. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,[4] to reflect the 2030 target set by EO B-30-15 and codified by Senate Bill 32 (SB 32).

The Draft 2022 Scoping Plan Update[5] assesses progress toward the statutory 2030 target, while laying out a path to achieving carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities.

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1 CARB. 2007. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. October 25.

2 CARB. 2007. *Expanded List of Early Action Measures to Reduce Greenhouse Gas Emissions in California Recommended for Board Consideration*. October.

3 CARB. 2007. "ARB approves tripling of early action measures required under AB 32" News Release 07-46. October 25.

4 CARB. 2017. *California's 2017 Climate Change Scoping Plan*. November.

5 CARB. 2021. *Draft 2022 Scoping Plan Update*. May 10. Website: https://ww2.arb.ca.gov/sites/default/files/2022-05/2022-draft-sp.pdf (accessed August 2022).

Senate Bill 97 (2007)

SB 97, signed by the Governor in August 2007 (Chapter 185, Statutes of 2007; Public Resources Code, Sections 21083.05 and 21097), acknowledges climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Governor's Office of Planning and Research (OPR) to prepare, develop, and transmit to the California Resources Agency guidelines for mitigating GHG emissions or the effects of GHG emissions, as required by CEQA.

The California Natural Resources Agency adopted the amendments to the CEQA Guidelines in November 2018, which went into effect in December 2018. The amendments do not identify a threshold of significance for GHG emissions, nor do they prescribe assessment methodologies or specific mitigation measures. The amendments encourage lead agencies to consider many factors in performing a CEQA analysis, but preserve the discretion granted by CEQA to lead agencies in making their own determinations based on substantial evidence. The amendments also encourage public agencies to make use of programmatic mitigation plans and programs when they perform individual project analyses.

Senate Bill 375 (2008)

SB 375, the Sustainable Communities and Climate Protection Act, which establishes mechanisms for the development of regional targets for reducing passenger vehicle GHG emissions, was adopted by the State on September 30, 2008. On September 23, 2010, the CARB adopted the vehicular GHG emissions reduction targets that had been developed in consultation with the Metropolitan Planning Organization (MPOs); the targets require a 6 to 15 percent reduction by 2020 and between 13 to 19 percent reduction by 2035 for each MPO. SB 375 recognizes the importance of achieving significant GHG reductions by working with cities and counties to change land use patterns and improve transportation alternatives. Through the SB 375 process, MPOs such as the ABAG will work with local jurisdictions in the development of Sustainable Communities Strategy (SCS) designed to integrate development patterns and the transportation network in a way that reduces GHG emissions while meeting housing needs and other regional planning objectives. Pursuant to SB 375, the San Francisco Bay Area reduction targets for per capita vehicular emissions are 10 percent by 2020 and 19 percent by 2035 as shown in Table E.

Table E: Senate Bill 375 Regional Greenhouse Gas Emissions Reduction Targets

Metropolitan Planning Organization	By 2020 (percent)	By 2035 (percent)
San Francisco Bay Area	10	19
San Diego	15	19
Sacramento	7	19
Central Valley/San Joaquin	6-13	13-16
Los Angeles/Southern California	8	19

Source: California Air Resources Board (2018).

Executive Order B-30-15 (2015)

Governor Jerry Brown signed EO B-30-15 on April 29, 2015, which added the immediate target of:

- GHG emissions should be reduced to 40 percent below 1990 levels by 2030.

All State agencies with jurisdiction over sources of GHG emissions were directed to implement measures to achieve reductions of GHG emissions to meet the 2030 and 2050 targets. CARB was directed to update the AB 32 Scoping Plan to reflect the 2030 target, and therefore, is moving forward with the update process. The mid-term target is critical to help frame the suite of policy measures, regulations, planning efforts, and investments in clean technologies and infrastructure needed to continue reducing emissions.

Senate Bill 350 (2015) Clean Energy and Pollution Reduction Act

Senate Bill (SB) 350, signed by Governor Jerry Brown on October 7, 2015, updates and enhances AB 32 by introducing the following set of objectives in clean energy, clean air, and pollution reduction for 2030:

- Raise California's renewable portfolio standard from 33 percent to 50 percent; and
- Increasing energy efficiency in buildings by 50 percent by the year 2030.

The 50 percent renewable energy standard will be implemented by the California Public Utilities Commission (CPUC) for the private utilities and by the California Energy Commission (CEC) for municipal utilities. Each utility must submit a procurement plan showing it will purchase clean energy to displace other non-renewable resources. The 50 percent increase in energy efficiency in buildings must be achieved through the use of existing energy efficiency retrofit funding and regulatory tools already available to state energy agencies under existing law. The addition made by this legislation requires state energy agencies to plan for, and implement those programs in a manner that achieves the energy efficiency target.

Senate Bill 32, California Global Warming Solutions Act of 2016, and Assembly Bill 197

In summer 2016 the Legislature passed, and the Governor signed, SB 32, and AB 197. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in Governor Brown's April 2015 EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels, consistent with an IPCC analysis of the emissions trajectory that would stabilize atmospheric GHG concentrations at 450 parts per million CO_2e and reduce the likelihood of catastrophic impacts from climate change.

The companion bill to SB 32, AB 197, provides additional direction to CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 meant to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

Senate Bill 100

On September 10, 2018, Governor Brown signed SB 100, which raises California's Renewables Portfolio Standard (RPS) requirements to 60 percent by 2030, with interim targets, and 100 percent by 2045. The bill also establishes a state policy that eligible renewable energy resources and zero-carbon resources supply 100 percent of all retail sales of electricity to California end-use customers

and 100 percent of electricity procured to serve all state agencies by December 31, 2045. Under the bill, the state cannot increase carbon emissions elsewhere in the western grid or allow resource shuffling to achieve the 100 percent carbon-free electricity target.

Executive Order B-55-18

EO B-55-18, signed September 10, 2018, sets a goal "to achieve carbon neutrality as soon as possible, and no later than 2045, and achieve and maintain net negative emissions thereafter." EO B-55-18 directs CARB to work with relevant state agencies to ensure future Scoping Plans identify and recommend measures to achieve the carbon neutrality goal. The goal of carbon neutrality by 2045 is in addition to other statewide goals, meaning not only should emissions be reduced to 80 percent below 1990 levels by 2050, but that, by no later than 2045, the remaining emissions be offset by equivalent net removals of CO_2e from the atmosphere, including through sequestration in forests, soils, and other natural landscapes.

Title 24, Building Standards Code and CALGreen Code

In November 2008, the California Building Standards Commission established the California Green Building Standards (CALGreen Code) Code, which sets performance standards for residential and nonresidential development to reduce environmental impacts and encourage sustainable construction practices. The CALGreen Code addresses energy efficiency, water conservation, material conservation, planning and design, and overall environmental quality. The CALGreen Code is updated every 3 years and was most recently updated in 2019 to include new mandatory measures for residential as well as non-residential uses; the new measures took effect on January 1, 2020. The next set of standards will be adopted in 2022 and apply to projects seeking building permits on or after January 1, 2023.

California Building Efficiency Standards (Title 24, Part 6)

The California Building Standards Code, or Title 24 of the California Code of Regulations (CCR) contains the regulations that govern the construction of buildings in California. Within the Building Standards Code, two parts pertain to the incorporation of both energy efficient and green building elements into land use development. Part 6 is California's Energy Efficiency Standards for Residential and Non-Residential Buildings. These standards were first adopted in 1978 in response to a legislative mandate to reduce California's energy consumption and are updated on an approximately 3-year cycle to allow consideration and possible incorporation of new energy efficient technologies and methods. All buildings for which an application for a building permit is submitted on or after January 1, 2020, must follow the 2019 standards. The next set of standards is anticipated for release in 2022. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions.

Cap and Trade

The development of a cap-and-trade program was included as a key reduction measure of the CARB AB 32 Climate Change Scoping Plan. The cap-and-trade program will help put California on the path to meet its goal of reducing GHG emissions to 1990 levels by 2020 and ultimately achieving an 80 percent reduction from 1990 levels by 2050. The cap-and-trade emissions trading program developed by the CARB took effect on January 1, 2012, with enforceable compliance obligations

beginning January 1, 2013. The cap-and-trade program aims to regulate GHG emissions from the largest producers in the State by setting a statewide firm limit, or cap, on allowable annual GHG emissions. The cap was set in 2013 at approximately 2 percent below the emissions forecast for 2020. In 2014, the cap declined approximately 2 percent. Beginning in 2015 and continuing through 2020, the cap has been declining approximately 3 percent annually. The CARB administered the first auction on November 14, 2012, with many of the qualified bidders representing corporations or organizations that produce large amounts of GHG emissions, including energy companies, agriculture and food industries, steel mills, cement companies, and universities. On January 1, 2015, compliance obligation began for distributors of transportation fuels, natural gas, and other fuels. The cap-and-trade program was initially slated to sunset in 2020 but the passage of SB 398 in 2017 extended the program through 2030.

Executive Order N-79-20

EO N-79-20, which was signed by the Governor on September 23, 2020, sets the following goals for the State: 100 percent of in-state sales of new passenger cars and trucks shall be zero-emission by 2035; 100 percent of medium- and heavy-duty vehicles in the State shall be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and 100 percent of off-road vehicles and equipment in the State shall be zero-emission by 2035, where feasible.

Low Carbon Fuel Standard

In January 2007, EO S-01-07 established a Low Carbon Fuel Standard (LCFS). This executive order calls for a statewide goal to be established to reduce the carbon intensity of California's transportation fuels by at least 10 percent by 2020, and that an LCFS for transportation fuels be established for California. The LCFS applies to all refiners, blenders, producers, or importers ("Providers") of transportation fuels in California, including fuels used by off-road construction equipment. In June 2007, CARB adopted the LCFS under AB 32 pursuant to Health and Safety Code Section 38560.5, and, in April 2009, CARB approved the new rules and carbon intensity reference values with new regulatory requirements taking effect in January 2011. The standards require providers of transportation fuels to report on the mix of fuels they provide and demonstrate they meet the LCFS intensity standards annually. This is accomplished by ensuring that the number of "credits" earned by providing fuels with a lower carbon intensity than the established baseline (or obtained from another party) is equal to or greater than the "deficits" earned from selling higher intensity fuels. In response to certain court rulings, CARB re-adopted the LCFS regulation in September 2015, and the LCFS went into effect on January 1, 2016. In 2018, CARB approved amendments to the regulation to readjust carbon intensity benchmarks to meet California's 2030 GHG reductions targets under SB 32. These amendments include opportunities to promote zero emission vehicle (ZEV) adoption, carbon capture and sequestration, and advanced technologies for decarbonization of the transportation sector.

Advanced Clean Cars Program

In January 2012, CARB approved the Advanced Clean Cars program, which combines the control of GHG emissions and criteria air pollutants, as well as requirements for greater numbers of ZEVs, into a single package of regulatory standards for vehicle model years 2017 through 2025. The new regulations strengthen the GHG standard for 2017 models and beyond. This will be achieved

through existing technologies, the use of stronger and lighter materials, and more efficient drivetrains and engines. The program's ZEVs regulation requires battery, fuel cell, and/or plug-in hybrid electric vehicles to account for up to 15 percent of California's new vehicle sales by 2025. The program also includes a clean fuels outlet regulation designed to support the commercialization of zero-emission hydrogen fuel cell vehicles planned by vehicle manufacturers by 2015 by requiring increased numbers of hydrogen fueling stations throughout the State. The number of stations will grow as vehicle manufacturers sell more fuel cell vehicles. By 2025, when the rules will be fully implemented, the statewide fleet of new cars and light trucks will emit 40 percent fewer GHGs and 75 percent fewer smog-forming emissions than 2012 model year vehicles.

Executive Order B-48-18

In January 2018, Governor Brown signed EO B-48-18 requiring all State entities to work with the private sector to have at least 5 million ZEVs on the road by 2030, as well as install 200 hydrogen fueling stations and 250,000 electric vehicle charging stations by 2025. It specifies that 10,000 of the electric vehicle charging stations should be direct current fast chargers. This order also requires all State entities to continue to partner with local and regional governments to streamline the installation of ZEV infrastructure. The Governor's Office of Business and Economic Development is required to publish a Plug-in Charging Station Design Guidebook and update the 2015 Hydrogen Station Permitting Guidebook to aid in these efforts. All State entities are required to participate in updating the 2016 Zero-Emissions Vehicle Action Plan to help expand private investment in ZEV infrastructure with a focus on serving low-income and disadvantaged communities. Additionally, all State entities are to support and recommend policies and actions to expand ZEV infrastructure at residential land uses, through the LCFS Program, and recommend how to ensure affordability and accessibility for all drivers.

Regional Regulations

Regional regulations that are applicable to GHG emissions generated by the proposed project are implemented by the Metropolitan Transportation Commission (MTC), Association of Bay Area Governments (ABAG), and BAAQMD, as discussed below.

Plan Bay Area 2050

Plan Bay Area 2050 is a State-mandated, integrated long-range transportation and land use plan. As required by SB 375, all metropolitan regions in California must complete a Sustainable Communities Strategy (SCS) as part of a Regional Transportation Plan (RTP). In the Bay Area, MTC and ABAG are jointly responsible for developing and adopting an SCS that integrates transportation, land use and housing to meet GHG reduction targets set by the CARB. Plan Bay Area 2050 connects the elements of housing, the economy, transportation, and the environment through 35 strategies that will make the Bay Area more equitable for all residents and more resilient in the face of unexpected challenges. In the short-term, the plan's Implementation Plan identifies more than 80 specific actions for MTC, ABAG, and partner organizations to take over the next five years to make headway on each of the 35 strategies.

Bay Area Air Quality Management District

The BAAQMD is the regional government agency that regulates sources of air pollution within the nine Bay Area counties. The BAAQMD regulates GHG emissions through the following plans, programs, and guidelines.

BAAQMD Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans. In April 2022, the BAAQMD adopted the *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts from Land Use Projects and Plans*[1] document, which incorporates updated GHG significance thresholds. The BAAQMD recommends these thresholds of significance for use in determining whether a proposed project will have a significant impact related to climate change. These thresholds evaluate a project based on its effect on California's efforts to meet the State's long-term climate goals. Applying this approach, the BAAQMD identifies and provides supporting documentation, outlining the requirements for new land use development projects necessary to achieve California's long-term climate goal of carbon neutrality by 2045. Based on their analysis, the BAAQMD found that new land use development projects need to incorporate design elements to do its "fair share" to implement the goal of carbon neutrality by 2045. If a project is designed and built to incorporate the identified design elements, then it will contribute its portion of what is necessary to achieve California's long-term climate goals—its "fair share"—and an agency reviewing the project under CEQA can conclude that the project will not make a cumulatively considerable contribution to global climate change. The document concludes that if a project does not incorporate these design elements, then it should be found to make a significant climate impact because it will hinder California's efforts to address climate change.

City of Menlo Park

The City of Menlo Park addresses global climate change and GHG emissions in the General Plan, ConnectMenlo EIR, and Climate Action Plan, as discussed below.

City of Menlo Park General Plan

The City of Menlo Park addresses GHG emissions in the Open Space, Conservation, Noise and Safety Elements of the General Plan.[2] The Open Space, Conservation, Noise and Safety Elements set goals, policies, and implementing programs that work to promote sustainability and climate action planning. The following policies are applicable to the proposed project.

- **Policy OSC4.1: Sustainable Approach to Land Use Planning to Reduce Resource Consumption.** Encourage, to the extent feasible, 1) a balance and match between jobs and housing, 2) higher density residential and mixed-use development to be located adjacent to commercial centers and transit corridors, and 3) retail and office areas to be located within walking and biking distance of transit or existing and proposed residential developments.

[1] BAAQMD. 2022, op. cit.
[2] Menlo Park, City of. 2013. *City of Menlo Park General Plan. Open Space Conservation, Noise and Safety Elements*. May 21.

- **Policy OSC4.2: Sustainable Building.** Promote and/or establish environmentally sustainable building practices or standards in new development that would conserve water and energy, prevent stormwater pollution, reduce landfilled waste, and reduce fossil fuel consumption from transportation and energy activities.

- **Policy OSC4.3: Renewable Energy.** Promote the installation of renewable energy technology, such as, on residences and businesses through education, social marketing methods, establishing standards and/or providing incentives.

- **Policy OSC4.4: Vehicles Using Alternative Fuel**. Explore the potential for installing infrastructure for vehicles that use alternative fuel, such as electric plug-in recharging stations.

- **Policy OSC4.5: Energy Standards in Residential and Commercial Construction.** Encourage projects to achieve a high level of energy conservation exceeding standards set forth in the California Energy Code for Residential and Commercial development.

- **Policy OSC4.6: Waste Reduction Target.** Strive to meet the California State Integrated Waste Management Board per person target of waste generation per person per day through their source reduction, reuse, and recycling programs.

- **Policy OSC4.7: Waste Management Collaboration.** Continue to support and participate in efforts such as the South Bayside Waste Management Authority, which provides waste reduction, recycling, and solid waste programs and solutions.

- **Policy OSC4.8: Waste Diversion.** Develop and implement a zero waste policy, or implement standards, incentives, or other programs that would lead the community towards a zero waste goal.

- **Policy OSC4.10: Energy Upgrade California.** Consider actively marketing and providing additional incentives for residents and businesses to participate in local, State, and/or Federal renewable or energy conservation programs.

ConnectMenlo EIR

The proposed project's hotel room count is within the maximum amount of hotel room development potential identified in ConnectMenlo. The ConnectMenlo EIR identified the following mitigation measures that would apply to the proposed project and that would help to reduce and avoid potential impacts related to GHG emissions:

- **Mitigation Measure GHG-1:** Prior to January 1, 2020, the City of Menlo Park shall update the Climate Action Plan (CAP) to address the GHG reduction goals of Executive Order B-30-15 and Executive Order S03-05 for GHG sectors that the City has direct or indirect jurisdictional control over. The City shall identify a GHG emissions reduction target for year 2030 and 2040 that is consistent with the GHG reduction goals identified in Executive Order B-30-15 and Executive Order S-03-05. The CAP shall be updated to include measures to ensure that the City is on a trajectory that aligns with the state's 2030 GHG emissions reduction target.

- **Mitigation Measure GHG-2:** Implementation of Mitigation Measure GHG-1.

Climate Action Plan

The City's Climate Action Plan (CAP) was first adopted in May 2009 and is updated from time to time, most recently in 2020 and amended April 2021, and identifies local emissions reduction strategies designed to help meet AB 32 targets. CEQA authorizes reliance on a previously approved CAP that was prepared per Section 15183.5 of the *State CEQA Guidelines*. This section of the guidelines establishes opportunities for CEQA tiering; the City's CAP does not meet these tiering requirements because the CAP does not include specific thresholds of significance for determining the significance of GHG emissions, nor has the CAP been adopted in a public process following environmental review. Consequently, because the City's CAP does not satisfy the tiering requirements of CEQA established in Section 15183.5 of the CEQA Guidelines, it is not used to determine the significance of project-related GHG emissions, as described below. However, for informational purposes, this qualitative analysis compares the project against measures found in the City's CAP.

The CAP recommends various community and municipal strategies for near-term and mid-term considerations. The emissions reduction strategies are generally focused on community actions, since more than 99 percent of the emissions are from community sources.

The City updates its community-wide GHG inventory and CAP annually. In 2011, the City completed the first update to the City's CAP Strategy, known as the 2011 CAP Assessment Report. As part of the 2013 update, the City Council adopted a target of reducing community-wide GHG emissions by 27 percent below 2005 levels by 2020.

The most recent status update to the City's CAP was conducted in April 2021.[1] The 2021 CAP includes updated emissions inventories through year 2017 and adopts a climate goal of zero carbon by 2030. The CAP aims for a 90 percent reduction in CO_2e emissions from 2005 levels by 2030.

[1] Menlo Park, City of. 2021, *2030 Climate Action Plan*. June.

SETTING

ATTAINMENT STATUS

The CARB is required to designate areas of the state as attainment, nonattainment, or unclassified for all State standards. An *attainment* designation for an area signifies that pollutant concentrations did not violate the standard for that pollutant in that area. A *nonattainment* designation indicates that a pollutant concentration violated the standard at least once, excluding those occasions when a violation was caused by an exceptional event, as defined in the criteria. An *unclassified* designation signifies that data do not support either an attainment or nonattainment status. The CCAA divides districts into moderate, serious, and severe air pollution categories, with increasingly stringent control requirements mandated for each category.

The USEPA designates areas for O_3, CO, and NO_2 as either does not meet the primary standards, or cannot be classified, or better than national standards. For SO_2, areas are designated as does not meet the primary standards, does not meet the secondary standards, cannot be classified, or better than national standards.

Table F provides a summary of the attainment status for the Basin with respect to the National Ambient Air Quality Standards (NAAQS) and the California Ambient Air Quality Standards (CAAQS).

REGIONAL CLIMATE AND AIR QUALITY

Menlo Park is located in the southern part of the San Francisco Bay Area Air Basin, a large shallow air basin ringed by hills that taper into a number of sheltered valleys around the perimeter. Two primary atmospheric outlets exist. One is through the strait known as the Golden Gate, a direct outlet to the Pacific Ocean. The second extends to the northeast, along the west delta region of the Sacramento and San Joaquin Rivers.

The City is within the jurisdiction of the BAAQMD, which regulates air quality in the Bay Area. Air quality conditions in the Bay Area have improved significantly since the BAAQMD was created in 1955. Ambient concentrations of air pollutants and the number of days during which the region exceeds air quality standards have fallen dramatically. Neither State nor national ambient air quality standards of the following chemicals have been violated in recent decades: nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and vinyl chloride. Those exceedances of air quality standards that do occur primarily happen during meteorological conditions conducive to high pollution levels, such as cold, windless nights or hot, sunny summer afternoons.

Ozone levels, measured by peak concentrations and the number of days over the State 1-hour standard, have declined substantially as a result of aggressive programs by the BAAQMD and other regional, State, and federal agencies. The reduction of peak concentrations represents progress in improving public health; however, the Bay Area still exceeds the State standard for 1-hour ozone as well as the State and federal 8-hour standards. Levels of PM_{10} have exceeded State standards two of the last three years, and the area is considered a nonattainment area for this pollutant relative to the State standards. The Bay Area is an unclassified area for the federal PM_{10} standard.

Table F: San Francisco Bay Area Basin Attainment Status

	Averaging Time	California Standards [a]		National Standards [b]	
		Concentration	Attainment Status	Concentration [c]	Attainment Status
Ozone (O_3)	8-Hour	0.070 ppm (137µg/m^3)	Nonattainment [l]	0.070 ppm	Nonattainment [d]
	1-Hour	0.09 ppm (180 µg/m^3)	Nonattainment	Not Applicable	[e]
Carbon Monoxide (CO)	8-Hour	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Attainment [f]
	1-Hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Attainment
Nitrogen Dioxide (NO_2)	1-Hour	0.18 ppm (339 µg/m^3)	Attainment	0.100 ppm [k]	[k]
	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	Not Applicable	0.053 ppm (100 µg/m^3)	Attainment
Sulfur Dioxide (SO_2) [l]	24-Hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	[l]
	1-Hour	0.25 ppm (655 µg/m^3)	Attainment	0.075 ppm (196 µg/m^3)	[l]
	Annual Arithmetic Mean	Not Applicable	Not Applicable	0.030 ppm (80 µg/m^3)	[l]
Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	Nonattainment [g]	Not Applicable	Not Applicable
	24-Hour	50 µg/m^3	Nonattainment	150 µg/m^3	Unclassified
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	Nonattainment [g]	15 µg/m^3 [0]	Unclassified/ Attainment
	24-Hour	Not Applicable	Not Applicable	35 µg/m^3 [j]	Nonattainment
Sulfates	24-Hour	25 µg/m^3	Attainment	Not Applicable	Not Applicable
Lead (Pb) [m]	30-Day Average	1.5 µg/m^3	Not Applicable	Not Applicable	Attainment
	Calendar Quarter	Not Applicable	Not Applicable	1.5 µg/m^3	Attainment
	Rolling 3-Month Average [n]	Not Applicable	Not Applicable	0.15 µg/m^3	[n]
Hydrogen Sulfide	1-Hour	0.010 ppm (26 µg/m^3)	Unclassified	Not Applicable	Not Applicable
Vinyl Chloride (chloroethene)	24-Hour	0.010 ppm (26 µg/m^3)	No Information Available	Not Applicable	Not Applicable
Visibility Reducing Particles	8-Hour (10:00 to 18:00 PST)	[h]	Unclassified	Not Applicable	Not Applicable

Source: Bay Area Air Quality Management District Bay Area Attainment Status (BAAQMD 2017).
Table notes continued on the following page

[a] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1-hour and 24-hour), nitrogen dioxide, suspended particulate matter - PM_{10}, and visibility reducing particles are values that are not to be exceeded. The standards for sulfates, Lake Tahoe carbon monoxide, lead, hydrogen sulfide, and vinyl chloride are not to be equaled or exceeded. If the standard is for a 1-hour, 8-hour or 24-hour average (i.e., all standards except for lead and the PM_{10} annual standard), then some measurements may be excluded. In particular, measurements are excluded that CARB determines would occur less than once per year on the average. The Lake Tahoe CO standard is 6.0 ppm, a level one-half the national standard and two-thirds the State standard.

[b] National standards shown are the "primary standards" designed to protect public health. National standards other than for ozone, particulates and those based on annual averages are not to be exceeded more than once a year. The 1-hour ozone standard is attained if, during the most recent three-year period, the average number of days per year with maximum hourly concentrations above the standard is equal to or less than one. The 8-hour ozone standard is attained when the three-year average of the 4th highest daily concentrations is 0.070 ppm (70 ppb) or less. The 24-hour PM_{10} standard is attained when the three-year average of the 99th percentile of monitored concentrations is less than 150 µg/m^3. The 24-hour $PM_{2.5}$ standard is attained when the three-year average of 98th percentiles is less than 35 µg/m^3.
Except for the national particulate standards, annual standards are met if the annual average falls below the standard at every site. The national annual particulate standard for PM_{10} is met if the three-year average falls below the standard at every site. The annual $PM_{2.5}$ standard is met if the three-year average of annual averages spatially-averaged across officially designed clusters of sites falls below the standard.

[c] National air quality standards are set by USEPA at levels determined to be protective of public health with an adequate margin of safety.

[d] On October 1, 2015, the national 8-hour ozone primary and secondary standards were lowered from 0.075 to 0.070 ppm. An area will meet the standard if the fourth-highest maximum daily 8-hour ozone concentration per year, averaged over three years, is equal to or less than 0.070 ppm. USEPA will make recommendations on attainment designations by October 1, 2016, and issue final designations October 1, 2017. Nonattainment areas will have until 2020 to late 2037 to meet the health standard, with attainment dates varying based on the ozone level in the area.

[e] The national 1-hour ozone standard was revoked by USEPA on June 15, 2005.

[f] In April 1998, the Bay Area was redesignated to attainment for the national 8-hour carbon monoxide standard.

[g] In June 2002, CARB established new annual standards for $PM_{2.5}$ and PM_{10}.

[h] Statewide VRP Standard (except Lake Tahoe Air Basin): Particles in sufficient amount to produce an extinction coefficient of 0.23 per kilometer when the relative humidity is less than 70 percent. This standard is intended to limit the frequency and severity of visibility impairment due to regional haze and is equivalent to a 10-mile nominal visual range.

[i] The 8-hour CA ozone standard was approved by the Air Resources Board on April 28, 2005, and became effective on May 17, 2006.

[j] On January 9, 2013, USEPA issued a final rule to determine that the Bay Area attains the 24-hour $PM_{2.5}$ national standard. This USEPA rule suspends key SIP requirements as long as monitoring data continue to show that the Bay Area attains the standard. Despite this USEPA action, the Bay Area will continue to be designated as “non-attainment” for the national 24-hour $PM_{2.5}$ standard until such time as the Air District submits a “redesignation request” and a “maintenance plan” to USEPA and USEPA approves the proposed redesignation.

[k] To attain this standard, the three-year average of the 98th percentile of the daily maximum 1-hour average at each monitor within an area must not exceed 0.100 ppm (effective January 22, 2010). The USEPA expects to make a designation for the Bay Area by the end of 2017.

[l] On June 2, 2010, the USEPA established a new 1-hour SO_2 standard, effective August 23, 2010, which is based on the three-year average of the annual 99th percentile of 1-hour daily maximum concentrations. The existing 0.030-ppm annual and 0.14-ppm 24-hour SO_2 NAAQS however must continue to be used until one year following USEPA initial designations of the new 1-hour SO_2 NAAQS. USEPA expects to make designation for the Bay Area by the end of 2017.

[m] CARB has identified lead and vinyl chloride as ‘toxic air contaminants’ with no threshold level of exposure below which there are no adverse health effects determined.

[n] National lead standard, rolling 3-month average: final rule signed October 15, 2008. Final designations effective December 31, 2011.

[o] In December 2012, USEPA strengthened the annual $PM_{2.5}$ NAAQS from 15.0 to 12.0 µg/m^3. In December 2014, USEPA issued final area designations for the 2012 primary annual $PM_{2.5}$ NAAQS. Areas designated “unclassifiable/attainment” must continue to take steps to prevent their air quality from deteriorating to unhealthy levels. The effective date of this standard is April 15, 2015.

µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
mg/m^3 = milligrams per cubic meter
NAAQS = National Ambient Air Quality Standards
ppm = parts per million
USEPA = United States Environmental Protection Agency

No exceedances of the State or federal CO standards have been recorded at any of the region’s monitoring stations since 1991. The Bay Area is currently considered a maintenance area for State and federal CO standards.

LOCAL CLIMATE AND AIR QUALITY

Air quality is a function of both local climate and local sources of air pollution. Air quality is the balance of the natural dispersal capacity of the atmosphere and emissions of air pollutants from human uses of the environment. Two meteorological factors affect air quality in Menlo Park: wind and temperature. Winds affect the direction of transport of any air pollution emissions and wind also controls the volume of air into which pollution is mixed in a given period of time. While winds govern horizontal mixing processes, temperature inversions determine the vertical mixing depth of air pollutants.

Menlo Park is located in San Mateo County, which lies in the middle of the San Francisco Peninsula, south of San Francisco County, and north of Santa Clara and Santa Cruz Counties. San Mateo County is bounded by the Pacific Ocean to the west and San Francisco Bay to the east. Cool, foggy weather is prevalent along the western coast of the peninsula, particularly during the summer. Summertime average daily temperatures are moderate along the west coast and warm in the County's east side. In the winter, average daily temperatures across the County range from mild to moderate. Winds are mild, with the highest wind speeds focused along the western coast. Rainfall averages about 20 to 25 inches per year at lower elevations and up to 36 inches in the Santa Cruz Mountains.[1]

Ozone and fine particle pollution, or $PM_{2.5}$, are the major regional air pollutants of concern in the Bay Area. Ozone is primarily a problem in the summer, and fine particle pollution in the winter.[2]

In San Mateo County, ozone almost never exceeds health standards, and $PM_{2.5}$ exceeds the national standard only on about one day each year. San Mateo County frequently receives fresh marine air from the Pacific Ocean, which passes over the coastal hills. In winter, $PM_{2.5}$ may be transported into San Mateo County from other parts of the Bay Area, adding to wood smoke, which may lead to elevated concentrations, but these are rarely high enough to exceed health standards.[3]

AIR QUALITY MONITORING RESULTS

Air quality monitoring stations are located throughout the nation and are maintained by the local air pollution control district and State air quality regulating agencies. The BAAQMD, together with the CARB, maintains ambient air quality monitoring stations in the Basin. The air quality monitoring station closest to the project site is the 897 Barron Avenue monitoring station in Redwood City, which monitors criteria air pollutant data.[4] The air quality trends from this station are used to represent the ambient air quality in the project area. Ambient air quality in the project area from 2019 to 2021 is shown in Table G. The pollutants monitored were CO, O_3, $PM_{2.5}$, and NO_2. Air quality trends for PM_{10} and SO_2 are not monitored in San Mateo County; therefore, the air quality trends for PM_{10} and SO_2 are from the 156B Jackson Street monitoring station in San Jose.

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1 BAAQMD. 2019. *Climate and Air Quality in San Mateo County.* February 14, 2019. Website: www.baaqmd.gov/about-the-air-district/in-your-community/san-mateo-county (accessed May 2021).

2 Ibid.

3 Ibid.

4 CARB gathers ambient air quality data for the State of California and ensures the quality of these data. CARB provides ambient air quality monitoring sites throughout California's counties and air basins.

Table G: Ambient Air Quality at the 897 Barron Avenue, Redwood City Monitoring Station

Pollutant	Standard	2019	2020	2021
Carbon Monoxide (CO)				
Maximum 1-hour concentration (ppm)		2.0	2.1	1.6
Number of days exceeded:	State: > 20 ppm	0	0	0
	Federal: > 35 ppm	0	0	0
Maximum 8-hour concentration (ppm)		1.1	1.5	0.9
Number of days exceeded:	State: > 9 ppm	0	0	0
	Federal: > 9 ppm	0	0	0
Ozone (O_3)				
Maximum 1-hour concentration (ppm)		0.083	0.098	0.085
Number of days exceeded:	State: > 0.09 ppm	0	1	0
Maximum 8-hour concentration (ppm)		0.077	0.078	0.064
Number of days exceeded:	State: > 0.07 ppm	2	1	0
	Federal: > 0.07 ppm	2	1	0
Coarse Particulates (PM_{10})[1]				
Maximum 24-hour concentration (µg/m^3)		77.1	137.1	45.1
Number of days exceeded:	State: > 50 µg/m^3	4	10	0
	Federal: > 150 µg/m^3	0	0	0
Annual arithmetic average concentration (µg/m^3)		19.1	ND	20.1
Exceeded for the year:	State: > 20 µg/m^3	No	ND	Yes
	Federal: > 50 µg/m^3	No	ND	No
Fine Particulates ($PM_{2.5}$)				
Maximum 24-hour concentration (µg/m^3)		29.5	124.1	30.1
Number of days exceeded:	Federal: > 35 µg/m^3	0	9	0
Annual arithmetic average concentration (µg/m^3)		7.0	9.8	6.0
Exceeded for the year:	State: > 12 µg/m^3	No	No	No
	Federal: > 15 µg/m^3	No	No	No
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration (ppm)		0.055	0.046	0.041
Number of days exceeded:	State: > 250 ppb	0	0	0
Annual arithmetic average concentration (ppm)		0.009	0.008	0.007
Exceeded for the year:	Federal: > 53 ppb	No	No	No
Sulfur Dioxide (SO_2)[1]				
Maximum 1-hour concentration (ppm)		0.0145	0.0029	0.0018
Number of days exceeded:	State: > 0.25 ppm	0	0	0
Maximum 24-hour concentration (ppm)		0.0015	0.0008	0.0007
Number of days exceeded:	State: > 0.04 ppm	0	0	0
	Federal: > 0.14 ppm	0	0	0
Annual arithmetic average concentration (ppm)		0.0001	0.0002	0.0002
Exceeded for the year:	Federal: > 0.030 ppm	No	No	No

Sources: CARB (2022) and USEPA (2022).

[1] Data taken at the 156B Jackson Street air quality monitoring station in San Jose.

µg/m^3 = micrograms per cubic meter
CARB = California Air Resources Board
ND = No data. There were insufficient (or no) data to determine the value.
ppb = parts per billion
ppm = parts per million
USEPA = United States Environmental Protection Agency

Pollutant monitoring results indicate that air quality in the San Mateo County area has generally been good. As indicated in the monitoring results, 1-hour ozone concentrations exceeded the State standard once in 2020 and the 8-hour ozone concentrations exceeded the State and federal standards twice in 2019 and once in 2020. In addition, the State PM_{10} standard was exceeded four times in 2019 and 10 times in 2020. The federal $PM_{2.5}$ standard was not exceeded between 2019 and 2021. The federal $PM_{2.5}$ standard exceeded nine times in 2020. The CO, NO_2, and SO_2 standards were not exceeded in this area during the three-year period.

GREENHOUSE GAS EMISSIONS INVENTORY

An emissions inventory that identifies and quantifies the primary human-generated sources and sinks of GHGs is a well-recognized and useful tool for addressing climate change. This section summarizes the latest information on global, United States, and California GHG emissions inventories.

Global Emissions

Worldwide emissions of GHGs in 2018 totaled 25.6 billion metric tons of CO_2e. Global estimates are based on country inventories developed as part of the programs of the United Nations Framework Convention on Climate Change.[1]

United States Emissions

In 2019, the year for which the most recent data are available, the United States emitted about 6,558 million metric tons of CO_2e (MMT CO_2e). Overall, emissions in 2019 decreased by 1.7 percent since 2018 and were 13 percent 2005 levels. This decrease was driven largely by a decrease in emissions from fossil fuel combustion resulting from a decrease in total energy use in 2019 compared to 2018 and a continued shift from coal to natural gas and renewables in the electric power sector. Of the six major sectors – residential, commercial, agricultural, industry, transportation, and electricity generation – transportation accounted for the highest amount of GHG emissions in 2019 (approximately 29 percent), with electricity generation second at 25 percent and emissions from industry third at 23 percent.[2]

State of California Emissions

The State emitted approximately 418.2 MMT CO_2e emissions in 2019, 7.2 MMT CO_2e lower than 2018 levels and almost 13 MMT CO_2e below the 2020 GHG Limit of 431 MMT CO_2e.[3] The CARB estimates that transportation was the source of approximately 40 percent of the State's GHG

1 United Nations Framework Convention on Climate Change (UNFCCC). 2021. GHG Data from UNFCCC. Website: unfccc.int/process-and-meetings/transparency-and-reporting/greenhouse-gas-data/ghg-data-unfccc/ghg-data-from-unfccc (accessed May 2022).

2 USEPA. 2021. Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2019. Website: https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2019 (accessed May 2022).

3 CARB. 2021. *California Greenhouse Gas Emissions for 2000 to 2019, Trends of Emissions and Other Indicators Report*. Website: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf (accessed May 2022).

emissions in 2019, followed by industrial sources at approximately 21 percent and electricity generation at 14 percent. The remaining sources of GHG emissions were agriculture at 8 percent, residential activities at 7 percent, commercial activities at 4 percent, high GWP at 5 percent, and waste at 2 percent.[1]

San Francisco Bay Area Emissions

The BAAQMD established a climate protection program in 2005 to acknowledge the link between climate change and air quality. The BAAQMD regularly prepares inventories of criteria and toxic air pollutants to support planning, regulatory and other programs. The most recent emissions inventory estimates GHG emissions produced by the Bay Area in 2011.[2] The inventory, which was published January 2015, updates the BAAQMD's previous GHG emission inventory for base year 2007.

In 2011, 86.6 MMT CO_2e of GHGs were emitted in the Bay Area. Fossil fuel consumption in the transportation sector was the single largest source of the Bay Area's GHG emissions in 2011. The transportation sector (including on-road motor vehicles, locomotives, ships and boats, and aircraft) contributed 39.7 percent of GHG emissions and the industrial and commercial sectors (excluding electricity and agriculture) contributed 35.7 percent of GHG emissions in the Bay Area. Energy production activities such as electricity generation and co-generation were the third largest contributor with approximately 14 percent of the total GHG emissions. Off-road equipment such as construction, industrial, commercial, and lawn and garden equipment contributed 1.5 percent of GHG emissions.

City of Menlo Park Emissions

The City of Menlo Park's Climate Action Plan identifies the City's communitywide GHG emissions by source for the years 2005 and 2017.[3] As shown in Table H below, in 2005, the community emitted 349,284 metric tons (MT) of CO_2e most of which was the result of vehicles (40 percent), emissions from electricity (25 percent), natural gas (29 percent), and waste (6 percent). In addition, the aim of the City's Climate Action Plan is to reduce community-wide emissions by another 71 percent for a total reduction of 90 percent from 2005 emissions, leaving just 34,933 tons of CO_2e per year by 2030, as shown in Table H below.

1 CARB. 2021. *California Greenhouse Gas Emissions for 2000 to 2019, Trends of Emissions and Other Indicators Report*. Website: https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf (accessed May 2022).

2 BAAQMD. 2015. *Source Inventory of Bay Area Greenhouse Gas Emissions.* January.

3 Menlo Park, City of. 2021, op. cit.

Table H: City of Menlo Park Greenhouse Gas Emissions Inventory

Source	2005	2017	2030
Vehicles	137,628	158,686	18,373
Natural Gas	102,295	95,742	13,656
Electricity	87,617	21,528	-
Waste	21,745	8,424	2,903
Total Greenhouse Gas Emissions (MT CO_2e)	**349,285**	**284,380**	**34,933**

Source: 2030 Climate Action Plan (City of Menlo Park, June 2020).
MT CO_2e = metric tons of carbon dioxide equivalent

METHODOLOGY

The methodology used to estimate air quality and GHG impacts is described below.

CONSTRUCTION EMISSIONS

Construction activities can generate a substantial amount of air pollution. Construction activities are considered temporary; however, short-term impacts can contribute to exceedances of air quality standards. Construction activities include demolition, site preparation, earthmoving, and general construction. The emissions generated from these common construction activities include fugitive dust from soil disturbance, fuel combustion from mobile heavy-duty diesel- and gasoline-powered equipment, portable auxiliary equipment, and worker commute trips. The California Emissions Estimator Model (CalEEMod) Version 2020.4.0 computer program was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site.

The proposed project would include demolition of the existing building and surface parking lot on the project site, which was included in CalEEMod. In addition, a total of approximately 439 cubic yards of soils would be imported to the project site, which was included in CalEEMod. Construction of the proposed project is anticipated to begin in January 2023 and end January 2025. Construction phasing, equipment, and worker and vendor trips in CalEEMod are based on information provided by the project sponsor. This analysis also assumes the use of Tier 2 construction equipment. CalEEMod output sheets are included in Appendix A.

OPERATIONAL EMISSIONS

This air quality analysis includes estimating emissions associated with long-term operation of the project. Indirect emissions of criteria pollutants with regional impacts would be emitted by project-generated vehicle trips. In addition, localized air quality impacts (i.e., higher CO concentrations or "hot-spots") near intersections or roadway segments in the project vicinity would also potentially occur due to project-generated vehicle trips.

Consistent with BAAQMD's guidance for estimating emissions, the CalEEMod computer program was used to calculate the long-term operational emissions associated with the project. The analysis was conducted using land use codes *Hotel* and *Enclosed Parking Structure.*[1] Based on the project's Transportation Impact Analysis[2], the proposed project would generate 957 net new average daily trips, which was included in CalEEMod. In addition, the proposed project would not increase the demand for natural gas as the City's reach codes would require the buildings to be all electric, which was included in CalEEMod. The proposed project would also include a 670 HP diesel generator, which was also included in CalEEMod. The proposed project would be built to LEED Silver standards, would include solar panels, and would be 12 percent more energy efficient than the 2019 Title 24 standards, which was also included in CalEEMod. Where project-specific data were not available,

1 The CalEEMod analysis evaluated 125 parking spaces based on a previous site plan. The latest site plan indicates the proposed project would provide 124 parking spaces. This slight refinement was reviewed by LSA and it was determined that this refinement would negligibly affect the air quality and GHG analysis.

2 Hexagon Transportation Consultants, Inc. 2021, op. cit.

default assumptions (e.g., energy usage, water usage, and solid waste generation) from CalEEMod were used to estimate project emissions. CalEEMod output sheets are included in Appendix A.

CONSTRUCTION HEALTH RISK ASSESSMENT

A construction health risk assessment (HRA), which evaluates construction-period health risk to off-site receptors, was performed for the proposed project. To estimate the potential cancer risk associated with construction of the proposed project from equipment exhaust (including diesel particulate matter), a dispersion model was used to translate an emission rate from the source location to a concentration at the receptor location of interest (i.e., a nearby residence and worksites). Dispersion modeling varies from a simpler, more conservative screening-level analysis to a more complex and refined detailed analysis. This refined assessment was conducted using the CARB exposure methodology with the air dispersion modeling performed using the USEPA dispersion model AERMOD. The model provides a detailed estimate of exhaust concentrations based on site and source geometry, source emissions strength, distance from the source to the receptor, and meteorological data.

OPERATIONAL HEALTH RISK ASSESSMENT

To determine the potential health risk to people living near the proposed project associated with the exhaust of the 670 HP diesel-powered emergency backup generator, an operational HRA was conducted for the proposed project. The generator would be tested on the first Monday of every month (i.e., once a month) at 9:00 a.m. and the testing would last 30 minutes. However, to be conservative and to account for any use of the generator, this analysis assumed the generator would run 50 hours per year. This analysis also assumes that the stack would exhaust from the rooftop. This HRA has been conducted using the USEPA AERMOD air dispersion model to determine how the TACs would move through the atmosphere after release from sources both on site and on surrounding roadways and CARB's HARP2 model to translate the pollutant concentrations from AERMOD into individual health risks at any sensitive receptor locations surrounding the project site.

GREENHOUSE GAS ANALYSIS

GHG emissions associated with the project would occur over the short-term from construction activities, consisting primarily of emissions from equipment exhaust. There would also be long-term GHG emissions associated with project-related area sources, energy consumption, water conveyance and treatment, and waste generation.

THRESHOLDS OF SIGNIFICANCE

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse air quality impact if project-generated pollutant emissions would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project is nonattainment under an applicable federal or state ambient air quality standard;
- Expose sensitive receptors to substantial pollutant concentrations; or
- Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

According to the BAAQMD CEQA Guidelines, to meet air quality standards for criteria air pollutant and air precursor impacts, the proposed project must not:

- Contribute to CO concentrations exceeding the State ambient air quality standards;
- Generate average daily construction emissions of ROG, NO_x or $PM_{2.5}$ (exhaust) greater than 54 pounds per day or PM_{10} [particulate matter 10 microns or less in diameter] exhaust emissions greater than 82 pounds per day; or
- Generate operational emissions of ROG, NO_x or $PM_{2.5}$ of greater than 10 tons per year or 54 pounds per day or PM_{10} emissions greater than 15 tons per year or 82 pounds per day.

The *State CEQA Guidelines* indicate that a project would normally have a significant adverse GHG emissions impact if the project would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment; or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reduction the emissions of greenhouse gases.

According to the BAAQMD's April 2022 *Justification Report: CEQA Thresholds for Evaluating the Significance of Climate Impacts From Land Use Projects and Plans*, a project would have a less than significant impact related to GHG emissions if it would:

A. Include, at a minimum, the following project design elements:

    1. Buildings

        a. The project will not include natural gas appliances or natural gas plumbing (in both residential and nonresidential development).

b. The project will not result in any wasteful, inefficient, or unnecessary electrical usage as determined by the analysis required under CEQA Section 21100(b)(3) and Section 15126.2(b) of the State CEQA Guidelines.

2. Transportation

a. Achieve a reduction in project-generated vehicle miles traveled (VMT) below the regional average consistent with the current version of the California Climate Change Scoping Plan (currently 15 percent) or meet a locally adopted Senate Bill 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's Technical Advisory on Evaluating Transportation Impacts in CEQA:

1. Residential projects: 15 percent below the existing VMT per capita

2. Office projects: 15 percent below the existing VMT per employee

3. Retail projects: no net increase in existing VMT

b. Achieve compliance with off-street electric vehicle requirements in the most recently adopted version of CALGreen Tier 2.

B. Or be consistent with a local GHG reduction strategy that meets the criteria under State CEQA Guidelines Section 15183.5(b).

IMPACTS ANALYSIS

This section identifies the air quality and GHG emissions impacts associated with implementation of the proposed project. The results of the impact analyses are then compared to applicable thresholds of significance.

AIR QUALITY

Consistency with Applicable Air Quality Plans

The applicable air quality plan is the BAAQMD 2017 Clean Air Plan, which defines control strategies to reduce emissions and ambient concentrations of air pollutants; safeguard public health by reducing exposure to air pollutants that pose the greatest heath risk, with an emphasis on protecting the communities most heavily affected by air pollution; and reduce GHG emissions to protect the climate. Consistency with the Clean Air Plan can be determined if the project: (1) supports the goals of the Clean Air Plan, (2) includes applicable control measures from the Clean Air Plan, and (3) would not disrupt or hinder implementation of any control measures from the Clean Air Plan.

Clean Air Plan Goals

The primary goals of the Bay Area Clean Air Plan are to attain air quality standards, reduce population exposure and protect public health in the Bay Area, and reduce GHG emissions and protect the climate.

The BAAQMD has established significance thresholds for project construction and operational impacts at a level at which the cumulative impact of exceeding these thresholds would have an adverse impact on the region's attainment of air quality standards. The health and hazards thresholds were established to help protect public health. As discussed below, construction and operation of the proposed project would not result in the generation of criteria air pollutants that would exceed BAAQMD thresholds of significance. Therefore, the proposed project would not conflict with the Clean Air Plan goals.

Clean Air Plan Control Measures

The control strategies of the Clean Air Plan include measures in the following categories: Stationary Source Measures, Transportation Measures, Energy Measures, Building Measures, Agriculture Measures, Natural and Working Lands Measures, Waste Management Measures, Water Measures, and Super-GHG Pollutants Measures. The proposed project's compliance with each of these control measures is discussed below.

Stationary Source Control Measures. The Stationary Source Control Measures, which are designed to reduce emissions from stationary sources such as metal melting facilities, cement kilns, refineries, and glass furnaces, are incorporated into rules adopted by the BAAQMD and then enforced by the BAAQMD Permit and Inspection programs. Since the proposed project would not include any of these stationary sources, the Stationary Source Control Measures of the Clean Air Plan are not applicable to the proposed project.

Transportation Control Measures. The BAAQMD identifies Transportation Control Measures as part of the Clean Air Plan to decrease emissions of criteria pollutants, toxic air contaminants (TACs), and GHGs by reducing demand for motor vehicle travel, promoting efficient vehicles and transit service, decarbonizing transportation fuels, and electrifying motor vehicles and equipment. The proposed project would develop a new hotel that would locate visitors and employees near existing residential, office, commercial, and light manufacturing uses, reducing the demand for travel by single occupancy vehicles. As discussed in the project's Transportation Impact Analysis[1], since proposed hotel would be located within very close proximity to a major employment area in the Bayfront Area, hotel patrons would travel shorter distances to their business destinations; therefore, the proposed project would result in a net decrease in vehicle miles traveled (VMT). As such, the proposed project would help to reduce the demand for travel by single occupancy vehicles and promote BAAQMD initiatives to reduce vehicle trips and VMT. Therefore, the proposed project would not conflict with the identified Transportation and Mobile Source Control Measures of the Clean Air Plan.

Energy Control Measures. The Clean Air Plan also includes Energy Control Measures, which are designed to reduce emissions of criteria air pollutants, TACs, and GHGs by decreasing the amount of electricity consumed in the Bay Area and decreasing the carbon intensity of the electricity used by switching to less GHG-intensive fuel sources for electricity generation. Since these measures apply to electrical utility providers and local government agencies (and not individual projects), the energy control measures of the Clean Air Plan are not applicable to the proposed project.

Building Control Measures. The BAAQMD has authority to regulate emissions from certain sources in buildings such as boilers and water heaters but has limited authority to regulate buildings themselves. Therefore, the strategies in the control measures for this sector focus on working with local governments that do have authority over local building codes, to facilitate adoption of best GHG control practices and policies. The proposed project would be built to LEED Silver standards, would include solar panels, and would be 12 percent more energy efficient than the 2019 Title 24 standards of the California Code of Regulations, established by the CEC, regarding energy conservation and green building standards. Therefore, the proposed project would not conflict with any of the Building Control Measures.

Agriculture Control Measures. The Agriculture Control Measures are designed to primarily reduce emissions of methane. Since the project does not include any agricultural activities, the Agriculture Control Measures of the Clean Air Plan are not applicable to the proposed project.

Natural and Working Lands Control Measures. The Natural and Working Lands Control Measures focus on increasing carbon sequestration on rangelands and wetlands and encouraging local governments to adopt ordinances that promote urban tree plantings. Since the proposed project does not include the disturbance of any rangelands or wetlands, the Natural and Working Lands Control Measures of the Clean Air Plan are not applicable to the proposed project.

Waste Management Control Measures. The Waste Management Control Measures focus on reducing or capturing methane emissions from landfills and composting facilities, diverting organic

[1] Hexagon Transportation Consultants, Inc., op. cit.

materials away from landfills, and increasing waste diversion rates through efforts to reduce, reuse, and recycle. The proposed project would comply with local requirements for waste management (e.g., recycling and composting services). Therefore, the proposed project would be consistent with the Waste Management Control Measures of the Clean Air Plan.

Water Control Measures. The Water Control Measures focus on reducing emissions of criteria pollutants, TACs, and GHGs by encouraging water conservation, limiting GHG emissions from publicly owned treatment works (POTW), and promoting the use of biogas recovery systems. Since these measures apply to POTWs and local government agencies (and not individual projects), the Water Control Measures are not applicable to the proposed project.

Super GHG Control Measures. The Super-GHG Control Measures are designed to facilitate the adoption of best GHG control practices and policies through the BAAQMD and local government agencies. Since these measures do not apply to individual projects, the Super-GHG Control Measures are not applicable to the proposed project.

Clean Air Plan Implementation

As discussed above, the proposed project would generally implement the applicable measures outlined in the Clean Air Plan, including Transportation Control Measures. Therefore, the Project would not disrupt or hinder implementation of a control measure from the Clean Air Plan.

Criteria Pollutant Analysis

The BAAQMD is currently designated as a nonattainment area for State and national O_3 standards and national particulate matter ambient air quality standards. The BAAQMD's nonattainment status is attributed to the region's development history. Past, present, and future development projects contribute to the region's adverse air quality impacts on a cumulative basis. By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size to, by itself, result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's contribution to the cumulative impact is considerable, then the project's impact on air quality would be considered significant.

In developing thresholds of significance for air pollutants, the BAAQMD considered the emission levels for which a project's individual emissions would be cumulatively considerable. If a project exceeds the identified significance thresholds, its emissions would be cumulatively considerable, resulting in significant adverse air quality impacts to the region's existing air quality conditions. Therefore, additional analysis to assess cumulative impacts is unnecessary. The following analysis assesses the potential project-level construction- and operation-related air quality impacts.

Construction Emissions

The proposed project would be below the BAAQMD's screening level criteria of 554 hotel rooms for construction emissions; however, since construction of the proposed project would require demolition, the proposed project would not meet the screening criteria according to the current

BAAQMD CEQA Guidelines. Therefore, per ConnectMenlo EIR Mitigation Measure AQ-2b2, project-specific construction emissions are evaluated below.

During construction, short-term degradation of air quality may occur due to the release of particulate emissions generated by demolition, grading, paving, building, and other activities. Emissions from construction equipment are also anticipated and would include CO, NO_x, ROG, directly emitted particulate matter ($PM_{2.5}$ and PM_{10}), and TACs such as diesel exhaust particulate matter.

Project construction activities would include demolition, site preparation, grading, building, paving, and architectural coating (painting). Construction-related effects on air quality from the proposed project would be greatest during the site preparation phase due to the disturbance of soils. If not properly controlled, these activities would temporarily generate particulate emissions. Sources of fugitive dust would include disturbed soils at the construction site. Unless properly controlled, vehicles leaving the site would deposit dirt and mud on local streets, which could be an additional source of airborne dust after it dries. PM_{10} emissions would vary from day to day, depending on the nature and magnitude of construction activity and local weather conditions. PM_{10} emissions would depend on soil moisture, silt content of soil, wind speed, and the amount of operating equipment. Larger dust particles would settle near the source, while fine particles would be dispersed over greater distances from the construction site.

Water or other soil stabilizers can be used to control dust, resulting in emission reductions of 50 percent or more. The BAAQMD has established standard measures for reducing fugitive dust emissions (PM_{10}). With the implementation of these Basic Construction Mitigation Measures, fugitive dust emissions from construction activities would not result in adverse air quality impacts.

In addition to dust-related PM_{10} emissions, heavy trucks and construction equipment powered by gasoline and diesel engines would generate CO, SO_2, NO_x, ROG, and some soot particulate ($PM_{2.5}$ and PM_{10}) in exhaust emissions. If construction activities were to increase traffic congestion in the area, CO and other emissions from traffic would increase slightly while those vehicles idle in traffic. These emissions would be temporary in nature and limited to the immediate area surrounding the construction site.

As discussed above, CalEEMod was used to calculate emissions from on-site construction equipment and emissions from worker and vehicle trips to the site. Construction-related emissions are presented in Table I, below.

Table I: Project Construction Emissions (in Pounds Per Day)

Project Construction	ROG	NO_X	Exhaust PM_{10}	Fugitive Dust PM_{10}	Exhaust $PM_{2.5}$	Fugitive Dust $PM_{2.5}$
Average Daily Emissions	4.0	23.7	0.8	2.0	0.8	0.5
BAAQMD Thresholds	54.0	54.0	82.0	BMP	54.0	BMP
Exceeds Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: Compiled by LSA (August 2022).
BAAQMD = Bay Area Air Quality Management District
BMP = best management practices
NO_X = nitrogen oxides
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
PM_{10} = particulate matter less than 10 microns in diameter
ROG = reactive organic gases

As shown in Table I, construction emissions associated with the project would not exceed the BAAQMD's thresholds for ROG, NO_x, CO, exhaust PM_{10}, and exhaust $PM_{2.5}$ emissions. In order to reduce construction $PM_{2.5}$ and PM_{10} fugitive dust impacts to a less-than-significant level, the BAAQMD requires the implementation of BAAQMD Best Management Practices (BMPs, Basic Construction Mitigation Measures). The ConnectMenlo EIR identified Mitigation Measure AQ-2b1, which would require implementation of the BMPs, which would reduce construction-related air quality impacts of PM_{10} and $PM_{2.5}$ fugitive dust emissions. As identified above, ConnectMenlo EIR Mitigation Measure AQ-2b2 further requires implementation of BAAQMD-approved mitigation measures if it is determined during project-specific evaluation that individual development projects would generate construction exhaust emissions in excess of the BAAQMD significance thresholds. As the proposed project would not exceed BAAQMD thresholds, implementation of the additional construction measures (e.g., Table 8-3, Additional Construction Measures Recommended for Projects with Construction Emissions Above the Threshold of the current BAAQMD CEQA Guidelines) as identified in ConnectMenlo EIR Mitigation Measure AQ-2b2 would not be required.

Mitigation Measure AIR-1

Consistent with ConnectMenlo EIR Mitigation Measure AQ-2b1, the proposed project would be required to comply with Bay Area Air Quality Management District (BAAQMD) basic control measures for reducing construction emissions of PM_{10} (Table 8-2, Basic Construction Mitigation Measures Recommended for All Proposed Projects, of the BAAQMD CEQA Guidelines), as follows:

- All exposed surfaces (e.g., parking areas, staging areas, soil piles, graded areas, and unpaved access roads) shall be watered two times per day.
- All haul trucks transporting soil, sand, or other loose material off-site shall be covered.
- All visible mud or dirt track-out onto adjacent public roads shall be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited.
- All vehicle speeds on unpaved roads shall be limited to 15 miles per hour (mph).
- All roadways, driveways, and sidewalks to be paved shall be completed as soon as possible. Building pads shall be laid as soon as possible after grading unless seeding or soil binders are used.
- Idling times shall be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure Title 13, Section 2485 of the California Code of

Regulations). Clear signage shall be provided for construction workers at all access points.

- All construction equipment shall be maintained and properly tuned in accordance with manufacturer specifications. All equipment shall be checked by a certified mechanic and determined to be running in proper condition prior to operation.

- Post a publicly visible sign with the telephone number and person to contact at the City of Menlo Park regarding dust complaints. This person shall respond and take corrective action within 48 hours. The phone number for BAAQMD shall also be visible to ensure compliance with applicable regulations.

With implementation of the BAAQMD's Basic Construction Mitigation Measures Recommended for All Proposed Projects as outlined in Mitigation Measure AIR-1, and consistent with ConnectMenlo EIR Mitigation Measure AQ-2b1, construction of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

Operational Air Quality Impacts

Long-term air pollutant emission impacts that would result from the proposed project are those associated with mobile sources (e.g., vehicle trips), energy sources (e.g., electricity), area sources (e.g., architectural coatings and the use of landscape maintenance equipment), and stationary sources (e.g., emergency generators).

PM_{10} emissions result from running exhaust, tire and brake wear, and the entrainment of dust into the atmosphere from vehicles traveling on paved roadways. Entrainment of PM_{10} occurs when vehicle tires pulverize small rocks and pavement, and the vehicle wakes generate airborne dust. The contribution of tire and brake wear is small compared to the other PM emissions processes. Gasoline-powered engines have small rates of particulate matter emissions compared with diesel-powered vehicles.

Energy source emissions result from activities in buildings for which electricity is used. The quantity of emissions is the product of usage intensity (i.e., the amount of electricity) and the emission factor of the fuel source. Major sources of energy demand include building mechanical systems, such as heating and air conditioning, lighting, and plug-in electronics, such as refrigerators or computers. Greater building or appliance efficiency reduces the amount of energy for a given activity and thus lowers the resultant emissions. The emission factor is determined by the fuel source, with cleaner energy sources, like renewable energy, producing fewer emissions than conventional sources.

Typically, area source emissions consist of direct sources of air emissions located at the project site, including architectural coatings and the use of landscape maintenance equipment. Area source

emissions associated with the project would include emissions from the use of landscaping equipment and the use of consumer products.

Long-term operational emissions associated with the proposed project were calculated using CalEEMod. Model results are shown in Table J. CalEEMod output sheets are included in Appendix A.

Table J: Project Operational Emissions

	ROG	NO_x	PM_{10}	$PM_{2.5}$
Pounds Per Day				
Area Source Emissions	1.6	<0.1	<0.1	<0.1
Energy Source Emissions	0.0	0.0	0.0	0.0
Mobile Source Emissions	1.6	1.6	3.7	1.0
Stationary Source Emissions	<0.1	<0.1	<0.1	<0.1
Total Emissions	**3.2**	**1.6**	**3.7**	**1.0**
BAAQMD Thresholds	54.0	54.0	82.0	54.0
Exceed Threshold?	**No**	**No**	**No**	**No**
Tons Per Year				
Area Source Emissions	0.3	<0.1	<0.1	<0.1
Energy Source Emissions	0.0	0.0	0.0	0.0
Mobile Source Emissions	0.3	0.3	0.7	0.2
Stationary Source Emissions	<0.1	<0.1	<0.1	<0.1
Total Emissions	**0.6**	**0.3**	**0.7**	**0.2**
BAAQMD Thresholds	10.0	10.0	15.0	10.0
Exceed Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (August 2022).
BAAQMD = Bay Area Air Quality Management District
NO_x = nitrogen oxides
PM_{10} = particulate matter less than 10 microns in diameter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter
ROG = reactive organic gases

The results shown in Table J indicate the project would not exceed the significance criteria for daily or annual ROG, NO_x, PM_{10}, and $PM_{2.5}$ emissions; therefore, the proposed project would not have a significant effect on regional air quality, and mitigation measures, including implementation of ConnectMenlo EIR Mitigation Measure AQ-2a, would not be required. Operation of the proposed project would not result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or State AAQS.

Long-Term Microscale (CO Hot Spot) Analysis

Emissions and ambient concentrations of CO have decreased dramatically in the Bay Area with the introduction of the catalytic converter in 1975. No exceedances of the State or federal CO standards have been recorded at Bay Area monitoring stations since 1991. BAAQMD CEQA Guidelines include recommended methodologies for quantifying concentrations of localized CO levels for proposed development projects. A screening level analysis using guidance from the BAAQMD CEQA Guidelines was performed to determine the impacts of the project. The screening methodology provides a conservative indication of whether the implementation of a proposed project would result in significant CO emissions. According to the BAAQMD CEQA Guidelines, a proposed project would result in a

less-than-significant impact to localized CO concentrations if the following screening criteria are met:

- The project is consistent with an applicable congestion management program established by the county congestion management agency for designated roads or highways, and the regional transportation plan and local congestion management agency plans.
- Project traffic would not increase traffic volumes at affected intersections to more than 44,000 vehicles per hour.
- The project would not increase traffic volumes at affected intersections to more than 24,000 vehicles per hour where vertical and/or horizontal mixing is substantially limited (e.g., tunnel, parking garage, bridge underpass, natural or urban street canyon, or below-grade roadway).

Implementation of the proposed project would not conflict with the San Mateo County Transportation Authority's congestion management program for designated roads or highways, a regional transportation plan, or other agency plans. The proposed project would generate approximately 46 net new AM and 62 net new PM peak hour trips; therefore, the project's contribution to peak hour traffic volumes at intersections in the vicinity of the project site would be well below 44,000 vehicles per hour. Therefore, the proposed project would not result in localized CO concentrations that exceed State or federal standards.

Health Risk on Nearby Sensitive Receptors

Sensitive receptors are defined as residential uses, schools, daycare centers, nursing homes, and medical centers. Individuals particularly vulnerable to diesel particulate matter are children, whose lung tissue is still developing, and the elderly, who may have serious health problems that can be aggravated by exposure to diesel particulate matter. Exposure from diesel exhaust associated with construction activity contributes to both cancer and chronic non-cancer health risks. The closest receptors to the project site are multifamily residential uses immediately west of the project site boundary.

The following section describes the potential impacts on sensitive receptors from construction and operation of the proposed project. The HRA analysis and results are presented below; data outputs are included in Appendix B.

Construction Health Risk Assessment

A construction HRA, which evaluates construction-period health risk to off-site receptors, was performed for the proposed project. Table K, below, identifies the results of the analysis assuming the use of Tier 2 construction equipment (current CARB standards), at the maximally exposed individual (MEI), which is the nearest sensitive receptor. Model snap shots of the sources are shown in Appendix B.

Table K: Unmitigated Health Risks from Project Construction to Off-Site Receptors

	Carcinogenic Inhalation Health Risk in 1 Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual	54.2	0.036	0.000	0.38
Threshold	**10.0**	**1.0**	**1**	**0.3**
Exceeds Threshold?	**Yes**	**No**	**No**	**Yes**

Source: Compiled by LSA (August 2022).
$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

As shown in Table K, the risk associated with project construction at the MEI would be 54.2 in 1 million, which would exceed the BAAQMD cancer risk of 10 in 1 million. The total chronic hazard index would be 0.036, which is below the threshold of 1.0. In addition, the total acute hazard index would be nominal (0.0), which would also not exceed the threshold of 1.0. The results of the analysis indicate that the total $PM_{2.5}$ concentration would be 0.38 micrograms per cubic meter ($\mu g/m^3$), which would also exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$. Therefore, since the maximum cancer risk for the sensitive receptor MEI would exceed the BAAQMD threshold, implementation of Mitigation Measure AIR-2 would be required to reduce substantial pollutant concentrations during project construction.

Mitigation Measure AIR-2 During construction of the proposed project, the project contractor shall ensure all off-road diesel-powered construction equipment of 50 horsepower or more used for the project construction at a minimum meets the California Air Resources Board Tier 2 emissions standards with Level 3 diesel particulate filters or equivalent.

As shown in Table L, the mitigated cancer risk at the receptor MEI would be 9.8 in one million, which would not exceed the BAAQMD cancer risk of 10 in one million. In addition, the mitigated $PM_{2.5}$ concentration would be 0.07 $\mu g/m^3$, which would also not exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$. Therefore, with implementation of Mitigation Measure AIR-2, construction of the proposed project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations.

Table M identifies the results of the analysis with implementation of Mitigation Measure AIR-2, as detailed above.

Table L: Mitigated Health Risks from Project Construction to Off-Site Receptors

	Carcinogenic Inhalation Health Risk in 1 Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual	9.8	0.007	0.000	0.07
Threshold	**10.0**	**1.0**	**1**	**0.3**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (August 2022).
$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

Operational Health Risk Assessment

To determine the potential health risk to people living near the proposed project associated with the exhaust of the diesel-powered emergency backup generator, an operational HRA was conducted for the proposed project. The carcinogenic and chronic health risks from the proposed project are shown in Table M. The HRA model snapshots and outputs are included in Appendix B.

Table M: Unmitigated Health Risks from Project Operation to Off-Site Receptors

	Carcinogenic Inhalation Health Risk in 1 Million	Chronic Inhalation Hazard Index	Acute Inhalation Hazard Index	Annual $PM_{2.5}$ Concentration ($\mu g/m^3$)
Maximally Exposed Individual	0.2	0.000	0.000	0.05
Threshold	**10.0**	**1.0**	**1**	**0.3**
Exceeds Threshold?	**No**	**No**	**No**	**No**

Source: Compiled by LSA (August 2022).
$\mu g/m^3$ = micrograms per cubic meter
$PM_{2.5}$ = particulate matter less than 2.5 microns in diameter

As shown in Table M, the risk associated with project operation at the MEI would be 0.2 in 1 million, which would not exceed the BAAQMD cancer risk of 10 in 1 million. The total chronic hazard index and the total acute hazard index would be nominal (0.0), which would not exceed the threshold of 1.0. In addition, the total $PM_{2.5}$ concentration would be 0.05 $\mu g/m^3$, which would also not exceed the BAAQMD significance threshold of 0.3 $\mu g/m^3$. Therefore, operation of the proposed project would not exceed BAAQMD thresholds and would not expose nearby sensitive receptors to substantial pollutant concentrations.

Therefore, sensitive receptors are not expected to be exposed to substantial pollutant concentrations during project construction or operation.

Odors

During construction, the various diesel-powered vehicles and equipment in use on site would create localized odors. These odors would be temporary and are not likely to be noticeable for extended periods of time beyond the project site. Additionally, the proposed uses that would be developed within the project site are not expected to produce any offensive odors that would result in frequent odor complaints. The proposed project would not include sensitive receptors; therefore, odor impacts on the project do not require further evaluation.

GREENHOUSE GAS EMISSIONS

Generate Greenhouse Gas Emissions

As discussed above, a project would have a less than significant impact related to GHG emissions if it would include the project design elements related to natural gas, energy, VMT, and electric vehicles or if it would be consistent with a local GHG reduction strategy that meets the criteria under *State CEQA Guidelines* Section 15183.5(b). The City's CAP does not meet these requirements. Therefore,

this section evaluates the proposed project's consistency with the BAAQMD's project design elements.

Natural Gas Usage. As required by the BAAQMD, the project must not include natural gas appliances or natural gas plumbing. As discussed in the Project Description, the proposed project would not increase the demand for natural gas as the City's reach codes would require the buildings to be all electric. Since the proposed project would not include natural gas, the proposed project would be consistent with this design element.

Energy Usage. The project must not result in any wasteful, inefficient, or unnecessary energy usage as determined by the analysis required under Section 21100(b)(3) and Section 15126.2(b) of the *State CEQA Guidelines*. Energy use consumed by the proposed project would be associated with electricity consumption associated with the project. Energy consumption was estimated for the project using default energy intensities by land use type in the CalEEMod output, which is included in Appendix A.

Based on CalEEMod, the estimated potential increased electricity demand associated with the proposed project is 696,998 kilowatt-hours (kWh) per year. Total electricity consumption in San Mateo County in 2020 was 4,167 gigawatt-hours (GWh) or 4,167,506,557 kWh.[1] Therefore, operation of the proposed project would increase the annual electricity consumption in San Mateo County by 0.02 percent.

The proposed project would be built to LEED Silver standards, would include solar panels, and would be 12 percent more energy efficient than the 2019 Title 24 standards. As such, the proposed project would include energy-saving building features. As such, based on this analysis, as required under Section 21100(b)(3) and Section 15126.2(b) of the *State CEQA Guidelines*, the proposed project would not result in the wasteful, inefficient, or unnecessary consumption of fuel or energy and would incorporate renewable energy or energy efficiency measures into building design, equipment use, and transportation. As such, the proposed project would be consistent with this design element.

Vehicle Miles Traveled. To meet the BAAQMD's VMT threshold, the project must achieve a reduction in project-generated VMT below the regional average consistent with the current version of the California Climate Change Scoping Plan or meet a locally adopted SB 743 VMT target, reflecting the recommendations provided in the Governor's Office of Planning and Research's (OPR) 2018 *Technical Advisory on Evaluating Transportation Impacts in CEQA*. As discussed in the project's Transportation Impact Analysis[2], the Transportation Impact Analysis Guidelines (TIA Guidelines) were updated in July 2020 to include guidelines on evaluating VMT. For hotel uses, a project is considered to have a significant impact on VMT if the project results in a net increase in total City VMT.

1 California Energy Commission (CEC). 2022. Electricity Consumption by County and Entity. Websites: http://www.ecdms.energy.ca.gov/elecbycounty.aspx, and http://www.ecdms.energy.ca.gov/elecbyutil.aspx (accessed August 2022).

2 Hexagon Transportation Consultants, Inc. 2021, op. cit.

Based on the VMT analysis prepared for the proposed project, under existing conditions, the total daily VMT would be approximately 7,126,189 VMT and the existing conditions with the proposed project would be approximately 7,092,216 VMT. As such, the proposed project would result in a net reduction of VMT and, therefore, the proposed project would result in a less-than-significant impact related to VMT. As such, the proposed project would be consistent with this design element.

Electric Vehicle Requirements. This criterion requires that the project achieve compliance with off-street electric vehicle requirements in the most recently adopted version of the California Green Building Standards Code (CALGreen Code) Tier 2 measures. The current CALGreen Code Tier 2 requires that a minimum of 10 percent of the parking spaces provide electric vehicle charging. As identified in the Project Description, the proposed project would provide 40 electric vehicle parking spaces out of the total 124 spaces. As such, the proposed project would be consistent with this criterion.

As discussed above, the proposed project would be consistent with the BAAQMD's project design elements related to natural gas, energy, VMT, and electric vehicles. Therefore, the proposed project would be consistent with the BAAQMD's GHG emission thresholds. As such, the proposed project would not result in the generation of GHG emissions that would have a significant impact on the environment.

Consistency with Greenhouse Gas Reduction Plans

As discussed above, the City's CAP was first adopted in May 2009 and is updated from time to time, most recently in 2021 and identifies local emissions reduction strategies designed to help meet AB 32 targets. The CAP recommends various community and municipal strategies for near-term and mid-term considerations. The emissions reduction strategies are generally focused on community actions, since more than 99 percent of the emissions are from community sources.

The City updates its community-wide GHG inventory and CAP annually. In 2011, the City completed the first update to the City's CAP Strategy, known as the 2011 CAP Assessment Report. As part of the 2013 update, the City Council adopted a target of reducing community-wide GHG emissions by 27 percent below 2005 levels by 2020.

The most recent status update to the City's CAP was conducted in April 2021.[1] The 2021 CAP includes updated emissions inventories through year 2017 and adopts a climate goal of zero carbon by 2030. The CAP aims for a 90 percent reduction in CO_2e emissions from 2005 levels by 2030.

Table N includes an evaluation of the proposed project's consistency with the CAP's GHG reduction strategies.

[1] Menlo Park, City of. 2021, op. cit.

Table N: Project Consistency with CAP Strategies

Strategy	Project Consistency
Explore policy/program options to convert 95 percent of existing buildings to all-electric by 2030.	***Consistent.*** The proposed project would not increase the demand for natural gas as the City's reach codes would require the building to be all electric.
Support setting regional goals for increasing EVs and decreasing gasoline sales.	***Consistent.*** As identified in the Project Description, the proposed project would provide 40 electric vehicle parking spaces out of the total 124 spaces.
Expand access to EV charging for multifamily and commercial properties.	***Consistent.*** As identified in the Project Description, the proposed project would provide 40 electric vehicle parking spaces out of the total 124 spaces.
Reduce vehicle miles traveled (VMT) by 25 percent or an amount recommended by the Complete Streets Commission.	***Consistent.*** The proposed project would not reduce VMT by 25 percent; however, as discussed above, based on the City's TIA Guidelines, for hotel uses, a project is considered to have a significant impact on VMT if the project results in a net increase in total City VMT. Based on the VMT analysis prepared for the proposed project, under existing conditions, the total daily VMT would be approximately 7,126,189 VMT and the existing conditions with the proposed project would be approximately 7,092,216 VMT. As such, the proposed project would result in a net reduction of VMT and, therefore, the proposed project would result in a less-than-significant impact related to VMT. In addition, the proposed hotel would be located within very close proximity to a major employment area in the Bayfront Area, hotel patrons would travel shorter distances to their business destinations, reducing the demand for travel by single occupancy vehicles.
Eliminate the use of fossil fuels from municipal operations.	***Not Applicable.*** This action is not directly applicable to the proposed project.
Develop a climate adaptation plan to protect the community from sea level rise and flooding.	***Not Applicable.*** This action is not directly applicable to the proposed project.

Sources: City of Menlo Park (2020); LSA (August 2022).
CAP = Climate Action Plan
EV = electric vehicle
TIA = Transportation Impact Analysis

As described above, the proposed project would generally be consistent with the City of Menlo Park CAP and Plan Bay. Therefore, the proposed project would not conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the GHG emissions.

In addition, the following discussion evaluates the proposed project according to the goals of AB 32, the AB 32 Scoping Plan, EO B-30-15, SB 32, and AB 197.

AB 32 is aimed at reducing GHG emissions to 1990 levels by 2020. AB 32 requires the CARB to prepare a Scoping Plan that outlines the main State strategies for meeting the 2020 deadline and to reduce GHGs that contribute to global climate change. The AB 32 Scoping Plan has a range of GHG reduction actions, which include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, market-based mechanisms such as a cap-and-trade system, and an AB 32 implementation fee to fund the program.

EO B-30-15 added the immediate target of reducing GHG emissions to 40 percent below 1990 levels by 2030. CARB released a second update to the Scoping Plan, the 2017 Scoping Plan,[1] to reflect the 2030 target set by EO B-30-15 and codified by SB 32. SB 32 affirms the importance of addressing climate change by codifying into statute the GHG emissions reductions target of at least 40 percent below 1990 levels by 2030 contained in EO B-30-15. SB 32 builds on AB 32 and keeps us on the path toward achieving the State's 2050 objective of reducing emissions to 80 percent below 1990 levels. The companion bill to SB 32, AB 197, provides additional direction to the CARB related to the adoption of strategies to reduce GHG emissions. Additional direction in AB 197 intended to provide easier public access to air emissions data that are collected by CARB was posted in December 2016.

As identified above, the AB 32 Scoping Plan contains GHG reduction measures that work towards reducing GHG emissions, consistent with the targets set by AB 32, EO B-30-15 and codified by SB 32 and AB 197. The measures applicable to the proposed project include energy efficiency measures, water conservation and efficiency measures, and transportation and motor vehicle measures, as discussed below.

Energy efficient measures are intended to maximize energy efficiency building and appliance standards, pursue additional efficiency efforts, including new technologies and new policy and implementation mechanisms, and pursue comparable investment in energy efficiency from all retail providers of electricity in California. In addition, these measures are designed to expand the use of green building practices to reduce the carbon footprint of California's new and existing inventory of buildings. The proposed project would be built to LEED Silver standards, would include solar panels, and would be 12 percent more energy efficient than the 2019 Title 24 standards, regarding energy conservation and green building standards. In addition, as discussed above, the proposed project would replace older buildings that were built with less efficient standard codes, improving the overall efficiency of the project site. Therefore, the proposed project would comply with applicable energy measures.

Water conservation and efficiency measures are intended to continue efficiency programs and use cleaner energy sources to move and treat water. Increasing the efficiency of water transport and reducing water use would reduce GHG emissions. As noted above, the project would be built to LEED Silver standards and would be 12 percent more energy efficient than the 2019 Title 24 standards, which include a variety of different measures, including reduction of wastewater and water use. In addition, the proposed project would be required to comply with the California Model Water Efficient Landscape Ordinance. Therefore, the proposed project would not conflict with any of the water conservation and efficiency measures.

The goal of transportation and motor vehicle measures is to develop regional GHG emissions reduction targets for passenger vehicles. Specific regional emission targets for transportation emissions would not directly apply to the proposed project. The second phase of Pavley standards will reduce GHG emissions from new cars by 34 percent from 2016 levels by. Vehicles traveling to the project site would comply with the Pavley II (LEV III) Advanced Clean Cars Program. Therefore,

[1] CARB. 2017. *California's 2017 Climate Change Scoping Plan*. November.

the proposed project would not conflict with the identified transportation and motor vehicle measures.

Therefore, the proposed project would comply with existing State regulations adopted to achieve the overall GHG emissions reduction goals identified in AB 32 and would be consistent with applicable plans and programs designed to reduce GHG emissions. Therefore, the proposed project would not conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

CONCLUSIONS

Based on the analysis presented above, with implementation of Mitigation Measure AIR-1 construction of the proposed project would not result in the generation of criteria air pollutants that would exceed BAAQMD thresholds of significance. Operational emissions associated with the proposed project would also not exceed BAAQMD established significance thresholds. With implementation of Mitigation Measure AIR-2, the proposed project is not expected to produce significant emissions that would affect nearby sensitive receptors. The proposed project would also not result in objectionable odors affecting a substantial number of people. In addition, the project would not result in substantial GHG emissions. The project would not conflict with the State's GHG emissions reductions objectives embodied in AB 32, EO B-30-15, SB 32, and AB 197. Therefore, the proposed project's incremental contribution to cumulative GHG emissions would not be cumulatively considerable.

APPENDIX A

CALEEMOD OUTPUT SHEETS

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Hotel Moxy Project

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	125.00	Space	0.26	51,868.00	0
Hotel	163.00	Room	0.50	58,014.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site is 0.76 acres

Construction Phase - Construction schedule provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Hotel Moxy Project - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Trips and VMT - Based on schedule provided by client

Demolition - demolition of existing office space

Grading - proposed project would require 522 CY of soil fill and 83 CY of cut during rough grading

Vehicle Trips - Based on a net trip generation of 957 ADT

Energy Use - No natural gas

Construction Off-road Equipment Mitigation - use of construction equipment tier 2

Area Mitigation - Project would not use natural gas

Energy Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - Proposed project would include a diesel emergency generator

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	5.00	67.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	NumDays	100.00	481.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	NumDays	2.00	23.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	NumDays	1.00	23.00
tblEnergyUse	NT24NG	7.13	0.00
tblEnergyUse	T24NG	29.09	0.00
tblGrading	MaterialImported	0.00	439.00
tblLandUse	LandUseSquareFeet	50,000.00	51,868.00
tblLandUse	LandUseSquareFeet	236,676.00	58,014.00
tblLandUse	LotAcreage	1.13	0.26
tblLandUse	LotAcreage	5.43	0.50
tblOffRoadEquipment	HorsePower	78.00	35.00
tblOffRoadEquipment	HorsePower	81.00	30.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	89.00	74.00
tblOffRoadEquipment	HorsePower	187.00	70.00
tblOffRoadEquipment	HorsePower	187.00	70.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	HorsePower	80.00	85.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	84.00	40.00
tblOffRoadEquipment	HorsePower	8.00	60.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	46.00	25.00
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.74	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.48
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	670.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.14
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	18.00	80.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	23.00	16.00
tblTripsAndVMT	WorkerTripNumber	46.00	160.00
tblTripsAndVMT	WorkerTripNumber	10.00	16.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	5.00	60.00
tblTripsAndVMT	WorkerTripNumber	9.00	40.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	SU_TR	5.95	5.87
tblVehicleTrips	WD_TR	8.36	5.87

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2299	2.0640	2.2143	6.0200e-003	0.2529	0.0788	0.3317	0.0652	0.0733	0.1385	0.0000	557.1516	557.1516	0.0832	0.0333	569.1387
2024	0.8320	1.9400	2.0976	6.1900e-003	0.2502	0.0679	0.3181	0.0677	0.0633	0.1310	0.0000	575.5086	575.5086	0.0818	0.0360	588.2862
2025	5.4800e-003	7.3700e-003	8.7100e-003	3.0000e-005	1.0600e-003	2.4000e-004	1.3000e-003	2.9000e-004	2.2000e-004	5.1000e-004	0.0000	2.3519	2.3519	3.4000e-004	1.4000e-004	2.4025
Maximum	**0.8320**	**2.0640**	**2.2143**	**6.1900e-003**	**0.2529**	**0.0788**	**0.3317**	**0.0677**	**0.0733**	**0.1385**	**0.0000**	**575.5086**	**575.5086**	**0.0832**	**0.0360**	**588.2862**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1652	2.8599	2.3792	6.0200e-003	0.2385	0.0959	0.3344	0.0633	0.0957	0.1590	0.0000	557.1513	557.1513	0.0832	0.0333	569.1385
2024	0.7842	2.8344	2.3368	6.1900e-003	0.2486	0.0919	0.3404	0.0676	0.0917	0.1592	0.0000	575.5083	575.5083	0.0818	0.0360	588.2860
2025	5.3500e-003	0.0117	9.7000e-003	3.0000e-005	1.0600e-003	3.8000e-004	1.4500e-003	2.9000e-004	3.8000e-004	6.7000e-004	0.0000	2.3519	2.3519	3.4000e-004	1.4000e-004	2.4025
Maximum	**0.7842**	**2.8599**	**2.3792**	**6.1900e-003**	**0.2486**	**0.0959**	**0.3404**	**0.0676**	**0.0957**	**0.1592**	**0.0000**	**575.5083**	**575.5083**	**0.0832**	**0.0360**	**588.2860**

Hotel Moxy Project - San Mateo County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**10.56**	**-42.24**	**-9.38**	**0.00**	**3.17**	**-27.99**	**-3.87**	**1.55**	**-37.28**	**-18.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**11-1-2022**	**1-31-2023**	0.0689	0.0812
3	**2-1-2023**	**4-30-2023**	0.6958	0.9196
4	**5-1-2023**	**7-31-2023**	0.6364	0.8519
5	**8-1-2023**	**10-31-2023**	0.5311	0.6997
6	**11-1-2023**	**1-31-2024**	0.5268	0.7029
7	**2-1-2024**	**4-30-2024**	0.4952	0.6830
8	**5-1-2024**	**7-31-2024**	0.5004	0.6924
9	**8-1-2024**	**10-31-2024**	0.9367	1.1514
10	**11-1-2024**	**1-31-2025**	0.6429	0.8308
		Highest	0.9367	1.1514

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2615	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	67.7605	67.7605	0.0110	1.3300e-003	68.4306
Mobile	0.3256	0.2837	2.9865	5.8700e-003	0.6666	3.9700e-003	0.6706	0.1781	3.6800e-003	0.1817	0.0000	555.4686	555.4686	0.0396	0.0252	563.9698
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	18.1149	0.0000	18.1149	1.0706	0.0000	44.8789
Water						0.0000	0.0000		0.0000	0.0000	1.3118	2.2188	3.5306	0.1351	3.2200e-003	7.8689
Total	**0.6146**	**0.3606**	**3.0592**	**6.0000e-003**	**0.6666**	**8.0200e-003**	**0.6746**	**0.1781**	**7.7300e-003**	**0.1858**	**19.4267**	**638.2098**	**657.6365**	**1.2580**	**0.0298**	**697.9551**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2615	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	64.4889	64.4889	0.0104	1.2600e-003	65.1266
Mobile	0.3256	0.2837	2.9865	5.8700e-003	0.6666	3.9700e-003	0.6706	0.1781	3.6800e-003	0.1817	0.0000	555.4686	555.4686	0.0396	0.0252	563.9698
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	18.1149	0.0000	18.1149	1.0706	0.0000	44.8789
Water						0.0000	0.0000		0.0000	0.0000	1.3118	2.2188	3.5306	0.1351	3.2200e-003	7.8689
Total	**0.6146**	**0.3606**	**3.0592**	**6.0000e-003**	**0.6666**	**8.0200e-003**	**0.6746**	**0.1781**	**7.7300e-003**	**0.1858**	**19.4267**	**634.9382**	**654.3648**	**1.2575**	**0.0297**	**694.6511**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.51**	**0.50**	**0.04**	**0.24**	**0.47**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	3/1/2023	5	43	
2	Asphalt Demoltion	Demolition	3/1/2023	3/15/2023	5	11	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3	Rough Grading	Grading	3/1/2023	3/31/2023	5	23	
4	Building Construction	Building Construction	3/1/2023	1/1/2025	5	481	
5	Site Preparation	Site Preparation	3/15/2023	4/15/2023	5	23	
6	Utility Trenching	Trenching	4/1/2023	8/1/2023	5	87	
7	Fine Grading	Grading	10/1/2024	10/15/2024	5	11	
8	Finishing/Landscaping	Architectural Coating	10/1/2024	1/1/2025	5	67	
9	Architectural Coating	Architectural Coating	10/15/2024	11/1/2024	5	14	
10	Paving	Paving	11/1/2024	11/29/2024	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 23

Acres of Paving: 0.26

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 87,021; Non-Residential Outdoor: 29,007; Striped Parking Area: 3,112 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	30	0.73
Demolition	Excavators	3	8.00	50	0.37
Asphalt Demoltion	Excavators	1	8.00	50	0.37
Rough Grading	Excavators	3	8.00	50	0.40
Rough Grading	Graders	2	8.00	70	0.41
Rough Grading	Plate Compactors	1	8.00	60	0.43
Rough Grading	Tractors/Loaders/Backhoes	3	8.00	75	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	74	0.20
Building Construction	Generator Sets	1	8.00	40	0.37
Building Construction	Tractors/Loaders/Backhoes	3	7.00	75	0.37
Building Construction	Welders	1	8.00	25	0.45

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site Preparation	Tractors/Loaders/Backhoes	4	8.00	75	0.37
Utility Trenching	Excavators	1	8.00	50	0.38
Utility Trenching	Tractors/Loaders/Backhoes	1	8.00	75	0.37
Fine Grading	Excavators	1	6.00	50	0.40
Fine Grading	Graders	1	8.00	70	0.41
Fine Grading	Tractors/Loaders/Backhoes	1	8.00	75	0.37
Finishing/Landscaping	Tractors/Loaders/Backhoes	1	8.00	75	0.48
Architectural Coating	Air Compressors	1	6.00	35	0.48
Paving	Rollers	1	8.00	85	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	75	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	20.00	5.00	62.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demoltion	1	8.00	1.00	66.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	9	16.00	2.00	55.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	160.00	80.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	16.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	2	60.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	3	8.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	1	40.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	2	16.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.7100e-003	0.0000	6.7100e-003	1.0200e-003	0.0000	1.0200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0145	0.1073	0.1254	1.7000e-004		4.0500e-003	4.0500e-003		3.8100e-003	3.8100e-003	0.0000	14.3128	14.3128	3.6500e-003	0.0000	14.4041
Total	**0.0145**	**0.1073**	**0.1254**	**1.7000e-004**	**6.7100e-003**	**4.0500e-003**	**0.0108**	**1.0200e-003**	**3.8100e-003**	**4.8300e-003**	**0.0000**	**14.3128**	**14.3128**	**3.6500e-003**	**0.0000**	**14.4041**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	4.8700e-003	1.5900e-003	2.0000e-005	5.2000e-004	3.0000e-005	5.5000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	2.1120	2.1120	2.1000e-004	3.4000e-004	2.2187
Vendor	1.1000e-004	5.0600e-003	1.8200e-003	2.0000e-005	7.0000e-004	3.0000e-005	7.3000e-004	2.0000e-004	2.0000e-005	2.3000e-004	0.0000	2.2839	2.2839	1.4000e-004	3.4000e-004	2.3878
Worker	9.3000e-004	6.1000e-004	8.3600e-003	3.0000e-005	3.3900e-003	2.0000e-005	3.4000e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.5475	2.5475	6.0000e-005	6.0000e-005	2.5679
Total	**1.1100e-003**	**0.0105**	**0.0118**	**7.0000e-005**	**4.6100e-003**	**8.0000e-005**	**4.6800e-003**	**1.2400e-003**	**7.0000e-005**	**1.3200e-003**	**0.0000**	**6.9434**	**6.9434**	**4.1000e-004**	**7.4000e-004**	**7.1743**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.0200e-003	0.0000	3.0200e-003	4.6000e-004	0.0000	4.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2500e-003	0.1384	0.1119	1.7000e-004		6.3700e-003	6.3700e-003		6.3700e-003	6.3700e-003	0.0000	14.3128	14.3128	3.6500e-003	0.0000	14.4041
Total	**7.2500e-003**	**0.1384**	**0.1119**	**1.7000e-004**	**3.0200e-003**	**6.3700e-003**	**9.3900e-003**	**4.6000e-004**	**6.3700e-003**	**6.8300e-003**	**0.0000**	**14.3128**	**14.3128**	**3.6500e-003**	**0.0000**	**14.4041**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	4.8700e-003	1.5900e-003	2.0000e-005	5.2000e-004	3.0000e-005	5.5000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	2.1120	2.1120	2.1000e-004	3.4000e-004	2.2187
Vendor	1.1000e-004	5.0600e-003	1.8200e-003	2.0000e-005	7.0000e-004	3.0000e-005	7.3000e-004	2.0000e-004	2.0000e-005	2.3000e-004	0.0000	2.2839	2.2839	1.4000e-004	3.4000e-004	2.3878
Worker	9.3000e-004	6.1000e-004	8.3600e-003	3.0000e-005	3.3900e-003	2.0000e-005	3.4000e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.5475	2.5475	6.0000e-005	6.0000e-005	2.5679
Total	**1.1100e-003**	**0.0105**	**0.0118**	**7.0000e-005**	**4.6100e-003**	**8.0000e-005**	**4.6800e-003**	**1.2400e-003**	**7.0000e-005**	**1.3200e-003**	**0.0000**	**6.9434**	**6.9434**	**4.1000e-004**	**7.4000e-004**	**7.1743**

3.3 Asphalt Demoltion - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.1600e-003	0.0000	7.1600e-003	1.0800e-003	0.0000	1.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1000e-004	6.4500e-003	7.6000e-003	1.0000e-005		2.5000e-004	2.5000e-004		2.3000e-004	2.3000e-004	0.0000	0.8554	0.8554	2.8000e-004	0.0000	0.8623
Total	**8.1000e-004**	**6.4500e-003**	**7.6000e-003**	**1.0000e-005**	**7.1600e-003**	**2.5000e-004**	**7.4100e-003**	**1.0800e-003**	**2.3000e-004**	**1.3100e-003**	**0.0000**	**0.8554**	**0.8554**	**2.8000e-004**	**0.0000**	**0.8623**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Asphalt Demoltion - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	5.1900e-003	1.7000e-003	2.0000e-005	5.5000e-004	3.0000e-005	5.9000e-004	1.5000e-004	3.0000e-005	1.8000e-004	0.0000	2.2482	2.2482	2.3000e-004	3.6000e-004	2.3618
Vendor	1.0000e-005	2.6000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1169	0.1169	1.0000e-005	2.0000e-005	0.1222
Worker	9.0000e-005	6.0000e-005	8.6000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2607	0.2607	1.0000e-005	1.0000e-005	0.2628
Total	**1.8000e-004**	**5.5100e-003**	**2.6500e-003**	**2.0000e-005**	**9.4000e-004**	**3.0000e-005**	**9.8000e-004**	**2.5000e-004**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**2.6258**	**2.6258**	**2.5000e-004**	**3.9000e-004**	**2.7468**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.2200e-003	0.0000	3.2200e-003	4.9000e-004	0.0000	4.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-004	8.5200e-003	6.6400e-003	1.0000e-005		3.4000e-004	3.4000e-004		3.4000e-004	3.4000e-004	0.0000	0.8554	0.8554	2.8000e-004	0.0000	0.8623
Total	**4.1000e-004**	**8.5200e-003**	**6.6400e-003**	**1.0000e-005**	**3.2200e-003**	**3.4000e-004**	**3.5600e-003**	**4.9000e-004**	**3.4000e-004**	**8.3000e-004**	**0.0000**	**0.8554**	**0.8554**	**2.8000e-004**	**0.0000**	**0.8623**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Asphalt Demoltion - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	5.1900e-003	1.7000e-003	2.0000e-005	5.5000e-004	3.0000e-005	5.9000e-004	1.5000e-004	3.0000e-005	1.8000e-004	0.0000	2.2482	2.2482	2.3000e-004	3.6000e-004	2.3618
Vendor	1.0000e-005	2.6000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1169	0.1169	1.0000e-005	2.0000e-005	0.1222
Worker	9.0000e-005	6.0000e-005	8.6000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2607	0.2607	1.0000e-005	1.0000e-005	0.2628
Total	**1.8000e-004**	**5.5100e-003**	**2.6500e-003**	**2.0000e-005**	**9.4000e-004**	**3.0000e-005**	**9.8000e-004**	**2.5000e-004**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**2.6258**	**2.6258**	**2.5000e-004**	**3.9000e-004**	**2.7468**

3.4 Rough Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0122	0.0000	0.0122	1.3200e-003	0.0000	1.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0179	0.1515	0.1603	2.1000e-004		8.7900e-003	8.7900e-003		8.0900e-003	8.0900e-003	0.0000	18.0551	18.0551	5.8400e-003	0.0000	18.2011
Total	**0.0179**	**0.1515**	**0.1603**	**2.1000e-004**	**0.0122**	**8.7900e-003**	**0.0210**	**1.3200e-003**	**8.0900e-003**	**9.4100e-003**	**0.0000**	**18.0551**	**18.0551**	**5.8400e-003**	**0.0000**	**18.2011**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Rough Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	4.3200e-003	1.4100e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.5000e-004	0.0000	1.8735	1.8735	1.9000e-004	3.0000e-004	1.9682
Vendor	2.0000e-005	1.0800e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4887	0.4887	3.0000e-005	7.0000e-005	0.5109
Worker	4.0000e-004	2.6000e-004	3.5800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.0901	1.0901	3.0000e-005	3.0000e-005	1.0988
Total	**4.8000e-004**	**5.6600e-003**	**5.3800e-003**	**3.0000e-005**	**2.0600e-003**	**5.0000e-005**	**2.1100e-003**	**5.6000e-004**	**5.0000e-005**	**5.9000e-004**	**0.0000**	**3.4523**	**3.4523**	**2.5000e-004**	**4.0000e-004**	**3.5779**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5000e-003	0.0000	5.5000e-003	5.9000e-004	0.0000	5.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3600e-003	0.1933	0.1506	2.1000e-004		7.8100e-003	7.8100e-003		7.8100e-003	7.8100e-003	0.0000	18.0551	18.0551	5.8400e-003	0.0000	18.2011
Total	**9.3600e-003**	**0.1933**	**0.1506**	**2.1000e-004**	**5.5000e-003**	**7.8100e-003**	**0.0133**	**5.9000e-004**	**7.8100e-003**	**8.4000e-003**	**0.0000**	**18.0551**	**18.0551**	**5.8400e-003**	**0.0000**	**18.2011**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Rough Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	4.3200e-003	1.4100e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.5000e-004	0.0000	1.8735	1.8735	1.9000e-004	3.0000e-004	1.9682
Vendor	2.0000e-005	1.0800e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4887	0.4887	3.0000e-005	7.0000e-005	0.5109
Worker	4.0000e-004	2.6000e-004	3.5800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.0901	1.0901	3.0000e-005	3.0000e-005	1.0988
Total	**4.8000e-004**	**5.6600e-003**	**5.3800e-003**	**3.0000e-005**	**2.0600e-003**	**5.0000e-005**	**2.1100e-003**	**5.6000e-004**	**5.0000e-005**	**5.9000e-004**	**0.0000**	**3.4523**	**3.4523**	**2.5000e-004**	**4.0000e-004**	**3.5779**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1245	1.1577	1.1368	1.9900e-003		0.0553	0.0553		0.0515	0.0515	0.0000	170.1602	170.1602	0.0492	0.0000	171.3888
Total	**0.1245**	**1.1577**	**1.1368**	**1.9900e-003**		**0.0553**	**0.0553**		**0.0515**	**0.0515**	**0.0000**	**170.1602**	**170.1602**	**0.0492**	**0.0000**	**171.3888**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.2800e-003	0.4106	0.1472	1.8300e-003	0.0569	2.1100e-003	0.0590	0.0165	2.0200e-003	0.0185	0.0000	185.2627	185.2627	0.0114	0.0273	193.6866
Worker	0.0376	0.0246	0.3390	1.1100e-003	0.1373	6.6000e-004	0.1380	0.0365	6.1000e-004	0.0372	0.0000	103.3202	103.3202	2.6000e-003	2.5600e-003	104.1487
Total	**0.0469**	**0.4351**	**0.4863**	**2.9400e-003**	**0.1942**	**2.7700e-003**	**0.1970**	**0.0530**	**2.6300e-003**	**0.0556**	**0.0000**	**288.5829**	**288.5829**	**0.0140**	**0.0299**	**297.8352**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0796	1.7600	1.3259	1.9900e-003		0.0670	0.0670		0.0670	0.0670	0.0000	170.1600	170.1600	0.0492	0.0000	171.3886
Total	**0.0796**	**1.7600**	**1.3259**	**1.9900e-003**		**0.0670**	**0.0670**		**0.0670**	**0.0670**	**0.0000**	**170.1600**	**170.1600**	**0.0492**	**0.0000**	**171.3886**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.2800e-003	0.4106	0.1472	1.8300e-003	0.0569	2.1100e-003	0.0590	0.0165	2.0200e-003	0.0185	0.0000	185.2627	185.2627	0.0114	0.0273	193.6866
Worker	0.0376	0.0246	0.3390	1.1100e-003	0.1373	6.6000e-004	0.1380	0.0365	6.1000e-004	0.0372	0.0000	103.3202	103.3202	2.6000e-003	2.5600e-003	104.1487
Total	**0.0469**	**0.4351**	**0.4863**	**2.9400e-003**	**0.1942**	**2.7700e-003**	**0.1970**	**0.0530**	**2.6300e-003**	**0.0556**	**0.0000**	**288.5829**	**288.5829**	**0.0140**	**0.0299**	**297.8352**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1412	1.3043	1.3573	2.4000e-003		0.0591	0.0591		0.0550	0.0550	0.0000	204.5491	204.5491	0.0589	0.0000	206.0224
Total	**0.1412**	**1.3043**	**1.3573**	**2.4000e-003**		**0.0591**	**0.0591**		**0.0550**	**0.0550**	**0.0000**	**204.5491**	**204.5491**	**0.0589**	**0.0000**	**206.0224**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0108	0.4886	0.1763	2.1500e-003	0.0684	2.5500e-003	0.0710	0.0198	2.4400e-003	0.0222	0.0000	218.7021	218.7021	0.0140	0.0323	228.6736
Worker	0.0429	0.0265	0.3837	1.2900e-003	0.1650	7.6000e-004	0.1658	0.0439	7.0000e-004	0.0446	0.0000	121.0911	121.0911	2.8400e-003	2.8800e-003	122.0194
Total	**0.0537**	**0.5151**	**0.5600**	**3.4400e-003**	**0.2334**	**3.3100e-003**	**0.2367**	**0.0637**	**3.1400e-003**	**0.0668**	**0.0000**	**339.7932**	**339.7932**	**0.0169**	**0.0352**	**350.6929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0957	2.1152	1.5935	2.4000e-003		0.0805	0.0805		0.0805	0.0805	0.0000	204.5489	204.5489	0.0589	0.0000	206.0222
Total	**0.0957**	**2.1152**	**1.5935**	**2.4000e-003**		**0.0805**	**0.0805**		**0.0805**	**0.0805**	**0.0000**	**204.5489**	**204.5489**	**0.0589**	**0.0000**	**206.0222**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0108	0.4886	0.1763	2.1500e-003	0.0684	2.5500e-003	0.0710	0.0198	2.4400e-003	0.0222	0.0000	218.7021	218.7021	0.0140	0.0323	228.6736
Worker	0.0429	0.0265	0.3837	1.2900e-003	0.1650	7.6000e-004	0.1658	0.0439	7.0000e-004	0.0446	0.0000	121.0911	121.0911	2.8400e-003	2.8800e-003	122.0194
Total	**0.0537**	**0.5151**	**0.5600**	**3.4400e-003**	**0.2334**	**3.3100e-003**	**0.2367**	**0.0637**	**3.1400e-003**	**0.0668**	**0.0000**	**339.7932**	**339.7932**	**0.0169**	**0.0352**	**350.6929**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.0000e-004	4.6200e-003	5.1500e-003	1.0000e-005		2.0000e-004	2.0000e-004		1.8000e-004	1.8000e-004	0.0000	0.7810	0.7810	2.2000e-004	0.0000	0.7866
Total	**5.0000e-004**	**4.6200e-003**	**5.1500e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.7810**	**0.7810**	**2.2000e-004**	**0.0000**	**0.7866**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.8400e-003	6.7000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.7000e-004	8.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.8183	0.8183	5.0000e-005	1.2000e-004	0.8557
Worker	1.6000e-004	9.0000e-005	1.3800e-003	0.0000	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4512	0.4512	1.0000e-005	1.0000e-005	0.4545
Total	**2.0000e-004**	**1.9300e-003**	**2.0500e-003**	**1.0000e-005**	**8.9000e-004**	**1.0000e-005**	**9.0000e-004**	**2.5000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.2695**	**1.2695**	**6.0000e-005**	**1.3000e-004**	**1.3102**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.7000e-004	8.0700e-003	6.0800e-003	1.0000e-005		3.1000e-004	3.1000e-004		3.1000e-004	3.1000e-004	0.0000	0.7810	0.7810	2.2000e-004	0.0000	0.7866
Total	**3.7000e-004**	**8.0700e-003**	**6.0800e-003**	**1.0000e-005**		**3.1000e-004**	**3.1000e-004**		**3.1000e-004**	**3.1000e-004**	**0.0000**	**0.7810**	**0.7810**	**2.2000e-004**	**0.0000**	**0.7866**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.8400e-003	6.7000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.7000e-004	8.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.8183	0.8183	5.0000e-005	1.2000e-004	0.8557
Worker	1.6000e-004	9.0000e-005	1.3800e-003	0.0000	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4512	0.4512	1.0000e-005	1.0000e-005	0.4545
Total	**2.0000e-004**	**1.9300e-003**	**2.0500e-003**	**1.0000e-005**	**8.9000e-004**	**1.0000e-005**	**9.0000e-004**	**2.5000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.2695**	**1.2695**	**6.0000e-005**	**1.3000e-004**	**1.3102**

3.6 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3800e-003	0.0546	0.0794	1.1000e-004		2.7000e-003	2.7000e-003		2.4800e-003	2.4800e-003	0.0000	9.7306	9.7306	3.1500e-003	0.0000	9.8093
Total	**5.3800e-003**	**0.0546**	**0.0794**	**1.1000e-004**	**0.0000**	**2.7000e-003**	**2.7000e-003**	**0.0000**	**2.4800e-003**	**2.4800e-003**	**0.0000**	**9.7306**	**9.7306**	**3.1500e-003**	**0.0000**	**9.8093**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	1.0800e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4887	0.4887	3.0000e-005	7.0000e-005	0.5109
Worker	4.0000e-004	2.6000e-004	3.5800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.0901	1.0901	3.0000e-005	3.0000e-005	1.0988
Total	**4.2000e-004**	**1.3400e-003**	**3.9700e-003**	**1.0000e-005**	**1.6000e-003**	**2.0000e-005**	**1.6200e-003**	**4.3000e-004**	**2.0000e-005**	**4.4000e-004**	**0.0000**	**1.5787**	**1.5787**	**6.0000e-005**	**1.0000e-004**	**1.6097**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1800e-003	0.1069	0.0833	1.1000e-004		4.3200e-003	4.3200e-003		4.3200e-003	4.3200e-003	0.0000	9.7306	9.7306	3.1500e-003	0.0000	9.8093
Total	**5.1800e-003**	**0.1069**	**0.0833**	**1.1000e-004**	**0.0000**	**4.3200e-003**	**4.3200e-003**	**0.0000**	**4.3200e-003**	**4.3200e-003**	**0.0000**	**9.7306**	**9.7306**	**3.1500e-003**	**0.0000**	**9.8093**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	1.0800e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4887	0.4887	3.0000e-005	7.0000e-005	0.5109
Worker	4.0000e-004	2.6000e-004	3.5800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.0901	1.0901	3.0000e-005	3.0000e-005	1.0988
Total	**4.2000e-004**	**1.3400e-003**	**3.9700e-003**	**1.0000e-005**	**1.6000e-003**	**2.0000e-005**	**1.6200e-003**	**4.3000e-004**	**2.0000e-005**	**4.4000e-004**	**0.0000**	**1.5787**	**1.5787**	**6.0000e-005**	**1.0000e-004**	**1.6097**

3.7 Utility Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0117	0.1040	0.1368	1.8000e-004		4.5800e-003	4.5800e-003		4.2200e-003	4.2200e-003	0.0000	16.1501	16.1501	5.2200e-003	0.0000	16.2806
Total	**0.0117**	**0.1040**	**0.1368**	**1.8000e-004**		**4.5800e-003**	**4.5800e-003**		**4.2200e-003**	**4.2200e-003**	**0.0000**	**16.1501**	**16.1501**	**5.2200e-003**	**0.0000**	**16.2806**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Utility Trenching - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6000e-004	0.0205	7.3400e-003	9.0000e-005	2.8400e-003	1.1000e-004	2.9400e-003	8.2000e-004	1.0000e-004	9.2000e-004	0.0000	9.2419	9.2419	5.7000e-004	1.3600e-003	9.6621
Worker	5.6300e-003	3.6800e-003	0.0507	1.7000e-004	0.0206	1.0000e-004	0.0207	5.4700e-003	9.0000e-005	5.5600e-003	0.0000	15.4625	15.4625	3.9000e-004	3.8000e-004	15.5865
Total	**6.0900e-003**	**0.0242**	**0.0581**	**2.6000e-004**	**0.0234**	**2.1000e-004**	**0.0236**	**6.2900e-003**	**1.9000e-004**	**6.4800e-003**	**0.0000**	**24.7044**	**24.7044**	**9.6000e-004**	**1.7400e-003**	**25.2486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2500e-003	0.1704	0.1327	1.8000e-004		6.8900e-003	6.8900e-003		6.8900e-003	6.8900e-003	0.0000	16.1500	16.1500	5.2200e-003	0.0000	16.2806
Total	**8.2500e-003**	**0.1704**	**0.1327**	**1.8000e-004**		**6.8900e-003**	**6.8900e-003**		**6.8900e-003**	**6.8900e-003**	**0.0000**	**16.1500**	**16.1500**	**5.2200e-003**	**0.0000**	**16.2806**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Utility Trenching - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6000e-004	0.0205	7.3400e-003	9.0000e-005	2.8400e-003	1.1000e-004	2.9400e-003	8.2000e-004	1.0000e-004	9.2000e-004	0.0000	9.2419	9.2419	5.7000e-004	1.3600e-003	9.6621
Worker	5.6300e-003	3.6800e-003	0.0507	1.7000e-004	0.0206	1.0000e-004	0.0207	5.4700e-003	9.0000e-005	5.5600e-003	0.0000	15.4625	15.4625	3.9000e-004	3.8000e-004	15.5865
Total	**6.0900e-003**	**0.0242**	**0.0581**	**2.6000e-004**	**0.0234**	**2.1000e-004**	**0.0236**	**6.2900e-003**	**1.9000e-004**	**6.4800e-003**	**0.0000**	**24.7044**	**24.7044**	**9.6000e-004**	**1.7400e-003**	**25.2486**

3.8 Fine Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9200e-003	0.0000	2.9200e-003	3.1000e-004	0.0000	3.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1200e-003	0.0264	0.0273	3.0000e-005		1.5900e-003	1.5900e-003		1.4600e-003	1.4600e-003	0.0000	3.0451	3.0451	9.8000e-004	0.0000	3.0697
Total	**3.1200e-003**	**0.0264**	**0.0273**	**3.0000e-005**	**2.9200e-003**	**1.5900e-003**	**4.5100e-003**	**3.1000e-004**	**1.4600e-003**	**1.7700e-003**	**0.0000**	**3.0451**	**3.0451**	**9.8000e-004**	**0.0000**	**3.0697**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Fine Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.6000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1148	0.1148	1.0000e-005	2.0000e-005	0.1200
Worker	9.0000e-005	6.0000e-005	8.1000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2542	0.2542	1.0000e-005	1.0000e-005	0.2562
Total	**1.0000e-004**	**3.2000e-004**	**9.0000e-004**	**0.0000**	**3.9000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3690**	**0.3690**	**2.0000e-005**	**3.0000e-005**	**0.3762**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3100e-003	0.0000	1.3100e-003	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0329	0.0256	3.0000e-005		1.3300e-003	1.3300e-003		1.3300e-003	1.3300e-003	0.0000	3.0451	3.0451	9.8000e-004	0.0000	3.0697
Total	**1.5900e-003**	**0.0329**	**0.0256**	**3.0000e-005**	**1.3100e-003**	**1.3300e-003**	**2.6400e-003**	**1.4000e-004**	**1.3300e-003**	**1.4700e-003**	**0.0000**	**3.0451**	**3.0451**	**9.8000e-004**	**0.0000**	**3.0697**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Fine Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.6000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1148	0.1148	1.0000e-005	2.0000e-005	0.1200
Worker	9.0000e-005	6.0000e-005	8.1000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2542	0.2542	1.0000e-005	1.0000e-005	0.2562
Total	**1.0000e-004**	**3.2000e-004**	**9.0000e-004**	**0.0000**	**3.9000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3690**	**0.3690**	**2.0000e-005**	**3.0000e-005**	**0.3762**

3.9 Finishing/Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3087					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7600e-003	0.0479	0.0740	1.0000e-004		2.2000e-003	2.2000e-003		2.0200e-003	2.0200e-003	0.0000	9.0617	9.0617	2.9300e-003	0.0000	9.1350
Total	**0.3134**	**0.0479**	**0.0740**	**1.0000e-004**		**2.2000e-003**	**2.2000e-003**		**2.0200e-003**	**2.0200e-003**	**0.0000**	**9.0617**	**9.0617**	**2.9300e-003**	**0.0000**	**9.1350**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	7.6900e-003	2.7800e-003	3.0000e-005	1.0800e-003	4.0000e-005	1.1200e-003	3.1000e-004	4.0000e-005	3.5000e-004	0.0000	3.4433	3.4433	2.2000e-004	5.1000e-004	3.6003
Worker	2.7000e-003	1.6700e-003	0.0242	8.0000e-005	0.0104	5.0000e-005	0.0104	2.7700e-003	4.0000e-005	2.8100e-003	0.0000	7.6260	7.6260	1.8000e-004	1.8000e-004	7.6844
Total	**2.8700e-003**	**9.3600e-003**	**0.0269**	**1.1000e-004**	**0.0115**	**9.0000e-005**	**0.0116**	**3.0800e-003**	**8.0000e-005**	**3.1600e-003**	**0.0000**	**11.0693**	**11.0693**	**4.0000e-004**	**6.9000e-004**	**11.2847**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3087					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8200e-003	0.0995	0.0775	1.0000e-004		4.0200e-003	4.0200e-003		4.0200e-003	4.0200e-003	0.0000	9.0617	9.0617	2.9300e-003	0.0000	9.1350
Total	**0.3135**	**0.0995**	**0.0775**	**1.0000e-004**		**4.0200e-003**	**4.0200e-003**		**4.0200e-003**	**4.0200e-003**	**0.0000**	**9.0617**	**9.0617**	**2.9300e-003**	**0.0000**	**9.1350**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	7.6900e-003	2.7800e-003	3.0000e-005	1.0800e-003	4.0000e-005	1.1200e-003	3.1000e-004	4.0000e-005	3.5000e-004	0.0000	3.4433	3.4433	2.2000e-004	5.1000e-004	3.6003
Worker	2.7000e-003	1.6700e-003	0.0242	8.0000e-005	0.0104	5.0000e-005	0.0104	2.7700e-003	4.0000e-005	2.8100e-003	0.0000	7.6260	7.6260	1.8000e-004	1.8000e-004	7.6844
Total	**2.8700e-003**	**9.3600e-003**	**0.0269**	**1.1000e-004**	**0.0115**	**9.0000e-005**	**0.0116**	**3.0800e-003**	**8.0000e-005**	**3.1600e-003**	**0.0000**	**11.0693**	**11.0693**	**4.0000e-004**	**6.9000e-004**	**11.2847**

3.9 Finishing/Landscaping - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.6800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-005	6.7000e-004	1.1200e-003	0.0000		3.0000e-005	3.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.1374	0.1374	4.0000e-005	0.0000	0.1385
Total	**4.7500e-003**	**6.7000e-004**	**1.1200e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.1374**	**0.1374**	**4.0000e-005**	**0.0000**	**0.1385**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.2000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0512	0.0512	0.0000	1.0000e-005	0.0535
Worker	4.0000e-005	2.0000e-005	3.5000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1128	0.1128	0.0000	0.0000	0.1136
Total	**4.0000e-005**	**1.4000e-004**	**3.9000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1639**	**0.1639**	**0.0000**	**1.0000e-005**	**0.1671**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.6800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-005	1.5100e-003	1.1700e-003	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005	0.0000	0.1374	0.1374	4.0000e-005	0.0000	0.1385
Total	**4.7500e-003**	**1.5100e-003**	**1.1700e-003**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**	**0.0000**	**0.1374**	**0.1374**	**4.0000e-005**	**0.0000**	**0.1385**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.2000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0512	0.0512	0.0000	1.0000e-005	0.0535
Worker	4.0000e-005	2.0000e-005	3.5000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1128	0.1128	0.0000	0.0000	0.1136
Total	**4.0000e-005**	**1.4000e-004**	**3.9000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1639**	**0.1639**	**0.0000**	**1.0000e-005**	**0.1671**

3.10 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	6.0100e-003	7.5900e-003	1.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.8020	0.8020	9.0000e-005	0.0000	0.8042
Total	**0.3144**	**6.0100e-003**	**7.5900e-003**	**1.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.8020**	**0.8020**	**9.0000e-005**	**0.0000**	**0.8042**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	6.5000e-004	2.4000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.2922	0.2922	2.0000e-005	4.0000e-005	0.3055
Worker	1.1000e-004	7.0000e-005	1.0300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3235	0.3235	1.0000e-005	1.0000e-005	0.3260
Total	**1.2000e-004**	**7.2000e-004**	**1.2700e-003**	**0.0000**	**5.3000e-004**	**0.0000**	**5.3000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.6157**	**0.6157**	**3.0000e-005**	**5.0000e-005**	**0.6315**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	7.2000e-003	6.3800e-003	1.0000e-005		4.4000e-004	4.4000e-004		4.4000e-004	4.4000e-004	0.0000	0.8020	0.8020	9.0000e-005	0.0000	0.8042
Total	**0.3138**	**7.2000e-003**	**6.3800e-003**	**1.0000e-005**		**4.4000e-004**	**4.4000e-004**		**4.4000e-004**	**4.4000e-004**	**0.0000**	**0.8020**	**0.8020**	**9.0000e-005**	**0.0000**	**0.8042**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	6.5000e-004	2.4000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.2922	0.2922	2.0000e-005	4.0000e-005	0.3055
Worker	1.1000e-004	7.0000e-005	1.0300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3235	0.3235	1.0000e-005	1.0000e-005	0.3260
Total	**1.2000e-004**	**7.2000e-004**	**1.2700e-003**	**0.0000**	**5.3000e-004**	**0.0000**	**5.3000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.6157**	**0.6157**	**3.0000e-005**	**5.0000e-005**	**0.6315**

3.11 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7900e-003	0.0288	0.0388	5.0000e-005		1.4400e-003	1.4400e-003		1.3200e-003	1.3200e-003	0.0000	4.7947	4.7947	1.5500e-003	0.0000	4.8334
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7900e-003**	**0.0288**	**0.0388**	**5.0000e-005**		**1.4400e-003**	**1.4400e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**4.7947**	**4.7947**	**1.5500e-003**	**0.0000**	**4.8334**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	9.8000e-004	3.5000e-004	0.0000	1.4000e-004	1.0000e-005	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4382	0.4382	3.0000e-005	6.0000e-005	0.4582
Worker	3.4000e-004	2.1000e-004	3.0800e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	0.9706	0.9706	2.0000e-005	2.0000e-005	0.9780
Total	**3.6000e-004**	**1.1900e-003**	**3.4300e-003**	**1.0000e-005**	**1.4600e-003**	**2.0000e-005**	**1.4700e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.4088**	**1.4088**	**5.0000e-005**	**8.0000e-005**	**1.4362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5600e-003	0.0528	0.0412	5.0000e-005		2.1400e-003	2.1400e-003		2.1400e-003	2.1400e-003	0.0000	4.7947	4.7947	1.5500e-003	0.0000	4.8334
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5600e-003**	**0.0528**	**0.0412**	**5.0000e-005**		**2.1400e-003**	**2.1400e-003**		**2.1400e-003**	**2.1400e-003**	**0.0000**	**4.7947**	**4.7947**	**1.5500e-003**	**0.0000**	**4.8334**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	9.8000e-004	3.5000e-004	0.0000	1.4000e-004	1.0000e-005	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4382	0.4382	3.0000e-005	6.0000e-005	0.4582
Worker	3.4000e-004	2.1000e-004	3.0800e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	0.9706	0.9706	2.0000e-005	2.0000e-005	0.9780
Total	**3.6000e-004**	**1.1900e-003**	**3.4300e-003**	**1.0000e-005**	**1.4600e-003**	**2.0000e-005**	**1.4700e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.4088**	**1.4088**	**5.0000e-005**	**8.0000e-005**	**1.4362**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3256	0.2837	2.9865	5.8700e-003	0.6666	3.9700e-003	0.6706	0.1781	3.6800e-003	0.1817	0.0000	555.4686	555.4686	0.0396	0.0252	563.9698
Unmitigated	0.3256	0.2837	2.9865	5.8700e-003	0.6666	3.9700e-003	0.6706	0.1781	3.6800e-003	0.1817	0.0000	555.4686	555.4686	0.0396	0.0252	563.9698

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
Hotel	956.81	956.81	956.81	1,817,873	1,817,873
Total	956.81	956.81	956.81	1,817,873	1,817,873

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.465403	0.073585	0.235906	0.146720	0.025583	0.006412	0.010355	0.002060	0.001446	0.000572	0.028871	0.000432	0.002657
Hotel	0.465403	0.073585	0.235906	0.146720	0.025583	0.006412	0.010355	0.002060	0.001446	0.000572	0.028871	0.000432	0.002657

5.0 Energy Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	64.4889	64.4889	0.0104	1.2600e-003	65.1266
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	67.7605	67.7605	0.0110	1.3300e-003	68.4306
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	272307	25.1949	4.0800e-003	4.9000e-004	25.4440
Hotel	460051	42.5657	6.8900e-003	8.3000e-004	42.9866
Total		**67.7605**	**0.0110**	**1.3200e-003**	**68.4306**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	250522	23.1793	3.7500e-003	4.5000e-004	23.4085
Hotel	446476	41.3096	6.6800e-003	8.1000e-004	41.7181
Total		**64.4889**	**0.0104**	**1.2600e-003**	**65.1266**

6.0 Area Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2615	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Unmitigated	0.2615	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2299					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Total	**0.2615**	**2.0000e-005**	**2.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.1500e-003**	**5.1500e-003**	**1.0000e-005**	**0.0000**	**5.4800e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2299					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Total	**0.2615**	**2.0000e-005**	**2.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.1500e-003**	**5.1500e-003**	**1.0000e-005**	**0.0000**	**5.4800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.5306	0.1351	3.2200e-003	7.8689
Unmitigated	3.5306	0.1351	3.2200e-003	7.8689

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	4.13478 / 0.45942	3.5306	0.1351	3.2200e-003	7.8689
Total		**3.5306**	**0.1351**	**3.2200e-003**	**7.8689**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	4.13478 / 0.45942	3.5306	0.1351	3.2200e-003	7.8689
Total		**3.5306**	**0.1351**	**3.2200e-003**	**7.8689**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.1149	1.0706	0.0000	44.8789
Unmitigated	18.1149	1.0706	0.0000	44.8789

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	89.24	18.1149	1.0706	0.0000	44.8789
Total		**18.1149**	**1.0706**	**0.0000**	**44.8789**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	89.24	18.1149	1.0706	0.0000	44.8789
Total		**18.1149**	**1.0706**	**0.0000**	**44.8789**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.14	50	670	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (600 - 750 HP)	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Total	**0.0275**	**0.0768**	**0.0701**	**1.3000e-004**		**4.0400e-003**	**4.0400e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

11.0 Vegetation

Hotel Moxy Project - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Hotel Moxy Project

San Mateo County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	125.00	Space	0.26	51,868.00	0
Hotel	163.00	Room	0.50	58,014.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site is 0.76 acres

Construction Phase - Construction schedule provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Trips and VMT - Based on schedule provided by client

Demolition - demolition of existing office space

Grading - proposed project would require 522 CY of soil fill and 83 CY of cut during rough grading

Vehicle Trips - Based on a net trip generation of 957 ADT

Energy Use - No natural gas

Construction Off-road Equipment Mitigation - use of construction equipment tier 2

Area Mitigation - Project would not use natural gas

Energy Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - Proposed project would include a diesel emergency generator

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	5.00	67.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	NumDays	100.00	481.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	NumDays	2.00	23.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	NumDays	1.00	23.00
tblEnergyUse	NT24NG	7.13	0.00
tblEnergyUse	T24NG	29.09	0.00
tblGrading	MaterialImported	0.00	439.00
tblLandUse	LandUseSquareFeet	50,000.00	51,868.00
tblLandUse	LandUseSquareFeet	236,676.00	58,014.00
tblLandUse	LotAcreage	1.13	0.26
tblLandUse	LotAcreage	5.43	0.50
tblOffRoadEquipment	HorsePower	78.00	35.00
tblOffRoadEquipment	HorsePower	81.00	30.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	89.00	74.00
tblOffRoadEquipment	HorsePower	187.00	70.00
tblOffRoadEquipment	HorsePower	187.00	70.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	HorsePower	80.00	85.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	84.00	40.00
tblOffRoadEquipment	HorsePower	8.00	60.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	46.00	25.00
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.74	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.48
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	670.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.14
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	18.00	80.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	23.00	16.00
tblTripsAndVMT	WorkerTripNumber	46.00	160.00
tblTripsAndVMT	WorkerTripNumber	10.00	16.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	5.00	60.00
tblTripsAndVMT	WorkerTripNumber	9.00	40.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	SU_TR	5.95	5.87
tblVehicleTrips	WD_TR	8.36	5.87

2.0 Emissions Summary

Hotel Moxy Project - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.0815	35.7110	38.5449	0.0844	5.1186	1.5887	6.6634	1.0217	1.4682	2.4538	0.0000	8,560.3794	8,560.3794	1.6302	0.4529	8,733.6212
2024	56.5949	21.2723	24.2280	0.0614	2.8995	0.8662	3.7657	0.6991	0.8052	1.5043	0.0000	6,234.5938	6,234.5938	0.9650	0.3331	6,356.6445
2025	10.9720	14.5732	17.5307	0.0511	2.2176	0.4756	2.6932	0.6011	0.4431	1.0442	0.0000	5,251.8549	5,251.8549	0.7465	0.3091	5,362.6316
Maximum	**56.5949**	**35.7110**	**38.5449**	**0.0844**	**5.1186**	**1.5887**	**6.6634**	**1.0217**	**1.4682**	**2.4538**	**0.0000**	**8,560.3794**	**8,560.3794**	**1.6302**	**0.4529**	**8,733.6212**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.6163	49.1954	39.6057	0.0844	3.6464	1.7694	5.3383	0.8242	1.7676	2.5490	0.0000	8,560.3794	8,560.3794	1.6302	0.4529	8,733.6212
2024	55.8806	30.3836	25.6600	0.0614	2.6078	1.0700	3.6778	0.6676	1.0684	1.7360	0.0000	6,234.5938	6,234.5938	0.9650	0.3331	6,356.6445
2025	10.7075	23.1503	19.5156	0.0511	2.2176	0.7642	2.9817	0.6011	0.7627	1.3639	0.0000	5,251.8549	5,251.8549	0.7465	0.3091	5,362.6316
Maximum	**55.8806**	**49.1954**	**39.6057**	**0.0844**	**3.6464**	**1.7694**	**5.3383**	**0.8242**	**1.7676**	**2.5490**	**0.0000**	**8,560.3794**	**8,560.3794**	**1.6302**	**0.4529**	**8,733.6212**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.41**	**-43.56**	**-5.58**	**0.00**	**17.23**	**-22.97**	**8.57**	**9.87**	**-32.47**	**-12.92**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4343	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.9354	1.4189	15.7637	0.0337	3.8210	0.0218	3.8428	1.0171	0.0203	1.0374		3,506.9888	3,506.9888	0.2238	0.1440	3,555.5006
Stationary	0.1539	0.4302	0.3925	7.4000e-004		0.0226	0.0226		0.0226	0.0226		78.7464	78.7464	0.0110		79.0224
Total	**3.5236**	**1.8494**	**16.1855**	**0.0344**	**3.8210**	**0.0446**	**3.8655**	**1.0171**	**0.0430**	**1.0601**		**3,585.7983**	**3,585.7983**	**0.2350**	**0.1440**	**3,634.5901**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4343	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.9354	1.4189	15.7637	0.0337	3.8210	0.0218	3.8428	1.0171	0.0203	1.0374		3,506.9888	3,506.9888	0.2238	0.1440	3,555.5006
Stationary	0.1539	0.4302	0.3925	7.4000e-004		0.0226	0.0226		0.0226	0.0226		78.7464	78.7464	0.0110		79.0224
Total	**3.5236**	**1.8494**	**16.1855**	**0.0344**	**3.8210**	**0.0446**	**3.8655**	**1.0171**	**0.0430**	**1.0601**		**3,585.7983**	**3,585.7983**	**0.2350**	**0.1440**	**3,634.5901**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	3/1/2023	5	43	
2	Asphalt Demoltion	Demolition	3/1/2023	3/15/2023	5	11	
3	Rough Grading	Grading	3/1/2023	3/31/2023	5	23	
4	Building Construction	Building Construction	3/1/2023	1/1/2025	5	481	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5	Site Preparation	Site Preparation	3/15/2023	4/15/2023	5	23	
6	Utility Trenching	Trenching	4/1/2023	8/1/2023	5	87	
7	Fine Grading	Grading	10/1/2024	10/15/2024	5	11	
8	Finishing/Landscaping	Architectural Coating	10/1/2024	1/1/2025	5	67	
9	Architectural Coating	Architectural Coating	10/15/2024	11/1/2024	5	14	
10	Paving	Paving	11/1/2024	11/29/2024	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 23

Acres of Paving: 0.26

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 87,021; Non-Residential Outdoor: 29,007; Striped Parking Area: 3,112 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	30	0.73
Demolition	Excavators	3	8.00	50	0.37
Asphalt Demoltion	Excavators	1	8.00	50	0.37
Rough Grading	Excavators	3	8.00	50	0.40
Rough Grading	Graders	2	8.00	70	0.41
Rough Grading	Plate Compactors	1	8.00	60	0.43
Rough Grading	Tractors/Loaders/Backhoes	3	8.00	75	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	74	0.20
Building Construction	Generator Sets	1	8.00	40	0.37
Building Construction	Tractors/Loaders/Backhoes	3	7.00	75	0.37
Building Construction	Welders	1	8.00	25	0.45
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	75	0.37
Utility Trenching	Excavators	1	8.00	50	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Utility Trenching	Tractors/Loaders/Backhoes	1	8.00	75	0.37
Fine Grading	Excavators	1	6.00	50	0.40
Fine Grading	Graders	1	8.00	70	0.41
Fine Grading	Tractors/Loaders/Backhoes	1	8.00	75	0.37
Finishing/Landscaping	Tractors/Loaders/Backhoes	1	8.00	75	0.48
Architectural Coating	Air Compressors	1	6.00	35	0.48
Paving	Rollers	1	8.00	85	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	75	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	20.00	5.00	62.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demoltion	1	8.00	1.00	66.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	9	16.00	2.00	55.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	160.00	80.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	16.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	2	60.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	3	8.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	1	40.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	2	16.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3123	0.0000	0.3123	0.0473	0.0000	0.0473			0.0000			0.0000
Off-Road	0.6747	4.9911	5.8331	8.0100e-003		0.1882	0.1882		0.1773	0.1773		733.8225	733.8225	0.1872		738.5024
Total	**0.6747**	**4.9911**	**5.8331**	**8.0100e-003**	**0.3123**	**0.1882**	**0.5005**	**0.0473**	**0.1773**	**0.2246**		**733.8225**	**733.8225**	**0.1872**		**738.5024**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4200e-003	0.2187	0.0740	9.3000e-004	0.0251	1.4800e-003	0.0266	6.8700e-003	1.4200e-003	8.2900e-003		108.2686	108.2686	0.0109	0.0174	113.7380
Vendor	5.3800e-003	0.2276	0.0833	1.0500e-003	0.0338	1.2100e-003	0.0350	9.7200e-003	1.1600e-003	0.0109		117.0736	117.0736	7.2100e-003	0.0173	122.3931
Worker	0.0435	0.0248	0.4050	1.3500e-003	0.1643	7.6000e-004	0.1651	0.0436	7.0000e-004	0.0443		137.7250	137.7250	3.0700e-003	2.9800e-003	138.6892
Total	**0.0523**	**0.4711**	**0.5623**	**3.3300e-003**	**0.2232**	**3.4500e-003**	**0.2267**	**0.0602**	**3.2800e-003**	**0.0635**		**363.0672**	**363.0672**	**0.0212**	**0.0377**	**374.8202**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1405	0.0000	0.1405	0.0213	0.0000	0.0213			0.0000			0.0000
Off-Road	0.3372	6.4379	5.2054	8.0100e-003		0.2961	0.2961		0.2961	0.2961	0.0000	733.8225	733.8225	0.1872		738.5024
Total	**0.3372**	**6.4379**	**5.2054**	**8.0100e-003**	**0.1405**	**0.2961**	**0.4366**	**0.0213**	**0.2961**	**0.3174**	**0.0000**	**733.8225**	**733.8225**	**0.1872**		**738.5024**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.4200e-003	0.2187	0.0740	9.3000e-004	0.0251	1.4800e-003	0.0266	6.8700e-003	1.4200e-003	8.2900e-003		108.2686	108.2686	0.0109	0.0174	113.7380
Vendor	5.3800e-003	0.2276	0.0833	1.0500e-003	0.0338	1.2100e-003	0.0350	9.7200e-003	1.1600e-003	0.0109		117.0736	117.0736	7.2100e-003	0.0173	122.3931
Worker	0.0435	0.0248	0.4050	1.3500e-003	0.1643	7.6000e-004	0.1651	0.0436	7.0000e-004	0.0443		137.7250	137.7250	3.0700e-003	2.9800e-003	138.6892
Total	**0.0523**	**0.4711**	**0.5623**	**3.3300e-003**	**0.2232**	**3.4500e-003**	**0.2267**	**0.0602**	**3.2800e-003**	**0.0635**		**363.0672**	**363.0672**	**0.0212**	**0.0377**	**374.8202**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Asphalt Demoltion - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3018	0.0000	1.3018	0.1971	0.0000	0.1971			0.0000			0.0000
Off-Road	0.1469	1.1725	1.3815	1.7700e-003		0.0455	0.0455		0.0419	0.0419		171.4390	171.4390	0.0555		172.8252
Total	**0.1469**	**1.1725**	**1.3815**	**1.7700e-003**	**1.3018**	**0.0455**	**1.3473**	**0.1971**	**0.0419**	**0.2390**		**171.4390**	**171.4390**	**0.0555**		**172.8252**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0142	0.9101	0.3080	3.8600e-003	0.1045	6.1600e-003	0.1106	0.0286	5.8900e-003	0.0345		450.5372	450.5372	0.0452	0.0726	473.2967
Vendor	1.0800e-003	0.0455	0.0167	2.1000e-004	6.7600e-003	2.4000e-004	7.0000e-003	1.9400e-003	2.3000e-004	2.1800e-003		23.4147	23.4147	1.4400e-003	3.4500e-003	24.4786
Worker	0.0174	9.9300e-003	0.1620	5.4000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		55.0900	55.0900	1.2300e-003	1.1900e-003	55.4757
Total	**0.0327**	**0.9656**	**0.4867**	**4.6100e-003**	**0.1770**	**6.7000e-003**	**0.1837**	**0.0480**	**6.4000e-003**	**0.0544**		**529.0419**	**529.0419**	**0.0479**	**0.0772**	**553.2510**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Asphalt Demoltion - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5858	0.0000	0.5858	0.0887	0.0000	0.0887			0.0000			0.0000
Off-Road	0.0751	1.5499	1.2073	1.7700e-003		0.0627	0.0627		0.0627	0.0627	0.0000	171.4390	171.4390	0.0555		172.8252
Total	**0.0751**	**1.5499**	**1.2073**	**1.7700e-003**	**0.5858**	**0.0627**	**0.6484**	**0.0887**	**0.0627**	**0.1513**	**0.0000**	**171.4390**	**171.4390**	**0.0555**		**172.8252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0142	0.9101	0.3080	3.8600e-003	0.1045	6.1600e-003	0.1106	0.0286	5.8900e-003	0.0345		450.5372	450.5372	0.0452	0.0726	473.2967
Vendor	1.0800e-003	0.0455	0.0167	2.1000e-004	6.7600e-003	2.4000e-004	7.0000e-003	1.9400e-003	2.3000e-004	2.1800e-003		23.4147	23.4147	1.4400e-003	3.4500e-003	24.4786
Worker	0.0174	9.9300e-003	0.1620	5.4000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		55.0900	55.0900	1.2300e-003	1.1900e-003	55.4757
Total	**0.0327**	**0.9656**	**0.4867**	**4.6100e-003**	**0.1770**	**6.7000e-003**	**0.1837**	**0.0480**	**6.4000e-003**	**0.0544**		**529.0419**	**529.0419**	**0.0479**	**0.0772**	**553.2510**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Rough Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.0627	0.0000	1.0627	0.1148	0.0000	0.1148			0.0000			0.0000
Off-Road	1.5554	13.1759	13.9365	0.0179		0.7645	0.7645		0.7033	0.7033		1,730.6391	1,730.6391	0.5597		1,744.6322
Total	**1.5554**	**13.1759**	**13.9365**	**0.0179**	**1.0627**	**0.7645**	**1.8272**	**0.1148**	**0.7033**	**0.8182**		**1,730.6391**	**1,730.6391**	**0.5597**		**1,744.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.6800e-003	0.3627	0.1228	1.5400e-003	0.0416	2.4500e-003	0.0441	0.0114	2.3500e-003	0.0138		179.5619	179.5619	0.0180	0.0289	188.6328
Vendor	2.1500e-003	0.0910	0.0333	4.2000e-004	0.0135	4.8000e-004	0.0140	3.8900e-003	4.6000e-004	4.3500e-003		46.8294	46.8294	2.8800e-003	6.9000e-003	48.9572
Worker	0.0348	0.0199	0.3240	1.0800e-003	0.1314	6.1000e-004	0.1321	0.0349	5.6000e-004	0.0354		110.1800	110.1800	2.4500e-003	2.3800e-003	110.9513
Total	**0.0427**	**0.4736**	**0.4801**	**3.0400e-003**	**0.1866**	**3.5400e-003**	**0.1902**	**0.0502**	**3.3700e-003**	**0.0535**		**336.5714**	**336.5714**	**0.0234**	**0.0382**	**348.5413**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Rough Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4782	0.0000	0.4782	0.0517	0.0000	0.0517			0.0000			0.0000
Off-Road	0.8139	16.8096	13.0938	0.0179		0.6795	0.6795		0.6795	0.6795	0.0000	1,730.6391	1,730.6391	0.5597		1,744.6322
Total	**0.8139**	**16.8096**	**13.0938**	**0.0179**	**0.4782**	**0.6795**	**1.1577**	**0.0517**	**0.6795**	**0.7311**	**0.0000**	**1,730.6391**	**1,730.6391**	**0.5597**		**1,744.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.6800e-003	0.3627	0.1228	1.5400e-003	0.0416	2.4500e-003	0.0441	0.0114	2.3500e-003	0.0138		179.5619	179.5619	0.0180	0.0289	188.6328
Vendor	2.1500e-003	0.0910	0.0333	4.2000e-004	0.0135	4.8000e-004	0.0140	3.8900e-003	4.6000e-004	4.3500e-003		46.8294	46.8294	2.8800e-003	6.9000e-003	48.9572
Worker	0.0348	0.0199	0.3240	1.0800e-003	0.1314	6.1000e-004	0.1321	0.0349	5.6000e-004	0.0354		110.1800	110.1800	2.4500e-003	2.3800e-003	110.9513
Total	**0.0427**	**0.4736**	**0.4801**	**3.0400e-003**	**0.1866**	**3.5400e-003**	**0.1902**	**0.0502**	**3.3700e-003**	**0.0535**		**336.5714**	**336.5714**	**0.0234**	**0.0382**	**348.5413**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1424	10.6212	10.4292	0.0183		0.5075	0.5075		0.4724	0.4724		1,720.8213	1,720.8213	0.4970		1,733.2464
Total	**1.1424**	**10.6212**	**10.4292**	**0.0183**		**0.5075**	**0.5075**		**0.4724**	**0.4724**		**1,720.8213**	**1,720.8213**	**0.4970**		**1,733.2464**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0861	3.6412	1.3327	0.0168	0.5407	0.0193	0.5600	0.1556	0.0185	0.1741		1,873.1768	1,873.1768	0.1153	0.2759	1,958.2890
Worker	0.3484	0.1987	3.2400	0.0108	1.3144	6.1000e-003	1.3205	0.3486	5.6100e-003	0.3542		1,101.8003	1,101.8003	0.0245	0.0238	1,109.5134
Total	**0.4344**	**3.8399**	**4.5726**	**0.0275**	**1.8551**	**0.0254**	**1.8805**	**0.5042**	**0.0241**	**0.5283**		**2,974.9771**	**2,974.9771**	**0.1398**	**0.2998**	**3,067.8025**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7302	16.1469	12.1644	0.0183		0.6147	0.6147		0.6147	0.6147	0.0000	1,720.8213	1,720.8213	0.4970		1,733.2464
Total	**0.7302**	**16.1469**	**12.1644**	**0.0183**		**0.6147**	**0.6147**		**0.6147**	**0.6147**	**0.0000**	**1,720.8213**	**1,720.8213**	**0.4970**		**1,733.2464**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0861	3.6412	1.3327	0.0168	0.5407	0.0193	0.5600	0.1556	0.0185	0.1741		1,873.1768	1,873.1768	0.1153	0.2759	1,958.2890
Worker	0.3484	0.1987	3.2400	0.0108	1.3144	6.1000e-003	1.3205	0.3486	5.6100e-003	0.3542		1,101.8003	1,101.8003	0.0245	0.0238	1,109.5134
Total	**0.4344**	**3.8399**	**4.5726**	**0.0275**	**1.8551**	**0.0254**	**1.8805**	**0.5042**	**0.0241**	**0.5283**		**2,974.9771**	**2,974.9771**	**0.1398**	**0.2998**	**3,067.8025**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0775	9.9563	10.3613	0.0183		0.4508	0.4508		0.4199	0.4199		1,721.1972	1,721.1972	0.4959		1,733.5944
Total	**1.0775**	**9.9563**	**10.3613**	**0.0183**		**0.4508**	**0.4508**		**0.4199**	**0.4199**		**1,721.1972**	**1,721.1972**	**0.4959**		**1,733.5944**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0833	3.6050	1.3283	0.0164	0.5408	0.0194	0.5602	0.1556	0.0186	0.1742		1,839.8558	1,839.8558	0.1180	0.2714	1,923.6863
Worker	0.3295	0.1783	3.0456	0.0104	1.3144	5.8100e-003	1.3202	0.3486	5.3500e-003	0.3540		1,074.2838	1,074.2838	0.0222	0.0223	1,081.4751
Total	**0.4127**	**3.7833**	**4.3738**	**0.0268**	**1.8551**	**0.0252**	**1.8804**	**0.5042**	**0.0239**	**0.5282**		**2,914.1397**	**2,914.1397**	**0.1402**	**0.2937**	**3,005.1614**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7302	16.1469	12.1644	0.0183		0.6147	0.6147		0.6147	0.6147	0.0000	1,721.1972	1,721.1972	0.4959		1,733.5944
Total	**0.7302**	**16.1469**	**12.1644**	**0.0183**		**0.6147**	**0.6147**		**0.6147**	**0.6147**	**0.0000**	**1,721.1972**	**1,721.1972**	**0.4959**		**1,733.5944**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0833	3.6050	1.3283	0.0164	0.5408	0.0194	0.5602	0.1556	0.0186	0.1742		1,839.8558	1,839.8558	0.1180	0.2714	1,923.6863
Worker	0.3295	0.1783	3.0456	0.0104	1.3144	5.8100e-003	1.3202	0.3486	5.3500e-003	0.3540		1,074.2838	1,074.2838	0.0222	0.0223	1,081.4751
Total	**0.4127**	**3.7833**	**4.3738**	**0.0268**	**1.8551**	**0.0252**	**1.8804**	**0.5042**	**0.0239**	**0.5282**		**2,914.1397**	**2,914.1397**	**0.1402**	**0.2937**	**3,005.1614**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0082	9.2465	10.2923	0.0183		0.3938	0.3938		0.3670	0.3670		1,721.8004	1,721.8004	0.4953		1,734.1829
Total	**1.0082**	**9.2465**	**10.2923**	**0.0183**		**0.3938**	**0.3938**		**0.3670**	**0.3670**		**1,721.8004**	**1,721.8004**	**0.4953**		**1,734.1829**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0810	3.5629	1.3281	0.0161	0.5408	0.0194	0.5602	0.1556	0.0186	0.1742		1,803.6524	1,803.6524	0.1205	0.2663	1,886.0202
Worker	0.3137	0.1616	2.8727	0.0101	1.3144	5.5700e-003	1.3199	0.3486	5.1200e-003	0.3538		1,048.5537	1,048.5537	0.0202	0.0209	1,055.2967
Total	**0.3948**	**3.7245**	**4.2008**	**0.0261**	**1.8552**	**0.0250**	**1.8802**	**0.5043**	**0.0237**	**0.5279**		**2,852.2061**	**2,852.2061**	**0.1406**	**0.2872**	**2,941.3169**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7302	16.1469	12.1644	0.0183		0.6147	0.6147		0.6147	0.6147	0.0000	1,721.8004	1,721.8004	0.4953		1,734.1829
Total	**0.7302**	**16.1469**	**12.1644**	**0.0183**		**0.6147**	**0.6147**		**0.6147**	**0.6147**	**0.0000**	**1,721.8004**	**1,721.8004**	**0.4953**		**1,734.1829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0810	3.5629	1.3281	0.0161	0.5408	0.0194	0.5602	0.1556	0.0186	0.1742		1,803.6524	1,803.6524	0.1205	0.2663	1,886.0202
Worker	0.3137	0.1616	2.8727	0.0101	1.3144	5.5700e-003	1.3199	0.3486	5.1200e-003	0.3538		1,048.5537	1,048.5537	0.0202	0.0209	1,055.2967
Total	**0.3948**	**3.7245**	**4.2008**	**0.0261**	**1.8552**	**0.0250**	**1.8802**	**0.5043**	**0.0237**	**0.5279**		**2,852.2061**	**2,852.2061**	**0.1406**	**0.2872**	**2,941.3169**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4681	4.7495	6.9010	9.6300e-003		0.2345	0.2345		0.2157	0.2157		932.7108	932.7108	0.3017		940.2523
Total	**0.4681**	**4.7495**	**6.9010**	**9.6300e-003**	**0.0000**	**0.2345**	**0.2345**	**0.0000**	**0.2157**	**0.2157**		**932.7108**	**932.7108**	**0.3017**		**940.2523**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1500e-003	0.0910	0.0333	4.2000e-004	0.0135	4.8000e-004	0.0140	3.8900e-003	4.6000e-004	4.3500e-003		46.8294	46.8294	2.8800e-003	6.9000e-003	48.9572
Worker	0.0348	0.0199	0.3240	1.0800e-003	0.1314	6.1000e-004	0.1321	0.0349	5.6000e-004	0.0354		110.1800	110.1800	2.4500e-003	2.3800e-003	110.9513
Total	**0.0370**	**0.1109**	**0.3573**	**1.5000e-003**	**0.1450**	**1.0900e-003**	**0.1461**	**0.0388**	**1.0200e-003**	**0.0398**		**157.0095**	**157.0095**	**5.3300e-003**	**9.2800e-003**	**159.9086**

Hotel Moxy Project - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4503	9.2991	7.2435	9.6300e-003		0.3759	0.3759		0.3759	0.3759	0.0000	932.7108	932.7108	0.3017		940.2523
Total	**0.4503**	**9.2991**	**7.2435**	**9.6300e-003**	**0.0000**	**0.3759**	**0.3759**	**0.0000**	**0.3759**	**0.3759**	**0.0000**	**932.7108**	**932.7108**	**0.3017**		**940.2523**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1500e-003	0.0910	0.0333	4.2000e-004	0.0135	4.8000e-004	0.0140	3.8900e-003	4.6000e-004	4.3500e-003		46.8294	46.8294	2.8800e-003	6.9000e-003	48.9572
Worker	0.0348	0.0199	0.3240	1.0800e-003	0.1314	6.1000e-004	0.1321	0.0349	5.6000e-004	0.0354		110.1800	110.1800	2.4500e-003	2.3800e-003	110.9513
Total	**0.0370**	**0.1109**	**0.3573**	**1.5000e-003**	**0.1450**	**1.0900e-003**	**0.1461**	**0.0388**	**1.0200e-003**	**0.0398**		**157.0095**	**157.0095**	**5.3300e-003**	**9.2800e-003**	**159.9086**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Utility Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2679	2.3916	3.1441	4.2300e-003		0.1053	0.1053		0.0969	0.0969		409.2502	409.2502	0.1324		412.5592
Total	**0.2679**	**2.3916**	**3.1441**	**4.2300e-003**		**0.1053**	**0.1053**		**0.0969**	**0.0969**		**409.2502**	**409.2502**	**0.1324**		**412.5592**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0108	0.4552	0.1666	2.0900e-003	0.0676	2.4200e-003	0.0700	0.0195	2.3100e-003	0.0218		234.1471	234.1471	0.0144	0.0345	244.7861
Worker	0.1306	0.0745	1.2150	4.0400e-003	0.4929	2.2900e-003	0.4952	0.1307	2.1000e-003	0.1328		413.1751	413.1751	9.2000e-003	8.9300e-003	416.0675
Total	**0.1414**	**0.5297**	**1.3816**	**6.1300e-003**	**0.5605**	**4.7100e-003**	**0.5652**	**0.1502**	**4.4100e-003**	**0.1546**		**647.3222**	**647.3222**	**0.0236**	**0.0434**	**660.8537**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Utility Trenching - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1896	3.9165	3.0508	4.2300e-003		0.1583	0.1583		0.1583	0.1583	0.0000	409.2502	409.2502	0.1324		412.5592
Total	**0.1896**	**3.9165**	**3.0508**	**4.2300e-003**		**0.1583**	**0.1583**		**0.1583**	**0.1583**	**0.0000**	**409.2502**	**409.2502**	**0.1324**		**412.5592**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0108	0.4552	0.1666	2.0900e-003	0.0676	2.4200e-003	0.0700	0.0195	2.3100e-003	0.0218		234.1471	234.1471	0.0144	0.0345	244.7861
Worker	0.1306	0.0745	1.2150	4.0400e-003	0.4929	2.2900e-003	0.4952	0.1307	2.1000e-003	0.1328		413.1751	413.1751	9.2000e-003	8.9300e-003	416.0675
Total	**0.1414**	**0.5297**	**1.3816**	**6.1300e-003**	**0.5605**	**4.7100e-003**	**0.5652**	**0.1502**	**4.4100e-003**	**0.1546**		**647.3222**	**647.3222**	**0.0236**	**0.0434**	**660.8537**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Fine Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5670	4.7984	4.9672	6.3000e-003		0.2895	0.2895		0.2664	0.2664		610.2895	610.2895	0.1974		615.2240
Total	**0.5670**	**4.7984**	**4.9672**	**6.3000e-003**	**0.5303**	**0.2895**	**0.8198**	**0.0573**	**0.2664**	**0.3236**		**610.2895**	**610.2895**	**0.1974**		**615.2240**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0400e-003	0.0451	0.0166	2.1000e-004	6.7600e-003	2.4000e-004	7.0000e-003	1.9500e-003	2.3000e-004	2.1800e-003		22.9982	22.9982	1.4800e-003	3.3900e-003	24.0461
Worker	0.0165	8.9100e-003	0.1523	5.2000e-004	0.0657	2.9000e-004	0.0660	0.0174	2.7000e-004	0.0177		53.7142	53.7142	1.1100e-003	1.1100e-003	54.0738
Total	**0.0175**	**0.0540**	**0.1689**	**7.3000e-004**	**0.0725**	**5.3000e-004**	**0.0730**	**0.0194**	**5.0000e-004**	**0.0199**		**76.7124**	**76.7124**	**2.5900e-003**	**4.5000e-003**	**78.1198**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Fine Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.2898	5.9858	4.6626	6.3000e-003		0.2420	0.2420		0.2420	0.2420	0.0000	610.2895	610.2895	0.1974		615.2240
Total	**0.2898**	**5.9858**	**4.6626**	**6.3000e-003**	**0.2386**	**0.2420**	**0.4806**	**0.0258**	**0.2420**	**0.2677**	**0.0000**	**610.2895**	**610.2895**	**0.1974**		**615.2240**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0400e-003	0.0451	0.0166	2.1000e-004	6.7600e-003	2.4000e-004	7.0000e-003	1.9500e-003	2.3000e-004	2.1800e-003		22.9982	22.9982	1.4800e-003	3.3900e-003	24.0461
Worker	0.0165	8.9100e-003	0.1523	5.2000e-004	0.0657	2.9000e-004	0.0660	0.0174	2.7000e-004	0.0177		53.7142	53.7142	1.1100e-003	1.1100e-003	54.0738
Total	**0.0175**	**0.0540**	**0.1689**	**7.3000e-004**	**0.0725**	**5.3000e-004**	**0.0730**	**0.0194**	**5.0000e-004**	**0.0199**		**76.7124**	**76.7124**	**2.5900e-003**	**4.5000e-003**	**78.1198**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.3530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1444	1.4527	2.2425	3.1300e-003		0.0667	0.0667		0.0613	0.0613		302.6916	302.6916	0.0979		305.1390
Total	**9.4974**	**1.4527**	**2.2425**	**3.1300e-003**		**0.0667**	**0.0667**		**0.0613**	**0.0613**		**302.6916**	**302.6916**	**0.0979**		**305.1390**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-003	0.2253	0.0830	1.0300e-003	0.0338	1.2100e-003	0.0350	9.7300e-003	1.1600e-003	0.0109		114.9910	114.9910	7.3800e-003	0.0170	120.2304
Worker	0.0824	0.0446	0.7614	2.6000e-003	0.3286	1.4500e-003	0.3300	0.0872	1.3400e-003	0.0885		268.5710	268.5710	5.5500e-003	5.5700e-003	270.3688
Total	**0.0876**	**0.2699**	**0.8444**	**3.6300e-003**	**0.3624**	**2.6600e-003**	**0.3651**	**0.0969**	**2.5000e-003**	**0.0994**		**383.5620**	**383.5620**	**0.0129**	**0.0225**	**390.5992**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.3530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1460	3.0159	2.3493	3.1300e-003		0.1219	0.1219		0.1219	0.1219	0.0000	302.6916	302.6916	0.0979		305.1390
Total	**9.4990**	**3.0159**	**2.3493**	**3.1300e-003**		**0.1219**	**0.1219**		**0.1219**	**0.1219**	**0.0000**	**302.6916**	**302.6916**	**0.0979**		**305.1390**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.2000e-003	0.2253	0.0830	1.0300e-003	0.0338	1.2100e-003	0.0350	9.7300e-003	1.1600e-003	0.0109		114.9910	114.9910	7.3800e-003	0.0170	120.2304
Worker	0.0824	0.0446	0.7614	2.6000e-003	0.3286	1.4500e-003	0.3300	0.0872	1.3400e-003	0.0885		268.5710	268.5710	5.5500e-003	5.5700e-003	270.3688
Total	**0.0876**	**0.2699**	**0.8444**	**3.6300e-003**	**0.3624**	**2.6600e-003**	**0.3651**	**0.0969**	**2.5000e-003**	**0.0994**		**383.5620**	**383.5620**	**0.0129**	**0.0225**	**390.5992**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.3530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1325	1.3392	2.2365	3.1300e-003		0.0543	0.0543		0.0499	0.0499		302.9816	302.9816	0.0980		305.4314
Total	**9.4855**	**1.3392**	**2.2365**	**3.1300e-003**		**0.0543**	**0.0543**		**0.0499**	**0.0499**		**302.9816**	**302.9816**	**0.0980**		**305.4314**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0600e-003	0.2227	0.0830	1.0000e-003	0.0338	1.2100e-003	0.0350	9.7300e-003	1.1600e-003	0.0109		112.7283	112.7283	7.5300e-003	0.0166	117.8763
Worker	0.0784	0.0404	0.7182	2.5200e-003	0.3286	1.3900e-003	0.3300	0.0872	1.2800e-003	0.0884		262.1384	262.1384	5.0400e-003	5.2300e-003	263.8242
Total	**0.0835**	**0.2631**	**0.8012**	**3.5200e-003**	**0.3624**	**2.6000e-003**	**0.3650**	**0.0969**	**2.4400e-003**	**0.0993**		**374.8667**	**374.8667**	**0.0126**	**0.0219**	**381.7004**

Hotel Moxy Project - San Mateo County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.3530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1460	3.0159	2.3493	3.1300e-003		0.1219	0.1219		0.1219	0.1219	0.0000	302.9816	302.9816	0.0980		305.4314
Total	**9.4990**	**3.0159**	**2.3493**	**3.1300e-003**		**0.1219**	**0.1219**		**0.1219**	**0.1219**	**0.0000**	**302.9816**	**302.9816**	**0.0980**		**305.4314**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0600e-003	0.2227	0.0830	1.0000e-003	0.0338	1.2100e-003	0.0350	9.7300e-003	1.1600e-003	0.0109		112.7283	112.7283	7.5300e-003	0.0166	117.8763
Worker	0.0784	0.0404	0.7182	2.5200e-003	0.3286	1.3900e-003	0.3300	0.0872	1.2800e-003	0.0884		262.1384	262.1384	5.0400e-003	5.2300e-003	263.8242
Total	**0.0835**	**0.2631**	**0.8012**	**3.5200e-003**	**0.3624**	**2.6000e-003**	**0.3650**	**0.0969**	**2.4400e-003**	**0.0993**		**374.8667**	**374.8667**	**0.0126**	**0.0219**	**381.7004**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.7607					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1560	0.8587	1.0845	1.5600e-003		0.0300	0.0300		0.0300	0.0300		126.2908	126.2908	0.0140		126.6408
Total	**44.9167**	**0.8587**	**1.0845**	**1.5600e-003**		**0.0300**	**0.0300**		**0.0300**	**0.0300**		**126.2908**	**126.2908**	**0.0140**		**126.6408**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0800e-003	0.0901	0.0332	4.1000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.6000e-004	4.3500e-003		45.9964	45.9964	2.9500e-003	6.7900e-003	48.0922
Worker	0.0165	8.9100e-003	0.1523	5.2000e-004	0.0657	2.9000e-004	0.0660	0.0174	2.7000e-004	0.0177		53.7142	53.7142	1.1100e-003	1.1100e-003	54.0738
Total	**0.0186**	**0.0990**	**0.1855**	**9.3000e-004**	**0.0792**	**7.8000e-004**	**0.0800**	**0.0213**	**7.3000e-004**	**0.0221**		**99.7106**	**99.7106**	**4.0600e-003**	**7.9000e-003**	**102.1659**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.7607					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0645	1.0289	0.9111	1.5600e-003		0.0622	0.0622		0.0622	0.0622	0.0000	126.2908	126.2908	0.0140		126.6408
Total	**44.8251**	**1.0289**	**0.9111**	**1.5600e-003**		**0.0622**	**0.0622**		**0.0622**	**0.0622**	**0.0000**	**126.2908**	**126.2908**	**0.0140**		**126.6408**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0800e-003	0.0901	0.0332	4.1000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.6000e-004	4.3500e-003		45.9964	45.9964	2.9500e-003	6.7900e-003	48.0922
Worker	0.0165	8.9100e-003	0.1523	5.2000e-004	0.0657	2.9000e-004	0.0660	0.0174	2.7000e-004	0.0177		53.7142	53.7142	1.1100e-003	1.1100e-003	54.0738
Total	**0.0186**	**0.0990**	**0.1855**	**9.3000e-004**	**0.0792**	**7.8000e-004**	**0.0800**	**0.0213**	**7.3000e-004**	**0.0221**		**99.7106**	**99.7106**	**4.0600e-003**	**7.9000e-003**	**102.1659**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2661	2.7394	3.6943	5.2000e-003		0.1371	0.1371		0.1261	0.1261		503.3546	503.3546	0.1628		507.4245
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2661**	**2.7394**	**3.6943**	**5.2000e-003**		**0.1371**	**0.1371**		**0.1261**	**0.1261**		**503.3546**	**503.3546**	**0.1628**		**507.4245**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0800e-003	0.0901	0.0332	4.1000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.6000e-004	4.3500e-003		45.9964	45.9964	2.9500e-003	6.7900e-003	48.0922
Worker	0.0330	0.0178	0.3046	1.0400e-003	0.1314	5.8000e-004	0.1320	0.0349	5.4000e-004	0.0354		107.4284	107.4284	2.2200e-003	2.2300e-003	108.1475
Total	**0.0350**	**0.1080**	**0.3378**	**1.4500e-003**	**0.1450**	**1.0700e-003**	**0.1460**	**0.0388**	**1.0000e-003**	**0.0398**		**153.4248**	**153.4248**	**5.1700e-003**	**9.0200e-003**	**156.2397**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2436	5.0307	3.9187	5.2000e-003		0.2034	0.2034		0.2034	0.2034	0.0000	503.3546	503.3546	0.1628		507.4245
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2436**	**5.0307**	**3.9187**	**5.2000e-003**		**0.2034**	**0.2034**		**0.2034**	**0.2034**	**0.0000**	**503.3546**	**503.3546**	**0.1628**		**507.4245**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0800e-003	0.0901	0.0332	4.1000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.6000e-004	4.3500e-003		45.9964	45.9964	2.9500e-003	6.7900e-003	48.0922
Worker	0.0330	0.0178	0.3046	1.0400e-003	0.1314	5.8000e-004	0.1320	0.0349	5.4000e-004	0.0354		107.4284	107.4284	2.2200e-003	2.2300e-003	108.1475
Total	**0.0350**	**0.1080**	**0.3378**	**1.4500e-003**	**0.1450**	**1.0700e-003**	**0.1460**	**0.0388**	**1.0000e-003**	**0.0398**		**153.4248**	**153.4248**	**5.1700e-003**	**9.0200e-003**	**156.2397**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.9354	1.4189	15.7637	0.0337	3.8210	0.0218	3.8428	1.0171	0.0203	1.0374		3,506.9888	3,506.9888	0.2238	0.1440	3,555.5006
Unmitigated	1.9354	1.4189	15.7637	0.0337	3.8210	0.0218	3.8428	1.0171	0.0203	1.0374		3,506.9888	3,506.9888	0.2238	0.1440	3,555.5006

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
Hotel	956.81	956.81	956.81	1,817,873	1,817,873
Total	956.81	956.81	956.81	1,817,873	1,817,873

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.465403	0.073585	0.235906	0.146720	0.025583	0.006412	0.010355	0.002060	0.001446	0.000572	0.028871	0.000432	0.002657
Hotel	0.465403	0.073585	0.235906	0.146720	0.025583	0.006412	0.010355	0.002060	0.001446	0.000572	0.028871	0.000432	0.002657

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.4343	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Unmitigated	1.4343	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1717					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.7000e-003	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Total	**1.4343**	**2.7000e-004**	**0.0293**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**0.0630**	**0.0630**	**1.6000e-004**		**0.0671**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1717					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.7000e-003	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Total	**1.4343**	**2.7000e-004**	**0.0293**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**0.0630**	**0.0630**	**1.6000e-004**		**0.0671**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.14	50	670	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (600 - 750 HP)	0.1539	0.4302	0.3925	7.4000e-004		0.0226	0.0226		0.0226	0.0226		78.7464	78.7464	0.0110		79.0224
Total	**0.1539**	**0.4302**	**0.3925**	**7.4000e-004**		**0.0226**	**0.0226**		**0.0226**	**0.0226**		**78.7464**	**78.7464**	**0.0110**		**79.0224**

11.0 Vegetation

Hotel Moxy Project - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Hotel Moxy Project

San Mateo County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	125.00	Space	0.26	51,868.00	0
Hotel	163.00	Room	0.50	58,014.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site is 0.76 acres

Construction Phase - Construction schedule provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Hotel Moxy Project - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Trips and VMT - Based on schedule provided by client

Demolition - demolition of existing office space

Grading - proposed project would require 522 CY of soil fill and 83 CY of cut during rough grading

Vehicle Trips - Based on a net trip generation of 957 ADT

Energy Use - No natural gas

Construction Off-road Equipment Mitigation - use of construction equipment tier 2

Area Mitigation - Project would not use natural gas

Energy Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - Proposed project would include a diesel emergency generator

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	5.00	67.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	NumDays	100.00	481.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	NumDays	2.00	23.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	NumDays	1.00	23.00
tblEnergyUse	NT24NG	7.13	0.00
tblEnergyUse	T24NG	29.09	0.00
tblGrading	MaterialImported	0.00	439.00
tblLandUse	LandUseSquareFeet	50,000.00	51,868.00
tblLandUse	LandUseSquareFeet	236,676.00	58,014.00
tblLandUse	LotAcreage	1.13	0.26
tblLandUse	LotAcreage	5.43	0.50
tblOffRoadEquipment	HorsePower	78.00	35.00
tblOffRoadEquipment	HorsePower	81.00	30.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	89.00	74.00
tblOffRoadEquipment	HorsePower	187.00	70.00
tblOffRoadEquipment	HorsePower	187.00	70.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	HorsePower	80.00	85.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	84.00	40.00
tblOffRoadEquipment	HorsePower	8.00	60.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	46.00	25.00
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.74	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.48
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00

Hotel Moxy Project - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblStationaryGeneratorsPumpsEF	CH4_EF	0.07	0.07
tblStationaryGeneratorsPumpsEF	ROG_EF	2.2480e-003	2.2477e-003
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	670.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.14
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	18.00	80.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	23.00	16.00
tblTripsAndVMT	WorkerTripNumber	46.00	160.00
tblTripsAndVMT	WorkerTripNumber	10.00	16.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	WorkerTripNumber	5.00	60.00
tblTripsAndVMT	WorkerTripNumber	9.00	40.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	SU_TR	5.95	5.87
tblVehicleTrips	WD_TR	8.36	5.87

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	4.1197	36.0628	38.5791	0.0837	5.1186	1.5889	6.6635	1.0217	1.4684	2.4540	0.0000	8,484.8473	8,484.8473	1.6341	0.4580	8,659.7101
2024	56.6370	21.5392	24.2712	0.0607	2.8995	0.8664	3.7658	0.6991	0.8054	1.5044	0.0000	6,156.7244	6,156.7244	0.9689	0.3383	6,280.3565
2025	11.0112	14.8227	17.5778	0.0504	2.2176	0.4757	2.6933	0.6011	0.4432	1.0443	0.0000	5,181.8436	5,181.8436	0.7498	0.3135	5,294.0055
Maximum	**56.6370**	**36.0628**	**38.5791**	**0.0837**	**5.1186**	**1.5889**	**6.6635**	**1.0217**	**1.4684**	**2.4540**	**0.0000**	**8,484.8473**	**8,484.8473**	**1.6341**	**0.4580**	**8,659.7101**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.6538	49.5269	39.6400	0.0837	3.6464	1.7696	5.3385	0.8242	1.7677	2.5492	0.0000	8,484.8473	8,484.8473	1.6341	0.4580	8,659.7101
2024	55.9226	30.6505	25.7031	0.0607	2.6078	1.0701	3.6779	0.6676	1.0685	1.7361	0.0000	6,156.7244	6,156.7244	0.9689	0.3383	6,280.3565
2025	10.7467	23.3997	19.5627	0.0504	2.2176	0.7643	2.9819	0.6011	0.7628	1.3640	0.0000	5,181.8436	5,181.8436	0.7498	0.3135	5,294.0055
Maximum	**55.9226**	**49.5269**	**39.6400**	**0.0837**	**3.6464**	**1.7696**	**5.3385**	**0.8242**	**1.7677**	**2.5492**	**0.0000**	**8,484.8473**	**8,484.8473**	**1.6341**	**0.4580**	**8,659.7101**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.41**	**-43.01**	**-5.57**	**0.00**	**17.23**	**-22.96**	**8.57**	**9.87**	**-32.47**	**-12.92**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4343	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.8120	1.6491	17.5524	0.0323	3.8210	0.0218	3.8428	1.0171	0.0203	1.0374		3,361.7917	3,361.7917	0.2526	0.1585	3,415.3485
Stationary	0.1539	0.4302	0.3925	7.4000e-004		0.0226	0.0226		0.0226	0.0226		78.7464	78.7464	0.0110		79.0224
Total	**3.4001**	**2.0796**	**17.9742**	**0.0330**	**3.8210**	**0.0446**	**3.8655**	**1.0171**	**0.0430**	**1.0601**		**3,440.6012**	**3,440.6012**	**0.2638**	**0.1585**	**3,494.4381**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.4343	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	1.8120	1.6491	17.5524	0.0323	3.8210	0.0218	3.8428	1.0171	0.0203	1.0374		3,361.7917	3,361.7917	0.2526	0.1585	3,415.3485
Stationary	0.1539	0.4302	0.3925	7.4000e-004		0.0226	0.0226		0.0226	0.0226		78.7464	78.7464	0.0110		79.0224
Total	**3.4001**	**2.0796**	**17.9742**	**0.0330**	**3.8210**	**0.0446**	**3.8655**	**1.0171**	**0.0430**	**1.0601**		**3,440.6012**	**3,440.6012**	**0.2638**	**0.1585**	**3,494.4381**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	3/1/2023	5	43	
2	Asphalt Demoltion	Demolition	3/1/2023	3/15/2023	5	11	
3	Rough Grading	Grading	3/1/2023	3/31/2023	5	23	
4	Building Construction	Building Construction	3/1/2023	1/1/2025	5	481	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5	Site Preparation	Site Preparation	3/15/2023	4/15/2023	5	23	
6	Utility Trenching	Trenching	4/1/2023	8/1/2023	5	87	
7	Fine Grading	Grading	10/1/2024	10/15/2024	5	11	
8	Finishing/Landscaping	Architectural Coating	10/1/2024	1/1/2025	5	67	
9	Architectural Coating	Architectural Coating	10/15/2024	11/1/2024	5	14	
10	Paving	Paving	11/1/2024	11/29/2024	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 23

Acres of Paving: 0.26

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 87,021; Non-Residential Outdoor: 29,007; Striped Parking Area: 3,112 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	30	0.73
Demolition	Excavators	3	8.00	50	0.37
Asphalt Demoltion	Excavators	1	8.00	50	0.37
Rough Grading	Excavators	3	8.00	50	0.40
Rough Grading	Graders	2	8.00	70	0.41
Rough Grading	Plate Compactors	1	8.00	60	0.43
Rough Grading	Tractors/Loaders/Backhoes	3	8.00	75	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	74	0.20
Building Construction	Generator Sets	1	8.00	40	0.37
Building Construction	Tractors/Loaders/Backhoes	3	7.00	75	0.37
Building Construction	Welders	1	8.00	25	0.45
Site Preparation	Tractors/Loaders/Backhoes	4	8.00	75	0.37
Utility Trenching	Excavators	1	8.00	50	0.38

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Utility Trenching	Tractors/Loaders/Backhoes	1	8.00	75	0.37
Fine Grading	Excavators	1	6.00	50	0.40
Fine Grading	Graders	1	8.00	70	0.41
Fine Grading	Tractors/Loaders/Backhoes	1	8.00	75	0.37
Finishing/Landscaping	Tractors/Loaders/Backhoes	1	8.00	75	0.48
Architectural Coating	Air Compressors	1	6.00	35	0.48
Paving	Rollers	1	8.00	85	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	75	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	20.00	5.00	62.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demoltion	1	8.00	1.00	66.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	9	16.00	2.00	55.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	160.00	80.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	16.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	2	60.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	3	8.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	1	40.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	2	16.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3123	0.0000	0.3123	0.0473	0.0000	0.0473			0.0000			0.0000
Off-Road	0.6747	4.9911	5.8331	8.0100e-003		0.1882	0.1882		0.1773	0.1773		733.8225	733.8225	0.1872		738.5024
Total	**0.6747**	**4.9911**	**5.8331**	**8.0100e-003**	**0.3123**	**0.1882**	**0.5005**	**0.0473**	**0.1773**	**0.2246**		**733.8225**	**733.8225**	**0.1872**		**738.5024**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2800e-003	0.2306	0.0744	9.3000e-004	0.0251	1.4800e-003	0.0266	6.8700e-003	1.4200e-003	8.2900e-003		108.3007	108.3007	0.0109	0.0175	113.7726
Vendor	5.3100e-003	0.2396	0.0858	1.0500e-003	0.0338	1.2200e-003	0.0350	9.7200e-003	1.1600e-003	0.0109		117.1301	117.1301	7.1900e-003	0.0173	122.4580
Worker	0.0475	0.0306	0.4039	1.2700e-003	0.1643	7.6000e-004	0.1651	0.0436	7.0000e-004	0.0443		130.2009	130.2009	3.4800e-003	3.4200e-003	131.3079
Total	**0.0561**	**0.5008**	**0.5641**	**3.2500e-003**	**0.2232**	**3.4600e-003**	**0.2267**	**0.0602**	**3.2800e-003**	**0.0635**		**355.6317**	**355.6317**	**0.0215**	**0.0382**	**367.5384**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1405	0.0000	0.1405	0.0213	0.0000	0.0213			0.0000			0.0000
Off-Road	0.3372	6.4379	5.2054	8.0100e-003		0.2961	0.2961		0.2961	0.2961	0.0000	733.8225	733.8225	0.1872		738.5024
Total	**0.3372**	**6.4379**	**5.2054**	**8.0100e-003**	**0.1405**	**0.2961**	**0.4366**	**0.0213**	**0.2961**	**0.3174**	**0.0000**	**733.8225**	**733.8225**	**0.1872**		**738.5024**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.2800e-003	0.2306	0.0744	9.3000e-004	0.0251	1.4800e-003	0.0266	6.8700e-003	1.4200e-003	8.2900e-003		108.3007	108.3007	0.0109	0.0175	113.7726
Vendor	5.3100e-003	0.2396	0.0858	1.0500e-003	0.0338	1.2200e-003	0.0350	9.7200e-003	1.1600e-003	0.0109		117.1301	117.1301	7.1900e-003	0.0173	122.4580
Worker	0.0475	0.0306	0.4039	1.2700e-003	0.1643	7.6000e-004	0.1651	0.0436	7.0000e-004	0.0443		130.2009	130.2009	3.4800e-003	3.4200e-003	131.3079
Total	**0.0561**	**0.5008**	**0.5641**	**3.2500e-003**	**0.2232**	**3.4600e-003**	**0.2267**	**0.0602**	**3.2800e-003**	**0.0635**		**355.6317**	**355.6317**	**0.0215**	**0.0382**	**367.5384**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Asphalt Demoltion - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.3018	0.0000	1.3018	0.1971	0.0000	0.1971			0.0000			0.0000
Off-Road	0.1469	1.1725	1.3815	1.7700e-003		0.0455	0.0455		0.0419	0.0419		171.4390	171.4390	0.0555		172.8252
Total	**0.1469**	**1.1725**	**1.3815**	**1.7700e-003**	**1.3018**	**0.0455**	**1.3473**	**0.1971**	**0.0419**	**0.2390**		**171.4390**	**171.4390**	**0.0555**		**172.8252**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0137	0.9595	0.3096	3.8600e-003	0.1045	6.1800e-003	0.1107	0.0286	5.9100e-003	0.0345		450.6708	450.6708	0.0452	0.0726	473.4407
Vendor	1.0600e-003	0.0479	0.0172	2.1000e-004	6.7600e-003	2.4000e-004	7.0000e-003	1.9400e-003	2.3000e-004	2.1800e-003		23.4260	23.4260	1.4400e-003	3.4600e-003	24.4916
Worker	0.0190	0.0122	0.1616	5.1000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		52.0804	52.0804	1.3900e-003	1.3700e-003	52.5231
Total	**0.0337**	**1.0196**	**0.4883**	**4.5800e-003**	**0.1770**	**6.7200e-003**	**0.1837**	**0.0480**	**6.4200e-003**	**0.0544**		**526.1772**	**526.1772**	**0.0480**	**0.0775**	**550.4555**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Asphalt Demoltion - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5858	0.0000	0.5858	0.0887	0.0000	0.0887			0.0000			0.0000
Off-Road	0.0751	1.5499	1.2073	1.7700e-003		0.0627	0.0627		0.0627	0.0627	0.0000	171.4390	171.4390	0.0555		172.8252
Total	**0.0751**	**1.5499**	**1.2073**	**1.7700e-003**	**0.5858**	**0.0627**	**0.6484**	**0.0887**	**0.0627**	**0.1513**	**0.0000**	**171.4390**	**171.4390**	**0.0555**		**172.8252**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0137	0.9595	0.3096	3.8600e-003	0.1045	6.1800e-003	0.1107	0.0286	5.9100e-003	0.0345		450.6708	450.6708	0.0452	0.0726	473.4407
Vendor	1.0600e-003	0.0479	0.0172	2.1000e-004	6.7600e-003	2.4000e-004	7.0000e-003	1.9400e-003	2.3000e-004	2.1800e-003		23.4260	23.4260	1.4400e-003	3.4600e-003	24.4916
Worker	0.0190	0.0122	0.1616	5.1000e-004	0.0657	3.0000e-004	0.0660	0.0174	2.8000e-004	0.0177		52.0804	52.0804	1.3900e-003	1.3700e-003	52.5231
Total	**0.0337**	**1.0196**	**0.4883**	**4.5800e-003**	**0.1770**	**6.7200e-003**	**0.1837**	**0.0480**	**6.4200e-003**	**0.0544**		**526.1772**	**526.1772**	**0.0480**	**0.0775**	**550.4555**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Rough Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.0627	0.0000	1.0627	0.1148	0.0000	0.1148			0.0000			0.0000
Off-Road	1.5554	13.1759	13.9365	0.0179		0.7645	0.7645		0.7033	0.7033		1,730.6391	1,730.6391	0.5597		1,744.6322
Total	**1.5554**	**13.1759**	**13.9365**	**0.0179**	**1.0627**	**0.7645**	**1.8272**	**0.1148**	**0.7033**	**0.8182**		**1,730.6391**	**1,730.6391**	**0.5597**		**1,744.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.4500e-003	0.3824	0.1234	1.5400e-003	0.0416	2.4600e-003	0.0441	0.0114	2.3600e-003	0.0138		179.6152	179.6152	0.0180	0.0289	188.6901
Vendor	2.1200e-003	0.0959	0.0343	4.2000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.7000e-004	4.3500e-003		46.8520	46.8520	2.8800e-003	6.9100e-003	48.9832
Worker	0.0380	0.0245	0.3231	1.0200e-003	0.1314	6.1000e-004	0.1321	0.0349	5.6000e-004	0.0354		104.1607	104.1607	2.7900e-003	2.7400e-003	105.0463
Total	**0.0456**	**0.5027**	**0.4809**	**2.9800e-003**	**0.1866**	**3.5600e-003**	**0.1902**	**0.0502**	**3.3900e-003**	**0.0535**		**330.6279**	**330.6279**	**0.0237**	**0.0386**	**342.7196**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Rough Grading - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.4782	0.0000	0.4782	0.0517	0.0000	0.0517			0.0000			0.0000
Off-Road	0.8139	16.8096	13.0938	0.0179		0.6795	0.6795		0.6795	0.6795	0.0000	1,730.6391	1,730.6391	0.5597		1,744.6322
Total	**0.8139**	**16.8096**	**13.0938**	**0.0179**	**0.4782**	**0.6795**	**1.1577**	**0.0517**	**0.6795**	**0.7311**	**0.0000**	**1,730.6391**	**1,730.6391**	**0.5597**		**1,744.6322**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.4500e-003	0.3824	0.1234	1.5400e-003	0.0416	2.4600e-003	0.0441	0.0114	2.3600e-003	0.0138		179.6152	179.6152	0.0180	0.0289	188.6901
Vendor	2.1200e-003	0.0959	0.0343	4.2000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.7000e-004	4.3500e-003		46.8520	46.8520	2.8800e-003	6.9100e-003	48.9832
Worker	0.0380	0.0245	0.3231	1.0200e-003	0.1314	6.1000e-004	0.1321	0.0349	5.6000e-004	0.0354		104.1607	104.1607	2.7900e-003	2.7400e-003	105.0463
Total	**0.0456**	**0.5027**	**0.4809**	**2.9800e-003**	**0.1866**	**3.5600e-003**	**0.1902**	**0.0502**	**3.3900e-003**	**0.0535**		**330.6279**	**330.6279**	**0.0237**	**0.0386**	**342.7196**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1424	10.6212	10.4292	0.0183		0.5075	0.5075		0.4724	0.4724		1,720.8213	1,720.8213	0.4970		1,733.2464
Total	**1.1424**	**10.6212**	**10.4292**	**0.0183**		**0.5075**	**0.5075**		**0.4724**	**0.4724**		**1,720.8213**	**1,720.8213**	**0.4970**		**1,733.2464**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0849	3.8343	1.3730	0.0168	0.5407	0.0195	0.5602	0.1556	0.0186	0.1742		1,874.0814	1,874.0814	0.1151	0.2764	1,959.3277
Worker	0.3800	0.2446	3.2314	0.0102	1.3144	6.1000e-003	1.3205	0.3486	5.6100e-003	0.3542		1,041.6072	1,041.6072	0.0279	0.0274	1,050.4628
Total	**0.4649**	**4.0788**	**4.6044**	**0.0270**	**1.8551**	**0.0256**	**1.8806**	**0.5042**	**0.0242**	**0.5284**		**2,915.6887**	**2,915.6887**	**0.1429**	**0.3038**	**3,009.7905**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7302	16.1469	12.1644	0.0183		0.6147	0.6147		0.6147	0.6147	0.0000	1,720.8213	1,720.8213	0.4970		1,733.2464
Total	**0.7302**	**16.1469**	**12.1644**	**0.0183**		**0.6147**	**0.6147**		**0.6147**	**0.6147**	**0.0000**	**1,720.8213**	**1,720.8213**	**0.4970**		**1,733.2464**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0849	3.8343	1.3730	0.0168	0.5407	0.0195	0.5602	0.1556	0.0186	0.1742		1,874.0814	1,874.0814	0.1151	0.2764	1,959.3277
Worker	0.3800	0.2446	3.2314	0.0102	1.3144	6.1000e-003	1.3205	0.3486	5.6100e-003	0.3542		1,041.6072	1,041.6072	0.0279	0.0274	1,050.4628
Total	**0.4649**	**4.0788**	**4.6044**	**0.0270**	**1.8551**	**0.0256**	**1.8806**	**0.5042**	**0.0242**	**0.5284**		**2,915.6887**	**2,915.6887**	**0.1429**	**0.3038**	**3,009.7905**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0775	9.9563	10.3613	0.0183		0.4508	0.4508		0.4199	0.4199		1,721.1972	1,721.1972	0.4959		1,733.5944
Total	**1.0775**	**9.9563**	**10.3613**	**0.0183**		**0.4508**	**0.4508**		**0.4199**	**0.4199**		**1,721.1972**	**1,721.1972**	**0.4959**		**1,733.5944**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0819	3.7972	1.3678	0.0164	0.5408	0.0196	0.5603	0.1556	0.0187	0.1743		1,840.8967	1,840.8967	0.1178	0.2719	1,924.8593
Worker	0.3617	0.2194	3.0453	9.8500e-003	1.3144	5.8100e-003	1.3202	0.3486	5.3500e-003	0.3540		1,015.7548	1,015.7548	0.0253	0.0256	1,024.0097
Total	**0.4436**	**4.0166**	**4.4131**	**0.0263**	**1.8551**	**0.0254**	**1.8805**	**0.5042**	**0.0241**	**0.5283**		**2,856.6514**	**2,856.6514**	**0.1431**	**0.2975**	**2,948.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7302	16.1469	12.1644	0.0183		0.6147	0.6147		0.6147	0.6147	0.0000	1,721.1972	1,721.1972	0.4959		1,733.5944
Total	**0.7302**	**16.1469**	**12.1644**	**0.0183**		**0.6147**	**0.6147**		**0.6147**	**0.6147**	**0.0000**	**1,721.1972**	**1,721.1972**	**0.4959**		**1,733.5944**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0819	3.7972	1.3678	0.0164	0.5408	0.0196	0.5603	0.1556	0.0187	0.1743		1,840.8967	1,840.8967	0.1178	0.2719	1,924.8593
Worker	0.3617	0.2194	3.0453	9.8500e-003	1.3144	5.8100e-003	1.3202	0.3486	5.3500e-003	0.3540		1,015.7548	1,015.7548	0.0253	0.0256	1,024.0097
Total	**0.4436**	**4.0166**	**4.4131**	**0.0263**	**1.8551**	**0.0254**	**1.8805**	**0.5042**	**0.0241**	**0.5283**		**2,856.6514**	**2,856.6514**	**0.1431**	**0.2975**	**2,948.8690**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.0082	9.2465	10.2923	0.0183		0.3938	0.3938		0.3670	0.3670		1,721.8004	1,721.8004	0.4953		1,734.1829
Total	**1.0082**	**9.2465**	**10.2923**	**0.0183**		**0.3938**	**0.3938**		**0.3670**	**0.3670**		**1,721.8004**	**1,721.8004**	**0.4953**		**1,734.1829**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0794	3.7538	1.3668	0.0161	0.5408	0.0195	0.5603	0.1556	0.0187	0.1743		1,804.8086	1,804.8086	0.1202	0.2668	1,887.3080
Worker	0.3464	0.1988	2.8774	9.5200e-003	1.3144	5.5700e-003	1.3199	0.3486	5.1200e-003	0.3538		991.5620	991.5620	0.0230	0.0240	999.3012
Total	**0.4259**	**3.9526**	**4.2442**	**0.0256**	**1.8552**	**0.0251**	**1.8803**	**0.5043**	**0.0238**	**0.5281**		**2,796.3706**	**2,796.3706**	**0.1432**	**0.2908**	**2,886.6092**

Hotel Moxy Project - San Mateo County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7302	16.1469	12.1644	0.0183		0.6147	0.6147		0.6147	0.6147	0.0000	1,721.8004	1,721.8004	0.4953		1,734.1829
Total	**0.7302**	**16.1469**	**12.1644**	**0.0183**		**0.6147**	**0.6147**		**0.6147**	**0.6147**	**0.0000**	**1,721.8004**	**1,721.8004**	**0.4953**		**1,734.1829**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0794	3.7538	1.3668	0.0161	0.5408	0.0195	0.5603	0.1556	0.0187	0.1743		1,804.8086	1,804.8086	0.1202	0.2668	1,887.3080
Worker	0.3464	0.1988	2.8774	9.5200e-003	1.3144	5.5700e-003	1.3199	0.3486	5.1200e-003	0.3538		991.5620	991.5620	0.0230	0.0240	999.3012
Total	**0.4259**	**3.9526**	**4.2442**	**0.0256**	**1.8552**	**0.0251**	**1.8803**	**0.5043**	**0.0238**	**0.5281**		**2,796.3706**	**2,796.3706**	**0.1432**	**0.2908**	**2,886.6092**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4681	4.7495	6.9010	9.6300e-003		0.2345	0.2345		0.2157	0.2157		932.7108	932.7108	0.3017		940.2523
Total	**0.4681**	**4.7495**	**6.9010**	**9.6300e-003**	**0.0000**	**0.2345**	**0.2345**	**0.0000**	**0.2157**	**0.2157**		**932.7108**	**932.7108**	**0.3017**		**940.2523**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1200e-003	0.0959	0.0343	4.2000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.7000e-004	4.3500e-003		46.8520	46.8520	2.8800e-003	6.9100e-003	48.9832
Worker	0.0380	0.0245	0.3231	1.0200e-003	0.1314	6.1000e-004	0.1321	0.0349	5.6000e-004	0.0354		104.1607	104.1607	2.7900e-003	2.7400e-003	105.0463
Total	**0.0401**	**0.1203**	**0.3575**	**1.4400e-003**	**0.1450**	**1.1000e-003**	**0.1461**	**0.0388**	**1.0300e-003**	**0.0398**		**151.0128**	**151.0128**	**5.6700e-003**	**9.6500e-003**	**154.0295**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Site Preparation - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.4503	9.2991	7.2435	9.6300e-003		0.3759	0.3759		0.3759	0.3759	0.0000	932.7108	932.7108	0.3017		940.2523
Total	**0.4503**	**9.2991**	**7.2435**	**9.6300e-003**	**0.0000**	**0.3759**	**0.3759**	**0.0000**	**0.3759**	**0.3759**	**0.0000**	**932.7108**	**932.7108**	**0.3017**		**940.2523**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.1200e-003	0.0959	0.0343	4.2000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.7000e-004	4.3500e-003		46.8520	46.8520	2.8800e-003	6.9100e-003	48.9832
Worker	0.0380	0.0245	0.3231	1.0200e-003	0.1314	6.1000e-004	0.1321	0.0349	5.6000e-004	0.0354		104.1607	104.1607	2.7900e-003	2.7400e-003	105.0463
Total	**0.0401**	**0.1203**	**0.3575**	**1.4400e-003**	**0.1450**	**1.1000e-003**	**0.1461**	**0.0388**	**1.0300e-003**	**0.0398**		**151.0128**	**151.0128**	**5.6700e-003**	**9.6500e-003**	**154.0295**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Utility Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2679	2.3916	3.1441	4.2300e-003		0.1053	0.1053		0.0969	0.0969		409.2502	409.2502	0.1324		412.5592
Total	**0.2679**	**2.3916**	**3.1441**	**4.2300e-003**		**0.1053**	**0.1053**		**0.0969**	**0.0969**		**409.2502**	**409.2502**	**0.1324**		**412.5592**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0106	0.4793	0.1716	2.1000e-003	0.0676	2.4300e-003	0.0700	0.0195	2.3300e-003	0.0218		234.2602	234.2602	0.0144	0.0346	244.9160
Worker	0.1425	0.0917	1.2118	3.8200e-003	0.4929	2.2900e-003	0.4952	0.1307	2.1000e-003	0.1328		390.6027	390.6027	0.0105	0.0103	393.9236
Total	**0.1531**	**0.5710**	**1.3834**	**5.9200e-003**	**0.5605**	**4.7200e-003**	**0.5652**	**0.1502**	**4.4300e-003**	**0.1546**		**624.8629**	**624.8629**	**0.0248**	**0.0448**	**638.8395**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Utility Trenching - 2023

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1896	3.9165	3.0508	4.2300e-003		0.1583	0.1583		0.1583	0.1583	0.0000	409.2502	409.2502	0.1324		412.5592
Total	**0.1896**	**3.9165**	**3.0508**	**4.2300e-003**		**0.1583**	**0.1583**		**0.1583**	**0.1583**	**0.0000**	**409.2502**	**409.2502**	**0.1324**		**412.5592**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0106	0.4793	0.1716	2.1000e-003	0.0676	2.4300e-003	0.0700	0.0195	2.3300e-003	0.0218		234.2602	234.2602	0.0144	0.0346	244.9160
Worker	0.1425	0.0917	1.2118	3.8200e-003	0.4929	2.2900e-003	0.4952	0.1307	2.1000e-003	0.1328		390.6027	390.6027	0.0105	0.0103	393.9236
Total	**0.1531**	**0.5710**	**1.3834**	**5.9200e-003**	**0.5605**	**4.7200e-003**	**0.5652**	**0.1502**	**4.4300e-003**	**0.1546**		**624.8629**	**624.8629**	**0.0248**	**0.0448**	**638.8395**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Fine Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5303	0.0000	0.5303	0.0573	0.0000	0.0573			0.0000			0.0000
Off-Road	0.5670	4.7984	4.9672	6.3000e-003		0.2895	0.2895		0.2664	0.2664		610.2895	610.2895	0.1974		615.2240
Total	**0.5670**	**4.7984**	**4.9672**	**6.3000e-003**	**0.5303**	**0.2895**	**0.8198**	**0.0573**	**0.2664**	**0.3236**		**610.2895**	**610.2895**	**0.1974**		**615.2240**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0200e-003	0.0475	0.0171	2.1000e-004	6.7600e-003	2.4000e-004	7.0000e-003	1.9500e-003	2.3000e-004	2.1800e-003		23.0112	23.0112	1.4700e-003	3.4000e-003	24.0607
Worker	0.0181	0.0110	0.1523	4.9000e-004	0.0657	2.9000e-004	0.0660	0.0174	2.7000e-004	0.0177		50.7877	50.7877	1.2600e-003	1.2800e-003	51.2005
Total	**0.0191**	**0.0584**	**0.1694**	**7.0000e-004**	**0.0725**	**5.3000e-004**	**0.0730**	**0.0194**	**5.0000e-004**	**0.0199**		**73.7990**	**73.7990**	**2.7300e-003**	**4.6800e-003**	**75.2612**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Fine Grading - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.2386	0.0000	0.2386	0.0258	0.0000	0.0258			0.0000			0.0000
Off-Road	0.2898	5.9858	4.6626	6.3000e-003		0.2420	0.2420		0.2420	0.2420	0.0000	610.2895	610.2895	0.1974		615.2240
Total	**0.2898**	**5.9858**	**4.6626**	**6.3000e-003**	**0.2386**	**0.2420**	**0.4806**	**0.0258**	**0.2420**	**0.2677**	**0.0000**	**610.2895**	**610.2895**	**0.1974**		**615.2240**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0200e-003	0.0475	0.0171	2.1000e-004	6.7600e-003	2.4000e-004	7.0000e-003	1.9500e-003	2.3000e-004	2.1800e-003		23.0112	23.0112	1.4700e-003	3.4000e-003	24.0607
Worker	0.0181	0.0110	0.1523	4.9000e-004	0.0657	2.9000e-004	0.0660	0.0174	2.7000e-004	0.0177		50.7877	50.7877	1.2600e-003	1.2800e-003	51.2005
Total	**0.0191**	**0.0584**	**0.1694**	**7.0000e-004**	**0.0725**	**5.3000e-004**	**0.0730**	**0.0194**	**5.0000e-004**	**0.0199**		**73.7990**	**73.7990**	**2.7300e-003**	**4.6800e-003**	**75.2612**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.3530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1444	1.4527	2.2425	3.1300e-003		0.0667	0.0667		0.0613	0.0613		302.6916	302.6916	0.0979		305.1390
Total	**9.4974**	**1.4527**	**2.2425**	**3.1300e-003**		**0.0667**	**0.0667**		**0.0613**	**0.0613**		**302.6916**	**302.6916**	**0.0979**		**305.1390**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1200e-003	0.2373	0.0855	1.0300e-003	0.0338	1.2200e-003	0.0350	9.7300e-003	1.1700e-003	0.0109		115.0560	115.0560	7.3600e-003	0.0170	120.3037
Worker	0.0904	0.0549	0.7613	2.4600e-003	0.3286	1.4500e-003	0.3300	0.0872	1.3400e-003	0.0885		253.9387	253.9387	6.3200e-003	6.3900e-003	256.0024
Total	**0.0956**	**0.2922**	**0.8468**	**3.4900e-003**	**0.3624**	**2.6700e-003**	**0.3651**	**0.0969**	**2.5100e-003**	**0.0994**		**368.9947**	**368.9947**	**0.0137**	**0.0234**	**376.3061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.3530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1460	3.0159	2.3493	3.1300e-003		0.1219	0.1219		0.1219	0.1219	0.0000	302.6916	302.6916	0.0979		305.1390
Total	**9.4990**	**3.0159**	**2.3493**	**3.1300e-003**		**0.1219**	**0.1219**		**0.1219**	**0.1219**	**0.0000**	**302.6916**	**302.6916**	**0.0979**		**305.1390**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.1200e-003	0.2373	0.0855	1.0300e-003	0.0338	1.2200e-003	0.0350	9.7300e-003	1.1700e-003	0.0109		115.0560	115.0560	7.3600e-003	0.0170	120.3037
Worker	0.0904	0.0549	0.7613	2.4600e-003	0.3286	1.4500e-003	0.3300	0.0872	1.3400e-003	0.0885		253.9387	253.9387	6.3200e-003	6.3900e-003	256.0024
Total	**0.0956**	**0.2922**	**0.8468**	**3.4900e-003**	**0.3624**	**2.6700e-003**	**0.3651**	**0.0969**	**2.5100e-003**	**0.0994**		**368.9947**	**368.9947**	**0.0137**	**0.0234**	**376.3061**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.3530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1325	1.3392	2.2365	3.1300e-003		0.0543	0.0543		0.0499	0.0499		302.9816	302.9816	0.0980		305.4314
Total	**9.4855**	**1.3392**	**2.2365**	**3.1300e-003**		**0.0543**	**0.0543**		**0.0499**	**0.0499**		**302.9816**	**302.9816**	**0.0980**		**305.4314**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9600e-003	0.2346	0.0854	1.0000e-003	0.0338	1.2200e-003	0.0350	9.7300e-003	1.1700e-003	0.0109		112.8005	112.8005	7.5100e-003	0.0167	117.9568
Worker	0.0866	0.0497	0.7193	2.3800e-003	0.3286	1.3900e-003	0.3300	0.0872	1.2800e-003	0.0884		247.8905	247.8905	5.7500e-003	6.0100e-003	249.8253
Total	**0.0916**	**0.2843**	**0.8048**	**3.3800e-003**	**0.3624**	**2.6100e-003**	**0.3650**	**0.0969**	**2.4500e-003**	**0.0993**		**360.6910**	**360.6910**	**0.0133**	**0.0227**	**367.7821**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2025

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	9.3530					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1460	3.0159	2.3493	3.1300e-003		0.1219	0.1219		0.1219	0.1219	0.0000	302.9816	302.9816	0.0980		305.4314
Total	**9.4990**	**3.0159**	**2.3493**	**3.1300e-003**		**0.1219**	**0.1219**		**0.1219**	**0.1219**	**0.0000**	**302.9816**	**302.9816**	**0.0980**		**305.4314**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.9600e-003	0.2346	0.0854	1.0000e-003	0.0338	1.2200e-003	0.0350	9.7300e-003	1.1700e-003	0.0109		112.8005	112.8005	7.5100e-003	0.0167	117.9568
Worker	0.0866	0.0497	0.7193	2.3800e-003	0.3286	1.3900e-003	0.3300	0.0872	1.2800e-003	0.0884		247.8905	247.8905	5.7500e-003	6.0100e-003	249.8253
Total	**0.0916**	**0.2843**	**0.8048**	**3.3800e-003**	**0.3624**	**2.6100e-003**	**0.3650**	**0.0969**	**2.4500e-003**	**0.0993**		**360.6910**	**360.6910**	**0.0133**	**0.0227**	**367.7821**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.7607					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.1560	0.8587	1.0845	1.5600e-003		0.0300	0.0300		0.0300	0.0300		126.2908	126.2908	0.0140		126.6408
Total	**44.9167**	**0.8587**	**1.0845**	**1.5600e-003**		**0.0300**	**0.0300**		**0.0300**	**0.0300**		**126.2908**	**126.2908**	**0.0140**		**126.6408**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0500e-003	0.0949	0.0342	4.1000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.7000e-004	4.3600e-003		46.0224	46.0224	2.9500e-003	6.8000e-003	48.1215
Worker	0.0181	0.0110	0.1523	4.9000e-004	0.0657	2.9000e-004	0.0660	0.0174	2.7000e-004	0.0177		50.7877	50.7877	1.2600e-003	1.2800e-003	51.2005
Total	**0.0201**	**0.1059**	**0.1865**	**9.0000e-004**	**0.0792**	**7.8000e-004**	**0.0800**	**0.0213**	**7.4000e-004**	**0.0221**		**96.8102**	**96.8102**	**4.2100e-003**	**8.0800e-003**	**99.3220**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Architectural Coating - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	44.7607					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0645	1.0289	0.9111	1.5600e-003		0.0622	0.0622		0.0622	0.0622	0.0000	126.2908	126.2908	0.0140		126.6408
Total	**44.8251**	**1.0289**	**0.9111**	**1.5600e-003**		**0.0622**	**0.0622**		**0.0622**	**0.0622**	**0.0000**	**126.2908**	**126.2908**	**0.0140**		**126.6408**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0500e-003	0.0949	0.0342	4.1000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.7000e-004	4.3600e-003		46.0224	46.0224	2.9500e-003	6.8000e-003	48.1215
Worker	0.0181	0.0110	0.1523	4.9000e-004	0.0657	2.9000e-004	0.0660	0.0174	2.7000e-004	0.0177		50.7877	50.7877	1.2600e-003	1.2800e-003	51.2005
Total	**0.0201**	**0.1059**	**0.1865**	**9.0000e-004**	**0.0792**	**7.8000e-004**	**0.0800**	**0.0213**	**7.4000e-004**	**0.0221**		**96.8102**	**96.8102**	**4.2100e-003**	**8.0800e-003**	**99.3220**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2661	2.7394	3.6943	5.2000e-003		0.1371	0.1371		0.1261	0.1261		503.3546	503.3546	0.1628		507.4245
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2661**	**2.7394**	**3.6943**	**5.2000e-003**		**0.1371**	**0.1371**		**0.1261**	**0.1261**		**503.3546**	**503.3546**	**0.1628**		**507.4245**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0500e-003	0.0949	0.0342	4.1000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.7000e-004	4.3600e-003		46.0224	46.0224	2.9500e-003	6.8000e-003	48.1215
Worker	0.0362	0.0219	0.3045	9.8000e-004	0.1314	5.8000e-004	0.1320	0.0349	5.4000e-004	0.0354		101.5755	101.5755	2.5300e-003	2.5600e-003	102.4010
Total	**0.0382**	**0.1169**	**0.3387**	**1.3900e-003**	**0.1450**	**1.0700e-003**	**0.1460**	**0.0388**	**1.0100e-003**	**0.0398**		**147.5979**	**147.5979**	**5.4800e-003**	**9.3600e-003**	**150.5225**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Paving - 2024

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2436	5.0307	3.9187	5.2000e-003		0.2034	0.2034		0.2034	0.2034	0.0000	503.3546	503.3546	0.1628		507.4245
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2436**	**5.0307**	**3.9187**	**5.2000e-003**		**0.2034**	**0.2034**		**0.2034**	**0.2034**	**0.0000**	**503.3546**	**503.3546**	**0.1628**		**507.4245**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0500e-003	0.0949	0.0342	4.1000e-004	0.0135	4.9000e-004	0.0140	3.8900e-003	4.7000e-004	4.3600e-003		46.0224	46.0224	2.9500e-003	6.8000e-003	48.1215
Worker	0.0362	0.0219	0.3045	9.8000e-004	0.1314	5.8000e-004	0.1320	0.0349	5.4000e-004	0.0354		101.5755	101.5755	2.5300e-003	2.5600e-003	102.4010
Total	**0.0382**	**0.1169**	**0.3387**	**1.3900e-003**	**0.1450**	**1.0700e-003**	**0.1460**	**0.0388**	**1.0100e-003**	**0.0398**		**147.5979**	**147.5979**	**5.4800e-003**	**9.3600e-003**	**150.5225**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.8120	1.6491	17.5524	0.0323	3.8210	0.0218	3.8428	1.0171	0.0203	1.0374		3,361.7917	3,361.7917	0.2526	0.1585	3,415.3485
Unmitigated	1.8120	1.6491	17.5524	0.0323	3.8210	0.0218	3.8428	1.0171	0.0203	1.0374		3,361.7917	3,361.7917	0.2526	0.1585	3,415.3485

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
Hotel	956.81	956.81	956.81	1,817,873	1,817,873
Total	956.81	956.81	956.81	1,817,873	1,817,873

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.465403	0.073585	0.235906	0.146720	0.025583	0.006412	0.010355	0.002060	0.001446	0.000572	0.028871	0.000432	0.002657
Hotel	0.465403	0.073585	0.235906	0.146720	0.025583	0.006412	0.010355	0.002060	0.001446	0.000572	0.028871	0.000432	0.002657

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.4343	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Unmitigated	1.4343	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1717					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.7000e-003	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Total	**1.4343**	**2.7000e-004**	**0.0293**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**0.0630**	**0.0630**	**1.6000e-004**		**0.0671**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1717					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.2599					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.7000e-003	2.7000e-004	0.0293	0.0000		1.0000e-004	1.0000e-004		1.0000e-004	1.0000e-004		0.0630	0.0630	1.6000e-004		0.0671
Total	**1.4343**	**2.7000e-004**	**0.0293**	**0.0000**		**1.0000e-004**	**1.0000e-004**		**1.0000e-004**	**1.0000e-004**		**0.0630**	**0.0630**	**1.6000e-004**		**0.0671**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.14	50	670	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel (600 - 750 HP)	0.1539	0.4302	0.3925	7.4000e-004		0.0226	0.0226		0.0226	0.0226		78.7464	78.7464	0.0110		79.0224
Total	**0.1539**	**0.4302**	**0.3925**	**7.4000e-004**		**0.0226**	**0.0226**		**0.0226**	**0.0226**		**78.7464**	**78.7464**	**0.0110**		**79.0224**

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Hotel Moxy Project - Mitigated

San Mateo County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Enclosed Parking Structure	125.00	Space	0.26	51,868.00	0
Hotel	163.00	Room	0.50	58,014.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	70
Climate Zone	5			**Operational Year**	2025
Utility Company	Pacific Gas and Electric Company				
CO2 Intensity (lb/MWhr)	203.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Total project site is 0.76 acres

Construction Phase - Construction schedule provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Off-road Equipment - Construction equipment provided by client

Off-road Equipment - Construction equipment provided by client

Trips and VMT - Based on schedule provided by client

Demolition - demolition of existing office space

Grading - proposed project would require 522 CY of soil fill and 83 CY of cut during rough grading

Vehicle Trips - Based on a net trip generation of 957 ADT

Energy Use - No natural gas

Construction Off-road Equipment Mitigation - use of construction equipment tier 2 level 3 DPF

Area Mitigation - Project would not use natural gas

Energy Mitigation -

Stationary Sources - Emergency Generators and Fire Pumps - Proposed project would include a diesel emergency generator

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	15
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	DPF	No Change	Level 3
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	9.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	14.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstEquipMitigation	Tier	No Change	Tier 2
tblConstructionPhase	NumDays	5.00	67.00
tblConstructionPhase	NumDays	5.00	14.00
tblConstructionPhase	NumDays	100.00	481.00
tblConstructionPhase	NumDays	10.00	43.00
tblConstructionPhase	NumDays	10.00	11.00
tblConstructionPhase	NumDays	2.00	23.00
tblConstructionPhase	NumDays	2.00	11.00
tblConstructionPhase	NumDays	5.00	21.00
tblConstructionPhase	NumDays	1.00	23.00
tblEnergyUse	NT24NG	7.13	0.00
tblEnergyUse	T24NG	29.09	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblGrading	MaterialImported	0.00	439.00
tblLandUse	LandUseSquareFeet	50,000.00	51,868.00
tblLandUse	LandUseSquareFeet	236,676.00	58,014.00
tblLandUse	LotAcreage	1.13	0.26
tblLandUse	LotAcreage	5.43	0.50
tblOffRoadEquipment	HorsePower	78.00	35.00
tblOffRoadEquipment	HorsePower	81.00	30.00
tblOffRoadEquipment	HorsePower	231.00	226.00
tblOffRoadEquipment	HorsePower	89.00	74.00
tblOffRoadEquipment	HorsePower	187.00	70.00
tblOffRoadEquipment	HorsePower	187.00	70.00
tblOffRoadEquipment	HorsePower	80.00	85.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	158.00	50.00
tblOffRoadEquipment	HorsePower	84.00	40.00
tblOffRoadEquipment	HorsePower	8.00	60.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	97.00	75.00
tblOffRoadEquipment	HorsePower	46.00	25.00
tblOffRoadEquipment	LoadFactor	0.38	0.37
tblOffRoadEquipment	LoadFactor	0.38	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.38	0.40
tblOffRoadEquipment	LoadFactor	0.74	0.37
tblOffRoadEquipment	LoadFactor	0.37	0.48
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	4.00
tblOffRoadEquipment	UsageHours	4.00	7.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	8.00	7.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	670.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	0.14
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	18.00	80.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	10.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblTripsAndVMT	VendorTripNumber	0.00	1.00
tblTripsAndVMT	VendorTripNumber	0.00	5.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	10.00	20.00
tblTripsAndVMT	WorkerTripNumber	5.00	16.00
tblTripsAndVMT	WorkerTripNumber	3.00	8.00
tblTripsAndVMT	WorkerTripNumber	23.00	16.00
tblTripsAndVMT	WorkerTripNumber	46.00	160.00
tblTripsAndVMT	WorkerTripNumber	10.00	16.00
tblTripsAndVMT	WorkerTripNumber	5.00	60.00
tblTripsAndVMT	WorkerTripNumber	9.00	40.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00
tblVehicleTrips	ST_TR	8.19	5.87
tblVehicleTrips	SU_TR	5.95	5.87
tblVehicleTrips	WD_TR	8.36	5.87

2.0 Emissions Summary

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.2299	2.0640	2.2143	6.0200e-003	0.2529	0.0788	0.3317	0.0652	0.0733	0.1385	0.0000	557.1516	557.1516	0.0832	0.0333	569.1387
2024	0.8320	1.9400	2.0976	6.1900e-003	0.2502	0.0679	0.3181	0.0677	0.0633	0.1310	0.0000	575.5086	575.5086	0.0818	0.0360	588.2862
2025	5.4800e-003	7.3700e-003	8.7100e-003	3.0000e-005	1.0600e-003	2.4000e-004	1.3000e-003	2.9000e-004	2.2000e-004	5.1000e-004	0.0000	2.3519	2.3519	3.4000e-004	1.4000e-004	2.4025
Maximum	**0.8320**	**2.0640**	**2.2143**	**6.1900e-003**	**0.2529**	**0.0788**	**0.3317**	**0.0677**	**0.0733**	**0.1385**	**0.0000**	**575.5086**	**575.5086**	**0.0832**	**0.0360**	**588.2862**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.1652	2.8599	2.3792	6.0200e-003	0.2385	0.0171	0.2556	0.0633	0.0169	0.0802	0.0000	557.1513	557.1513	0.0832	0.0333	569.1385
2024	0.7842	2.8344	2.3368	6.1900e-003	0.2486	0.0167	0.2653	0.0676	0.0165	0.0841	0.0000	575.5083	575.5083	0.0818	0.0360	588.2860
2025	5.3500e-003	0.0117	9.7000e-003	3.0000e-005	1.0600e-003	7.0000e-005	1.1300e-003	2.9000e-004	7.0000e-005	3.6000e-004	0.0000	2.3519	2.3519	3.4000e-004	1.4000e-004	2.4025
Maximum	**0.7842**	**2.8599**	**2.3792**	**6.1900e-003**	**0.2486**	**0.0171**	**0.2653**	**0.0676**	**0.0169**	**0.0841**	**0.0000**	**575.5083**	**575.5083**	**0.0832**	**0.0360**	**588.2860**

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EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**10.56**	**-42.24**	**-9.38**	**0.00**	**3.17**	**76.99**	**19.83**	**1.55**	**75.53**	**39.03**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	**11-1-2022**	**1-31-2023**	0.0689	0.0812
3	**2-1-2023**	**4-30-2023**	0.6958	0.9196
4	**5-1-2023**	**7-31-2023**	0.6364	0.8519
5	**8-1-2023**	**10-31-2023**	0.5311	0.6997
6	**11-1-2023**	**1-31-2024**	0.5268	0.7029
7	**2-1-2024**	**4-30-2024**	0.4952	0.6830
8	**5-1-2024**	**7-31-2024**	0.5004	0.6924
9	**8-1-2024**	**10-31-2024**	0.9367	1.1514
10	**11-1-2024**	**1-31-2025**	0.6429	0.8308
		Highest	0.9367	1.1514

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2615	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	67.7605	67.7605	0.0110	1.3300e-003	68.4306
Mobile	0.3256	0.2837	2.9865	5.8700e-003	0.6666	3.9700e-003	0.6706	0.1781	3.6800e-003	0.1817	0.0000	555.4686	555.4686	0.0396	0.0252	563.9698
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	18.1149	0.0000	18.1149	1.0706	0.0000	44.8789
Water						0.0000	0.0000		0.0000	0.0000	1.3118	2.2188	3.5306	0.1351	3.2200e-003	7.8689
Total	**0.6146**	**0.3606**	**3.0592**	**6.0000e-003**	**0.6666**	**8.0200e-003**	**0.6746**	**0.1781**	**7.7300e-003**	**0.1858**	**19.4267**	**638.2098**	**657.6365**	**1.2580**	**0.0298**	**697.9551**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.2615	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	64.4889	64.4889	0.0104	1.2600e-003	65.1266
Mobile	0.3256	0.2837	2.9865	5.8700e-003	0.6666	3.9700e-003	0.6706	0.1781	3.6800e-003	0.1817	0.0000	555.4686	555.4686	0.0396	0.0252	563.9698
Stationary	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Waste						0.0000	0.0000		0.0000	0.0000	18.1149	0.0000	18.1149	1.0706	0.0000	44.8789
Water						0.0000	0.0000		0.0000	0.0000	1.3118	2.2188	3.5306	0.1351	3.2200e-003	7.8689
Total	**0.6146**	**0.3606**	**3.0592**	**6.0000e-003**	**0.6666**	**8.0200e-003**	**0.6746**	**0.1781**	**7.7300e-003**	**0.1858**	**19.4267**	**634.9382**	**654.3648**	**1.2575**	**0.0297**	**694.6511**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.51**	**0.50**	**0.04**	**0.24**	**0.47**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2023	3/1/2023	5	43	
2	Asphalt Demoltion	Demolition	3/1/2023	3/15/2023	5	11	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3	Rough Grading	Grading	3/1/2023	3/31/2023	5	23	
4	Building Construction	Building Construction	3/1/2023	1/1/2025	5	481	
5	Site Preparation	Site Preparation	3/15/2023	4/15/2023	5	23	
6	Utility Trenching	Trenching	4/1/2023	8/1/2023	5	87	
7	Fine Grading	Grading	10/1/2024	10/15/2024	5	11	
8	Finishing/Landscaping	Architectural Coating	10/1/2024	1/1/2025	5	67	
9	Architectural Coating	Architectural Coating	10/15/2024	11/1/2024	5	14	
10	Paving	Paving	11/1/2024	11/29/2024	5	21	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 23

Acres of Paving: 0.26

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 87,021; Non-Residential Outdoor: 29,007; Striped Parking Area: 3,112 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	30	0.73
Demolition	Excavators	3	8.00	50	0.37
Asphalt Demoltion	Excavators	1	8.00	50	0.37
Rough Grading	Excavators	3	8.00	50	0.40
Rough Grading	Graders	2	8.00	70	0.41
Rough Grading	Plate Compactors	1	8.00	60	0.43
Rough Grading	Tractors/Loaders/Backhoes	3	8.00	75	0.37
Building Construction	Cranes	1	7.00	226	0.29
Building Construction	Forklifts	3	8.00	74	0.20
Building Construction	Generator Sets	1	8.00	40	0.37
Building Construction	Tractors/Loaders/Backhoes	3	7.00	75	0.37
Building Construction	Welders	1	8.00	25	0.45

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Site Preparation	Tractors/Loaders/Backhoes	4	8.00	75	0.37
Utility Trenching	Excavators	1	8.00	50	0.38
Utility Trenching	Tractors/Loaders/Backhoes	1	8.00	75	0.37
Fine Grading	Excavators	1	6.00	50	0.40
Fine Grading	Graders	1	8.00	70	0.41
Fine Grading	Tractors/Loaders/Backhoes	1	8.00	75	0.37
Finishing/Landscaping	Tractors/Loaders/Backhoes	1	8.00	75	0.48
Architectural Coating	Air Compressors	1	6.00	35	0.48
Paving	Rollers	1	8.00	85	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	75	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	4	20.00	5.00	62.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Asphalt Demoltion	1	8.00	1.00	66.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Rough Grading	9	16.00	2.00	55.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	160.00	80.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Site Preparation	4	16.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Utility Trenching	2	60.00	10.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Fine Grading	3	8.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Finishing/Landscaping	1	40.00	5.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	8.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	2	16.00	2.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Cleaner Engines for Construction Equipment

Use DPF for Construction Equipment

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Water Exposed Area

Reduce Vehicle Speed on Unpaved Roads

3.2 Demolition - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.7100e-003	0.0000	6.7100e-003	1.0200e-003	0.0000	1.0200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0145	0.1073	0.1254	1.7000e-004		4.0500e-003	4.0500e-003		3.8100e-003	3.8100e-003	0.0000	14.3128	14.3128	3.6500e-003	0.0000	14.4041
Total	**0.0145**	**0.1073**	**0.1254**	**1.7000e-004**	**6.7100e-003**	**4.0500e-003**	**0.0108**	**1.0200e-003**	**3.8100e-003**	**4.8300e-003**	**0.0000**	**14.3128**	**14.3128**	**3.6500e-003**	**0.0000**	**14.4041**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	4.8700e-003	1.5900e-003	2.0000e-005	5.2000e-004	3.0000e-005	5.5000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	2.1120	2.1120	2.1000e-004	3.4000e-004	2.2187
Vendor	1.1000e-004	5.0600e-003	1.8200e-003	2.0000e-005	7.0000e-004	3.0000e-005	7.3000e-004	2.0000e-004	2.0000e-005	2.3000e-004	0.0000	2.2839	2.2839	1.4000e-004	3.4000e-004	2.3878
Worker	9.3000e-004	6.1000e-004	8.3600e-003	3.0000e-005	3.3900e-003	2.0000e-005	3.4000e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.5475	2.5475	6.0000e-005	6.0000e-005	2.5679
Total	**1.1100e-003**	**0.0105**	**0.0118**	**7.0000e-005**	**4.6100e-003**	**8.0000e-005**	**4.6800e-003**	**1.2400e-003**	**7.0000e-005**	**1.3200e-003**	**0.0000**	**6.9434**	**6.9434**	**4.1000e-004**	**7.4000e-004**	**7.1743**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.0200e-003	0.0000	3.0200e-003	4.6000e-004	0.0000	4.6000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2500e-003	0.1384	0.1119	1.7000e-004		9.5000e-004	9.5000e-004		9.5000e-004	9.5000e-004	0.0000	14.3128	14.3128	3.6500e-003	0.0000	14.4041
Total	**7.2500e-003**	**0.1384**	**0.1119**	**1.7000e-004**	**3.0200e-003**	**9.5000e-004**	**3.9700e-003**	**4.6000e-004**	**9.5000e-004**	**1.4100e-003**	**0.0000**	**14.3128**	**14.3128**	**3.6500e-003**	**0.0000**	**14.4041**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.2 Demolition - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	4.8700e-003	1.5900e-003	2.0000e-005	5.2000e-004	3.0000e-005	5.5000e-004	1.4000e-004	3.0000e-005	1.7000e-004	0.0000	2.1120	2.1120	2.1000e-004	3.4000e-004	2.2187
Vendor	1.1000e-004	5.0600e-003	1.8200e-003	2.0000e-005	7.0000e-004	3.0000e-005	7.3000e-004	2.0000e-004	2.0000e-005	2.3000e-004	0.0000	2.2839	2.2839	1.4000e-004	3.4000e-004	2.3878
Worker	9.3000e-004	6.1000e-004	8.3600e-003	3.0000e-005	3.3900e-003	2.0000e-005	3.4000e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.5475	2.5475	6.0000e-005	6.0000e-005	2.5679
Total	**1.1100e-003**	**0.0105**	**0.0118**	**7.0000e-005**	**4.6100e-003**	**8.0000e-005**	**4.6800e-003**	**1.2400e-003**	**7.0000e-005**	**1.3200e-003**	**0.0000**	**6.9434**	**6.9434**	**4.1000e-004**	**7.4000e-004**	**7.1743**

3.3 Asphalt Demoltion - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					7.1600e-003	0.0000	7.1600e-003	1.0800e-003	0.0000	1.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.1000e-004	6.4500e-003	7.6000e-003	1.0000e-005		2.5000e-004	2.5000e-004		2.3000e-004	2.3000e-004	0.0000	0.8554	0.8554	2.8000e-004	0.0000	0.8623
Total	**8.1000e-004**	**6.4500e-003**	**7.6000e-003**	**1.0000e-005**	**7.1600e-003**	**2.5000e-004**	**7.4100e-003**	**1.0800e-003**	**2.3000e-004**	**1.3100e-003**	**0.0000**	**0.8554**	**0.8554**	**2.8000e-004**	**0.0000**	**0.8623**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Asphalt Demoltion - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	5.1900e-003	1.7000e-003	2.0000e-005	5.5000e-004	3.0000e-005	5.9000e-004	1.5000e-004	3.0000e-005	1.8000e-004	0.0000	2.2482	2.2482	2.3000e-004	3.6000e-004	2.3618
Vendor	1.0000e-005	2.6000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1169	0.1169	1.0000e-005	2.0000e-005	0.1222
Worker	9.0000e-005	6.0000e-005	8.6000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2607	0.2607	1.0000e-005	1.0000e-005	0.2628
Total	**1.8000e-004**	**5.5100e-003**	**2.6500e-003**	**2.0000e-005**	**9.4000e-004**	**3.0000e-005**	**9.8000e-004**	**2.5000e-004**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**2.6258**	**2.6258**	**2.5000e-004**	**3.9000e-004**	**2.7468**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.2200e-003	0.0000	3.2200e-003	4.9000e-004	0.0000	4.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.1000e-004	8.5200e-003	6.6400e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.8554	0.8554	2.8000e-004	0.0000	0.8623
Total	**4.1000e-004**	**8.5200e-003**	**6.6400e-003**	**1.0000e-005**	**3.2200e-003**	**5.0000e-005**	**3.2700e-003**	**4.9000e-004**	**5.0000e-005**	**5.4000e-004**	**0.0000**	**0.8554**	**0.8554**	**2.8000e-004**	**0.0000**	**0.8623**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Asphalt Demoltion - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	5.1900e-003	1.7000e-003	2.0000e-005	5.5000e-004	3.0000e-005	5.9000e-004	1.5000e-004	3.0000e-005	1.8000e-004	0.0000	2.2482	2.2482	2.3000e-004	3.6000e-004	2.3618
Vendor	1.0000e-005	2.6000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1169	0.1169	1.0000e-005	2.0000e-005	0.1222
Worker	9.0000e-005	6.0000e-005	8.6000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2607	0.2607	1.0000e-005	1.0000e-005	0.2628
Total	**1.8000e-004**	**5.5100e-003**	**2.6500e-003**	**2.0000e-005**	**9.4000e-004**	**3.0000e-005**	**9.8000e-004**	**2.5000e-004**	**3.0000e-005**	**2.8000e-004**	**0.0000**	**2.6258**	**2.6258**	**2.5000e-004**	**3.9000e-004**	**2.7468**

3.4 Rough Grading - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0122	0.0000	0.0122	1.3200e-003	0.0000	1.3200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0179	0.1515	0.1603	2.1000e-004		8.7900e-003	8.7900e-003		8.0900e-003	8.0900e-003	0.0000	18.0551	18.0551	5.8400e-003	0.0000	18.2011
Total	**0.0179**	**0.1515**	**0.1603**	**2.1000e-004**	**0.0122**	**8.7900e-003**	**0.0210**	**1.3200e-003**	**8.0900e-003**	**9.4100e-003**	**0.0000**	**18.0551**	**18.0551**	**5.8400e-003**	**0.0000**	**18.2011**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Rough Grading - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	4.3200e-003	1.4100e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.5000e-004	0.0000	1.8735	1.8735	1.9000e-004	3.0000e-004	1.9682
Vendor	2.0000e-005	1.0800e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4887	0.4887	3.0000e-005	7.0000e-005	0.5109
Worker	4.0000e-004	2.6000e-004	3.5800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.0901	1.0901	3.0000e-005	3.0000e-005	1.0988
Total	**4.8000e-004**	**5.6600e-003**	**5.3800e-003**	**3.0000e-005**	**2.0600e-003**	**5.0000e-005**	**2.1100e-003**	**5.6000e-004**	**5.0000e-005**	**5.9000e-004**	**0.0000**	**3.4523**	**3.4523**	**2.5000e-004**	**4.0000e-004**	**3.5779**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.5000e-003	0.0000	5.5000e-003	5.9000e-004	0.0000	5.9000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3600e-003	0.1933	0.1506	2.1000e-004		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	18.0551	18.0551	5.8400e-003	0.0000	18.2011
Total	**9.3600e-003**	**0.1933**	**0.1506**	**2.1000e-004**	**5.5000e-003**	**1.1700e-003**	**6.6700e-003**	**5.9000e-004**	**1.1700e-003**	**1.7600e-003**	**0.0000**	**18.0551**	**18.0551**	**5.8400e-003**	**0.0000**	**18.2011**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Rough Grading - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	6.0000e-005	4.3200e-003	1.4100e-003	2.0000e-005	4.6000e-004	3.0000e-005	4.9000e-004	1.3000e-004	3.0000e-005	1.5000e-004	0.0000	1.8735	1.8735	1.9000e-004	3.0000e-004	1.9682
Vendor	2.0000e-005	1.0800e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4887	0.4887	3.0000e-005	7.0000e-005	0.5109
Worker	4.0000e-004	2.6000e-004	3.5800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.0901	1.0901	3.0000e-005	3.0000e-005	1.0988
Total	**4.8000e-004**	**5.6600e-003**	**5.3800e-003**	**3.0000e-005**	**2.0600e-003**	**5.0000e-005**	**2.1100e-003**	**5.6000e-004**	**5.0000e-005**	**5.9000e-004**	**0.0000**	**3.4523**	**3.4523**	**2.5000e-004**	**4.0000e-004**	**3.5779**

3.5 Building Construction - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1245	1.1577	1.1368	1.9900e-003		0.0553	0.0553		0.0515	0.0515	0.0000	170.1602	170.1602	0.0492	0.0000	171.3888
Total	**0.1245**	**1.1577**	**1.1368**	**1.9900e-003**		**0.0553**	**0.0553**		**0.0515**	**0.0515**	**0.0000**	**170.1602**	**170.1602**	**0.0492**	**0.0000**	**171.3888**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.2800e-003	0.4106	0.1472	1.8300e-003	0.0569	2.1100e-003	0.0590	0.0165	2.0200e-003	0.0185	0.0000	185.2627	185.2627	0.0114	0.0273	193.6866
Worker	0.0376	0.0246	0.3390	1.1100e-003	0.1373	6.6000e-004	0.1380	0.0365	6.1000e-004	0.0372	0.0000	103.3202	103.3202	2.6000e-003	2.5600e-003	104.1487
Total	**0.0469**	**0.4351**	**0.4863**	**2.9400e-003**	**0.1942**	**2.7700e-003**	**0.1970**	**0.0530**	**2.6300e-003**	**0.0556**	**0.0000**	**288.5829**	**288.5829**	**0.0140**	**0.0299**	**297.8352**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0796	1.7600	1.3259	1.9900e-003		0.0101	0.0101		0.0101	0.0101	0.0000	170.1600	170.1600	0.0492	0.0000	171.3886
Total	**0.0796**	**1.7600**	**1.3259**	**1.9900e-003**		**0.0101**	**0.0101**		**0.0101**	**0.0101**	**0.0000**	**170.1600**	**170.1600**	**0.0492**	**0.0000**	**171.3886**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.2800e-003	0.4106	0.1472	1.8300e-003	0.0569	2.1100e-003	0.0590	0.0165	2.0200e-003	0.0185	0.0000	185.2627	185.2627	0.0114	0.0273	193.6866
Worker	0.0376	0.0246	0.3390	1.1100e-003	0.1373	6.6000e-004	0.1380	0.0365	6.1000e-004	0.0372	0.0000	103.3202	103.3202	2.6000e-003	2.5600e-003	104.1487
Total	**0.0469**	**0.4351**	**0.4863**	**2.9400e-003**	**0.1942**	**2.7700e-003**	**0.1970**	**0.0530**	**2.6300e-003**	**0.0556**	**0.0000**	**288.5829**	**288.5829**	**0.0140**	**0.0299**	**297.8352**

3.5 Building Construction - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1412	1.3043	1.3573	2.4000e-003		0.0591	0.0591		0.0550	0.0550	0.0000	204.5491	204.5491	0.0589	0.0000	206.0224
Total	**0.1412**	**1.3043**	**1.3573**	**2.4000e-003**		**0.0591**	**0.0591**		**0.0550**	**0.0550**	**0.0000**	**204.5491**	**204.5491**	**0.0589**	**0.0000**	**206.0224**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0108	0.4886	0.1763	2.1500e-003	0.0684	2.5500e-003	0.0710	0.0198	2.4400e-003	0.0222	0.0000	218.7021	218.7021	0.0140	0.0323	228.6736
Worker	0.0429	0.0265	0.3837	1.2900e-003	0.1650	7.6000e-004	0.1658	0.0439	7.0000e-004	0.0446	0.0000	121.0911	121.0911	2.8400e-003	2.8800e-003	122.0194
Total	**0.0537**	**0.5151**	**0.5600**	**3.4400e-003**	**0.2334**	**3.3100e-003**	**0.2367**	**0.0637**	**3.1400e-003**	**0.0668**	**0.0000**	**339.7932**	**339.7932**	**0.0169**	**0.0352**	**350.6929**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0957	2.1152	1.5935	2.4000e-003		0.0121	0.0121		0.0121	0.0121	0.0000	204.5489	204.5489	0.0589	0.0000	206.0222
Total	**0.0957**	**2.1152**	**1.5935**	**2.4000e-003**		**0.0121**	**0.0121**		**0.0121**	**0.0121**	**0.0000**	**204.5489**	**204.5489**	**0.0589**	**0.0000**	**206.0222**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0108	0.4886	0.1763	2.1500e-003	0.0684	2.5500e-003	0.0710	0.0198	2.4400e-003	0.0222	0.0000	218.7021	218.7021	0.0140	0.0323	228.6736
Worker	0.0429	0.0265	0.3837	1.2900e-003	0.1650	7.6000e-004	0.1658	0.0439	7.0000e-004	0.0446	0.0000	121.0911	121.0911	2.8400e-003	2.8800e-003	122.0194
Total	**0.0537**	**0.5151**	**0.5600**	**3.4400e-003**	**0.2334**	**3.3100e-003**	**0.2367**	**0.0637**	**3.1400e-003**	**0.0668**	**0.0000**	**339.7932**	**339.7932**	**0.0169**	**0.0352**	**350.6929**

3.5 Building Construction - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.0000e-004	4.6200e-003	5.1500e-003	1.0000e-005		2.0000e-004	2.0000e-004		1.8000e-004	1.8000e-004	0.0000	0.7810	0.7810	2.2000e-004	0.0000	0.7866
Total	**5.0000e-004**	**4.6200e-003**	**5.1500e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**1.8000e-004**	**1.8000e-004**	**0.0000**	**0.7810**	**0.7810**	**2.2000e-004**	**0.0000**	**0.7866**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.8400e-003	6.7000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.7000e-004	8.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.8183	0.8183	5.0000e-005	1.2000e-004	0.8557
Worker	1.6000e-004	9.0000e-005	1.3800e-003	0.0000	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4512	0.4512	1.0000e-005	1.0000e-005	0.4545
Total	**2.0000e-004**	**1.9300e-003**	**2.0500e-003**	**1.0000e-005**	**8.9000e-004**	**1.0000e-005**	**9.0000e-004**	**2.5000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.2695**	**1.2695**	**6.0000e-005**	**1.3000e-004**	**1.3102**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.7000e-004	8.0700e-003	6.0800e-003	1.0000e-005		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.7810	0.7810	2.2000e-004	0.0000	0.7866
Total	**3.7000e-004**	**8.0700e-003**	**6.0800e-003**	**1.0000e-005**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**	**0.0000**	**0.7810**	**0.7810**	**2.2000e-004**	**0.0000**	**0.7866**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Building Construction - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.8400e-003	6.7000e-004	1.0000e-005	2.6000e-004	1.0000e-005	2.7000e-004	8.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.8183	0.8183	5.0000e-005	1.2000e-004	0.8557
Worker	1.6000e-004	9.0000e-005	1.3800e-003	0.0000	6.3000e-004	0.0000	6.3000e-004	1.7000e-004	0.0000	1.7000e-004	0.0000	0.4512	0.4512	1.0000e-005	1.0000e-005	0.4545
Total	**2.0000e-004**	**1.9300e-003**	**2.0500e-003**	**1.0000e-005**	**8.9000e-004**	**1.0000e-005**	**9.0000e-004**	**2.5000e-004**	**1.0000e-005**	**2.5000e-004**	**0.0000**	**1.2695**	**1.2695**	**6.0000e-005**	**1.3000e-004**	**1.3102**

3.6 Site Preparation - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.3800e-003	0.0546	0.0794	1.1000e-004		2.7000e-003	2.7000e-003		2.4800e-003	2.4800e-003	0.0000	9.7306	9.7306	3.1500e-003	0.0000	9.8093
Total	**5.3800e-003**	**0.0546**	**0.0794**	**1.1000e-004**	**0.0000**	**2.7000e-003**	**2.7000e-003**	**0.0000**	**2.4800e-003**	**2.4800e-003**	**0.0000**	**9.7306**	**9.7306**	**3.1500e-003**	**0.0000**	**9.8093**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Site Preparation - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	1.0800e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4887	0.4887	3.0000e-005	7.0000e-005	0.5109
Worker	4.0000e-004	2.6000e-004	3.5800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.0901	1.0901	3.0000e-005	3.0000e-005	1.0988
Total	**4.2000e-004**	**1.3400e-003**	**3.9700e-003**	**1.0000e-005**	**1.6000e-003**	**2.0000e-005**	**1.6200e-003**	**4.3000e-004**	**2.0000e-005**	**4.4000e-004**	**0.0000**	**1.5787**	**1.5787**	**6.0000e-005**	**1.0000e-004**	**1.6097**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1800e-003	0.1069	0.0833	1.1000e-004		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	9.7306	9.7306	3.1500e-003	0.0000	9.8093
Total	**5.1800e-003**	**0.1069**	**0.0833**	**1.1000e-004**	**0.0000**	**6.5000e-004**	**6.5000e-004**	**0.0000**	**6.5000e-004**	**6.5000e-004**	**0.0000**	**9.7306**	**9.7306**	**3.1500e-003**	**0.0000**	**9.8093**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Site Preparation - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	1.0800e-003	3.9000e-004	0.0000	1.5000e-004	1.0000e-005	1.6000e-004	4.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.4887	0.4887	3.0000e-005	7.0000e-005	0.5109
Worker	4.0000e-004	2.6000e-004	3.5800e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.0901	1.0901	3.0000e-005	3.0000e-005	1.0988
Total	**4.2000e-004**	**1.3400e-003**	**3.9700e-003**	**1.0000e-005**	**1.6000e-003**	**2.0000e-005**	**1.6200e-003**	**4.3000e-004**	**2.0000e-005**	**4.4000e-004**	**0.0000**	**1.5787**	**1.5787**	**6.0000e-005**	**1.0000e-004**	**1.6097**

3.7 Utility Trenching - 2023

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0117	0.1040	0.1368	1.8000e-004		4.5800e-003	4.5800e-003		4.2200e-003	4.2200e-003	0.0000	16.1501	16.1501	5.2200e-003	0.0000	16.2806
Total	**0.0117**	**0.1040**	**0.1368**	**1.8000e-004**		**4.5800e-003**	**4.5800e-003**		**4.2200e-003**	**4.2200e-003**	**0.0000**	**16.1501**	**16.1501**	**5.2200e-003**	**0.0000**	**16.2806**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Utility Trenching - 2023

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6000e-004	0.0205	7.3400e-003	9.0000e-005	2.8400e-003	1.1000e-004	2.9400e-003	8.2000e-004	1.0000e-004	9.2000e-004	0.0000	9.2419	9.2419	5.7000e-004	1.3600e-003	9.6621
Worker	5.6300e-003	3.6800e-003	0.0507	1.7000e-004	0.0206	1.0000e-004	0.0207	5.4700e-003	9.0000e-005	5.5600e-003	0.0000	15.4625	15.4625	3.9000e-004	3.8000e-004	15.5865
Total	**6.0900e-003**	**0.0242**	**0.0581**	**2.6000e-004**	**0.0234**	**2.1000e-004**	**0.0236**	**6.2900e-003**	**1.9000e-004**	**6.4800e-003**	**0.0000**	**24.7044**	**24.7044**	**9.6000e-004**	**1.7400e-003**	**25.2486**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2500e-003	0.1704	0.1327	1.8000e-004		1.0300e-003	1.0300e-003		1.0300e-003	1.0300e-003	0.0000	16.1500	16.1500	5.2200e-003	0.0000	16.2806
Total	**8.2500e-003**	**0.1704**	**0.1327**	**1.8000e-004**		**1.0300e-003**	**1.0300e-003**		**1.0300e-003**	**1.0300e-003**	**0.0000**	**16.1500**	**16.1500**	**5.2200e-003**	**0.0000**	**16.2806**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.7 Utility Trenching - 2023

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.6000e-004	0.0205	7.3400e-003	9.0000e-005	2.8400e-003	1.1000e-004	2.9400e-003	8.2000e-004	1.0000e-004	9.2000e-004	0.0000	9.2419	9.2419	5.7000e-004	1.3600e-003	9.6621
Worker	5.6300e-003	3.6800e-003	0.0507	1.7000e-004	0.0206	1.0000e-004	0.0207	5.4700e-003	9.0000e-005	5.5600e-003	0.0000	15.4625	15.4625	3.9000e-004	3.8000e-004	15.5865
Total	**6.0900e-003**	**0.0242**	**0.0581**	**2.6000e-004**	**0.0234**	**2.1000e-004**	**0.0236**	**6.2900e-003**	**1.9000e-004**	**6.4800e-003**	**0.0000**	**24.7044**	**24.7044**	**9.6000e-004**	**1.7400e-003**	**25.2486**

3.8 Fine Grading - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.9200e-003	0.0000	2.9200e-003	3.1000e-004	0.0000	3.1000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.1200e-003	0.0264	0.0273	3.0000e-005		1.5900e-003	1.5900e-003		1.4600e-003	1.4600e-003	0.0000	3.0451	3.0451	9.8000e-004	0.0000	3.0697
Total	**3.1200e-003**	**0.0264**	**0.0273**	**3.0000e-005**	**2.9200e-003**	**1.5900e-003**	**4.5100e-003**	**3.1000e-004**	**1.4600e-003**	**1.7700e-003**	**0.0000**	**3.0451**	**3.0451**	**9.8000e-004**	**0.0000**	**3.0697**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Fine Grading - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.6000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1148	0.1148	1.0000e-005	2.0000e-005	0.1200
Worker	9.0000e-005	6.0000e-005	8.1000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2542	0.2542	1.0000e-005	1.0000e-005	0.2562
Total	**1.0000e-004**	**3.2000e-004**	**9.0000e-004**	**0.0000**	**3.9000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3690**	**0.3690**	**2.0000e-005**	**3.0000e-005**	**0.3762**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.3100e-003	0.0000	1.3100e-003	1.4000e-004	0.0000	1.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5900e-003	0.0329	0.0256	3.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	3.0451	3.0451	9.8000e-004	0.0000	3.0697
Total	**1.5900e-003**	**0.0329**	**0.0256**	**3.0000e-005**	**1.3100e-003**	**2.0000e-004**	**1.5100e-003**	**1.4000e-004**	**2.0000e-004**	**3.4000e-004**	**0.0000**	**3.0451**	**3.0451**	**9.8000e-004**	**0.0000**	**3.0697**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.8 Fine Grading - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.6000e-004	9.0000e-005	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1148	0.1148	1.0000e-005	2.0000e-005	0.1200
Worker	9.0000e-005	6.0000e-005	8.1000e-004	0.0000	3.5000e-004	0.0000	3.5000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2542	0.2542	1.0000e-005	1.0000e-005	0.2562
Total	**1.0000e-004**	**3.2000e-004**	**9.0000e-004**	**0.0000**	**3.9000e-004**	**0.0000**	**3.9000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3690**	**0.3690**	**2.0000e-005**	**3.0000e-005**	**0.3762**

3.9 Finishing/Landscaping - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3087					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7600e-003	0.0479	0.0740	1.0000e-004		2.2000e-003	2.2000e-003		2.0200e-003	2.0200e-003	0.0000	9.0617	9.0617	2.9300e-003	0.0000	9.1350
Total	**0.3134**	**0.0479**	**0.0740**	**1.0000e-004**		**2.2000e-003**	**2.2000e-003**		**2.0200e-003**	**2.0200e-003**	**0.0000**	**9.0617**	**9.0617**	**2.9300e-003**	**0.0000**	**9.1350**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	7.6900e-003	2.7800e-003	3.0000e-005	1.0800e-003	4.0000e-005	1.1200e-003	3.1000e-004	4.0000e-005	3.5000e-004	0.0000	3.4433	3.4433	2.2000e-004	5.1000e-004	3.6003
Worker	2.7000e-003	1.6700e-003	0.0242	8.0000e-005	0.0104	5.0000e-005	0.0104	2.7700e-003	4.0000e-005	2.8100e-003	0.0000	7.6260	7.6260	1.8000e-004	1.8000e-004	7.6844
Total	**2.8700e-003**	**9.3600e-003**	**0.0269**	**1.1000e-004**	**0.0115**	**9.0000e-005**	**0.0116**	**3.0800e-003**	**8.0000e-005**	**3.1600e-003**	**0.0000**	**11.0693**	**11.0693**	**4.0000e-004**	**6.9000e-004**	**11.2847**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3087					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.8200e-003	0.0995	0.0775	1.0000e-004		6.0000e-004	6.0000e-004		6.0000e-004	6.0000e-004	0.0000	9.0617	9.0617	2.9300e-003	0.0000	9.1350
Total	**0.3135**	**0.0995**	**0.0775**	**1.0000e-004**		**6.0000e-004**	**6.0000e-004**		**6.0000e-004**	**6.0000e-004**	**0.0000**	**9.0617**	**9.0617**	**2.9300e-003**	**0.0000**	**9.1350**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.7000e-004	7.6900e-003	2.7800e-003	3.0000e-005	1.0800e-003	4.0000e-005	1.1200e-003	3.1000e-004	4.0000e-005	3.5000e-004	0.0000	3.4433	3.4433	2.2000e-004	5.1000e-004	3.6003
Worker	2.7000e-003	1.6700e-003	0.0242	8.0000e-005	0.0104	5.0000e-005	0.0104	2.7700e-003	4.0000e-005	2.8100e-003	0.0000	7.6260	7.6260	1.8000e-004	1.8000e-004	7.6844
Total	**2.8700e-003**	**9.3600e-003**	**0.0269**	**1.1000e-004**	**0.0115**	**9.0000e-005**	**0.0116**	**3.0800e-003**	**8.0000e-005**	**3.1600e-003**	**0.0000**	**11.0693**	**11.0693**	**4.0000e-004**	**6.9000e-004**	**11.2847**

3.9 Finishing/Landscaping - 2025

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.6800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-005	6.7000e-004	1.1200e-003	0.0000		3.0000e-005	3.0000e-005		2.0000e-005	2.0000e-005	0.0000	0.1374	0.1374	4.0000e-005	0.0000	0.1385
Total	**4.7500e-003**	**6.7000e-004**	**1.1200e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**0.1374**	**0.1374**	**4.0000e-005**	**0.0000**	**0.1385**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2025

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.2000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0512	0.0512	0.0000	1.0000e-005	0.0535
Worker	4.0000e-005	2.0000e-005	3.5000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1128	0.1128	0.0000	0.0000	0.1136
Total	**4.0000e-005**	**1.4000e-004**	**3.9000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1639**	**0.1639**	**0.0000**	**1.0000e-005**	**0.1671**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.6800e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-005	1.5100e-003	1.1700e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.1374	0.1374	4.0000e-005	0.0000	0.1385
Total	**4.7500e-003**	**1.5100e-003**	**1.1700e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.1374**	**0.1374**	**4.0000e-005**	**0.0000**	**0.1385**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.9 Finishing/Landscaping - 2025

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.2000e-004	4.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	1.0000e-005	0.0000	0.0512	0.0512	0.0000	1.0000e-005	0.0535
Worker	4.0000e-005	2.0000e-005	3.5000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1128	0.1128	0.0000	0.0000	0.1136
Total	**4.0000e-005**	**1.4000e-004**	**3.9000e-004**	**0.0000**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**4.0000e-005**	**0.0000**	**5.0000e-005**	**0.0000**	**0.1639**	**0.1639**	**0.0000**	**1.0000e-005**	**0.1671**

3.10 Architectural Coating - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0900e-003	6.0100e-003	7.5900e-003	1.0000e-005		2.1000e-004	2.1000e-004		2.1000e-004	2.1000e-004	0.0000	0.8020	0.8020	9.0000e-005	0.0000	0.8042
Total	**0.3144**	**6.0100e-003**	**7.5900e-003**	**1.0000e-005**		**2.1000e-004**	**2.1000e-004**		**2.1000e-004**	**2.1000e-004**	**0.0000**	**0.8020**	**0.8020**	**9.0000e-005**	**0.0000**	**0.8042**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Architectural Coating - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	6.5000e-004	2.4000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.2922	0.2922	2.0000e-005	4.0000e-005	0.3055
Worker	1.1000e-004	7.0000e-005	1.0300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3235	0.3235	1.0000e-005	1.0000e-005	0.3260
Total	**1.2000e-004**	**7.2000e-004**	**1.2700e-003**	**0.0000**	**5.3000e-004**	**0.0000**	**5.3000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.6157**	**0.6157**	**3.0000e-005**	**5.0000e-005**	**0.6315**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.3133					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.5000e-004	7.2000e-003	6.3800e-003	1.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.8020	0.8020	9.0000e-005	0.0000	0.8042
Total	**0.3138**	**7.2000e-003**	**6.3800e-003**	**1.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**0.8020**	**0.8020**	**9.0000e-005**	**0.0000**	**0.8042**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.10 Architectural Coating - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	6.5000e-004	2.4000e-004	0.0000	9.0000e-005	0.0000	9.0000e-005	3.0000e-005	0.0000	3.0000e-005	0.0000	0.2922	0.2922	2.0000e-005	4.0000e-005	0.3055
Worker	1.1000e-004	7.0000e-005	1.0300e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3235	0.3235	1.0000e-005	1.0000e-005	0.3260
Total	**1.2000e-004**	**7.2000e-004**	**1.2700e-003**	**0.0000**	**5.3000e-004**	**0.0000**	**5.3000e-004**	**1.5000e-004**	**0.0000**	**1.5000e-004**	**0.0000**	**0.6157**	**0.6157**	**3.0000e-005**	**5.0000e-005**	**0.6315**

3.11 Paving - 2024

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.7900e-003	0.0288	0.0388	5.0000e-005		1.4400e-003	1.4400e-003		1.3200e-003	1.3200e-003	0.0000	4.7947	4.7947	1.5500e-003	0.0000	4.8334
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.7900e-003**	**0.0288**	**0.0388**	**5.0000e-005**		**1.4400e-003**	**1.4400e-003**		**1.3200e-003**	**1.3200e-003**	**0.0000**	**4.7947**	**4.7947**	**1.5500e-003**	**0.0000**	**4.8334**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Paving - 2024

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	9.8000e-004	3.5000e-004	0.0000	1.4000e-004	1.0000e-005	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4382	0.4382	3.0000e-005	6.0000e-005	0.4582
Worker	3.4000e-004	2.1000e-004	3.0800e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	0.9706	0.9706	2.0000e-005	2.0000e-005	0.9780
Total	**3.6000e-004**	**1.1900e-003**	**3.4300e-003**	**1.0000e-005**	**1.4600e-003**	**2.0000e-005**	**1.4700e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.4088**	**1.4088**	**5.0000e-005**	**8.0000e-005**	**1.4362**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.5600e-003	0.0528	0.0412	5.0000e-005		3.2000e-004	3.2000e-004		3.2000e-004	3.2000e-004	0.0000	4.7947	4.7947	1.5500e-003	0.0000	4.8334
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5600e-003**	**0.0528**	**0.0412**	**5.0000e-005**		**3.2000e-004**	**3.2000e-004**		**3.2000e-004**	**3.2000e-004**	**0.0000**	**4.7947**	**4.7947**	**1.5500e-003**	**0.0000**	**4.8334**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.11 Paving - 2024

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	9.8000e-004	3.5000e-004	0.0000	1.4000e-004	1.0000e-005	1.4000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.4382	0.4382	3.0000e-005	6.0000e-005	0.4582
Worker	3.4000e-004	2.1000e-004	3.0800e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	0.9706	0.9706	2.0000e-005	2.0000e-005	0.9780
Total	**3.6000e-004**	**1.1900e-003**	**3.4300e-003**	**1.0000e-005**	**1.4600e-003**	**2.0000e-005**	**1.4700e-003**	**3.9000e-004**	**1.0000e-005**	**4.0000e-004**	**0.0000**	**1.4088**	**1.4088**	**5.0000e-005**	**8.0000e-005**	**1.4362**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.3256	0.2837	2.9865	5.8700e-003	0.6666	3.9700e-003	0.6706	0.1781	3.6800e-003	0.1817	0.0000	555.4686	555.4686	0.0396	0.0252	563.9698
Unmitigated	0.3256	0.2837	2.9865	5.8700e-003	0.6666	3.9700e-003	0.6706	0.1781	3.6800e-003	0.1817	0.0000	555.4686	555.4686	0.0396	0.0252	563.9698

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Enclosed Parking Structure	0.00	0.00	0.00		
Hotel	956.81	956.81	956.81	1,817,873	1,817,873
Total	956.81	956.81	956.81	1,817,873	1,817,873

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Enclosed Parking Structure	9.50	7.30	7.30	0.00	0.00	0.00	0	0	0
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Enclosed Parking Structure	0.465403	0.073585	0.235906	0.146720	0.025583	0.006412	0.010355	0.002060	0.001446	0.000572	0.028871	0.000432	0.002657
Hotel	0.465403	0.073585	0.235906	0.146720	0.025583	0.006412	0.010355	0.002060	0.001446	0.000572	0.028871	0.000432	0.002657

5.0 Energy Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Historical Energy Use: N

5.1 Mitigation Measures Energy

Exceed Title 24

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	64.4889	64.4889	0.0104	1.2600e-003	65.1266
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	67.7605	67.7605	0.0110	1.3300e-003	68.4306
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	272307	25.1949	4.0800e-003	4.9000e-004	25.4440
Hotel	460051	42.5657	6.8900e-003	8.3000e-004	42.9866
Total		**67.7605**	**0.0110**	**1.3200e-003**	**68.4306**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Enclosed Parking Structure	250522	23.1793	3.7500e-003	4.5000e-004	23.4085
Hotel	446476	41.3096	6.6800e-003	8.1000e-004	41.7181
Total		**64.4889**	**0.0104**	**1.2600e-003**	**65.1266**

6.0 Area Detail

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.1 Mitigation Measures Area

No Hearths Installed

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.2615	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Unmitigated	0.2615	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2299					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Total	**0.2615**	**2.0000e-005**	**2.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.1500e-003**	**5.1500e-003**	**1.0000e-005**	**0.0000**	**5.4800e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0313					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.2299					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.4000e-004	2.0000e-005	2.6400e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	5.1500e-003	5.1500e-003	1.0000e-005	0.0000	5.4800e-003
Total	**0.2615**	**2.0000e-005**	**2.6400e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**5.1500e-003**	**5.1500e-003**	**1.0000e-005**	**0.0000**	**5.4800e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	3.5306	0.1351	3.2200e-003	7.8689
Unmitigated	3.5306	0.1351	3.2200e-003	7.8689

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	4.13478 / 0.45942	3.5306	0.1351	3.2200e-003	7.8689
Total		**3.5306**	**0.1351**	**3.2200e-003**	**7.8689**

7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Enclosed Parking Structure	0 / 0	0.0000	0.0000	0.0000	0.0000
Hotel	4.13478 / 0.45942	3.5306	0.1351	3.2200e-003	7.8689
Total		**3.5306**	**0.1351**	**3.2200e-003**	**7.8689**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	18.1149	1.0706	0.0000	44.8789
Unmitigated	18.1149	1.0706	0.0000	44.8789

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	89.24	18.1149	1.0706	0.0000	44.8789
Total		**18.1149**	**1.0706**	**0.0000**	**44.8789**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Enclosed Parking Structure	0	0.0000	0.0000	0.0000	0.0000
Hotel	89.24	18.1149	1.0706	0.0000	44.8789
Total		**18.1149**	**1.0706**	**0.0000**	**44.8789**

9.0 Operational Offroad

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	1	0.14	50	670	0.73	Diesel

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

10.1 Stationary Sources

Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel (600 - 750 HP)	0.0275	0.0768	0.0701	1.3000e-004		4.0400e-003	4.0400e-003		4.0400e-003	4.0400e-003	0.0000	12.7567	12.7567	1.7900e-003	0.0000	12.8014
Total	**0.0275**	**0.0768**	**0.0701**	**1.3000e-004**		**4.0400e-003**	**4.0400e-003**		**4.0400e-003**	**4.0400e-003**	**0.0000**	**12.7567**	**12.7567**	**1.7900e-003**	**0.0000**	**12.8014**

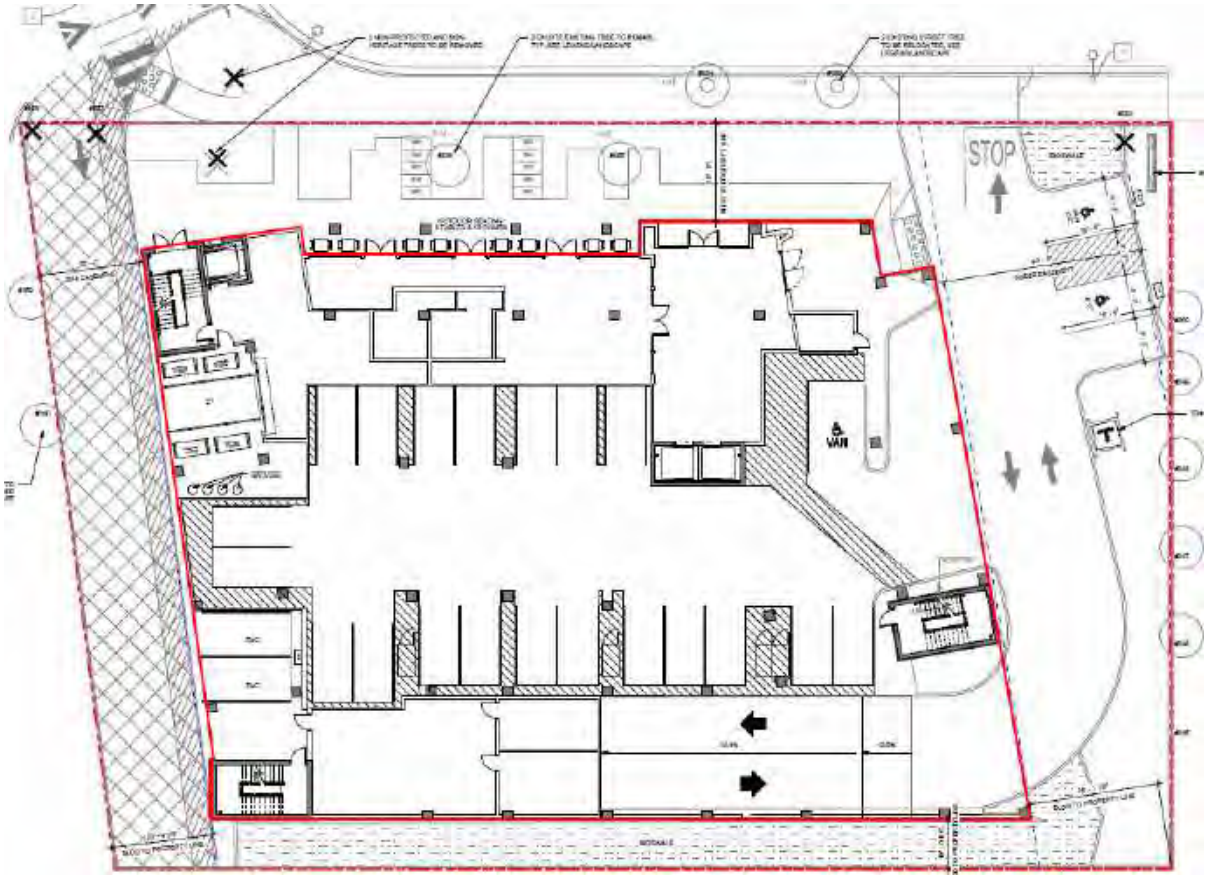
11.0 Vegetation

APPENDIX B

HRA OUTPUT

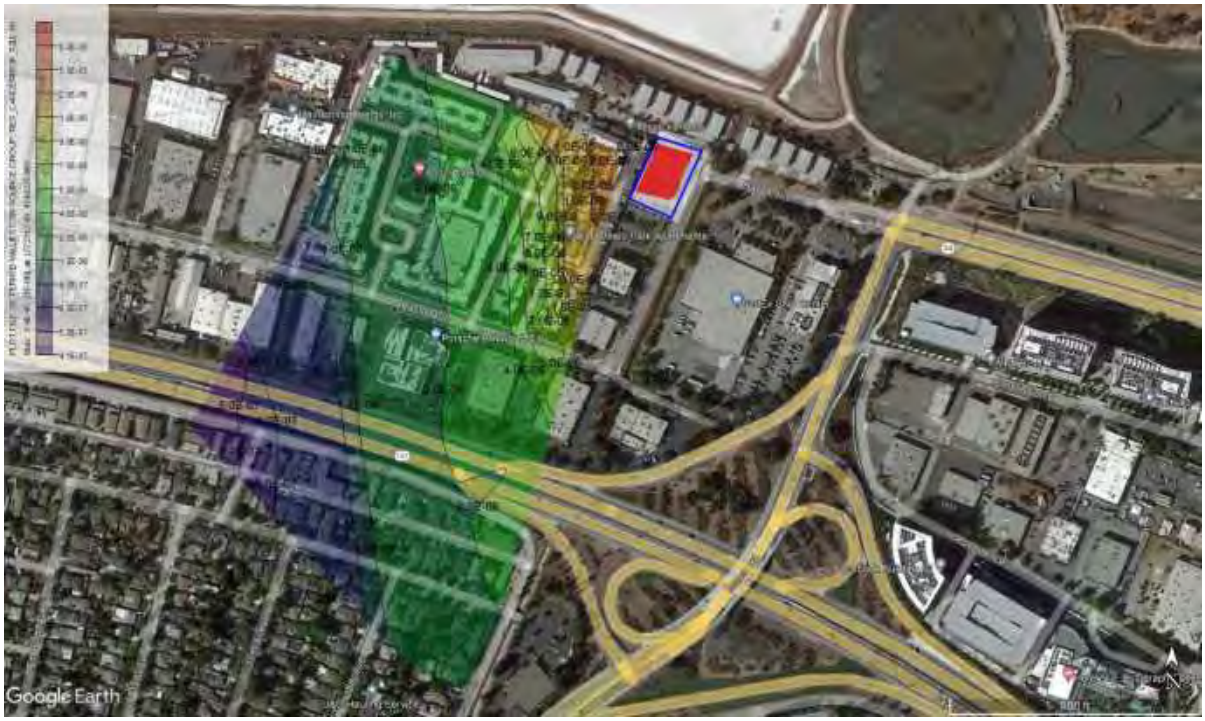
Project Site Location

Project Site Plan

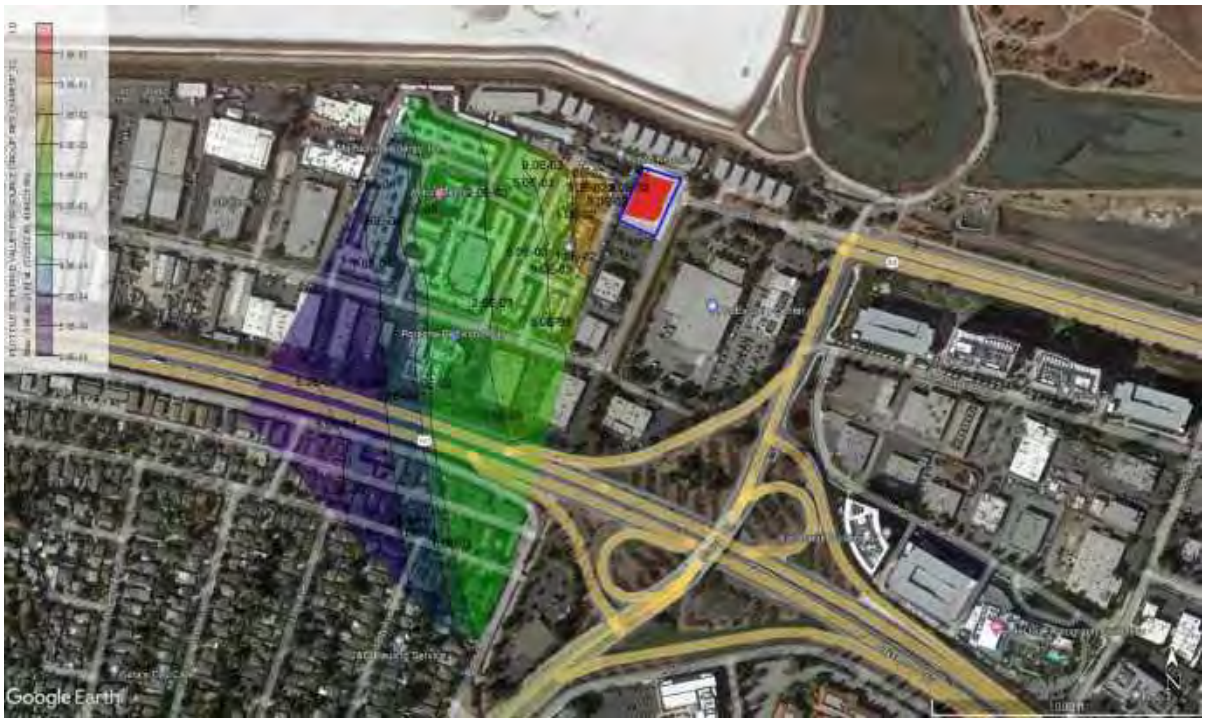


Receptor Locations

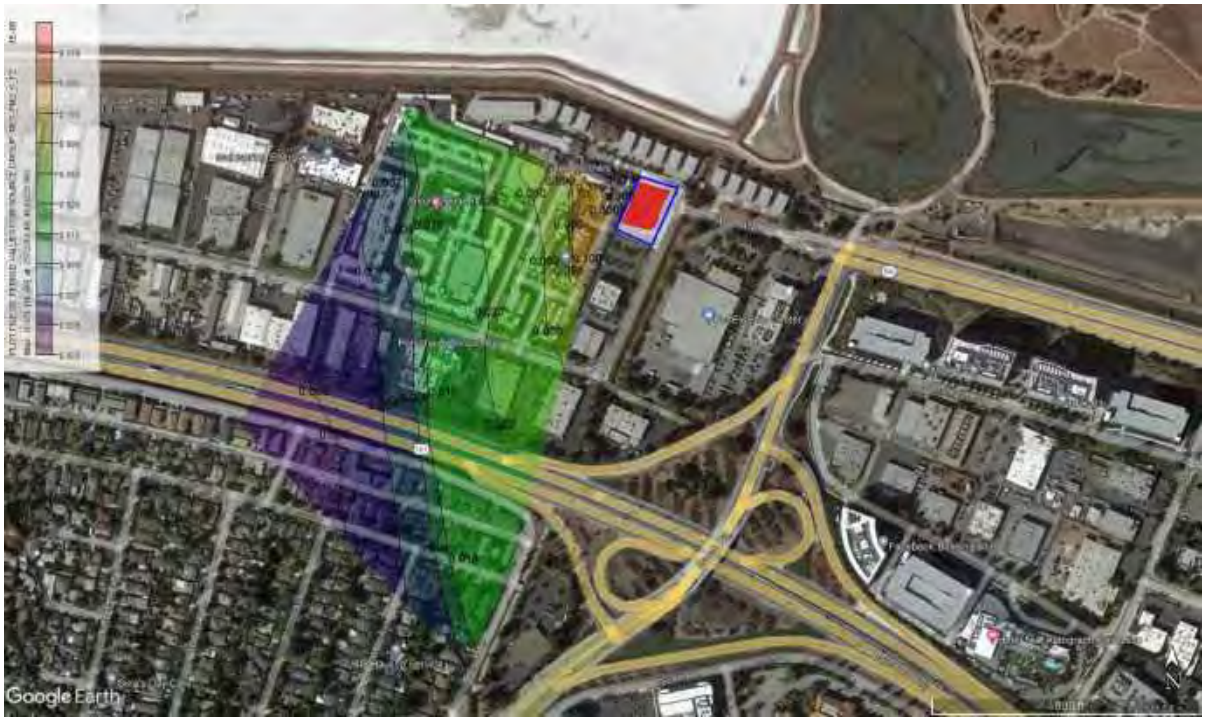
Project Construction Unmitigated Cancer Risk



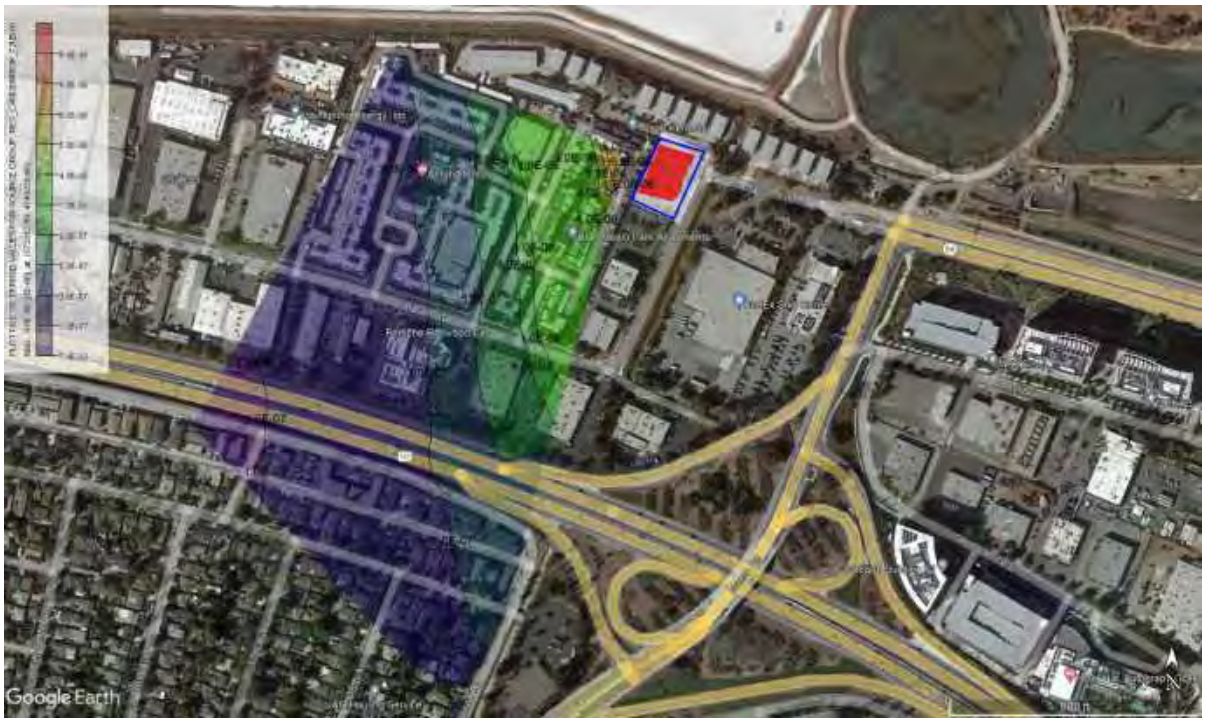
Project Construction Unmitigated Chronic Hazard Index



Project Construction Unmitigated $PM_{2.5}$ Concentrations



Project Construction Mitigated Cancer Risk

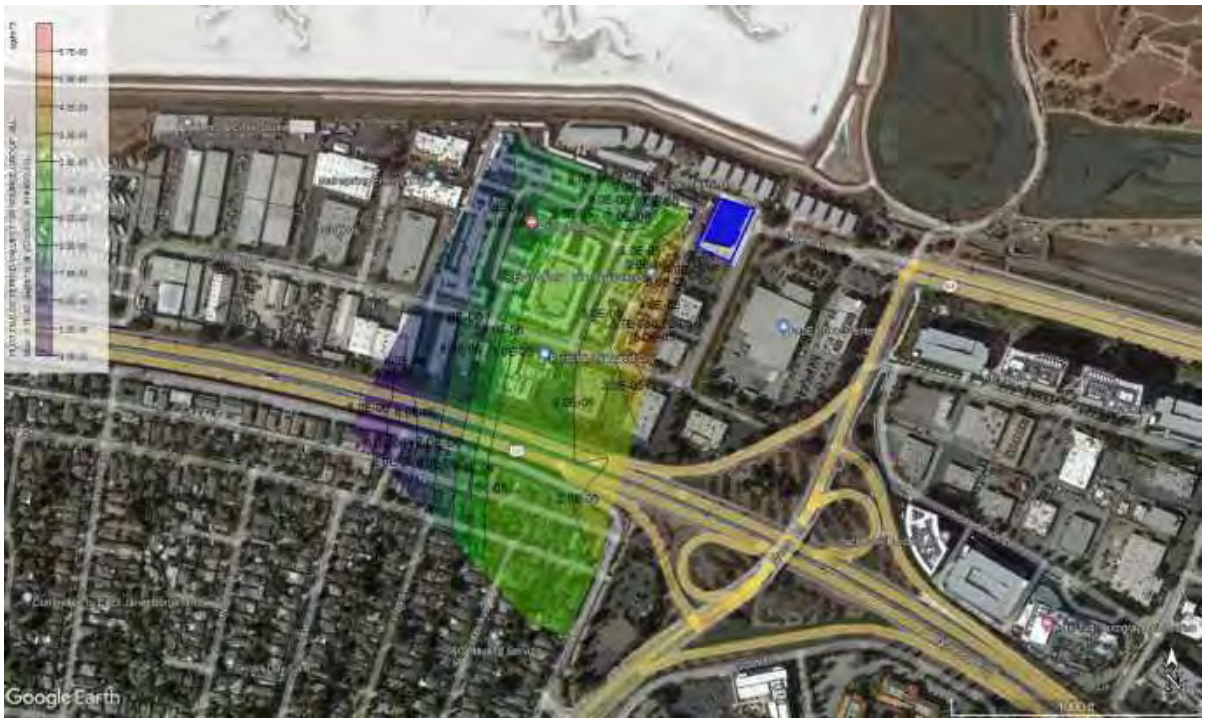


Project Construction Mitigated Chronic Hazard Index

Project Construction Mitigated $PM_{2.5}$ Concentrations

Project Operation Cancer Risk

Project Operation Chronic Hazard Index



Construction	Worker Receptor	Sensitive Receptor
Cancer Risk (in a Million)	1.6	42.4
Chronic HI	6.67E-02	3.12E-02
Acute HI	0	0
PM 2.5	0.62	0.29

Construction (T2)	Worker Receptor	Sensitive Receptor
Cancer Risk (in a Million)	2.1	54.2
Chronic HI	7.78E-02	3.64E-02
Acute HI	0	0
PM 2.5	0.81	0.38

Construction (T2L3)	Worker Receptor	Sensitive Receptor
Cancer Risk (in a Million)	0.4	9.8
Chronic HI	1.41E-02	6.62E-03
Acute HI	0	0
PM 2.5	0.14	0.07

Construction (T4)	Worker Receptor	Sensitive Receptor
Cancer Risk (in a Million)	0.2	4.3
Chronic HI	6.31E-03	2.95E-03
Acute HI	0	0
PM 2.5	0.06	0.03

Operational	Worker Receptor	Sensitive Receptor
70yr Cancer Risk (in a Million)	---	0.23
30yr Cancer Risk (in a Million)	---	0.20
25yr Cancer Risk (in a Million)	0.08	---
Chronic HI	2.65E-04	5.75E-05
Acute HI	0.00	0.00
PM 2.5	0.23	0.05

PM 10				
Tons/Yr	UM	T2	T2L3	T4
Year 1	0.0788	9.59E-02	1.71E-02	7.27E-03
Year 2	0.0679	9.19E-02	0.0167	7.45E-03
Year 3	2.40E-04	3.80E-04	7.00E-05	3.00E-05

PM 10				
Lbs /Yr	UM	T2	T2L3	T4
Year 1	157.6	191.8	34.2	14.54
Year 2	135.8	183.8	33.4	14.9
Year 3	0.48	0.76	0.14	0.06

PM 10				
% Chng	UM	T2	T2L3	T4
Year 1	100%	122%	22%	9%
Year 2	100%	135%	25%	11%
Year 3	100%	100%	100%	100%

PM 2.5				
Tons/Yr	UM	T2	T2L3	T4
Year 1	0.0733	9.57E-02	1.69E-02	7.11E-03
Year 2	0.0633	9.17E-02	0.0165	7.27E-03
Year 3	2.20E-04	3.80E-04	7.00E-05	3.00E-05

PM 2.5				
Lbs /Yr	UM	T2	T2L3	T4
Year 1	146.6	191.4	33.8	14.22
Year 2	126.6	183.4	33	14.54
Year 3	0.44	0.76	0.14	0.06

PM 2.5				
g/sec	UM	T2	T2L3	T4
Year 1	0.004217	0.005506	0.000972	0.000409
Year 2	0.003642	0.005276	0.000949	0.000418
Year 3	1.27E-05	2.19E-05	4.03E-06	1.73E-06

PM 2.5				
% Chng	UM	T2	T2L3	T4
Year 1	100%	131%	23%	9.7%
Year 2	86%	125%	23%	9.9%
Year 3	0.3%	0.5%	0.1%	0.0%
Max Year	1	1	1	2

						Emission Factors (grams/bhp-hr)				
Engine Mfg.	Model	Engine Rating (BHP)	CEP # (Appl. #)	Exp. Date	Comments	HC	NOx	HC + NOx	CO	PM
Perkins	2506C-E15TAG3	762	545376	12/31/2022	TIER 2	0.07	4.10	4.17	1.19	0.067

Hours / Yr	Lbs / Yr				
50	5.63	344.38	350.01	99.95	5.63

0.014182

			UnMitigation				T2				T2L3				T4			
			Max in a million			42.42	Max in a million			54.19	Max in a million			9.76	Max in a million			4.25
#	X	Y	Year 1	Year 2	Year 3	Total	Year 1	Year 2	Year 3	Total	Year 1	Year 2	Year 3	Total	Year 1	Year 2	Year 3	Total
1	572214.1	4148842	1.13E-06	8.99E-07	6.38E-10	2.03E-06	1.37E-06	1.22E-06	6.38E-10	2.59E-06	2.45E-07	2.21E-07	6.38E-10	4.67E-07	1.04E-07	9.86E-08	6.38E-10	2.03E-07
2	572197.9	4148849	1.02E-06	8.13E-07	5.77E-10	1.84E-06	1.24E-06	1.10E-06	5.77E-10	2.35E-06	2.22E-07	2.00E-07	5.77E-10	4.22E-07	9.43E-08	8.92E-08	5.77E-10	1.84E-07
3	572181.7	4148856	9.18E-07	7.30E-07	5.18E-10	1.65E-06	1.12E-06	9.89E-07	5.18E-10	2.11E-06	1.99E-07	1.80E-07	5.18E-10	3.79E-07	8.47E-08	8.01E-08	5.18E-10	1.65E-07
4	572210	4148832	1.07E-06	8.52E-07	6.05E-10	1.92E-06	1.30E-06	1.15E-06	6.05E-10	2.46E-06	2.32E-07	2.10E-07	6.05E-10	4.43E-07	9.88E-08	9.35E-08	6.05E-10	1.93E-07
5	572193.8	4148840	9.71E-07	7.73E-07	5.48E-10	1.74E-06	1.18E-06	1.05E-06	5.48E-10	2.23E-06	2.11E-07	1.90E-07	5.48E-10	4.01E-07	8.96E-08	8.48E-08	5.48E-10	1.75E-07
6	572177.6	4148847	8.74E-07	6.96E-07	4.94E-10	1.57E-06	1.06E-06	9.42E-07	4.94E-10	2.01E-06	1.90E-07	1.71E-07	4.94E-10	3.61E-07	8.07E-08	7.63E-08	4.94E-10	1.57E-07
7	572205.9	4148823	1.02E-06	8.10E-07	5.75E-10	1.83E-06	1.24E-06	1.10E-06	5.75E-10	2.34E-06	2.21E-07	1.99E-07	5.75E-10	4.21E-07	9.39E-08	8.89E-08	5.75E-10	1.83E-07
8	572189.7	4148831	9.24E-07	7.35E-07	5.22E-10	1.66E-06	1.12E-06	9.95E-07	5.22E-10	2.12E-06	2.01E-07	1.81E-07	5.22E-10	3.82E-07	8.53E-08	8.07E-08	5.22E-10	1.66E-07
9	572173.5	4148838	8.33E-07	6.63E-07	4.70E-10	1.50E-06	1.01E-06	8.97E-07	4.70E-10	1.91E-06	1.81E-07	1.63E-07	4.70E-10	3.44E-07	7.69E-08	7.28E-08	4.70E-10	1.50E-07
10	572201.8	4148814	9.68E-07	7.71E-07	5.47E-10	1.74E-06	1.18E-06	1.04E-06	5.47E-10	2.22E-06	2.10E-07	1.90E-07	5.47E-10	4.00E-07	8.93E-08	8.45E-08	5.47E-10	1.74E-07
11	572185.6	4148821	8.81E-07	7.01E-07	4.97E-10	1.58E-06	1.07E-06	9.49E-07	4.97E-10	2.02E-06	1.91E-07	1.72E-07	4.97E-10	3.64E-07	8.13E-08	7.69E-08	4.97E-10	1.59E-07
12	572169.4	4148829	7.96E-07	6.33E-07	4.49E-10	1.43E-06	9.68E-07	8.57E-07	4.49E-10	1.83E-06	1.73E-07	1.56E-07	4.49E-10	3.29E-07	7.34E-08	6.95E-08	4.49E-10	1.43E-07
13	572197.8	4148805	9.22E-07	7.34E-07	5.21E-10	1.66E-06	1.12E-06	9.93E-07	5.21E-10	2.12E-06	2.00E-07	1.81E-07	5.21E-10	3.81E-07	8.51E-08	8.05E-08	5.21E-10	1.66E-07
14	572181.6	4148812	8.40E-07	6.69E-07	4.75E-10	1.51E-06	1.02E-06	9.05E-07	4.75E-10	1.93E-06	1.82E-07	1.65E-07	4.75E-10	3.47E-07	7.75E-08	7.34E-08	4.75E-10	1.51E-07
15	572165.4	4148820	7.61E-07	6.06E-07	4.30E-10	1.37E-06	9.26E-07	8.20E-07	4.30E-10	1.75E-06	1.65E-07	1.49E-07	4.30E-10	3.14E-07	7.02E-08	6.64E-08	4.30E-10	1.37E-07
16	572193.7	4148796	8.79E-07	6.99E-07	4.96E-10	1.58E-06	1.07E-06	9.46E-07	4.96E-10	2.02E-06	1.91E-07	1.72E-07	4.96E-10	3.63E-07	8.11E-08	7.67E-08	4.96E-10	1.58E-07
17	572177.5	4148803	8.02E-07	6.38E-07	4.53E-10	1.44E-06	9.76E-07	8.64E-07	4.53E-10	1.84E-06	1.74E-07	1.57E-07	4.53E-10	3.32E-07	7.40E-08	7.01E-08	4.53E-10	1.45E-07
18	572161.3	4148810	7.28E-07	5.80E-07	4.11E-10	1.31E-06	8.86E-07	7.84E-07	4.11E-10	1.67E-06	1.58E-07	1.43E-07	4.11E-10	3.01E-07	6.72E-08	6.36E-08	4.11E-10	1.31E-07
19	572206.4	4148783	9.22E-07	7.34E-07	5.21E-10	1.66E-06	1.12E-06	9.93E-07	5.21E-10	2.12E-06	2.00E-07	1.80E-07	5.21E-10	3.81E-07	8.51E-08	8.05E-08	5.21E-10	1.66E-07
20	572189.6	4148787	8.38E-07	6.67E-07	4.73E-10	1.51E-06	1.02E-06	9.02E-07	4.73E-10	1.92E-06	1.82E-07	1.64E-07	4.73E-10	3.46E-07	7.73E-08	7.32E-08	4.73E-10	1.51E-07
21	572173.4	4148794	7.66E-07	6.10E-07	4.33E-10	1.38E-06	9.32E-07	8.25E-07	4.33E-10	1.76E-06	1.66E-07	1.50E-07	4.33E-10	3.17E-07	7.07E-08	6.69E-08	4.33E-10	1.38E-07
22	572157.2	4148801	6.97E-07	5.55E-07	3.94E-10	1.25E-06	8.48E-07	7.51E-07	3.94E-10	1.60E-06	1.51E-07	1.36E-07	3.94E-10	2.88E-07	6.43E-08	6.09E-08	3.94E-10	1.26E-07
23	572202.3	4148774	8.79E-07	6.99E-07	4.96E-10	1.58E-06	1.07E-06	9.47E-07	4.96E-10	2.02E-06	1.91E-07	1.72E-07	4.96E-10	3.63E-07	8.11E-08	7.67E-08	4.96E-10	1.58E-07
24	572185.5	4148778	8.00E-07	6.36E-07	4.52E-10	1.44E-06	9.73E-07	8.61E-07	4.52E-10	1.84E-06	1.74E-07	1.57E-07	4.52E-10	3.31E-07	7.38E-08	6.98E-08	4.52E-10	1.44E-07
25	572169.3	4148785	7.32E-07	5.83E-07	4.14E-10	1.32E-06	8.91E-07	7.89E-07	4.14E-10	1.68E-06	1.59E-07	1.43E-07	4.14E-10	3.03E-07	6.76E-08	6.40E-08	4.14E-10	1.32E-07
26	572153.1	4148792	6.68E-07	5.31E-07	3.77E-10	1.20E-06	8.13E-07	7.19E-07	3.77E-10	1.53E-06	1.45E-07	1.31E-07	3.77E-10	2.76E-07	6.16E-08	5.83E-08	3.77E-10	1.20E-07
27	572198.2	4148765	8.39E-07	6.67E-07	4.74E-10	1.51E-06	1.02E-06	9.03E-07	4.74E-10	1.92E-06	1.82E-07	1.64E-07	4.74E-10	3.47E-07	7.74E-08	7.32E-08	4.74E-10	1.51E-07
28	572181.4	4148769	7.65E-07	6.08E-07	4.32E-10	1.37E-06	9.31E-07	8.24E-07	4.32E-10	1.75E-06	1.66E-07	1.50E-07	4.32E-10	3.16E-07	7.05E-08	6.68E-08	4.32E-10	1.38E-07
29	572165.2	4148776	7.01E-07	5.58E-07	3.96E-10	1.26E-06	8.53E-07	7.55E-07	3.96E-10	1.61E-06	1.52E-07	1.37E-07	3.96E-10	2.90E-07	6.47E-08	6.12E-08	3.96E-10	1.26E-07
30	572149	4148783	6.40E-07	5.09E-07	3.61E-10	1.15E-06	7.79E-07	6.89E-07	3.61E-10	1.47E-06	1.39E-07	1.25E-07	3.61E-10	2.65E-07	5.91E-08	5.59E-08	3.61E-10	1.15E-07
31	572194.3	4148756	8.02E-07	6.38E-07	4.53E-10	1.44E-06	9.76E-07	8.64E-07	4.53E-10	1.84E-06	1.74E-07	1.57E-07	4.53E-10	3.32E-07	7.40E-08	7.00E-08	4.53E-10	1.45E-07
32	572177.4	4148759	7.32E-07	5.82E-07	4.13E-10	1.31E-06	8.91E-07	7.88E-07	4.13E-10	1.68E-06	1.59E-07	1.43E-07	4.13E-10	3.02E-07	6.75E-08	6.39E-08	4.13E-10	1.32E-07
33	572161.2	4148767	6.72E-07	5.35E-07	3.79E-10	1.21E-06	8.18E-07	7.24E-07	3.79E-10	1.54E-06	1.46E-07	1.32E-07	3.79E-10	2.78E-07	6.20E-08	5.87E-08	3.79E-10	1.21E-07
34	572145	4148774	6.14E-07	4.89E-07	3.47E-10	1.10E-06	7.48E-07	6.62E-07	3.47E-10	1.41E-06	1.33E-07	1.20E-07	3.47E-10	2.54E-07	5.67E-08	5.36E-08	3.47E-10	1.11E-07
35	572190.2	4148746	7.67E-07	6.11E-07	4.33E-10	1.38E-06	9.34E-07	8.26E-07	4.33E-10	1.76E-06	1.67E-07	1.50E-07	4.33E-10	3.17E-07	7.08E-08	6.70E-08	4.33E-10	1.38E-07
36	572173.3	4148750	7.01E-07	5.58E-07	3.96E-10	1.26E-06	8.53E-07	7.55E-07	3.96E-10	1.61E-06	1.52E-07	1.37E-07	3.96E-10	2.90E-07	6.47E-08	6.12E-08	3.96E-10	1.26E-07
37	572157.1	4148758	6.45E-07	5.13E-07	3.64E-10	1.16E-06	7.84E-07	6.94E-07	3.64E-10	1.48E-06	1.40E-07	1.26E-07	3.64E-10	2.66E-07	5.95E-08	5.63E-08	3.64E-10	1.16E-07
38	572140.9	4148765	5.90E-07	4.70E-07	3.33E-10	1.06E-06	7.18E-07	6.36E-07	3.33E-10	1.35E-06	1.28E-07	1.16E-07	3.33E-10	2.44E-07	5.45E-08	5.15E-08	3.33E-10	1.06E-07
39	572186.1	4148737	7.35E-07	5.85E-07	4.15E-10	1.32E-06	8.94E-07	7.91E-07	4.15E-10	1.69E-06	1.59E-07	1.44E-07	4.15E-10	3.04E-07	6.78E-08	6.42E-08	4.15E-10	1.32E-07
40	572169.2	4148741	6.72E-07	5.35E-07	3.80E-10	1.21E-06	8.18E-07	7.24E-07	3.80E-10	1.54E-06	1.46E-07	1.32E-07	3.80E-10	2.78E-07	6.20E-08	5.87E-08	3.80E-10	1.21E-07
41	572153	4148748	6.19E-07	4.93E-07	3.50E-10	1.11E-06	7.53E-07	6.67E-07	3.50E-10	1.42E-06	1.34E-07	1.21E-07	3.50E-10	2.56E-07	5.71E-08	5.40E-08	3.50E-10	1.12E-07
42	572136.8	4148756	5.68E-07	4.52E-07	3.21E-10	1.02E-06	6.91E-07	6.12E-07	3.21E-10	1.30E-06	1.23E-07	1.11E-07	3.21E-10	2.35E-07	5.24E-08	4.96E-08	3.21E-10	1.02E-07
43	572182	4148728	7.04E-07	5.60E-07	3.98E-10	1.27E-06	8.57E-07	7.59E-07	3.98E-10	1.62E-06	1.53E-07	1.38E-07	3.98E-10	2.91E-07	6.50E-08	6.15E-08	3.98E-10	1.27E-07
44	572165.1	4148732	6.45E-07	5.14E-07	3.64E-10	1.16E-06	7.85E-07	6.95E-07	3.64E-10	1.48E-06	1.40E-07	1.26E-07	3.64E-10	2.67E-07	5.95E-08	5.63E-08	3.64E-10	1.16E-07
45	572148.9	4148739	5.95E-07	4.73E-07	3.36E-10	1.07E-06	7.24E-07	6.41E-07	3.36E-10	1.37E-06	1.29E-07	1.16E-07	3.36E-10	2.46E-07	5.49E-08	5.20E-08	3.36E-10	1.07E-07
46	572132.7	4148746	5.47E-07	4.35E-07	3.09E-10	9.82E-07	6.65E-07	5.89E-07	3.09E-10	1.25E-06	1.19E-07	1.07E-07	3.09E-10	2.26E-07	5.04E-08	4.77E-08	3.09E-10	9.85E-08
47	572177.9	4148719	6.76E-07	5.38E-07	3.81E-10	1.21E-06	8.22E-07	7.28E-07	3.81E-10	1.55E-06	1.47E-07	1.32E-07	3.81E-10	2.79E-07	6.23E-08	5.90E-08	3.81E-10	1.22E-07
48	572161	4148723	6.20E-07	4.93E-07	3.50E-10	1.11E-06	7.54E-07	6.68E-07	3.50E-10	1.42E-06	1.35E-07	1.21E-07	3.50E-10	2.56E-07	5.72E-08	5.41E-08	3.50E-10	1.12E-07
49	572144.8	4148730	5.72E-07	4.55E-07	3.23E-10	1.03E-06	6.97E-07	6.16E-07	3.23E-10	1.31E-06	1.24E-07	1.12E-07	3.23E-10	2.37E-07	5.28E-08	5.00E-08	3.23E-10	1.03E-07
50	572128.6	4148737	5.27E-07	4.19E-07	2.97E-10	9.46E-07	6.41E-07	5.67E-07	2.97E-10	1.21E-06	1.14E-07	1.03E-07	2.97E-10	2.18E-07	4.86E-08	4.60E-08	2.97E-10	9.49E-08
51	572173.8	4148710	6.49E-07	5.16E-07	3.66E-10	1.17E-06	7.89E-07	6.99E-07	3.66E-10	1.49E-06	1.41E-07	1.27E-07	3.66E-10	2.68E-07	5.98E-08	5.66E-08	3.66E-10	1.17E-07
52	572157	4148714	5.96E-07	4.74E-07	3.37E-10	1.07E-06	7.25E-07	6.42E-07	3.37E-10	1.37E-06	1.29E-07	1.17E-07	3.37E-10	2.46E-07	5.50E-08	5.20E-08	3.37E-10	1.07E-07
53	572140.8	4148721	5.51E-07	4.38E-07	3.11E-10	9.90E-07	6.71E-07	5.93E-07	3.11E-10	1.26E-06	1.20E-07	1.08E-07	3.11E-10	2.28E-07	5.08E-08	4.81E-08	3.11E-10	9.93E-08
54	572124.6	4148728	5.08E-07	4.04E-07	2.87E-10	9.12E-07	6.18E-07	5.47E-07	2.87E-10	1.17E-06	1.10E-07	9.94E-08	2.87E-10	2.10E-07	4.68E-08	4.43E-08	2.87E-10	9.15E-08
55	572169.7	4148701	6.23E-07	4.96E-07	3.52E-10	1.12E-06	7.58E-07	6.71E-07	3.52E-10	1.43E-06	1.35E-07	1.22E-07	3.52E-10	2.58E-07	5.75E-08	5.44E-08	3.52E-10	1.12E-07
56	572152.9	4148705	5.74E-07	4.56E-07	3.24E-10	1.03E-06	6.98E-07	6.18E-07	3.24E-10	1.32E-06	1.24E-07	1.12E-07	3.24E-10	2.37E-07	5.29E-08	5.01E-08	3.24E-10	1.03E-07
57	572136.7	4148712	5.31E-07	4.22E-07	3.00E-10	9.54E-07	6.46E-07	5.72E-07	3.00E-10	1.22E-06	1.15E-07	1.04E-07	3.00E-10	2.19E-07	4.90E-08	4.64E-08	3.00E-10	9.56E-08
58	572120.5	4148719	4.90E-07	3.90E-07	2.77E-10	8.80E-07	5.96E-07	5.28E-07	2.77E-10	1.12E-06	1.06E-07	9.59E-08	2.77E-10	2.02E-07	4.52E-08	4.28E-08	2.77E-10	8.83E-08
59	572310.1	4149192	1.76E-05	1.40E-05	9.91E-09	3.15E-05	2.14E-05	1.89E-05	9.91E-09	4.03E-05	3.81E-06	3.44E-06	9.91E-09	7.26E-06	1.62E-06	1.53E-06	9.91E-09	3.16E-06
60	572313.9	4149201	2.11E-05	1.68E-05	1.19E-08	3.79E-05	2.57E-05	2.27E-05	1.19E-08	4.85E-05	4.58E-06	4.13E-06	1.19E-08	8.73E-06	1.95E-06	1.84E-06	1.19E-08	3.80E-06
61	572296.9	4149180	1.16E-05	9.20E-06	6.53E-09	2.08E-05	1.41E-05	1.24E-05	6.53E-09	2.65E-05	2.51E-06	2.26E-06	6.53E-09	4.78E-06	1.07E-06	1.01E-06	6.53E-09	2.08E-06
62	572301	4149196	1.26E-05	1.00E-05	7.10E-09	2.26E-05	1.53E-05	1.35E-05	7.10E-09	2.88E-05	2.73E-06	2.46E-06	7.10E-09	5.20E-06	1.16E-06	1.10E-06	7.10E-09	2.26E-06
63	572304.8	4149205	1.51E-05	1.20E-05	8.51E-09	2.71E-05	1.83E-05	1.62E-05	8.51E-09	3.46E-05	3.27E-06	2.95E-06	8.51E-09	6.23E-06	1.39E-06	1.32E-06	8.51E-09	2.71E-06
64	572308.7	4149213	1.92E-05	1.52E-05	1.08E-08	3.44E-05	2.33E-05	2.06E-05	1.08E-08	4.39E-05	4.16E-06	3.75E-06	1.08E-08	7.91E-06	1.77E-06	1.67E-06	1.08E-08	3.45E-06
65	572312.5	4149222	2.36E-05	1.88E-05	1.33E-08	4.24E-05	2.87E-05	2.54E-05	1.33E-08	5.42E-05	5.12E-06	4.62E-06	1.33E-08	9.76E-06	2.18E-06	2.06E-06	1.33E-08	4.25E-06
66	572287.8	4149184	8.58E-06	6.83E-06	4.84E-09	1.54E-05	1.04E-05	9.24E-06	4.84E-09	1.97E-05	1.86E-06	1.68E-06	4.84E-09	3.55E-06	7.92E-07	7.49E-07	4.84E-09	1.55E-06
67	572287.3	4149169	8.65E-06	6.88E-06	4.88E-09	1.55E-05	1.05E-05	9.32E-06	4.88E-09	1.99E-05	1.88E-06	1.69E-06	4.88E-09	3.58E-06	7.98E-07	7.55E-07	4.88E-09	1.56E-06
68	572292.4	4149156	1.02E-05	8.13E-06	5.77E-09	1.84E-05	1.24E-05	1.10E-05	5.77E-09	2.34E-05	2.22E-06	2.00E-06	5.77E-09	4.22E-06	9.42E-07	8.92E-07	5.77E-09	1.84E-06
69	572291.9	4149201	9.43E-06	7.51E-06	5.33E-09	1.69E-05	1.15E-05	1.02E-05	5.33E-09	2.16E-05	2.05E-06	1.85E-06	5.33E-09	3.90E-06	8.70E-07	8.24E-07	5.33E-09	1.70E-06
70	572295.7	4149209	1.11E-05	8.84E-06	6.27E-09	2.00E-05	1.35E-05	1.20E-05	6.27E-09	2.55E-05	2.41E-06	2.18E-06	6.27E-09	4.59E-06	1.03E-06	9.70E-07	6.27E-09	2.00E-06
71	572299.5	4149218	1.39E-05	1.10E-05	7.83E-09	2.49E-05	1.69E-05	1.49E-05	7.83E-09	3.18E-05	3.01E-06	2.71E-06	7.83E-09	5.73E-06	1.28E-06	1.21E-06	7.83E-09	2.50E-06
72	572303.4	4149226	1.73E-05	1.38E-05	9.78E-09	3.11E-05	2.11E-05	1.87E-05	9.78E-09	3.98E-05	3.76E-06	3.39E-06	9.78E-09	7.16E-06	1.60E-06	1.51E-06	9.78E-09	3.12E-06
73	572278.7	4149189	6.65E-06	5.29E-06	3.75E-09	1.19E-05	8.09E-06	7.16E-06	3.75E-09	1.53E-05	1.44E-06	1.30E-06	3.75E-09	2.75E-06	6.13E-07	5.81E-07	3.75E-09	1.20E-06
74	572278.2	4149173	6.69E-06	5.32E-06	3.78E-09	1.20E-05	8.14E-06	7.20E-06	3.78E-09	1.53E-05	1.45E-06	1.31E-06	3.78E-09	2.76E-06	6.17E-07	5.84E-07	3.78E-09	1.20E-06
75	572283	4149152	7.63E-06	6.07E-06	4.31E-09	1.37E-05	9.29E-06	8.22E-06	4.31E-09	1.75E-05	1.66E-06	1.49E-06	4.31E-09	3.15E-06	7.04E-07	6.66E-07	4.31E-09	1.37E-06
76	572282.8	4149205	7.31E-06	5.82E-06	4.13E-09	1.31E-05	8.89E-06	7.87E-06	4.13E-09	1.68E-05	1.59E-06	1.43E-06	4.13E-09	3.02E-06	6.74E-07	6.38E-07	4.13E-09	1.32E-06
77	572286.6	4149213	8.49E-06	6.75E-06	4.79E-09	1.52E-05	1.03E-05	9.14E-06	4.79E-09	1.95E-05	1.84E-06	1.66E-06	4.79E-09	3.51E-06	7.83E-07	7.41E-07	4.79E-09	1.53E-06
78	572290.4	4149222	1.04E-05	8.28E-06	5.88E-09	1.87E-05	1.27E-05	1.12E-05	5.88E-09	2.39E-05	2.26E-06	2.04E-06	5.88E-09	4.30E-06	9.60E-07	9.09E-07	5.88E-09	1.88E-06
79	572294.3	4149230	1.30E-05	1.03E-05	7.34E-09	2.34E-05	1.58E-05	1.40E-05	7.34E-09	2.98E-05	2.82E-06	2.55E-06	7.34E-09	5.37E-06	1.20E-06	1.14E-06	7.34E-09	2.34E-06
80	572269.5	4149191	5.32E-06	4.23E-06	3.00E-09	9.55E-06	6.47E-06	5.73E-06	3.00E-09	1.22E-05	1.15E-06	1.04E-06	3.00E-09	2.20E-06	4.91E-07	4.64E-07	3.00E-09	9.58E-07
81	572269.2	4149182	5.35E-06	4.26E-06	3.02E-09	9.61E-06	6.51E-06	5.76E-06	3.02E-09	1.23E-05	1.16E-06	1.05E-06	3.02E-09	2.21E-06	4.93E-07	4.67E-07	3.02E-09	9.63E-07
82	572269	4149173	5.33E-06	4.24E-06	3.01E-09	9.58E-06	6.49E-06	5.74E-06	3.01E-09	1.22E-05	1.16E-06	1.04E-06	3.01E-09	2.20E-06	4.92E-07	4.66E-07	3.01E-09	9.60E-07
83	572268.7	4149163	5.27E-06	4.19E-06	2.98E-09	9.47E-06	6.41E-06	5.68E-06	2.98E-09	1.21E-05	1.14E-06	1.03E-06	2.98E-09	2.18E-06	4.86E-07	4.60E-07	2.98E-09	9.49E-07
84	572274.7	4149148	6.08E-06	4.84E-06	3.43E-09	1.09E-05	7.39E-06	6.54E-06	3.43E-09	1.39E-05	1.32E-06	1.19E-06	3.43E-09	2.51E-06	5.61E-07	5.31E-07	3.43E-09	1.09E-06
85	572281	4149141	7.20E-06	5.73E-06	4.07E-09	1.29E-05	8.76E-06	7.76E-06	4.07E-09	1.65E-05	1.56E-06	1.41E-06	4.07E-09	2.98E-06	6.64E-07	6.29E-07	4.07E-09	1.30E-06
86	572287.4	4149134	8.58E-06	6.83E-06	4.84E-09	1.54E-05	1.04E-05	9.24E-06	4.84E-09	1.97E-05	1.86E-06	1.68E-06	4.84E-09	3.55E-06	7.91E-07	7.49E-07	4.84E-09	1.55E-06
87	572269.8	4149200	5.29E-06	4.21E-06	2.99E-09	9.50E-06	6.44E-06	5.70E-06	2.99E-09	1.21E-05	1.15E-06	1.04E-06	2.99E-09	2.19E-06	4.88E-07	4.62E-07	2.99E-09	9.53E-07
88	572273.7	4149209	5.82E-06	4.63E-06	3.29E-09	1.05E-05	7.08E-06	6.27E-06	3.29E-09	1.34E-05	1.26E-06	1.14E-06	3.29E-09	2.41E-06	5.37E-07	5.08E-07	3.29E-09	1.05E-06
89	572277.5	4149217	6.68E-06	5.32E-06	3.77E-09	1.20E-05	8.13E-06	7.20E-06	3.77E-09	1.53E-05	1.45E-06	1.31E-06	3.77E-09	2.76E-06	6.17E-07	5.84E-07	3.77E-09	1.20E-06
90	572281.3	4149226	8.08E-06	6.43E-06	4.56E-09	1.45E-05	9.84E-06	8.71E-06	4.56E-09	1.86E-05	1.75E-06	1.58E-06	4.56E-09	3.34E-06	7.46E-07	7.06E-07	4.56E-09	1.46E-06
91	572285.2	4149234	1.00E-05	7.98E-06	5.66E-09	1.80E-05	1.22E-05	1.08E-05	5.66E-09	2.30E-05	2.18E-06	1.96E-06	5.66E-09	4.15E-06	9.25E-07	8.76E-07	5.66E-09	1.81E-06
92	572260.4	4149195	4.35E-06	3.46E-06	2.45E-09	7.81E-06	5.29E-06	4.68E-06	2.45E-09	9.97E-06	9.43E-07	8.51E-07	2.45E-09	1.80E-06	4.01E-07	3.79E-07	2.45E-09	7.83E-07
93	572260.2	4149187	4.38E-06	3.48E-06	2.47E-09	7.86E-06	5.33E-06	4.71E-06	2.47E-09	1.00E-05	9.50E-07	8.56E-07	2.47E-09	1.81E-06	4.04E-07	3.82E-07	2.47E-09	7.88E-07
94	572259.9	4149178	4.38E-06	3.48E-06	2.47E-09	7.86E-06	5.32E-06	4.71E-06	2.47E-09	1.00E-05	9.49E-07	8.56E-07	2.47E-09	1.81E-06	4.04E-07	3.82E-07	2.47E-09	7.88E-07
95	572259.3	4149160	4.27E-06	3.40E-06	2.41E-09	7.67E-06	5.20E-06	4.60E-06	2.41E-09	9.80E-06	9.27E-07	8.36E-07	2.41E-09	1.77E-06	3.94E-07	3.73E-07	2.41E-09	7.70E-07
96	572265.2	4149144	4.81E-06	3.83E-06	2.72E-09	8.64E-06	5.85E-06	5.18E-06	2.72E-09	1.10E-05	1.04E-06	9.41E-07	2.72E-09	1.99E-06	4.44E-07	4.20E-07	2.72E-09	8.66E-07
97	572277.5	4149131	6.50E-06	5.17E-06	3.67E-09	1.17E-05	7.91E-06	7.00E-06	3.67E-09	1.49E-05	1.41E-06	1.27E-06	3.67E-09	2.69E-06	5.99E-07	5.67E-07	3.67E-09	1.17E-06
98	572260.7	4149204	4.34E-06	3.45E-06	2.45E-09	7.79E-06	5.28E-06	4.67E-06	2.45E-09	9.95E-06	9.41E-07	8.49E-07	2.45E-09	1.79E-06	4.00E-07	3.79E-07	2.45E-09	7.81E-07
99	572264.5	4149213	4.74E-06	3.78E-06	2.68E-09	8.52E-06	5.77E-06	5.11E-06	2.68E-09	1.09E-05	1.03E-06	9.29E-07	2.68E-09	1.96E-06	4.38E-07	4.14E-07	2.68E-09	8.55E-07
100	572268.4	4149221	5.41E-06	4.30E-06	3.05E-09	9.71E-06	6.58E-06	5.82E-06	3.05E-09	1.24E-05	1.17E-06	1.06E-06	3.05E-09	2.23E-06	4.99E-07	4.72E-07	3.05E-09	9.74E-07

101	572272.2	4149230	6.46E-06	5.14E-06	3.65E-09	1.16E-05	7.86E-06	6.96E-06	3.65E-09	1.48E-05	1.40E-06	1.26E-06	3.65E-09	2.67E-06	5.96E-07	5.64E-07	3.65E-09	1.16E-06
102	572276.1	4149238	7.94E-06	6.32E-06	4.48E-09	1.43E-05	9.66E-06	8.55E-06	4.48E-09	1.82E-05	1.72E-06	1.55E-06	4.48E-09	3.28E-06	7.33E-07	6.93E-07	4.48E-09	1.43E-06
103	572250.8	4149182	3.66E-06	2.91E-06	2.06E-09	6.57E-06	4.45E-06	3.94E-06	2.06E-09	8.39E-06	7.93E-07	7.16E-07	2.06E-09	1.51E-06	3.37E-07	3.19E-07	2.06E-09	6.59E-07
104	572250.2	4149165	3.59E-06	2.86E-06	2.03E-09	6.45E-06	4.37E-06	3.87E-06	2.03E-09	8.24E-06	7.79E-07	7.03E-07	2.03E-09	1.48E-06	3.31E-07	3.14E-07	2.03E-09	6.47E-07
105	572255.7	4149141	3.91E-06	3.11E-06	2.21E-09	7.02E-06	4.75E-06	4.21E-06	2.21E-09	8.96E-06	8.48E-07	7.65E-07	2.21E-09	1.61E-06	3.60E-07	3.41E-07	2.21E-09	7.04E-07
106	572267.8	4149128	5.09E-06	4.05E-06	2.87E-09	9.14E-06	6.19E-06	5.48E-06	2.87E-09	1.17E-05	1.10E-06	9.96E-07	2.87E-09	2.10E-06	4.70E-07	4.44E-07	2.87E-09	9.17E-07
107	572240.6	4149152	2.97E-06	2.36E-06	1.68E-09	5.33E-06	3.61E-06	3.20E-06	1.68E-09	6.81E-06	6.44E-07	5.81E-07	1.68E-09	1.23E-06	2.74E-07	2.59E-07	1.68E-09	5.35E-07
108	572246.3	4149137	3.24E-06	2.58E-06	1.83E-09	5.82E-06	3.94E-06	3.49E-06	1.83E-09	7.43E-06	7.03E-07	6.34E-07	1.83E-09	1.34E-06	2.99E-07	2.83E-07	1.83E-09	5.83E-07
109	572258.1	4149125	4.10E-06	3.26E-06	2.31E-09	7.36E-06	4.99E-06	4.41E-06	2.31E-09	9.40E-06	8.89E-07	8.02E-07	2.31E-09	1.69E-06	3.78E-07	3.58E-07	2.31E-09	7.38E-07
110	572270	4149112	5.27E-06	4.20E-06	2.98E-09	9.47E-06	6.42E-06	5.68E-06	2.98E-09	1.21E-05	1.14E-06	1.03E-06	2.98E-09	2.18E-06	4.86E-07	4.60E-07	2.98E-09	9.50E-07
111	572236.8	4149134	2.73E-06	2.17E-06	1.54E-09	4.90E-06	3.32E-06	2.94E-06	1.54E-09	6.26E-06	5.92E-07	5.34E-07	1.54E-09	1.13E-06	2.52E-07	2.38E-07	1.54E-09	4.91E-07
112	572248.6	4149121	3.37E-06	2.68E-06	1.90E-09	6.05E-06	4.10E-06	3.63E-06	1.90E-09	7.73E-06	7.31E-07	6.59E-07	1.90E-09	1.39E-06	3.11E-07	2.94E-07	1.90E-09	6.07E-07
113	572260.3	4149109	4.24E-06	3.38E-06	2.40E-09	7.63E-06	5.17E-06	4.57E-06	2.40E-09	9.74E-06	9.21E-07	8.31E-07	2.40E-09	1.75E-06	3.92E-07	3.71E-07	2.40E-09	7.65E-07
114	572227.4	4149130	2.33E-06	1.86E-06	1.32E-09	4.19E-06	2.84E-06	2.51E-06	1.32E-09	5.35E-06	5.06E-07	4.56E-07	1.32E-09	9.64E-07	2.15E-07	2.04E-07	1.32E-09	4.20E-07
115	572239	4149118	2.82E-06	2.24E-06	1.59E-09	5.07E-06	3.43E-06	3.04E-06	1.59E-09	6.47E-06	6.12E-07	5.52E-07	1.59E-09	1.17E-06	2.60E-07	2.46E-07	1.59E-09	5.08E-07
116	572213.7	4149179	2.03E-06	1.61E-06	1.15E-09	3.64E-06	2.47E-06	2.18E-06	1.15E-09	4.65E-06	4.40E-07	3.97E-07	1.15E-09	8.38E-07	1.87E-07	1.77E-07	1.15E-09	3.65E-07
117	572213.4	4149170	2.01E-06	1.60E-06	1.14E-09	3.62E-06	2.45E-06	2.17E-06	1.14E-09	4.62E-06	4.37E-07	3.94E-07	1.14E-09	8.32E-07	1.86E-07	1.76E-07	1.14E-09	3.63E-07
118	572213.2	4149161	1.98E-06	1.58E-06	1.12E-09	3.56E-06	2.41E-06	2.14E-06	1.12E-09	4.55E-06	4.30E-07	3.88E-07	1.12E-09	8.19E-07	1.83E-07	1.73E-07	1.12E-09	3.57E-07
119	572212.9	4149151	1.94E-06	1.55E-06	1.10E-09	3.49E-06	2.36E-06	2.09E-06	1.10E-09	4.46E-06	4.21E-07	3.80E-07	1.10E-09	8.02E-07	1.79E-07	1.70E-07	1.10E-09	3.50E-07
120	572243.9	4149100	3.06E-06	2.44E-06	1.73E-09	5.50E-06	3.73E-06	3.30E-06	1.73E-09	7.03E-06	6.64E-07	5.99E-07	1.73E-09	1.27E-06	2.82E-07	2.67E-07	1.73E-09	5.52E-07
121	572250.2	4149093	3.42E-06	2.72E-06	1.93E-09	6.14E-06	4.16E-06	3.68E-06	1.93E-09	7.84E-06	7.41E-07	6.68E-07	1.93E-09	1.41E-06	3.15E-07	2.98E-07	1.93E-09	6.15E-07
122	572256.6	4149086	3.80E-06	3.02E-06	2.14E-09	6.82E-06	4.62E-06	4.09E-06	2.14E-09	8.72E-06	8.24E-07	7.43E-07	2.14E-09	1.57E-06	3.50E-07	3.32E-07	2.14E-09	6.84E-07
123	572262.9	4149079	4.21E-06	3.35E-06	2.37E-09	7.55E-06	5.12E-06	4.53E-06	2.37E-09	9.65E-06	9.13E-07	8.23E-07	2.37E-09	1.74E-06	3.88E-07	3.67E-07	2.37E-09	7.58E-07
124	572269.2	4149073	4.63E-06	3.68E-06	2.61E-09	8.31E-06	5.63E-06	4.99E-06	2.61E-09	1.06E-05	1.00E-06	9.06E-07	2.61E-09	1.91E-06	4.27E-07	4.04E-07	2.61E-09	8.34E-07
125	572204.6	4149184	1.79E-06	1.43E-06	1.01E-09	3.22E-06	2.18E-06	1.93E-06	1.01E-09	4.12E-06	3.89E-07	3.51E-07	1.01E-09	7.41E-07	1.65E-07	1.57E-07	1.01E-09	3.23E-07
126	572204.4	4149175	1.79E-06	1.43E-06	1.01E-09	3.22E-06	2.18E-06	1.93E-06	1.01E-09	4.11E-06	3.89E-07	3.51E-07	1.01E-09	7.40E-07	1.65E-07	1.56E-07	1.01E-09	3.23E-07
127	572204.1	4149166	1.77E-06	1.41E-06	1.00E-09	3.19E-06	2.16E-06	1.91E-06	1.00E-09	4.07E-06	3.85E-07	3.47E-07	1.00E-09	7.33E-07	1.64E-07	1.55E-07	1.00E-09	3.19E-07
128	572203.8	4149157	1.74E-06	1.39E-06	9.84E-10	3.13E-06	2.12E-06	1.88E-06	9.84E-10	4.00E-06	3.78E-07	3.41E-07	9.84E-10	7.20E-07	1.61E-07	1.52E-07	9.84E-10	3.14E-07
129	572203.5	4149148	1.71E-06	1.36E-06	9.63E-10	3.06E-06	2.08E-06	1.84E-06	9.63E-10	3.91E-06	3.70E-07	3.34E-07	9.63E-10	7.05E-07	1.57E-07	1.49E-07	9.63E-10	3.07E-07
130	572203.2	4149139	1.67E-06	1.33E-06	9.43E-10	3.00E-06	2.03E-06	1.80E-06	9.43E-10	3.83E-06	3.63E-07	3.27E-07	9.43E-10	6.91E-07	1.54E-07	1.46E-07	9.43E-10	3.01E-07
131	572221.6	4149110	2.11E-06	1.68E-06	1.19E-09	3.79E-06	2.57E-06	2.27E-06	1.19E-09	4.85E-06	4.58E-07	4.13E-07	1.19E-09	8.73E-07	1.95E-07	1.84E-07	1.19E-09	3.80E-07
132	572227.9	4149103	2.33E-06	1.85E-06	1.31E-09	4.18E-06	2.83E-06	2.51E-06	1.31E-09	5.34E-06	5.05E-07	4.56E-07	1.31E-09	9.62E-07	2.15E-07	2.03E-07	1.31E-09	4.19E-07
133	572240.3	4149090	2.85E-06	2.27E-06	1.61E-09	5.12E-06	3.47E-06	3.07E-06	1.61E-09	6.54E-06	6.19E-07	5.58E-07	1.61E-09	1.18E-06	2.63E-07	2.49E-07	1.61E-09	5.14E-07
134	572252.8	4149077	3.47E-06	2.76E-06	1.96E-09	6.24E-06	4.23E-06	3.74E-06	1.96E-09	7.97E-06	7.54E-07	6.80E-07	1.96E-09	1.44E-06	3.20E-07	3.03E-07	1.96E-09	6.26E-07
135	572259	4149070	3.81E-06	3.03E-06	2.15E-09	6.85E-06	4.64E-06	4.11E-06	2.15E-09	8.75E-06	8.27E-07	7.46E-07	2.15E-09	1.58E-06	3.52E-07	3.33E-07	2.15E-09	6.87E-07
136	572195.5	4149189	1.59E-06	1.27E-06	9.00E-10	2.86E-06	1.94E-06	1.72E-06	9.00E-10	3.66E-06	3.46E-07	3.12E-07	9.00E-10	6.59E-07	1.47E-07	1.39E-07	9.00E-10	2.87E-07
137	572195.3	4149180	1.60E-06	1.27E-06	9.03E-10	2.87E-06	1.95E-06	1.72E-06	9.03E-10	3.67E-06	3.47E-07	3.13E-07	9.03E-10	6.61E-07	1.48E-07	1.40E-07	9.03E-10	2.88E-07
138	572194.7	4149162	1.57E-06	1.25E-06	8.88E-10	2.82E-06	1.91E-06	1.69E-06	8.88E-10	3.61E-06	3.41E-07	3.08E-07	8.88E-10	6.50E-07	1.45E-07	1.37E-07	8.88E-10	2.83E-07
139	572194.4	4149153	1.54E-06	1.23E-06	8.71E-10	2.77E-06	1.88E-06	1.66E-06	8.71E-10	3.54E-06	3.35E-07	3.02E-07	8.71E-10	6.38E-07	1.42E-07	1.35E-07	8.71E-10	2.78E-07
140	572194.2	4149144	1.51E-06	1.20E-06	8.52E-10	2.71E-06	1.84E-06	1.63E-06	8.52E-10	3.46E-06	3.28E-07	2.95E-07	8.52E-10	6.24E-07	1.39E-07	1.32E-07	8.52E-10	2.72E-07
141	572193.9	4149135	1.48E-06	1.18E-06	8.35E-10	2.66E-06	1.80E-06	1.59E-06	8.35E-10	3.40E-06	3.21E-07	2.90E-07	8.35E-10	6.12E-07	1.37E-07	1.29E-07	8.35E-10	2.67E-07
142	572218.2	4149100	2.00E-06	1.59E-06	1.13E-09	3.59E-06	2.43E-06	2.15E-06	1.13E-09	4.59E-06	4.34E-07	3.92E-07	1.13E-09	8.27E-07	1.85E-07	1.75E-07	1.13E-09	3.60E-07
143	572230.5	4149087	2.42E-06	1.92E-06	1.36E-09	4.34E-06	2.94E-06	2.60E-06	1.36E-09	5.54E-06	5.24E-07	4.73E-07	1.36E-09	9.98E-07	2.23E-07	2.11E-07	1.36E-09	4.35E-07
144	572242.8	4149074	2.91E-06	2.32E-06	1.64E-09	5.23E-06	3.54E-06	3.14E-06	1.64E-09	6.68E-06	6.32E-07	5.70E-07	1.64E-09	1.20E-06	2.69E-07	2.54E-07	1.64E-09	5.24E-07
145	572255.1	4149061	3.47E-06	2.76E-06	1.96E-09	6.23E-06	4.22E-06	3.74E-06	1.96E-09	7.96E-06	7.53E-07	6.79E-07	1.96E-09	1.43E-06	3.20E-07	3.03E-07	1.96E-09	6.25E-07
146	572187.5	4149229	1.42E-06	1.13E-06	7.99E-10	2.54E-06	1.72E-06	1.52E-06	7.99E-10	3.25E-06	3.07E-07	2.77E-07	7.99E-10	5.85E-07	1.31E-07	1.24E-07	7.99E-10	2.55E-07
147	572186.4	4149193	1.42E-06	1.13E-06	8.03E-10	2.55E-06	1.73E-06	1.53E-06	8.03E-10	3.26E-06	3.09E-07	2.78E-07	8.03E-10	5.88E-07	1.31E-07	1.24E-07	8.03E-10	2.56E-07
148	572186.2	4149184	1.43E-06	1.14E-06	8.09E-10	2.57E-06	1.74E-06	1.54E-06	8.09E-10	3.29E-06	3.11E-07	2.80E-07	8.09E-10	5.92E-07	1.32E-07	1.25E-07	8.09E-10	2.58E-07
149	572185.6	4149167	1.42E-06	1.13E-06	8.04E-10	2.56E-06	1.73E-06	1.53E-06	8.04E-10	3.27E-06	3.09E-07	2.79E-07	8.04E-10	5.89E-07	1.31E-07	1.24E-07	8.04E-10	2.57E-07
150	572185.1	4149149	1.37E-06	1.09E-06	7.76E-10	2.47E-06	1.67E-06	1.48E-06	7.76E-10	3.15E-06	2.98E-07	2.69E-07	7.76E-10	5.68E-07	1.27E-07	1.20E-07	7.76E-10	2.48E-07
151	572184.8	4149140	1.35E-06	1.07E-06	7.60E-10	2.42E-06	1.64E-06	1.45E-06	7.60E-10	3.09E-06	2.92E-07	2.63E-07	7.60E-10	5.56E-07	1.24E-07	1.17E-07	7.60E-10	2.42E-07
152	572190.3	4149116	1.38E-06	1.10E-06	7.82E-10	2.49E-06	1.68E-06	1.49E-06	7.82E-10	3.18E-06	3.00E-07	2.71E-07	7.82E-10	5.72E-07	1.28E-07	1.21E-07	7.82E-10	2.49E-07
153	572214.6	4149090	1.90E-06	1.51E-06	1.07E-09	3.41E-06	2.31E-06	2.04E-06	1.07E-09	4.35E-06	4.11E-07	3.71E-07	1.07E-09	7.84E-07	1.75E-07	1.66E-07	1.07E-09	3.42E-07
154	572226.8	4149077	2.26E-06	1.80E-06	1.28E-09	4.07E-06	2.76E-06	2.44E-06	1.28E-09	5.20E-06	4.91E-07	4.43E-07	1.28E-09	9.36E-07	2.09E-07	1.98E-07	1.28E-09	4.08E-07
155	572239	4149064	2.69E-06	2.14E-06	1.52E-09	4.83E-06	3.28E-06	2.90E-06	1.52E-09	6.18E-06	5.84E-07	5.27E-07	1.52E-09	1.11E-06	2.48E-07	2.35E-07	1.52E-09	4.85E-07
156	572251.1	4149052	3.17E-06	2.52E-06	1.79E-09	5.69E-06	3.85E-06	3.41E-06	1.79E-09	7.26E-06	6.87E-07	6.20E-07	1.79E-09	1.31E-06	2.92E-07	2.76E-07	1.79E-09	5.70E-07
157	572187.8	4149237	1.45E-06	1.15E-06	8.16E-10	2.60E-06	1.76E-06	1.56E-06	8.16E-10	3.32E-06	3.14E-07	2.83E-07	8.16E-10	5.97E-07	1.33E-07	1.26E-07	8.16E-10	2.60E-07
158	572191.7	4149246	1.56E-06	1.24E-06	8.83E-10	2.81E-06	1.90E-06	1.68E-06	8.83E-10	3.59E-06	3.39E-07	3.06E-07	8.83E-10	6.46E-07	1.44E-07	1.37E-07	8.83E-10	2.82E-07
159	572195.5	4149254	1.73E-06	1.37E-06	9.74E-10	3.10E-06	2.10E-06	1.86E-06	9.74E-10	3.96E-06	3.74E-07	3.38E-07	9.74E-10	7.13E-07	1.59E-07	1.51E-07	9.74E-10	3.11E-07
160	572178.4	4149233	1.28E-06	1.02E-06	7.24E-10	2.30E-06	1.56E-06	1.38E-06	7.24E-10	2.94E-06	2.78E-07	2.51E-07	7.24E-10	5.30E-07	1.18E-07	1.12E-07	7.24E-10	2.31E-07
161	572177.3	4149198	1.28E-06	1.01E-06	7.20E-10	2.29E-06	1.55E-06	1.37E-06	7.20E-10	2.93E-06	2.77E-07	2.50E-07	7.20E-10	5.27E-07	1.18E-07	1.11E-07	7.20E-10	2.30E-07
162	572176.8	4149180	1.29E-06	1.03E-06	7.31E-10	2.33E-06	1.58E-06	1.39E-06	7.31E-10	2.97E-06	2.81E-07	2.53E-07	7.31E-10	5.35E-07	1.19E-07	1.13E-07	7.31E-10	2.33E-07
163	572176.3	4149163	1.28E-06	1.02E-06	7.23E-10	2.30E-06	1.56E-06	1.38E-06	7.23E-10	2.94E-06	2.78E-07	2.51E-07	7.23E-10	5.29E-07	1.18E-07	1.12E-07	7.23E-10	2.31E-07
164	572176	4149154	1.26E-06	1.00E-06	7.11E-10	2.26E-06	1.53E-06	1.36E-06	7.11E-10	2.89E-06	2.73E-07	2.46E-07	7.11E-10	5.20E-07	1.16E-07	1.10E-07	7.11E-10	2.27E-07
165	572175.4	4149136	1.21E-06	9.60E-07	6.81E-10	2.17E-06	1.47E-06	1.30E-06	6.81E-10	2.77E-06	2.62E-07	2.36E-07	6.81E-10	4.99E-07	1.11E-07	1.05E-07	6.81E-10	2.17E-07
166	572180.9	4149112	1.24E-06	9.84E-07	6.98E-10	2.22E-06	1.51E-06	1.33E-06	6.98E-10	2.84E-06	2.68E-07	2.42E-07	6.98E-10	5.11E-07	1.14E-07	1.08E-07	6.98E-10	2.23E-07
167	572205	4149087	1.65E-06	1.32E-06	9.34E-10	2.97E-06	2.01E-06	1.78E-06	9.34E-10	3.79E-06	3.59E-07	3.24E-07	9.34E-10	6.83E-07	1.53E-07	1.44E-07	9.34E-10	2.98E-07
168	572217.1	4149074	1.95E-06	1.55E-06	1.10E-09	3.51E-06	2.38E-06	2.10E-06	1.10E-09	4.48E-06	4.24E-07	3.82E-07	1.10E-09	8.07E-07	1.80E-07	1.71E-07	1.10E-09	3.52E-07
169	572229.1	4149061	2.30E-06	1.83E-06	1.30E-09	4.14E-06	2.80E-06	2.48E-06	1.30E-09	5.28E-06	5.00E-07	4.51E-07	1.30E-09	9.51E-07	2.12E-07	2.01E-07	1.30E-09	4.15E-07
170	572241.1	4149049	2.69E-06	2.14E-06	1.52E-09	4.83E-06	3.27E-06	2.90E-06	1.52E-09	6.17E-06	5.84E-07	5.27E-07	1.52E-09	1.11E-06	2.48E-07	2.35E-07	1.52E-09	4.85E-07
171	572182.5	4149250	1.42E-06	1.13E-06	8.00E-10	2.54E-06	1.72E-06	1.53E-06	8.00E-10	3.25E-06	3.07E-07	2.77E-07	8.00E-10	5.85E-07	1.31E-07	1.24E-07	8.00E-10	2.55E-07
172	572186.4	4149258	1.56E-06	1.24E-06	8.80E-10	2.80E-06	1.90E-06	1.68E-06	8.80E-10	3.57E-06	3.38E-07	3.05E-07	8.80E-10	6.44E-07	1.44E-07	1.36E-07	8.80E-10	2.81E-07
173	572169.3	4149237	1.17E-06	9.29E-07	6.59E-10	2.10E-06	1.42E-06	1.26E-06	6.59E-10	2.68E-06	2.53E-07	2.28E-07	6.59E-10	4.83E-07	1.08E-07	1.02E-07	6.59E-10	2.10E-07
174	572168.2	4149202	1.15E-06	9.16E-07	6.50E-10	2.07E-06	1.40E-06	1.24E-06	6.50E-10	2.64E-06	2.50E-07	2.25E-07	6.50E-10	4.76E-07	1.06E-07	1.00E-07	6.50E-10	2.07E-07
175	572167.7	4149185	1.17E-06	9.32E-07	6.61E-10	2.10E-06	1.42E-06	1.26E-06	6.61E-10	2.69E-06	2.54E-07	2.29E-07	6.61E-10	4.84E-07	1.08E-07	1.02E-07	6.61E-10	2.11E-07
176	572167.2	4149167	1.17E-06	9.31E-07	6.61E-10	2.10E-06	1.42E-06	1.26E-06	6.61E-10	2.68E-06	2.54E-07	2.29E-07	6.61E-10	4.84E-07	1.08E-07	1.02E-07	6.61E-10	2.11E-07
177	572166.6	4149150	1.14E-06	9.04E-07	6.41E-10	2.04E-06	1.38E-06	1.22E-06	6.41E-10	2.61E-06	2.46E-07	2.22E-07	6.41E-10	4.69E-07	1.05E-07	9.91E-08	6.41E-10	2.05E-07
178	572166.1	4149133	1.09E-06	8.66E-07	6.14E-10	1.95E-06	1.32E-06	1.17E-06	6.14E-10	2.50E-06	2.36E-07	2.13E-07	6.14E-10	4.50E-07	1.00E-07	9.50E-08	6.14E-10	1.96E-07
179	572171.5	4149109	1.11E-06	8.85E-07	6.28E-10	2.00E-06	1.35E-06	1.20E-06	6.28E-10	2.55E-06	2.41E-07	2.18E-07	6.28E-10	4.60E-07	1.03E-07	9.71E-08	6.28E-10	2.00E-07
180	572183.5	4149096	1.26E-06	1.00E-06	7.12E-10	2.26E-06	1.53E-06	1.36E-06	7.12E-10	2.89E-06	2.74E-07	2.47E-07	7.12E-10	5.21E-07	1.16E-07	1.10E-07	7.12E-10	2.27E-07
181	572195.4	4149084	1.46E-06	1.16E-06	8.22E-10	2.61E-06	1.77E-06	1.57E-06	8.22E-10	3.34E-06	3.16E-07	2.85E-07	8.22E-10	6.01E-07	1.34E-07	1.27E-07	8.22E-10	2.62E-07
182	572207.4	4149071	1.70E-06	1.35E-06	9.61E-10	3.06E-06	2.07E-06	1.83E-06	9.61E-10	3.90E-06	3.69E-07	3.33E-07	9.61E-10	7.03E-07	1.57E-07	1.49E-07	9.61E-10	3.07E-07
183	572219.3	4149058	1.99E-06	1.58E-06	1.12E-09	3.57E-06	2.42E-06	2.14E-06	1.12E-09	4.57E-06	4.32E-07	3.89E-07	1.12E-09	8.22E-07	1.84E-07	1.74E-07	1.12E-09	3.58E-07
184	572231.2	4149046	2.31E-06	1.84E-06	1.30E-09	4.15E-06	2.81E-06	2.49E-06	1.30E-09	5.30E-06	5.01E-07	4.52E-07	1.30E-09	9.55E-07	2.13E-07	2.02E-07	1.30E-09	4.16E-07
185	572173.4	4149254	1.29E-06	1.03E-06	7.28E-10	2.32E-06	1.57E-06	1.39E-06	7.28E-10	2.96E-06	2.80E-07	2.52E-07	7.28E-10	5.33E-07	1.19E-07	1.13E-07	7.28E-10	2.32E-07
186	572177.3	4149263	1.41E-06	1.13E-06	7.98E-10	2.54E-06	1.72E-06	1.52E-06	7.98E-10	3.24E-06	3.07E-07	2.77E-07	7.98E-10	5.84E-07	1.30E-07	1.23E-07	7.98E-10	2.55E-07
187	572160.2	4149241	1.07E-06	8.50E-07	6.03E-10	1.92E-06	1.30E-06	1.15E-06	6.03E-10	2.45E-06	2.32E-07	2.09E-07	6.03E-10	4.41E-07	9.85E-08	9.32E-08	6.03E-10	1.92E-07
188	572159.3	4149213	1.04E-06	8.28E-07	5.87E-10	1.87E-06	1.27E-06	1.12E-06	5.87E-10	2.39E-06	2.26E-07	2.04E-07	5.87E-10	4.30E-07	9.60E-08	9.08E-08	5.87E-10	1.87E-07
189	572159.1	4149204	1.05E-06	8.32E-07	5.91E-10	1.88E-06	1.27E-06	1.13E-06	5.91E-10	2.40E-06	2.27E-07	2.05E-07	5.91E-10	4.32E-07	9.65E-08	9.13E-08	5.91E-10	1.88E-07
190	572158.8	4149195	1.06E-06	8.40E-07	5.96E-10	1.90E-06	1.28E-06	1.14E-06	5.96E-10	2.42E-06	2.29E-07	2.07E-07	5.96E-10	4.36E-07	9.74E-08	9.21E-08	5.96E-10	1.90E-07
191	572158.5	4149185	1.07E-06	8.48E-07	6.02E-10	1.91E-06	1.30E-06	1.15E-06	6.02E-10	2.45E-06	2.31E-07	2.09E-07	6.02E-10	4.40E-07	9.83E-08	9.31E-08	6.02E-10	1.92E-07
192	572158.2	4149176	1.07E-06	8.52E-07	6.05E-10	1.92E-06	1.30E-06	1.15E-06	6.05E-10	2.46E-06	2.32E-07	2.10E-07	6.05E-10	4.43E-07	9.88E-08	9.35E-08	6.05E-10	1.93E-07
193	572157.9	4149167	1.07E-06	8.49E-07	6.03E-10	1.92E-06	1.30E-06	1.15E-06	6.03E-10	2.45E-06	2.32E-07	2.09E-07	6.03E-10	4.41E-07	9.85E-08	9.32E-08	6.03E-10	1.92E-07
194	572157.6	4149158	1.05E-06	8.39E-07	5.96E-10	1.89E-06	1.28E-06	1.14E-06	5.96E-10	2.42E-06	2.29E-07	2.06E-07	5.96E-10	4.36E-07	9.73E-08	9.21E-08	5.96E-10	1.90E-07
195	572157.3	4149149	1.03E-06	8.23E-07	5.84E-10	1.86E-06	1.26E-06	1.11E-06	5.84E-10	2.37E-06	2.25E-07	2.03E-07	5.84E-10	4.28E-07	9.55E-08	9.04E-08	5.84E-10	1.86E-07
196	572157.1	4149139	1.01E-06	8.05E-07	5.71E-10	1.82E-06	1.23E-06	1.09E-06	5.71E-10	2.32E-06	2.20E-07	1.98E-07	5.71E-10	4.18E-07	9.33E-08	8.83E-08	5.71E-10	1.82E-07
197	572156.8	4149130	9.89E-07	7.87E-07	5.58E-10	1.78E-06	1.20E-06	1.07E-06	5.58E-10	2.27E-06	2.15E-07	1.94E-07	5.58E-10	4.09E-07	9.12E-08	8.64E-08	5.58E-10	1.78E-07
198	572156.5	4149121	9.70E-07	7.72E-07	5.48E-10	1.74E-06	1.18E-06	1.04E-06	5.48E-10	2.23E-06	2.10E-07	1.90E-07	5.48E-10	4.01E-07	8.95E-08	8.47E-08	5.48E-10	1.75E-07
199	572162.5	4149105	1.01E-06	8.03E-07	5.70E-10	1.81E-06	1.23E-06	1.09E-06	5.70E-10	2.32E-06	2.19E-07	1.97E-07	5.70E-10	4.17E-07	9.31E-08	8.81E-08	5.70E-10	1.82E-07
200	572168.8	4149098	1.07E-06	8.53E-07	6.05E-10	1.93E-06	1.30E-06	1.15E-06	6.05E-10	2.46E-06	2.33E-07	2.10E-07	6.05E-10	4.43E-07	9.89E-08	9.36E-08	6.05E-10	1.93E-07
201	572175.2	4149092	1.14E-06	9.11E-07	6.46E-10	2.06E-06	1.39E-06	1.23E-06	6.46E-10	2.63E-06	2.48E-07	2.24E-07	6.46E-10	4.73E-07	1.06E-07	9.99E-08	6.46E-10	2.06E-07
202	572181.5	4149085	1.23E-06	9.77E-07	6.93E-10	2.20E-06	1.49E-06	1.32E-06	6.93E-10	2.82E-06	2.66E-07	2.40E-07	6.93E-10	5.07E-07	1.13E-07	1.07E-07	6.93E-10	2.21E-07
203	572194.1	4149072	1.43E-06	1.14E-06	8.07E-10	2.57E-06	1.74E-06	1.54E-06	8.07E-10	3.28E-06	3.10E-07	2.80E-07	8.07E-10	5.91E-07	1.32E-07	1.25E-07	8.07E-10	2.58E-07

204	572200.5	4149065	1.55E-06	1.23E-06	8.74E-10	2.78E-06	1.88E-06	1.67E-06	8.74E-10	3.55E-06	3.36E-07	3.03E-07	8.74E-10	6.40E-07	1.43E-07	1.35E-07	8.74E-10	2.79E-07
205	572206.8	4149058	1.68E-06	1.33E-06	9.47E-10	3.01E-06	2.04E-06	1.81E-06	9.47E-10	3.85E-06	3.64E-07	3.28E-07	9.47E-10	6.93E-07	1.55E-07	1.46E-07	9.47E-10	3.02E-07
206	572213.1	4149051	1.81E-06	1.44E-06	1.02E-09	3.26E-06	2.21E-06	1.95E-06	1.02E-09	4.16E-06	3.93E-07	3.55E-07	1.02E-09	7.49E-07	1.67E-07	1.58E-07	1.02E-09	3.27E-07
207	572160.5	4149250	1.10E-06	8.72E-07	6.19E-10	1.97E-06	1.33E-06	1.18E-06	6.19E-10	2.51E-06	2.38E-07	2.15E-07	6.19E-10	4.53E-07	1.01E-07	9.57E-08	6.19E-10	1.97E-07
208	572164.3	4149258	1.18E-06	9.39E-07	6.66E-10	2.12E-06	1.44E-06	1.27E-06	6.66E-10	2.71E-06	2.56E-07	2.31E-07	6.66E-10	4.88E-07	1.09E-07	1.03E-07	6.66E-10	2.13E-07
209	572168.2	4149267	1.29E-06	1.03E-06	7.29E-10	2.32E-06	1.57E-06	1.39E-06	7.29E-10	2.96E-06	2.80E-07	2.53E-07	7.29E-10	5.33E-07	1.19E-07	1.13E-07	7.29E-10	2.32E-07
210	572151.1	4149245	9.82E-07	7.82E-07	5.55E-10	1.76E-06	1.20E-06	1.06E-06	5.55E-10	2.25E-06	2.13E-07	1.92E-07	5.55E-10	4.06E-07	9.06E-08	8.57E-08	5.55E-10	1.77E-07
211	572150.2	4149217	9.50E-07	7.56E-07	5.37E-10	1.71E-06	1.16E-06	1.02E-06	5.37E-10	2.18E-06	2.06E-07	1.86E-07	5.37E-10	3.93E-07	8.77E-08	8.30E-08	5.37E-10	1.71E-07
212	572150	4149208	9.53E-07	7.58E-07	5.38E-10	1.71E-06	1.16E-06	1.03E-06	5.38E-10	2.19E-06	2.07E-07	1.87E-07	5.38E-10	3.94E-07	8.79E-08	8.32E-08	5.38E-10	1.72E-07
213	572149.7	4149199	9.60E-07	7.64E-07	5.42E-10	1.72E-06	1.17E-06	1.03E-06	5.42E-10	2.20E-06	2.08E-07	1.88E-07	5.42E-10	3.97E-07	8.86E-08	8.38E-08	5.42E-10	1.73E-07
214	572149.4	4149190	9.70E-07	7.72E-07	5.48E-10	1.74E-06	1.18E-06	1.04E-06	5.48E-10	2.23E-06	2.10E-07	1.90E-07	5.48E-10	4.01E-07	8.95E-08	8.47E-08	5.48E-10	1.75E-07
215	572149.1	4149181	9.78E-07	7.78E-07	5.52E-10	1.76E-06	1.19E-06	1.05E-06	5.52E-10	2.24E-06	2.12E-07	1.91E-07	5.52E-10	4.04E-07	9.02E-08	8.54E-08	5.52E-10	1.76E-07
216	572148.8	4149172	9.80E-07	7.80E-07	5.54E-10	1.76E-06	1.19E-06	1.06E-06	5.54E-10	2.25E-06	2.13E-07	1.92E-07	5.54E-10	4.05E-07	9.04E-08	8.56E-08	5.54E-10	1.77E-07
217	572148.6	4149163	9.75E-07	7.76E-07	5.50E-10	1.75E-06	1.19E-06	1.05E-06	5.50E-10	2.24E-06	2.12E-07	1.91E-07	5.50E-10	4.03E-07	8.99E-08	8.51E-08	5.50E-10	1.76E-07
218	572148.3	4149154	9.61E-07	7.65E-07	5.43E-10	1.73E-06	1.17E-06	1.04E-06	5.43E-10	2.21E-06	2.09E-07	1.88E-07	5.43E-10	3.97E-07	8.87E-08	8.39E-08	5.43E-10	1.73E-07
219	572148	4149145	9.42E-07	7.49E-07	5.32E-10	1.69E-06	1.15E-06	1.01E-06	5.32E-10	2.16E-06	2.04E-07	1.84E-07	5.32E-10	3.89E-07	8.69E-08	8.22E-08	5.32E-10	1.70E-07
220	572147.7	4149135	9.20E-07	7.33E-07	5.20E-10	1.65E-06	1.12E-06	9.91E-07	5.20E-10	2.11E-06	2.00E-07	1.80E-07	5.20E-10	3.80E-07	8.49E-08	8.04E-08	5.20E-10	1.66E-07
221	572147.4	4149126	9.00E-07	7.16E-07	5.08E-10	1.62E-06	1.10E-06	9.70E-07	5.08E-10	2.07E-06	1.95E-07	1.76E-07	5.08E-10	3.72E-07	8.31E-08	7.86E-08	5.08E-10	1.62E-07
222	572147.1	4149117	8.83E-07	7.03E-07	4.99E-10	1.59E-06	1.08E-06	9.51E-07	4.99E-10	2.03E-06	1.92E-07	1.73E-07	4.99E-10	3.65E-07	8.15E-08	7.71E-08	4.99E-10	1.59E-07
223	572153.1	4149102	9.17E-07	7.29E-07	5.17E-10	1.65E-06	1.12E-06	9.87E-07	5.17E-10	2.10E-06	1.99E-07	1.79E-07	5.17E-10	3.79E-07	8.46E-08	8.00E-08	5.17E-10	1.65E-07
224	572159.4	4149095	9.70E-07	7.72E-07	5.47E-10	1.74E-06	1.18E-06	1.04E-06	5.47E-10	2.22E-06	2.10E-07	1.90E-07	5.47E-10	4.01E-07	8.95E-08	8.47E-08	5.47E-10	1.75E-07
225	572165.6	4149088	1.03E-06	8.20E-07	5.82E-10	1.85E-06	1.25E-06	1.11E-06	5.82E-10	2.36E-06	2.24E-07	2.02E-07	5.82E-10	4.26E-07	9.50E-08	8.99E-08	5.82E-10	1.86E-07
226	572171.9	4149082	1.10E-06	8.75E-07	6.21E-10	1.97E-06	1.34E-06	1.18E-06	6.21E-10	2.52E-06	2.38E-07	2.15E-07	6.21E-10	4.54E-07	1.01E-07	9.60E-08	6.21E-10	1.98E-07
227	572190.7	4149062	1.37E-06	1.09E-06	7.71E-10	2.45E-06	1.66E-06	1.47E-06	7.71E-10	3.13E-06	2.96E-07	2.67E-07	7.71E-10	5.64E-07	1.26E-07	1.19E-07	7.71E-10	2.46E-07
228	572196.9	4149055	1.47E-06	1.17E-06	8.32E-10	2.65E-06	1.79E-06	1.59E-06	8.32E-10	3.38E-06	3.20E-07	2.88E-07	8.32E-10	6.09E-07	1.36E-07	1.29E-07	8.32E-10	2.65E-07
229	572151.4	4149254	1.01E-06	8.03E-07	5.70E-10	1.81E-06	1.23E-06	1.09E-06	5.70E-10	2.31E-06	2.19E-07	1.97E-07	5.70E-10	4.17E-07	9.31E-08	8.81E-08	5.70E-10	1.82E-07
230	572155.2	4149262	1.08E-06	8.63E-07	6.12E-10	1.95E-06	1.32E-06	1.17E-06	6.12E-10	2.49E-06	2.35E-07	2.12E-07	6.12E-10	4.48E-07	1.00E-07	9.47E-08	6.12E-10	1.95E-07
231	572159	4149271	1.18E-06	9.41E-07	6.68E-10	2.12E-06	1.44E-06	1.27E-06	6.68E-10	2.71E-06	2.57E-07	2.31E-07	6.68E-10	4.89E-07	1.09E-07	1.03E-07	6.68E-10	2.13E-07
232	572142	4149249	9.07E-07	7.22E-07	5.12E-10	1.63E-06	1.10E-06	9.77E-07	5.12E-10	2.08E-06	1.97E-07	1.78E-07	5.12E-10	3.75E-07	8.37E-08	7.92E-08	5.12E-10	1.63E-07
233	572141.1	4149222	8.73E-07	6.94E-07	4.93E-10	1.57E-06	1.06E-06	9.40E-07	4.93E-10	2.00E-06	1.89E-07	1.71E-07	4.93E-10	3.61E-07	8.05E-08	7.62E-08	4.93E-10	1.57E-07
234	572140.9	4149213	8.73E-07	6.94E-07	4.93E-10	1.57E-06	1.06E-06	9.40E-07	4.93E-10	2.00E-06	1.89E-07	1.71E-07	4.93E-10	3.61E-07	8.05E-08	7.62E-08	4.93E-10	1.57E-07
235	572140.6	4149204	8.77E-07	6.98E-07	4.95E-10	1.58E-06	1.07E-06	9.45E-07	4.95E-10	2.01E-06	1.90E-07	1.72E-07	4.95E-10	3.63E-07	8.10E-08	7.66E-08	4.95E-10	1.58E-07
236	572140.3	4149195	8.85E-07	7.04E-07	5.00E-10	1.59E-06	1.08E-06	9.53E-07	5.00E-10	2.03E-06	1.92E-07	1.73E-07	5.00E-10	3.66E-07	8.17E-08	7.73E-08	5.00E-10	1.59E-07
237	572140	4149186	8.94E-07	7.12E-07	5.05E-10	1.61E-06	1.09E-06	9.63E-07	5.05E-10	2.05E-06	1.94E-07	1.75E-07	5.05E-10	3.70E-07	8.25E-08	7.81E-08	5.05E-10	1.61E-07
238	572139.7	4149177	9.00E-07	7.17E-07	5.08E-10	1.62E-06	1.10E-06	9.70E-07	5.08E-10	2.07E-06	1.95E-07	1.76E-07	5.08E-10	3.72E-07	8.31E-08	7.86E-08	5.08E-10	1.62E-07
239	572139.5	4149168	9.00E-07	7.17E-07	5.08E-10	1.62E-06	1.10E-06	9.70E-07	5.08E-10	2.07E-06	1.95E-07	1.76E-07	5.08E-10	3.72E-07	8.31E-08	7.86E-08	5.08E-10	1.62E-07
240	572139.2	4149159	8.93E-07	7.11E-07	5.04E-10	1.60E-06	1.09E-06	9.62E-07	5.04E-10	2.05E-06	1.94E-07	1.75E-07	5.04E-10	3.69E-07	8.24E-08	7.80E-08	5.04E-10	1.61E-07
241	572138.9	4149150	8.79E-07	6.99E-07	4.96E-10	1.58E-06	1.07E-06	9.47E-07	4.96E-10	2.02E-06	1.91E-07	1.72E-07	4.96E-10	3.63E-07	8.11E-08	7.67E-08	4.96E-10	1.58E-07
242	572138.6	4149141	8.61E-07	6.85E-07	4.86E-10	1.55E-06	1.05E-06	9.27E-07	4.86E-10	1.97E-06	1.87E-07	1.68E-07	4.86E-10	3.56E-07	7.94E-08	7.51E-08	4.86E-10	1.55E-07
243	572138.3	4149132	8.41E-07	6.69E-07	4.75E-10	1.51E-06	1.02E-06	9.06E-07	4.75E-10	1.93E-06	1.83E-07	1.65E-07	4.75E-10	3.48E-07	7.76E-08	7.34E-08	4.75E-10	1.52E-07
244	572138.1	4149123	8.23E-07	6.55E-07	4.65E-10	1.48E-06	1.00E-06	8.86E-07	4.65E-10	1.89E-06	1.79E-07	1.61E-07	4.65E-10	3.40E-07	7.59E-08	7.19E-08	4.65E-10	1.48E-07
245	572137.8	4149114	8.08E-07	6.43E-07	4.56E-10	1.45E-06	9.83E-07	8.70E-07	4.56E-10	1.85E-06	1.75E-07	1.58E-07	4.56E-10	3.34E-07	7.46E-08	7.06E-08	4.56E-10	1.46E-07
246	572143.7	4149098	8.36E-07	6.65E-07	4.72E-10	1.50E-06	1.02E-06	9.01E-07	4.72E-10	1.92E-06	1.81E-07	1.64E-07	4.72E-10	3.46E-07	7.71E-08	7.30E-08	4.72E-10	1.51E-07
247	572156.1	4149085	9.33E-07	7.42E-07	5.27E-10	1.68E-06	1.14E-06	1.00E-06	5.27E-10	2.14E-06	2.02E-07	1.83E-07	5.27E-10	3.86E-07	8.61E-08	8.15E-08	5.27E-10	1.68E-07
248	572162.3	4149078	9.90E-07	7.88E-07	5.59E-10	1.78E-06	1.20E-06	1.07E-06	5.59E-10	2.27E-06	2.15E-07	1.94E-07	5.59E-10	4.09E-07	9.13E-08	8.65E-08	5.59E-10	1.78E-07
249	572142.3	4149258	9.32E-07	7.42E-07	5.26E-10	1.67E-06	1.13E-06	1.00E-06	5.26E-10	2.14E-06	2.02E-07	1.82E-07	5.26E-10	3.85E-07	8.60E-08	8.14E-08	5.26E-10	1.68E-07
250	572146.1	4149267	1.00E-06	7.96E-07	5.65E-10	1.80E-06	1.22E-06	1.08E-06	5.65E-10	2.30E-06	2.17E-07	1.96E-07	5.65E-10	4.14E-07	9.23E-08	8.74E-08	5.65E-10	1.80E-07
251	572149.9	4149275	1.09E-06	8.66E-07	6.14E-10	1.95E-06	1.32E-06	1.17E-06	6.14E-10	2.50E-06	2.36E-07	2.13E-07	6.14E-10	4.50E-07	1.00E-07	9.50E-08	6.14E-10	1.96E-07
252	572132.9	4149253	8.41E-07	6.69E-07	4.75E-10	1.51E-06	1.02E-06	9.06E-07	4.75E-10	1.93E-06	1.82E-07	1.65E-07	4.75E-10	3.48E-07	7.76E-08	7.34E-08	4.75E-10	1.51E-07
253	572132	4149226	8.05E-07	6.41E-07	4.55E-10	1.45E-06	9.80E-07	8.67E-07	4.55E-10	1.85E-06	1.75E-07	1.58E-07	4.55E-10	3.33E-07	7.43E-08	7.03E-08	4.55E-10	1.45E-07
254	572131.5	4149208	8.05E-07	6.41E-07	4.55E-10	1.45E-06	9.80E-07	8.67E-07	4.55E-10	1.85E-06	1.75E-07	1.58E-07	4.55E-10	3.33E-07	7.43E-08	7.03E-08	4.55E-10	1.45E-07
255	572131.2	4149199	8.11E-07	6.46E-07	4.58E-10	1.46E-06	9.87E-07	8.74E-07	4.58E-10	1.86E-06	1.76E-07	1.59E-07	4.58E-10	3.35E-07	7.49E-08	7.08E-08	4.58E-10	1.46E-07
256	572130.9	4149191	8.20E-07	6.52E-07	4.63E-10	1.47E-06	9.98E-07	8.83E-07	4.63E-10	1.88E-06	1.78E-07	1.60E-07	4.63E-10	3.39E-07	7.56E-08	7.16E-08	4.63E-10	1.48E-07
257	572130.7	4149182	8.27E-07	6.58E-07	4.67E-10	1.49E-06	1.01E-06	8.91E-07	4.67E-10	1.90E-06	1.80E-07	1.62E-07	4.67E-10	3.42E-07	7.63E-08	7.22E-08	4.67E-10	1.49E-07
258	572130.1	4149164	8.29E-07	6.60E-07	4.68E-10	1.49E-06	1.01E-06	8.93E-07	4.68E-10	1.90E-06	1.80E-07	1.62E-07	4.68E-10	3.43E-07	7.65E-08	7.24E-08	4.68E-10	1.49E-07
259	572129.8	4149155	8.21E-07	6.53E-07	4.63E-10	1.47E-06	9.99E-07	8.84E-07	4.63E-10	1.88E-06	1.78E-07	1.61E-07	4.63E-10	3.39E-07	7.57E-08	7.17E-08	4.63E-10	1.48E-07
260	572129.5	4149146	8.07E-07	6.42E-07	4.55E-10	1.45E-06	9.82E-07	8.69E-07	4.55E-10	1.85E-06	1.75E-07	1.58E-07	4.55E-10	3.33E-07	7.44E-08	7.04E-08	4.55E-10	1.45E-07
261	572129.3	4149137	7.89E-07	6.28E-07	4.46E-10	1.42E-06	9.60E-07	8.50E-07	4.46E-10	1.81E-06	1.71E-07	1.54E-07	4.46E-10	3.26E-07	7.28E-08	6.89E-08	4.46E-10	1.42E-07
262	572128.7	4149119	7.55E-07	6.01E-07	4.26E-10	1.36E-06	9.19E-07	8.14E-07	4.26E-10	1.73E-06	1.64E-07	1.48E-07	4.26E-10	3.12E-07	6.97E-08	6.60E-08	4.26E-10	1.36E-07
263	572128.4	4149110	7.42E-07	5.91E-07	4.19E-10	1.33E-06	9.03E-07	7.99E-07	4.19E-10	1.70E-06	1.61E-07	1.45E-07	4.19E-10	3.07E-07	6.85E-08	6.48E-08	4.19E-10	1.34E-07
264	572134.3	4149095	7.66E-07	6.10E-07	4.33E-10	1.38E-06	9.32E-07	8.25E-07	4.33E-10	1.76E-06	1.66E-07	1.50E-07	4.33E-10	3.17E-07	7.07E-08	6.69E-08	4.33E-10	1.38E-07
265	572146.6	4149082	8.49E-07	6.75E-07	4.79E-10	1.52E-06	1.03E-06	9.14E-07	4.79E-10	1.95E-06	1.84E-07	1.66E-07	4.79E-10	3.51E-07	7.83E-08	7.41E-08	4.79E-10	1.53E-07
266	572158.9	4149068	9.53E-07	7.58E-07	5.38E-10	1.71E-06	1.16E-06	1.03E-06	5.38E-10	2.19E-06	2.07E-07	1.87E-07	5.38E-10	3.94E-07	8.79E-08	8.32E-08	5.38E-10	1.72E-07
267	572133.2	4149262	8.64E-07	6.88E-07	4.88E-10	1.55E-06	1.05E-06	9.31E-07	4.88E-10	1.98E-06	1.88E-07	1.69E-07	4.88E-10	3.57E-07	7.97E-08	7.55E-08	4.88E-10	1.56E-07
268	572137	4149271	9.26E-07	7.37E-07	5.23E-10	1.66E-06	1.13E-06	9.98E-07	5.23E-10	2.13E-06	2.01E-07	1.81E-07	5.23E-10	3.83E-07	8.55E-08	8.09E-08	5.23E-10	1.67E-07
269	572140.8	4149279	1.01E-06	8.00E-07	5.68E-10	1.81E-06	1.22E-06	1.08E-06	5.68E-10	2.31E-06	2.18E-07	1.97E-07	5.68E-10	4.15E-07	9.27E-08	8.78E-08	5.68E-10	1.81E-07
270	572123.8	4149257	7.82E-07	6.23E-07	4.42E-10	1.41E-06	9.52E-07	8.43E-07	4.42E-10	1.80E-06	1.70E-07	1.53E-07	4.42E-10	3.23E-07	7.22E-08	6.83E-08	4.42E-10	1.41E-07
271	572122.7	4149222	7.43E-07	5.91E-07	4.19E-10	1.33E-06	9.04E-07	8.00E-07	4.19E-10	1.70E-06	1.61E-07	1.45E-07	4.19E-10	3.07E-07	6.85E-08	6.48E-08	4.19E-10	1.34E-07
272	572122.1	4149204	7.47E-07	5.94E-07	4.22E-10	1.34E-06	9.09E-07	8.04E-07	4.22E-10	1.71E-06	1.62E-07	1.46E-07	4.22E-10	3.09E-07	6.89E-08	6.52E-08	4.22E-10	1.35E-07
273	572121.6	4149186	7.61E-07	6.06E-07	4.30E-10	1.37E-06	9.27E-07	8.20E-07	4.30E-10	1.75E-06	1.65E-07	1.49E-07	4.30E-10	3.15E-07	7.02E-08	6.65E-08	4.30E-10	1.37E-07
274	572121	4149169	7.70E-07	6.13E-07	4.35E-10	1.38E-06	9.37E-07	8.29E-07	4.35E-10	1.77E-06	1.67E-07	1.51E-07	4.35E-10	3.18E-07	7.10E-08	6.72E-08	4.35E-10	1.39E-07
275	572120.5	4149151	7.57E-07	6.02E-07	4.27E-10	1.36E-06	9.21E-07	8.15E-07	4.27E-10	1.74E-06	1.64E-07	1.48E-07	4.27E-10	3.13E-07	6.98E-08	6.61E-08	4.27E-10	1.36E-07
276	572119.9	4149133	7.26E-07	5.78E-07	4.10E-10	1.30E-06	8.84E-07	7.82E-07	4.10E-10	1.67E-06	1.58E-07	1.42E-07	4.10E-10	3.00E-07	6.70E-08	6.34E-08	4.10E-10	1.31E-07
277	572119.4	4149115	6.96E-07	5.54E-07	3.93E-10	1.25E-06	8.47E-07	7.49E-07	3.93E-10	1.60E-06	1.51E-07	1.36E-07	3.93E-10	2.87E-07	6.42E-08	6.07E-08	3.93E-10	1.25E-07
278	572124.9	4149091	7.05E-07	5.61E-07	3.98E-10	1.27E-06	8.58E-07	7.59E-07	3.98E-10	1.62E-06	1.53E-07	1.38E-07	3.98E-10	2.91E-07	6.50E-08	6.15E-08	3.98E-10	1.27E-07
279	572137.1	4149078	7.76E-07	6.17E-07	4.38E-10	1.39E-06	9.44E-07	8.35E-07	4.38E-10	1.78E-06	1.68E-07	1.52E-07	4.38E-10	3.21E-07	7.16E-08	6.77E-08	4.38E-10	1.40E-07
280	572127.9	4149275	8.61E-07	6.85E-07	4.86E-10	1.55E-06	1.05E-06	9.27E-07	4.86E-10	1.97E-06	1.87E-07	1.68E-07	4.86E-10	3.56E-07	7.94E-08	7.52E-08	4.86E-10	1.55E-07
281	572131.7	4149283	9.32E-07	7.41E-07	5.26E-10	1.67E-06	1.13E-06	1.00E-06	5.26E-10	2.14E-06	2.02E-07	1.82E-07	5.26E-10	3.85E-07	8.59E-08	8.13E-08	5.26E-10	1.68E-07
282	572114.6	4149261	7.29E-07	5.81E-07	4.12E-10	1.31E-06	8.88E-07	7.86E-07	4.12E-10	1.67E-06	1.58E-07	1.43E-07	4.12E-10	3.01E-07	6.73E-08	6.37E-08	4.12E-10	1.31E-07
283	572114.4	4149252	7.13E-07	5.68E-07	4.03E-10	1.28E-06	8.68E-07	7.68E-07	4.03E-10	1.64E-06	1.55E-07	1.40E-07	4.03E-10	2.95E-07	6.58E-08	6.23E-08	4.03E-10	1.29E-07
284	572113.8	4149233	6.93E-07	5.52E-07	3.91E-10	1.25E-06	8.44E-07	7.47E-07	3.91E-10	1.59E-06	1.50E-07	1.36E-07	3.91E-10	2.87E-07	6.40E-08	6.05E-08	3.91E-10	1.25E-07
285	572113.5	4149224	6.89E-07	5.48E-07	3.89E-10	1.24E-06	8.38E-07	7.42E-07	3.89E-10	1.58E-06	1.49E-07	1.35E-07	3.89E-10	2.85E-07	6.36E-08	6.01E-08	3.89E-10	1.24E-07
286	572113.2	4149215	6.88E-07	5.48E-07	3.89E-10	1.24E-06	8.38E-07	7.41E-07	3.89E-10	1.58E-06	1.49E-07	1.35E-07	3.89E-10	2.84E-07	6.35E-08	6.01E-08	3.89E-10	1.24E-07
287	572112.9	4149205	6.91E-07	5.50E-07	3.90E-10	1.24E-06	8.41E-07	7.45E-07	3.90E-10	1.59E-06	1.50E-07	1.35E-07	3.90E-10	2.86E-07	6.38E-08	6.04E-08	3.90E-10	1.25E-07
288	572112.6	4149196	6.97E-07	5.55E-07	3.94E-10	1.25E-06	8.49E-07	7.51E-07	3.94E-10	1.60E-06	1.51E-07	1.36E-07	3.94E-10	2.88E-07	6.43E-08	6.09E-08	3.94E-10	1.26E-07
289	572112.3	4149187	7.06E-07	5.61E-07	3.98E-10	1.27E-06	8.59E-07	7.60E-07	3.98E-10	1.62E-06	1.53E-07	1.38E-07	3.98E-10	2.92E-07	6.51E-08	6.16E-08	3.98E-10	1.27E-07
290	572112.1	4149178	7.12E-07	5.67E-07	4.02E-10	1.28E-06	8.67E-07	7.67E-07	4.02E-10	1.63E-06	1.55E-07	1.39E-07	4.02E-10	2.94E-07	6.57E-08	6.22E-08	4.02E-10	1.28E-07
291	572111.8	4149168	7.15E-07	5.69E-07	4.04E-10	1.28E-06	8.70E-07	7.70E-07	4.04E-10	1.64E-06	1.55E-07	1.40E-07	4.04E-10	2.95E-07	6.59E-08	6.24E-08	4.04E-10	1.29E-07
292	572111.5	4149159	7.12E-07	5.66E-07	4.02E-10	1.28E-06	8.66E-07	7.67E-07	4.02E-10	1.63E-06	1.54E-07	1.39E-07	4.02E-10	2.94E-07	6.57E-08	6.22E-08	4.02E-10	1.28E-07
293	572111.2	4149150	7.03E-07	5.59E-07	3.97E-10	1.26E-06	8.56E-07	7.57E-07	3.97E-10	1.61E-06	1.53E-07	1.38E-07	3.97E-10	2.91E-07	6.49E-08	6.14E-08	3.97E-10	1.27E-07
294	572110.9	4149140	6.90E-07	5.49E-07	3.89E-10	1.24E-06	8.39E-07	7.43E-07	3.89E-10	1.58E-06	1.50E-07	1.35E-07	3.89E-10	2.85E-07	6.36E-08	6.02E-08	3.89E-10	1.24E-07
295	572110.6	4149131	6.74E-07	5.36E-07	3.80E-10	1.21E-06	8.20E-07	7.26E-07	3.80E-10	1.55E-06	1.46E-07	1.32E-07	3.80E-10	2.78E-07	6.22E-08	5.88E-08	3.80E-10	1.21E-07
296	572110.3	4149122	6.58E-07	5.24E-07	3.72E-10	1.18E-06	8.01E-07	7.09E-07	3.72E-10	1.51E-06	1.43E-07	1.29E-07	3.72E-10	2.72E-07	6.07E-08	5.75E-08	3.72E-10	1.19E-07
297	572110	4149113	6.44E-07	5.12E-07	3.64E-10	1.16E-06	7.84E-07	6.94E-07	3.64E-10	1.48E-06	1.40E-07	1.26E-07	3.64E-10	2.66E-07	5.94E-08	5.62E-08	3.64E-10	1.16E-07
298	572109.7	4149103	6.33E-07	5.03E-07	3.57E-10	1.14E-06	7.70E-07	6.81E-07	3.57E-10	1.45E-06	1.37E-07	1.24E-07	3.57E-10	2.61E-07	5.84E-08	5.52E-08	3.57E-10	1.14E-07
299	572115.8	4149087	6.52E-07	5.19E-07	3.68E-10	1.17E-06	7.93E-07	7.02E-07	3.68E-10	1.50E-06	1.41E-07	1.28E-07	3.68E-10	2.69E-07	6.01E-08	5.69E-08	3.68E-10	1.17E-07
300	572122.2	4149080	6.83E-07	5.43E-07	3.86E-10	1.23E-06	8.31E-07	7.36E-07	3.86E-10	1.57E-06	1.48E-07	1.34E-07	3.86E-10	2.82E-07	6.30E-08	5.96E-08	3.86E-10	1.23E-07
301	572114.9	4149270	7.51E-07	5.97E-07	4.24E-10	1.35E-06	9.14E-07	8.09E-07	4.24E-10	1.72E-06	1.63E-07	1.47E-07	4.24E-10	3.10E-07	6.93E-08	6.56E-08	4.24E-10	1.35E-07
302	572118.8	4149279	8.02E-07	6.38E-07	4.53E-10	1.44E-06	9.76E-07	8.64E-07	4.53E-10	1.84E-06	1.74E-07	1.57E-07	4.53E-10	3.31E-07	7.40E-08	7.00E-08	4.53E-10	1.44E-07
303	572105.5	4149265	6.83E-07	5.43E-07	3.85E-10	1.23E-06	8.31E-07	7.35E-07	3.85E-10	1.57E-06	1.48E-07	1.34E-07	3.85E-10	2.82E-07	6.30E-08	5.96E-08	3.85E-10	1.23E-07
304	572105.2	4149256	6.67E-07	5.31E-07	3.77E-10	1.20E-06	8.12E-07	7.19E-07	3.77E-10	1.53E-06	1.45E-07	1.31E-07	3.77E-10	2.76E-07	6.16E-08	5.83E-08	3.77E-10	1.20E-07
305	572105	4149247	6.56E-07	5.22E-07	3.70E-10	1.18E-06	7.98E-07	7.07E-07	3.70E-10	1.51E-06	1.42E-07	1.28E-07	3.70E-10	2.71E-07	6.05E-08	5.73E-08	3.70E-10	1.18E-07
306	572104.4	4149228	6.42E-07	5.11E-07	3.63E-10	1.15E-06	7.81E-07	6.92E-07	3.63E-10	1.47E-06	1.39E-07	1.26E-07	3.63E-10	2.65E-07	5.92E-08	5.61E-08	3.63E-10	1.16E-07

307	572104.1	4149219	6.40E-07	5.09E-07	3.61E-10	1.15E-06	7.79E-07	6.89E-07	3.61E-10	1.47E-06	1.39E-07	1.25E-07	3.61E-10	2.64E-07	5.90E-08	5.59E-08	3.61E-10	1.15E-07
308	572103.8	4149210	6.41E-07	5.10E-07	3.62E-10	1.15E-06	7.80E-07	6.90E-07	3.62E-10	1.47E-06	1.39E-07	1.25E-07	3.62E-10	2.65E-07	5.91E-08	5.60E-08	3.62E-10	1.15E-07
309	572103.5	4149201	6.45E-07	5.13E-07	3.64E-10	1.16E-06	7.85E-07	6.95E-07	3.64E-10	1.48E-06	1.40E-07	1.26E-07	3.64E-10	2.67E-07	5.95E-08	5.63E-08	3.64E-10	1.16E-07
310	572103.3	4149192	6.52E-07	5.19E-07	3.68E-10	1.17E-06	7.93E-07	7.02E-07	3.68E-10	1.50E-06	1.41E-07	1.28E-07	3.68E-10	2.69E-07	6.01E-08	5.69E-08	3.68E-10	1.17E-07
311	572103	4149182	6.59E-07	5.25E-07	3.72E-10	1.18E-06	8.02E-07	7.10E-07	3.72E-10	1.51E-06	1.43E-07	1.29E-07	3.72E-10	2.72E-07	6.08E-08	5.76E-08	3.72E-10	1.19E-07
312	572102.7	4149173	6.64E-07	5.29E-07	3.75E-10	1.19E-06	8.08E-07	7.15E-07	3.75E-10	1.52E-06	1.44E-07	1.30E-07	3.75E-10	2.75E-07	6.13E-08	5.80E-08	3.75E-10	1.20E-07
313	572102.4	4149164	6.65E-07	5.30E-07	3.76E-10	1.20E-06	8.10E-07	7.17E-07	3.76E-10	1.53E-06	1.44E-07	1.30E-07	3.76E-10	2.75E-07	6.14E-08	5.81E-08	3.76E-10	1.20E-07
314	572102.1	4149155	6.61E-07	5.26E-07	3.73E-10	1.19E-06	8.05E-07	7.12E-07	3.73E-10	1.52E-06	1.43E-07	1.29E-07	3.73E-10	2.73E-07	6.10E-08	5.77E-08	3.73E-10	1.19E-07
315	572101.8	4149146	6.52E-07	5.19E-07	3.68E-10	1.17E-06	7.93E-07	7.02E-07	3.68E-10	1.50E-06	1.41E-07	1.28E-07	3.68E-10	2.69E-07	6.01E-08	5.69E-08	3.68E-10	1.17E-07
316	572101.5	4149136	6.39E-07	5.08E-07	3.61E-10	1.15E-06	7.77E-07	6.88E-07	3.61E-10	1.47E-06	1.39E-07	1.25E-07	3.61E-10	2.64E-07	5.89E-08	5.58E-08	3.61E-10	1.15E-07
317	572101.3	4149127	6.24E-07	4.96E-07	3.52E-10	1.12E-06	7.59E-07	6.72E-07	3.52E-10	1.43E-06	1.35E-07	1.22E-07	3.52E-10	2.58E-07	5.75E-08	5.45E-08	3.52E-10	1.12E-07
318	572101	4149118	6.09E-07	4.85E-07	3.44E-10	1.09E-06	7.41E-07	6.56E-07	3.44E-10	1.40E-06	1.32E-07	1.19E-07	3.44E-10	2.52E-07	5.62E-08	5.32E-08	3.44E-10	1.10E-07
319	572100.7	4149109	5.97E-07	4.75E-07	3.37E-10	1.07E-06	7.26E-07	6.43E-07	3.37E-10	1.37E-06	1.29E-07	1.17E-07	3.37E-10	2.47E-07	5.51E-08	5.21E-08	3.37E-10	1.07E-07
320	572100.4	4149100	5.86E-07	4.67E-07	3.31E-10	1.05E-06	7.14E-07	6.32E-07	3.31E-10	1.35E-06	1.27E-07	1.15E-07	3.31E-10	2.42E-07	5.41E-08	5.12E-08	3.31E-10	1.06E-07
321	572106.4	4149084	6.03E-07	4.80E-07	3.40E-10	1.08E-06	7.34E-07	6.49E-07	3.40E-10	1.38E-06	1.31E-07	1.18E-07	3.40E-10	2.49E-07	5.56E-08	5.26E-08	3.40E-10	1.09E-07
322	572105.8	4149275	7.02E-07	5.59E-07	3.97E-10	1.26E-06	8.55E-07	7.56E-07	3.97E-10	1.61E-06	1.52E-07	1.37E-07	3.97E-10	2.90E-07	6.48E-08	6.13E-08	3.97E-10	1.27E-07
323	572109.7	4149283	7.49E-07	5.96E-07	4.23E-10	1.35E-06	9.12E-07	8.07E-07	4.23E-10	1.72E-06	1.63E-07	1.47E-07	4.23E-10	3.10E-07	6.91E-08	6.54E-08	4.23E-10	1.35E-07
324	572096.4	4149269	6.40E-07	5.10E-07	3.61E-10	1.15E-06	7.79E-07	6.90E-07	3.61E-10	1.47E-06	1.39E-07	1.25E-07	3.61E-10	2.65E-07	5.91E-08	5.59E-08	3.61E-10	1.15E-07
325	572096.1	4149260	6.26E-07	4.98E-07	3.53E-10	1.12E-06	7.62E-07	6.74E-07	3.53E-10	1.44E-06	1.36E-07	1.23E-07	3.53E-10	2.59E-07	5.78E-08	5.47E-08	3.53E-10	1.13E-07
326	572095.9	4149251	6.15E-07	4.89E-07	3.47E-10	1.10E-06	7.48E-07	6.62E-07	3.47E-10	1.41E-06	1.33E-07	1.20E-07	3.47E-10	2.54E-07	5.67E-08	5.37E-08	3.47E-10	1.11E-07
327	572095.3	4149233	6.00E-07	4.78E-07	3.39E-10	1.08E-06	7.31E-07	6.47E-07	3.39E-10	1.38E-06	1.30E-07	1.18E-07	3.39E-10	2.48E-07	5.54E-08	5.24E-08	3.39E-10	1.08E-07
328	572095	4149224	5.97E-07	4.75E-07	3.37E-10	1.07E-06	7.27E-07	6.43E-07	3.37E-10	1.37E-06	1.30E-07	1.17E-07	3.37E-10	2.47E-07	5.51E-08	5.21E-08	3.37E-10	1.08E-07
329	572094.7	4149215	5.96E-07	4.75E-07	3.37E-10	1.07E-06	7.26E-07	6.42E-07	3.37E-10	1.37E-06	1.29E-07	1.17E-07	3.37E-10	2.46E-07	5.50E-08	5.21E-08	3.37E-10	1.07E-07
330	572094.4	4149206	5.99E-07	4.77E-07	3.38E-10	1.08E-06	7.29E-07	6.45E-07	3.38E-10	1.37E-06	1.30E-07	1.17E-07	3.38E-10	2.48E-07	5.53E-08	5.23E-08	3.38E-10	1.08E-07
331	572094.2	4149196	6.04E-07	4.81E-07	3.41E-10	1.08E-06	7.35E-07	6.51E-07	3.41E-10	1.39E-06	1.31E-07	1.18E-07	3.41E-10	2.50E-07	5.57E-08	5.27E-08	3.41E-10	1.09E-07
332	572093.9	4149187	6.11E-07	4.86E-07	3.45E-10	1.10E-06	7.44E-07	6.58E-07	3.45E-10	1.40E-06	1.33E-07	1.20E-07	3.45E-10	2.53E-07	5.64E-08	5.34E-08	3.45E-10	1.10E-07
333	572093.6	4149178	6.17E-07	4.91E-07	3.49E-10	1.11E-06	7.51E-07	6.65E-07	3.49E-10	1.42E-06	1.34E-07	1.21E-07	3.49E-10	2.55E-07	5.70E-08	5.39E-08	3.49E-10	1.11E-07
334	572093.3	4149169	6.21E-07	4.94E-07	3.51E-10	1.12E-06	7.56E-07	6.69E-07	3.51E-10	1.43E-06	1.35E-07	1.22E-07	3.51E-10	2.57E-07	5.73E-08	5.42E-08	3.51E-10	1.12E-07
335	572093	4149160	6.21E-07	4.94E-07	3.50E-10	1.11E-06	7.55E-07	6.68E-07	3.50E-10	1.42E-06	1.35E-07	1.21E-07	3.50E-10	2.56E-07	5.72E-08	5.42E-08	3.50E-10	1.12E-07
336	572092.7	4149151	6.15E-07	4.90E-07	3.47E-10	1.11E-06	7.49E-07	6.63E-07	3.47E-10	1.41E-06	1.33E-07	1.20E-07	3.47E-10	2.54E-07	5.68E-08	5.37E-08	3.47E-10	1.11E-07
337	572092.5	4149142	6.05E-07	4.82E-07	3.42E-10	1.09E-06	7.37E-07	6.52E-07	3.42E-10	1.39E-06	1.31E-07	1.18E-07	3.42E-10	2.50E-07	5.59E-08	5.29E-08	3.42E-10	1.09E-07
338	572092.2	4149133	5.93E-07	4.72E-07	3.35E-10	1.06E-06	7.21E-07	6.38E-07	3.35E-10	1.36E-06	1.29E-07	1.16E-07	3.35E-10	2.45E-07	5.47E-08	5.18E-08	3.35E-10	1.07E-07
339	572091.9	4149123	5.79E-07	4.61E-07	3.27E-10	1.04E-06	7.05E-07	6.24E-07	3.27E-10	1.33E-06	1.26E-07	1.13E-07	3.27E-10	2.39E-07	5.34E-08	5.05E-08	3.27E-10	1.04E-07
340	572091.6	4149114	5.66E-07	4.50E-07	3.19E-10	1.02E-06	6.89E-07	6.09E-07	3.19E-10	1.30E-06	1.23E-07	1.11E-07	3.19E-10	2.34E-07	5.22E-08	4.94E-08	3.19E-10	1.02E-07
341	572091.3	4149105	5.54E-07	4.41E-07	3.13E-10	9.95E-07	6.74E-07	5.97E-07	3.13E-10	1.27E-06	1.20E-07	1.08E-07	3.13E-10	2.29E-07	5.11E-08	4.84E-08	3.13E-10	9.98E-08
342	572091	4149096	5.45E-07	4.34E-07	3.08E-10	9.80E-07	6.64E-07	5.87E-07	3.08E-10	1.25E-06	1.18E-07	1.07E-07	3.08E-10	2.25E-07	5.03E-08	4.76E-08	3.08E-10	9.82E-08
343	572096.7	4149279	6.59E-07	5.24E-07	3.72E-10	1.18E-06	8.01E-07	7.09E-07	3.72E-10	1.51E-06	1.43E-07	1.29E-07	3.72E-10	2.72E-07	6.08E-08	5.75E-08	3.72E-10	1.19E-07
344	572100.5	4149287	7.02E-07	5.58E-07	3.96E-10	1.26E-06	8.54E-07	7.56E-07	3.96E-10	1.61E-06	1.52E-07	1.37E-07	3.96E-10	2.90E-07	6.47E-08	6.13E-08	3.96E-10	1.26E-07
345	572104.4	4149296	7.55E-07	6.01E-07	4.26E-10	1.36E-06	9.19E-07	8.13E-07	4.26E-10	1.73E-06	1.64E-07	1.48E-07	4.26E-10	3.12E-07	6.97E-08	6.59E-08	4.26E-10	1.36E-07
346	572108.2	4149304	8.21E-07	6.53E-07	4.63E-10	1.47E-06	9.99E-07	8.84E-07	4.63E-10	1.88E-06	1.78E-07	1.61E-07	4.63E-10	3.39E-07	7.57E-08	7.16E-08	4.63E-10	1.48E-07
347	572087.3	4149274	6.02E-07	4.79E-07	3.40E-10	1.08E-06	7.33E-07	6.48E-07	3.40E-10	1.38E-06	1.31E-07	1.18E-07	3.40E-10	2.49E-07	5.55E-08	5.26E-08	3.40E-10	1.08E-07
348	572087	4149265	5.89E-07	4.68E-07	3.32E-10	1.06E-06	7.16E-07	6.34E-07	3.32E-10	1.35E-06	1.28E-07	1.15E-07	3.32E-10	2.43E-07	5.43E-08	5.14E-08	3.32E-10	1.06E-07
349	572086.8	4149256	5.78E-07	4.60E-07	3.26E-10	1.04E-06	7.03E-07	6.23E-07	3.26E-10	1.33E-06	1.25E-07	1.13E-07	3.26E-10	2.39E-07	5.33E-08	5.05E-08	3.26E-10	1.04E-07
350	572086.2	4149237	5.63E-07	4.48E-07	3.18E-10	1.01E-06	6.86E-07	6.07E-07	3.18E-10	1.29E-06	1.22E-07	1.10E-07	3.18E-10	2.33E-07	5.20E-08	4.92E-08	3.18E-10	1.01E-07
351	572085.9	4149228	5.59E-07	4.45E-07	3.16E-10	1.00E-06	6.80E-07	6.02E-07	3.16E-10	1.28E-06	1.21E-07	1.09E-07	3.16E-10	2.31E-07	5.16E-08	4.88E-08	3.16E-10	1.01E-07
352	572085.6	4149219	5.57E-07	4.43E-07	3.15E-10	1.00E-06	6.78E-07	6.00E-07	3.15E-10	1.28E-06	1.21E-07	1.09E-07	3.15E-10	2.30E-07	5.14E-08	4.87E-08	3.15E-10	1.00E-07
353	572085.3	4149210	5.58E-07	4.44E-07	3.15E-10	1.00E-06	6.79E-07	6.01E-07	3.15E-10	1.28E-06	1.21E-07	1.09E-07	3.15E-10	2.31E-07	5.15E-08	4.87E-08	3.15E-10	1.01E-07
354	572085.1	4149201	5.62E-07	4.47E-07	3.17E-10	1.01E-06	6.84E-07	6.05E-07	3.17E-10	1.29E-06	1.22E-07	1.10E-07	3.17E-10	2.32E-07	5.18E-08	4.91E-08	3.17E-10	1.01E-07
355	572084.8	4149192	5.68E-07	4.52E-07	3.20E-10	1.02E-06	6.91E-07	6.11E-07	3.20E-10	1.30E-06	1.23E-07	1.11E-07	3.20E-10	2.35E-07	5.24E-08	4.96E-08	3.20E-10	1.02E-07
356	572084.5	4149183	5.74E-07	4.57E-07	3.24E-10	1.03E-06	6.99E-07	6.18E-07	3.24E-10	1.32E-06	1.25E-07	1.12E-07	3.24E-10	2.37E-07	5.30E-08	5.01E-08	3.24E-10	1.03E-07
357	572084.2	4149174	5.79E-07	4.61E-07	3.27E-10	1.04E-06	7.05E-07	6.24E-07	3.27E-10	1.33E-06	1.26E-07	1.13E-07	3.27E-10	2.39E-07	5.35E-08	5.06E-08	3.27E-10	1.04E-07
358	572083.9	4149165	5.82E-07	4.63E-07	3.29E-10	1.05E-06	7.08E-07	6.27E-07	3.29E-10	1.34E-06	1.26E-07	1.14E-07	3.29E-10	2.40E-07	5.37E-08	5.08E-08	3.29E-10	1.05E-07
359	572083.7	4149156	5.80E-07	4.62E-07	3.28E-10	1.04E-06	7.06E-07	6.25E-07	3.28E-10	1.33E-06	1.26E-07	1.14E-07	3.28E-10	2.40E-07	5.35E-08	5.07E-08	3.28E-10	1.05E-07
360	572083.4	4149147	5.74E-07	4.57E-07	3.24E-10	1.03E-06	6.99E-07	6.18E-07	3.24E-10	1.32E-06	1.25E-07	1.12E-07	3.24E-10	2.37E-07	5.30E-08	5.01E-08	3.24E-10	1.03E-07
361	572083.1	4149138	5.64E-07	4.49E-07	3.18E-10	1.01E-06	6.86E-07	6.08E-07	3.18E-10	1.29E-06	1.22E-07	1.10E-07	3.18E-10	2.33E-07	5.20E-08	4.92E-08	3.18E-10	1.02E-07
362	572082.8	4149129	5.52E-07	4.39E-07	3.12E-10	9.91E-07	6.72E-07	5.94E-07	3.12E-10	1.27E-06	1.20E-07	1.08E-07	3.12E-10	2.28E-07	5.09E-08	4.82E-08	3.12E-10	9.94E-08
363	572082.5	4149120	5.39E-07	4.29E-07	3.04E-10	9.69E-07	6.56E-07	5.81E-07	3.04E-10	1.24E-06	1.17E-07	1.06E-07	3.04E-10	2.23E-07	4.97E-08	4.71E-08	3.04E-10	9.71E-08
364	572082.3	4149111	5.27E-07	4.19E-07	2.98E-10	9.47E-07	6.41E-07	5.68E-07	2.98E-10	1.21E-06	1.14E-07	1.03E-07	2.98E-10	2.18E-07	4.86E-08	4.60E-08	2.98E-10	9.49E-08
365	572082	4149101	5.16E-07	4.11E-07	2.91E-10	9.27E-07	6.28E-07	5.56E-07	2.91E-10	1.18E-06	1.12E-07	1.01E-07	2.91E-10	2.13E-07	4.76E-08	4.51E-08	2.91E-10	9.30E-08
366	572081.7	4149092	5.08E-07	4.04E-07	2.87E-10	9.12E-07	6.18E-07	5.47E-07	2.87E-10	1.17E-06	1.10E-07	9.94E-08	2.87E-10	2.10E-07	4.69E-08	4.43E-08	2.87E-10	9.15E-08
367	572087.6	4149283	6.19E-07	4.93E-07	3.49E-10	1.11E-06	7.53E-07	6.67E-07	3.49E-10	1.42E-06	1.34E-07	1.21E-07	3.49E-10	2.56E-07	5.71E-08	5.40E-08	3.49E-10	1.11E-07
368	572091.4	4149291	6.59E-07	5.24E-07	3.72E-10	1.18E-06	8.02E-07	7.09E-07	3.72E-10	1.51E-06	1.43E-07	1.29E-07	3.72E-10	2.72E-07	6.08E-08	5.75E-08	3.72E-10	1.19E-07
369	572095.3	4149300	7.07E-07	5.63E-07	3.99E-10	1.27E-06	8.61E-07	7.62E-07	3.99E-10	1.62E-06	1.54E-07	1.38E-07	3.99E-10	2.92E-07	6.53E-08	6.18E-08	3.99E-10	1.27E-07
370	572099.1	4149308	7.67E-07	6.10E-07	4.33E-10	1.38E-06	9.33E-07	8.26E-07	4.33E-10	1.76E-06	1.66E-07	1.50E-07	4.33E-10	3.17E-07	7.08E-08	6.70E-08	4.33E-10	1.38E-07
371	572078.2	4149278	5.67E-07	4.51E-07	3.20E-10	1.02E-06	6.90E-07	6.11E-07	3.20E-10	1.30E-06	1.23E-07	1.11E-07	3.20E-10	2.34E-07	5.23E-08	4.95E-08	3.20E-10	1.02E-07
372	572077.9	4149269	5.54E-07	4.41E-07	3.13E-10	9.96E-07	6.75E-07	5.97E-07	3.13E-10	1.27E-06	1.20E-07	1.09E-07	3.13E-10	2.29E-07	5.11E-08	4.84E-08	3.13E-10	9.99E-08
373	572077.6	4149260	5.44E-07	4.33E-07	3.07E-10	9.78E-07	6.62E-07	5.86E-07	3.07E-10	1.25E-06	1.18E-07	1.07E-07	3.07E-10	2.25E-07	5.02E-08	4.75E-08	3.07E-10	9.81E-08
374	572077.1	4149242	5.30E-07	4.22E-07	2.99E-10	9.52E-07	6.45E-07	5.71E-07	2.99E-10	1.22E-06	1.15E-07	1.04E-07	2.99E-10	2.19E-07	4.89E-08	4.63E-08	2.99E-10	9.55E-08
375	572076.8	4149233	5.25E-07	4.18E-07	2.97E-10	9.43E-07	6.39E-07	5.66E-07	2.97E-10	1.21E-06	1.14E-07	1.03E-07	2.97E-10	2.17E-07	4.85E-08	4.59E-08	2.97E-10	9.46E-08
376	572076.5	4149224	5.23E-07	4.16E-07	2.95E-10	9.39E-07	6.36E-07	5.63E-07	2.95E-10	1.20E-06	1.13E-07	1.02E-07	2.95E-10	2.16E-07	4.82E-08	4.56E-08	2.95E-10	9.41E-08
377	572076.3	4149215	5.22E-07	4.16E-07	2.95E-10	9.38E-07	6.36E-07	5.62E-07	2.95E-10	1.20E-06	1.13E-07	1.02E-07	2.95E-10	2.16E-07	4.82E-08	4.56E-08	2.95E-10	9.41E-08
378	572076	4149206	5.24E-07	4.17E-07	2.96E-10	9.42E-07	6.38E-07	5.65E-07	2.96E-10	1.20E-06	1.14E-07	1.03E-07	2.96E-10	2.17E-07	4.84E-08	4.58E-08	2.96E-10	9.45E-08
379	572075.7	4149197	5.29E-07	4.21E-07	2.99E-10	9.50E-07	6.43E-07	5.69E-07	2.99E-10	1.21E-06	1.15E-07	1.03E-07	2.99E-10	2.19E-07	4.88E-08	4.62E-08	2.99E-10	9.52E-08
380	572075.4	4149188	5.35E-07	4.26E-07	3.02E-10	9.61E-07	6.51E-07	5.76E-07	3.02E-10	1.23E-06	1.16E-07	1.05E-07	3.02E-10	2.21E-07	4.94E-08	4.67E-08	3.02E-10	9.64E-08
381	572075.1	4149179	5.41E-07	4.31E-07	3.05E-10	9.72E-07	6.58E-07	5.83E-07	3.05E-10	1.24E-06	1.17E-07	1.06E-07	3.05E-10	2.24E-07	4.99E-08	4.72E-08	3.05E-10	9.75E-08
382	572074.9	4149170	5.45E-07	4.34E-07	3.08E-10	9.79E-07	6.64E-07	5.87E-07	3.08E-10	1.25E-06	1.18E-07	1.07E-07	3.08E-10	2.25E-07	5.03E-08	4.76E-08	3.08E-10	9.82E-08
383	572074.6	4149161	5.46E-07	4.35E-07	3.09E-10	9.82E-07	6.65E-07	5.89E-07	3.09E-10	1.25E-06	1.19E-07	1.07E-07	3.09E-10	2.26E-07	5.04E-08	4.77E-08	3.09E-10	9.84E-08
384	572074.3	4149152	5.44E-07	4.33E-07	3.07E-10	9.77E-07	6.62E-07	5.86E-07	3.07E-10	1.25E-06	1.18E-07	1.06E-07	3.07E-10	2.25E-07	5.02E-08	4.75E-08	3.07E-10	9.79E-08
385	572074	4149143	5.37E-07	4.27E-07	3.03E-10	9.64E-07	6.53E-07	5.78E-07	3.03E-10	1.23E-06	1.17E-07	1.05E-07	3.03E-10	2.22E-07	4.95E-08	4.69E-08	3.03E-10	9.67E-08
386	572073.7	4149134	5.27E-07	4.19E-07	2.97E-10	9.46E-07	6.41E-07	5.67E-07	2.97E-10	1.21E-06	1.14E-07	1.03E-07	2.97E-10	2.18E-07	4.86E-08	4.60E-08	2.97E-10	9.49E-08
387	572073.5	4149125	5.15E-07	4.10E-07	2.91E-10	9.25E-07	6.27E-07	5.55E-07	2.91E-10	1.18E-06	1.12E-07	1.01E-07	2.91E-10	2.13E-07	4.75E-08	4.50E-08	2.91E-10	9.28E-08
388	572073.2	4149116	5.03E-07	4.00E-07	2.84E-10	9.03E-07	6.12E-07	5.42E-07	2.84E-10	1.15E-06	1.09E-07	9.84E-08	2.84E-10	2.08E-07	4.64E-08	4.39E-08	2.84E-10	9.06E-08
389	572072.9	4149107	4.91E-07	3.91E-07	2.77E-10	8.83E-07	5.98E-07	5.29E-07	2.77E-10	1.13E-06	1.07E-07	9.62E-08	2.77E-10	2.03E-07	4.53E-08	4.29E-08	2.77E-10	8.85E-08
390	572072.6	4149098	4.82E-07	3.84E-07	2.72E-10	8.66E-07	5.87E-07	5.19E-07	2.72E-10	1.11E-06	1.05E-07	9.44E-08	2.72E-10	1.99E-07	4.45E-08	4.21E-08	2.72E-10	8.68E-08
391	572078.5	4149287	5.83E-07	4.64E-07	3.29E-10	1.05E-06	7.09E-07	6.28E-07	3.29E-10	1.34E-06	1.27E-07	1.14E-07	3.29E-10	2.41E-07	5.38E-08	5.09E-08	3.29E-10	1.05E-07
392	572082.3	4149295	6.20E-07	4.93E-07	3.50E-10	1.11E-06	7.54E-07	6.67E-07	3.50E-10	1.42E-06	1.34E-07	1.21E-07	3.50E-10	2.56E-07	5.72E-08	5.41E-08	3.50E-10	1.12E-07
393	572086.2	4149304	6.64E-07	5.29E-07	3.75E-10	1.19E-06	8.09E-07	7.16E-07	3.75E-10	1.52E-06	1.44E-07	1.30E-07	3.75E-10	2.75E-07	6.13E-08	5.80E-08	3.75E-10	1.20E-07
394	572090	4149312	7.19E-07	5.72E-07	4.06E-10	1.29E-06	8.75E-07	7.74E-07	4.06E-10	1.65E-06	1.56E-07	1.41E-07	4.06E-10	2.97E-07	6.63E-08	6.28E-08	4.06E-10	1.29E-07
395	572068	4149246	5.00E-07	3.98E-07	2.82E-10	8.97E-07	6.08E-07	5.38E-07	2.82E-10	1.15E-06	1.08E-07	9.78E-08	2.82E-10	2.06E-07	4.61E-08	4.36E-08	2.82E-10	9.00E-08
396	572067.7	4149237	4.95E-07	3.94E-07	2.79E-10	8.89E-07	6.02E-07	5.33E-07	2.79E-10	1.13E-06	1.07E-07	9.68E-08	2.79E-10	2.04E-07	4.56E-08	4.32E-08	2.79E-10	8.91E-08
397	572067.4	4149228	4.91E-07	3.91E-07	2.77E-10	8.83E-07	5.98E-07	5.29E-07	2.77E-10	1.13E-06	1.07E-07	9.62E-08	2.77E-10	2.03E-07	4.53E-08	4.29E-08	2.77E-10	8.85E-08
398	572066.9	4149210	4.91E-07	3.91E-07	2.77E-10	8.82E-07	5.97E-07	5.29E-07	2.77E-10	1.13E-06	1.07E-07	9.61E-08	2.77E-10	2.03E-07	4.53E-08	4.29E-08	2.77E-10	8.84E-08
399	572066.6	4149202	4.94E-07	3.93E-07	2.79E-10	8.87E-07	6.01E-07	5.32E-07	2.79E-10	1.13E-06	1.07E-07	9.67E-08	2.79E-10	2.04E-07	4.56E-08	4.31E-08	2.79E-10	8.90E-08
400	572066.3	4149193	4.99E-07	3.97E-07	2.82E-10	8.96E-07	6.07E-07	5.37E-07	2.82E-10	1.15E-06	1.08E-07	9.77E-08	2.82E-10	2.06E-07	4.60E-08	4.36E-08	2.82E-10	8.99E-08
401	572066	4149184	5.05E-07	4.02E-07	2.85E-10	9.07E-07	6.15E-07	5.44E-07	2.85E-10	1.16E-06	1.10E-07	9.88E-08	2.85E-10	2.09E-07	4.66E-08	4.41E-08	2.85E-10	9.10E-08
402	572065.5	4149166	5.14E-07	4.09E-07	2.90E-10	9.22E-07	6.25E-07	5.53E-07	2.90E-10	1.18E-06	1.11E-07	1.01E-07	2.90E-10	2.12E-07	4.74E-08	4.48E-08	2.90E-10	9.25E-08
403	572065.2	4149157	5.13E-07	4.09E-07	2.90E-10	9.22E-07	6.25E-07	5.53E-07	2.90E-10	1.18E-06	1.11E-07	1.00E-07	2.90E-10	2.12E-07	4.74E-08	4.48E-08	2.90E-10	9.25E-08
404	572064.9	4149148	5.10E-07	4.06E-07	2.88E-10	9.16E-07	6.20E-07	5.49E-07	2.88E-10	1.17E-06	1.11E-07	9.98E-08	2.88E-10	2.11E-07	4.70E-08	4.45E-08	2.88E-10	9.18E-08
405	572064.7	4149139	5.02E-07	4.00E-07	2.84E-10	9.03E-07	6.11E-07	5.41E-07	2.84E-10	1.15E-06	1.09E-07	9.83E-08	2.84E-10	2.08E-07	4.64E-08	4.39E-08	2.84E-10	9.05E-08
406	572064.1	4149121	4.81E-07	3.83E-07	2.72E-10	8.65E-07	5.86E-07	5.18E-07	2.72E-10	1.10E-06	1.04E-07	9.42E-08	2.72E-10	1.99E-07	4.44E-08	4.20E-08	2.72E-10	8.67E-08
407	572063.8	4149112	4.70E-07	3.74E-07	2.65E-10	8.44E-07	5.72E-07	5.06E-07	2.65E-10	1.08E-06	1.02E-07	9.20E-08	2.65E-10	1.94E-07	4.34E-08	4.10E-08	2.65E-10	8.47E-08
408	572063.5	4149103	4.60E-07	3.66E-07	2.60E-10	8.26E-07	5.59E-07	4.95E-07	2.60E-10	1.05E-06	9.98E-08	9.00E-08	2.60E-10	1.90E-07	4.24E-08	4.01E-08	2.60E-10	8.28E-08
409	572058.5	4149240	4.66E-07	3.71E-07	2.63E-10	8.37E-07	5.67E-07	5.02E-07	2.63E-10	1.07E-06	1.01E-07	9.12E-08	2.63E-10	1.93E-07	4.30E-08	4.07E-08	2.63E-10	8.39E-08

410	572058.3	4149230	4.62E-07	3.68E-07	2.61E-10	8.31E-07	5.63E-07	4.98E-07	2.61E-10	1.06E-06	1.00E-07	9.05E-08	2.61E-10	1.91E-07	4.27E-08	4.04E-08	2.61E-10	8.33E-08
411	572058	4149221	4.61E-07	3.67E-07	2.60E-10	8.28E-07	5.61E-07	4.96E-07	2.60E-10	1.06E-06	1.00E-07	9.02E-08	2.60E-10	1.90E-07	4.25E-08	4.02E-08	2.60E-10	8.30E-08
412	572057.7	4149212	4.61E-07	3.67E-07	2.60E-10	8.28E-07	5.61E-07	4.97E-07	2.60E-10	1.06E-06	1.00E-07	9.03E-08	2.60E-10	1.91E-07	4.26E-08	4.03E-08	2.60E-10	8.31E-08
413	572057.4	4149202	4.64E-07	3.69E-07	2.62E-10	8.34E-07	5.65E-07	5.00E-07	2.62E-10	1.06E-06	1.01E-07	9.08E-08	2.62E-10	1.92E-07	4.28E-08	4.05E-08	2.62E-10	8.36E-08
414	572057.1	4149193	4.69E-07	3.73E-07	2.65E-10	8.42E-07	5.70E-07	5.05E-07	2.65E-10	1.08E-06	1.02E-07	9.17E-08	2.65E-10	1.94E-07	4.32E-08	4.09E-08	2.65E-10	8.44E-08
415	572056.8	4149184	4.75E-07	3.78E-07	2.68E-10	8.53E-07	5.78E-07	5.11E-07	2.68E-10	1.09E-06	1.03E-07	9.29E-08	2.68E-10	1.96E-07	4.38E-08	4.14E-08	2.68E-10	8.55E-08
416	572056.5	4149175	4.80E-07	3.82E-07	2.71E-10	8.62E-07	5.84E-07	5.17E-07	2.71E-10	1.10E-06	1.04E-07	9.39E-08	2.71E-10	1.98E-07	4.43E-08	4.19E-08	2.71E-10	8.65E-08
417	572056.2	4149165	4.83E-07	3.85E-07	2.73E-10	8.68E-07	5.88E-07	5.21E-07	2.73E-10	1.11E-06	1.05E-07	9.46E-08	2.73E-10	2.00E-07	4.46E-08	4.22E-08	2.73E-10	8.71E-08
418	572056	4149156	4.84E-07	3.85E-07	2.73E-10	8.69E-07	5.89E-07	5.21E-07	2.73E-10	1.11E-06	1.05E-07	9.47E-08	2.73E-10	2.00E-07	4.46E-08	4.22E-08	2.73E-10	8.71E-08
419	572055.7	4149147	4.80E-07	3.82E-07	2.71E-10	8.63E-07	5.85E-07	5.17E-07	2.71E-10	1.10E-06	1.04E-07	9.40E-08	2.71E-10	1.99E-07	4.43E-08	4.19E-08	2.71E-10	8.65E-08
420	572055.4	4149138	4.74E-07	3.77E-07	2.67E-10	8.51E-07	5.76E-07	5.10E-07	2.67E-10	1.09E-06	1.03E-07	9.27E-08	2.67E-10	1.96E-07	4.37E-08	4.13E-08	2.67E-10	8.53E-08
421	572055.1	4149128	4.64E-07	3.69E-07	2.62E-10	8.34E-07	5.65E-07	5.00E-07	2.62E-10	1.06E-06	1.01E-07	9.08E-08	2.62E-10	1.92E-07	4.28E-08	4.05E-08	2.62E-10	8.36E-08
422	572054.8	4149119	4.53E-07	3.61E-07	2.56E-10	8.14E-07	5.51E-07	4.88E-07	2.56E-10	1.04E-06	9.83E-08	8.87E-08	2.56E-10	1.87E-07	4.18E-08	3.96E-08	2.56E-10	8.16E-08
423	572054.5	4149110	4.42E-07	3.52E-07	2.50E-10	7.94E-07	5.38E-07	4.76E-07	2.50E-10	1.01E-06	9.59E-08	8.65E-08	2.50E-10	1.83E-07	4.08E-08	3.86E-08	2.50E-10	7.96E-08
424	572054.2	4149100	4.32E-07	3.44E-07	2.44E-10	7.76E-07	5.26E-07	4.65E-07	2.44E-10	9.92E-07	9.38E-08	8.46E-08	2.44E-10	1.79E-07	3.99E-08	3.77E-08	2.44E-10	7.78E-08
425	572048.6	4149216	4.34E-07	3.45E-07	2.45E-10	7.80E-07	5.28E-07	4.67E-07	2.45E-10	9.96E-07	9.42E-08	8.49E-08	2.45E-10	1.79E-07	4.00E-08	3.79E-08	2.45E-10	7.82E-08
426	572048.3	4149207	4.36E-07	3.47E-07	2.46E-10	7.82E-07	5.30E-07	4.69E-07	2.46E-10	9.99E-07	9.45E-08	8.52E-08	2.46E-10	1.80E-07	4.02E-08	3.80E-08	2.46E-10	7.85E-08
427	572048	4149198	4.39E-07	3.49E-07	2.48E-10	7.88E-07	5.34E-07	4.73E-07	2.48E-10	1.01E-06	9.52E-08	8.59E-08	2.48E-10	1.81E-07	4.05E-08	3.83E-08	2.48E-10	7.91E-08
428	572047.7	4149189	4.44E-07	3.53E-07	2.51E-10	7.98E-07	5.41E-07	4.78E-07	2.51E-10	1.02E-06	9.64E-08	8.69E-08	2.51E-10	1.84E-07	4.10E-08	3.88E-08	2.51E-10	8.00E-08
429	572047.4	4149180	4.50E-07	3.58E-07	2.54E-10	8.08E-07	5.47E-07	4.84E-07	2.54E-10	1.03E-06	9.76E-08	8.80E-08	2.54E-10	1.86E-07	4.15E-08	3.93E-08	2.54E-10	8.10E-08
430	572047.2	4149170	4.54E-07	3.62E-07	2.57E-10	8.16E-07	5.53E-07	4.89E-07	2.57E-10	1.04E-06	9.86E-08	8.89E-08	2.57E-10	1.88E-07	4.19E-08	3.97E-08	2.57E-10	8.18E-08
431	572046.9	4149161	4.57E-07	3.63E-07	2.58E-10	8.20E-07	5.56E-07	4.92E-07	2.58E-10	1.05E-06	9.91E-08	8.94E-08	2.58E-10	1.89E-07	4.21E-08	3.99E-08	2.58E-10	8.23E-08
432	572046.6	4149152	4.56E-07	3.63E-07	2.57E-10	8.19E-07	5.55E-07	4.91E-07	2.57E-10	1.05E-06	9.90E-08	8.93E-08	2.57E-10	1.88E-07	4.21E-08	3.98E-08	2.57E-10	8.21E-08
433	572046.3	4149143	4.52E-07	3.60E-07	2.55E-10	8.12E-07	5.50E-07	4.87E-07	2.55E-10	1.04E-06	9.81E-08	8.85E-08	2.55E-10	1.87E-07	4.17E-08	3.95E-08	2.55E-10	8.14E-08
434	572046	4149134	4.45E-07	3.54E-07	2.51E-10	7.99E-07	5.41E-07	4.79E-07	2.51E-10	1.02E-06	9.65E-08	8.71E-08	2.51E-10	1.84E-07	4.10E-08	3.88E-08	2.51E-10	8.01E-08
435	572045.7	4149124	4.36E-07	3.47E-07	2.46E-10	7.82E-07	5.30E-07	4.69E-07	2.46E-10	9.99E-07	9.45E-08	8.52E-08	2.46E-10	1.80E-07	4.02E-08	3.80E-08	2.46E-10	7.85E-08
436	572045.4	4149115	4.25E-07	3.38E-07	2.40E-10	7.64E-07	5.17E-07	4.58E-07	2.40E-10	9.76E-07	9.23E-08	8.32E-08	2.40E-10	1.76E-07	3.92E-08	3.71E-08	2.40E-10	7.66E-08
437	572045.2	4149106	4.15E-07	3.30E-07	2.34E-10	7.45E-07	5.05E-07	4.47E-07	2.34E-10	9.52E-07	9.00E-08	8.12E-08	2.34E-10	1.71E-07	3.83E-08	3.62E-08	2.34E-10	7.47E-08
438	572038.4	4149184	4.22E-07	3.36E-07	2.38E-10	7.57E-07	5.13E-07	4.54E-07	2.38E-10	9.68E-07	9.15E-08	8.25E-08	2.38E-10	1.74E-07	3.89E-08	3.68E-08	2.38E-10	7.60E-08
439	572038.1	4149175	4.27E-07	3.40E-07	2.41E-10	7.67E-07	5.19E-07	4.60E-07	2.41E-10	9.79E-07	9.26E-08	8.35E-08	2.41E-10	1.76E-07	3.94E-08	3.73E-08	2.41E-10	7.69E-08
440	572037.8	4149166	4.31E-07	3.43E-07	2.43E-10	7.73E-07	5.24E-07	4.64E-07	2.43E-10	9.88E-07	9.34E-08	8.43E-08	2.43E-10	1.78E-07	3.97E-08	3.76E-08	2.43E-10	7.76E-08
441	572037.5	4149157	4.32E-07	3.44E-07	2.44E-10	7.76E-07	5.26E-07	4.65E-07	2.44E-10	9.91E-07	9.38E-08	8.46E-08	2.44E-10	1.79E-07	3.99E-08	3.77E-08	2.44E-10	7.78E-08
442	572037.2	4149148	4.31E-07	3.43E-07	2.43E-10	7.73E-07	5.24E-07	4.64E-07	2.43E-10	9.88E-07	9.34E-08	8.43E-08	2.43E-10	1.78E-07	3.97E-08	3.76E-08	2.43E-10	7.75E-08
443	572036.9	4149139	4.26E-07	3.39E-07	2.40E-10	7.65E-07	5.18E-07	4.59E-07	2.40E-10	9.77E-07	9.24E-08	8.33E-08	2.40E-10	1.76E-07	3.93E-08	3.72E-08	2.40E-10	7.67E-08
444	572036.7	4149130	4.18E-07	3.33E-07	2.36E-10	7.52E-07	5.09E-07	4.51E-07	2.36E-10	9.60E-07	9.08E-08	8.19E-08	2.36E-10	1.73E-07	3.86E-08	3.65E-08	2.36E-10	7.54E-08
445	572036.4	4149120	4.09E-07	3.26E-07	2.31E-10	7.35E-07	4.98E-07	4.41E-07	2.31E-10	9.39E-07	8.88E-08	8.01E-08	2.31E-10	1.69E-07	3.78E-08	3.57E-08	2.31E-10	7.37E-08
446	572036.1	4149111	4.00E-07	3.18E-07	2.26E-10	7.18E-07	4.86E-07	4.30E-07	2.26E-10	9.17E-07	8.67E-08	7.82E-08	2.26E-10	1.65E-07	3.69E-08	3.49E-08	2.26E-10	7.20E-08
447	572028.1	4149153	4.09E-07	3.26E-07	2.31E-10	7.35E-07	4.98E-07	4.41E-07	2.31E-10	9.39E-07	8.88E-08	8.01E-08	2.31E-10	1.69E-07	3.77E-08	3.57E-08	2.31E-10	7.37E-08
448	572027.9	4149144	4.07E-07	3.24E-07	2.30E-10	7.31E-07	4.95E-07	4.38E-07	2.30E-10	9.34E-07	8.83E-08	7.96E-08	2.30E-10	1.68E-07	3.75E-08	3.55E-08	2.30E-10	7.33E-08
449	572027.6	4149135	4.02E-07	3.20E-07	2.27E-10	7.21E-07	4.89E-07	4.33E-07	2.27E-10	9.22E-07	8.72E-08	7.86E-08	2.27E-10	1.66E-07	3.71E-08	3.51E-08	2.27E-10	7.24E-08
450	572027.3	4149126	3.94E-07	3.14E-07	2.23E-10	7.08E-07	4.80E-07	4.25E-07	2.23E-10	9.05E-07	8.56E-08	7.72E-08	2.23E-10	1.63E-07	3.64E-08	3.44E-08	2.23E-10	7.10E-08
451	572027	4149117	3.86E-07	3.07E-07	2.18E-10	6.93E-07	4.69E-07	4.15E-07	2.18E-10	8.85E-07	8.37E-08	7.55E-08	2.18E-10	1.59E-07	3.56E-08	3.37E-08	2.18E-10	6.95E-08
452	572026.7	4149107	3.77E-07	3.00E-07	2.13E-10	6.76E-07	4.58E-07	4.06E-07	2.13E-10	8.64E-07	8.17E-08	7.37E-08	2.13E-10	1.56E-07	3.47E-08	3.29E-08	2.13E-10	6.78E-08
453	572018.2	4149131	3.80E-07	3.02E-07	2.14E-10	6.82E-07	4.62E-07	4.09E-07	2.14E-10	8.71E-07	8.24E-08	7.43E-08	2.14E-10	1.57E-07	3.50E-08	3.31E-08	2.14E-10	6.84E-08
454	572017.9	4149122	3.72E-07	2.96E-07	2.10E-10	6.69E-07	4.53E-07	4.01E-07	2.10E-10	8.54E-07	8.08E-08	7.29E-08	2.10E-10	1.54E-07	3.43E-08	3.25E-08	2.10E-10	6.71E-08
455	572017.7	4149113	3.64E-07	2.90E-07	2.05E-10	6.54E-07	4.43E-07	3.92E-07	2.05E-10	8.35E-07	7.90E-08	7.12E-08	2.05E-10	1.50E-07	3.36E-08	3.18E-08	2.05E-10	6.56E-08
456	572169	4148870	8.52E-07	6.78E-07	4.81E-10	1.53E-06	1.04E-06	9.18E-07	4.81E-10	1.96E-06	1.85E-07	1.67E-07	4.81E-10	3.52E-07	7.86E-08	7.44E-08	4.81E-10	1.54E-07
457	572175.3	4148863	8.85E-07	7.04E-07	5.00E-10	1.59E-06	1.08E-06	9.53E-07	5.00E-10	2.03E-06	1.92E-07	1.73E-07	5.00E-10	3.66E-07	8.17E-08	7.73E-08	5.00E-10	1.59E-07
458	572139.7	4148887	6.93E-07	5.51E-07	3.91E-10	1.24E-06	8.43E-07	7.46E-07	3.91E-10	1.59E-06	1.50E-07	1.36E-07	3.91E-10	2.86E-07	6.39E-08	6.05E-08	3.91E-10	1.25E-07
459	572146	4148880	7.22E-07	5.75E-07	4.08E-10	1.30E-06	8.79E-07	7.78E-07	4.08E-10	1.66E-06	1.57E-07	1.41E-07	4.08E-10	2.98E-07	6.66E-08	6.31E-08	4.08E-10	1.30E-07
460	572152.3	4148874	7.53E-07	5.99E-07	4.25E-10	1.35E-06	9.16E-07	8.11E-07	4.25E-10	1.73E-06	1.63E-07	1.47E-07	4.25E-10	3.11E-07	6.94E-08	6.57E-08	4.25E-10	1.36E-07
461	572158.6	4148867	7.83E-07	6.23E-07	4.42E-10	1.41E-06	9.53E-07	8.43E-07	4.42E-10	1.80E-06	1.70E-07	1.53E-07	4.42E-10	3.24E-07	7.23E-08	6.84E-08	4.42E-10	1.41E-07
462	572165	4148860	8.13E-07	6.47E-07	4.59E-10	1.46E-06	9.90E-07	8.76E-07	4.59E-10	1.87E-06	1.77E-07	1.59E-07	4.59E-10	3.36E-07	7.50E-08	7.10E-08	4.59E-10	1.47E-07
463	572171.3	4148854	8.44E-07	6.72E-07	4.76E-10	1.52E-06	1.03E-06	9.09E-07	4.76E-10	1.94E-06	1.83E-07	1.65E-07	4.76E-10	3.49E-07	7.79E-08	7.37E-08	4.76E-10	1.52E-07
464	572116.9	4148898	5.89E-07	4.69E-07	3.33E-10	1.06E-06	7.17E-07	6.35E-07	3.33E-10	1.35E-06	1.28E-07	1.15E-07	3.33E-10	2.43E-07	5.44E-08	5.14E-08	3.33E-10	1.06E-07
465	572123.2	4148891	6.13E-07	4.88E-07	3.46E-10	1.10E-06	7.46E-07	6.60E-07	3.46E-10	1.41E-06	1.33E-07	1.20E-07	3.46E-10	2.53E-07	5.66E-08	5.35E-08	3.46E-10	1.10E-07
466	572129.5	4148884	6.38E-07	5.08E-07	3.60E-10	1.15E-06	7.77E-07	6.88E-07	3.60E-10	1.47E-06	1.39E-07	1.25E-07	3.60E-10	2.64E-07	5.89E-08	5.57E-08	3.60E-10	1.15E-07
467	572135.8	4148878	6.65E-07	5.29E-07	3.76E-10	1.19E-06	8.09E-07	7.16E-07	3.76E-10	1.53E-06	1.44E-07	1.30E-07	3.76E-10	2.75E-07	6.14E-08	5.81E-08	3.76E-10	1.20E-07
468	572142.1	4148871	6.93E-07	5.51E-07	3.91E-10	1.24E-06	8.43E-07	7.46E-07	3.91E-10	1.59E-06	1.50E-07	1.36E-07	3.91E-10	2.86E-07	6.39E-08	6.05E-08	3.91E-10	1.25E-07
469	572148.4	4148864	7.21E-07	5.74E-07	4.07E-10	1.29E-06	8.77E-07	7.76E-07	4.07E-10	1.65E-06	1.56E-07	1.41E-07	4.07E-10	2.98E-07	6.65E-08	6.29E-08	4.07E-10	1.30E-07
470	572154.7	4148858	7.49E-07	5.96E-07	4.23E-10	1.35E-06	9.11E-07	8.07E-07	4.23E-10	1.72E-06	1.62E-07	1.47E-07	4.23E-10	3.09E-07	6.91E-08	6.54E-08	4.23E-10	1.35E-07
471	572160.9	4148851	7.77E-07	6.18E-07	4.39E-10	1.40E-06	9.46E-07	8.37E-07	4.39E-10	1.78E-06	1.69E-07	1.52E-07	4.39E-10	3.21E-07	7.17E-08	6.78E-08	4.39E-10	1.40E-07
472	572167.2	4148844	8.05E-07	6.41E-07	4.55E-10	1.45E-06	9.80E-07	8.67E-07	4.55E-10	1.85E-06	1.75E-07	1.58E-07	4.55E-10	3.33E-07	7.43E-08	7.03E-08	4.55E-10	1.45E-07
473	572100.6	4148902	5.27E-07	4.19E-07	2.97E-10	9.46E-07	6.41E-07	5.67E-07	2.97E-10	1.21E-06	1.14E-07	1.03E-07	2.97E-10	2.18E-07	4.86E-08	4.60E-08	2.97E-10	9.48E-08
474	572106.9	4148895	5.46E-07	4.35E-07	3.09E-10	9.82E-07	6.65E-07	5.89E-07	3.09E-10	1.25E-06	1.19E-07	1.07E-07	3.09E-10	2.26E-07	5.04E-08	4.77E-08	3.09E-10	9.84E-08
475	572113.1	4148888	5.68E-07	4.52E-07	3.21E-10	1.02E-06	6.91E-07	6.11E-07	3.21E-10	1.30E-06	1.23E-07	1.11E-07	3.21E-10	2.35E-07	5.24E-08	4.96E-08	3.21E-10	1.02E-07
476	572119.4	4148882	5.90E-07	4.70E-07	3.33E-10	1.06E-06	7.18E-07	6.36E-07	3.33E-10	1.35E-06	1.28E-07	1.16E-07	3.33E-10	2.44E-07	5.45E-08	5.15E-08	3.33E-10	1.06E-07
477	572125.6	4148875	6.14E-07	4.89E-07	3.47E-10	1.10E-06	7.47E-07	6.61E-07	3.47E-10	1.41E-06	1.33E-07	1.20E-07	3.47E-10	2.54E-07	5.67E-08	5.36E-08	3.47E-10	1.11E-07
478	572131.9	4148868	6.39E-07	5.09E-07	3.61E-10	1.15E-06	7.78E-07	6.88E-07	3.61E-10	1.47E-06	1.39E-07	1.25E-07	3.61E-10	2.64E-07	5.90E-08	5.58E-08	3.61E-10	1.15E-07
479	572138.2	4148862	6.65E-07	5.29E-07	3.75E-10	1.19E-06	8.09E-07	7.16E-07	3.75E-10	1.53E-06	1.44E-07	1.30E-07	3.75E-10	2.75E-07	6.13E-08	5.80E-08	3.75E-10	1.20E-07
480	572144.4	4148855	6.91E-07	5.50E-07	3.90E-10	1.24E-06	8.40E-07	7.44E-07	3.90E-10	1.58E-06	1.50E-07	1.35E-07	3.90E-10	2.85E-07	6.37E-08	6.03E-08	3.90E-10	1.24E-07
481	572150.7	4148849	7.17E-07	5.70E-07	4.05E-10	1.29E-06	8.72E-07	7.72E-07	4.05E-10	1.64E-06	1.56E-07	1.40E-07	4.05E-10	2.96E-07	6.61E-08	6.26E-08	4.05E-10	1.29E-07
482	572156.9	4148842	7.43E-07	5.91E-07	4.19E-10	1.33E-06	9.04E-07	8.00E-07	4.19E-10	1.70E-06	1.61E-07	1.45E-07	4.19E-10	3.07E-07	6.85E-08	6.48E-08	4.19E-10	1.34E-07
483	572163.2	4148835	7.69E-07	6.12E-07	4.34E-10	1.38E-06	9.36E-07	8.28E-07	4.34E-10	1.76E-06	1.67E-07	1.51E-07	4.34E-10	3.18E-07	7.10E-08	6.72E-08	4.34E-10	1.39E-07
484	572090.6	4148899	4.91E-07	3.91E-07	2.77E-10	8.82E-07	5.97E-07	5.29E-07	2.77E-10	1.13E-06	1.06E-07	9.61E-08	2.77E-10	2.03E-07	4.53E-08	4.29E-08	2.77E-10	8.84E-08
485	572096.9	4148892	5.09E-07	4.05E-07	2.87E-10	9.13E-07	6.19E-07	5.48E-07	2.87E-10	1.17E-06	1.10E-07	9.95E-08	2.87E-10	2.10E-07	4.69E-08	4.44E-08	2.87E-10	9.16E-08
486	572109.3	4148879	5.47E-07	4.36E-07	3.09E-10	9.83E-07	6.66E-07	5.90E-07	3.09E-10	1.26E-06	1.19E-07	1.07E-07	3.09E-10	2.26E-07	5.05E-08	4.78E-08	3.09E-10	9.86E-08
487	572115.5	4148872	5.69E-07	4.53E-07	3.21E-10	1.02E-06	6.92E-07	6.13E-07	3.21E-10	1.31E-06	1.23E-07	1.11E-07	3.21E-10	2.35E-07	5.25E-08	4.97E-08	3.21E-10	1.02E-07
488	572128	4148859	6.15E-07	4.89E-07	3.47E-10	1.10E-06	7.48E-07	6.62E-07	3.47E-10	1.41E-06	1.33E-07	1.20E-07	3.47E-10	2.54E-07	5.67E-08	5.37E-08	3.47E-10	1.11E-07
489	572140.5	4148846	6.62E-07	5.27E-07	3.74E-10	1.19E-06	8.06E-07	7.13E-07	3.74E-10	1.52E-06	1.44E-07	1.30E-07	3.74E-10	2.74E-07	6.11E-08	5.78E-08	3.74E-10	1.19E-07
490	572146.7	4148839	6.86E-07	5.46E-07	3.88E-10	1.23E-06	8.35E-07	7.39E-07	3.88E-10	1.58E-06	1.49E-07	1.34E-07	3.88E-10	2.84E-07	6.33E-08	5.99E-08	3.88E-10	1.24E-07
491	572159.1	4148826	7.36E-07	5.86E-07	4.16E-10	1.32E-06	8.96E-07	7.93E-07	4.16E-10	1.69E-06	1.60E-07	1.44E-07	4.16E-10	3.04E-07	6.79E-08	6.43E-08	4.16E-10	1.33E-07
492	572065.5	4148912	4.22E-07	3.35E-07	2.38E-10	7.57E-07	5.13E-07	4.54E-07	2.38E-10	9.67E-07	9.15E-08	8.25E-08	2.38E-10	1.74E-07	3.89E-08	3.68E-08	2.38E-10	7.59E-08
493	572071.9	4148905	4.37E-07	3.48E-07	2.47E-10	7.85E-07	5.32E-07	4.71E-07	2.47E-10	1.00E-06	9.48E-08	8.55E-08	2.47E-10	1.81E-07	4.03E-08	3.82E-08	2.47E-10	7.87E-08
494	572078.3	4148898	4.53E-07	3.60E-07	2.56E-10	8.13E-07	5.51E-07	4.87E-07	2.56E-10	1.04E-06	9.82E-08	8.86E-08	2.56E-10	1.87E-07	4.18E-08	3.95E-08	2.56E-10	8.15E-08
495	572084.6	4148892	4.69E-07	3.73E-07	2.65E-10	8.42E-07	5.71E-07	5.05E-07	2.65E-10	1.08E-06	1.02E-07	9.18E-08	2.65E-10	1.94E-07	4.33E-08	4.09E-08	2.65E-10	8.44E-08
496	572091	4148885	4.86E-07	3.87E-07	2.74E-10	8.73E-07	5.91E-07	5.23E-07	2.74E-10	1.11E-06	1.05E-07	9.51E-08	2.74E-10	2.01E-07	4.48E-08	4.24E-08	2.74E-10	8.75E-08
497	572097.4	4148878	5.04E-07	4.01E-07	2.84E-10	9.05E-07	6.13E-07	5.43E-07	2.84E-10	1.16E-06	1.09E-07	9.86E-08	2.84E-10	2.08E-07	4.65E-08	4.40E-08	2.84E-10	9.07E-08
498	572103.8	4148871	5.23E-07	4.16E-07	2.95E-10	9.40E-07	6.37E-07	5.63E-07	2.95E-10	1.20E-06	1.14E-07	1.02E-07	2.95E-10	2.16E-07	4.83E-08	4.57E-08	2.95E-10	9.42E-08
499	572110.2	4148865	5.44E-07	4.33E-07	3.07E-10	9.76E-07	6.61E-07	5.85E-07	3.07E-10	1.25E-06	1.18E-07	1.06E-07	3.07E-10	2.25E-07	5.01E-08	4.75E-08	3.07E-10	9.79E-08
500	572116.6	4148858	5.65E-07	4.50E-07	3.19E-10	1.02E-06	6.88E-07	6.09E-07	3.19E-10	1.30E-06	1.23E-07	1.11E-07	3.19E-10	2.34E-07	5.21E-08	4.93E-08	3.19E-10	1.02E-07
501	572123	4148851	5.87E-07	4.67E-07	3.32E-10	1.06E-06	7.15E-07	6.33E-07	3.32E-10	1.35E-06	1.27E-07	1.15E-07	3.32E-10	2.43E-07	5.42E-08	5.13E-08	3.32E-10	1.06E-07
502	572129.3	4148844	6.10E-07	4.86E-07	3.45E-10	1.10E-06	7.43E-07	6.57E-07	3.45E-10	1.40E-06	1.32E-07	1.19E-07	3.45E-10	2.52E-07	5.63E-08	5.33E-08	3.45E-10	1.10E-07
503	572135.7	4148837	6.33E-07	5.04E-07	3.58E-10	1.14E-06	7.71E-07	6.82E-07	3.58E-10	1.45E-06	1.37E-07	1.24E-07	3.58E-10	2.62E-07	5.84E-08	5.53E-08	3.58E-10	1.14E-07
504	572142.1	4148831	6.57E-07	5.22E-07	3.71E-10	1.18E-06	7.99E-07	7.07E-07	3.71E-10	1.51E-06	1.42E-07	1.29E-07	3.71E-10	2.71E-07	6.06E-08	5.73E-08	3.71E-10	1.18E-07
505	572148.5	4148824	6.80E-07	5.41E-07	3.84E-10	1.22E-06	8.28E-07	7.33E-07	3.84E-10	1.56E-06	1.48E-07	1.33E-07	3.84E-10	2.81E-07	6.28E-08	5.94E-08	3.84E-10	1.23E-07
506	572154.9	4148817	7.04E-07	5.60E-07	3.98E-10	1.27E-06	8.57E-07	7.59E-07	3.98E-10	1.62E-06	1.53E-07	1.38E-07	3.98E-10	2.91E-07	6.50E-08	6.15E-08	3.98E-10	1.27E-07
507	572049.2	4148916	3.81E-07	3.03E-07	2.15E-10	6.85E-07	4.64E-07	4.11E-07	2.15E-10	8.75E-07	8.27E-08	7.46E-08	2.15E-10	1.58E-07	3.52E-08	3.33E-08	2.15E-10	6.87E-08
508	572055.5	4148909	3.96E-07	3.15E-07	2.23E-10	7.10E-07	4.81E-07	4.26E-07	2.23E-10	9.08E-07	8.58E-08	7.74E-08	2.23E-10	1.63E-07	3.65E-08	3.45E-08	2.23E-10	7.12E-08
509	572061.9	4148902	4.10E-07	3.26E-07	2.31E-10	7.36E-07	4.99E-07	4.41E-07	2.31E-10	9.40E-07	8.89E-08	8.02E-08	2.31E-10	1.69E-07	3.78E-08	3.58E-08	2.31E-10	7.38E-08
510	572068.2	4148895	4.24E-07	3.37E-07	2.39E-10	7.62E-07	5.16E-07	4.57E-07	2.39E-10	9.73E-07	9.20E-08	8.30E-08	2.39E-10	1.75E-07	3.91E-08	3.70E-08	2.39E-10	7.64E-08
511	572074.6	4148889	4.39E-07	3.49E-07	2.48E-10	7.88E-07	5.34E-07	4.73E-07	2.48E-10	1.01E-06	9.52E-08	8.59E-08	2.48E-10	1.81E-07	4.05E-08	3.83E-08	2.48E-10	7.91E-08
512	572081	4148882	4.54E-07	3.61E-07	2.56E-10	8.16E-07	5.53E-07	4.89E-07	2.56E-10	1.04E-06	9.85E-08	8.89E-08	2.56E-10	1.88E-07	4.19E-08	3.96E-08	2.56E-10	8.18E-08

513	572087.3	4148875	4.70E-07	3.74E-07	2.65E-10	8.45E-07	5.72E-07	5.06E-07	2.65E-10	1.08E-06	1.02E-07	9.20E-08	2.65E-10	1.94E-07	4.34E-08	4.10E-08	2.65E-10	8.47E-08
514	572093.7	4148869	4.87E-07	3.88E-07	2.75E-10	8.75E-07	5.93E-07	5.25E-07	2.75E-10	1.12E-06	1.06E-07	9.53E-08	2.75E-10	2.01E-07	4.49E-08	4.25E-08	2.75E-10	8.77E-08
515	572100	4148862	5.05E-07	4.02E-07	2.85E-10	9.08E-07	6.15E-07	5.44E-07	2.85E-10	1.16E-06	1.10E-07	9.89E-08	2.85E-10	2.09E-07	4.66E-08	4.41E-08	2.85E-10	9.10E-08
516	572106.4	4148855	5.25E-07	4.18E-07	2.96E-10	9.42E-07	6.39E-07	5.65E-07	2.96E-10	1.20E-06	1.14E-07	1.03E-07	2.96E-10	2.17E-07	4.84E-08	4.58E-08	2.96E-10	9.45E-08
517	572112.7	4148848	5.45E-07	4.34E-07	3.08E-10	9.79E-07	6.63E-07	5.87E-07	3.08E-10	1.25E-06	1.18E-07	1.07E-07	3.08E-10	2.25E-07	5.03E-08	4.76E-08	3.08E-10	9.82E-08
518	572119.1	4148842	5.66E-07	4.50E-07	3.20E-10	1.02E-06	6.89E-07	6.10E-07	3.20E-10	1.30E-06	1.23E-07	1.11E-07	3.20E-10	2.34E-07	5.22E-08	4.94E-08	3.20E-10	1.02E-07
519	572125.4	4148835	5.87E-07	4.67E-07	3.32E-10	1.06E-06	7.15E-07	6.33E-07	3.32E-10	1.35E-06	1.27E-07	1.15E-07	3.32E-10	2.43E-07	5.42E-08	5.13E-08	3.32E-10	1.06E-07
520	572131.8	4148828	6.09E-07	4.85E-07	3.44E-10	1.09E-06	7.41E-07	6.56E-07	3.44E-10	1.40E-06	1.32E-07	1.19E-07	3.44E-10	2.52E-07	5.62E-08	5.32E-08	3.44E-10	1.10E-07
521	572138.1	4148821	6.31E-07	5.02E-07	3.56E-10	1.13E-06	7.68E-07	6.80E-07	3.56E-10	1.45E-06	1.37E-07	1.23E-07	3.56E-10	2.61E-07	5.82E-08	5.51E-08	3.56E-10	1.14E-07
522	572144.5	4148815	6.53E-07	5.20E-07	3.69E-10	1.17E-06	7.95E-07	7.03E-07	3.69E-10	1.50E-06	1.42E-07	1.28E-07	3.69E-10	2.70E-07	6.03E-08	5.70E-08	3.69E-10	1.18E-07
523	572150.8	4148808	6.75E-07	5.37E-07	3.81E-10	1.21E-06	8.22E-07	7.27E-07	3.81E-10	1.55E-06	1.47E-07	1.32E-07	3.81E-10	2.79E-07	6.23E-08	5.90E-08	3.81E-10	1.22E-07
524	572033	4148919	3.45E-07	2.75E-07	1.95E-10	6.20E-07	4.20E-07	3.72E-07	1.95E-10	7.92E-07	7.49E-08	6.76E-08	1.95E-10	1.43E-07	3.18E-08	3.01E-08	1.95E-10	6.22E-08
525	572039.3	4148913	3.59E-07	2.85E-07	2.02E-10	6.44E-07	4.36E-07	3.86E-07	2.02E-10	8.23E-07	7.78E-08	7.02E-08	2.02E-10	1.48E-07	3.31E-08	3.13E-08	2.02E-10	6.46E-08
526	572045.6	4148906	3.72E-07	2.96E-07	2.10E-10	6.68E-07	4.53E-07	4.01E-07	2.10E-10	8.53E-07	8.07E-08	7.28E-08	2.10E-10	1.54E-07	3.43E-08	3.25E-08	2.10E-10	6.70E-08
527	572052	4148899	3.85E-07	3.06E-07	2.17E-10	6.92E-07	4.69E-07	4.15E-07	2.17E-10	8.84E-07	8.36E-08	7.54E-08	2.17E-10	1.59E-07	3.55E-08	3.36E-08	2.17E-10	6.94E-08
528	572058.3	4148893	3.98E-07	3.17E-07	2.25E-10	7.16E-07	4.85E-07	4.29E-07	2.25E-10	9.14E-07	8.64E-08	7.80E-08	2.25E-10	1.65E-07	3.68E-08	3.48E-08	2.25E-10	7.18E-08
529	572064.6	4148886	4.12E-07	3.28E-07	2.33E-10	7.40E-07	5.01E-07	4.44E-07	2.33E-10	9.45E-07	8.94E-08	8.06E-08	2.33E-10	1.70E-07	3.80E-08	3.60E-08	2.33E-10	7.42E-08
530	572070.9	4148879	4.26E-07	3.39E-07	2.40E-10	7.65E-07	5.18E-07	4.59E-07	2.40E-10	9.77E-07	9.24E-08	8.33E-08	2.40E-10	1.76E-07	3.93E-08	3.72E-08	2.40E-10	7.67E-08
531	572077.2	4148872	4.40E-07	3.50E-07	2.49E-10	7.91E-07	5.36E-07	4.74E-07	2.49E-10	1.01E-06	9.55E-08	8.62E-08	2.49E-10	1.82E-07	4.06E-08	3.84E-08	2.49E-10	7.93E-08
532	572083.6	4148866	4.55E-07	3.62E-07	2.57E-10	8.18E-07	5.54E-07	4.90E-07	2.57E-10	1.04E-06	9.88E-08	8.91E-08	2.57E-10	1.88E-07	4.20E-08	3.98E-08	2.57E-10	8.20E-08
533	572089.9	4148859	4.71E-07	3.75E-07	2.66E-10	8.47E-07	5.74E-07	5.08E-07	2.66E-10	1.08E-06	1.02E-07	9.23E-08	2.66E-10	1.95E-07	4.35E-08	4.12E-08	2.66E-10	8.49E-08
534	572096.2	4148852	4.89E-07	3.89E-07	2.76E-10	8.78E-07	5.95E-07	5.26E-07	2.76E-10	1.12E-06	1.06E-07	9.56E-08	2.76E-10	2.02E-07	4.51E-08	4.27E-08	2.76E-10	8.80E-08
535	572102.5	4148846	5.07E-07	4.03E-07	2.86E-10	9.10E-07	6.17E-07	5.46E-07	2.86E-10	1.16E-06	1.10E-07	9.92E-08	2.86E-10	2.09E-07	4.68E-08	4.42E-08	2.86E-10	9.13E-08
536	572108.9	4148839	5.26E-07	4.18E-07	2.97E-10	9.45E-07	6.40E-07	5.66E-07	2.97E-10	1.21E-06	1.14E-07	1.03E-07	2.97E-10	2.17E-07	4.85E-08	4.59E-08	2.97E-10	9.47E-08
537	572115.2	4148832	5.46E-07	4.34E-07	3.08E-10	9.80E-07	6.64E-07	5.88E-07	3.08E-10	1.25E-06	1.18E-07	1.07E-07	3.08E-10	2.25E-07	5.03E-08	4.76E-08	3.08E-10	9.83E-08
538	572121.5	4148826	5.66E-07	4.50E-07	3.19E-10	1.02E-06	6.88E-07	6.09E-07	3.19E-10	1.30E-06	1.23E-07	1.11E-07	3.19E-10	2.34E-07	5.22E-08	4.94E-08	3.19E-10	1.02E-07
539	572127.8	4148819	5.86E-07	4.66E-07	3.31E-10	1.05E-06	7.13E-07	6.31E-07	3.31E-10	1.34E-06	1.27E-07	1.15E-07	3.31E-10	2.42E-07	5.41E-08	5.12E-08	3.31E-10	1.06E-07
540	572134.1	4148812	6.07E-07	4.83E-07	3.42E-10	1.09E-06	7.38E-07	6.53E-07	3.42E-10	1.39E-06	1.32E-07	1.19E-07	3.42E-10	2.51E-07	5.60E-08	5.30E-08	3.42E-10	1.09E-07
541	572140.5	4148806	6.27E-07	4.99E-07	3.54E-10	1.13E-06	7.63E-07	6.76E-07	3.54E-10	1.44E-06	1.36E-07	1.23E-07	3.54E-10	2.59E-07	5.79E-08	5.48E-08	3.54E-10	1.13E-07
542	572146.8	4148799	6.47E-07	5.15E-07	3.66E-10	1.16E-06	7.88E-07	6.97E-07	3.66E-10	1.49E-06	1.41E-07	1.27E-07	3.66E-10	2.68E-07	5.97E-08	5.65E-08	3.66E-10	1.17E-07
543	572016.9	4148923	3.13E-07	2.49E-07	1.77E-10	5.63E-07	3.81E-07	3.37E-07	1.77E-10	7.19E-07	6.80E-08	6.13E-08	1.77E-10	1.30E-07	2.89E-08	2.74E-08	1.77E-10	5.64E-08
544	572023.2	4148916	3.25E-07	2.59E-07	1.84E-10	5.85E-07	3.96E-07	3.51E-07	1.84E-10	7.47E-07	7.06E-08	6.37E-08	1.84E-10	1.35E-07	3.00E-08	2.84E-08	1.84E-10	5.86E-08
545	572029.5	4148910	3.38E-07	2.69E-07	1.91E-10	6.07E-07	4.11E-07	3.64E-07	1.91E-10	7.75E-07	7.33E-08	6.61E-08	1.91E-10	1.40E-07	3.12E-08	2.95E-08	1.91E-10	6.09E-08
546	572035.8	4148903	3.50E-07	2.79E-07	1.98E-10	6.29E-07	4.26E-07	3.77E-07	1.98E-10	8.04E-07	7.60E-08	6.86E-08	1.98E-10	1.45E-07	3.23E-08	3.06E-08	1.98E-10	6.31E-08
547	572042.1	4148896	3.63E-07	2.89E-07	2.05E-10	6.52E-07	4.42E-07	3.91E-07	2.05E-10	8.33E-07	7.87E-08	7.10E-08	2.05E-10	1.50E-07	3.35E-08	3.17E-08	2.05E-10	6.54E-08
548	572048.3	4148890	3.75E-07	2.98E-07	2.12E-10	6.74E-07	4.56E-07	4.04E-07	2.12E-10	8.61E-07	8.14E-08	7.34E-08	2.12E-10	1.55E-07	3.46E-08	3.28E-08	2.12E-10	6.76E-08
549	572054.6	4148883	3.88E-07	3.08E-07	2.19E-10	6.96E-07	4.72E-07	4.17E-07	2.19E-10	8.89E-07	8.41E-08	7.58E-08	2.19E-10	1.60E-07	3.58E-08	3.38E-08	2.19E-10	6.98E-08
550	572060.9	4148876	4.00E-07	3.18E-07	2.26E-10	7.19E-07	4.87E-07	4.31E-07	2.26E-10	9.18E-07	8.68E-08	7.83E-08	2.26E-10	1.65E-07	3.69E-08	3.49E-08	2.26E-10	7.21E-08
551	572067.2	4148870	4.13E-07	3.29E-07	2.33E-10	7.42E-07	5.03E-07	4.45E-07	2.33E-10	9.48E-07	8.97E-08	8.09E-08	2.33E-10	1.71E-07	3.81E-08	3.61E-08	2.33E-10	7.45E-08
552	572073.5	4148863	4.27E-07	3.40E-07	2.41E-10	7.67E-07	5.19E-07	4.60E-07	2.41E-10	9.79E-07	9.26E-08	8.35E-08	2.41E-10	1.76E-07	3.94E-08	3.73E-08	2.41E-10	7.69E-08
553	572079.8	4148856	4.41E-07	3.51E-07	2.49E-10	7.92E-07	5.37E-07	4.75E-07	2.49E-10	1.01E-06	9.57E-08	8.63E-08	2.49E-10	1.82E-07	4.07E-08	3.85E-08	2.49E-10	7.95E-08
554	572086.1	4148850	4.56E-07	3.63E-07	2.58E-10	8.20E-07	5.55E-07	4.92E-07	2.58E-10	1.05E-06	9.90E-08	8.93E-08	2.58E-10	1.89E-07	4.21E-08	3.98E-08	2.58E-10	8.22E-08
555	572092.4	4148843	4.73E-07	3.76E-07	2.67E-10	8.49E-07	5.75E-07	5.09E-07	2.67E-10	1.08E-06	1.03E-07	9.25E-08	2.67E-10	1.95E-07	4.36E-08	4.13E-08	2.67E-10	8.51E-08
556	572098.7	4148836	4.90E-07	3.90E-07	2.77E-10	8.80E-07	5.96E-07	5.27E-07	2.77E-10	1.12E-06	1.06E-07	9.59E-08	2.77E-10	2.02E-07	4.52E-08	4.28E-08	2.77E-10	8.82E-08
557	572105	4148830	5.08E-07	4.04E-07	2.87E-10	9.12E-07	6.18E-07	5.47E-07	2.87E-10	1.16E-06	1.10E-07	9.94E-08	2.87E-10	2.10E-07	4.68E-08	4.43E-08	2.87E-10	9.15E-08
558	572111.3	4148823	5.26E-07	4.19E-07	2.97E-10	9.45E-07	6.40E-07	5.67E-07	2.97E-10	1.21E-06	1.14E-07	1.03E-07	2.97E-10	2.17E-07	4.85E-08	4.59E-08	2.97E-10	9.48E-08
559	572117.6	4148816	5.45E-07	4.34E-07	3.08E-10	9.79E-07	6.63E-07	5.87E-07	3.08E-10	1.25E-06	1.18E-07	1.07E-07	3.08E-10	2.25E-07	5.03E-08	4.76E-08	3.08E-10	9.82E-08
560	572123.9	4148810	5.64E-07	4.49E-07	3.19E-10	1.01E-06	6.87E-07	6.08E-07	3.19E-10	1.29E-06	1.22E-07	1.10E-07	3.19E-10	2.33E-07	5.21E-08	4.93E-08	3.19E-10	1.02E-07
561	572130.2	4148803	5.83E-07	4.64E-07	3.29E-10	1.05E-06	7.10E-07	6.28E-07	3.29E-10	1.34E-06	1.27E-07	1.14E-07	3.29E-10	2.41E-07	5.38E-08	5.09E-08	3.29E-10	1.05E-07
562	572136.4	4148796	6.02E-07	4.79E-07	3.40E-10	1.08E-06	7.33E-07	6.49E-07	3.40E-10	1.38E-06	1.31E-07	1.18E-07	3.40E-10	2.49E-07	5.56E-08	5.26E-08	3.40E-10	1.08E-07
563	572142.7	4148790	6.21E-07	4.94E-07	3.51E-10	1.12E-06	7.56E-07	6.69E-07	3.51E-10	1.43E-06	1.35E-07	1.22E-07	3.51E-10	2.57E-07	5.73E-08	5.42E-08	3.51E-10	1.12E-07
564	572000.8	4148927	2.86E-07	2.27E-07	1.61E-10	5.13E-07	3.47E-07	3.08E-07	1.61E-10	6.55E-07	6.20E-08	5.59E-08	1.61E-10	1.18E-07	2.63E-08	2.49E-08	1.61E-10	5.14E-08
565	572007.1	4148920	2.96E-07	2.36E-07	1.67E-10	5.32E-07	3.60E-07	3.19E-07	1.67E-10	6.80E-07	6.43E-08	5.80E-08	1.67E-10	1.22E-07	2.73E-08	2.59E-08	1.67E-10	5.33E-08
566	572013.4	4148913	3.07E-07	2.45E-07	1.73E-10	5.52E-07	3.74E-07	3.31E-07	1.73E-10	7.05E-07	6.67E-08	6.01E-08	1.73E-10	1.27E-07	2.83E-08	2.68E-08	1.73E-10	5.53E-08
567	572019.6	4148907	3.19E-07	2.54E-07	1.80E-10	5.73E-07	3.88E-07	3.43E-07	1.80E-10	7.32E-07	6.92E-08	6.24E-08	1.80E-10	1.32E-07	2.94E-08	2.78E-08	1.80E-10	5.74E-08
568	572025.9	4148900	3.31E-07	2.63E-07	1.87E-10	5.94E-07	4.02E-07	3.56E-07	1.87E-10	7.59E-07	7.17E-08	6.47E-08	1.87E-10	1.37E-07	3.05E-08	2.89E-08	1.87E-10	5.95E-08
569	572032.2	4148893	3.42E-07	2.72E-07	1.93E-10	6.15E-07	4.17E-07	3.69E-07	1.93E-10	7.85E-07	7.43E-08	6.70E-08	1.93E-10	1.41E-07	3.16E-08	2.99E-08	1.93E-10	6.17E-08
570	572038.4	4148887	3.54E-07	2.82E-07	2.00E-10	6.36E-07	4.31E-07	3.81E-07	2.00E-10	8.12E-07	7.68E-08	6.92E-08	2.00E-10	1.46E-07	3.26E-08	3.09E-08	2.00E-10	6.37E-08
571	572044.7	4148880	3.65E-07	2.91E-07	2.06E-10	6.56E-07	4.45E-07	3.93E-07	2.06E-10	8.38E-07	7.93E-08	7.15E-08	2.06E-10	1.51E-07	3.37E-08	3.19E-08	2.06E-10	6.58E-08
572	572051	4148873	3.77E-07	3.00E-07	2.13E-10	6.77E-07	4.59E-07	4.06E-07	2.13E-10	8.65E-07	8.18E-08	7.38E-08	2.13E-10	1.56E-07	3.48E-08	3.29E-08	2.13E-10	6.79E-08
573	572057.2	4148867	3.89E-07	3.09E-07	2.20E-10	6.98E-07	4.73E-07	4.19E-07	2.20E-10	8.92E-07	8.44E-08	7.61E-08	2.20E-10	1.61E-07	3.59E-08	3.39E-08	2.20E-10	7.00E-08
574	572063.5	4148860	4.01E-07	3.19E-07	2.26E-10	7.21E-07	4.88E-07	4.32E-07	2.26E-10	9.20E-07	8.71E-08	7.85E-08	2.26E-10	1.66E-07	3.70E-08	3.50E-08	2.26E-10	7.23E-08
575	572069.8	4148854	4.14E-07	3.29E-07	2.34E-10	7.44E-07	5.04E-07	4.46E-07	2.34E-10	9.50E-07	8.98E-08	8.10E-08	2.34E-10	1.71E-07	3.82E-08	3.61E-08	2.34E-10	7.46E-08
576	572076	4148847	4.28E-07	3.40E-07	2.41E-10	7.68E-07	5.20E-07	4.61E-07	2.41E-10	9.81E-07	9.28E-08	8.37E-08	2.41E-10	1.77E-07	3.94E-08	3.73E-08	2.41E-10	7.70E-08
577	572082.3	4148840	4.42E-07	3.52E-07	2.50E-10	7.94E-07	5.38E-07	4.76E-07	2.50E-10	1.01E-06	9.59E-08	8.65E-08	2.50E-10	1.83E-07	4.08E-08	3.86E-08	2.50E-10	7.96E-08
578	572088.6	4148834	4.57E-07	3.64E-07	2.58E-10	8.22E-07	5.57E-07	4.93E-07	2.58E-10	1.05E-06	9.92E-08	8.95E-08	2.58E-10	1.89E-07	4.22E-08	3.99E-08	2.58E-10	8.24E-08
579	572094.8	4148827	4.74E-07	3.77E-07	2.67E-10	8.51E-07	5.76E-07	5.10E-07	2.67E-10	1.09E-06	1.03E-07	9.27E-08	2.67E-10	1.96E-07	4.37E-08	4.13E-08	2.67E-10	8.53E-08
580	572101.1	4148820	4.90E-07	3.90E-07	2.77E-10	8.81E-07	5.97E-07	5.28E-07	2.77E-10	1.13E-06	1.06E-07	9.60E-08	2.77E-10	2.03E-07	4.52E-08	4.28E-08	2.77E-10	8.83E-08
581	572107.4	4148814	5.08E-07	4.04E-07	2.87E-10	9.12E-07	6.18E-07	5.47E-07	2.87E-10	1.17E-06	1.10E-07	9.94E-08	2.87E-10	2.10E-07	4.69E-08	4.43E-08	2.87E-10	9.15E-08
582	572113.6	4148807	5.26E-07	4.18E-07	2.97E-10	9.44E-07	6.40E-07	5.66E-07	2.97E-10	1.21E-06	1.14E-07	1.03E-07	2.97E-10	2.17E-07	4.85E-08	4.59E-08	2.97E-10	9.47E-08
583	572119.9	4148800	5.43E-07	4.32E-07	3.07E-10	9.76E-07	6.61E-07	5.85E-07	3.07E-10	1.25E-06	1.18E-07	1.06E-07	3.07E-10	2.25E-07	5.01E-08	4.74E-08	3.07E-10	9.79E-08
584	572126.2	4148794	5.61E-07	4.46E-07	3.17E-10	1.01E-06	6.83E-07	6.04E-07	3.17E-10	1.29E-06	1.22E-07	1.10E-07	3.17E-10	2.32E-07	5.18E-08	4.90E-08	3.17E-10	1.01E-07
585	572132.4	4148787	5.79E-07	4.61E-07	3.27E-10	1.04E-06	7.04E-07	6.23E-07	3.27E-10	1.33E-06	1.26E-07	1.13E-07	3.27E-10	2.39E-07	5.34E-08	5.05E-08	3.27E-10	1.04E-07
586	572138.7	4148781	5.96E-07	4.75E-07	3.37E-10	1.07E-06	7.26E-07	6.42E-07	3.37E-10	1.37E-06	1.29E-07	1.17E-07	3.37E-10	2.47E-07	5.50E-08	5.21E-08	3.37E-10	1.07E-07
587	571984.9	4148930	2.61E-07	2.08E-07	1.48E-10	4.69E-07	3.18E-07	2.81E-07	1.48E-10	6.00E-07	5.67E-08	5.11E-08	1.48E-10	1.08E-07	2.41E-08	2.28E-08	1.48E-10	4.71E-08
588	571991.1	4148923	2.70E-07	2.15E-07	1.53E-10	4.86E-07	3.29E-07	2.91E-07	1.53E-10	6.21E-07	5.87E-08	5.29E-08	1.53E-10	1.12E-07	2.50E-08	2.36E-08	1.53E-10	4.87E-08
589	571997.4	4148917	2.80E-07	2.23E-07	1.58E-10	5.03E-07	3.41E-07	3.02E-07	1.58E-10	6.43E-07	6.08E-08	5.49E-08	1.58E-10	1.16E-07	2.59E-08	2.45E-08	1.58E-10	5.05E-08
590	572003.6	4148910	2.91E-07	2.31E-07	1.64E-10	5.22E-07	3.54E-07	3.13E-07	1.64E-10	6.67E-07	6.31E-08	5.69E-08	1.64E-10	1.20E-07	2.68E-08	2.54E-08	1.64E-10	5.23E-08
591	572009.9	4148904	3.01E-07	2.40E-07	1.70E-10	5.41E-07	3.67E-07	3.25E-07	1.70E-10	6.91E-07	6.54E-08	5.90E-08	1.70E-10	1.25E-07	2.78E-08	2.63E-08	1.70E-10	5.43E-08
592	572022.3	4148890	3.23E-07	2.57E-07	1.83E-10	5.81E-07	3.93E-07	3.48E-07	1.83E-10	7.42E-07	7.01E-08	6.33E-08	1.83E-10	1.34E-07	2.98E-08	2.82E-08	1.83E-10	5.82E-08
593	572028.6	4148884	3.34E-07	2.66E-07	1.89E-10	6.00E-07	4.07E-07	3.60E-07	1.89E-10	7.67E-07	7.25E-08	6.54E-08	1.89E-10	1.38E-07	3.08E-08	2.92E-08	1.89E-10	6.02E-08
594	572034.8	4148877	3.45E-07	2.74E-07	1.95E-10	6.20E-07	4.20E-07	3.71E-07	1.95E-10	7.91E-07	7.48E-08	6.75E-08	1.95E-10	1.43E-07	3.18E-08	3.01E-08	1.95E-10	6.21E-08
595	572041	4148870	3.56E-07	2.83E-07	2.01E-10	6.39E-07	4.33E-07	3.83E-07	2.01E-10	8.16E-07	7.72E-08	6.96E-08	2.01E-10	1.47E-07	3.28E-08	3.10E-08	2.01E-10	6.41E-08
596	572047.3	4148864	3.66E-07	2.92E-07	2.07E-10	6.58E-07	4.46E-07	3.95E-07	2.07E-10	8.41E-07	7.95E-08	7.17E-08	2.07E-10	1.51E-07	3.38E-08	3.20E-08	2.07E-10	6.60E-08
597	572059.8	4148851	3.89E-07	3.10E-07	2.20E-10	6.99E-07	4.74E-07	4.19E-07	2.20E-10	8.93E-07	8.45E-08	7.62E-08	2.20E-10	1.61E-07	3.59E-08	3.40E-08	2.20E-10	7.01E-08
598	572066	4148844	4.02E-07	3.20E-07	2.27E-10	7.21E-07	4.89E-07	4.33E-07	2.27E-10	9.21E-07	8.71E-08	7.86E-08	2.27E-10	1.66E-07	3.70E-08	3.51E-08	2.27E-10	7.23E-08
599	572072.2	4148837	4.15E-07	3.30E-07	2.34E-10	7.45E-07	5.04E-07	4.46E-07	2.34E-10	9.51E-07	9.00E-08	8.11E-08	2.34E-10	1.71E-07	3.82E-08	3.62E-08	2.34E-10	7.47E-08
600	572078.5	4148831	4.28E-07	3.41E-07	2.42E-10	7.69E-07	5.21E-07	4.61E-07	2.42E-10	9.83E-07	9.29E-08	8.38E-08	2.42E-10	1.77E-07	3.95E-08	3.74E-08	2.42E-10	7.72E-08
601	572091	4148818	4.58E-07	3.65E-07	2.59E-10	8.23E-07	5.58E-07	4.93E-07	2.59E-10	1.05E-06	9.94E-08	8.97E-08	2.59E-10	1.89E-07	4.23E-08	4.00E-08	2.59E-10	8.25E-08
602	572097.2	4148811	4.74E-07	3.77E-07	2.68E-10	8.52E-07	5.77E-07	5.11E-07	2.68E-10	1.09E-06	1.03E-07	9.28E-08	2.68E-10	1.96E-07	4.37E-08	4.14E-08	2.68E-10	8.54E-08
603	572103.4	4148804	4.90E-07	3.90E-07	2.77E-10	8.81E-07	5.97E-07	5.28E-07	2.77E-10	1.13E-06	1.06E-07	9.60E-08	2.77E-10	2.03E-07	4.52E-08	4.28E-08	2.77E-10	8.83E-08
604	572109.7	4148798	5.07E-07	4.03E-07	2.86E-10	9.10E-07	6.17E-07	5.46E-07	2.86E-10	1.16E-06	1.10E-07	9.92E-08	2.86E-10	2.09E-07	4.67E-08	4.42E-08	2.86E-10	9.13E-08
605	572115.9	4148791	5.23E-07	4.16E-07	2.95E-10	9.40E-07	6.37E-07	5.64E-07	2.95E-10	1.20E-06	1.14E-07	1.02E-07	2.95E-10	2.16E-07	4.83E-08	4.57E-08	2.95E-10	9.43E-08
606	572122.2	4148785	5.40E-07	4.30E-07	3.05E-10	9.70E-07	6.57E-07	5.81E-07	3.05E-10	1.24E-06	1.17E-07	1.06E-07	3.05E-10	2.23E-07	4.98E-08	4.71E-08	3.05E-10	9.72E-08
607	572128.4	4148778	5.57E-07	4.43E-07	3.14E-10	1.00E-06	6.77E-07	5.99E-07	3.14E-10	1.28E-06	1.21E-07	1.09E-07	3.14E-10	2.30E-07	5.14E-08	4.86E-08	3.14E-10	1.00E-07
608	572134.6	4148771	5.73E-07	4.56E-07	3.24E-10	1.03E-06	6.98E-07	6.18E-07	3.24E-10	1.32E-06	1.24E-07	1.12E-07	3.24E-10	2.37E-07	5.29E-08	5.01E-08	3.24E-10	1.03E-07
609	571964.6	4148938	2.36E-07	1.87E-07	1.33E-10	4.23E-07	2.87E-07	2.54E-07	1.33E-10	5.41E-07	5.11E-08	4.61E-08	1.33E-10	9.74E-08	2.17E-08	2.06E-08	1.33E-10	4.24E-08
610	571971	4148931	2.43E-07	1.93E-07	1.37E-10	4.36E-07	2.96E-07	2.62E-07	1.37E-10	5.57E-07	5.27E-08	4.75E-08	1.37E-10	1.00E-07	2.24E-08	2.12E-08	1.37E-10	4.38E-08
611	571977.3	4148925	2.51E-07	2.00E-07	1.42E-10	4.51E-07	3.06E-07	2.70E-07	1.42E-10	5.76E-07	5.45E-08	4.91E-08	1.42E-10	1.04E-07	2.32E-08	2.19E-08	1.42E-10	4.52E-08
612	571983.7	4148918	2.60E-07	2.07E-07	1.47E-10	4.67E-07	3.16E-07	2.80E-07	1.47E-10	5.96E-07	5.64E-08	5.09E-08	1.47E-10	1.07E-07	2.40E-08	2.27E-08	1.47E-10	4.68E-08
613	571990.1	4148911	2.69E-07	2.14E-07	1.52E-10	4.84E-07	3.28E-07	2.90E-07	1.52E-10	6.18E-07	5.84E-08	5.27E-08	1.52E-10	1.11E-07	2.48E-08	2.35E-08	1.52E-10	4.85E-08
614	571996.5	4148904	2.79E-07	2.22E-07	1.58E-10	5.02E-07	3.40E-07	3.01E-07	1.58E-10	6.41E-07	6.06E-08	5.47E-08	1.58E-10	1.15E-07	2.58E-08	2.44E-08	1.58E-10	5.03E-08
615	572002.9	4148897	2.90E-07	2.31E-07	1.64E-10	5.20E-07	3.53E-07	3.12E-07	1.64E-10	6.65E-07	6.29E-08	5.67E-08	1.64E-10	1.20E-07	2.67E-08	2.53E-08	1.64E-10	5.22E-08

616	572009.2	4148891	3.00E-07	2.39E-07	1.69E-10	5.39E-07	3.65E-07	3.23E-07	1.69E-10	6.89E-07	6.51E-08	5.88E-08	1.69E-10	1.24E-07	2.77E-08	2.62E-08	1.69E-10	5.41E-08
617	572015.6	4148884	3.11E-07	2.47E-07	1.75E-10	5.58E-07	3.78E-07	3.35E-07	1.75E-10	7.13E-07	6.74E-08	6.08E-08	1.75E-10	1.28E-07	2.87E-08	2.71E-08	1.75E-10	5.60E-08
618	572022	4148877	3.21E-07	2.56E-07	1.81E-10	5.77E-07	3.91E-07	3.46E-07	1.81E-10	7.37E-07	6.97E-08	6.29E-08	1.81E-10	1.33E-07	2.96E-08	2.80E-08	1.81E-10	5.79E-08
619	572028.4	4148870	3.32E-07	2.64E-07	1.87E-10	5.96E-07	4.03E-07	3.57E-07	1.87E-10	7.61E-07	7.19E-08	6.49E-08	1.87E-10	1.37E-07	3.06E-08	2.89E-08	1.87E-10	5.97E-08
620	572034.7	4148864	3.42E-07	2.72E-07	1.93E-10	6.14E-07	4.16E-07	3.68E-07	1.93E-10	7.84E-07	7.42E-08	6.69E-08	1.93E-10	1.41E-07	3.15E-08	2.98E-08	1.93E-10	6.16E-08
621	572041.1	4148857	3.52E-07	2.80E-07	1.99E-10	6.33E-07	4.29E-07	3.79E-07	1.99E-10	8.08E-07	7.64E-08	6.89E-08	1.99E-10	1.46E-07	3.25E-08	3.07E-08	1.99E-10	6.34E-08
622	572047.5	4148850	3.63E-07	2.89E-07	2.05E-10	6.52E-07	4.42E-07	3.91E-07	2.05E-10	8.33E-07	7.87E-08	7.10E-08	2.05E-10	1.50E-07	3.35E-08	3.17E-08	2.05E-10	6.54E-08
623	572053.9	4148843	3.74E-07	2.98E-07	2.11E-10	6.72E-07	4.55E-07	4.03E-07	2.11E-10	8.58E-07	8.12E-08	7.32E-08	2.11E-10	1.55E-07	3.45E-08	3.27E-08	2.11E-10	6.74E-08
624	572060.3	4148837	3.86E-07	3.07E-07	2.18E-10	6.93E-07	4.70E-07	4.16E-07	2.18E-10	8.85E-07	8.37E-08	7.55E-08	2.18E-10	1.59E-07	3.56E-08	3.37E-08	2.18E-10	6.95E-08
625	572066.6	4148830	3.98E-07	3.17E-07	2.25E-10	7.16E-07	4.85E-07	4.29E-07	2.25E-10	9.14E-07	8.65E-08	7.80E-08	2.25E-10	1.65E-07	3.68E-08	3.48E-08	2.25E-10	7.18E-08
626	572073	4148823	4.12E-07	3.28E-07	2.32E-10	7.39E-07	5.01E-07	4.43E-07	2.32E-10	9.45E-07	8.93E-08	8.06E-08	2.32E-10	1.70E-07	3.80E-08	3.59E-08	2.32E-10	7.42E-08
627	572079.4	4148816	4.26E-07	3.39E-07	2.40E-10	7.65E-07	5.18E-07	4.59E-07	2.40E-10	9.77E-07	9.24E-08	8.33E-08	2.40E-10	1.76E-07	3.93E-08	3.72E-08	2.40E-10	7.67E-08
628	572085.8	4148810	4.40E-07	3.50E-07	2.49E-10	7.91E-07	5.36E-07	4.74E-07	2.49E-10	1.01E-06	9.56E-08	8.62E-08	2.49E-10	1.82E-07	4.06E-08	3.85E-08	2.49E-10	7.93E-08
629	572092.2	4148803	4.56E-07	3.63E-07	2.57E-10	8.18E-07	5.54E-07	4.91E-07	2.57E-10	1.05E-06	9.89E-08	8.92E-08	2.57E-10	1.88E-07	4.20E-08	3.98E-08	2.57E-10	8.21E-08
630	572098.5	4148796	4.71E-07	3.75E-07	2.66E-10	8.46E-07	5.73E-07	5.07E-07	2.66E-10	1.08E-06	1.02E-07	9.22E-08	2.66E-10	1.95E-07	4.35E-08	4.11E-08	2.66E-10	8.49E-08
631	572104.9	4148789	4.87E-07	3.87E-07	2.75E-10	8.74E-07	5.92E-07	5.24E-07	2.75E-10	1.12E-06	1.06E-07	9.53E-08	2.75E-10	2.01E-07	4.49E-08	4.25E-08	2.75E-10	8.77E-08
632	572111.3	4148783	5.03E-07	4.00E-07	2.84E-10	9.03E-07	6.12E-07	5.42E-07	2.84E-10	1.15E-06	1.09E-07	9.84E-08	2.84E-10	2.08E-07	4.64E-08	4.39E-08	2.84E-10	9.06E-08
633	572117.7	4148776	5.19E-07	4.13E-07	2.93E-10	9.32E-07	6.31E-07	5.59E-07	2.93E-10	1.19E-06	1.13E-07	1.02E-07	2.93E-10	2.14E-07	4.79E-08	4.53E-08	2.93E-10	9.35E-08
634	572124	4148769	5.35E-07	4.26E-07	3.02E-10	9.61E-07	6.51E-07	5.76E-07	3.02E-10	1.23E-06	1.16E-07	1.05E-07	3.02E-10	2.21E-07	4.94E-08	4.67E-08	3.02E-10	9.64E-08
635	572130.4	4148762	5.52E-07	4.39E-07	3.11E-10	9.91E-07	6.71E-07	5.94E-07	3.11E-10	1.27E-06	1.20E-07	1.08E-07	3.11E-10	2.28E-07	5.09E-08	4.82E-08	3.11E-10	9.94E-08
636	571948.6	4148942	2.19E-07	1.74E-07	1.23E-10	3.93E-07	2.66E-07	2.35E-07	1.23E-10	5.02E-07	4.74E-08	4.28E-08	1.23E-10	9.03E-08	2.02E-08	1.91E-08	1.23E-10	3.94E-08
637	571954.9	4148935	2.25E-07	1.79E-07	1.27E-10	4.04E-07	2.73E-07	2.42E-07	1.27E-10	5.16E-07	4.88E-08	4.40E-08	1.27E-10	9.29E-08	2.07E-08	1.96E-08	1.27E-10	4.05E-08
638	571961.3	4148928	2.31E-07	1.84E-07	1.31E-10	4.16E-07	2.82E-07	2.49E-07	1.31E-10	5.31E-07	5.02E-08	4.53E-08	1.31E-10	9.56E-08	2.13E-08	2.02E-08	1.31E-10	4.17E-08
639	571967.6	4148921	2.39E-07	1.90E-07	1.35E-10	4.29E-07	2.91E-07	2.57E-07	1.35E-10	5.48E-07	5.18E-08	4.67E-08	1.35E-10	9.87E-08	2.20E-08	2.08E-08	1.35E-10	4.30E-08
640	571974	4148915	2.47E-07	1.96E-07	1.39E-10	4.43E-07	3.00E-07	2.66E-07	1.39E-10	5.66E-07	5.36E-08	4.83E-08	1.39E-10	1.02E-07	2.28E-08	2.16E-08	1.39E-10	4.45E-08
641	571980.3	4148908	2.56E-07	2.03E-07	1.44E-10	4.59E-07	3.11E-07	2.75E-07	1.44E-10	5.86E-07	5.54E-08	5.00E-08	1.44E-10	1.06E-07	2.36E-08	2.23E-08	1.44E-10	4.60E-08
642	571986.7	4148901	2.65E-07	2.11E-07	1.49E-10	4.75E-07	3.22E-07	2.85E-07	1.49E-10	6.07E-07	5.74E-08	5.18E-08	1.49E-10	1.09E-07	2.44E-08	2.31E-08	1.49E-10	4.77E-08
643	571993	4148894	2.74E-07	2.18E-07	1.55E-10	4.93E-07	3.34E-07	2.95E-07	1.55E-10	6.29E-07	5.95E-08	5.37E-08	1.55E-10	1.13E-07	2.53E-08	2.40E-08	1.55E-10	4.94E-08
644	571999.4	4148888	2.84E-07	2.26E-07	1.60E-10	5.10E-07	3.46E-07	3.06E-07	1.60E-10	6.52E-07	6.17E-08	5.56E-08	1.60E-10	1.17E-07	2.62E-08	2.48E-08	1.60E-10	5.12E-08
645	572005.7	4148881	2.94E-07	2.34E-07	1.66E-10	5.28E-07	3.58E-07	3.17E-07	1.66E-10	6.75E-07	6.38E-08	5.75E-08	1.66E-10	1.22E-07	2.71E-08	2.57E-08	1.66E-10	5.30E-08
646	572012.1	4148874	3.04E-07	2.42E-07	1.72E-10	5.46E-07	3.70E-07	3.27E-07	1.72E-10	6.97E-07	6.59E-08	5.95E-08	1.72E-10	1.26E-07	2.80E-08	2.65E-08	1.72E-10	5.47E-08
647	572018.4	4148868	3.14E-07	2.50E-07	1.77E-10	5.63E-07	3.82E-07	3.38E-07	1.77E-10	7.20E-07	6.80E-08	6.14E-08	1.77E-10	1.30E-07	2.89E-08	2.74E-08	1.77E-10	5.65E-08
648	572024.8	4148861	3.23E-07	2.57E-07	1.82E-10	5.81E-07	3.93E-07	3.48E-07	1.82E-10	7.42E-07	7.01E-08	6.33E-08	1.82E-10	1.34E-07	2.98E-08	2.82E-08	1.82E-10	5.82E-08
649	572031.1	4148854	3.33E-07	2.65E-07	1.88E-10	5.98E-07	4.05E-07	3.58E-07	1.88E-10	7.64E-07	7.22E-08	6.51E-08	1.88E-10	1.38E-07	3.07E-08	2.91E-08	1.88E-10	5.99E-08
650	572037.5	4148847	3.43E-07	2.73E-07	1.93E-10	6.15E-07	4.17E-07	3.69E-07	1.93E-10	7.86E-07	7.43E-08	6.70E-08	1.93E-10	1.42E-07	3.16E-08	2.99E-08	1.93E-10	6.17E-08
651	572043.8	4148841	3.53E-07	2.81E-07	1.99E-10	6.33E-07	4.29E-07	3.80E-07	1.99E-10	8.09E-07	7.65E-08	6.90E-08	1.99E-10	1.46E-07	3.25E-08	3.08E-08	1.99E-10	6.35E-08
652	572050.2	4148834	3.63E-07	2.89E-07	2.05E-10	6.53E-07	4.42E-07	3.91E-07	2.05E-10	8.34E-07	7.88E-08	7.11E-08	2.05E-10	1.50E-07	3.35E-08	3.17E-08	2.05E-10	6.54E-08
653	572056.5	4148827	3.75E-07	2.98E-07	2.12E-10	6.73E-07	4.56E-07	4.04E-07	2.12E-10	8.60E-07	8.13E-08	7.33E-08	2.12E-10	1.55E-07	3.46E-08	3.27E-08	2.12E-10	6.75E-08
654	572062.9	4148820	3.87E-07	3.08E-07	2.18E-10	6.95E-07	4.71E-07	4.17E-07	2.18E-10	8.87E-07	8.39E-08	7.57E-08	2.18E-10	1.60E-07	3.57E-08	3.38E-08	2.18E-10	6.97E-08
655	572069.2	4148814	3.99E-07	3.18E-07	2.26E-10	7.18E-07	4.86E-07	4.30E-07	2.26E-10	9.17E-07	8.67E-08	7.82E-08	2.26E-10	1.65E-07	3.69E-08	3.49E-08	2.26E-10	7.20E-08
656	572075.6	4148807	4.13E-07	3.29E-07	2.33E-10	7.42E-07	5.02E-07	4.45E-07	2.33E-10	9.47E-07	8.96E-08	8.08E-08	2.33E-10	1.71E-07	3.81E-08	3.60E-08	2.33E-10	7.44E-08
657	572081.9	4148800	4.27E-07	3.39E-07	2.41E-10	7.66E-07	5.19E-07	4.59E-07	2.41E-10	9.79E-07	9.26E-08	8.35E-08	2.41E-10	1.76E-07	3.94E-08	3.72E-08	2.41E-10	7.68E-08
658	572088.3	4148794	4.41E-07	3.51E-07	2.49E-10	7.92E-07	5.36E-07	4.75E-07	2.49E-10	1.01E-06	9.56E-08	8.63E-08	2.49E-10	1.82E-07	4.07E-08	3.85E-08	2.49E-10	7.94E-08
659	572094.6	4148787	4.55E-07	3.62E-07	2.57E-10	8.18E-07	5.54E-07	4.90E-07	2.57E-10	1.04E-06	9.88E-08	8.91E-08	2.57E-10	1.88E-07	4.20E-08	3.97E-08	2.57E-10	8.20E-08
660	572101	4148780	4.70E-07	3.74E-07	2.65E-10	8.45E-07	5.72E-07	5.06E-07	2.65E-10	1.08E-06	1.02E-07	9.20E-08	2.65E-10	1.94E-07	4.34E-08	4.10E-08	2.65E-10	8.47E-08
661	572107.3	4148773	4.85E-07	3.86E-07	2.74E-10	8.72E-07	5.91E-07	5.23E-07	2.74E-10	1.11E-06	1.05E-07	9.50E-08	2.74E-10	2.01E-07	4.48E-08	4.24E-08	2.74E-10	8.74E-08
662	572113.7	4148767	5.01E-07	3.98E-07	2.83E-10	8.99E-07	6.09E-07	5.39E-07	2.83E-10	1.15E-06	1.09E-07	9.80E-08	2.83E-10	2.07E-07	4.62E-08	4.37E-08	2.83E-10	9.02E-08
663	572120	4148760	5.16E-07	4.11E-07	2.91E-10	9.27E-07	6.28E-07	5.56E-07	2.91E-10	1.18E-06	1.12E-07	1.01E-07	2.91E-10	2.13E-07	4.76E-08	4.51E-08	2.91E-10	9.29E-08
664	572126.4	4148753	5.31E-07	4.23E-07	3.00E-10	9.54E-07	6.47E-07	5.72E-07	3.00E-10	1.22E-06	1.15E-07	1.04E-07	3.00E-10	2.20E-07	4.90E-08	4.64E-08	3.00E-10	9.57E-08
665	571932.6	4148945	2.04E-07	1.62E-07	1.15E-10	3.66E-07	2.48E-07	2.20E-07	1.15E-10	4.68E-07	4.42E-08	3.99E-08	1.15E-10	8.43E-08	1.88E-08	1.78E-08	1.15E-10	3.67E-08
666	571939	4148938	2.09E-07	1.66E-07	1.18E-10	3.75E-07	2.54E-07	2.25E-07	1.18E-10	4.80E-07	4.54E-08	4.09E-08	1.18E-10	8.64E-08	1.93E-08	1.83E-08	1.18E-10	3.77E-08
667	571945.3	4148932	2.15E-07	1.71E-07	1.21E-10	3.86E-07	2.61E-07	2.31E-07	1.21E-10	4.92E-07	4.66E-08	4.20E-08	1.21E-10	8.87E-08	1.98E-08	1.87E-08	1.21E-10	3.87E-08
668	571951.6	4148925	2.21E-07	1.76E-07	1.25E-10	3.97E-07	2.69E-07	2.38E-07	1.25E-10	5.06E-07	4.79E-08	4.32E-08	1.25E-10	9.12E-08	2.04E-08	1.93E-08	1.25E-10	3.98E-08
669	571957.9	4148918	2.27E-07	1.81E-07	1.28E-10	4.09E-07	2.77E-07	2.45E-07	1.28E-10	5.22E-07	4.94E-08	4.45E-08	1.28E-10	9.40E-08	2.10E-08	1.99E-08	1.28E-10	4.10E-08
670	571964.3	4148911	2.35E-07	1.87E-07	1.33E-10	4.22E-07	2.86E-07	2.53E-07	1.33E-10	5.39E-07	5.10E-08	4.60E-08	1.33E-10	9.71E-08	2.17E-08	2.05E-08	1.33E-10	4.23E-08
671	571970.6	4148905	2.43E-07	1.93E-07	1.37E-10	4.36E-07	2.95E-07	2.61E-07	1.37E-10	5.57E-07	5.27E-08	4.75E-08	1.37E-10	1.00E-07	2.24E-08	2.12E-08	1.37E-10	4.37E-08
672	571976.9	4148898	2.51E-07	2.00E-07	1.42E-10	4.51E-07	3.06E-07	2.71E-07	1.42E-10	5.77E-07	5.45E-08	4.92E-08	1.42E-10	1.04E-07	2.32E-08	2.19E-08	1.42E-10	4.53E-08
673	571983.2	4148891	2.60E-07	2.07E-07	1.47E-10	4.67E-07	3.17E-07	2.80E-07	1.47E-10	5.97E-07	5.65E-08	5.09E-08	1.47E-10	1.08E-07	2.40E-08	2.27E-08	1.47E-10	4.69E-08
674	571989.5	4148885	2.69E-07	2.14E-07	1.52E-10	4.84E-07	3.28E-07	2.90E-07	1.52E-10	6.18E-07	5.84E-08	5.27E-08	1.52E-10	1.11E-07	2.48E-08	2.35E-08	1.52E-10	4.85E-08
675	571995.9	4148878	2.79E-07	2.22E-07	1.57E-10	5.00E-07	3.39E-07	3.00E-07	1.57E-10	6.39E-07	6.05E-08	5.45E-08	1.57E-10	1.15E-07	2.57E-08	2.43E-08	1.57E-10	5.02E-08
676	572002.2	4148871	2.88E-07	2.29E-07	1.63E-10	5.17E-07	3.50E-07	3.10E-07	1.63E-10	6.61E-07	6.25E-08	5.63E-08	1.63E-10	1.19E-07	2.66E-08	2.51E-08	1.63E-10	5.19E-08
677	572008.5	4148865	2.97E-07	2.36E-07	1.68E-10	5.34E-07	3.61E-07	3.20E-07	1.68E-10	6.82E-07	6.45E-08	5.81E-08	1.68E-10	1.23E-07	2.74E-08	2.59E-08	1.68E-10	5.35E-08
678	572014.8	4148858	3.06E-07	2.44E-07	1.73E-10	5.50E-07	3.72E-07	3.30E-07	1.73E-10	7.02E-07	6.64E-08	5.99E-08	1.73E-10	1.26E-07	2.82E-08	2.67E-08	1.73E-10	5.51E-08
679	572021.2	4148851	3.15E-07	2.51E-07	1.78E-10	5.66E-07	3.83E-07	3.39E-07	1.78E-10	7.23E-07	6.84E-08	6.16E-08	1.78E-10	1.30E-07	2.91E-08	2.75E-08	1.78E-10	5.67E-08
680	572027.5	4148845	3.24E-07	2.58E-07	1.83E-10	5.82E-07	3.94E-07	3.49E-07	1.83E-10	7.43E-07	7.03E-08	6.34E-08	1.83E-10	1.34E-07	2.99E-08	2.83E-08	1.83E-10	5.84E-08
681	572033.8	4148838	3.33E-07	2.65E-07	1.88E-10	5.99E-07	4.05E-07	3.59E-07	1.88E-10	7.65E-07	7.23E-08	6.52E-08	1.88E-10	1.38E-07	3.07E-08	2.91E-08	1.88E-10	6.00E-08
682	572040.1	4148831	3.43E-07	2.73E-07	1.94E-10	6.16E-07	4.17E-07	3.69E-07	1.94E-10	7.87E-07	7.44E-08	6.71E-08	1.94E-10	1.42E-07	3.16E-08	2.99E-08	1.94E-10	6.18E-08
683	572046.4	4148824	3.53E-07	2.81E-07	1.99E-10	6.34E-07	4.30E-07	3.80E-07	1.99E-10	8.10E-07	7.66E-08	6.91E-08	1.99E-10	1.46E-07	3.26E-08	3.08E-08	1.99E-10	6.36E-08
684	572052.8	4148818	3.64E-07	2.90E-07	2.05E-10	6.54E-07	4.43E-07	3.92E-07	2.05E-10	8.35E-07	7.90E-08	7.12E-08	2.05E-10	1.50E-07	3.36E-08	3.18E-08	2.05E-10	6.55E-08
685	572059.1	4148811	3.75E-07	2.99E-07	2.12E-10	6.74E-07	4.57E-07	4.04E-07	2.12E-10	8.62E-07	8.15E-08	7.35E-08	2.12E-10	1.55E-07	3.46E-08	3.28E-08	2.12E-10	6.76E-08
686	572065.4	4148804	3.88E-07	3.09E-07	2.19E-10	6.96E-07	4.72E-07	4.18E-07	2.19E-10	8.90E-07	8.41E-08	7.59E-08	2.19E-10	1.60E-07	3.58E-08	3.38E-08	2.19E-10	6.98E-08
687	572071.7	4148798	4.00E-07	3.18E-07	2.26E-10	7.19E-07	4.87E-07	4.31E-07	2.26E-10	9.18E-07	8.68E-08	7.83E-08	2.26E-10	1.65E-07	3.69E-08	3.49E-08	2.26E-10	7.21E-08
688	572078.1	4148791	4.13E-07	3.29E-07	2.33E-10	7.42E-07	5.03E-07	4.45E-07	2.33E-10	9.48E-07	8.97E-08	8.09E-08	2.33E-10	1.71E-07	3.81E-08	3.61E-08	2.33E-10	7.44E-08
689	572084.4	4148784	4.27E-07	3.40E-07	2.41E-10	7.66E-07	5.19E-07	4.60E-07	2.41E-10	9.79E-07	9.26E-08	8.35E-08	2.41E-10	1.76E-07	3.94E-08	3.73E-08	2.41E-10	7.69E-08
690	572090.7	4148778	4.40E-07	3.50E-07	2.49E-10	7.91E-07	5.36E-07	4.74E-07	2.49E-10	1.01E-06	9.56E-08	8.62E-08	2.49E-10	1.82E-07	4.06E-08	3.84E-08	2.49E-10	7.93E-08
691	572097	4148771	4.54E-07	3.62E-07	2.57E-10	8.16E-07	5.53E-07	4.89E-07	2.57E-10	1.04E-06	9.86E-08	8.89E-08	2.57E-10	1.88E-07	4.19E-08	3.97E-08	2.57E-10	8.19E-08
692	572103.3	4148764	4.69E-07	3.73E-07	2.65E-10	8.42E-07	5.71E-07	5.05E-07	2.65E-10	1.08E-06	1.02E-07	9.18E-08	2.65E-10	1.94E-07	4.33E-08	4.09E-08	2.65E-10	8.45E-08
693	572109.7	4148757	4.83E-07	3.85E-07	2.73E-10	8.68E-07	5.88E-07	5.21E-07	2.73E-10	1.11E-06	1.05E-07	9.46E-08	2.73E-10	2.00E-07	4.46E-08	4.22E-08	2.73E-10	8.71E-08
694	572116	4148751	4.98E-07	3.96E-07	2.81E-10	8.94E-07	6.06E-07	5.36E-07	2.81E-10	1.14E-06	1.08E-07	9.74E-08	2.81E-10	2.06E-07	4.59E-08	4.35E-08	2.81E-10	8.97E-08
695	572122.3	4148744	5.12E-07	4.08E-07	2.89E-10	9.20E-07	6.23E-07	5.52E-07	2.89E-10	1.18E-06	1.11E-07	1.00E-07	2.89E-10	2.12E-07	4.73E-08	4.47E-08	2.89E-10	9.23E-08
696	571916.8	4148948	1.91E-07	1.52E-07	1.08E-10	3.43E-07	2.32E-07	2.06E-07	1.08E-10	4.38E-07	4.14E-08	3.74E-08	1.08E-10	7.89E-08	1.76E-08	1.67E-08	1.08E-10	3.44E-08
697	571923.1	4148942	1.95E-07	1.56E-07	1.10E-10	3.51E-07	2.38E-07	2.10E-07	1.10E-10	4.48E-07	4.24E-08	3.82E-08	1.10E-10	8.08E-08	1.80E-08	1.71E-08	1.10E-10	3.52E-08
698	571929.4	4148935	2.00E-07	1.59E-07	1.13E-10	3.60E-07	2.44E-07	2.16E-07	1.13E-10	4.59E-07	4.34E-08	3.92E-08	1.13E-10	8.27E-08	1.85E-08	1.75E-08	1.13E-10	3.61E-08
699	571935.7	4148928	2.05E-07	1.63E-07	1.16E-10	3.69E-07	2.50E-07	2.21E-07	1.16E-10	4.71E-07	4.45E-08	4.02E-08	1.16E-10	8.48E-08	1.89E-08	1.79E-08	1.16E-10	3.70E-08
700	571941.9	4148922	2.11E-07	1.68E-07	1.19E-10	3.79E-07	2.57E-07	2.27E-07	1.19E-10	4.84E-07	4.58E-08	4.13E-08	1.19E-10	8.71E-08	1.95E-08	1.84E-08	1.19E-10	3.80E-08
701	571948.2	4148915	2.17E-07	1.73E-07	1.23E-10	3.90E-07	2.64E-07	2.34E-07	1.23E-10	4.98E-07	4.71E-08	4.25E-08	1.23E-10	8.97E-08	2.00E-08	1.89E-08	1.23E-10	3.91E-08
702	571954.5	4148908	2.24E-07	1.78E-07	1.26E-10	4.02E-07	2.72E-07	2.41E-07	1.26E-10	5.13E-07	4.85E-08	4.38E-08	1.26E-10	9.24E-08	2.06E-08	1.95E-08	1.26E-10	4.03E-08
703	571960.8	4148902	2.31E-07	1.84E-07	1.30E-10	4.15E-07	2.81E-07	2.49E-07	1.30E-10	5.30E-07	5.01E-08	4.52E-08	1.30E-10	9.55E-08	2.13E-08	2.02E-08	1.30E-10	4.16E-08
704	571967.1	4148895	2.39E-07	1.90E-07	1.35E-10	4.29E-07	2.91E-07	2.57E-07	1.35E-10	5.48E-07	5.18E-08	4.67E-08	1.35E-10	9.87E-08	2.20E-08	2.08E-08	1.35E-10	4.30E-08
705	571973.4	4148888	2.47E-07	1.97E-07	1.39E-10	4.44E-07	3.01E-07	2.66E-07	1.39E-10	5.67E-07	5.36E-08	4.83E-08	1.39E-10	1.02E-07	2.28E-08	2.16E-08	1.39E-10	4.45E-08
706	571979.7	4148882	2.56E-07	2.03E-07	1.44E-10	4.59E-07	3.11E-07	2.75E-07	1.44E-10	5.86E-07	5.55E-08	5.00E-08	1.44E-10	1.06E-07	2.36E-08	2.23E-08	1.44E-10	4.60E-08
707	571986	4148875	2.64E-07	2.10E-07	1.49E-10	4.75E-07	3.22E-07	2.85E-07	1.49E-10	6.06E-07	5.73E-08	5.17E-08	1.49E-10	1.09E-07	2.44E-08	2.31E-08	1.49E-10	4.76E-08
708	571992.3	4148868	2.73E-07	2.17E-07	1.54E-10	4.90E-07	3.32E-07	2.94E-07	1.54E-10	6.26E-07	5.92E-08	5.34E-08	1.54E-10	1.13E-07	2.52E-08	2.38E-08	1.54E-10	4.92E-08
709	571998.6	4148862	2.82E-07	2.24E-07	1.59E-10	5.06E-07	3.43E-07	3.03E-07	1.59E-10	6.46E-07	6.11E-08	5.51E-08	1.59E-10	1.16E-07	2.60E-08	2.46E-08	1.59E-10	5.07E-08
710	572004.9	4148855	2.90E-07	2.31E-07	1.64E-10	5.21E-07	3.53E-07	3.13E-07	1.64E-10	6.66E-07	6.30E-08	5.68E-08	1.64E-10	1.20E-07	2.68E-08	2.53E-08	1.64E-10	5.23E-08
711	572011.2	4148848	2.99E-07	2.38E-07	1.69E-10	5.36E-07	3.63E-07	3.22E-07	1.69E-10	6.85E-07	6.48E-08	5.84E-08	1.69E-10	1.23E-07	2.75E-08	2.61E-08	1.69E-10	5.38E-08
712	572017.5	4148842	3.07E-07	2.44E-07	1.73E-10	5.51E-07	3.74E-07	3.31E-07	1.73E-10	7.04E-07	6.66E-08	6.01E-08	1.73E-10	1.27E-07	2.83E-08	2.68E-08	1.73E-10	5.53E-08
713	572023.8	4148835	3.15E-07	2.51E-07	1.78E-10	5.67E-07	3.84E-07	3.40E-07	1.78E-10	7.24E-07	6.84E-08	6.17E-08	1.78E-10	1.30E-07	2.91E-08	2.75E-08	1.78E-10	5.68E-08
714	572030.1	4148828	3.24E-07	2.58E-07	1.83E-10	5.82E-07	3.95E-07	3.49E-07	1.83E-10	7.44E-07	7.03E-08	6.34E-08	1.83E-10	1.34E-07	2.99E-08	2.83E-08	1.83E-10	5.84E-08
715	572036.4	4148822	3.33E-07	2.65E-07	1.88E-10	5.99E-07	4.06E-07	3.59E-07	1.88E-10	7.65E-07	7.23E-08	6.52E-08	1.88E-10	1.38E-07	3.08E-08	2.91E-08	1.88E-10	6.00E-08
716	572042.7	4148815	3.43E-07	2.73E-07	1.94E-10	6.16E-07	4.18E-07	3.70E-07	1.94E-10	7.87E-07	7.45E-08	6.72E-08	1.94E-10	1.42E-07	3.17E-08	3.00E-08	1.94E-10	6.18E-08
717	572049	4148808	3.54E-07	2.81E-07	2.00E-10	6.35E-07	4.30E-07	3.81E-07	2.00E-10	8.11E-07	7.67E-08	6.92E-08	2.00E-10	1.46E-07	3.26E-08	3.09E-08	2.00E-10	6.37E-08
718	572055.3	4148802	3.65E-07	2.90E-07	2.06E-10	6.55E-07	4.44E-07	3.93E-07	2.06E-10	8.37E-07	7.91E-08	7.14E-08	2.06E-10	1.51E-07	3.36E-08	3.18E-08	2.06E-10	6.57E-08

719	572061.6	4148795	3.76E-07	2.99E-07	2.12E-10	6.76E-07	4.58E-07	4.05E-07	2.12E-10	8.63E-07	8.16E-08	7.36E-08	2.12E-10	1.55E-07	3.47E-08	3.28E-08	2.12E-10	6.78E-08
720	572067.9	4148788	3.88E-07	3.09E-07	2.19E-10	6.97E-07	4.72E-07	4.18E-07	2.19E-10	8.91E-07	8.42E-08	7.60E-08	2.19E-10	1.60E-07	3.58E-08	3.39E-08	2.19E-10	6.99E-08
721	572074.2	4148782	4.01E-07	3.19E-07	2.26E-10	7.19E-07	4.87E-07	4.31E-07	2.26E-10	9.19E-07	8.69E-08	7.84E-08	2.26E-10	1.66E-07	3.70E-08	3.50E-08	2.26E-10	7.22E-08
722	572080.5	4148775	4.13E-07	3.29E-07	2.33E-10	7.42E-07	5.03E-07	4.45E-07	2.33E-10	9.48E-07	8.97E-08	8.09E-08	2.33E-10	1.71E-07	3.81E-08	3.61E-08	2.33E-10	7.45E-08
723	572086.8	4148768	4.26E-07	3.39E-07	2.41E-10	7.66E-07	5.19E-07	4.59E-07	2.41E-10	9.79E-07	9.25E-08	8.35E-08	2.41E-10	1.76E-07	3.93E-08	3.72E-08	2.41E-10	7.68E-08
724	572093.1	4148762	4.40E-07	3.50E-07	2.48E-10	7.90E-07	5.35E-07	4.74E-07	2.48E-10	1.01E-06	9.54E-08	8.61E-08	2.48E-10	1.82E-07	4.06E-08	3.84E-08	2.48E-10	7.92E-08
725	572099.4	4148755	4.53E-07	3.61E-07	2.56E-10	8.14E-07	5.52E-07	4.88E-07	2.56E-10	1.04E-06	9.84E-08	8.87E-08	2.56E-10	1.87E-07	4.18E-08	3.96E-08	2.56E-10	8.16E-08
726	572105.7	4148748	4.67E-07	3.72E-07	2.64E-10	8.39E-07	5.68E-07	5.03E-07	2.64E-10	1.07E-06	1.01E-07	9.14E-08	2.64E-10	1.93E-07	4.31E-08	4.08E-08	2.64E-10	8.41E-08
727	572112	4148742	4.81E-07	3.82E-07	2.71E-10	8.63E-07	5.85E-07	5.18E-07	2.71E-10	1.10E-06	1.04E-07	9.41E-08	2.71E-10	1.99E-07	4.43E-08	4.20E-08	2.71E-10	8.66E-08
728	572118.3	4148735	4.94E-07	3.93E-07	2.79E-10	8.88E-07	6.01E-07	5.32E-07	2.79E-10	1.13E-06	1.07E-07	9.67E-08	2.79E-10	2.04E-07	4.56E-08	4.31E-08	2.79E-10	8.90E-08
729	571900.9	4148952	1.79E-07	1.43E-07	1.01E-10	3.22E-07	2.18E-07	1.93E-07	1.01E-10	4.12E-07	3.89E-08	3.51E-08	1.01E-10	7.41E-08	1.66E-08	1.57E-08	1.01E-10	3.23E-08
730	571907.2	4148945	1.83E-07	1.46E-07	1.04E-10	3.29E-07	2.23E-07	1.97E-07	1.04E-10	4.21E-07	3.98E-08	3.59E-08	1.04E-10	7.58E-08	1.69E-08	1.60E-08	1.04E-10	3.30E-08
731	571913.5	4148938	1.87E-07	1.49E-07	1.06E-10	3.37E-07	2.28E-07	2.02E-07	1.06E-10	4.30E-07	4.07E-08	3.67E-08	1.06E-10	7.75E-08	1.73E-08	1.64E-08	1.06E-10	3.38E-08
732	571919.8	4148932	1.92E-07	1.53E-07	1.08E-10	3.45E-07	2.33E-07	2.07E-07	1.08E-10	4.40E-07	4.16E-08	3.75E-08	1.08E-10	7.93E-08	1.77E-08	1.67E-08	1.08E-10	3.46E-08
733	571926	4148925	1.97E-07	1.56E-07	1.11E-10	3.53E-07	2.39E-07	2.12E-07	1.11E-10	4.51E-07	4.26E-08	3.85E-08	1.11E-10	8.12E-08	1.81E-08	1.72E-08	1.11E-10	3.54E-08
734	571932.3	4148918	2.02E-07	1.60E-07	1.14E-10	3.62E-07	2.45E-07	2.17E-07	1.14E-10	4.63E-07	4.38E-08	3.95E-08	1.14E-10	8.33E-08	1.86E-08	1.76E-08	1.14E-10	3.63E-08
735	571938.6	4148912	2.07E-07	1.65E-07	1.17E-10	3.72E-07	2.52E-07	2.23E-07	1.17E-10	4.75E-07	4.50E-08	4.06E-08	1.17E-10	8.56E-08	1.91E-08	1.81E-08	1.17E-10	3.73E-08
736	571944.8	4148905	2.13E-07	1.70E-07	1.20E-10	3.83E-07	2.60E-07	2.30E-07	1.20E-10	4.90E-07	4.63E-08	4.18E-08	1.20E-10	8.82E-08	1.97E-08	1.86E-08	1.20E-10	3.84E-08
737	571951.1	4148898	2.20E-07	1.75E-07	1.24E-10	3.95E-07	2.68E-07	2.37E-07	1.24E-10	5.05E-07	4.78E-08	4.31E-08	1.24E-10	9.09E-08	2.03E-08	1.92E-08	1.24E-10	3.96E-08
738	571957.4	4148892	2.27E-07	1.81E-07	1.28E-10	4.08E-07	2.77E-07	2.45E-07	1.28E-10	5.21E-07	4.93E-08	4.45E-08	1.28E-10	9.39E-08	2.10E-08	1.98E-08	1.28E-10	4.09E-08
739	571963.7	4148885	2.35E-07	1.87E-07	1.33E-10	4.22E-07	2.86E-07	2.53E-07	1.33E-10	5.39E-07	5.10E-08	4.60E-08	1.33E-10	9.71E-08	2.17E-08	2.05E-08	1.33E-10	4.23E-08
740	571969.9	4148879	2.43E-07	1.93E-07	1.37E-10	4.36E-07	2.96E-07	2.62E-07	1.37E-10	5.57E-07	5.27E-08	4.75E-08	1.37E-10	1.00E-07	2.24E-08	2.12E-08	1.37E-10	4.37E-08
741	571976.2	4148872	2.51E-07	2.00E-07	1.42E-10	4.51E-07	3.05E-07	2.70E-07	1.42E-10	5.76E-07	5.45E-08	4.91E-08	1.42E-10	1.04E-07	2.32E-08	2.19E-08	1.42E-10	4.52E-08
742	571982.5	4148865	2.59E-07	2.06E-07	1.46E-10	4.66E-07	3.16E-07	2.79E-07	1.46E-10	5.95E-07	5.63E-08	5.07E-08	1.46E-10	1.07E-07	2.39E-08	2.26E-08	1.46E-10	4.67E-08
743	571988.8	4148859	2.68E-07	2.13E-07	1.51E-10	4.81E-07	3.26E-07	2.88E-07	1.51E-10	6.14E-07	5.81E-08	5.24E-08	1.51E-10	1.11E-07	2.47E-08	2.34E-08	1.51E-10	4.82E-08
744	571995	4148852	2.76E-07	2.19E-07	1.56E-10	4.95E-07	3.35E-07	2.97E-07	1.56E-10	6.32E-07	5.98E-08	5.39E-08	1.56E-10	1.14E-07	2.54E-08	2.41E-08	1.56E-10	4.96E-08
745	572001.3	4148845	2.84E-07	2.26E-07	1.60E-10	5.09E-07	3.45E-07	3.05E-07	1.60E-10	6.51E-07	6.15E-08	5.55E-08	1.60E-10	1.17E-07	2.62E-08	2.48E-08	1.60E-10	5.11E-08
746	572007.6	4148839	2.91E-07	2.32E-07	1.64E-10	5.23E-07	3.55E-07	3.14E-07	1.64E-10	6.68E-07	6.32E-08	5.70E-08	1.64E-10	1.20E-07	2.69E-08	2.54E-08	1.64E-10	5.25E-08
747	572013.8	4148832	2.99E-07	2.38E-07	1.69E-10	5.37E-07	3.64E-07	3.22E-07	1.69E-10	6.86E-07	6.49E-08	5.86E-08	1.69E-10	1.24E-07	2.76E-08	2.61E-08	1.69E-10	5.39E-08
748	572020.1	4148825	3.07E-07	2.44E-07	1.73E-10	5.52E-07	3.74E-07	3.31E-07	1.73E-10	7.05E-07	6.66E-08	6.01E-08	1.73E-10	1.27E-07	2.83E-08	2.68E-08	1.73E-10	5.53E-08
749	572026.4	4148819	3.15E-07	2.51E-07	1.78E-10	5.67E-07	3.84E-07	3.40E-07	1.78E-10	7.24E-07	6.85E-08	6.17E-08	1.78E-10	1.30E-07	2.91E-08	2.75E-08	1.78E-10	5.68E-08
750	572032.7	4148812	3.24E-07	2.58E-07	1.83E-10	5.82E-07	3.95E-07	3.49E-07	1.83E-10	7.44E-07	7.04E-08	6.35E-08	1.83E-10	1.34E-07	2.99E-08	2.83E-08	1.83E-10	5.84E-08
751	572038.9	4148805	3.34E-07	2.65E-07	1.88E-10	5.99E-07	4.06E-07	3.59E-07	1.88E-10	7.66E-07	7.24E-08	6.53E-08	1.88E-10	1.38E-07	3.08E-08	2.91E-08	1.88E-10	6.01E-08
752	572045.2	4148799	3.43E-07	2.73E-07	1.94E-10	6.17E-07	4.18E-07	3.70E-07	1.94E-10	7.88E-07	7.45E-08	6.72E-08	1.94E-10	1.42E-07	3.17E-08	3.00E-08	1.94E-10	6.19E-08
753	572051.5	4148792	3.54E-07	2.82E-07	2.00E-10	6.36E-07	4.31E-07	3.81E-07	2.00E-10	8.12E-07	7.68E-08	6.93E-08	2.00E-10	1.46E-07	3.27E-08	3.09E-08	2.00E-10	6.38E-08
754	572057.8	4148786	3.65E-07	2.91E-07	2.06E-10	6.56E-07	4.44E-07	3.93E-07	2.06E-10	8.38E-07	7.92E-08	7.15E-08	2.06E-10	1.51E-07	3.37E-08	3.19E-08	2.06E-10	6.58E-08
755	572064	4148779	3.77E-07	3.00E-07	2.13E-10	6.77E-07	4.58E-07	4.06E-07	2.13E-10	8.64E-07	8.17E-08	7.37E-08	2.13E-10	1.56E-07	3.48E-08	3.29E-08	2.13E-10	6.79E-08
756	572070.3	4148772	3.89E-07	3.09E-07	2.19E-10	6.98E-07	4.73E-07	4.19E-07	2.19E-10	8.92E-07	8.43E-08	7.61E-08	2.19E-10	1.61E-07	3.59E-08	3.39E-08	2.19E-10	7.00E-08
757	572076.6	4148766	4.01E-07	3.19E-07	2.26E-10	7.20E-07	4.88E-07	4.32E-07	2.26E-10	9.20E-07	8.70E-08	7.85E-08	2.26E-10	1.66E-07	3.70E-08	3.50E-08	2.26E-10	7.22E-08
758	572082.8	4148759	4.13E-07	3.29E-07	2.33E-10	7.42E-07	5.03E-07	4.45E-07	2.33E-10	9.48E-07	8.97E-08	8.09E-08	2.33E-10	1.71E-07	3.81E-08	3.61E-08	2.33E-10	7.45E-08
759	572089.1	4148752	4.26E-07	3.39E-07	2.40E-10	7.65E-07	5.18E-07	4.59E-07	2.40E-10	9.77E-07	9.24E-08	8.33E-08	2.40E-10	1.76E-07	3.93E-08	3.72E-08	2.40E-10	7.67E-08
760	572095.4	4148746	4.38E-07	3.49E-07	2.48E-10	7.88E-07	5.34E-07	4.72E-07	2.48E-10	1.01E-06	9.51E-08	8.58E-08	2.48E-10	1.81E-07	4.05E-08	3.83E-08	2.48E-10	7.90E-08
761	572101.7	4148739	4.51E-07	3.59E-07	2.55E-10	8.11E-07	5.49E-07	4.86E-07	2.55E-10	1.04E-06	9.79E-08	8.83E-08	2.55E-10	1.87E-07	4.16E-08	3.94E-08	2.55E-10	8.13E-08
762	572107.9	4148732	4.64E-07	3.69E-07	2.62E-10	8.34E-07	5.65E-07	5.00E-07	2.62E-10	1.07E-06	1.01E-07	9.09E-08	2.62E-10	1.92E-07	4.28E-08	4.05E-08	2.62E-10	8.36E-08
763	572114.2	4148726	4.77E-07	3.80E-07	2.69E-10	8.57E-07	5.81E-07	5.14E-07	2.69E-10	1.09E-06	1.04E-07	9.34E-08	2.69E-10	1.97E-07	4.40E-08	4.17E-08	2.69E-10	8.59E-08

			UnMitigation			T2			T2L3			T4		
			0.031	0.027	0.000	0.038	0.036	0.000	0.0068	0.0066	0.000	0.0029	0.0030	0.0001
#	X	Y	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
1	572214.1	4148842	1.49E-03	0.001288	4.55E-06	1.82E-03	1.74E-03	4.55E-06	3.24E-04	3.17E-04	4.55E-06	1.38E-04	1.41E-04	4.55E-06
2	572197.9	4148849	1.35E-03	0.001165	4.12E-06	1.65E-03	1.58E-03	4.12E-06	2.93E-04	2.87E-04	4.12E-06	1.25E-04	1.28E-04	4.12E-06
3	572181.7	4148856	1.21E-03	0.001046	3.7E-06	1.48E-03	1.42E-03	3.70E-06	2.64E-04	2.57E-04	3.70E-06	1.12E-04	1.15E-04	3.70E-06
4	572210	4148832	1.42E-03	0.001221	4.32E-06	1.72E-03	1.65E-03	4.32E-06	3.07E-04	3.00E-04	4.32E-06	1.31E-04	1.34E-04	4.32E-06
5	572193.8	4148840	1.28E-03	0.001107	3.91E-06	1.56E-03	1.50E-03	3.91E-06	2.79E-04	2.72E-04	3.91E-06	1.19E-04	1.21E-04	3.91E-06
6	572177.6	4148847	1.16E-03	0.000997	3.52E-06	1.41E-03	1.35E-03	3.52E-06	2.51E-04	2.45E-04	3.52E-06	1.07E-04	1.09E-04	3.52E-06
7	572205.9	4148823	1.35E-03	0.00116	4.1E-06	1.64E-03	1.57E-03	4.10E-06	2.92E-04	2.85E-04	4.10E-06	1.24E-04	1.27E-04	4.10E-06
8	572189.7	4148831	1.22E-03	0.001054	3.72E-06	1.49E-03	1.43E-03	3.72E-06	2.65E-04	2.59E-04	3.72E-06	1.13E-04	1.16E-04	3.72E-06
9	572173.5	4148838	1.10E-03	0.00095	3.36E-06	1.34E-03	1.29E-03	3.36E-06	2.39E-04	2.34E-04	3.36E-06	1.02E-04	1.04E-04	3.36E-06
10	572201.8	4148814	1.28E-03	0.001104	3.9E-06	1.56E-03	1.49E-03	3.90E-06	2.78E-04	2.72E-04	3.90E-06	1.18E-04	1.21E-04	3.90E-06
11	572185.6	4148821	1.17E-03	0.001004	3.55E-06	1.42E-03	1.36E-03	3.55E-06	2.53E-04	2.47E-04	3.55E-06	1.08E-04	1.10E-04	3.55E-06
12	572169.4	4148829	1.05E-03	0.000907	3.21E-06	1.28E-03	1.23E-03	3.21E-06	2.28E-04	2.23E-04	3.21E-06	9.71E-05	9.95E-05	3.21E-06
13	572197.8	4148805	1.22E-03	0.001052	3.72E-06	1.49E-03	1.42E-03	3.72E-06	2.65E-04	2.59E-04	3.72E-06	1.13E-04	1.15E-04	3.72E-06
14	572181.6	4148812	1.11E-03	0.000958	3.39E-06	1.35E-03	1.30E-03	3.39E-06	2.41E-04	2.36E-04	3.39E-06	1.03E-04	1.05E-04	3.39E-06
15	572165.4	4148820	1.01E-03	0.000867	3.07E-06	1.23E-03	1.17E-03	3.07E-06	2.18E-04	2.13E-04	3.07E-06	9.29E-05	9.52E-05	3.07E-06
16	572193.7	4148796	1.16E-03	0.001002	3.54E-06	1.41E-03	1.36E-03	3.54E-06	2.52E-04	2.46E-04	3.54E-06	1.07E-04	1.10E-04	3.54E-06
17	572177.5	4148803	1.06E-03	0.000915	3.23E-06	1.29E-03	1.24E-03	3.23E-06	2.30E-04	2.25E-04	3.23E-06	9.79E-05	1.00E-04	3.23E-06
18	572161.3	4148810	9.63E-04	0.00083	2.93E-06	1.17E-03	1.12E-03	2.93E-06	2.09E-04	2.04E-04	2.93E-06	8.89E-05	9.11E-05	2.93E-06
19	572206.4	4148783	1.22E-03	0.001051	3.72E-06	1.48E-03	1.42E-03	3.72E-06	2.65E-04	2.59E-04	3.72E-06	1.13E-04	1.15E-04	3.72E-06
20	572189.6	4148787	1.11E-03	0.000955	3.38E-06	1.35E-03	1.29E-03	3.38E-06	2.41E-04	2.35E-04	3.38E-06	1.02E-04	1.05E-04	3.38E-06
21	572173.4	4148794	1.01E-03	0.000873	3.09E-06	1.23E-03	1.18E-03	3.09E-06	2.20E-04	2.15E-04	3.09E-06	9.35E-05	9.58E-05	3.09E-06
22	572157.2	4148801	9.22E-04	0.000795	2.81E-06	1.12E-03	1.08E-03	2.81E-06	2.00E-04	1.95E-04	2.81E-06	8.51E-05	8.72E-05	2.81E-06
23	572202.3	4148774	1.16E-03	0.001002	3.54E-06	1.42E-03	1.36E-03	3.54E-06	2.52E-04	2.46E-04	3.54E-06	1.07E-04	1.10E-04	3.54E-06
24	572185.5	4148778	1.06E-03	0.000912	3.22E-06	1.29E-03	1.23E-03	3.22E-06	2.30E-04	2.24E-04	3.22E-06	9.76E-05	1.00E-04	3.22E-06
25	572169.3	4148785	9.69E-04	0.000835	2.95E-06	1.18E-03	1.13E-03	2.95E-06	2.10E-04	2.05E-04	2.95E-06	8.94E-05	9.16E-05	2.95E-06
26	572153.1	4148792	8.83E-04	0.000761	2.69E-06	1.07E-03	1.03E-03	2.69E-06	1.92E-04	1.87E-04	2.69E-06	8.15E-05	8.35E-05	2.69E-06
27	572198.2	4148765	1.11E-03	0.000956	3.38E-06	1.35E-03	1.29E-03	3.38E-06	2.41E-04	2.35E-04	3.38E-06	1.02E-04	1.05E-04	3.38E-06
28	572181.4	4148769	1.01E-03	0.000872	3.08E-06	1.23E-03	1.18E-03	3.08E-06	2.20E-04	2.14E-04	3.08E-06	9.33E-05	9.56E-05	3.08E-06
29	572165.2	4148776	9.27E-04	0.000799	2.82E-06	1.13E-03	1.08E-03	2.82E-06	2.01E-04	1.97E-04	2.82E-06	8.56E-05	8.77E-05	2.82E-06
30	572149	4148783	8.47E-04	0.00073	2.58E-06	1.03E-03	9.88E-04	2.58E-06	1.84E-04	1.79E-04	2.58E-06	7.81E-05	8.01E-05	2.58E-06
31	572194.3	4148756	1.06E-03	0.000915	3.23E-06	1.29E-03	1.24E-03	3.23E-06	2.30E-04	2.25E-04	3.23E-06	9.79E-05	1.00E-04	3.23E-06
32	572177.4	4148759	9.68E-04	0.000834	2.95E-06	1.18E-03	1.13E-03	2.95E-06	2.10E-04	2.05E-04	2.95E-06	8.93E-05	9.15E-05	2.95E-06
33	572161.2	4148767	8.89E-04	0.000766	2.71E-06	1.08E-03	1.04E-03	2.71E-06	1.93E-04	1.88E-04	2.71E-06	8.20E-05	8.40E-05	2.71E-06
34	572145	4148774	8.13E-04	0.0007	2.48E-06	9.89E-04	9.48E-04	2.48E-06	1.76E-04	1.72E-04	2.48E-06	7.50E-05	7.68E-05	2.48E-06
35	572190.2	4148746	1.02E-03	0.000875	3.09E-06	1.24E-03	1.18E-03	3.09E-06	2.20E-04	2.15E-04	3.09E-06	9.37E-05	9.60E-05	3.09E-06
36	572173.3	4148750	9.28E-04	0.000799	2.83E-06	1.13E-03	1.08E-03	2.83E-06	2.01E-04	1.97E-04	2.83E-06	8.56E-05	8.77E-05	2.83E-06
37	572157.1	4148758	8.53E-04	0.000735	2.6E-06	1.04E-03	9.95E-04	2.60E-06	1.85E-04	1.81E-04	2.60E-06	7.87E-05	8.06E-05	2.60E-06
38	572140.9	4148765	7.81E-04	0.000673	2.38E-06	9.51E-04	9.11E-04	2.38E-06	1.69E-04	1.66E-04	2.38E-06	7.21E-05	7.38E-05	2.38E-06
39	572186.1	4148737	9.72E-04	0.000838	2.96E-06	1.18E-03	1.13E-03	2.96E-06	2.11E-04	2.06E-04	2.96E-06	8.97E-05	9.19E-05	2.96E-06
40	572169.2	4148741	8.89E-04	0.000766	2.71E-06	1.08E-03	1.04E-03	2.71E-06	1.93E-04	1.89E-04	2.71E-06	8.21E-05	8.41E-05	2.71E-06
41	572153	4148748	8.19E-04	0.000706	2.49E-06	9.97E-04	9.55E-04	2.49E-06	1.78E-04	1.74E-04	2.49E-06	7.56E-05	7.74E-05	2.49E-06
42	572136.8	4148756	7.51E-04	0.000647	2.29E-06	9.14E-04	8.76E-04	2.29E-06	1.63E-04	1.59E-04	2.29E-06	6.93E-05	7.10E-05	2.29E-06
43	572182	4148728	9.32E-04	0.000803	2.84E-06	1.13E-03	1.09E-03	2.84E-06	2.02E-04	1.97E-04	2.84E-06	8.60E-05	8.81E-05	2.84E-06
44	572165.1	4148732	8.54E-04	0.000736	2.6E-06	1.04E-03	9.96E-04	2.60E-06	1.85E-04	1.81E-04	2.60E-06	7.88E-05	8.07E-05	2.60E-06
45	572148.9	4148739	7.87E-04	0.000678	2.4E-06	9.58E-04	9.18E-04	2.40E-06	1.71E-04	1.67E-04	2.40E-06	7.26E-05	7.44E-05	2.40E-06
46	572132.7	4148746	7.23E-04	0.000623	2.2E-06	8.80E-04	8.44E-04	2.20E-06	1.57E-04	1.53E-04	2.20E-06	6.67E-05	6.84E-05	2.20E-06
47	572177.9	4148719	8.94E-04	0.00077	2.72E-06	1.09E-03	1.04E-03	2.72E-06	1.94E-04	1.89E-04	2.72E-06	8.25E-05	8.45E-05	2.72E-06
48	572161	4148723	8.20E-04	0.000707	2.5E-06	9.98E-04	9.57E-04	2.50E-06	1.78E-04	1.74E-04	2.50E-06	7.57E-05	7.75E-05	2.50E-06
49	572144.8	4148730	7.57E-04	0.000652	2.31E-06	9.22E-04	8.83E-04	2.31E-06	1.64E-04	1.60E-04	2.31E-06	6.99E-05	7.16E-05	2.31E-06
50	572128.6	4148737	6.97E-04	0.0006	2.12E-06	8.48E-04	8.13E-04	2.12E-06	1.51E-04	1.48E-04	2.12E-06	6.43E-05	6.59E-05	2.12E-06
51	572173.8	4148710	8.58E-04	0.000739	2.61E-06	1.04E-03	1.00E-03	2.61E-06	1.86E-04	1.82E-04	2.61E-06	7.92E-05	8.11E-05	2.61E-06
52	572157	4148714	7.89E-04	0.000679	2.4E-06	9.60E-04	9.20E-04	2.40E-06	1.71E-04	1.67E-04	2.40E-06	7.28E-05	7.46E-05	2.40E-06
53	572140.8	4148721	7.29E-04	0.000628	2.22E-06	8.87E-04	8.50E-04	2.22E-06	1.58E-04	1.54E-04	2.22E-06	6.73E-05	6.89E-05	2.22E-06
54	572124.6	4148728	6.72E-04	0.000579	2.05E-06	8.18E-04	7.84E-04	2.05E-06	1.46E-04	1.42E-04	2.05E-06	6.20E-05	6.35E-05	2.05E-06
55	572169.7	4148701	8.25E-04	0.00071	2.51E-06	1.00E-03	9.62E-04	2.51E-06	1.79E-04	1.75E-04	2.51E-06	7.61E-05	7.80E-05	2.51E-06
56	572152.9	4148705	7.59E-04	0.000654	2.31E-06	9.24E-04	8.85E-04	2.31E-06	1.65E-04	1.61E-04	2.31E-06	7.00E-05	7.17E-05	2.31E-06
57	572136.7	4148712	7.02E-04	0.000605	2.14E-06	8.55E-04	8.19E-04	2.14E-06	1.52E-04	1.49E-04	2.14E-06	6.48E-05	6.64E-05	2.14E-06
58	572120.5	4148719	6.48E-04	0.000559	1.97E-06	7.89E-04	7.56E-04	1.97E-06	1.41E-04	1.37E-04	1.97E-06	5.98E-05	6.13E-05	1.97E-06
59	572310.1	4149192	2.32E-02	0.020014	7.07E-05	2.83E-02	2.71E-02	7.07E-05	5.04E-03	4.92E-03	7.07E-05	2.14E-03	2.20E-03	7.07E-05
60	572313.9	4149201	2.79E-02	0.024071	8.51E-05	3.40E-02	3.26E-02	8.51E-05	6.06E-03	5.92E-03	8.51E-05	2.58E-03	2.64E-03	8.51E-05
61	572296.9	4149180	1.53E-02	0.013177	4.66E-05	1.86E-02	1.78E-02	4.66E-05	3.32E-03	3.24E-03	4.66E-05	1.41E-03	1.45E-03	4.66E-05
62	572301	4149196	1.66E-02	0.014333	5.07E-05	2.02E-02	1.94E-02	5.07E-05	3.61E-03	3.53E-03	5.07E-05	1.53E-03	1.57E-03	5.07E-05
63	572304.8	4149205	1.99E-02	0.017179	6.07E-05	2.43E-02	2.33E-02	6.07E-05	4.33E-03	4.23E-03	6.07E-05	1.84E-03	1.88E-03	6.07E-05
64	572308.7	4149213	2.53E-02	0.021833	7.72E-05	3.08E-02	2.96E-02	7.72E-05	5.50E-03	5.37E-03	7.72E-05	2.34E-03	2.40E-03	7.72E-05
65	572312.5	4149222	3.12E-02	0.026923	9.52E-05	3.80E-02	3.64E-02	9.52E-05	6.78E-03	6.62E-03	9.52E-05	2.88E-03	2.95E-03	9.52E-05
66	572287.8	4149184	1.14E-02	0.009781	3.46E-05	1.38E-02	1.32E-02	3.46E-05	2.46E-03	2.41E-03	3.46E-05	1.05E-03	1.07E-03	3.46E-05
67	572287.3	4149169	1.14E-02	0.009863	3.49E-05	1.39E-02	1.33E-02	3.49E-05	2.48E-03	2.43E-03	3.49E-05	1.06E-03	1.08E-03	3.49E-05
68	572292.4	4149156	1.35E-02	0.011646	4.12E-05	1.64E-02	1.58E-02	4.12E-05	2.93E-03	2.86E-03	4.12E-05	1.25E-03	1.28E-03	4.12E-05
69	572291.9	4149201	1.25E-02	0.010754	3.8E-05	1.52E-02	1.46E-02	3.80E-05	2.71E-03	2.64E-03	3.80E-05	1.15E-03	1.18E-03	3.80E-05
70	572295.7	4149209	1.47E-02	0.012669	4.48E-05	1.79E-02	1.71E-02	4.48E-05	3.19E-03	3.12E-03	4.48E-05	1.36E-03	1.39E-03	4.48E-05
71	572299.5	4149218	1.83E-02	0.015809	5.59E-05	2.23E-02	2.14E-02	5.59E-05	3.98E-03	3.89E-03	5.59E-05	1.69E-03	1.73E-03	5.59E-05
72	572303.4	4149226	2.29E-02	0.019749	6.98E-05	2.79E-02	2.67E-02	6.98E-05	4.97E-03	4.86E-03	6.98E-05	2.11E-03	2.17E-03	6.98E-05
73	572278.7	4149189	8.80E-03	0.00758	2.68E-05	1.07E-02	1.03E-02	2.68E-05	1.91E-03	1.86E-03	2.68E-05	8.12E-04	8.32E-04	2.68E-05
74	572278.2	4149173	8.85E-03	0.007625	2.7E-05	1.08E-02	1.03E-02	2.70E-05	1.92E-03	1.88E-03	2.70E-05	8.16E-04	8.37E-04	2.70E-05
75	572283	4149152	1.01E-02	0.0087	3.08E-05	1.23E-02	1.18E-02	3.08E-05	2.19E-03	2.14E-03	3.08E-05	9.31E-04	9.55E-04	3.08E-05
76	572282.8	4149205	9.67E-03	0.008332	2.95E-05	1.18E-02	1.13E-02	2.95E-05	2.10E-03	2.05E-03	2.95E-05	8.92E-04	9.14E-04	2.95E-05
77	572286.6	4149213	1.12E-02	0.009674	3.42E-05	1.37E-02	1.31E-02	3.42E-05	2.44E-03	2.38E-03	3.42E-05	1.04E-03	1.06E-03	3.42E-05
78	572290.4	4149222	1.38E-02	0.011867	4.19E-05	1.68E-02	1.61E-02	4.19E-05	2.99E-03	2.92E-03	4.19E-05	1.27E-03	1.30E-03	4.19E-05
79	572294.3	4149230	1.72E-02	0.014825	5.24E-05	2.09E-02	2.01E-02	5.24E-05	3.73E-03	3.65E-03	5.24E-05	1.59E-03	1.63E-03	5.24E-05
80	572269.5	4149191	7.04E-03	0.006063	2.14E-05	8.56E-03	8.21E-03	2.14E-05	1.53E-03	1.49E-03	2.14E-05	6.49E-04	6.65E-04	2.14E-05
81	572269.2	4149182	7.08E-03	0.006097	2.16E-05	8.61E-03	8.25E-03	2.16E-05	1.54E-03	1.50E-03	2.16E-05	6.53E-04	6.69E-04	2.16E-05
82	572269	4149173	7.05E-03	0.006079	2.15E-05	8.59E-03	8.23E-03	2.15E-05	1.53E-03	1.50E-03	2.15E-05	6.51E-04	6.67E-04	2.15E-05
83	572268.7	4149163	6.97E-03	0.006009	2.12E-05	8.49E-03	8.13E-03	2.12E-05	1.51E-03	1.48E-03	2.12E-05	6.43E-04	6.59E-04	2.12E-05
84	572274.7	4149148	8.04E-03	0.006927	2.45E-05	9.78E-03	9.38E-03	2.45E-05	1.74E-03	1.70E-03	2.45E-05	7.42E-04	7.60E-04	2.45E-05

85	572281	4149141	9.53E-03	0.008209	2.9E-05	1.16E-02	1.11E-02	2.90E-05	2.07E-03	2.02E-03	2.90E-05	8.79E-04	9.01E-04	2.90E-05
86	572287.4	4149134	1.14E-02	0.00978	3.46E-05	1.38E-02	1.32E-02	3.46E-05	2.46E-03	2.41E-03	3.46E-05	1.05E-03	1.07E-03	3.46E-05
87	572269.8	4149200	7.00E-03	0.00603	2.13E-05	8.52E-03	8.16E-03	2.13E-05	1.52E-03	1.48E-03	2.13E-05	6.46E-04	6.62E-04	2.13E-05
88	572273.7	4149209	7.70E-03	0.006635	2.35E-05	9.37E-03	8.98E-03	2.35E-05	1.67E-03	1.63E-03	2.35E-05	7.10E-04	7.28E-04	2.35E-05
89	572277.5	4149217	8.84E-03	0.00762	2.69E-05	1.08E-02	1.03E-02	2.69E-05	1.92E-03	1.87E-03	2.69E-05	8.16E-04	8.36E-04	2.69E-05
90	572281.3	4149226	1.07E-02	0.009217	3.26E-05	1.30E-02	1.25E-02	3.26E-05	2.32E-03	2.27E-03	3.26E-05	9.87E-04	1.01E-03	3.26E-05
91	572285.2	4149234	1.33E-02	0.011434	4.04E-05	1.61E-02	1.55E-02	4.04E-05	2.88E-03	2.81E-03	4.04E-05	1.22E-03	1.25E-03	4.04E-05
92	572260.4	4149195	5.75E-03	0.004954	1.75E-05	7.00E-03	6.71E-03	1.75E-05	1.25E-03	1.22E-03	1.75E-05	5.30E-04	5.44E-04	1.75E-05
93	572260.2	4149187	5.79E-03	0.004988	1.76E-05	7.05E-03	6.75E-03	1.76E-05	1.26E-03	1.23E-03	1.76E-05	5.34E-04	5.47E-04	1.76E-05
94	572259.9	4149178	5.79E-03	0.004988	1.76E-05	7.04E-03	6.75E-03	1.76E-05	1.26E-03	1.23E-03	1.76E-05	5.34E-04	5.47E-04	1.76E-05
95	572259.3	4149160	5.65E-03	0.00487	1.72E-05	6.88E-03	6.59E-03	1.72E-05	1.23E-03	1.20E-03	1.72E-05	5.21E-04	5.34E-04	1.72E-05
96	572265.2	4149144	6.36E-03	0.005483	1.94E-05	7.74E-03	7.42E-03	1.94E-05	1.38E-03	1.35E-03	1.94E-05	5.87E-04	6.02E-04	1.94E-05
97	572277.5	4149131	8.60E-03	0.007407	2.62E-05	1.05E-02	1.00E-02	2.62E-05	1.87E-03	1.82E-03	2.62E-05	7.93E-04	8.13E-04	2.62E-05
98	572260.7	4149204	5.74E-03	0.004945	1.75E-05	6.98E-03	6.69E-03	1.75E-05	1.25E-03	1.22E-03	1.75E-05	5.29E-04	5.43E-04	1.75E-05
99	572264.5	4149213	6.28E-03	0.005408	1.91E-05	7.64E-03	7.32E-03	1.91E-05	1.36E-03	1.33E-03	1.91E-05	5.79E-04	5.93E-04	1.91E-05
100	572268.4	4149221	7.15E-03	0.006162	2.18E-05	8.70E-03	8.34E-03	2.18E-05	1.55E-03	1.52E-03	2.18E-05	6.60E-04	6.76E-04	2.18E-05
101	572272.2	4149230	8.55E-03	0.007367	2.6E-05	1.04E-02	9.97E-03	2.60E-05	1.86E-03	1.81E-03	2.60E-05	7.89E-04	8.08E-04	2.60E-05
102	572276.1	4149238	1.05E-02	0.009053	0.000032	1.28E-02	1.23E-02	3.20E-05	2.28E-03	2.23E-03	3.20E-05	9.69E-04	9.93E-04	3.20E-05
103	572250.8	4149182	4.84E-03	0.004168	1.47E-05	5.89E-03	5.64E-03	1.47E-05	1.05E-03	1.03E-03	1.47E-05	4.46E-04	4.57E-04	1.47E-05
104	572250.2	4149165	4.75E-03	0.004094	1.45E-05	5.78E-03	5.54E-03	1.45E-05	1.03E-03	1.01E-03	1.45E-05	4.38E-04	4.49E-04	1.45E-05
105	572255.7	4149141	5.17E-03	0.004454	1.57E-05	6.29E-03	6.03E-03	1.57E-05	1.12E-03	1.10E-03	1.57E-05	4.77E-04	4.89E-04	1.57E-05
106	572267.8	4149128	6.73E-03	0.005803	2.05E-05	8.20E-03	7.85E-03	2.05E-05	1.46E-03	1.43E-03	2.05E-05	6.21E-04	6.37E-04	2.05E-05
107	572240.6	4149152	3.93E-03	0.003384	1.2E-05	4.78E-03	4.58E-03	1.20E-05	8.52E-04	8.32E-04	1.20E-05	3.62E-04	3.71E-04	1.20E-05
108	572246.3	4149137	4.28E-03	0.003691	1.3E-05	5.21E-03	5.00E-03	1.30E-05	9.30E-04	9.08E-04	1.30E-05	3.95E-04	4.05E-04	1.30E-05
109	572258.1	4149125	5.42E-03	0.00467	1.65E-05	6.60E-03	6.32E-03	1.65E-05	1.18E-03	1.15E-03	1.65E-05	5.00E-04	5.12E-04	1.65E-05
110	572270	4149112	6.98E-03	0.006012	2.12E-05	8.49E-03	8.14E-03	2.12E-05	1.51E-03	1.48E-03	2.12E-05	6.44E-04	6.60E-04	2.12E-05
111	572236.8	4149134	3.61E-03	0.00311	1.1E-05	4.39E-03	4.21E-03	1.10E-05	7.83E-04	7.65E-04	1.10E-05	3.33E-04	3.41E-04	1.10E-05
112	572248.6	4149121	4.46E-03	0.003841	1.36E-05	5.42E-03	5.20E-03	1.36E-05	9.67E-04	9.45E-04	1.36E-05	4.11E-04	4.21E-04	1.36E-05
113	572260.3	4149109	5.62E-03	0.004839	1.71E-05	6.83E-03	6.55E-03	1.71E-05	1.22E-03	1.19E-03	1.71E-05	5.18E-04	5.31E-04	1.71E-05
114	572227.4	4149130	3.08E-03	0.002658	9.39E-06	3.75E-03	3.60E-03	9.39E-06	6.69E-04	6.54E-04	9.39E-06	2.85E-04	2.92E-04	9.39E-06
115	572239	4149118	3.73E-03	0.003216	1.14E-05	4.54E-03	4.35E-03	1.14E-05	8.10E-04	7.91E-04	1.14E-05	3.44E-04	3.53E-04	1.14E-05
116	572213.7	4149179	2.68E-03	0.002312	8.17E-06	3.27E-03	3.13E-03	8.17E-06	5.82E-04	5.69E-04	8.17E-06	2.48E-04	2.54E-04	8.17E-06
117	572213.4	4149170	2.66E-03	0.002296	8.11E-06	3.24E-03	3.11E-03	8.11E-06	5.78E-04	5.65E-04	8.11E-06	2.46E-04	2.52E-04	8.11E-06
118	572213.2	4149161	2.62E-03	0.00226	7.99E-06	3.19E-03	3.06E-03	7.99E-06	5.69E-04	5.56E-04	7.99E-06	2.42E-04	2.48E-04	7.99E-06
119	572212.9	4149151	2.57E-03	0.002214	7.82E-06	3.13E-03	3.00E-03	7.82E-06	5.57E-04	5.44E-04	7.82E-06	2.37E-04	2.43E-04	7.82E-06
120	572243.9	4149100	4.05E-03	0.003491	1.23E-05	4.93E-03	4.72E-03	1.23E-05	8.79E-04	8.59E-04	1.23E-05	3.74E-04	3.83E-04	1.23E-05
121	572250.2	4149093	4.52E-03	0.003894	1.38E-05	5.50E-03	5.27E-03	1.38E-05	9.81E-04	9.58E-04	1.38E-05	4.17E-04	4.27E-04	1.38E-05
122	572256.6	4149086	5.03E-03	0.004331	1.53E-05	6.12E-03	5.86E-03	1.53E-05	1.09E-03	1.07E-03	1.53E-05	4.64E-04	4.75E-04	1.53E-05
123	572262.9	4149079	5.56E-03	0.004795	1.69E-05	6.77E-03	6.49E-03	1.69E-05	1.21E-03	1.18E-03	1.69E-05	5.13E-04	5.26E-04	1.69E-05
124	572269.2	4149073	6.12E-03	0.005277	1.87E-05	7.45E-03	7.14E-03	1.87E-05	1.33E-03	1.30E-03	1.87E-05	5.65E-04	5.79E-04	1.87E-05
125	572204.6	4149184	2.37E-03	0.002045	7.23E-06	2.89E-03	2.77E-03	7.23E-06	5.15E-04	5.03E-04	7.23E-06	2.19E-04	2.24E-04	7.23E-06
126	572204.4	4149175	2.37E-03	0.002042	7.22E-06	2.88E-03	2.76E-03	7.22E-06	5.14E-04	5.02E-04	7.22E-06	2.19E-04	2.24E-04	7.22E-06
127	572204.1	4149166	2.35E-03	0.002022	7.15E-06	2.86E-03	2.74E-03	7.15E-06	5.09E-04	4.97E-04	7.15E-06	2.16E-04	2.22E-04	7.15E-06
128	572203.8	4149157	2.31E-03	0.001986	7.02E-06	2.81E-03	2.69E-03	7.02E-06	5.00E-04	4.89E-04	7.02E-06	2.13E-04	2.18E-04	7.02E-06
129	572203.5	4149148	2.26E-03	0.001944	6.87E-06	2.75E-03	2.63E-03	6.87E-06	4.90E-04	4.78E-04	6.87E-06	2.08E-04	2.13E-04	6.87E-06
130	572203.2	4149139	2.21E-03	0.001905	6.73E-06	2.69E-03	2.58E-03	6.73E-06	4.80E-04	4.68E-04	6.73E-06	2.04E-04	2.09E-04	6.73E-06
131	572221.6	4149110	2.79E-03	0.002407	8.51E-06	3.40E-03	3.26E-03	8.51E-06	6.06E-04	5.92E-04	8.51E-06	2.58E-04	2.64E-04	8.51E-06
132	572227.9	4149103	3.08E-03	0.002654	9.38E-06	3.75E-03	3.59E-03	9.38E-06	6.68E-04	6.53E-04	9.38E-06	2.84E-04	2.91E-04	9.38E-06
133	572240.3	4149090	3.77E-03	0.00325	1.15E-05	4.59E-03	4.40E-03	1.15E-05	8.19E-04	7.99E-04	1.15E-05	3.48E-04	3.57E-04	1.15E-05
134	572252.8	4149077	4.60E-03	0.00396	1.4E-05	5.59E-03	5.36E-03	1.40E-05	9.97E-04	9.74E-04	1.40E-05	4.24E-04	4.35E-04	1.40E-05
135	572259	4149070	5.04E-03	0.004346	1.54E-05	6.14E-03	5.88E-03	1.54E-05	1.09E-03	1.07E-03	1.54E-05	4.65E-04	4.77E-04	1.54E-05
136	572195.5	4149189	2.11E-03	0.001817	6.42E-06	2.57E-03	2.46E-03	6.42E-06	4.58E-04	4.47E-04	6.42E-06	1.95E-04	1.99E-04	6.42E-06
137	572195.3	4149180	2.12E-03	0.001823	6.45E-06	2.58E-03	2.47E-03	6.45E-06	4.59E-04	4.48E-04	6.45E-06	1.95E-04	2.00E-04	6.45E-06
138	572194.7	4149162	2.08E-03	0.001793	6.34E-06	2.53E-03	2.43E-03	6.34E-06	4.51E-04	4.41E-04	6.34E-06	1.92E-04	1.97E-04	6.34E-06
139	572194.4	4149153	2.04E-03	0.001759	6.22E-06	2.48E-03	2.38E-03	6.22E-06	4.43E-04	4.33E-04	6.22E-06	1.88E-04	1.93E-04	6.22E-06
140	572194.2	4149144	2.00E-03	0.001721	6.08E-06	2.43E-03	2.33E-03	6.08E-06	4.33E-04	4.23E-04	6.08E-06	1.84E-04	1.89E-04	6.08E-06
141	572193.9	4149135	1.96E-03	0.001687	5.96E-06	2.38E-03	2.28E-03	5.96E-06	4.25E-04	4.15E-04	5.96E-06	1.81E-04	1.85E-04	5.96E-06
142	572218.2	4149100	2.65E-03	0.002281	8.06E-06	3.22E-03	3.09E-03	8.06E-06	5.74E-04	5.61E-04	8.06E-06	2.44E-04	2.50E-04	8.06E-06
143	572230.5	4149087	3.20E-03	0.002754	9.73E-06	3.89E-03	3.73E-03	9.73E-06	6.93E-04	6.77E-04	9.73E-06	2.95E-04	3.02E-04	9.73E-06
144	572242.8	4149074	3.85E-03	0.003318	1.17E-05	4.69E-03	4.49E-03	1.17E-05	8.36E-04	8.16E-04	1.17E-05	3.55E-04	3.64E-04	1.17E-05
145	572255.1	4149061	4.59E-03	0.003954	1.4E-05	5.58E-03	5.35E-03	1.40E-05	9.96E-04	9.72E-04	1.40E-05	4.23E-04	4.34E-04	1.40E-05
146	572187.5	4149229	1.87E-03	0.001614	5.7E-06	2.28E-03	2.18E-03	5.70E-06	4.06E-04	3.97E-04	5.70E-06	1.73E-04	1.77E-04	5.70E-06
147	572186.4	4149193	1.88E-03	0.001621	5.73E-06	2.29E-03	2.19E-03	5.73E-06	4.08E-04	3.99E-04	5.73E-06	1.74E-04	1.78E-04	5.73E-06
148	572186.2	4149184	1.90E-03	0.001633	5.77E-06	2.31E-03	2.21E-03	5.77E-06	4.11E-04	4.02E-04	5.77E-06	1.75E-04	1.79E-04	5.77E-06
149	572185.6	4149167	1.88E-03	0.001624	5.74E-06	2.29E-03	2.20E-03	5.74E-06	4.09E-04	3.99E-04	5.74E-06	1.74E-04	1.78E-04	5.74E-06
150	572185.1	4149149	1.82E-03	0.001567	5.54E-06	2.21E-03	2.12E-03	5.54E-06	3.95E-04	3.86E-04	5.54E-06	1.68E-04	1.72E-04	5.54E-06
151	572184.8	4149140	1.78E-03	0.001534	5.42E-06	2.17E-03	2.08E-03	5.42E-06	3.86E-04	3.77E-04	5.42E-06	1.64E-04	1.68E-04	5.42E-06
152	572190.3	4149116	1.83E-03	0.001578	5.58E-06	2.23E-03	2.14E-03	5.58E-06	3.97E-04	3.88E-04	5.58E-06	1.69E-04	1.73E-04	5.58E-06
153	572214.6	4149090	2.51E-03	0.002161	7.64E-06	3.05E-03	2.93E-03	7.64E-06	5.44E-04	5.32E-04	7.64E-06	2.31E-04	2.37E-04	7.64E-06
154	572226.8	4149077	3.00E-03	0.002581	9.12E-06	3.65E-03	3.49E-03	9.12E-06	6.50E-04	6.35E-04	9.12E-06	2.76E-04	2.83E-04	9.12E-06
155	572239	4149064	3.56E-03	0.003068	1.08E-05	4.33E-03	4.15E-03	1.08E-05	7.73E-04	7.55E-04	1.08E-05	3.28E-04	3.37E-04	1.08E-05
156	572251.1	4149052	4.19E-03	0.003609	1.28E-05	5.10E-03	4.88E-03	1.28E-05	9.09E-04	8.88E-04	1.28E-05	3.86E-04	3.96E-04	1.28E-05
157	572187.8	4149237	1.91E-03	0.001648	5.82E-06	2.33E-03	2.23E-03	5.82E-06	4.15E-04	4.05E-04	5.82E-06	1.76E-04	1.81E-04	5.82E-06
158	572191.7	4149246	2.07E-03	0.001783	6.3E-06	2.52E-03	2.41E-03	6.30E-06	4.49E-04	4.38E-04	6.30E-06	1.91E-04	1.96E-04	6.30E-06
159	572195.5	4149254	2.28E-03	0.001967	6.95E-06	2.78E-03	2.66E-03	6.95E-06	4.95E-04	4.84E-04	6.95E-06	2.11E-04	2.16E-04	6.95E-06
160	572178.4	4149233	1.70E-03	0.001461	5.16E-06	2.06E-03	1.98E-03	5.16E-06	3.68E-04	3.59E-04	5.16E-06	1.56E-04	1.60E-04	5.16E-06
161	572177.3	4149198	1.69E-03	0.001454	5.14E-06	2.05E-03	1.97E-03	5.14E-06	3.66E-04	3.58E-04	5.14E-06	1.56E-04	1.60E-04	5.14E-06
162	572176.8	4149180	1.71E-03	0.001476	5.22E-06	2.08E-03	2.00E-03	5.22E-06	3.72E-04	3.63E-04	5.22E-06	1.58E-04	1.62E-04	5.22E-06
163	572176.3	4149163	1.69E-03	0.001459	5.16E-06	2.06E-03	1.98E-03	5.16E-06	3.68E-04	3.59E-04	5.16E-06	1.56E-04	1.60E-04	5.16E-06
164	572176	4149154	1.67E-03	0.001435	5.07E-06	2.03E-03	1.94E-03	5.07E-06	3.61E-04	3.53E-04	5.07E-06	1.54E-04	1.57E-04	5.07E-06
165	572175.4	4149136	1.60E-03	0.001376	4.86E-06	1.94E-03	1.86E-03	4.86E-06	3.46E-04	3.38E-04	4.86E-06	1.47E-04	1.51E-04	4.86E-06
166	572180.9	4149112	1.64E-03	0.00141	4.98E-06	1.99E-03	1.91E-03	4.98E-06	3.55E-04	3.47E-04	4.98E-06	1.51E-04	1.55E-04	4.98E-06
167	572205	4149087	2.19E-03	0.001885	6.66E-06	2.66E-03	2.55E-03	6.66E-06	4.75E-04	4.64E-04	6.66E-06	2.02E-04	2.07E-04	6.66E-06
168	572217.1	4149074	2.58E-03	0.002227	7.87E-06	3.15E-03	3.01E-03	7.87E-06	5.61E-04	5.48E-04	7.87E-06	2.38E-04	2.44E-04	7.87E-06
169	572229.1	4149061	3.05E-03	0.002625	9.28E-06	3.71E-03	3.55E-03	9.28E-06	6.61E-04	6.45E-04	9.28E-06	2.81E-04	2.88E-04	9.28E-06
170	572241.1	4149049	3.56E-03	0.003067	1.08E-05	4.33E-03	4.15E-03	1.08E-05	7.72E-04	7.54E-04	1.08E-05	3.28E-04	3.36E-04	1.08E-05
171	572182.5	4149250	1.87E-03	0.001615	5.71E-06	2.28E-03	2.19E-03	5.71E-06	4.07E-04	3.97E-04	5.71E-06	1.73E-04	1.77E-04	5.71E-06

172	572186.4	4149258	2.06E-03	0.001776	6.28E-06	2.51E-03	2.40E-03	6.28E-06	4.47E-04	4.37E-04	6.28E-06	1.90E-04	1.95E-04	6.28E-06
173	572169.3	4149237	1.54E-03	0.001331	4.7E-06	1.88E-03	1.80E-03	4.70E-06	3.35E-04	3.27E-04	4.70E-06	1.43E-04	1.46E-04	4.70E-06
174	572168.2	4149202	1.52E-03	0.001312	4.64E-06	1.85E-03	1.78E-03	4.64E-06	3.30E-04	3.23E-04	4.64E-06	1.40E-04	1.44E-04	4.64E-06
175	572167.7	4149185	1.55E-03	0.001335	4.72E-06	1.89E-03	1.81E-03	4.72E-06	3.36E-04	3.28E-04	4.72E-06	1.43E-04	1.46E-04	4.72E-06
176	572167.2	4149167	1.55E-03	0.001334	4.72E-06	1.88E-03	1.81E-03	4.72E-06	3.36E-04	3.28E-04	4.72E-06	1.43E-04	1.46E-04	4.72E-06
177	572166.6	4149150	1.50E-03	0.001295	4.58E-06	1.83E-03	1.75E-03	4.58E-06	3.26E-04	3.18E-04	4.58E-06	1.39E-04	1.42E-04	4.58E-06
178	572166.1	4149133	1.44E-03	0.001241	4.39E-06	1.75E-03	1.68E-03	4.39E-06	3.12E-04	3.05E-04	4.39E-06	1.33E-04	1.36E-04	4.39E-06
179	572171.5	4149109	1.47E-03	0.001268	4.48E-06	1.79E-03	1.72E-03	4.48E-06	3.19E-04	3.12E-04	4.48E-06	1.36E-04	1.39E-04	4.48E-06
180	572183.5	4149096	1.67E-03	0.001437	5.08E-06	2.03E-03	1.94E-03	5.08E-06	3.62E-04	3.53E-04	5.08E-06	1.54E-04	1.58E-04	5.08E-06
181	572195.4	4149084	1.93E-03	0.001659	5.86E-06	2.34E-03	2.25E-03	5.86E-06	4.18E-04	4.08E-04	5.86E-06	1.78E-04	1.82E-04	5.86E-06
182	572207.4	4149071	2.25E-03	0.00194	6.86E-06	2.74E-03	2.63E-03	6.86E-06	4.89E-04	4.77E-04	6.86E-06	2.08E-04	2.13E-04	6.86E-06
183	572219.3	4149058	2.63E-03	0.002268	8.02E-06	3.20E-03	3.07E-03	8.02E-06	5.71E-04	5.58E-04	8.02E-06	2.43E-04	2.49E-04	8.02E-06
184	572231.2	4149046	3.06E-03	0.002633	9.31E-06	3.72E-03	3.56E-03	9.31E-06	6.63E-04	6.48E-04	9.31E-06	2.82E-04	2.89E-04	9.31E-06
185	572173.4	4149254	1.71E-03	0.00147	5.2E-06	2.08E-03	1.99E-03	5.20E-06	3.70E-04	3.62E-04	5.20E-06	1.57E-04	1.61E-04	5.20E-06
186	572177.3	4149263	1.87E-03	0.001612	5.7E-06	2.28E-03	2.18E-03	5.70E-06	4.06E-04	3.96E-04	5.70E-06	1.73E-04	1.77E-04	5.70E-06
187	572160.2	4149241	1.41E-03	0.001217	4.3E-06	1.72E-03	1.65E-03	4.30E-06	3.07E-04	2.99E-04	4.30E-06	1.30E-04	1.34E-04	4.30E-06
188	572159.3	4149213	1.38E-03	0.001186	4.19E-06	1.67E-03	1.61E-03	4.19E-06	2.99E-04	2.92E-04	4.19E-06	1.27E-04	1.30E-04	4.19E-06
189	572159.1	4149204	1.38E-03	0.001193	4.22E-06	1.68E-03	1.61E-03	4.22E-06	3.00E-04	2.93E-04	4.22E-06	1.28E-04	1.31E-04	4.22E-06
190	572158.8	4149195	1.40E-03	0.001203	4.25E-06	1.70E-03	1.63E-03	4.25E-06	3.03E-04	2.96E-04	4.25E-06	1.29E-04	1.32E-04	4.25E-06
191	572158.5	4149185	1.41E-03	0.001215	4.29E-06	1.72E-03	1.64E-03	4.29E-06	3.06E-04	2.99E-04	4.29E-06	1.30E-04	1.33E-04	4.29E-06
192	572158.2	4149176	1.42E-03	0.001221	4.31E-06	1.72E-03	1.65E-03	4.31E-06	3.07E-04	3.00E-04	4.31E-06	1.31E-04	1.34E-04	4.31E-06
193	572157.9	4149167	1.41E-03	0.001217	4.3E-06	1.72E-03	1.65E-03	4.30E-06	3.06E-04	2.99E-04	4.30E-06	1.30E-04	1.34E-04	4.30E-06
194	572157.6	4149158	1.40E-03	0.001202	4.25E-06	1.70E-03	1.63E-03	4.25E-06	3.03E-04	2.96E-04	4.25E-06	1.29E-04	1.32E-04	4.25E-06
195	572157.3	4149149	1.37E-03	0.00118	4.17E-06	1.67E-03	1.60E-03	4.17E-06	2.97E-04	2.90E-04	4.17E-06	1.26E-04	1.29E-04	4.17E-06
196	572157.1	4149139	1.34E-03	0.001153	4.08E-06	1.63E-03	1.56E-03	4.08E-06	2.90E-04	2.84E-04	4.08E-06	1.23E-04	1.27E-04	4.08E-06
197	572156.8	4149130	1.31E-03	0.001128	3.99E-06	1.59E-03	1.53E-03	3.99E-06	2.84E-04	2.77E-04	3.99E-06	1.21E-04	1.24E-04	3.99E-06
198	572156.5	4149121	1.28E-03	0.001106	3.91E-06	1.56E-03	1.50E-03	3.91E-06	2.78E-04	2.72E-04	3.91E-06	1.18E-04	1.21E-04	3.91E-06
199	572162.5	4149105	1.34E-03	0.00115	4.07E-06	1.62E-03	1.56E-03	4.07E-06	2.90E-04	2.83E-04	4.07E-06	1.23E-04	1.26E-04	4.07E-06
200	572168.8	4149098	1.42E-03	0.001222	4.32E-06	1.73E-03	1.65E-03	4.32E-06	3.08E-04	3.01E-04	4.32E-06	1.31E-04	1.34E-04	4.32E-06
201	572175.2	4149092	1.51E-03	0.001305	4.61E-06	1.84E-03	1.77E-03	4.61E-06	3.29E-04	3.21E-04	4.61E-06	1.40E-04	1.43E-04	4.61E-06
202	572181.5	4149085	1.62E-03	0.001399	4.95E-06	1.98E-03	1.89E-03	4.95E-06	3.52E-04	3.44E-04	4.95E-06	1.50E-04	1.54E-04	4.95E-06
203	572194.1	4149072	1.89E-03	0.00163	5.76E-06	2.30E-03	2.21E-03	5.76E-06	4.10E-04	4.01E-04	5.76E-06	1.75E-04	1.79E-04	5.76E-06
204	572200.5	4149065	2.05E-03	0.001766	6.24E-06	2.49E-03	2.39E-03	6.24E-06	4.45E-04	4.34E-04	6.24E-06	1.89E-04	1.94E-04	6.24E-06
205	572206.8	4149058	2.22E-03	0.001912	6.76E-06	2.70E-03	2.59E-03	6.76E-06	4.81E-04	4.70E-04	6.76E-06	2.05E-04	2.10E-04	6.76E-06
206	572213.1	4149051	2.40E-03	0.002066	7.3E-06	2.92E-03	2.80E-03	7.30E-06	5.20E-04	5.08E-04	7.30E-06	2.21E-04	2.27E-04	7.30E-06
207	572160.5	4149250	1.45E-03	0.001249	4.42E-06	1.76E-03	1.69E-03	4.42E-06	3.15E-04	3.07E-04	4.42E-06	1.34E-04	1.37E-04	4.42E-06
208	572164.3	4149258	1.56E-03	0.001346	4.76E-06	1.90E-03	1.82E-03	4.76E-06	3.39E-04	3.31E-04	4.76E-06	1.44E-04	1.48E-04	4.76E-06
209	572168.2	4149267	1.71E-03	0.001471	5.2E-06	2.08E-03	1.99E-03	5.20E-06	3.70E-04	3.62E-04	5.20E-06	1.57E-04	1.61E-04	5.20E-06
210	572151.1	4149245	1.30E-03	0.00112	3.96E-06	1.58E-03	1.52E-03	3.96E-06	2.82E-04	2.75E-04	3.96E-06	1.20E-04	1.23E-04	3.96E-06
211	572150.2	4149217	1.26E-03	0.001083	3.83E-06	1.53E-03	1.47E-03	3.83E-06	2.73E-04	2.66E-04	3.83E-06	1.16E-04	1.19E-04	3.83E-06
212	572150	4149208	1.26E-03	0.001086	3.84E-06	1.53E-03	1.47E-03	3.84E-06	2.74E-04	2.67E-04	3.84E-06	1.16E-04	1.19E-04	3.84E-06
213	572149.7	4149199	1.27E-03	0.001094	3.87E-06	1.55E-03	1.48E-03	3.87E-06	2.76E-04	2.69E-04	3.87E-06	1.17E-04	1.20E-04	3.87E-06
214	572149.4	4149190	1.28E-03	0.001106	3.91E-06	1.56E-03	1.50E-03	3.91E-06	2.78E-04	2.72E-04	3.91E-06	1.18E-04	1.21E-04	3.91E-06
215	572149.1	4149181	1.29E-03	0.001115	3.94E-06	1.57E-03	1.51E-03	3.94E-06	2.81E-04	2.74E-04	3.94E-06	1.19E-04	1.22E-04	3.94E-06
216	572148.8	4149172	1.30E-03	0.001118	3.95E-06	1.58E-03	1.51E-03	3.95E-06	2.81E-04	2.75E-04	3.95E-06	1.20E-04	1.23E-04	3.95E-06
217	572148.6	4149163	1.29E-03	0.001111	3.93E-06	1.57E-03	1.50E-03	3.93E-06	2.80E-04	2.73E-04	3.93E-06	1.19E-04	1.22E-04	3.93E-06
218	572148.3	4149154	1.27E-03	0.001096	3.87E-06	1.55E-03	1.48E-03	3.87E-06	2.76E-04	2.69E-04	3.87E-06	1.17E-04	1.20E-04	3.87E-06
219	572148	4149145	1.25E-03	0.001074	3.79E-06	1.52E-03	1.45E-03	3.79E-06	2.70E-04	2.64E-04	3.79E-06	1.15E-04	1.18E-04	3.79E-06
220	572147.7	4149135	1.22E-03	0.001049	3.71E-06	1.48E-03	1.42E-03	3.71E-06	2.64E-04	2.58E-04	3.71E-06	1.12E-04	1.15E-04	3.71E-06
221	572147.4	4149126	1.19E-03	0.001026	3.63E-06	1.45E-03	1.39E-03	3.63E-06	2.58E-04	2.52E-04	3.63E-06	1.10E-04	1.13E-04	3.63E-06
222	572147.1	4149117	1.17E-03	0.001007	3.56E-06	1.42E-03	1.36E-03	3.56E-06	2.54E-04	2.48E-04	3.56E-06	1.08E-04	1.10E-04	3.56E-06
223	572153.1	4149102	1.21E-03	0.001045	3.69E-06	1.48E-03	1.41E-03	3.69E-06	2.63E-04	2.57E-04	3.69E-06	1.12E-04	1.15E-04	3.69E-06
224	572159.4	4149095	1.28E-03	0.001105	3.91E-06	1.56E-03	1.50E-03	3.91E-06	2.78E-04	2.72E-04	3.91E-06	1.18E-04	1.21E-04	3.91E-06
225	572165.6	4149088	1.36E-03	0.001174	4.15E-06	1.66E-03	1.59E-03	4.15E-06	2.96E-04	2.89E-04	4.15E-06	1.26E-04	1.29E-04	4.15E-06
226	572171.9	4149082	1.45E-03	0.001253	4.43E-06	1.77E-03	1.70E-03	4.43E-06	3.16E-04	3.08E-04	4.43E-06	1.34E-04	1.37E-04	4.43E-06
227	572190.7	4149062	1.81E-03	0.001557	5.5E-06	2.20E-03	2.11E-03	5.50E-06	3.92E-04	3.83E-04	5.50E-06	1.67E-04	1.71E-04	5.50E-06
228	572196.9	4149055	1.95E-03	0.001679	5.94E-06	2.37E-03	2.27E-03	5.94E-06	4.23E-04	4.13E-04	5.94E-06	1.80E-04	1.84E-04	5.94E-06
229	572151.4	4149254	1.33E-03	0.00115	4.06E-06	1.62E-03	1.56E-03	4.06E-06	2.90E-04	2.83E-04	4.06E-06	1.23E-04	1.26E-04	4.06E-06
230	572155.2	4149262	1.43E-03	0.001236	4.37E-06	1.75E-03	1.67E-03	4.37E-06	3.11E-04	3.04E-04	4.37E-06	1.32E-04	1.36E-04	4.37E-06
231	572159	4149271	1.56E-03	0.001348	4.77E-06	1.90E-03	1.82E-03	4.77E-06	3.40E-04	3.32E-04	4.77E-06	1.44E-04	1.48E-04	4.77E-06
232	572142	4149249	1.20E-03	0.001034	3.66E-06	1.46E-03	1.40E-03	3.66E-06	2.60E-04	2.54E-04	3.66E-06	1.11E-04	1.13E-04	3.66E-06
233	572141.1	4149222	1.15E-03	0.000995	3.52E-06	1.41E-03	1.35E-03	3.52E-06	2.51E-04	2.45E-04	3.52E-06	1.07E-04	1.09E-04	3.52E-06
234	572140.9	4149213	1.15E-03	0.000995	3.52E-06	1.41E-03	1.35E-03	3.52E-06	2.51E-04	2.45E-04	3.52E-06	1.07E-04	1.09E-04	3.52E-06
235	572140.6	4149204	1.16E-03	0.001	3.54E-06	1.41E-03	1.35E-03	3.54E-06	2.52E-04	2.46E-04	3.54E-06	1.07E-04	1.10E-04	3.54E-06
236	572140.3	4149195	1.17E-03	0.001009	3.57E-06	1.43E-03	1.37E-03	3.57E-06	2.54E-04	2.48E-04	3.57E-06	1.08E-04	1.11E-04	3.57E-06
237	572140	4149186	1.18E-03	0.00102	3.6E-06	1.44E-03	1.38E-03	3.60E-06	2.57E-04	2.51E-04	3.60E-06	1.09E-04	1.12E-04	3.60E-06
238	572139.7	4149177	1.19E-03	0.001027	3.63E-06	1.45E-03	1.39E-03	3.63E-06	2.58E-04	2.52E-04	3.63E-06	1.10E-04	1.13E-04	3.63E-06
239	572139.5	4149168	1.19E-03	0.001026	3.63E-06	1.45E-03	1.39E-03	3.63E-06	2.58E-04	2.52E-04	3.63E-06	1.10E-04	1.13E-04	3.63E-06
240	572139.2	4149159	1.18E-03	0.001018	3.6E-06	1.44E-03	1.38E-03	3.60E-06	2.56E-04	2.50E-04	3.60E-06	1.09E-04	1.12E-04	3.60E-06
241	572138.9	4149150	1.16E-03	0.001002	3.54E-06	1.42E-03	1.36E-03	3.54E-06	2.52E-04	2.46E-04	3.54E-06	1.07E-04	1.10E-04	3.54E-06
242	572138.6	4149141	1.14E-03	0.000981	3.47E-06	1.39E-03	1.33E-03	3.47E-06	2.47E-04	2.41E-04	3.47E-06	1.05E-04	1.08E-04	3.47E-06
243	572138.3	4149132	1.11E-03	0.000959	3.39E-06	1.35E-03	1.30E-03	3.39E-06	2.41E-04	2.36E-04	3.39E-06	1.03E-04	1.05E-04	3.39E-06
244	572138.1	4149123	1.09E-03	0.000938	3.32E-06	1.33E-03	1.27E-03	3.32E-06	2.36E-04	2.31E-04	3.32E-06	1.00E-04	1.03E-04	3.32E-06
245	572137.8	4149114	1.07E-03	0.000921	3.26E-06	1.30E-03	1.25E-03	3.26E-06	2.32E-04	2.27E-04	3.26E-06	9.86E-05	1.01E-04	3.26E-06
246	572143.7	4149098	1.11E-03	0.000953	3.37E-06	1.35E-03	1.29E-03	3.37E-06	2.40E-04	2.34E-04	3.37E-06	1.02E-04	1.05E-04	3.37E-06
247	572156.1	4149085	1.23E-03	0.001064	3.76E-06	1.50E-03	1.44E-03	3.76E-06	2.68E-04	2.62E-04	3.76E-06	1.14E-04	1.17E-04	3.76E-06
248	572162.3	4149078	1.31E-03	0.001129	3.99E-06	1.59E-03	1.53E-03	3.99E-06	2.84E-04	2.78E-04	3.99E-06	1.21E-04	1.24E-04	3.99E-06
249	572142.3	4149258	1.23E-03	0.001063	3.76E-06	1.50E-03	1.44E-03	3.76E-06	2.68E-04	2.61E-04	3.76E-06	1.14E-04	1.17E-04	3.76E-06
250	572146.1	4149267	1.32E-03	0.001141	4.03E-06	1.61E-03	1.54E-03	4.03E-06	2.87E-04	2.81E-04	4.03E-06	1.22E-04	1.25E-04	4.03E-06
251	572149.9	4149275	1.44E-03	0.001241	4.38E-06	1.75E-03	1.68E-03	4.38E-06	3.12E-04	3.05E-04	4.38E-06	1.33E-04	1.36E-04	4.38E-06
252	572132.9	4149253	1.11E-03	0.000959	3.39E-06	1.35E-03	1.30E-03	3.39E-06	2.41E-04	2.36E-04	3.39E-06	1.03E-04	1.05E-04	3.39E-06
253	572132	4149226	1.07E-03	0.000918	3.25E-06	1.30E-03	1.24E-03	3.25E-06	2.31E-04	2.26E-04	3.25E-06	9.83E-05	1.01E-04	3.25E-06
254	572131.5	4149208	1.07E-03	0.000918	3.25E-06	1.30E-03	1.24E-03	3.25E-06	2.31E-04	2.26E-04	3.25E-06	9.83E-05	1.01E-04	3.25E-06
255	572131.2	4149199	1.07E-03	0.000925	3.27E-06	1.31E-03	1.25E-03	3.27E-06	2.33E-04	2.27E-04	3.27E-06	9.90E-05	1.01E-04	3.27E-06
256	572130.9	4149191	1.08E-03	0.000935	3.3E-06	1.32E-03	1.26E-03	3.30E-06	2.35E-04	2.30E-04	3.30E-06	1.00E-04	1.03E-04	3.30E-06
257	572130.7	4149182	1.09E-03	0.000943	3.33E-06	1.33E-03	1.28E-03	3.33E-06	2.38E-04	2.32E-04	3.33E-06	1.01E-04	1.04E-04	3.33E-06
258	572130.1	4149164	1.10E-03	0.000946	3.34E-06	1.34E-03	1.28E-03	3.34E-06	2.38E-04	2.33E-04	3.34E-06	1.01E-04	1.04E-04	3.34E-06

259	572129.8	4149155	1.09E-03	0.000936	3.31E-06	1.32E-03	1.27E-03	3.31E-06	2.36E-04	2.30E-04	3.31E-06	1.00E-04	1.03E-04	3.31E-06
260	572129.5	4149146	1.07E-03	0.000919	3.25E-06	1.30E-03	1.24E-03	3.25E-06	2.32E-04	2.26E-04	3.25E-06	9.84E-05	1.01E-04	3.25E-06
261	572129.3	4149137	1.04E-03	0.0009	3.18E-06	1.27E-03	1.22E-03	3.18E-06	2.27E-04	2.21E-04	3.18E-06	9.63E-05	9.87E-05	3.18E-06
262	572128.7	4149119	9.99E-04	0.000861	3.04E-06	1.22E-03	1.17E-03	3.04E-06	2.17E-04	2.12E-04	3.04E-06	9.22E-05	9.45E-05	3.04E-06
263	572128.4	4149110	9.82E-04	0.000846	2.99E-06	1.19E-03	1.14E-03	2.99E-06	2.13E-04	2.08E-04	2.99E-06	9.06E-05	9.28E-05	2.99E-06
264	572134.3	4149095	1.01E-03	0.000873	3.09E-06	1.23E-03	1.18E-03	3.09E-06	2.20E-04	2.15E-04	3.09E-06	9.35E-05	9.58E-05	3.09E-06
265	572146.6	4149082	1.12E-03	0.000968	3.42E-06	1.37E-03	1.31E-03	3.42E-06	2.44E-04	2.38E-04	3.42E-06	1.04E-04	1.06E-04	3.42E-06
266	572158.9	4149068	1.26E-03	0.001087	3.84E-06	1.53E-03	1.47E-03	3.84E-06	2.74E-04	2.67E-04	3.84E-06	1.16E-04	1.19E-04	3.84E-06
267	572133.2	4149262	1.14E-03	0.000985	3.48E-06	1.39E-03	1.33E-03	3.48E-06	2.48E-04	2.42E-04	3.48E-06	1.06E-04	1.08E-04	3.48E-06
268	572137	4149271	1.23E-03	0.001056	3.73E-06	1.49E-03	1.43E-03	3.73E-06	2.66E-04	2.60E-04	3.73E-06	1.13E-04	1.16E-04	3.73E-06
269	572140.8	4149279	1.33E-03	0.001146	4.05E-06	1.62E-03	1.55E-03	4.05E-06	2.89E-04	2.82E-04	4.05E-06	1.23E-04	1.26E-04	4.05E-06
270	572123.8	4149257	1.04E-03	0.000892	3.15E-06	1.26E-03	1.21E-03	3.15E-06	2.25E-04	2.19E-04	3.15E-06	9.55E-05	9.79E-05	3.15E-06
271	572122.7	4149222	9.82E-04	0.000847	2.99E-06	1.20E-03	1.15E-03	2.99E-06	2.13E-04	2.08E-04	2.99E-06	9.06E-05	9.29E-05	2.99E-06
272	572122.1	4149204	9.88E-04	0.000851	3.01E-06	1.20E-03	1.15E-03	3.01E-06	2.14E-04	2.09E-04	3.01E-06	9.11E-05	9.34E-05	3.01E-06
273	572121.6	4149186	1.01E-03	0.000868	3.07E-06	1.23E-03	1.17E-03	3.07E-06	2.19E-04	2.13E-04	3.07E-06	9.29E-05	9.52E-05	3.07E-06
274	572121	4149169	1.02E-03	0.000878	3.1E-06	1.24E-03	1.19E-03	3.10E-06	2.21E-04	2.16E-04	3.10E-06	9.40E-05	9.63E-05	3.10E-06
275	572120.5	4149151	1.00E-03	0.000863	3.05E-06	1.22E-03	1.17E-03	3.05E-06	2.17E-04	2.12E-04	3.05E-06	9.24E-05	9.46E-05	3.05E-06
276	572119.9	4149133	9.61E-04	0.000828	2.93E-06	1.17E-03	1.12E-03	2.93E-06	2.09E-04	2.04E-04	2.93E-06	8.87E-05	9.09E-05	2.93E-06
277	572119.4	4149115	9.20E-04	0.000793	2.8E-06	1.12E-03	1.07E-03	2.80E-06	2.00E-04	1.95E-04	2.80E-06	8.49E-05	8.70E-05	2.80E-06
278	572124.9	4149091	9.32E-04	0.000803	2.84E-06	1.13E-03	1.09E-03	2.84E-06	2.02E-04	1.98E-04	2.84E-06	8.60E-05	8.81E-05	2.84E-06
279	572137.1	4149078	1.03E-03	0.000884	3.13E-06	1.25E-03	1.20E-03	3.13E-06	2.23E-04	2.17E-04	3.13E-06	9.47E-05	9.70E-05	3.13E-06
280	572127.9	4149275	1.14E-03	0.000981	3.47E-06	1.39E-03	1.33E-03	3.47E-06	2.47E-04	2.41E-04	3.47E-06	1.05E-04	1.08E-04	3.47E-06
281	572131.7	4149283	1.23E-03	0.001062	3.75E-06	1.50E-03	1.44E-03	3.75E-06	2.67E-04	2.61E-04	3.75E-06	1.14E-04	1.17E-04	3.75E-06
282	572114.6	4149261	9.65E-04	0.000832	2.94E-06	1.17E-03	1.13E-03	2.94E-06	2.09E-04	2.05E-04	2.94E-06	8.90E-05	9.12E-05	2.94E-06
283	572114.4	4149252	9.44E-04	0.000813	2.87E-06	1.15E-03	1.10E-03	2.87E-06	2.05E-04	2.00E-04	2.87E-06	8.71E-05	8.92E-05	2.87E-06
284	572113.8	4149233	9.17E-04	0.00079	2.79E-06	1.12E-03	1.07E-03	2.79E-06	1.99E-04	1.94E-04	2.79E-06	8.46E-05	8.67E-05	2.79E-06
285	572113.5	4149224	9.11E-04	0.000785	2.78E-06	1.11E-03	1.06E-03	2.78E-06	1.98E-04	1.93E-04	2.78E-06	8.41E-05	8.62E-05	2.78E-06
286	572113.2	4149215	9.10E-04	0.000785	2.77E-06	1.11E-03	1.06E-03	2.77E-06	1.98E-04	1.93E-04	2.77E-06	8.40E-05	8.61E-05	2.77E-06
287	572112.9	4149205	9.15E-04	0.000788	2.79E-06	1.11E-03	1.07E-03	2.79E-06	1.99E-04	1.94E-04	2.79E-06	8.44E-05	8.65E-05	2.79E-06
288	572112.6	4149196	9.23E-04	0.000795	2.81E-06	1.12E-03	1.08E-03	2.81E-06	2.00E-04	1.96E-04	2.81E-06	8.51E-05	8.72E-05	2.81E-06
289	572112.3	4149187	9.33E-04	0.000804	2.84E-06	1.14E-03	1.09E-03	2.84E-06	2.03E-04	1.98E-04	2.84E-06	8.61E-05	8.83E-05	2.84E-06
290	572112.1	4149178	9.42E-04	0.000812	2.87E-06	1.15E-03	1.10E-03	2.87E-06	2.04E-04	2.00E-04	2.87E-06	8.69E-05	8.91E-05	2.87E-06
291	572111.8	4149168	9.46E-04	0.000815	2.88E-06	1.15E-03	1.10E-03	2.88E-06	2.05E-04	2.00E-04	2.88E-06	8.73E-05	8.94E-05	2.88E-06
292	572111.5	4149159	9.42E-04	0.000812	2.87E-06	1.15E-03	1.10E-03	2.87E-06	2.04E-04	2.00E-04	2.87E-06	8.69E-05	8.90E-05	2.87E-06
293	572111.2	4149150	9.30E-04	0.000801	2.83E-06	1.13E-03	1.08E-03	2.83E-06	2.02E-04	1.97E-04	2.83E-06	8.58E-05	8.79E-05	2.83E-06
294	572110.9	4149140	9.12E-04	0.000786	2.78E-06	1.11E-03	1.06E-03	2.78E-06	1.98E-04	1.93E-04	2.78E-06	8.42E-05	8.63E-05	2.78E-06
295	572110.6	4149131	8.91E-04	0.000768	2.71E-06	1.08E-03	1.04E-03	2.71E-06	1.93E-04	1.89E-04	2.71E-06	8.22E-05	8.43E-05	2.71E-06
296	572110.3	4149122	8.71E-04	0.00075	2.65E-06	1.06E-03	1.02E-03	2.65E-06	1.89E-04	1.84E-04	2.65E-06	8.03E-05	8.23E-05	2.65E-06
297	572110	4149113	8.52E-04	0.000734	2.59E-06	1.04E-03	9.94E-04	2.59E-06	1.85E-04	1.81E-04	2.59E-06	7.86E-05	8.05E-05	2.59E-06
298	572109.7	4149103	8.37E-04	0.000721	2.55E-06	1.02E-03	9.76E-04	2.55E-06	1.82E-04	1.77E-04	2.55E-06	7.72E-05	7.91E-05	2.55E-06
299	572115.8	4149087	8.62E-04	0.000743	2.63E-06	1.05E-03	1.01E-03	2.63E-06	1.87E-04	1.83E-04	2.63E-06	7.96E-05	8.15E-05	2.63E-06
300	572122.2	4149080	9.03E-04	0.000779	2.75E-06	1.10E-03	1.05E-03	2.75E-06	1.96E-04	1.91E-04	2.75E-06	8.34E-05	8.54E-05	2.75E-06
301	572114.9	4149270	9.93E-04	0.000856	3.03E-06	1.21E-03	1.16E-03	3.03E-06	2.16E-04	2.10E-04	3.03E-06	9.16E-05	9.39E-05	3.03E-06
302	572118.8	4149279	1.06E-03	0.000914	3.23E-06	1.29E-03	1.24E-03	3.23E-06	2.30E-04	2.25E-04	3.23E-06	9.79E-05	1.00E-04	3.23E-06
303	572105.5	4149265	9.03E-04	0.000778	2.75E-06	1.10E-03	1.05E-03	2.75E-06	1.96E-04	1.91E-04	2.75E-06	8.33E-05	8.54E-05	2.75E-06
304	572105.2	4149256	8.83E-04	0.000761	2.69E-06	1.07E-03	1.03E-03	2.69E-06	1.92E-04	1.87E-04	2.69E-06	8.15E-05	8.35E-05	2.69E-06
305	572105	4149247	8.68E-04	0.000748	2.64E-06	1.06E-03	1.01E-03	2.64E-06	1.88E-04	1.84E-04	2.64E-06	8.01E-05	8.21E-05	2.64E-06
306	572104.4	4149228	8.49E-04	0.000732	2.59E-06	1.03E-03	9.91E-04	2.59E-06	1.84E-04	1.80E-04	2.59E-06	7.84E-05	8.03E-05	2.59E-06
307	572104.1	4149219	8.46E-04	0.000729	2.58E-06	1.03E-03	9.87E-04	2.58E-06	1.84E-04	1.79E-04	2.58E-06	7.81E-05	8.00E-05	2.58E-06
308	572103.8	4149210	8.48E-04	0.000731	2.58E-06	1.03E-03	9.89E-04	2.58E-06	1.84E-04	1.80E-04	2.58E-06	7.82E-05	8.02E-05	2.58E-06
309	572103.5	4149201	8.54E-04	0.000735	2.6E-06	1.04E-03	9.95E-04	2.60E-06	1.85E-04	1.81E-04	2.60E-06	7.87E-05	8.07E-05	2.60E-06
310	572103.3	4149192	8.63E-04	0.000743	2.63E-06	1.05E-03	1.01E-03	2.63E-06	1.87E-04	1.83E-04	2.63E-06	7.96E-05	8.15E-05	2.63E-06
311	572103	4149182	8.72E-04	0.000752	2.66E-06	1.06E-03	1.02E-03	2.66E-06	1.89E-04	1.85E-04	2.66E-06	8.05E-05	8.25E-05	2.66E-06
312	572102.7	4149173	8.79E-04	0.000757	2.68E-06	1.07E-03	1.02E-03	2.68E-06	1.91E-04	1.86E-04	2.68E-06	8.11E-05	8.31E-05	2.68E-06
313	572102.4	4149164	8.80E-04	0.000759	2.68E-06	1.07E-03	1.03E-03	2.68E-06	1.91E-04	1.87E-04	2.68E-06	8.12E-05	8.32E-05	2.68E-06
314	572102.1	4149155	8.75E-04	0.000754	2.66E-06	1.06E-03	1.02E-03	2.66E-06	1.90E-04	1.85E-04	2.66E-06	8.07E-05	8.27E-05	2.66E-06
315	572101.8	4149146	8.62E-04	0.000743	2.63E-06	1.05E-03	1.01E-03	2.63E-06	1.87E-04	1.83E-04	2.63E-06	7.95E-05	8.15E-05	2.63E-06
316	572101.5	4149136	8.45E-04	0.000728	2.57E-06	1.03E-03	9.85E-04	2.57E-06	1.83E-04	1.79E-04	2.57E-06	7.79E-05	7.99E-05	2.57E-06
317	572101.3	4149127	8.25E-04	0.000711	2.51E-06	1.00E-03	9.62E-04	2.51E-06	1.79E-04	1.75E-04	2.51E-06	7.61E-05	7.80E-05	2.51E-06
318	572101	4149118	8.06E-04	0.000695	2.46E-06	9.81E-04	9.40E-04	2.46E-06	1.75E-04	1.71E-04	2.46E-06	7.44E-05	7.62E-05	2.46E-06
319	572100.7	4149109	7.89E-04	0.00068	2.4E-06	9.61E-04	9.21E-04	2.40E-06	1.71E-04	1.67E-04	2.40E-06	7.28E-05	7.46E-05	2.40E-06
320	572100.4	4149100	7.76E-04	0.000669	2.36E-06	9.44E-04	9.05E-04	2.36E-06	1.68E-04	1.64E-04	2.36E-06	7.16E-05	7.34E-05	2.36E-06
321	572106.4	4149084	7.98E-04	0.000687	2.43E-06	9.71E-04	9.30E-04	2.43E-06	1.73E-04	1.69E-04	2.43E-06	7.36E-05	7.54E-05	2.43E-06
322	572105.8	4149275	9.29E-04	0.000801	2.83E-06	1.13E-03	1.08E-03	2.83E-06	2.02E-04	1.97E-04	2.83E-06	8.57E-05	8.78E-05	2.83E-06
323	572109.7	4149283	9.91E-04	0.000854	3.02E-06	1.21E-03	1.16E-03	3.02E-06	2.15E-04	2.10E-04	3.02E-06	9.15E-05	9.37E-05	3.02E-06
324	572096.4	4149269	8.47E-04	0.00073	2.58E-06	1.03E-03	9.88E-04	2.58E-06	1.84E-04	1.80E-04	2.58E-06	7.81E-05	8.01E-05	2.58E-06
325	572096.1	4149260	8.28E-04	0.000714	2.52E-06	1.01E-03	9.66E-04	2.52E-06	1.80E-04	1.76E-04	2.52E-06	7.64E-05	7.83E-05	2.52E-06
326	572095.9	4149251	8.14E-04	0.000701	2.48E-06	9.90E-04	9.49E-04	2.48E-06	1.77E-04	1.72E-04	2.48E-06	7.51E-05	7.69E-05	2.48E-06
327	572095.3	4149233	7.94E-04	0.000685	2.42E-06	9.67E-04	9.26E-04	2.42E-06	1.72E-04	1.68E-04	2.42E-06	7.33E-05	7.51E-05	2.42E-06
328	572095	4149224	7.90E-04	0.000681	2.41E-06	9.61E-04	9.21E-04	2.41E-06	1.71E-04	1.67E-04	2.41E-06	7.29E-05	7.47E-05	2.41E-06
329	572094.7	4149215	7.89E-04	0.00068	2.4E-06	9.60E-04	9.20E-04	2.40E-06	1.71E-04	1.67E-04	2.40E-06	7.28E-05	7.46E-05	2.40E-06
330	572094.4	4149206	7.93E-04	0.000683	2.41E-06	9.65E-04	9.24E-04	2.41E-06	1.72E-04	1.68E-04	2.41E-06	7.31E-05	7.49E-05	2.41E-06
331	572094.2	4149196	7.99E-04	0.000689	2.43E-06	9.72E-04	9.32E-04	2.43E-06	1.73E-04	1.69E-04	2.43E-06	7.37E-05	7.55E-05	2.43E-06
332	572093.9	4149187	8.08E-04	0.000697	2.46E-06	9.84E-04	9.43E-04	2.46E-06	1.75E-04	1.71E-04	2.46E-06	7.46E-05	7.64E-05	2.46E-06
333	572093.6	4149178	8.17E-04	0.000704	2.49E-06	9.94E-04	9.53E-04	2.49E-06	1.77E-04	1.73E-04	2.49E-06	7.54E-05	7.72E-05	2.49E-06
334	572093.3	4149169	8.22E-04	0.000708	2.5E-06	1.00E-03	9.58E-04	2.50E-06	1.78E-04	1.74E-04	2.50E-06	7.58E-05	7.77E-05	2.50E-06
335	572093	4149160	8.21E-04	0.000707	2.5E-06	9.99E-04	9.57E-04	2.50E-06	1.78E-04	1.74E-04	2.50E-06	7.57E-05	7.76E-05	2.50E-06
336	572092.7	4149151	8.14E-04	0.000701	2.48E-06	9.91E-04	9.49E-04	2.48E-06	1.77E-04	1.72E-04	2.48E-06	7.51E-05	7.69E-05	2.48E-06
337	572092.5	4149142	8.01E-04	0.00069	2.44E-06	9.75E-04	9.34E-04	2.44E-06	1.74E-04	1.70E-04	2.44E-06	7.39E-05	7.57E-05	2.44E-06
338	572092.2	4149133	7.84E-04	0.000676	2.39E-06	9.54E-04	9.15E-04	2.39E-06	1.70E-04	1.66E-04	2.39E-06	7.23E-05	7.41E-05	2.39E-06
339	572091.9	4149123	7.66E-04	0.00066	2.33E-06	9.32E-04	8.93E-04	2.33E-06	1.66E-04	1.62E-04	2.33E-06	7.07E-05	7.24E-05	2.33E-06
340	572091.6	4149114	7.49E-04	0.000645	2.28E-06	9.11E-04	8.73E-04	2.28E-06	1.62E-04	1.59E-04	2.28E-06	6.91E-05	7.08E-05	2.28E-06
341	572091.3	4149105	7.33E-04	0.000632	2.23E-06	8.92E-04	8.55E-04	2.23E-06	1.59E-04	1.55E-04	2.23E-06	6.76E-05	6.93E-05	2.23E-06
342	572091	4149096	7.21E-04	0.000622	2.2E-06	8.78E-04	8.41E-04	2.20E-06	1.57E-04	1.53E-04	2.20E-06	6.66E-05	6.82E-05	2.20E-06
343	572096.7	4149279	8.71E-04	0.000751	2.65E-06	1.06E-03	1.02E-03	2.65E-06	1.89E-04	1.85E-04	2.65E-06	8.04E-05	8.24E-05	2.65E-06
344	572100.5	4149287	9.28E-04	0.0008	2.83E-06	1.13E-03	1.08E-03	2.83E-06	2.01E-04	1.97E-04	2.83E-06	8.57E-05	8.78E-05	2.83E-06
345	572104.4	4149296	9.99E-04	0.000861	3.04E-06	1.22E-03	1.17E-03	3.04E-06	2.17E-04	2.12E-04	3.04E-06	9.22E-05	9.44E-05	3.04E-06

346	572108.2	4149304	1.09E-03	0.000936	3.31E-06	1.32E-03	1.27E-03	3.31E-06	2.36E-04	2.30E-04	3.31E-06	1.00E-04	1.03E-04	3.31E-06
347	572087.3	4149274	7.96E-04	0.000686	2.43E-06	9.69E-04	9.29E-04	2.43E-06	1.73E-04	1.69E-04	2.43E-06	7.35E-05	7.53E-05	2.43E-06
348	572087	4149265	7.79E-04	0.000671	2.37E-06	9.48E-04	9.08E-04	2.37E-06	1.69E-04	1.65E-04	2.37E-06	7.18E-05	7.36E-05	2.37E-06
349	572086.8	4149256	7.65E-04	0.000659	2.33E-06	9.31E-04	8.92E-04	2.33E-06	1.66E-04	1.62E-04	2.33E-06	7.05E-05	7.23E-05	2.33E-06
350	572086.2	4149237	7.45E-04	0.000642	2.27E-06	9.07E-04	8.69E-04	2.27E-06	1.62E-04	1.58E-04	2.27E-06	6.88E-05	7.05E-05	2.27E-06
351	572085.9	4149228	7.40E-04	0.000637	2.25E-06	9.00E-04	8.63E-04	2.25E-06	1.61E-04	1.57E-04	2.25E-06	6.82E-05	6.99E-05	2.25E-06
352	572085.6	4149219	7.37E-04	0.000635	2.25E-06	8.97E-04	8.60E-04	2.25E-06	1.60E-04	1.56E-04	2.25E-06	6.80E-05	6.97E-05	2.25E-06
353	572085.3	4149210	7.39E-04	0.000636	2.25E-06	8.99E-04	8.61E-04	2.25E-06	1.60E-04	1.57E-04	2.25E-06	6.81E-05	6.98E-05	2.25E-06
354	572085.1	4149201	7.43E-04	0.000641	2.26E-06	9.05E-04	8.67E-04	2.26E-06	1.61E-04	1.58E-04	2.26E-06	6.86E-05	7.03E-05	2.26E-06
355	572084.8	4149192	7.51E-04	0.000647	2.29E-06	9.14E-04	8.76E-04	2.29E-06	1.63E-04	1.59E-04	2.29E-06	6.93E-05	7.10E-05	2.29E-06
356	572084.5	4149183	7.60E-04	0.000655	2.31E-06	9.25E-04	8.86E-04	2.31E-06	1.65E-04	1.61E-04	2.31E-06	7.01E-05	7.18E-05	2.31E-06
357	572084.2	4149174	7.67E-04	0.000661	2.33E-06	9.33E-04	8.94E-04	2.33E-06	1.66E-04	1.62E-04	2.33E-06	7.07E-05	7.25E-05	2.33E-06
358	572083.9	4149165	7.70E-04	0.000663	2.34E-06	9.37E-04	8.98E-04	2.34E-06	1.67E-04	1.63E-04	2.34E-06	7.10E-05	7.28E-05	2.34E-06
359	572083.7	4149156	7.68E-04	0.000661	2.34E-06	9.34E-04	8.95E-04	2.34E-06	1.67E-04	1.63E-04	2.34E-06	7.08E-05	7.26E-05	2.34E-06
360	572083.4	4149147	7.59E-04	0.000654	2.31E-06	9.24E-04	8.86E-04	2.31E-06	1.65E-04	1.61E-04	2.31E-06	7.01E-05	7.18E-05	2.31E-06
361	572083.1	4149138	7.46E-04	0.000643	2.27E-06	9.08E-04	8.70E-04	2.27E-06	1.62E-04	1.58E-04	2.27E-06	6.88E-05	7.06E-05	2.27E-06
362	572082.8	4149129	7.30E-04	0.000629	2.22E-06	8.88E-04	8.51E-04	2.22E-06	1.58E-04	1.55E-04	2.22E-06	6.74E-05	6.90E-05	2.22E-06
363	572082.5	4149120	7.13E-04	0.000615	2.17E-06	8.68E-04	8.32E-04	2.17E-06	1.55E-04	1.51E-04	2.17E-06	6.58E-05	6.74E-05	2.17E-06
364	572082.3	4149111	6.97E-04	0.000601	2.12E-06	8.48E-04	8.13E-04	2.12E-06	1.51E-04	1.48E-04	2.12E-06	6.43E-05	6.59E-05	2.12E-06
365	572082	4149101	6.83E-04	0.000588	2.08E-06	8.31E-04	7.96E-04	2.08E-06	1.48E-04	1.45E-04	2.08E-06	6.30E-05	6.46E-05	2.08E-06
366	572081.7	4149092	6.72E-04	0.000579	2.05E-06	8.18E-04	7.84E-04	2.05E-06	1.46E-04	1.42E-04	2.05E-06	6.20E-05	6.35E-05	2.05E-06
367	572087.6	4149283	8.19E-04	0.000706	2.49E-06	9.97E-04	9.55E-04	2.49E-06	1.78E-04	1.74E-04	2.49E-06	7.56E-05	7.74E-05	2.49E-06
368	572091.4	4149291	8.71E-04	0.000751	2.65E-06	1.06E-03	1.02E-03	2.65E-06	1.89E-04	1.85E-04	2.65E-06	8.04E-05	8.24E-05	2.65E-06
369	572095.3	4149300	9.36E-04	0.000806	2.85E-06	1.14E-03	1.09E-03	2.85E-06	2.03E-04	1.98E-04	2.85E-06	8.63E-05	8.85E-05	2.85E-06
370	572099.1	4149308	1.01E-03	0.000874	3.09E-06	1.24E-03	1.18E-03	3.09E-06	2.20E-04	2.15E-04	3.09E-06	9.36E-05	9.59E-05	3.09E-06
371	572078.2	4149278	7.50E-04	0.000646	2.28E-06	9.13E-04	8.75E-04	2.28E-06	1.63E-04	1.59E-04	2.28E-06	6.92E-05	7.09E-05	2.28E-06
372	572077.9	4149269	7.34E-04	0.000632	2.23E-06	8.93E-04	8.55E-04	2.23E-06	1.59E-04	1.55E-04	2.23E-06	6.77E-05	6.93E-05	2.23E-06
373	572077.6	4149260	7.20E-04	0.000621	2.19E-06	8.76E-04	8.40E-04	2.19E-06	1.56E-04	1.53E-04	2.19E-06	6.64E-05	6.81E-05	2.19E-06
374	572077.1	4149242	7.01E-04	0.000604	2.14E-06	8.53E-04	8.18E-04	2.14E-06	1.52E-04	1.49E-04	2.14E-06	6.47E-05	6.63E-05	2.14E-06
375	572076.8	4149233	6.95E-04	0.000599	2.12E-06	8.46E-04	8.10E-04	2.12E-06	1.51E-04	1.47E-04	2.12E-06	6.41E-05	6.57E-05	2.12E-06
376	572076.5	4149224	6.91E-04	0.000596	2.11E-06	8.41E-04	8.06E-04	2.11E-06	1.50E-04	1.47E-04	2.11E-06	6.38E-05	6.54E-05	2.11E-06
377	572076.3	4149215	6.91E-04	0.000595	2.1E-06	8.41E-04	8.06E-04	2.10E-06	1.50E-04	1.46E-04	2.10E-06	6.37E-05	6.53E-05	2.10E-06
378	572076	4149206	6.94E-04	0.000598	2.11E-06	8.44E-04	8.09E-04	2.11E-06	1.51E-04	1.47E-04	2.11E-06	6.40E-05	6.56E-05	2.11E-06
379	572075.7	4149197	7.00E-04	0.000603	2.13E-06	8.51E-04	8.16E-04	2.13E-06	1.52E-04	1.48E-04	2.13E-06	6.45E-05	6.61E-05	2.13E-06
380	572075.4	4149188	7.08E-04	0.00061	2.16E-06	8.62E-04	8.26E-04	2.16E-06	1.54E-04	1.50E-04	2.16E-06	6.53E-05	6.69E-05	2.16E-06
381	572075.1	4149179	7.16E-04	0.000617	2.18E-06	8.71E-04	8.35E-04	2.18E-06	1.55E-04	1.52E-04	2.18E-06	6.60E-05	6.77E-05	2.18E-06
382	572074.9	4149170	7.21E-04	0.000622	2.2E-06	8.78E-04	8.41E-04	2.20E-06	1.57E-04	1.53E-04	2.20E-06	6.66E-05	6.82E-05	2.20E-06
383	572074.6	4149161	7.23E-04	0.000623	2.2E-06	8.80E-04	8.43E-04	2.20E-06	1.57E-04	1.53E-04	2.20E-06	6.67E-05	6.84E-05	2.20E-06
384	572074.3	4149152	7.19E-04	0.00062	2.19E-06	8.75E-04	8.39E-04	2.19E-06	1.56E-04	1.52E-04	2.19E-06	6.64E-05	6.80E-05	2.19E-06
385	572074	4149143	7.10E-04	0.000612	2.16E-06	8.64E-04	8.28E-04	2.16E-06	1.54E-04	1.51E-04	2.16E-06	6.55E-05	6.72E-05	2.16E-06
386	572073.7	4149134	6.97E-04	0.000601	2.12E-06	8.48E-04	8.13E-04	2.12E-06	1.51E-04	1.48E-04	2.12E-06	6.43E-05	6.59E-05	2.12E-06
387	572073.5	4149125	6.81E-04	0.000587	2.08E-06	8.29E-04	7.95E-04	2.08E-06	1.48E-04	1.44E-04	2.08E-06	6.29E-05	6.44E-05	2.08E-06
388	572073.2	4149116	6.65E-04	0.000573	2.03E-06	8.10E-04	7.76E-04	2.03E-06	1.44E-04	1.41E-04	2.03E-06	6.14E-05	6.29E-05	2.03E-06
389	572072.9	4149107	6.50E-04	0.00056	1.98E-06	7.91E-04	7.58E-04	1.98E-06	1.41E-04	1.38E-04	1.98E-06	6.00E-05	6.15E-05	1.98E-06
390	572072.6	4149098	6.38E-04	0.00055	1.94E-06	7.76E-04	7.44E-04	1.94E-06	1.38E-04	1.35E-04	1.94E-06	5.88E-05	6.03E-05	1.94E-06
391	572078.5	4149287	7.71E-04	0.000665	2.35E-06	9.39E-04	8.99E-04	2.35E-06	1.67E-04	1.63E-04	2.35E-06	7.12E-05	7.29E-05	2.35E-06
392	572082.3	4149295	8.20E-04	0.000706	2.5E-06	9.98E-04	9.56E-04	2.50E-06	1.78E-04	1.74E-04	2.50E-06	7.56E-05	7.75E-05	2.50E-06
393	572086.2	4149304	8.79E-04	0.000757	2.68E-06	1.07E-03	1.03E-03	2.68E-06	1.91E-04	1.86E-04	2.68E-06	8.11E-05	8.31E-05	2.68E-06
394	572090	4149312	9.51E-04	0.000819	2.9E-06	1.16E-03	1.11E-03	2.90E-06	2.06E-04	2.02E-04	2.90E-06	8.77E-05	8.99E-05	2.90E-06
395	572068	4149246	6.61E-04	0.000569	2.01E-06	8.04E-04	7.71E-04	2.01E-06	1.43E-04	1.40E-04	2.01E-06	6.10E-05	6.25E-05	2.01E-06
396	572067.7	4149237	6.54E-04	0.000564	1.99E-06	7.96E-04	7.63E-04	1.99E-06	1.42E-04	1.39E-04	1.99E-06	6.04E-05	6.19E-05	1.99E-06
397	572067.4	4149228	6.50E-04	0.00056	1.98E-06	7.91E-04	7.58E-04	1.98E-06	1.41E-04	1.38E-04	1.98E-06	6.00E-05	6.15E-05	1.98E-06
398	572066.9	4149210	6.49E-04	0.00056	1.98E-06	7.90E-04	7.57E-04	1.98E-06	1.41E-04	1.38E-04	1.98E-06	5.99E-05	6.14E-05	1.98E-06
399	572066.6	4149202	6.54E-04	0.000563	1.99E-06	7.95E-04	7.62E-04	1.99E-06	1.42E-04	1.39E-04	1.99E-06	6.03E-05	6.18E-05	1.99E-06
400	572066.3	4149193	6.60E-04	0.000569	2.01E-06	8.03E-04	7.70E-04	2.01E-06	1.43E-04	1.40E-04	2.01E-06	6.09E-05	6.24E-05	2.01E-06
401	572066	4149184	6.68E-04	0.000576	2.03E-06	8.13E-04	7.79E-04	2.03E-06	1.45E-04	1.42E-04	2.03E-06	6.16E-05	6.32E-05	2.03E-06
402	572065.5	4149166	6.79E-04	0.000585	2.07E-06	8.27E-04	7.92E-04	2.07E-06	1.47E-04	1.44E-04	2.07E-06	6.27E-05	6.42E-05	2.07E-06
403	572065.2	4149157	6.79E-04	0.000585	2.07E-06	8.27E-04	7.92E-04	2.07E-06	1.47E-04	1.44E-04	2.07E-06	6.27E-05	6.42E-05	2.07E-06
404	572064.9	4149148	6.74E-04	0.000581	2.05E-06	8.21E-04	7.86E-04	2.05E-06	1.46E-04	1.43E-04	2.05E-06	6.22E-05	6.38E-05	2.05E-06
405	572064.7	4149139	6.65E-04	0.000573	2.02E-06	8.09E-04	7.75E-04	2.02E-06	1.44E-04	1.41E-04	2.02E-06	6.13E-05	6.28E-05	2.02E-06
406	572064.1	4149121	6.37E-04	0.000549	1.94E-06	7.75E-04	7.43E-04	1.94E-06	1.38E-04	1.35E-04	1.94E-06	5.88E-05	6.02E-05	1.94E-06
407	572063.8	4149112	6.22E-04	0.000536	1.89E-06	7.57E-04	7.25E-04	1.89E-06	1.35E-04	1.32E-04	1.89E-06	5.74E-05	5.88E-05	1.89E-06
408	572063.5	4149103	6.08E-04	0.000524	1.85E-06	7.40E-04	7.09E-04	1.85E-06	1.32E-04	1.29E-04	1.85E-06	5.61E-05	5.75E-05	1.85E-06
409	572058.5	4149240	6.17E-04	0.000531	1.88E-06	7.50E-04	7.19E-04	1.88E-06	1.34E-04	1.31E-04	1.88E-06	5.69E-05	5.83E-05	1.88E-06
410	572058.3	4149230	6.12E-04	0.000527	1.86E-06	7.45E-04	7.14E-04	1.86E-06	1.33E-04	1.30E-04	1.86E-06	5.64E-05	5.78E-05	1.86E-06
411	572058	4149221	6.10E-04	0.000525	1.86E-06	7.42E-04	7.11E-04	1.86E-06	1.32E-04	1.29E-04	1.86E-06	5.62E-05	5.76E-05	1.86E-06
412	572057.7	4149212	6.10E-04	0.000526	1.86E-06	7.43E-04	7.12E-04	1.86E-06	1.32E-04	1.29E-04	1.86E-06	5.63E-05	5.77E-05	1.86E-06
413	572057.4	4149202	6.14E-04	0.000529	1.87E-06	7.47E-04	7.16E-04	1.87E-06	1.33E-04	1.30E-04	1.87E-06	5.66E-05	5.80E-05	1.87E-06
414	572057.1	4149193	6.20E-04	0.000534	1.89E-06	7.55E-04	7.23E-04	1.89E-06	1.35E-04	1.31E-04	1.89E-06	5.72E-05	5.86E-05	1.89E-06
415	572056.8	4149184	6.28E-04	0.000541	1.91E-06	7.64E-04	7.32E-04	1.91E-06	1.36E-04	1.33E-04	1.91E-06	5.79E-05	5.94E-05	1.91E-06
416	572056.5	4149175	6.35E-04	0.000547	1.93E-06	7.73E-04	7.41E-04	1.93E-06	1.38E-04	1.35E-04	1.93E-06	5.86E-05	6.00E-05	1.93E-06
417	572056.2	4149165	6.40E-04	0.000551	1.95E-06	7.78E-04	7.46E-04	1.95E-06	1.39E-04	1.36E-04	1.95E-06	5.90E-05	6.05E-05	1.95E-06
418	572056	4149156	6.40E-04	0.000552	1.95E-06	7.79E-04	7.46E-04	1.95E-06	1.39E-04	1.36E-04	1.95E-06	5.91E-05	6.05E-05	1.95E-06
419	572055.7	4149147	6.36E-04	0.000548	1.94E-06	7.73E-04	7.41E-04	1.94E-06	1.38E-04	1.35E-04	1.94E-06	5.86E-05	6.01E-05	1.94E-06
420	572055.4	4149138	6.26E-04	0.00054	1.91E-06	7.62E-04	7.31E-04	1.91E-06	1.36E-04	1.33E-04	1.91E-06	5.78E-05	5.92E-05	1.91E-06
421	572055.1	4149128	6.14E-04	0.000529	1.87E-06	7.47E-04	7.16E-04	1.87E-06	1.33E-04	1.30E-04	1.87E-06	5.66E-05	5.80E-05	1.87E-06
422	572054.8	4149119	5.99E-04	0.000517	1.83E-06	7.30E-04	6.99E-04	1.83E-06	1.30E-04	1.27E-04	1.83E-06	5.53E-05	5.67E-05	1.83E-06
423	572054.5	4149110	5.85E-04	0.000504	1.78E-06	7.12E-04	6.82E-04	1.78E-06	1.27E-04	1.24E-04	1.78E-06	5.40E-05	5.53E-05	1.78E-06
424	572054.2	4149100	5.72E-04	0.000493	1.74E-06	6.96E-04	6.67E-04	1.74E-06	1.24E-04	1.21E-04	1.74E-06	5.27E-05	5.41E-05	1.74E-06
425	572048.6	4149216	5.74E-04	0.000495	1.75E-06	6.99E-04	6.70E-04	1.75E-06	1.25E-04	1.22E-04	1.75E-06	5.30E-05	5.43E-05	1.75E-06
426	572048.3	4149207	5.76E-04	0.000496	1.75E-06	7.01E-04	6.72E-04	1.75E-06	1.25E-04	1.22E-04	1.75E-06	5.32E-05	5.45E-05	1.75E-06
427	572048	4149198	5.81E-04	0.0005	1.77E-06	7.07E-04	6.77E-04	1.77E-06	1.26E-04	1.23E-04	1.77E-06	5.36E-05	5.49E-05	1.77E-06
428	572047.7	4149189	5.88E-04	0.000506	1.79E-06	7.15E-04	6.85E-04	1.79E-06	1.28E-04	1.25E-04	1.79E-06	5.42E-05	5.56E-05	1.79E-06
429	572047.4	4149180	5.95E-04	0.000513	1.81E-06	7.24E-04	6.94E-04	1.81E-06	1.29E-04	1.26E-04	1.81E-06	5.49E-05	5.62E-05	1.81E-06
430	572047.2	4149170	6.01E-04	0.000518	1.83E-06	7.31E-04	7.01E-04	1.83E-06	1.30E-04	1.27E-04	1.83E-06	5.55E-05	5.68E-05	1.83E-06
431	572046.9	4149161	6.04E-04	0.000521	1.84E-06	7.35E-04	7.05E-04	1.84E-06	1.31E-04	1.28E-04	1.84E-06	5.57E-05	5.71E-05	1.84E-06
432	572046.6	4149152	6.03E-04	0.00052	1.84E-06	7.34E-04	7.04E-04	1.84E-06	1.31E-04	1.28E-04	1.84E-06	5.57E-05	5.70E-05	1.84E-06

433	572046.3	4149143	5.98E-04	0.000515	1.82E-06	7.28E-04	6.97E-04	1.82E-06	1.30E-04	1.27E-04	1.82E-06	5.52E-05	5.65E-05	1.82E-06
434	572046	4149134	5.88E-04	0.000507	1.79E-06	7.16E-04	6.86E-04	1.79E-06	1.28E-04	1.25E-04	1.79E-06	5.43E-05	5.56E-05	1.79E-06
435	572045.7	4149124	5.76E-04	0.000497	1.76E-06	7.01E-04	6.72E-04	1.76E-06	1.25E-04	1.22E-04	1.76E-06	5.32E-05	5.45E-05	1.76E-06
436	572045.4	4149115	5.62E-04	0.000485	1.71E-06	6.85E-04	6.56E-04	1.71E-06	1.22E-04	1.19E-04	1.71E-06	5.19E-05	5.32E-05	1.71E-06
437	572045.2	4149106	5.49E-04	0.000473	1.67E-06	6.68E-04	6.40E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.06E-05	5.19E-05	1.67E-06
438	572038.4	4149184	5.58E-04	0.000481	1.7E-06	6.79E-04	6.51E-04	1.70E-06	1.21E-04	1.18E-04	1.70E-06	5.15E-05	5.27E-05	1.70E-06
439	572038.1	4149175	5.65E-04	0.000487	1.72E-06	6.87E-04	6.58E-04	1.72E-06	1.23E-04	1.20E-04	1.72E-06	5.21E-05	5.34E-05	1.72E-06
440	572037.8	4149166	5.70E-04	0.000491	1.73E-06	6.93E-04	6.64E-04	1.73E-06	1.24E-04	1.21E-04	1.73E-06	5.26E-05	5.39E-05	1.73E-06
441	572037.5	4149157	5.72E-04	0.000493	1.74E-06	6.96E-04	6.67E-04	1.74E-06	1.24E-04	1.21E-04	1.74E-06	5.27E-05	5.40E-05	1.74E-06
442	572037.2	4149148	5.70E-04	0.000491	1.73E-06	6.93E-04	6.64E-04	1.73E-06	1.24E-04	1.21E-04	1.73E-06	5.25E-05	5.38E-05	1.73E-06
443	572036.9	4149139	5.63E-04	0.000485	1.72E-06	6.86E-04	6.57E-04	1.72E-06	1.22E-04	1.19E-04	1.72E-06	5.20E-05	5.33E-05	1.72E-06
444	572036.7	4149130	5.54E-04	0.000477	1.69E-06	6.74E-04	6.46E-04	1.69E-06	1.20E-04	1.17E-04	1.69E-06	5.11E-05	5.23E-05	1.69E-06
445	572036.4	4149120	5.42E-04	0.000467	1.65E-06	6.59E-04	6.32E-04	1.65E-06	1.18E-04	1.15E-04	1.65E-06	5.00E-05	5.12E-05	1.65E-06
446	572036.1	4149111	5.29E-04	0.000456	1.61E-06	6.44E-04	6.17E-04	1.61E-06	1.15E-04	1.12E-04	1.61E-06	4.88E-05	5.00E-05	1.61E-06
447	572028.1	4149153	5.41E-04	0.000466	1.65E-06	6.59E-04	6.31E-04	1.65E-06	1.17E-04	1.15E-04	1.65E-06	4.99E-05	5.12E-05	1.65E-06
448	572027.9	4149144	5.38E-04	0.000464	1.64E-06	6.55E-04	6.28E-04	1.64E-06	1.17E-04	1.14E-04	1.64E-06	4.97E-05	5.09E-05	1.64E-06
449	572027.6	4149135	5.31E-04	0.000458	1.62E-06	6.47E-04	6.20E-04	1.62E-06	1.15E-04	1.13E-04	1.62E-06	4.90E-05	5.02E-05	1.62E-06
450	572027.3	4149126	5.22E-04	0.00045	1.59E-06	6.35E-04	6.08E-04	1.59E-06	1.13E-04	1.11E-04	1.59E-06	4.81E-05	4.93E-05	1.59E-06
451	572027	4149117	5.10E-04	0.00044	1.55E-06	6.21E-04	5.95E-04	1.55E-06	1.11E-04	1.08E-04	1.55E-06	4.71E-05	4.82E-05	1.55E-06
452	572026.7	4149107	4.98E-04	0.000429	1.52E-06	6.06E-04	5.81E-04	1.52E-06	1.08E-04	1.06E-04	1.52E-06	4.60E-05	4.71E-05	1.52E-06
453	572018.2	4149131	5.02E-04	0.000433	1.53E-06	6.11E-04	5.86E-04	1.53E-06	1.09E-04	1.06E-04	1.53E-06	4.63E-05	4.75E-05	1.53E-06
454	572017.9	4149122	4.93E-04	0.000424	1.5E-06	5.99E-04	5.74E-04	1.50E-06	1.07E-04	1.04E-04	1.50E-06	4.54E-05	4.66E-05	1.50E-06
455	572017.7	4149113	4.81E-04	0.000415	1.47E-06	5.86E-04	5.61E-04	1.47E-06	1.04E-04	1.02E-04	1.47E-06	4.44E-05	4.55E-05	1.47E-06
456	572169	4148870	1.13E-03	0.000972	3.43E-06	1.37E-03	1.32E-03	3.43E-06	2.45E-04	2.39E-04	3.43E-06	1.04E-04	1.07E-04	3.43E-06
457	572175.3	4148863	1.17E-03	0.001009	3.57E-06	1.43E-03	1.37E-03	3.57E-06	2.54E-04	2.48E-04	3.57E-06	1.08E-04	1.11E-04	3.57E-06
458	572139.7	4148887	9.16E-04	0.00079	2.79E-06	1.12E-03	1.07E-03	2.79E-06	1.99E-04	1.94E-04	2.79E-06	8.45E-05	8.66E-05	2.79E-06
459	572146	4148880	9.56E-04	0.000823	2.91E-06	1.16E-03	1.11E-03	2.91E-06	2.07E-04	2.03E-04	2.91E-06	8.82E-05	9.03E-05	2.91E-06
460	572152.3	4148874	9.96E-04	0.000858	3.03E-06	1.21E-03	1.16E-03	3.03E-06	2.16E-04	2.11E-04	3.03E-06	9.19E-05	9.41E-05	3.03E-06
461	572158.6	4148867	1.04E-03	0.000893	3.16E-06	1.26E-03	1.21E-03	3.16E-06	2.25E-04	2.20E-04	3.16E-06	9.56E-05	9.80E-05	3.16E-06
462	572165	4148860	1.08E-03	0.000927	3.28E-06	1.31E-03	1.26E-03	3.28E-06	2.34E-04	2.28E-04	3.28E-06	9.93E-05	1.02E-04	3.28E-06
463	572171.3	4148854	1.12E-03	0.000962	3.4E-06	1.36E-03	1.30E-03	3.40E-06	2.42E-04	2.37E-04	3.40E-06	1.03E-04	1.06E-04	3.40E-06
464	572116.9	4148898	7.79E-04	0.000672	2.37E-06	9.49E-04	9.09E-04	2.37E-06	1.69E-04	1.65E-04	2.37E-06	7.19E-05	7.37E-05	2.37E-06
465	572123.2	4148891	8.11E-04	0.000699	2.47E-06	9.87E-04	9.46E-04	2.47E-06	1.76E-04	1.72E-04	2.47E-06	7.48E-05	7.67E-05	2.47E-06
466	572129.5	4148884	8.45E-04	0.000728	2.57E-06	1.03E-03	9.85E-04	2.57E-06	1.83E-04	1.79E-04	2.57E-06	7.79E-05	7.99E-05	2.57E-06
467	572135.8	4148878	8.80E-04	0.000758	2.68E-06	1.07E-03	1.03E-03	2.68E-06	1.91E-04	1.86E-04	2.68E-06	8.12E-05	8.32E-05	2.68E-06
468	572142.1	4148871	9.16E-04	0.00079	2.79E-06	1.12E-03	1.07E-03	2.79E-06	1.99E-04	1.94E-04	2.79E-06	8.45E-05	8.66E-05	2.79E-06
469	572148.4	4148864	9.54E-04	0.000822	2.9E-06	1.16E-03	1.11E-03	2.90E-06	2.07E-04	2.02E-04	2.90E-06	8.80E-05	9.02E-05	2.90E-06
470	572154.7	4148858	9.91E-04	0.000854	3.02E-06	1.21E-03	1.16E-03	3.02E-06	2.15E-04	2.10E-04	3.02E-06	9.14E-05	9.37E-05	3.02E-06
471	572160.9	4148851	1.03E-03	0.000886	3.13E-06	1.25E-03	1.20E-03	3.13E-06	2.23E-04	2.18E-04	3.13E-06	9.48E-05	9.72E-05	3.13E-06
472	572167.2	4148844	1.07E-03	0.000918	3.24E-06	1.30E-03	1.24E-03	3.24E-06	2.31E-04	2.26E-04	3.24E-06	9.83E-05	1.01E-04	3.24E-06
473	572100.6	4148902	6.97E-04	0.0006	2.12E-06	8.48E-04	8.12E-04	2.12E-06	1.51E-04	1.48E-04	2.12E-06	6.43E-05	6.59E-05	2.12E-06
474	572106.9	4148895	7.23E-04	0.000623	2.2E-06	8.80E-04	8.43E-04	2.20E-06	1.57E-04	1.53E-04	2.20E-06	6.67E-05	6.84E-05	2.20E-06
475	572113.1	4148888	7.51E-04	0.000647	2.29E-06	9.14E-04	8.76E-04	2.29E-06	1.63E-04	1.59E-04	2.29E-06	6.93E-05	7.10E-05	2.29E-06
476	572119.4	4148882	7.81E-04	0.000673	2.38E-06	9.50E-04	9.11E-04	2.38E-06	1.69E-04	1.66E-04	2.38E-06	7.21E-05	7.38E-05	2.38E-06
477	572125.6	4148875	8.13E-04	0.0007	2.47E-06	9.89E-04	9.48E-04	2.47E-06	1.76E-04	1.72E-04	2.47E-06	7.50E-05	7.68E-05	2.47E-06
478	572131.9	4148868	8.46E-04	0.000729	2.58E-06	1.03E-03	9.86E-04	2.58E-06	1.83E-04	1.79E-04	2.58E-06	7.80E-05	7.99E-05	2.58E-06
479	572138.2	4148862	8.79E-04	0.000758	2.68E-06	1.07E-03	1.03E-03	2.68E-06	1.91E-04	1.86E-04	2.68E-06	8.11E-05	8.31E-05	2.68E-06
480	572144.4	4148855	9.14E-04	0.000787	2.78E-06	1.11E-03	1.07E-03	2.78E-06	1.98E-04	1.94E-04	2.78E-06	8.43E-05	8.64E-05	2.78E-06
481	572150.7	4148849	9.48E-04	0.000817	2.89E-06	1.15E-03	1.11E-03	2.89E-06	2.06E-04	2.01E-04	2.89E-06	8.75E-05	8.96E-05	2.89E-06
482	572156.9	4148842	9.82E-04	0.000847	2.99E-06	1.20E-03	1.15E-03	2.99E-06	2.13E-04	2.08E-04	2.99E-06	9.06E-05	9.29E-05	2.99E-06
483	572163.2	4148835	1.02E-03	0.000877	3.1E-06	1.24E-03	1.19E-03	3.10E-06	2.21E-04	2.16E-04	3.10E-06	9.39E-05	9.62E-05	3.10E-06
484	572090.6	4148899	6.49E-04	0.000559	1.98E-06	7.90E-04	7.57E-04	1.98E-06	1.41E-04	1.38E-04	1.98E-06	5.99E-05	6.14E-05	1.98E-06
485	572096.9	4148892	6.73E-04	0.00058	2.05E-06	8.19E-04	7.85E-04	2.05E-06	1.46E-04	1.43E-04	2.05E-06	6.21E-05	6.36E-05	2.05E-06
486	572109.3	4148879	7.24E-04	0.000624	2.21E-06	8.82E-04	8.45E-04	2.21E-06	1.57E-04	1.54E-04	2.21E-06	6.68E-05	6.85E-05	2.21E-06
487	572115.5	4148872	7.53E-04	0.000649	2.29E-06	9.16E-04	8.78E-04	2.29E-06	1.63E-04	1.59E-04	2.29E-06	6.94E-05	7.12E-05	2.29E-06
488	572128	4148859	8.13E-04	0.000701	2.48E-06	9.89E-04	9.48E-04	2.48E-06	1.76E-04	1.72E-04	2.48E-06	7.50E-05	7.69E-05	2.48E-06
489	572140.5	4148846	8.76E-04	0.000755	2.67E-06	1.07E-03	1.02E-03	2.67E-06	1.90E-04	1.86E-04	2.67E-06	8.08E-05	8.28E-05	2.67E-06
490	572146.7	4148839	9.08E-04	0.000783	2.77E-06	1.11E-03	1.06E-03	2.77E-06	1.97E-04	1.92E-04	2.77E-06	8.38E-05	8.59E-05	2.77E-06
491	572159.1	4148826	9.74E-04	0.000839	2.97E-06	1.18E-03	1.14E-03	2.97E-06	2.11E-04	2.06E-04	2.97E-06	8.98E-05	9.21E-05	2.97E-06
492	572065.5	4148912	5.58E-04	0.000481	1.7E-06	6.79E-04	6.50E-04	1.70E-06	1.21E-04	1.18E-04	1.70E-06	5.15E-05	5.27E-05	1.70E-06
493	572071.9	4148905	5.78E-04	0.000498	1.76E-06	7.04E-04	6.74E-04	1.76E-06	1.25E-04	1.23E-04	1.76E-06	5.33E-05	5.47E-05	1.76E-06
494	572078.3	4148898	5.99E-04	0.000516	1.82E-06	7.29E-04	6.98E-04	1.82E-06	1.30E-04	1.27E-04	1.82E-06	5.52E-05	5.66E-05	1.82E-06
495	572084.6	4148892	6.20E-04	0.000534	1.89E-06	7.55E-04	7.23E-04	1.89E-06	1.35E-04	1.31E-04	1.89E-06	5.72E-05	5.86E-05	1.89E-06
496	572091	4148885	6.43E-04	0.000554	1.96E-06	7.82E-04	7.50E-04	1.96E-06	1.39E-04	1.36E-04	1.96E-06	5.93E-05	6.08E-05	1.96E-06
497	572097.4	4148878	6.67E-04	0.000574	2.03E-06	8.11E-04	7.77E-04	2.03E-06	1.45E-04	1.41E-04	2.03E-06	6.15E-05	6.30E-05	2.03E-06
498	572103.8	4148871	6.92E-04	0.000596	2.11E-06	8.42E-04	8.07E-04	2.11E-06	1.50E-04	1.47E-04	2.11E-06	6.38E-05	6.54E-05	2.11E-06
499	572110.2	4148865	7.19E-04	0.00062	2.19E-06	8.75E-04	8.39E-04	2.19E-06	1.56E-04	1.52E-04	2.19E-06	6.63E-05	6.80E-05	2.19E-06
500	572116.6	4148858	7.48E-04	0.000644	2.28E-06	9.10E-04	8.72E-04	2.28E-06	1.62E-04	1.58E-04	2.28E-06	6.90E-05	7.07E-05	2.28E-06
501	572123	4148851	7.77E-04	0.00067	2.37E-06	9.46E-04	9.06E-04	2.37E-06	1.69E-04	1.65E-04	2.37E-06	7.17E-05	7.35E-05	2.37E-06
502	572129.3	4148844	8.07E-04	0.000696	2.46E-06	9.83E-04	9.42E-04	2.46E-06	1.75E-04	1.71E-04	2.46E-06	7.45E-05	7.63E-05	2.46E-06
503	572135.7	4148837	8.38E-04	0.000722	2.55E-06	1.02E-03	9.77E-04	2.55E-06	1.82E-04	1.78E-04	2.55E-06	7.73E-05	7.92E-05	2.55E-06
504	572142.1	4148831	8.69E-04	0.000748	2.65E-06	1.06E-03	1.01E-03	2.65E-06	1.88E-04	1.84E-04	2.65E-06	8.01E-05	8.21E-05	2.65E-06
505	572148.5	4148824	9.00E-04	0.000776	2.74E-06	1.10E-03	1.05E-03	2.74E-06	1.95E-04	1.91E-04	2.74E-06	8.31E-05	8.51E-05	2.74E-06
506	572154.9	4148817	9.32E-04	0.000803	2.84E-06	1.13E-03	1.09E-03	2.84E-06	2.02E-04	1.97E-04	2.84E-06	8.60E-05	8.81E-05	2.84E-06
507	572049.2	4148916	5.04E-04	0.000435	1.54E-06	6.14E-04	5.88E-04	1.54E-06	1.09E-04	1.07E-04	1.54E-06	4.65E-05	4.77E-05	1.54E-06
508	572055.5	4148909	5.23E-04	0.000451	1.59E-06	6.37E-04	6.10E-04	1.59E-06	1.14E-04	1.11E-04	1.59E-06	4.83E-05	4.95E-05	1.59E-06
509	572061.9	4148902	5.42E-04	0.000467	1.65E-06	6.60E-04	6.32E-04	1.65E-06	1.18E-04	1.15E-04	1.65E-06	5.00E-05	5.12E-05	1.65E-06
510	572068.2	4148895	5.61E-04	0.000483	1.71E-06	6.83E-04	6.54E-04	1.71E-06	1.22E-04	1.19E-04	1.71E-06	5.18E-05	5.30E-05	1.71E-06
511	572074.6	4148889	5.81E-04	0.0005	1.77E-06	7.07E-04	6.77E-04	1.77E-06	1.26E-04	1.23E-04	1.77E-06	5.36E-05	5.49E-05	1.77E-06
512	572081	4148882	6.01E-04	0.000518	1.83E-06	7.31E-04	7.01E-04	1.83E-06	1.30E-04	1.27E-04	1.83E-06	5.54E-05	5.68E-05	1.83E-06
513	572087.3	4148875	6.22E-04	0.000536	1.89E-06	7.57E-04	7.25E-04	1.89E-06	1.35E-04	1.32E-04	1.89E-06	5.74E-05	5.88E-05	1.89E-06
514	572093.7	4148869	6.44E-04	0.000555	1.96E-06	7.84E-04	7.52E-04	1.96E-06	1.40E-04	1.37E-04	1.96E-06	5.95E-05	6.09E-05	1.96E-06
515	572100	4148862	6.69E-04	0.000576	2.04E-06	8.14E-04	7.80E-04	2.04E-06	1.45E-04	1.42E-04	2.04E-06	6.17E-05	6.32E-05	2.04E-06
516	572106.4	4148855	6.94E-04	0.000598	2.11E-06	8.45E-04	8.10E-04	2.11E-06	1.51E-04	1.47E-04	2.11E-06	6.40E-05	6.56E-05	2.11E-06
517	572112.7	4148848	7.21E-04	0.000621	2.2E-06	8.77E-04	8.41E-04	2.20E-06	1.56E-04	1.53E-04	2.20E-06	6.65E-05	6.82E-05	2.20E-06
518	572119.1	4148842	7.49E-04	0.000645	2.28E-06	9.11E-04	8.73E-04	2.28E-06	1.62E-04	1.59E-04	2.28E-06	6.91E-05	7.08E-05	2.28E-06
519	572125.4	4148835	7.77E-04	0.00067	2.37E-06	9.46E-04	9.06E-04	2.37E-06	1.69E-04	1.65E-04	2.37E-06	7.17E-05	7.35E-05	2.37E-06

520	572131.8	4148828	8.06E-04	0.000694	2.45E-06	9.80E-04	9.40E-04	2.45E-06	1.75E-04	1.71E-04	2.45E-06	7.43E-05	7.62E-05	2.45E-06
521	572138.1	4148821	8.35E-04	0.000719	2.54E-06	1.02E-03	9.73E-04	2.54E-06	1.81E-04	1.77E-04	2.54E-06	7.70E-05	7.89E-05	2.54E-06
522	572144.5	4148815	8.64E-04	0.000745	2.63E-06	1.05E-03	1.01E-03	2.63E-06	1.88E-04	1.83E-04	2.63E-06	7.97E-05	8.17E-05	2.63E-06
523	572150.8	4148808	8.94E-04	0.00077	2.72E-06	1.09E-03	1.04E-03	2.72E-06	1.94E-04	1.89E-04	2.72E-06	8.24E-05	8.45E-05	2.72E-06
524	572033	4148919	4.57E-04	0.000394	1.39E-06	5.56E-04	5.33E-04	1.39E-06	9.91E-05	9.68E-05	1.39E-06	4.21E-05	4.32E-05	1.39E-06
525	572039.3	4148913	4.74E-04	0.000409	1.45E-06	5.77E-04	5.53E-04	1.45E-06	1.03E-04	1.01E-04	1.45E-06	4.38E-05	4.49E-05	1.45E-06
526	572045.6	4148906	4.92E-04	0.000424	1.5E-06	5.99E-04	5.74E-04	1.50E-06	1.07E-04	1.04E-04	1.50E-06	4.54E-05	4.65E-05	1.50E-06
527	572052	4148899	5.10E-04	0.000439	1.55E-06	6.20E-04	5.94E-04	1.55E-06	1.11E-04	1.08E-04	1.55E-06	4.70E-05	4.82E-05	1.55E-06
528	572058.3	4148893	5.27E-04	0.000454	1.61E-06	6.41E-04	6.15E-04	1.61E-06	1.14E-04	1.12E-04	1.61E-06	4.86E-05	4.98E-05	1.61E-06
529	572064.6	4148886	5.45E-04	0.00047	1.66E-06	6.63E-04	6.36E-04	1.66E-06	1.18E-04	1.15E-04	1.66E-06	5.03E-05	5.15E-05	1.66E-06
530	572070.9	4148879	5.63E-04	0.000485	1.72E-06	6.86E-04	6.57E-04	1.72E-06	1.22E-04	1.19E-04	1.72E-06	5.20E-05	5.33E-05	1.72E-06
531	572077.2	4148872	5.82E-04	0.000502	1.77E-06	7.09E-04	6.79E-04	1.77E-06	1.26E-04	1.23E-04	1.77E-06	5.37E-05	5.51E-05	1.77E-06
532	572083.6	4148866	6.02E-04	0.000519	1.83E-06	7.33E-04	7.03E-04	1.83E-06	1.31E-04	1.28E-04	1.83E-06	5.56E-05	5.70E-05	1.83E-06
533	572089.9	4148859	6.24E-04	0.000537	1.9E-06	7.59E-04	7.27E-04	1.90E-06	1.35E-04	1.32E-04	1.90E-06	5.75E-05	5.90E-05	1.90E-06
534	572096.2	4148852	6.46E-04	0.000557	1.97E-06	7.87E-04	7.54E-04	1.97E-06	1.40E-04	1.37E-04	1.97E-06	5.96E-05	6.11E-05	1.97E-06
535	572102.5	4148846	6.70E-04	0.000578	2.04E-06	8.16E-04	7.82E-04	2.04E-06	1.45E-04	1.42E-04	2.04E-06	6.19E-05	6.34E-05	2.04E-06
536	572108.9	4148839	6.96E-04	0.000599	2.12E-06	8.47E-04	8.11E-04	2.12E-06	1.51E-04	1.47E-04	2.12E-06	6.42E-05	6.58E-05	2.12E-06
537	572115.2	4148832	7.22E-04	0.000622	2.2E-06	8.78E-04	8.42E-04	2.20E-06	1.57E-04	1.53E-04	2.20E-06	6.66E-05	6.82E-05	2.20E-06
538	572121.5	4148826	7.48E-04	0.000645	2.28E-06	9.11E-04	8.73E-04	2.28E-06	1.62E-04	1.59E-04	2.28E-06	6.90E-05	7.08E-05	2.28E-06
539	572127.8	4148819	7.75E-04	0.000668	2.36E-06	9.44E-04	9.04E-04	2.36E-06	1.68E-04	1.64E-04	2.36E-06	7.15E-05	7.33E-05	2.36E-06
540	572134.1	4148812	8.02E-04	0.000691	2.44E-06	9.77E-04	9.36E-04	2.44E-06	1.74E-04	1.70E-04	2.44E-06	7.40E-05	7.59E-05	2.44E-06
541	572140.5	4148806	8.30E-04	0.000715	2.53E-06	1.01E-03	9.68E-04	2.53E-06	1.80E-04	1.76E-04	2.53E-06	7.66E-05	7.85E-05	2.53E-06
542	572146.8	4148799	8.57E-04	0.000738	2.61E-06	1.04E-03	9.99E-04	2.61E-06	1.86E-04	1.82E-04	2.61E-06	7.90E-05	8.10E-05	2.61E-06
543	572016.9	4148923	4.15E-04	0.000357	1.26E-06	5.05E-04	4.83E-04	1.26E-06	9.00E-05	8.79E-05	1.26E-06	3.82E-05	3.92E-05	1.26E-06
544	572023.2	4148916	4.31E-04	0.000371	1.31E-06	5.24E-04	5.02E-04	1.31E-06	9.34E-05	9.12E-05	1.31E-06	3.97E-05	4.07E-05	1.31E-06
545	572029.5	4148910	4.47E-04	0.000385	1.36E-06	5.44E-04	5.21E-04	1.36E-06	9.70E-05	9.47E-05	1.36E-06	4.12E-05	4.23E-05	1.36E-06
546	572035.8	4148903	4.64E-04	0.000399	1.41E-06	5.64E-04	5.41E-04	1.41E-06	1.01E-04	9.82E-05	1.41E-06	4.28E-05	4.38E-05	1.41E-06
547	572042.1	4148896	4.80E-04	0.000414	1.46E-06	5.84E-04	5.60E-04	1.46E-06	1.04E-04	1.02E-04	1.46E-06	4.43E-05	4.54E-05	1.46E-06
548	572048.3	4148890	4.96E-04	0.000428	1.51E-06	6.04E-04	5.79E-04	1.51E-06	1.08E-04	1.05E-04	1.51E-06	4.58E-05	4.69E-05	1.51E-06
549	572054.6	4148883	5.13E-04	0.000442	1.56E-06	6.24E-04	5.98E-04	1.56E-06	1.11E-04	1.09E-04	1.56E-06	4.73E-05	4.85E-05	1.56E-06
550	572060.9	4148876	5.29E-04	0.000456	1.61E-06	6.44E-04	6.18E-04	1.61E-06	1.15E-04	1.12E-04	1.61E-06	4.88E-05	5.01E-05	1.61E-06
551	572067.2	4148870	5.47E-04	0.000471	1.67E-06	6.65E-04	6.38E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.04E-05	5.17E-05	1.67E-06
552	572073.5	4148863	5.65E-04	0.000487	1.72E-06	6.87E-04	6.59E-04	1.72E-06	1.23E-04	1.20E-04	1.72E-06	5.21E-05	5.34E-05	1.72E-06
553	572079.8	4148856	5.84E-04	0.000503	1.78E-06	7.10E-04	6.81E-04	1.78E-06	1.27E-04	1.24E-04	1.78E-06	5.38E-05	5.52E-05	1.78E-06
554	572086.1	4148850	6.04E-04	0.00052	1.84E-06	7.35E-04	7.04E-04	1.84E-06	1.31E-04	1.28E-04	1.84E-06	5.57E-05	5.71E-05	1.84E-06
555	572092.4	4148843	6.25E-04	0.000539	1.9E-06	7.61E-04	7.29E-04	1.90E-06	1.36E-04	1.32E-04	1.90E-06	5.77E-05	5.91E-05	1.90E-06
556	572098.7	4148836	6.48E-04	0.000558	1.97E-06	7.89E-04	7.56E-04	1.97E-06	1.41E-04	1.37E-04	1.97E-06	5.98E-05	6.13E-05	1.97E-06
557	572105	4148830	6.72E-04	0.000579	2.05E-06	8.17E-04	7.83E-04	2.05E-06	1.46E-04	1.42E-04	2.05E-06	6.20E-05	6.35E-05	2.05E-06
558	572111.3	4148823	6.96E-04	0.0006	2.12E-06	8.47E-04	8.12E-04	2.12E-06	1.51E-04	1.48E-04	2.12E-06	6.42E-05	6.58E-05	2.12E-06
559	572117.6	4148816	7.21E-04	0.000621	2.2E-06	8.78E-04	8.41E-04	2.20E-06	1.56E-04	1.53E-04	2.20E-06	6.65E-05	6.82E-05	2.20E-06
560	572123.9	4148810	7.46E-04	0.000643	2.27E-06	9.08E-04	8.71E-04	2.27E-06	1.62E-04	1.58E-04	2.27E-06	6.89E-05	7.06E-05	2.27E-06
561	572130.2	4148803	7.72E-04	0.000665	2.35E-06	9.39E-04	9.00E-04	2.35E-06	1.67E-04	1.64E-04	2.35E-06	7.12E-05	7.30E-05	2.35E-06
562	572136.4	4148796	7.97E-04	0.000687	2.43E-06	9.70E-04	9.29E-04	2.43E-06	1.73E-04	1.69E-04	2.43E-06	7.35E-05	7.53E-05	2.43E-06
563	572142.7	4148790	8.22E-04	0.000708	2.5E-06	1.00E-03	9.58E-04	2.50E-06	1.78E-04	1.74E-04	2.50E-06	7.58E-05	7.77E-05	2.50E-06
564	572000.8	4148927	3.78E-04	0.000326	1.15E-06	4.60E-04	4.41E-04	1.15E-06	8.20E-05	8.01E-05	1.15E-06	3.49E-05	3.57E-05	1.15E-06
565	572007.1	4148920	3.92E-04	0.000338	1.19E-06	4.77E-04	4.57E-04	1.19E-06	8.50E-05	8.30E-05	1.19E-06	3.61E-05	3.70E-05	1.19E-06
566	572013.4	4148913	4.07E-04	0.00035	1.24E-06	4.95E-04	4.74E-04	1.24E-06	8.82E-05	8.62E-05	1.24E-06	3.75E-05	3.84E-05	1.24E-06
567	572019.6	4148907	4.22E-04	0.000363	1.28E-06	5.13E-04	4.92E-04	1.28E-06	9.15E-05	8.94E-05	1.28E-06	3.89E-05	3.99E-05	1.28E-06
568	572025.9	4148900	4.37E-04	0.000377	1.33E-06	5.32E-04	5.10E-04	1.33E-06	9.49E-05	9.27E-05	1.33E-06	4.04E-05	4.13E-05	1.33E-06
569	572032.2	4148893	4.53E-04	0.00039	1.38E-06	5.51E-04	5.28E-04	1.38E-06	9.83E-05	9.60E-05	1.38E-06	4.18E-05	4.28E-05	1.38E-06
570	572038.4	4148887	4.68E-04	0.000403	1.43E-06	5.70E-04	5.46E-04	1.43E-06	1.02E-04	9.92E-05	1.43E-06	4.32E-05	4.43E-05	1.43E-06
571	572044.7	4148880	4.83E-04	0.000416	1.47E-06	5.88E-04	5.64E-04	1.47E-06	1.05E-04	1.02E-04	1.47E-06	4.46E-05	4.57E-05	1.47E-06
572	572051	4148873	4.99E-04	0.00043	1.52E-06	6.07E-04	5.81E-04	1.52E-06	1.08E-04	1.06E-04	1.52E-06	4.60E-05	4.71E-05	1.52E-06
573	572057.2	4148867	5.14E-04	0.000443	1.57E-06	6.26E-04	6.00E-04	1.57E-06	1.12E-04	1.09E-04	1.57E-06	4.75E-05	4.86E-05	1.57E-06
574	572063.5	4148860	5.31E-04	0.000457	1.62E-06	6.46E-04	6.19E-04	1.62E-06	1.15E-04	1.12E-04	1.62E-06	4.90E-05	5.02E-05	1.62E-06
575	572069.8	4148854	5.48E-04	0.000472	1.67E-06	6.66E-04	6.39E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.05E-05	5.18E-05	1.67E-06
576	572076	4148847	5.66E-04	0.000487	1.72E-06	6.88E-04	6.60E-04	1.72E-06	1.23E-04	1.20E-04	1.72E-06	5.22E-05	5.35E-05	1.72E-06
577	572082.3	4148840	5.85E-04	0.000504	1.78E-06	7.12E-04	6.82E-04	1.78E-06	1.27E-04	1.24E-04	1.78E-06	5.40E-05	5.53E-05	1.78E-06
578	572088.6	4148834	6.05E-04	0.000521	1.84E-06	7.36E-04	7.06E-04	1.84E-06	1.31E-04	1.28E-04	1.84E-06	5.58E-05	5.72E-05	1.84E-06
579	572094.8	4148827	6.26E-04	0.00054	1.91E-06	7.62E-04	7.31E-04	1.91E-06	1.36E-04	1.33E-04	1.91E-06	5.78E-05	5.92E-05	1.91E-06
580	572101.1	4148820	6.49E-04	0.000559	1.98E-06	7.90E-04	7.57E-04	1.98E-06	1.41E-04	1.38E-04	1.98E-06	5.99E-05	6.13E-05	1.98E-06
581	572107.4	4148814	6.72E-04	0.000579	2.05E-06	8.18E-04	7.84E-04	2.05E-06	1.46E-04	1.42E-04	2.05E-06	6.20E-05	6.35E-05	2.05E-06
582	572113.6	4148807	6.95E-04	0.000599	2.12E-06	8.46E-04	8.11E-04	2.12E-06	1.51E-04	1.47E-04	2.12E-06	6.41E-05	6.57E-05	2.12E-06
583	572119.9	4148800	7.19E-04	0.000619	2.19E-06	8.75E-04	8.38E-04	2.19E-06	1.56E-04	1.52E-04	2.19E-06	6.63E-05	6.79E-05	2.19E-06
584	572126.2	4148794	7.42E-04	0.000639	2.26E-06	9.03E-04	8.65E-04	2.26E-06	1.61E-04	1.57E-04	2.26E-06	6.85E-05	7.02E-05	2.26E-06
585	572132.4	4148787	7.66E-04	0.00066	2.33E-06	9.32E-04	8.93E-04	2.33E-06	1.66E-04	1.62E-04	2.33E-06	7.06E-05	7.24E-05	2.33E-06
586	572138.7	4148781	7.89E-04	0.00068	2.4E-06	9.60E-04	9.20E-04	2.40E-06	1.71E-04	1.67E-04	2.40E-06	7.28E-05	7.46E-05	2.40E-06
587	571984.9	4148930	3.46E-04	0.000298	1.05E-06	4.21E-04	4.03E-04	1.05E-06	7.50E-05	7.33E-05	1.05E-06	3.19E-05	3.27E-05	1.05E-06
588	571991.1	4148923	3.58E-04	0.000308	1.09E-06	4.35E-04	4.17E-04	1.09E-06	7.76E-05	7.58E-05	1.09E-06	3.30E-05	3.38E-05	1.09E-06
589	571997.4	4148917	3.71E-04	0.00032	1.13E-06	4.51E-04	4.32E-04	1.13E-06	8.05E-05	7.86E-05	1.13E-06	3.42E-05	3.51E-05	1.13E-06
590	572003.6	4148910	3.84E-04	0.000331	1.17E-06	4.68E-04	4.48E-04	1.17E-06	8.34E-05	8.15E-05	1.17E-06	3.55E-05	3.64E-05	1.17E-06
591	572009.9	4148904	3.99E-04	0.000344	1.21E-06	4.85E-04	4.65E-04	1.21E-06	8.65E-05	8.45E-05	1.21E-06	3.68E-05	3.77E-05	1.21E-06
592	572022.3	4148890	4.28E-04	0.000368	1.3E-06	5.20E-04	4.99E-04	1.30E-06	9.28E-05	9.06E-05	1.30E-06	3.95E-05	4.04E-05	1.30E-06
593	572028.6	4148884	4.42E-04	0.000381	1.35E-06	5.38E-04	5.16E-04	1.35E-06	9.59E-05	9.37E-05	1.35E-06	4.08E-05	4.18E-05	1.35E-06
594	572034.8	4148877	4.56E-04	0.000393	1.39E-06	5.55E-04	5.32E-04	1.39E-06	9.90E-05	9.67E-05	1.39E-06	4.21E-05	4.31E-05	1.39E-06
595	572041	4148870	4.70E-04	0.000405	1.43E-06	5.73E-04	5.49E-04	1.43E-06	1.02E-04	9.97E-05	1.43E-06	4.34E-05	4.45E-05	1.43E-06
596	572047.3	4148864	4.85E-04	0.000418	1.48E-06	5.90E-04	5.65E-04	1.48E-06	1.05E-04	1.03E-04	1.48E-06	4.47E-05	4.58E-05	1.48E-06
597	572059.8	4148851	5.15E-04	0.000444	1.57E-06	6.27E-04	6.01E-04	1.57E-06	1.12E-04	1.09E-04	1.57E-06	4.75E-05	4.87E-05	1.57E-06
598	572066	4148844	5.31E-04	0.000458	1.62E-06	6.47E-04	6.20E-04	1.62E-06	1.15E-04	1.13E-04	1.62E-06	4.90E-05	5.02E-05	1.62E-06
599	572072.2	4148837	5.48E-04	0.000473	1.67E-06	6.67E-04	6.40E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.06E-05	5.19E-05	1.67E-06
600	572078.5	4148831	5.67E-04	0.000488	1.73E-06	6.90E-04	6.61E-04	1.73E-06	1.23E-04	1.20E-04	1.73E-06	5.23E-05	5.36E-05	1.73E-06
601	572091	4148818	6.06E-04	0.000522	1.85E-06	7.38E-04	7.07E-04	1.85E-06	1.32E-04	1.28E-04	1.85E-06	5.59E-05	5.73E-05	1.85E-06
602	572097.2	4148811	6.27E-04	0.00054	1.91E-06	7.63E-04	7.31E-04	1.91E-06	1.36E-04	1.33E-04	1.91E-06	5.79E-05	5.93E-05	1.91E-06
603	572103.4	4148804	6.49E-04	0.000559	1.98E-06	7.89E-04	7.57E-04	1.98E-06	1.41E-04	1.37E-04	1.98E-06	5.99E-05	6.13E-05	1.98E-06
604	572109.7	4148798	6.70E-04	0.000578	2.04E-06	8.16E-04	7.82E-04	2.04E-06	1.45E-04	1.42E-04	2.04E-06	6.19E-05	6.34E-05	2.04E-06
605	572115.9	4148791	6.92E-04	0.000597	2.11E-06	8.43E-04	8.07E-04	2.11E-06	1.50E-04	1.47E-04	2.11E-06	6.39E-05	6.55E-05	2.11E-06
606	572122.2	4148785	7.14E-04	0.000615	2.18E-06	8.69E-04	8.33E-04	2.18E-06	1.55E-04	1.51E-04	2.18E-06	6.59E-05	6.75E-05	2.18E-06

607	572128.4	4148778	7.36E-04	0.000635	2.24E-06	8.96E-04	8.59E-04	2.24E-06	1.60E-04	1.56E-04	2.24E-06	6.79E-05	6.96E-05	2.24E-06
608	572134.6	4148771	7.59E-04	0.000654	2.31E-06	9.23E-04	8.85E-04	2.31E-06	1.65E-04	1.61E-04	2.31E-06	7.00E-05	7.17E-05	2.31E-06
609	571964.6	4148938	3.12E-04	0.000269	9.49E-07	3.79E-04	3.63E-04	9.49E-07	6.76E-05	6.60E-05	9.49E-07	2.88E-05	2.95E-05	9.49E-07
610	571971	4148931	3.21E-04	0.000277	9.79E-07	3.91E-04	3.75E-04	9.79E-07	6.97E-05	6.81E-05	9.79E-07	2.97E-05	3.04E-05	9.79E-07
611	571977.3	4148925	3.32E-04	0.000286	1.01E-06	4.04E-04	3.87E-04	1.01E-06	7.21E-05	7.04E-05	1.01E-06	3.06E-05	3.14E-05	1.01E-06
612	571983.7	4148918	3.44E-04	0.000296	1.05E-06	4.18E-04	4.01E-04	1.05E-06	7.46E-05	7.29E-05	1.05E-06	3.17E-05	3.25E-05	1.05E-06
613	571990.1	4148911	3.56E-04	0.000307	1.09E-06	4.34E-04	4.16E-04	1.09E-06	7.73E-05	7.55E-05	1.09E-06	3.29E-05	3.37E-05	1.09E-06
614	571996.5	4148904	3.70E-04	0.000318	1.13E-06	4.50E-04	4.31E-04	1.13E-06	8.02E-05	7.83E-05	1.13E-06	3.41E-05	3.49E-05	1.13E-06
615	572002.9	4148897	3.83E-04	0.00033	1.17E-06	4.66E-04	4.47E-04	1.17E-06	8.32E-05	8.12E-05	1.17E-06	3.54E-05	3.62E-05	1.17E-06
616	572009.2	4148891	3.97E-04	0.000342	1.21E-06	4.83E-04	4.63E-04	1.21E-06	8.62E-05	8.42E-05	1.21E-06	3.66E-05	3.75E-05	1.21E-06
617	572015.6	4148884	4.11E-04	0.000354	1.25E-06	5.00E-04	4.79E-04	1.25E-06	8.92E-05	8.71E-05	1.25E-06	3.79E-05	3.89E-05	1.25E-06
618	572022	4148877	4.25E-04	0.000366	1.29E-06	5.17E-04	4.96E-04	1.29E-06	9.22E-05	9.01E-05	1.29E-06	3.92E-05	4.02E-05	1.29E-06
619	572028.4	4148870	4.39E-04	0.000378	1.34E-06	5.34E-04	5.12E-04	1.34E-06	9.52E-05	9.30E-05	1.34E-06	4.05E-05	4.15E-05	1.34E-06
620	572034.7	4148864	4.52E-04	0.00039	1.38E-06	5.50E-04	5.27E-04	1.38E-06	9.81E-05	9.58E-05	1.38E-06	4.17E-05	4.27E-05	1.38E-06
621	572041.1	4148857	4.66E-04	0.000401	1.42E-06	5.67E-04	5.43E-04	1.42E-06	1.01E-04	9.87E-05	1.42E-06	4.30E-05	4.40E-05	1.42E-06
622	572047.5	4148850	4.80E-04	0.000414	1.46E-06	5.84E-04	5.60E-04	1.46E-06	1.04E-04	1.02E-04	1.46E-06	4.43E-05	4.54E-05	1.46E-06
623	572053.9	4148843	4.95E-04	0.000426	1.51E-06	6.02E-04	5.77E-04	1.51E-06	1.07E-04	1.05E-04	1.51E-06	4.56E-05	4.68E-05	1.51E-06
624	572060.3	4148837	5.11E-04	0.00044	1.55E-06	6.21E-04	5.95E-04	1.55E-06	1.11E-04	1.08E-04	1.55E-06	4.71E-05	4.83E-05	1.55E-06
625	572066.6	4148830	5.27E-04	0.000454	1.61E-06	6.41E-04	6.15E-04	1.61E-06	1.14E-04	1.12E-04	1.61E-06	4.86E-05	4.98E-05	1.61E-06
626	572073	4148823	5.45E-04	0.000469	1.66E-06	6.63E-04	6.35E-04	1.66E-06	1.18E-04	1.15E-04	1.66E-06	5.02E-05	5.15E-05	1.66E-06
627	572079.4	4148816	5.63E-04	0.000485	1.72E-06	6.86E-04	6.57E-04	1.72E-06	1.22E-04	1.19E-04	1.72E-06	5.20E-05	5.33E-05	1.72E-06
628	572085.8	4148810	5.83E-04	0.000502	1.77E-06	7.09E-04	6.80E-04	1.77E-06	1.26E-04	1.23E-04	1.77E-06	5.38E-05	5.51E-05	1.77E-06
629	572092.2	4148803	6.03E-04	0.000519	1.84E-06	7.33E-04	7.03E-04	1.84E-06	1.31E-04	1.28E-04	1.84E-06	5.56E-05	5.70E-05	1.84E-06
630	572098.5	4148796	6.23E-04	0.000537	1.9E-06	7.58E-04	7.27E-04	1.90E-06	1.35E-04	1.32E-04	1.90E-06	5.75E-05	5.89E-05	1.90E-06
631	572104.9	4148789	6.44E-04	0.000555	1.96E-06	7.84E-04	7.51E-04	1.96E-06	1.40E-04	1.36E-04	1.96E-06	5.94E-05	6.09E-05	1.96E-06
632	572111.3	4148783	6.65E-04	0.000573	2.03E-06	8.10E-04	7.76E-04	2.03E-06	1.44E-04	1.41E-04	2.03E-06	6.14E-05	6.29E-05	2.03E-06
633	572117.7	4148776	6.86E-04	0.000591	2.09E-06	8.35E-04	8.01E-04	2.09E-06	1.49E-04	1.45E-04	2.09E-06	6.33E-05	6.49E-05	2.09E-06
634	572124	4148769	7.08E-04	0.00061	2.16E-06	8.62E-04	8.26E-04	2.16E-06	1.54E-04	1.50E-04	2.16E-06	6.53E-05	6.69E-05	2.16E-06
635	572130.4	4148762	7.30E-04	0.000629	2.22E-06	8.88E-04	8.51E-04	2.22E-06	1.58E-04	1.55E-04	2.22E-06	6.73E-05	6.90E-05	2.22E-06
636	571948.6	4148942	2.89E-04	0.000249	8.81E-07	3.52E-04	3.37E-04	8.81E-07	6.27E-05	6.13E-05	8.81E-07	2.67E-05	2.73E-05	8.81E-07
637	571954.9	4148935	2.97E-04	0.000256	9.05E-07	3.62E-04	3.47E-04	9.05E-07	6.45E-05	6.30E-05	9.05E-07	2.74E-05	2.81E-05	9.05E-07
638	571961.3	4148928	3.06E-04	0.000264	9.32E-07	3.73E-04	3.57E-04	9.32E-07	6.64E-05	6.49E-05	9.32E-07	2.82E-05	2.89E-05	9.32E-07
639	571967.6	4148921	3.16E-04	0.000272	9.62E-07	3.84E-04	3.68E-04	9.62E-07	6.85E-05	6.69E-05	9.62E-07	2.91E-05	2.99E-05	9.62E-07
640	571974	4148915	3.27E-04	0.000281	9.95E-07	3.97E-04	3.81E-04	9.95E-07	7.09E-05	6.92E-05	9.95E-07	3.01E-05	3.09E-05	9.95E-07
641	571980.3	4148908	3.38E-04	0.000291	1.03E-06	4.11E-04	3.94E-04	1.03E-06	7.34E-05	7.16E-05	1.03E-06	3.12E-05	3.20E-05	1.03E-06
642	571986.7	4148901	3.50E-04	0.000302	1.07E-06	4.26E-04	4.08E-04	1.07E-06	7.60E-05	7.42E-05	1.07E-06	3.23E-05	3.31E-05	1.07E-06
643	571993	4148894	3.63E-04	0.000313	1.11E-06	4.42E-04	4.23E-04	1.11E-06	7.88E-05	7.69E-05	1.11E-06	3.35E-05	3.43E-05	1.11E-06
644	571999.4	4148888	3.76E-04	0.000324	1.14E-06	4.57E-04	4.38E-04	1.14E-06	8.16E-05	7.97E-05	1.14E-06	3.47E-05	3.55E-05	1.14E-06
645	572005.7	4148881	3.89E-04	0.000335	1.18E-06	4.73E-04	4.54E-04	1.18E-06	8.44E-05	8.24E-05	1.18E-06	3.59E-05	3.68E-05	1.18E-06
646	572012.1	4148874	4.02E-04	0.000346	1.22E-06	4.89E-04	4.69E-04	1.22E-06	8.72E-05	8.52E-05	1.22E-06	3.71E-05	3.80E-05	1.22E-06
647	572018.4	4148868	4.15E-04	0.000357	1.26E-06	5.05E-04	4.84E-04	1.26E-06	9.00E-05	8.79E-05	1.26E-06	3.83E-05	3.92E-05	1.26E-06
648	572024.8	4148861	4.28E-04	0.000368	1.3E-06	5.20E-04	4.99E-04	1.30E-06	9.28E-05	9.06E-05	1.30E-06	3.94E-05	4.04E-05	1.30E-06
649	572031.1	4148854	4.40E-04	0.000379	1.34E-06	5.36E-04	5.13E-04	1.34E-06	9.55E-05	9.33E-05	1.34E-06	4.06E-05	4.16E-05	1.34E-06
650	572037.5	4148847	4.53E-04	0.00039	1.38E-06	5.52E-04	5.28E-04	1.38E-06	9.83E-05	9.60E-05	1.38E-06	4.18E-05	4.28E-05	1.38E-06
651	572043.8	4148841	4.67E-04	0.000402	1.42E-06	5.68E-04	5.44E-04	1.42E-06	1.01E-04	9.89E-05	1.42E-06	4.30E-05	4.41E-05	1.42E-06
652	572050.2	4148834	4.81E-04	0.000414	1.46E-06	5.85E-04	5.61E-04	1.46E-06	1.04E-04	1.02E-04	1.46E-06	4.43E-05	4.54E-05	1.46E-06
653	572056.5	4148827	4.96E-04	0.000427	1.51E-06	6.03E-04	5.78E-04	1.51E-06	1.08E-04	1.05E-04	1.51E-06	4.57E-05	4.69E-05	1.51E-06
654	572062.9	4148820	5.12E-04	0.000441	1.56E-06	6.23E-04	5.97E-04	1.56E-06	1.11E-04	1.08E-04	1.56E-06	4.72E-05	4.84E-05	1.56E-06
655	572069.2	4148814	5.29E-04	0.000455	1.61E-06	6.43E-04	6.16E-04	1.61E-06	1.15E-04	1.12E-04	1.61E-06	4.88E-05	5.00E-05	1.61E-06
656	572075.6	4148807	5.46E-04	0.000471	1.66E-06	6.65E-04	6.37E-04	1.66E-06	1.19E-04	1.16E-04	1.66E-06	5.04E-05	5.16E-05	1.66E-06
657	572081.9	4148800	5.64E-04	0.000486	1.72E-06	6.87E-04	6.58E-04	1.72E-06	1.22E-04	1.20E-04	1.72E-06	5.21E-05	5.34E-05	1.72E-06
658	572088.3	4148794	5.83E-04	0.000502	1.78E-06	7.10E-04	6.80E-04	1.78E-06	1.27E-04	1.24E-04	1.78E-06	5.38E-05	5.51E-05	1.78E-06
659	572094.6	4148787	6.02E-04	0.000519	1.83E-06	7.33E-04	7.02E-04	1.83E-06	1.31E-04	1.28E-04	1.83E-06	5.56E-05	5.69E-05	1.83E-06
660	572101	4148780	6.22E-04	0.000536	1.89E-06	7.57E-04	7.25E-04	1.89E-06	1.35E-04	1.32E-04	1.89E-06	5.74E-05	5.88E-05	1.89E-06
661	572107.3	4148773	6.42E-04	0.000553	1.96E-06	7.81E-04	7.49E-04	1.96E-06	1.39E-04	1.36E-04	1.96E-06	5.92E-05	6.07E-05	1.96E-06
662	572113.7	4148767	6.62E-04	0.000571	2.02E-06	8.06E-04	7.72E-04	2.02E-06	1.44E-04	1.40E-04	2.02E-06	6.11E-05	6.26E-05	2.02E-06
663	572120	4148760	6.83E-04	0.000588	2.08E-06	8.31E-04	7.96E-04	2.08E-06	1.48E-04	1.45E-04	2.08E-06	6.30E-05	6.45E-05	2.08E-06
664	572126.4	4148753	7.03E-04	0.000606	2.14E-06	8.56E-04	8.20E-04	2.14E-06	1.53E-04	1.49E-04	2.14E-06	6.49E-05	6.65E-05	2.14E-06
665	571932.6	4148945	2.70E-04	0.000232	8.22E-07	3.28E-04	3.15E-04	8.22E-07	5.85E-05	5.72E-05	8.22E-07	2.49E-05	2.55E-05	8.22E-07
666	571939	4148938	2.77E-04	0.000238	8.42E-07	3.37E-04	3.23E-04	8.42E-07	6.00E-05	5.86E-05	8.42E-07	2.55E-05	2.61E-05	8.42E-07
667	571945.3	4148932	2.84E-04	0.000245	8.65E-07	3.46E-04	3.31E-04	8.65E-07	6.16E-05	6.02E-05	8.65E-07	2.62E-05	2.68E-05	8.65E-07
668	571951.6	4148925	2.92E-04	0.000252	8.89E-07	3.55E-04	3.41E-04	8.89E-07	6.34E-05	6.19E-05	8.89E-07	2.69E-05	2.76E-05	8.89E-07
669	571957.9	4148918	3.01E-04	0.000259	9.17E-07	3.66E-04	3.51E-04	9.17E-07	6.53E-05	6.38E-05	9.17E-07	2.78E-05	2.85E-05	9.17E-07
670	571964.3	4148911	3.11E-04	0.000268	9.46E-07	3.78E-04	3.62E-04	9.46E-07	6.74E-05	6.58E-05	9.46E-07	2.87E-05	2.94E-05	9.46E-07
671	571970.6	4148905	3.21E-04	0.000277	9.78E-07	3.91E-04	3.75E-04	9.78E-07	6.97E-05	6.81E-05	9.78E-07	2.96E-05	3.04E-05	9.78E-07
672	571976.9	4148898	3.32E-04	0.000286	1.01E-06	4.05E-04	3.88E-04	1.01E-06	7.21E-05	7.04E-05	1.01E-06	3.07E-05	3.14E-05	1.01E-06
673	571983.2	4148891	3.44E-04	0.000297	1.05E-06	4.19E-04	4.01E-04	1.05E-06	7.47E-05	7.29E-05	1.05E-06	3.18E-05	3.25E-05	1.05E-06
674	571989.5	4148885	3.56E-04	0.000307	1.09E-06	4.34E-04	4.16E-04	1.09E-06	7.73E-05	7.55E-05	1.09E-06	3.29E-05	3.37E-05	1.09E-06
675	571995.9	4148878	3.69E-04	0.000318	1.12E-06	4.49E-04	4.30E-04	1.12E-06	8.00E-05	7.81E-05	1.12E-06	3.40E-05	3.48E-05	1.12E-06
676	572002.2	4148871	3.81E-04	0.000328	1.16E-06	4.63E-04	4.44E-04	1.16E-06	8.26E-05	8.07E-05	1.16E-06	3.51E-05	3.60E-05	1.16E-06
677	572008.5	4148865	3.93E-04	0.000339	1.2E-06	4.78E-04	4.58E-04	1.20E-06	8.53E-05	8.33E-05	1.20E-06	3.63E-05	3.72E-05	1.20E-06
678	572014.8	4148858	4.05E-04	0.000349	1.23E-06	4.93E-04	4.72E-04	1.23E-06	8.79E-05	8.58E-05	1.23E-06	3.74E-05	3.83E-05	1.23E-06
679	572021.2	4148851	4.17E-04	0.000359	1.27E-06	5.07E-04	4.86E-04	1.27E-06	9.04E-05	8.83E-05	1.27E-06	3.84E-05	3.94E-05	1.27E-06
680	572027.5	4148845	4.29E-04	0.000369	1.31E-06	5.22E-04	5.00E-04	1.31E-06	9.30E-05	9.08E-05	1.31E-06	3.95E-05	4.05E-05	1.31E-06
681	572033.8	4148838	4.41E-04	0.00038	1.34E-06	5.36E-04	5.14E-04	1.34E-06	9.57E-05	9.34E-05	1.34E-06	4.07E-05	4.17E-05	1.34E-06
682	572040.1	4148831	4.54E-04	0.000391	1.38E-06	5.52E-04	5.29E-04	1.38E-06	9.84E-05	9.61E-05	1.38E-06	4.18E-05	4.29E-05	1.38E-06
683	572046.4	4148824	4.67E-04	0.000402	1.42E-06	5.68E-04	5.45E-04	1.42E-06	1.01E-04	9.90E-05	1.42E-06	4.31E-05	4.42E-05	1.42E-06
684	572052.8	4148818	4.81E-04	0.000415	1.47E-06	5.86E-04	5.61E-04	1.47E-06	1.04E-04	1.02E-04	1.47E-06	4.44E-05	4.55E-05	1.47E-06
685	572059.1	4148811	4.97E-04	0.000428	1.51E-06	6.05E-04	5.79E-04	1.51E-06	1.08E-04	1.05E-04	1.51E-06	4.58E-05	4.70E-05	1.51E-06
686	572065.4	4148804	5.13E-04	0.000442	1.56E-06	6.24E-04	5.98E-04	1.56E-06	1.11E-04	1.09E-04	1.56E-06	4.73E-05	4.85E-05	1.56E-06
687	572071.7	4148798	5.29E-04	0.000456	1.61E-06	6.44E-04	6.17E-04	1.61E-06	1.15E-04	1.12E-04	1.61E-06	4.88E-05	5.01E-05	1.61E-06
688	572078.1	4148791	5.47E-04	0.000471	1.67E-06	6.65E-04	6.38E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.04E-05	5.17E-05	1.67E-06
689	572084.4	4148784	5.64E-04	0.000486	1.72E-06	6.87E-04	6.58E-04	1.72E-06	1.22E-04	1.20E-04	1.72E-06	5.21E-05	5.34E-05	1.72E-06
690	572090.7	4148778	5.83E-04	0.000502	1.77E-06	7.09E-04	6.79E-04	1.77E-06	1.26E-04	1.23E-04	1.77E-06	5.37E-05	5.51E-05	1.77E-06
691	572097	4148771	6.01E-04	0.000518	1.83E-06	7.32E-04	7.01E-04	1.83E-06	1.30E-04	1.27E-04	1.83E-06	5.55E-05	5.68E-05	1.83E-06
692	572103.3	4148764	6.20E-04	0.000534	1.89E-06	7.55E-04	7.23E-04	1.89E-06	1.35E-04	1.31E-04	1.89E-06	5.72E-05	5.86E-05	1.89E-06
693	572109.7	4148757	6.39E-04	0.000551	1.95E-06	7.78E-04	7.46E-04	1.95E-06	1.39E-04	1.36E-04	1.95E-06	5.90E-05	6.04E-05	1.95E-06

694	572116	4148751	6.59E-04	0.000567	2.01E-06	8.01E-04	7.68E-04	2.01E-06	1.43E-04	1.40E-04	2.01E-06	6.08E-05	6.23E-05	2.01E-06
695	572122.3	4148744	6.78E-04	0.000584	2.06E-06	8.25E-04	7.90E-04	2.06E-06	1.47E-04	1.44E-04	2.06E-06	6.25E-05	6.41E-05	2.06E-06
696	571916.8	4148948	2.53E-04	0.000218	7.7E-07	3.08E-04	2.95E-04	7.70E-07	5.48E-05	5.36E-05	7.70E-07	2.33E-05	2.39E-05	7.70E-07
697	571923.1	4148942	2.59E-04	0.000223	7.87E-07	3.15E-04	3.02E-04	7.87E-07	5.61E-05	5.48E-05	7.87E-07	2.39E-05	2.44E-05	7.87E-07
698	571929.4	4148935	2.65E-04	0.000228	8.06E-07	3.22E-04	3.09E-04	8.06E-07	5.75E-05	5.61E-05	8.06E-07	2.44E-05	2.50E-05	8.06E-07
699	571935.7	4148928	2.72E-04	0.000234	8.27E-07	3.30E-04	3.17E-04	8.27E-07	5.89E-05	5.75E-05	8.27E-07	2.51E-05	2.57E-05	8.27E-07
700	571941.9	4148922	2.79E-04	0.00024	8.5E-07	3.39E-04	3.25E-04	8.50E-07	6.05E-05	5.91E-05	8.50E-07	2.57E-05	2.64E-05	8.50E-07
701	571948.2	4148915	2.87E-04	0.000247	8.74E-07	3.49E-04	3.35E-04	8.74E-07	6.23E-05	6.08E-05	8.74E-07	2.65E-05	2.71E-05	8.74E-07
702	571954.5	4148908	2.96E-04	0.000255	9.01E-07	3.60E-04	3.45E-04	9.01E-07	6.42E-05	6.27E-05	9.01E-07	2.73E-05	2.80E-05	9.01E-07
703	571960.8	4148902	3.06E-04	0.000263	9.31E-07	3.72E-04	3.56E-04	9.31E-07	6.63E-05	6.48E-05	9.31E-07	2.82E-05	2.89E-05	9.31E-07
704	571967.1	4148895	3.16E-04	0.000272	9.62E-07	3.84E-04	3.68E-04	9.62E-07	6.86E-05	6.70E-05	9.62E-07	2.91E-05	2.99E-05	9.62E-07
705	571973.4	4148888	3.27E-04	0.000282	9.95E-07	3.98E-04	3.81E-04	9.95E-07	7.09E-05	6.93E-05	9.95E-07	3.02E-05	3.09E-05	9.95E-07
706	571979.7	4148882	3.38E-04	0.000291	1.03E-06	4.11E-04	3.94E-04	1.03E-06	7.34E-05	7.17E-05	1.03E-06	3.12E-05	3.20E-05	1.03E-06
707	571986	4148875	3.50E-04	0.000301	1.06E-06	4.26E-04	4.08E-04	1.06E-06	7.59E-05	7.41E-05	1.06E-06	3.23E-05	3.31E-05	1.06E-06
708	571992.3	4148868	3.61E-04	0.000311	1.1E-06	4.40E-04	4.21E-04	1.10E-06	7.84E-05	7.66E-05	1.10E-06	3.33E-05	3.42E-05	1.10E-06
709	571998.6	4148862	3.73E-04	0.000321	1.14E-06	4.54E-04	4.35E-04	1.14E-06	8.09E-05	7.90E-05	1.14E-06	3.44E-05	3.52E-05	1.14E-06
710	572004.9	4148855	3.84E-04	0.000331	1.17E-06	4.67E-04	4.48E-04	1.17E-06	8.33E-05	8.14E-05	1.17E-06	3.54E-05	3.63E-05	1.17E-06
711	572011.2	4148848	3.95E-04	0.00034	1.2E-06	4.81E-04	4.61E-04	1.20E-06	8.57E-05	8.37E-05	1.20E-06	3.64E-05	3.74E-05	1.20E-06
712	572017.5	4148842	4.06E-04	0.00035	1.24E-06	4.94E-04	4.74E-04	1.24E-06	8.81E-05	8.61E-05	1.24E-06	3.75E-05	3.84E-05	1.24E-06
713	572023.8	4148835	4.17E-04	0.00036	1.27E-06	5.08E-04	4.87E-04	1.27E-06	9.06E-05	8.84E-05	1.27E-06	3.85E-05	3.95E-05	1.27E-06
714	572030.1	4148828	4.29E-04	0.00037	1.31E-06	5.22E-04	5.00E-04	1.31E-06	9.31E-05	9.09E-05	1.31E-06	3.96E-05	4.05E-05	1.31E-06
715	572036.4	4148822	4.41E-04	0.00038	1.34E-06	5.37E-04	5.14E-04	1.34E-06	9.57E-05	9.35E-05	1.34E-06	4.07E-05	4.17E-05	1.34E-06
716	572042.7	4148815	4.54E-04	0.000391	1.38E-06	5.52E-04	5.29E-04	1.38E-06	9.85E-05	9.62E-05	1.38E-06	4.19E-05	4.29E-05	1.38E-06
717	572049	4148808	4.68E-04	0.000403	1.42E-06	5.69E-04	5.45E-04	1.42E-06	1.02E-04	9.91E-05	1.42E-06	4.32E-05	4.42E-05	1.42E-06
718	572055.3	4148802	4.82E-04	0.000416	1.47E-06	5.87E-04	5.62E-04	1.47E-06	1.05E-04	1.02E-04	1.47E-06	4.45E-05	4.56E-05	1.47E-06
719	572061.6	4148795	4.98E-04	0.000429	1.52E-06	6.06E-04	5.80E-04	1.52E-06	1.08E-04	1.05E-04	1.52E-06	4.59E-05	4.70E-05	1.52E-06
720	572067.9	4148788	5.14E-04	0.000443	1.56E-06	6.25E-04	5.99E-04	1.56E-06	1.11E-04	1.09E-04	1.56E-06	4.74E-05	4.86E-05	1.56E-06
721	572074.2	4148782	5.30E-04	0.000457	1.61E-06	6.45E-04	6.18E-04	1.61E-06	1.15E-04	1.12E-04	1.61E-06	4.89E-05	5.01E-05	1.61E-06
722	572080.5	4148775	5.47E-04	0.000471	1.67E-06	6.65E-04	6.38E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.04E-05	5.17E-05	1.67E-06
723	572086.8	4148768	5.64E-04	0.000486	1.72E-06	6.87E-04	6.58E-04	1.72E-06	1.22E-04	1.20E-04	1.72E-06	5.21E-05	5.33E-05	1.72E-06
724	572093.1	4148762	5.82E-04	0.000501	1.77E-06	7.08E-04	6.79E-04	1.77E-06	1.26E-04	1.23E-04	1.77E-06	5.37E-05	5.50E-05	1.77E-06
725	572099.4	4148755	6.00E-04	0.000517	1.83E-06	7.30E-04	6.99E-04	1.83E-06	1.30E-04	1.27E-04	1.83E-06	5.53E-05	5.67E-05	1.83E-06
726	572105.7	4148748	6.18E-04	0.000532	1.88E-06	7.52E-04	7.20E-04	1.88E-06	1.34E-04	1.31E-04	1.88E-06	5.70E-05	5.84E-05	1.88E-06
727	572112	4148742	6.36E-04	0.000548	1.94E-06	7.74E-04	7.41E-04	1.94E-06	1.38E-04	1.35E-04	1.94E-06	5.87E-05	6.01E-05	1.94E-06
728	572118.3	4148735	6.54E-04	0.000563	1.99E-06	7.96E-04	7.62E-04	1.99E-06	1.42E-04	1.39E-04	1.99E-06	6.03E-05	6.18E-05	1.99E-06
729	571900.9	4148952	2.37E-04	0.000205	7.23E-07	2.89E-04	2.77E-04	7.23E-07	5.15E-05	5.03E-05	7.23E-07	2.19E-05	2.24E-05	7.23E-07
730	571907.2	4148945	2.43E-04	0.000209	7.39E-07	2.95E-04	2.83E-04	7.39E-07	5.26E-05	5.14E-05	7.39E-07	2.24E-05	2.29E-05	7.39E-07
731	571913.5	4148938	2.48E-04	0.000214	7.55E-07	3.02E-04	2.89E-04	7.55E-07	5.38E-05	5.26E-05	7.55E-07	2.29E-05	2.34E-05	7.55E-07
732	571919.8	4148932	2.54E-04	0.000219	7.73E-07	3.09E-04	2.96E-04	7.73E-07	5.51E-05	5.38E-05	7.73E-07	2.34E-05	2.40E-05	7.73E-07
733	571926	4148925	2.60E-04	0.000224	7.92E-07	3.16E-04	3.03E-04	7.92E-07	5.64E-05	5.51E-05	7.92E-07	2.40E-05	2.46E-05	7.92E-07
734	571932.3	4148918	2.67E-04	0.00023	8.12E-07	3.25E-04	3.11E-04	8.12E-07	5.79E-05	5.65E-05	8.12E-07	2.46E-05	2.52E-05	8.12E-07
735	571938.6	4148912	2.74E-04	0.000236	8.35E-07	3.34E-04	3.20E-04	8.35E-07	5.95E-05	5.81E-05	8.35E-07	2.53E-05	2.59E-05	8.35E-07
736	571944.8	4148905	2.82E-04	0.000243	8.6E-07	3.44E-04	3.29E-04	8.60E-07	6.13E-05	5.98E-05	8.60E-07	2.60E-05	2.67E-05	8.60E-07
737	571951.1	4148898	2.91E-04	0.000251	8.87E-07	3.54E-04	3.40E-04	8.87E-07	6.32E-05	6.17E-05	8.87E-07	2.69E-05	2.75E-05	8.87E-07
738	571957.4	4148892	3.01E-04	0.000259	9.16E-07	3.66E-04	3.51E-04	9.16E-07	6.52E-05	6.37E-05	9.16E-07	2.77E-05	2.84E-05	9.16E-07
739	571963.7	4148885	3.11E-04	0.000268	9.46E-07	3.78E-04	3.62E-04	9.46E-07	6.74E-05	6.59E-05	9.46E-07	2.87E-05	2.94E-05	9.46E-07
740	571969.9	4148879	3.21E-04	0.000277	9.78E-07	3.91E-04	3.75E-04	9.78E-07	6.97E-05	6.81E-05	9.78E-07	2.96E-05	3.04E-05	9.78E-07
741	571976.2	4148872	3.32E-04	0.000286	1.01E-06	4.04E-04	3.87E-04	1.01E-06	7.21E-05	7.04E-05	1.01E-06	3.06E-05	3.14E-05	1.01E-06
742	571982.5	4148865	3.43E-04	0.000296	1.04E-06	4.17E-04	4.00E-04	1.04E-06	7.44E-05	7.27E-05	1.04E-06	3.16E-05	3.24E-05	1.04E-06
743	571988.8	4148859	3.54E-04	0.000305	1.08E-06	4.31E-04	4.13E-04	1.08E-06	7.68E-05	7.50E-05	1.08E-06	3.27E-05	3.35E-05	1.08E-06
744	571995	4148852	3.65E-04	0.000314	1.11E-06	4.44E-04	4.25E-04	1.11E-06	7.91E-05	7.73E-05	1.11E-06	3.36E-05	3.45E-05	1.11E-06
745	572001.3	4148845	3.75E-04	0.000323	1.14E-06	4.56E-04	4.37E-04	1.14E-06	8.14E-05	7.95E-05	1.14E-06	3.46E-05	3.55E-05	1.14E-06
746	572007.6	4148839	3.85E-04	0.000332	1.17E-06	4.69E-04	4.49E-04	1.17E-06	8.36E-05	8.17E-05	1.17E-06	3.56E-05	3.64E-05	1.17E-06
747	572013.8	4148832	3.96E-04	0.000341	1.21E-06	4.82E-04	4.62E-04	1.21E-06	8.59E-05	8.39E-05	1.21E-06	3.65E-05	3.74E-05	1.21E-06
748	572020.1	4148825	4.06E-04	0.00035	1.24E-06	4.95E-04	4.74E-04	1.24E-06	8.82E-05	8.61E-05	1.24E-06	3.75E-05	3.84E-05	1.24E-06
749	572026.4	4148819	4.17E-04	0.00036	1.27E-06	5.08E-04	4.87E-04	1.27E-06	9.06E-05	8.85E-05	1.27E-06	3.85E-05	3.95E-05	1.27E-06
750	572032.7	4148812	4.29E-04	0.00037	1.31E-06	5.22E-04	5.00E-04	1.31E-06	9.31E-05	9.09E-05	1.31E-06	3.96E-05	4.06E-05	1.31E-06
751	572038.9	4148805	4.41E-04	0.00038	1.34E-06	5.37E-04	5.15E-04	1.34E-06	9.58E-05	9.35E-05	1.34E-06	4.07E-05	4.17E-05	1.34E-06
752	572045.2	4148799	4.54E-04	0.000392	1.38E-06	5.53E-04	5.30E-04	1.38E-06	9.86E-05	9.63E-05	1.38E-06	4.19E-05	4.30E-05	1.38E-06
753	572051.5	4148792	4.68E-04	0.000404	1.43E-06	5.70E-04	5.46E-04	1.43E-06	1.02E-04	9.92E-05	1.43E-06	4.32E-05	4.43E-05	1.43E-06
754	572057.8	4148786	4.83E-04	0.000416	1.47E-06	5.88E-04	5.63E-04	1.47E-06	1.05E-04	1.02E-04	1.47E-06	4.46E-05	4.57E-05	1.47E-06
755	572064	4148779	4.98E-04	0.000429	1.52E-06	6.06E-04	5.81E-04	1.52E-06	1.08E-04	1.06E-04	1.52E-06	4.60E-05	4.71E-05	1.52E-06
756	572070.3	4148772	5.14E-04	0.000443	1.57E-06	6.26E-04	6.00E-04	1.57E-06	1.12E-04	1.09E-04	1.57E-06	4.74E-05	4.86E-05	1.57E-06
757	572076.6	4148766	5.30E-04	0.000457	1.62E-06	6.45E-04	6.19E-04	1.62E-06	1.15E-04	1.12E-04	1.62E-06	4.89E-05	5.01E-05	1.62E-06
758	572082.8	4148759	5.47E-04	0.000471	1.67E-06	6.65E-04	6.38E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.04E-05	5.17E-05	1.67E-06
759	572089.1	4148752	5.63E-04	0.000485	1.72E-06	6.86E-04	6.57E-04	1.72E-06	1.22E-04	1.19E-04	1.72E-06	5.20E-05	5.33E-05	1.72E-06
760	572095.4	4148746	5.80E-04	0.0005	1.77E-06	7.06E-04	6.77E-04	1.77E-06	1.26E-04	1.23E-04	1.77E-06	5.35E-05	5.48E-05	1.77E-06
761	572101.7	4148739	5.97E-04	0.000514	1.82E-06	7.27E-04	6.96E-04	1.82E-06	1.30E-04	1.27E-04	1.82E-06	5.51E-05	5.64E-05	1.82E-06
762	572107.9	4148732	6.14E-04	0.000529	1.87E-06	7.47E-04	7.16E-04	1.87E-06	1.33E-04	1.30E-04	1.87E-06	5.67E-05	5.81E-05	1.87E-06
763	572114.2	4148726	6.31E-04	0.000544	1.92E-06	7.68E-04	7.36E-04	1.92E-06	1.37E-04	1.34E-04	1.92E-06	5.82E-05	5.97E-05	1.92E-06

			UnMitigation				T2				T2L3				T4			
			Max in a million			1.61	Max in a million			2.06	Max in a million			0.37	Max in a million			0.16
#	X	Y	Year 1	Year 2	Year 3	Total	Year 1	Year 2	Year 3	Total	Year 1	Year 2	Year 3	Total	Year 1	Year 2	Year 3	Total
1	572406	4149236	6.86E-07	5.91E-07	2.09E-09	1.28E-06	8.35E-07	8.00E-07	2.09E-09	1.64E-06	1.49E-07	1.45E-07	2.09E-09	2.96E-07	6.33E-08	6.48E-08	2.09E-09	1.30E-07
2	572415	4149240	5.46E-07	4.70E-07	1.66E-09	1.02E-06	6.64E-07	6.36E-07	1.66E-09	1.30E-06	1.18E-07	1.16E-07	1.66E-09	2.36E-07	5.03E-08	5.16E-08	1.66E-09	1.04E-07
3	572430.4	4149231	6.58E-07	5.67E-07	2.00E-09	1.23E-06	8.01E-07	7.67E-07	2.00E-09	1.57E-06	1.43E-07	1.39E-07	2.00E-09	2.84E-07	6.07E-08	6.22E-08	2.00E-09	1.25E-07
4	572424.1	4149245	4.43E-07	3.82E-07	1.35E-09	8.27E-07	5.40E-07	5.17E-07	1.35E-09	1.06E-06	9.62E-08	9.40E-08	1.35E-09	1.92E-07	4.09E-08	4.19E-08	1.35E-09	8.42E-08
5	572411.5	4149255	3.60E-07	3.10E-07	1.10E-09	6.71E-07	4.38E-07	4.20E-07	1.10E-09	8.58E-07	7.81E-08	7.62E-08	1.10E-09	1.55E-07	3.32E-08	3.40E-08	1.10E-09	6.83E-08
6	572439.6	4149227	6.60E-07	5.69E-07	2.01E-09	1.23E-06	8.03E-07	7.70E-07	2.01E-09	1.58E-06	1.43E-07	1.40E-07	2.01E-09	2.85E-07	6.09E-08	6.24E-08	2.01E-09	1.25E-07
7	572433.2	4149249	3.64E-07	3.13E-07	1.11E-09	6.78E-07	4.43E-07	4.24E-07	1.11E-09	8.68E-07	7.89E-08	7.71E-08	1.11E-09	1.57E-07	3.36E-08	3.44E-08	1.11E-09	6.90E-08
8	572448.7	4149223	6.40E-07	5.52E-07	1.95E-09	1.19E-06	7.79E-07	7.47E-07	1.95E-09	1.53E-06	1.39E-07	1.36E-07	1.95E-09	2.77E-07	5.91E-08	6.05E-08	1.95E-09	1.22E-07
9	572448.6	4149239	4.27E-07	3.68E-07	1.30E-09	7.96E-07	5.20E-07	4.98E-07	1.30E-09	1.02E-06	9.27E-08	9.05E-08	1.30E-09	1.85E-07	3.94E-08	4.04E-08	1.30E-09	8.11E-08
10	572457.8	4149219	6.09E-07	5.25E-07	1.86E-09	1.14E-06	7.41E-07	7.11E-07	1.86E-09	1.45E-06	1.32E-07	1.29E-07	1.86E-09	2.63E-07	5.62E-08	5.76E-08	1.86E-09	1.16E-07
11	572457.7	4149235	4.36E-07	3.76E-07	1.33E-09	8.13E-07	5.31E-07	5.09E-07	1.33E-09	1.04E-06	9.46E-08	9.24E-08	1.33E-09	1.88E-07	4.02E-08	4.12E-08	1.33E-09	8.28E-08
12	572466.9	4149215	5.72E-07	4.93E-07	1.74E-09	1.07E-06	6.96E-07	6.67E-07	1.74E-09	1.37E-06	1.24E-07	1.21E-07	1.74E-09	2.47E-07	5.28E-08	5.41E-08	1.74E-09	1.09E-07
13	572466.8	4149231	4.36E-07	3.76E-07	1.33E-09	8.14E-07	5.31E-07	5.09E-07	1.33E-09	1.04E-06	9.47E-08	9.25E-08	1.33E-09	1.88E-07	4.03E-08	4.13E-08	1.33E-09	8.28E-08
14	572438	4149125	7.92E-07	6.82E-07	2.41E-09	1.48E-06	9.63E-07	9.23E-07	2.41E-09	1.89E-06	1.72E-07	1.68E-07	2.41E-09	3.42E-07	7.30E-08	7.48E-08	2.41E-09	1.50E-07
15	572476.1	4149211	5.32E-07	4.59E-07	1.62E-09	9.92E-07	6.48E-07	6.21E-07	1.62E-09	1.27E-06	1.15E-07	1.13E-07	1.62E-09	2.30E-07	4.91E-08	5.03E-08	1.62E-09	1.01E-07
16	572476	4149227	4.28E-07	3.68E-07	1.30E-09	7.97E-07	5.20E-07	4.99E-07	1.30E-09	1.02E-06	9.28E-08	9.06E-08	1.30E-09	1.85E-07	3.94E-08	4.04E-08	1.30E-09	8.12E-08
17	572450.8	4149129	7.50E-07	6.46E-07	2.28E-09	1.40E-06	9.12E-07	8.74E-07	2.28E-09	1.79E-06	1.63E-07	1.59E-07	2.28E-09	3.24E-07	6.92E-08	7.09E-08	2.28E-09	1.42E-07
18	572485.2	4149206	4.92E-07	4.24E-07	1.50E-09	9.17E-07	5.99E-07	5.74E-07	1.50E-09	1.17E-06	1.07E-07	1.04E-07	1.50E-09	2.13E-07	4.54E-08	4.65E-08	1.50E-09	9.34E-08
19	572485.1	4149223	4.11E-07	3.54E-07	1.25E-09	7.66E-07	5.00E-07	4.79E-07	1.25E-09	9.81E-07	8.92E-08	8.71E-08	1.25E-09	1.78E-07	3.79E-08	3.89E-08	1.25E-09	7.80E-08
20	572456.3	4149117	6.38E-07	5.50E-07	1.94E-09	1.19E-06	7.76E-07	7.44E-07	1.94E-09	1.52E-06	1.38E-07	1.35E-07	1.94E-09	2.76E-07	5.88E-08	6.03E-08	1.94E-09	1.21E-07
21	572494.3	4149202	4.53E-07	3.90E-07	1.38E-09	8.45E-07	5.51E-07	5.28E-07	1.38E-09	1.08E-06	9.83E-08	9.60E-08	1.38E-09	1.96E-07	4.18E-08	4.28E-08	1.38E-09	8.60E-08
22	572494.2	4149219	3.90E-07	3.36E-07	1.19E-09	7.26E-07	4.74E-07	4.54E-07	1.19E-09	9.30E-07	8.45E-08	8.26E-08	1.19E-09	1.68E-07	3.59E-08	3.68E-08	1.19E-09	7.40E-08
23	572465.4	4149113	5.76E-07	4.96E-07	1.75E-09	1.07E-06	7.01E-07	6.72E-07	1.75E-09	1.37E-06	1.25E-07	1.22E-07	1.75E-09	2.49E-07	5.31E-08	5.45E-08	1.75E-09	1.09E-07
24	572503.5	4149198	4.18E-07	3.60E-07	1.27E-09	7.79E-07	5.08E-07	4.87E-07	1.27E-09	9.97E-07	9.06E-08	8.85E-08	1.27E-09	1.80E-07	3.85E-08	3.95E-08	1.27E-09	7.93E-08
25	572503.3	4149215	3.67E-07	3.17E-07	1.12E-09	6.85E-07	4.47E-07	4.29E-07	1.12E-09	8.77E-07	7.97E-08	7.79E-08	1.12E-09	1.59E-07	3.39E-08	3.47E-08	1.12E-09	6.98E-08
26	572478.1	4149117	5.34E-07	4.60E-07	1.63E-09	9.95E-07	6.50E-07	6.22E-07	1.63E-09	1.27E-06	1.16E-07	1.13E-07	1.63E-09	2.31E-07	4.92E-08	5.05E-08	1.63E-09	1.01E-07
27	572512.6	4149194	3.85E-07	3.32E-07	1.17E-09	7.18E-07	4.69E-07	4.49E-07	1.17E-09	9.19E-07	8.36E-08	8.16E-08	1.17E-09	1.66E-07	3.55E-08	3.64E-08	1.17E-09	7.31E-08
28	572512.5	4149211	3.46E-07	2.98E-07	1.05E-09	6.44E-07	4.21E-07	4.03E-07	1.05E-09	8.25E-07	7.50E-08	7.32E-08	1.05E-09	1.49E-07	3.19E-08	3.27E-08	1.05E-09	6.56E-08
29	572521.7	4149190	3.55E-07	3.06E-07	1.08E-09	6.63E-07	4.32E-07	4.14E-07	1.08E-09	8.48E-07	7.71E-08	7.53E-08	1.08E-09	1.53E-07	3.28E-08	3.36E-08	1.08E-09	6.75E-08
30	572521.6	4149207	3.25E-07	2.80E-07	9.90E-10	6.06E-07	3.96E-07	3.79E-07	9.90E-10	7.76E-07	7.06E-08	6.89E-08	9.90E-10	1.40E-07	3.00E-08	3.07E-08	9.90E-10	6.17E-08
31	572530.8	4149197	3.15E-07	2.72E-07	9.60E-10	5.88E-07	3.84E-07	3.68E-07	9.60E-10	7.52E-07	6.84E-08	6.68E-08	9.60E-10	1.36E-07	2.91E-08	2.98E-08	9.60E-10	5.99E-08
32	572505.5	4149104	3.96E-07	3.41E-07	1.20E-09	7.38E-07	4.81E-07	4.61E-07	1.20E-09	9.44E-07	8.58E-08	8.38E-08	1.20E-09	1.71E-07	3.65E-08	3.74E-08	1.20E-09	7.51E-08
33	572540	4149184	3.03E-07	2.61E-07	9.23E-10	5.65E-07	3.69E-07	3.53E-07	9.23E-10	7.23E-07	6.58E-08	6.42E-08	9.23E-10	1.31E-07	2.80E-08	2.87E-08	9.23E-10	5.75E-08
34	572539.9	4149192	2.94E-07	2.53E-07	8.96E-10	5.49E-07	3.58E-07	3.43E-07	8.96E-10	7.02E-07	6.38E-08	6.23E-08	8.96E-10	1.27E-07	2.71E-08	2.78E-08	8.96E-10	5.58E-08
35	572518.3	4149108	3.58E-07	3.09E-07	1.09E-09	6.68E-07	4.36E-07	4.18E-07	1.09E-09	8.55E-07	7.77E-08	7.59E-08	1.09E-09	1.55E-07	3.30E-08	3.39E-08	1.09E-09	6.80E-08
36	572511	4149092	3.61E-07	3.11E-07	1.10E-09	6.73E-07	4.39E-07	4.21E-07	1.10E-09	8.61E-07	7.83E-08	7.64E-08	1.10E-09	1.56E-07	3.33E-08	3.41E-08	1.10E-09	6.85E-08
37	572549.1	4149179	2.81E-07	2.42E-07	8.57E-10	5.25E-07	3.42E-07	3.28E-07	8.57E-10	6.71E-07	6.10E-08	5.96E-08	8.57E-10	1.22E-07	2.60E-08	2.66E-08	8.57E-10	5.34E-08
38	572549	4149197	2.65E-07	2.28E-07	8.06E-10	4.94E-07	3.22E-07	3.09E-07	8.06E-10	6.32E-07	5.74E-08	5.61E-08	8.06E-10	1.14E-07	2.44E-08	2.50E-08	8.06E-10	5.03E-08
39	572527.4	4149104	3.28E-07	2.83E-07	9.99E-10	6.12E-07	3.99E-07	3.82E-07	9.99E-10	7.83E-07	7.12E-08	6.95E-08	9.99E-10	1.42E-07	3.03E-08	3.10E-08	9.99E-10	6.23E-08
40	572520.2	4149088	3.32E-07	2.86E-07	1.01E-09	6.18E-07	4.04E-07	3.87E-07	1.01E-09	7.91E-07	7.20E-08	7.03E-08	1.01E-09	1.43E-07	3.06E-08	3.14E-08	1.01E-09	6.30E-08
41	572558.2	4149175	2.62E-07	2.25E-07	7.97E-10	4.88E-07	3.18E-07	3.05E-07	7.97E-10	6.24E-07	5.68E-08	5.54E-08	7.97E-10	1.13E-07	2.41E-08	2.47E-08	7.97E-10	4.97E-08
42	572558.1	4149193	2.48E-07	2.14E-07	7.55E-10	4.62E-07	3.02E-07	2.89E-07	7.55E-10	5.92E-07	5.38E-08	5.25E-08	7.55E-10	1.07E-07	2.29E-08	2.34E-08	7.55E-10	4.71E-08
43	572532.9	4149092	3.05E-07	2.63E-07	9.28E-10	5.68E-07	3.71E-07	3.55E-07	9.28E-10	7.27E-07	6.61E-08	6.46E-08	9.28E-10	1.32E-07	2.81E-08	2.88E-08	9.28E-10	5.79E-08
44	572567.3	4149171	2.44E-07	2.10E-07	7.43E-10	4.55E-07	2.97E-07	2.85E-07	7.43E-10	5.82E-07	5.30E-08	5.17E-08	7.43E-10	1.05E-07	2.25E-08	2.31E-08	7.43E-10	4.63E-08
45	572567.2	4149189	2.33E-07	2.00E-07	7.09E-10	4.34E-07	2.83E-07	2.71E-07	7.09E-10	5.55E-07	5.05E-08	4.93E-08	7.09E-10	1.00E-07	2.15E-08	2.20E-08	7.09E-10	4.42E-08
46	572576.5	4149167	2.28E-07	1.97E-07	6.95E-10	4.26E-07	2.78E-07	2.66E-07	6.95E-10	5.45E-07	4.95E-08	4.84E-08	6.95E-10	9.86E-08	2.11E-08	2.16E-08	6.95E-10	4.33E-08
47	572576.4	4149184	2.19E-07	1.89E-07	6.67E-10	4.08E-07	2.66E-07	2.55E-07	6.67E-10	5.22E-07	4.75E-08	4.64E-08	6.67E-10	9.45E-08	2.02E-08	2.07E-08	6.67E-10	4.15E-08
48	572585.5	4149180	2.06E-07	1.78E-07	6.29E-10	3.85E-07	2.51E-07	2.41E-07	6.29E-10	4.92E-07	4.48E-08	4.37E-08	6.29E-10	8.91E-08	1.90E-08	1.95E-08	6.29E-10	3.92E-08
49	572607.7	4149088	1.75E-07	1.51E-07	5.34E-10	3.27E-07	2.13E-07	2.04E-07	5.34E-10	4.18E-07	3.80E-08	3.71E-08	5.34E-10	7.57E-08	1.62E-08	1.66E-08	5.34E-10	3.33E-08
50	572600.4	4149072	1.80E-07	1.55E-07	5.49E-10	3.36E-07	2.19E-07	2.10E-07	5.49E-10	4.30E-07	3.91E-08	3.82E-08	5.49E-10	7.79E-08	1.66E-08	1.71E-08	5.49E-10	3.42E-08
51	572593.2	4149055	1.85E-07	1.59E-07	5.63E-10	3.45E-07	2.25E-07	2.16E-07	5.63E-10	4.41E-07	4.01E-08	3.92E-08	5.63E-10	7.99E-08	1.71E-08	1.75E-08	5.63E-10	3.51E-08
52	572616.8	4149084	1.65E-07	1.42E-07	5.01E-10	3.07E-07	2.00E-07	1.92E-07	5.01E-10	3.93E-07	3.57E-08	3.49E-08	5.01E-10	7.11E-08	1.52E-08	1.56E-08	5.01E-10	3.12E-08
53	572609.6	4149068	1.69E-07	1.46E-07	5.15E-10	3.15E-07	2.06E-07	1.97E-07	5.15E-10	4.04E-07	3.67E-08	3.58E-08	5.15E-10	7.31E-08	1.56E-08	1.60E-08	5.15E-10	3.21E-08
54	572602.3	4149051	1.74E-07	1.50E-07	5.29E-10	3.24E-07	2.11E-07	2.02E-07	5.29E-10	4.14E-07	3.77E-08	3.68E-08	5.29E-10	7.50E-08	1.60E-08	1.64E-08	5.29E-10	3.29E-08
55	572622.3	4149072	1.57E-07	1.35E-07	4.78E-10	2.92E-07	1.91E-07	1.83E-07	4.78E-10	3.74E-07	3.40E-08	3.32E-08	4.78E-10	6.78E-08	1.45E-08	1.48E-08	4.78E-10	2.98E-08
56	572615.1	4149055	1.61E-07	1.39E-07	4.91E-10	3.01E-07	1.96E-07	1.88E-07	4.91E-10	3.85E-07	3.50E-08	3.42E-08	4.91E-10	6.96E-08	1.49E-08	1.52E-08	4.91E-10	3.06E-08
57	572635.1	4149076	1.46E-07	1.26E-07	4.44E-10	2.72E-07	1.78E-07	1.70E-07	4.44E-10	3.48E-07	3.17E-08	3.09E-08	4.44E-10	6.30E-08	1.35E-08	1.38E-08	4.44E-10	2.77E-08
58	572627.8	4149059	1.50E-07	1.29E-07	4.56E-10	2.79E-07	1.82E-07	1.75E-07	4.56E-10	3.57E-07	3.25E-08	3.17E-08	4.56E-10	6.47E-08	1.38E-08	1.42E-08	4.56E-10	2.84E-08
59	572620.6	4149043	1.54E-07	1.32E-07	4.68E-10	2.87E-07	1.87E-07	1.79E-07	4.68E-10	3.67E-07	3.34E-08	3.26E-08	4.68E-10	6.64E-08	1.42E-08	1.45E-08	4.68E-10	2.92E-08
60	572647.9	4149080	1.36E-07	1.17E-07	4.15E-10	2.54E-07	1.66E-07	1.59E-07	4.15E-10	3.25E-07	2.95E-08	2.89E-08	4.15E-10	5.88E-08	1.26E-08	1.29E-08	4.15E-10	2.58E-08
61	572640.6	4149063	1.40E-07	1.20E-07	4.25E-10	2.60E-07	1.70E-07	1.63E-07	4.25E-10	3.33E-07	3.03E-08	2.96E-08	4.25E-10	6.03E-08	1.29E-08	1.32E-08	4.25E-10	2.65E-08
62	572633.3	4149047	1.43E-07	1.23E-07	4.36E-10	2.67E-07	1.74E-07	1.67E-07	4.36E-10	3.42E-07	3.11E-08	3.04E-08	4.36E-10	6.19E-08	1.32E-08	1.35E-08	4.36E-10	2.72E-08
63	572657	4149076	1.29E-07	1.11E-07	3.92E-10	2.40E-07	1.57E-07	1.50E-07	3.92E-10	3.08E-07	2.80E-08	2.73E-08	3.92E-10	5.57E-08	1.19E-08	1.22E-08	3.92E-10	2.45E-08
64	572649.7	4149059	1.32E-07	1.14E-07	4.02E-10	2.46E-07	1.61E-07	1.54E-07	4.02E-10	3.15E-07	2.86E-08	2.80E-08	4.02E-10	5.70E-08	1.22E-08	1.25E-08	4.02E-10	2.51E-08
65	572642.4	4149043	1.35E-07	1.17E-07	4.13E-10	2.53E-07	1.65E-07	1.58E-07	4.13E-10	3.23E-07	2.94E-08	2.87E-08	4.13E-10	5.85E-08	1.25E-08	1.28E-08	4.13E-10	2.57E-08
66	572662.5	4149063	1.24E-07	1.06E-07	3.76E-10	2.30E-07	1.50E-07	1.44E-07	3.76E-10	2.95E-07	2.68E-08	2.62E-08	3.76E-10	5.34E-08	1.14E-08	1.17E-08	3.76E-10	2.35E-08
67	572655.2	4149047	1.27E-07	1.09E-07	3.86E-10	2.36E-07	1.54E-07	1.48E-07	3.86E-10	3.02E-07	2.75E-08	2.68E-08	3.86E-10	5.47E-08	1.17E-08	1.20E-08	3.86E-10	2.40E-08
68	572647.9	4149031	1.30E-07	1.12E-07	3.96E-10	2.43E-07	1.58E-07	1.52E-07	3.96E-10	3.10E-07	2.82E-08	2.76E-08	3.96E-10	5.62E-08	1.20E-08	1.23E-08	3.96E-10	2.47E-08
69	572675.2	4149067	1.16E-07	1.00E-07	3.54E-10	2.17E-07	1.41E-07	1.35E-07	3.54E-10	2.77E-07	2.52E-08	2.46E-08	3.54E-10	5.02E-08	1.07E-08	1.10E-08	3.54E-10	2.21E-08
70	572668	4149051	1.19E-07	1.02E-07	3.62E-10	2.21E-07	1.44E-07	1.38E-07	3.62E-10	2.83E-07	2.58E-08	2.52E-08	3.62E-10	5.13E-08	1.10E-08	1.12E-08	3.62E-10	2.25E-08
71	572660.7	4149035	1.22E-07	1.05E-07	3.71E-10	2.27E-07	1.48E-07	1.42E-07	3.71E-10	2.91E-07	2.64E-08	2.58E-08	3.71E-10	5.26E-08	1.12E-08	1.15E-08	3.71E-10	2.31E-08
72	572684.4	4149063	1.11E-07	9.53E-08	3.37E-10	2.06E-07	1.35E-07	1.29E-07	3.37E-10	2.64E-07	2.40E-08	2.34E-08	3.37E-10	4.78E-08	1.02E-08	1.05E-08	3.37E-10	2.10E-08
73	572677.1	4149047	1.13E-07	9.73E-08	3.44E-10	2.11E-07	1.37E-07	1.32E-07	3.44E-10	2.69E-07	2.45E-08	2.39E-08	3.44E-10	4.88E-08	1.04E-08	1.07E-08	3.44E-10	2.14E-08
74	572669.8	4149031	1.16E-07	9.98E-08	3.53E-10	2.16E-07	1.41E-07	1.35E-07	3.53E-10	2.76E-07	2.51E-08	2.45E-08	3.53E-10	5.00E-08	1.07E-08	1.09E-08	3.53E-10	2.20E-08
75	572697.1	4149067	1.04E-07	9.00E-08	3.18E-10	1.95E-07	1.27E-07	1.22E-07	3.18E-10	2.49E-07	2.27E-08	2.21E-08	3.18E-10	4.51E-08	9.63E-09	9.87E-09	3.18E-10	1.98E-08
76	572689.9	4149051	1.06E-07	9.17E-08	3.24E-10	1.98E-07	1.30E-07	1.24E-07	3.24E-10	2.54E-07	2.31E-08	2.26E-08	3.24E-10	4.60E-08	9.82E-09	1.01E-08	3.24E-10	2.02E-08
77	572682.6	4149035	1.09E-07	9.39E-08	3.32E-10	2.03E-07	1.33E-07	1.27E-07	3.32E-10	2.60E-07	2.36E-08	2.31E-08	3.32E-10	4.71E-08	1.00E-08	1.03E-08	3.32E-10	2.07E-08
78	572675.3	4149019	1.12E-07	9.63E-08	3.40E-10	2.08E-07	1.36E-07	1.30E-07	3.40E-10	2.67E-07	2.42E-08	2.37E-08	3.40E-10	4.83E-08	1.03E-08	1.06E-08	3.40E-10	2.12E-08
79	572702.6	4149055	1.01E-07	8.67E-08	3.06E-10	1.88E-07	1.22E-07	1.17E-07	3.06E-10	2.40E-07	2.18E-08	2.13E-08	3.06E-10	4.34E-08	9.28E-09	9.51E-09	3.06E-10	1.91E-08
80	572695.4	4149039	1.03E-07	8.85E-08	3.13E-10	1.91E-07	1.25E-07	1.20E-07	3.13E-10	2.45E-07	2.23E-08	2.18E-08	3.13E-10	4.44E-08	9.47E-09	9.71E-09	3.13E-10	1.95E-08
81	572688.1	4149023	1.05E-07	9.06E-08	3.20E-10	1.96E-07	1.28E-07	1.23E-07	3.20E-10	2.51E-07	2.28E-08	2.23E-08	3.20E-10	4.54E-08	9.70E-09	9.95E-09	3.20E-10	2.00E-08
82	572711.8	4149051	9.61E-08	8.28E-08	2.93E-10	1.79E-07	1.17E-07	1.12E-07	2.93E-10	2.29E-07	2.09E-08	2.04E-08	2.93E-10	4.15E-08	8.87E-09	9.09E-09	2.93E-10	1.82E-08
83	572704.5	4149035	9.81E-08	8.45E-08	2.99E-10	1.83E-07	1.19E-07	1.14E-07	2.99E-10	2.34E-07	2.13E-08	2.08E-08	2.99E-10	4.24E-08	9.05E-09	9.28E-09	2.99E-10	1.86E-08
84	572697.2	4149019	1.00E-07	8.66E-08	3.06E-10	1.87E-07	1.22E-07	1.17E-07	3.06E-10	2.40E-07	2.18E-08	2.13E-08	3.06E-10	4.34E-08	9.27E-09	9.50E-09	3.06E-10	1.91E-08
85	572724.5	4149055	9.11E-08	7.85E-08	2.78E-10	1.70E-07	1.11E-07	1.06E-07	2.78E-10	2.17E-07	1.98E-08	1.93E-08	2.78E-10	3.94E-08	8.41E-09	8.61E-09	2.78E-10	1.73E-08
86	572717.2	4149039	9.29E-08	8.00E-08	2.83E-10	1.73E-07	1.13E-07	1.08E-07	2.83E-10	2.22E-07	2.02E-08	1.97E-08	2.83E-10	4.01E-08	8.57E-09	8.78E-09	2.83E-10	1.76E-08
87	572710	4149023	9.49E-08	8.18E-08	2.89E-10	1.77E-07	1.15E-07	1.11E-07	2.89E-10	2.26E-07	2.06E-08	2.01E-08	2.89E-10	4.10E-08	8.75E-09	8.97E-09	2.89E-10	1.80E-08
88	572702.7	4149006	9.72E-08	8.38E-08	2.96E-10	1.81E-07	1.18E-07	1.13E-07	2.96E-10	2.32E-07	2.11E-08	2.06E-08	2.96E-10	4.20E-08	8.97E-09	9.19E-09	2.96E-10	1.85E-08
89	572730	4149043	8.81E-08	7.59E-08	2.68E-10	1.64E-07	1.07E-07	1.03E-07	2.68E-10	2.10E-07	1.91E-08	1.87E-08	2.68E-10	3.81E-08	8.13E-09	8.33E-09	2.68E-10	1.67E-08
90	572722.7	4149027	8.98E-08	7.74E-08	2.74E-10	1.68E-07	1.09E-07	1.05E-07	2.74E-10	2.14E-07	1.95E-08	1.90E-08	2.74E-10	3.88E-08	8.29E-09	8.49E-09	2.74E-10	1.71E-08
91	572715.5	4149010	9.19E-08	7.92E-08	2.80E-10	1.71E-07	1.12E-07	1.07E-07	2.80E-10	2.19E-07	1.99E-08	1.95E-08	2.80E-10	3.97E-08	8.48E-09	8.69E-09	2.80E-10	1.74E-08
92	572746.4	4149055	8.31E-08	7.16E-08	2.53E-10	1.55E-07	1.01E-07	9.69E-08	2.53E-10	1.98E-07	1.80E-08	1.76E-08	2.53E-10	3.59E-08	7.66E-09	7.85E-09	2.53E-10	1.58E-08
93	572739.1	4149039	8.45E-08	7.28E-08	2.57E-10	1.58E-07	1.03E-07	9.86E-08	2.57E-10	2.02E-07	1.83E-08	1.79E-08	2.57E-10	3.65E-08	7.80E-09	7.99E-09	2.57E-10	1.60E-08
94	572731.9	4149023	8.61E-08	7.42E-08	2.62E-10	1.61E-07	1.05E-07	1.00E-07	2.62E-10	2.05E-07	1.87E-08	1.83E-08	2.62E-10	3.72E-08	7.94E-09	8.14E-09	2.62E-10	1.63E-08
95	572724.6	4149006	8.80E-08	7.59E-08	2.68E-10	1.64E-07	1.07E-07	1.03E-07	2.68E-10	2.10E-07	1.91E-08	1.87E-08	2.68E-10	3.80E-08	8.12E-09	8.32E-09	2.68E-10	1.67E-08
96	572755.5	4149051	7.98E-08	6.88E-08	2.43E-10	1.49E-07	9.71E-08	9.31E-08	2.43E-10	1.90E-07	1.73E-08	1.69E-08	2.43E-10	3.45E-08	7.36E-09	7.54E-09	2.43E-10	1.51E-08
97	572751.9	4149043	8.04E-08	6.93E-08	2.45E-10	1.50E-07	9.79E-08	9.38E-08	2.45E-10	1.92E-07	1.75E-08	1.70E-08	2.45E-10	3.47E-08	7.42E-09	7.61E-09	2.45E-10	1.53E-08
98	572744.6	4149027	8.18E-08	7.05E-08	2.49E-10	1.53E-07	9.96E-08	9.54E-08	2.49E-10	1.95E-07	1.78E-08	1.73E-08	2.49E-10	3.54E-08	7.55E-09	7.74E-09	2.49E-10	1.55E-08
99	572737.4	4149010	8.35E-08	7.19E-08	2.54E-10	1.56E-07	1.02E-07	9.74E-08	2.54E-10	1.99E-07	1.81E-08	1.77E-08	2.54E-10	3.61E-08	7.70E-09	7.89E-09	2.54E-10	1.58E-08
100	572730.1	4148994	8.54E-08	7.36E-08	2.60E-10	1.59E-07	1.04E-07	9.96E-08	2.60E-10	2.04E-07	1.85E-08	1.81E-08	2.60E-10	3.69E-08	7.88E-09	8.07E-09	2.60E-10	1.62E-08

101	572764.7	4149047	7.68E-08	6.61E-08	2.34E-10	1.43E-07	9.34E-08	8.95E-08	2.34E-10	1.83E-07	1.67E-08	1.63E-08	2.34E-10	3.32E-08	7.08E-09	7.26E-09	2.34E-10	1.46E-08
102	572757.4	4149031	7.80E-08	6.72E-08	2.37E-10	1.45E-07	9.49E-08	9.09E-08	2.37E-10	1.86E-07	1.69E-08	1.65E-08	2.37E-10	3.37E-08	7.19E-09	7.37E-09	2.37E-10	1.48E-08
103	572750.1	4149014	7.94E-08	6.84E-08	2.42E-10	1.48E-07	9.66E-08	9.25E-08	2.42E-10	1.89E-07	1.72E-08	1.68E-08	2.42E-10	3.43E-08	7.32E-09	7.50E-09	2.42E-10	1.51E-08
104	572742.8	4148998	8.10E-08	6.98E-08	2.47E-10	1.51E-07	9.86E-08	9.45E-08	2.47E-10	1.93E-07	1.76E-08	1.72E-08	2.47E-10	3.50E-08	7.48E-09	7.66E-09	2.47E-10	1.54E-08
105	572773.8	4149043	7.39E-08	6.37E-08	2.25E-10	1.38E-07	8.99E-08	8.62E-08	2.25E-10	1.76E-07	1.60E-08	1.57E-08	2.25E-10	3.19E-08	6.82E-09	6.99E-09	2.25E-10	1.40E-08
106	572766.5	4149027	7.50E-08	6.46E-08	2.28E-10	1.40E-07	9.13E-08	8.75E-08	2.28E-10	1.79E-07	1.63E-08	1.59E-08	2.28E-10	3.24E-08	6.92E-09	7.09E-09	2.28E-10	1.42E-08
107	572759.2	4149010	7.63E-08	6.57E-08	2.32E-10	1.42E-07	9.28E-08	8.90E-08	2.32E-10	1.82E-07	1.66E-08	1.62E-08	2.32E-10	3.29E-08	7.04E-09	7.21E-09	2.32E-10	1.45E-08
108	572752	4148994	7.78E-08	6.71E-08	2.37E-10	1.45E-07	9.47E-08	9.08E-08	2.37E-10	1.86E-07	1.69E-08	1.65E-08	2.37E-10	3.36E-08	7.18E-09	7.36E-09	2.37E-10	1.48E-08
109	572782.9	4149039	7.12E-08	6.13E-08	2.17E-10	1.33E-07	8.66E-08	8.30E-08	2.17E-10	1.70E-07	1.54E-08	1.51E-08	2.17E-10	3.08E-08	6.57E-09	6.73E-09	2.17E-10	1.35E-08
110	572779.3	4149031	7.17E-08	6.18E-08	2.18E-10	1.34E-07	8.72E-08	8.36E-08	2.18E-10	1.71E-07	1.56E-08	1.52E-08	2.18E-10	3.10E-08	6.61E-09	6.78E-09	2.18E-10	1.36E-08
111	572772	4149014	7.27E-08	6.27E-08	2.22E-10	1.36E-07	8.85E-08	8.48E-08	2.22E-10	1.74E-07	1.58E-08	1.54E-08	2.22E-10	3.14E-08	6.71E-09	6.88E-09	2.22E-10	1.38E-08
112	572764.7	4148998	7.41E-08	6.38E-08	2.26E-10	1.38E-07	9.01E-08	8.64E-08	2.26E-10	1.77E-07	1.61E-08	1.57E-08	2.26E-10	3.20E-08	6.83E-09	7.00E-09	2.26E-10	1.41E-08
113	572757.5	4148982	7.56E-08	6.52E-08	2.30E-10	1.41E-07	9.21E-08	8.82E-08	2.30E-10	1.81E-07	1.64E-08	1.60E-08	2.30E-10	3.27E-08	6.98E-09	7.15E-09	2.30E-10	1.44E-08
114	572792	4149035	6.86E-08	5.91E-08	2.09E-10	1.28E-07	8.35E-08	8.00E-08	2.09E-10	1.64E-07	1.49E-08	1.45E-08	2.09E-10	2.96E-08	6.33E-09	6.49E-09	2.09E-10	1.30E-08
115	572784.8	4149018	6.95E-08	5.99E-08	2.12E-10	1.30E-07	8.46E-08	8.11E-08	2.12E-10	1.66E-07	1.51E-08	1.47E-08	2.12E-10	3.00E-08	6.41E-09	6.57E-09	2.12E-10	1.32E-08
116	572777.5	4149002	7.06E-08	6.09E-08	2.15E-10	1.32E-07	8.59E-08	8.24E-08	2.15E-10	1.69E-07	1.53E-08	1.50E-08	2.15E-10	3.05E-08	6.52E-09	6.68E-09	2.15E-10	1.34E-08
117	572770.2	4148986	7.20E-08	6.20E-08	2.19E-10	1.34E-07	8.76E-08	8.39E-08	2.19E-10	1.72E-07	1.56E-08	1.53E-08	2.19E-10	3.11E-08	6.64E-09	6.81E-09	2.19E-10	1.37E-08
118	572804.8	4149039	6.57E-08	5.66E-08	2.00E-10	1.23E-07	8.00E-08	7.66E-08	2.00E-10	1.57E-07	1.43E-08	1.39E-08	2.00E-10	2.84E-08	6.06E-09	6.21E-09	2.00E-10	1.25E-08
119	572797.5	4149022	6.66E-08	5.74E-08	2.03E-10	1.24E-07	8.10E-08	7.76E-08	2.03E-10	1.59E-07	1.44E-08	1.41E-08	2.03E-10	2.88E-08	6.14E-09	6.29E-09	2.03E-10	1.26E-08
120	572793.9	4149014	6.70E-08	5.77E-08	2.04E-10	1.25E-07	8.16E-08	7.82E-08	2.04E-10	1.60E-07	1.45E-08	1.42E-08	2.04E-10	2.90E-08	6.18E-09	6.34E-09	2.04E-10	1.27E-08
121	572786.6	4148998	6.80E-08	5.86E-08	2.07E-10	1.27E-07	8.28E-08	7.93E-08	2.07E-10	1.62E-07	1.48E-08	1.44E-08	2.07E-10	2.94E-08	6.28E-09	6.43E-09	2.07E-10	1.29E-08
122	572779.4	4148982	6.93E-08	5.97E-08	2.11E-10	1.29E-07	8.43E-08	8.08E-08	2.11E-10	1.65E-07	1.50E-08	1.47E-08	2.11E-10	2.99E-08	6.39E-09	6.55E-09	2.11E-10	1.32E-08
123	572813.9	4149035	6.34E-08	5.46E-08	1.93E-10	1.18E-07	7.72E-08	7.39E-08	1.93E-10	1.51E-07	1.38E-08	1.34E-08	1.93E-10	2.74E-08	5.85E-09	5.99E-09	1.93E-10	1.20E-08
124	572806.7	4149018	6.42E-08	5.53E-08	1.96E-10	1.20E-07	7.82E-08	7.49E-08	1.96E-10	1.53E-07	1.39E-08	1.36E-08	1.96E-10	2.77E-08	5.92E-09	6.07E-09	1.96E-10	1.22E-08
125	572799.4	4149002	6.51E-08	5.61E-08	1.98E-10	1.21E-07	7.92E-08	7.59E-08	1.98E-10	1.55E-07	1.41E-08	1.38E-08	1.98E-10	2.81E-08	6.01E-09	6.15E-09	1.98E-10	1.24E-08
126	572792.1	4148986	6.62E-08	5.70E-08	2.01E-10	1.23E-07	8.05E-08	7.71E-08	2.01E-10	1.58E-07	1.44E-08	1.40E-08	2.01E-10	2.86E-08	6.10E-09	6.25E-09	2.01E-10	1.26E-08
127	572784.8	4148970	6.75E-08	5.82E-08	2.06E-10	1.26E-07	8.21E-08	7.87E-08	2.06E-10	1.61E-07	1.46E-08	1.43E-08	2.06E-10	2.92E-08	6.23E-09	6.38E-09	2.06E-10	1.28E-08
128	572819.4	4149022	6.16E-08	5.31E-08	1.88E-10	1.15E-07	7.50E-08	7.19E-08	1.88E-10	1.47E-07	1.34E-08	1.31E-08	1.88E-10	2.66E-08	5.68E-09	5.83E-09	1.88E-10	1.17E-08
129	572812.2	4149006	6.24E-08	5.38E-08	1.90E-10	1.16E-07	7.59E-08	7.28E-08	1.90E-10	1.49E-07	1.35E-08	1.32E-08	1.90E-10	2.70E-08	5.76E-09	5.90E-09	1.90E-10	1.18E-08
130	572804.9	4148990	6.33E-08	5.45E-08	1.93E-10	1.18E-07	7.70E-08	7.38E-08	1.93E-10	1.51E-07	1.37E-08	1.34E-08	1.93E-10	2.73E-08	5.84E-09	5.98E-09	1.93E-10	1.20E-08
131	572797.6	4148974	6.44E-08	5.55E-08	1.96E-10	1.20E-07	7.84E-08	7.52E-08	1.96E-10	1.54E-07	1.40E-08	1.37E-08	1.96E-10	2.78E-08	5.95E-09	6.09E-09	1.96E-10	1.22E-08
132	572832.2	4149026	5.92E-08	5.10E-08	1.80E-10	1.10E-07	7.20E-08	6.90E-08	1.80E-10	1.41E-07	1.28E-08	1.25E-08	1.80E-10	2.56E-08	5.46E-09	5.59E-09	1.80E-10	1.12E-08
133	572824.9	4149010	5.99E-08	5.16E-08	1.82E-10	1.12E-07	7.29E-08	6.99E-08	1.82E-10	1.43E-07	1.30E-08	1.27E-08	1.82E-10	2.59E-08	5.53E-09	5.66E-09	1.82E-10	1.14E-08
134	572817.6	4148994	6.07E-08	5.23E-08	1.85E-10	1.13E-07	7.38E-08	7.08E-08	1.85E-10	1.45E-07	1.32E-08	1.29E-08	1.85E-10	2.62E-08	5.60E-09	5.74E-09	1.85E-10	1.15E-08
135	572810.4	4148978	6.16E-08	5.31E-08	1.88E-10	1.15E-07	7.50E-08	7.19E-08	1.88E-10	1.47E-07	1.34E-08	1.31E-08	1.88E-10	2.66E-08	5.69E-09	5.83E-09	1.88E-10	1.17E-08
136	572803.1	4148961	6.28E-08	5.42E-08	1.91E-10	1.17E-07	7.65E-08	7.33E-08	1.91E-10	1.50E-07	1.36E-08	1.33E-08	1.91E-10	2.71E-08	5.80E-09	5.94E-09	1.91E-10	1.19E-08
137	572837.7	4149014	5.76E-08	4.96E-08	1.75E-10	1.07E-07	7.01E-08	6.71E-08	1.75E-10	1.37E-07	1.25E-08	1.22E-08	1.75E-10	2.49E-08	5.31E-09	5.44E-09	1.75E-10	1.09E-08
138	572834	4149006	5.79E-08	4.99E-08	1.76E-10	1.08E-07	7.05E-08	6.75E-08	1.76E-10	1.38E-07	1.26E-08	1.23E-08	1.76E-10	2.50E-08	5.34E-09	5.47E-09	1.76E-10	1.10E-08
139	572826.8	4148990	5.86E-08	5.05E-08	1.79E-10	1.09E-07	7.14E-08	6.84E-08	1.79E-10	1.40E-07	1.27E-08	1.24E-08	1.79E-10	2.53E-08	5.41E-09	5.54E-09	1.79E-10	1.11E-08
140	572819.5	4148974	5.96E-08	5.13E-08	1.81E-10	1.11E-07	7.25E-08	6.95E-08	1.81E-10	1.42E-07	1.29E-08	1.26E-08	1.81E-10	2.57E-08	5.50E-09	5.63E-09	1.81E-10	1.13E-08
141	572812.2	4148957	6.07E-08	5.23E-08	1.85E-10	1.13E-07	7.39E-08	7.08E-08	1.85E-10	1.45E-07	1.32E-08	1.29E-08	1.85E-10	2.62E-08	5.60E-09	5.74E-09	1.85E-10	1.15E-08
142	572850.4	4149027	5.57E-08	4.80E-08	1.70E-10	1.04E-07	6.78E-08	6.50E-08	1.70E-10	1.33E-07	1.21E-08	1.18E-08	1.70E-10	2.41E-08	5.14E-09	5.27E-09	1.70E-10	1.06E-08
143	572846.8	4149010	5.57E-08	4.80E-08	1.70E-10	1.04E-07	6.78E-08	6.50E-08	1.70E-10	1.33E-07	1.21E-08	1.18E-08	1.70E-10	2.41E-08	5.14E-09	5.27E-09	1.70E-10	1.06E-08
144	572839.5	4148994	5.63E-08	4.86E-08	1.72E-10	1.05E-07	6.86E-08	6.57E-08	1.72E-10	1.34E-07	1.22E-08	1.19E-08	1.72E-10	2.43E-08	5.20E-09	5.33E-09	1.72E-10	1.07E-08
145	572832.3	4148978	5.71E-08	4.92E-08	1.74E-10	1.06E-07	6.95E-08	6.66E-08	1.74E-10	1.36E-07	1.24E-08	1.21E-08	1.74E-10	2.47E-08	5.27E-09	5.40E-09	1.74E-10	1.08E-08
146	572825	4148961	5.81E-08	5.01E-08	1.77E-10	1.08E-07	7.07E-08	6.77E-08	1.77E-10	1.39E-07	1.26E-08	1.23E-08	1.77E-10	2.51E-08	5.36E-09	5.49E-09	1.77E-10	1.10E-08
147	572388.4	4149116	6.23E-07	5.37E-07	1.90E-09	1.16E-06	7.59E-07	7.27E-07	1.90E-09	1.49E-06	1.35E-07	1.32E-07	1.90E-09	2.69E-07	5.75E-08	5.89E-08	1.90E-09	1.18E-07
148	572399.5	4149127	8.61E-07	7.42E-07	2.62E-09	1.61E-06	1.05E-06	1.00E-06	2.62E-09	2.06E-06	1.87E-07	1.83E-07	2.62E-09	3.72E-07	7.95E-08	8.14E-08	2.62E-09	1.64E-07
149	572392	4149107	5.09E-07	4.39E-07	1.55E-09	9.49E-07	6.20E-07	5.94E-07	1.55E-09	1.21E-06	1.10E-07	1.08E-07	1.55E-09	2.20E-07	4.70E-08	4.81E-08	1.55E-09	9.66E-08
150	572403.1	4149117	6.92E-07	5.96E-07	2.11E-09	1.29E-06	8.42E-07	8.07E-07	2.11E-09	1.65E-06	1.50E-07	1.47E-07	2.11E-09	2.99E-07	6.38E-08	6.54E-08	2.11E-09	1.31E-07
151	572332.4	4149106	3.75E-07	3.23E-07	1.14E-09	6.99E-07	4.56E-07	4.37E-07	1.14E-09	8.94E-07	8.13E-08	7.94E-08	1.14E-09	1.62E-07	3.46E-08	3.54E-08	1.14E-09	7.12E-08
152	572316.2	4149114	2.95E-07	2.54E-07	8.98E-10	5.50E-07	3.59E-07	3.44E-07	8.98E-10	7.04E-07	6.40E-08	6.25E-08	8.98E-10	1.27E-07	2.72E-08	2.79E-08	8.98E-10	5.60E-08
153	572374.7	4149093	3.71E-07	3.20E-07	1.13E-09	6.92E-07	4.51E-07	4.33E-07	1.13E-09	8.85E-07	8.05E-08	7.86E-08	1.13E-09	1.60E-07	3.42E-08	3.51E-08	1.13E-09	7.04E-08
154	572395.5	4149097	4.23E-07	3.65E-07	1.29E-09	7.89E-07	5.15E-07	4.94E-07	1.29E-09	1.01E-06	9.19E-08	8.97E-08	1.29E-09	1.83E-07	3.91E-08	4.00E-08	1.29E-09	8.04E-08
155	572406.6	4149108	5.66E-07	4.87E-07	1.72E-09	1.05E-06	6.88E-07	6.60E-07	1.72E-09	1.35E-06	1.23E-07	1.20E-07	1.72E-09	2.44E-07	5.22E-08	5.35E-08	1.72E-09	1.07E-07
156	572417.8	4149118	7.45E-07	6.42E-07	2.27E-09	1.39E-06	9.06E-07	8.68E-07	2.27E-09	1.78E-06	1.62E-07	1.58E-07	2.27E-09	3.22E-07	6.87E-08	7.04E-08	2.27E-09	1.41E-07
157	572328.3	4149097	3.05E-07	2.62E-07	9.28E-10	5.68E-07	3.71E-07	3.55E-07	9.28E-10	7.27E-07	6.61E-08	6.46E-08	9.28E-10	1.32E-07	2.81E-08	2.88E-08	9.28E-10	5.78E-08
158	572312.1	4149104	2.41E-07	2.08E-07	7.34E-10	4.50E-07	2.93E-07	2.81E-07	7.34E-10	5.75E-07	5.23E-08	5.11E-08	7.34E-10	1.04E-07	2.22E-08	2.28E-08	7.34E-10	4.58E-08
159	572376	4149083	3.16E-07	2.73E-07	9.64E-10	5.90E-07	3.85E-07	3.69E-07	9.64E-10	7.55E-07	6.87E-08	6.71E-08	9.64E-10	1.37E-07	2.92E-08	2.99E-08	9.64E-10	6.01E-08
160	572399.9	4149089	3.64E-07	3.14E-07	1.11E-09	6.80E-07	4.44E-07	4.25E-07	1.11E-09	8.70E-07	7.91E-08	7.72E-08	1.11E-09	1.57E-07	3.36E-08	3.45E-08	1.11E-09	6.92E-08
161	572412.6	4149101	5.01E-07	4.31E-07	1.53E-09	9.34E-07	6.09E-07	5.84E-07	1.53E-09	1.19E-06	1.09E-07	1.06E-07	1.53E-09	2.16E-07	4.62E-08	4.73E-08	1.53E-09	9.51E-08
162	572425.3	4149113	6.71E-07	5.78E-07	2.04E-09	1.25E-06	8.16E-07	7.82E-07	2.04E-09	1.60E-06	1.46E-07	1.42E-07	2.04E-09	2.90E-07	6.19E-08	6.34E-08	2.04E-09	1.27E-07
163	572324.2	4149088	2.52E-07	2.17E-07	7.66E-10	4.69E-07	3.06E-07	2.93E-07	7.66E-10	6.01E-07	5.46E-08	5.33E-08	7.66E-10	1.09E-07	2.32E-08	2.38E-08	7.66E-10	4.78E-08
164	572308	4149095	2.01E-07	1.73E-07	6.11E-10	3.74E-07	2.44E-07	2.34E-07	6.11E-10	4.79E-07	4.36E-08	4.25E-08	6.11E-10	8.67E-08	1.85E-08	1.90E-08	6.11E-10	3.81E-08
165	572371.3	4149074	2.75E-07	2.37E-07	8.37E-10	5.12E-07	3.34E-07	3.20E-07	8.37E-10	6.56E-07	5.96E-08	5.82E-08	8.37E-10	1.19E-07	2.53E-08	2.60E-08	8.37E-10	5.22E-08
166	572388.5	4149074	2.72E-07	2.35E-07	8.29E-10	5.08E-07	3.31E-07	3.17E-07	8.29E-10	6.50E-07	5.91E-08	5.77E-08	8.29E-10	1.18E-07	2.51E-08	2.57E-08	8.29E-10	5.17E-08
167	572403.4	4149079	3.11E-07	2.68E-07	9.49E-10	5.81E-07	3.79E-07	3.63E-07	9.49E-10	7.43E-07	6.76E-08	6.60E-08	9.49E-10	1.35E-07	2.87E-08	2.94E-08	9.49E-10	5.91E-08
168	572415.9	4149091	4.19E-07	3.61E-07	1.28E-09	7.81E-07	5.10E-07	4.88E-07	1.28E-09	9.99E-07	9.09E-08	8.88E-08	1.28E-09	1.81E-07	3.86E-08	3.96E-08	1.28E-09	7.95E-08
169	572428.4	4149103	5.60E-07	4.83E-07	1.71E-09	1.04E-06	6.82E-07	6.53E-07	1.71E-09	1.34E-06	1.22E-07	1.19E-07	1.71E-09	2.42E-07	5.17E-08	5.29E-08	1.71E-09	1.06E-07
170	572440.9	4149115	6.79E-07	5.85E-07	2.07E-09	1.27E-06	8.26E-07	7.92E-07	2.07E-09	1.62E-06	1.47E-07	1.44E-07	2.07E-09	2.93E-07	6.26E-08	6.42E-08	2.07E-09	1.29E-07
171	572320.2	4149079	2.11E-07	1.82E-07	6.43E-10	3.93E-07	2.57E-07	2.46E-07	6.43E-10	5.04E-07	4.58E-08	4.47E-08	6.43E-10	9.12E-08	1.95E-08	1.99E-08	6.43E-10	4.01E-08
172	572304	4149086	1.70E-07	1.46E-07	5.17E-10	3.16E-07	2.06E-07	1.98E-07	5.17E-10	4.05E-07	3.68E-08	3.60E-08	5.17E-10	7.33E-08	1.57E-08	1.60E-08	5.17E-10	3.22E-08
173	572366.7	4149065	2.41E-07	2.08E-07	7.34E-10	4.49E-07	2.93E-07	2.81E-07	7.34E-10	5.75E-07	5.23E-08	5.11E-08	7.34E-10	1.04E-07	2.22E-08	2.28E-08	7.34E-10	4.57E-08
174	572383.7	4149065	2.38E-07	2.05E-07	7.24E-10	4.43E-07	2.89E-07	2.77E-07	7.24E-10	5.67E-07	5.16E-08	5.04E-08	7.24E-10	1.03E-07	2.19E-08	2.25E-08	7.24E-10	4.51E-08
175	572406.8	4149070	2.70E-07	2.32E-07	8.22E-10	5.03E-07	3.28E-07	3.15E-07	8.22E-10	6.44E-07	5.85E-08	5.72E-08	8.22E-10	1.17E-07	2.49E-08	2.55E-08	8.22E-10	5.12E-08
176	572419.2	4149082	3.56E-07	3.06E-07	1.08E-09	6.63E-07	4.33E-07	4.15E-07	1.08E-09	8.49E-07	7.72E-08	7.54E-08	1.08E-09	1.54E-07	3.28E-08	3.36E-08	1.08E-09	6.75E-08
177	572431.5	4149093	4.73E-07	4.08E-07	1.44E-09	8.82E-07	5.76E-07	5.52E-07	1.44E-09	1.13E-06	1.03E-07	1.00E-07	1.44E-09	2.04E-07	4.37E-08	4.47E-08	1.44E-09	8.98E-08
178	572443.9	4149105	5.83E-07	5.02E-07	1.78E-09	1.09E-06	7.09E-07	6.80E-07	1.78E-09	1.39E-06	1.26E-07	1.24E-07	1.78E-09	2.52E-07	5.38E-08	5.51E-08	1.78E-09	1.11E-07
179	572316.1	4149070	1.79E-07	1.54E-07	5.46E-10	3.34E-07	2.18E-07	2.09E-07	5.46E-10	4.28E-07	3.89E-08	3.80E-08	5.46E-10	7.74E-08	1.65E-08	1.69E-08	5.46E-10	3.40E-08
180	572299.9	4149077	1.45E-07	1.25E-07	4.43E-10	2.71E-07	1.77E-07	1.69E-07	4.43E-10	3.47E-07	3.15E-08	3.08E-08	4.43E-10	6.28E-08	1.34E-08	1.37E-08	4.43E-10	2.76E-08
181	572362.2	4149056	2.13E-07	1.83E-07	6.48E-10	3.97E-07	2.59E-07	2.48E-07	6.48E-10	5.07E-07	4.61E-08	4.51E-08	6.48E-10	9.19E-08	1.96E-08	2.01E-08	6.48E-10	4.04E-08
182	572379	4149055	2.11E-07	1.81E-07	6.41E-10	3.93E-07	2.56E-07	2.46E-07	6.41E-10	5.02E-07	4.57E-08	4.46E-08	6.41E-10	9.09E-08	1.94E-08	1.99E-08	6.41E-10	4.00E-08
183	572395.8	4149055	2.10E-07	1.81E-07	6.38E-10	3.91E-07	2.55E-07	2.44E-07	6.38E-10	5.00E-07	4.55E-08	4.44E-08	6.38E-10	9.05E-08	1.93E-08	1.98E-08	6.38E-10	3.98E-08
184	572410.3	4149061	2.36E-07	2.03E-07	7.19E-10	4.40E-07	2.87E-07	2.75E-07	7.19E-10	5.64E-07	5.12E-08	5.00E-08	7.19E-10	1.02E-07	2.18E-08	2.23E-08	7.19E-10	4.48E-08
185	572422.6	4149072	3.06E-07	2.64E-07	9.32E-10	5.70E-07	3.72E-07	3.57E-07	9.32E-10	7.30E-07	6.64E-08	6.48E-08	9.32E-10	1.32E-07	2.82E-08	2.89E-08	9.32E-10	5.81E-08
186	572434.8	4149084	4.03E-07	3.48E-07	1.23E-09	7.52E-07	4.91E-07	4.71E-07	1.23E-09	9.63E-07	8.76E-08	8.55E-08	1.23E-09	1.74E-07	3.72E-08	3.81E-08	1.23E-09	7.66E-08
187	572447	4149095	5.03E-07	4.33E-07	1.53E-09	9.38E-07	6.12E-07	5.87E-07	1.53E-09	1.20E-06	1.09E-07	1.07E-07	1.53E-09	2.17E-07	4.64E-08	4.76E-08	1.53E-09	9.55E-08
188	572312	4149061	1.54E-07	1.33E-07	4.69E-10	2.87E-07	1.87E-07	1.80E-07	4.69E-10	3.67E-07	3.34E-08	3.26E-08	4.69E-10	6.65E-08	1.42E-08	1.46E-08	4.69E-10	2.92E-08
189	572295.8	4149068	1.26E-07	1.08E-07	3.83E-10	2.35E-07	1.53E-07	1.47E-07	3.83E-10	3.00E-07	2.73E-08	2.67E-08	3.83E-10	5.43E-08	1.16E-08	1.19E-08	3.83E-10	2.39E-08
190	572357.7	4149047	1.89E-07	1.63E-07	5.75E-10	3.52E-07	2.30E-07	2.20E-07	5.75E-10	4.50E-07	4.09E-08	4.00E-08	5.75E-10	8.15E-08	1.74E-08	1.78E-08	5.75E-10	3.58E-08
191	572374.4	4149046	1.88E-07	1.62E-07	5.73E-10	3.51E-07	2.29E-07	2.19E-07	5.73E-10	4.49E-07	4.08E-08	3.99E-08	5.73E-10	8.12E-08	1.73E-08	1.78E-08	5.73E-10	3.57E-08
192	572391.1	4149046	1.86E-07	1.60E-07	5.66E-10	3.46E-07	2.26E-07	2.17E-07	5.66E-10	4.43E-07	4.03E-08	3.94E-08	5.66E-10	8.02E-08	1.71E-08	1.76E-08	5.66E-10	3.53E-08
193	572413.9	4149051	2.08E-07	1.80E-07	6.35E-10	3.89E-07	2.54E-07	2.43E-07	6.35E-10	4.98E-07	4.52E-08	4.42E-08	6.35E-10	9.01E-08	1.92E-08	1.97E-08	6.35E-10	3.96E-08
194	572426	4149063	2.66E-07	2.29E-07	8.10E-10	4.96E-07	3.24E-07	3.10E-07	8.10E-10	6.35E-07	5.77E-08	5.64E-08	8.10E-10	1.15E-07	2.45E-08	2.51E-08	8.10E-10	5.05E-08
195	572438.1	4149074	3.47E-07	2.99E-07	1.06E-09	6.48E-07	4.23E-07	4.05E-07	1.06E-09	8.29E-07	7.54E-08	7.36E-08	1.06E-09	1.50E-07	3.20E-08	3.28E-08	1.06E-09	6.59E-08
196	572450.3	4149086	4.36E-07	3.75E-07	1.33E-09	8.12E-07	5.30E-07	5.08E-07	1.33E-09	1.04E-06	9.46E-08	9.23E-08	1.33E-09	1.88E-07	4.02E-08	4.12E-08	1.33E-09	8.27E-08
197	572462.4	4149097	5.01E-07	4.32E-07	1.53E-09	9.35E-07	6.10E-07	5.85E-07	1.53E-09	1.20E-06	1.09E-07	1.06E-07	1.53E-09	2.17E-07	4.63E-08	4.74E-08	1.53E-09	9.52E-08
198	572307.9	4149052	1.34E-07	1.15E-07	4.07E-10	2.49E-07	1.62E-07	1.56E-07	4.07E-10	3.19E-07	2.90E-08	2.83E-08	4.07E-10	5.77E-08	1.23E-08	1.26E-08	4.07E-10	2.53E-08
199	572291.7	4149059	1.10E-07	9.47E-08	3.35E-10	2.05E-07	1.34E-07	1.28E-07	3.35E-10	2.62E-07	2.39E-08	2.33E-08	3.35E-10	4.75E-08	1.01E-08	1.04E-08	3.35E-10	2.09E-08
200	572353.4	4149038	1.68E-07	1.45E-07	5.12E-10	3.13E-07	2.05E-07	1.96E-07	5.12E-10	4.01E-07	3.65E-08	3.56E-08	5.12E-10	7.26E-08	1.55E-08	1.59E-08	5.12E-10	3.19E-08
201	572369.9	4149037	1.69E-07	1.46E-07	5.15E-10	3.15E-07	2.06E-07	1.97E-07	5.15E-10	4.04E-07	3.67E-08	3.58E-08	5.15E-10	7.31E-08	1.56E-08	1.60E-08	5.15E-10	3.21E-08
202	572386.5	4149037	1.67E-07	1.44E-07	5.08E-10	3.11E-07	2.03E-07	1.94E-07	5.08E-10	3.98E-07	3.62E-08	3.53E-08	5.08E-10	7.20E-08	1.54E-08	1.58E-08	5.08E-10	3.16E-08
203	572403.1	4149036	1.67E-07	1.44E-07	5.08E-10	3.11E-07	2.03E-07	1.94E-07	5.08E-10	3.98E-07	3.62E-08	3.53E-08	5.08E-10	7.20E-08	1.54E-08	1.58E-08	5.08E-10	3.16E-08

204	572417.4	4149042	1.86E-07	1.60E-07	5.65E-10	3.46E-07	2.26E-07	2.16E-07	5.65E-10	4.43E-07	4.03E-08	3.93E-08	5.65E-10	8.01E-08	1.71E-08	1.75E-08	5.65E-10	3.52E-08
205	572429.4	4149053	2.33E-07	2.01E-07	7.10E-10	4.35E-07	2.84E-07	2.72E-07	7.10E-10	5.57E-07	5.06E-08	4.94E-08	7.10E-10	1.01E-07	2.15E-08	2.20E-08	7.10E-10	4.43E-08
206	572441.5	4149065	3.02E-07	2.60E-07	9.18E-10	5.62E-07	3.67E-07	3.52E-07	9.18E-10	7.20E-07	6.54E-08	6.39E-08	9.18E-10	1.30E-07	2.78E-08	2.85E-08	9.18E-10	5.72E-08
207	572453.5	4149076	3.79E-07	3.27E-07	1.16E-09	7.07E-07	4.62E-07	4.42E-07	1.16E-09	9.05E-07	8.23E-08	8.04E-08	1.16E-09	1.64E-07	3.50E-08	3.59E-08	1.16E-09	7.20E-08
208	572465.6	4149087	4.44E-07	3.83E-07	1.35E-09	8.29E-07	5.41E-07	5.18E-07	1.35E-09	1.06E-06	9.64E-08	9.42E-08	1.35E-09	1.92E-07	4.10E-08	4.20E-08	1.35E-09	8.44E-08
209	572303.8	4149042	1.17E-07	1.01E-07	3.56E-10	2.18E-07	1.42E-07	1.36E-07	3.56E-10	2.79E-07	2.54E-08	2.48E-08	3.56E-10	5.05E-08	1.08E-08	1.10E-08	3.56E-10	2.22E-08
210	572287.6	4149050	9.69E-08	8.35E-08	2.95E-10	1.81E-07	1.18E-07	1.13E-07	2.95E-10	2.31E-07	2.10E-08	2.05E-08	2.95E-10	4.19E-08	8.94E-09	9.16E-09	2.95E-10	1.84E-08
211	572349	4149029	1.50E-07	1.29E-07	4.57E-10	2.80E-07	1.83E-07	1.75E-07	4.57E-10	3.58E-07	3.26E-08	3.18E-08	4.57E-10	6.49E-08	1.39E-08	1.42E-08	4.57E-10	2.85E-08
212	572365.5	4149028	1.53E-07	1.32E-07	4.65E-10	2.85E-07	1.86E-07	1.78E-07	4.65E-10	3.64E-07	3.31E-08	3.24E-08	4.65E-10	6.60E-08	1.41E-08	1.44E-08	4.65E-10	2.90E-08
213	572382	4149028	1.51E-07	1.30E-07	4.60E-10	2.81E-07	1.84E-07	1.76E-07	4.60E-10	3.60E-07	3.27E-08	3.20E-08	4.60E-10	6.52E-08	1.39E-08	1.43E-08	4.60E-10	2.86E-08
214	572398.5	4149027	1.49E-07	1.29E-07	4.55E-10	2.79E-07	1.82E-07	1.74E-07	4.55E-10	3.57E-07	3.24E-08	3.17E-08	4.55E-10	6.45E-08	1.38E-08	1.41E-08	4.55E-10	2.84E-08
215	572420.9	4149032	1.66E-07	1.43E-07	5.06E-10	3.10E-07	2.02E-07	1.94E-07	5.06E-10	3.96E-07	3.61E-08	3.52E-08	5.06E-10	7.18E-08	1.53E-08	1.57E-08	5.06E-10	3.15E-08
216	572432.9	4149044	2.06E-07	1.78E-07	6.28E-10	3.85E-07	2.51E-07	2.41E-07	6.28E-10	4.92E-07	4.48E-08	4.37E-08	6.28E-10	8.91E-08	1.90E-08	1.95E-08	6.28E-10	3.92E-08
217	572444.9	4149055	2.64E-07	2.27E-07	8.04E-10	4.92E-07	3.21E-07	3.08E-07	8.04E-10	6.30E-07	5.73E-08	5.59E-08	8.04E-10	1.14E-07	2.43E-08	2.49E-08	8.04E-10	5.01E-08
218	572456.8	4149066	3.32E-07	2.86E-07	1.01E-09	6.19E-07	4.04E-07	3.87E-07	1.01E-09	7.92E-07	7.21E-08	7.04E-08	1.01E-09	1.43E-07	3.06E-08	3.14E-08	1.01E-09	6.30E-08
219	572299.8	4149033	1.03E-07	8.88E-08	3.14E-10	1.92E-07	1.25E-07	1.20E-07	3.14E-10	2.46E-07	2.24E-08	2.18E-08	3.14E-10	4.45E-08	9.51E-09	9.74E-09	3.14E-10	1.96E-08
220	572283.6	4149041	8.61E-08	7.42E-08	2.62E-10	1.61E-07	1.05E-07	1.00E-07	2.62E-10	2.05E-07	1.87E-08	1.82E-08	2.62E-10	3.72E-08	7.94E-09	8.14E-09	2.62E-10	1.63E-08
221	572347.9	4149019	1.36E-07	1.17E-07	4.14E-10	2.53E-07	1.65E-07	1.58E-07	4.14E-10	3.24E-07	2.95E-08	2.88E-08	4.14E-10	5.87E-08	1.25E-08	1.28E-08	4.14E-10	2.58E-08
222	572365.6	4149019	1.38E-07	1.19E-07	4.22E-10	2.58E-07	1.68E-07	1.61E-07	4.22E-10	3.30E-07	3.00E-08	2.93E-08	4.22E-10	5.98E-08	1.28E-08	1.31E-08	4.22E-10	2.63E-08
223	572383.2	4149018	1.37E-07	1.18E-07	4.16E-10	2.55E-07	1.66E-07	1.59E-07	4.16E-10	3.26E-07	2.96E-08	2.90E-08	4.16E-10	5.90E-08	1.26E-08	1.29E-08	4.16E-10	2.59E-08
224	572400.9	4149018	1.35E-07	1.16E-07	4.12E-10	2.52E-07	1.64E-07	1.58E-07	4.12E-10	3.23E-07	2.93E-08	2.86E-08	4.12E-10	5.84E-08	1.25E-08	1.28E-08	4.12E-10	2.57E-08
225	572424.9	4149023	1.51E-07	1.30E-07	4.59E-10	2.81E-07	1.84E-07	1.76E-07	4.59E-10	3.60E-07	3.27E-08	3.20E-08	4.59E-10	6.51E-08	1.39E-08	1.43E-08	4.59E-10	2.86E-08
226	572437.7	4149036	1.89E-07	1.63E-07	5.75E-10	3.52E-07	2.30E-07	2.20E-07	5.75E-10	4.50E-07	4.10E-08	4.00E-08	5.75E-10	8.15E-08	1.74E-08	1.78E-08	5.75E-10	3.58E-08
227	572295.7	4149024	9.15E-08	7.89E-08	2.79E-10	1.71E-07	1.11E-07	1.07E-07	2.79E-10	2.18E-07	1.99E-08	1.94E-08	2.79E-10	3.95E-08	8.45E-09	8.65E-09	2.79E-10	1.74E-08
228	572279.5	4149031	7.69E-08	6.63E-08	2.34E-10	1.43E-07	9.36E-08	8.97E-08	2.34E-10	1.84E-07	1.67E-08	1.63E-08	2.34E-10	3.32E-08	7.10E-09	7.27E-09	2.34E-10	1.46E-08
229	572343.4	4149010	1.22E-07	1.05E-07	3.72E-10	2.28E-07	1.49E-07	1.43E-07	3.72E-10	2.92E-07	2.65E-08	2.59E-08	3.72E-10	5.28E-08	1.13E-08	1.16E-08	3.72E-10	2.32E-08
230	572360.9	4149010	1.26E-07	1.09E-07	3.84E-10	2.35E-07	1.53E-07	1.47E-07	3.84E-10	3.01E-07	2.73E-08	2.67E-08	3.84E-10	5.44E-08	1.16E-08	1.19E-08	3.84E-10	2.39E-08
231	572378.4	4149009	1.25E-07	1.08E-07	3.81E-10	2.33E-07	1.52E-07	1.46E-07	3.81E-10	2.98E-07	2.71E-08	2.65E-08	3.81E-10	5.40E-08	1.15E-08	1.18E-08	3.81E-10	2.37E-08
232	572395.8	4149009	1.23E-07	1.06E-07	3.75E-10	2.30E-07	1.50E-07	1.44E-07	3.75E-10	2.94E-07	2.67E-08	2.61E-08	3.75E-10	5.32E-08	1.14E-08	1.16E-08	3.75E-10	2.34E-08
233	572413.3	4149008	1.23E-07	1.06E-07	3.76E-10	2.30E-07	1.50E-07	1.44E-07	3.76E-10	2.95E-07	2.68E-08	2.62E-08	3.76E-10	5.33E-08	1.14E-08	1.17E-08	3.76E-10	2.34E-08
234	572428.4	4149014	1.37E-07	1.18E-07	4.16E-10	2.55E-07	1.66E-07	1.59E-07	4.16E-10	3.26E-07	2.96E-08	2.89E-08	4.16E-10	5.90E-08	1.26E-08	1.29E-08	4.16E-10	2.59E-08
235	572492	4149074	3.60E-07	3.10E-07	1.10E-09	6.71E-07	4.38E-07	4.20E-07	1.10E-09	8.59E-07	7.81E-08	7.63E-08	1.10E-09	1.56E-07	3.32E-08	3.40E-08	1.10E-09	6.83E-08
236	572339	4149001	1.10E-07	9.50E-08	3.36E-10	2.06E-07	1.34E-07	1.29E-07	3.36E-10	2.63E-07	2.39E-08	2.34E-08	3.36E-10	4.76E-08	1.02E-08	1.04E-08	3.36E-10	2.09E-08
237	572356.3	4149001	1.15E-07	9.90E-08	3.50E-10	2.14E-07	1.40E-07	1.34E-07	3.50E-10	2.74E-07	2.49E-08	2.43E-08	3.50E-10	4.96E-08	1.06E-08	1.09E-08	3.50E-10	2.18E-08
238	572373.6	4149000	1.15E-07	9.89E-08	3.49E-10	2.14E-07	1.40E-07	1.34E-07	3.49E-10	2.74E-07	2.49E-08	2.43E-08	3.49E-10	4.96E-08	1.06E-08	1.08E-08	3.49E-10	2.18E-08
239	572391	4149000	1.13E-07	9.73E-08	3.44E-10	2.11E-07	1.37E-07	1.32E-07	3.44E-10	2.69E-07	2.45E-08	2.39E-08	3.44E-10	4.88E-08	1.04E-08	1.07E-08	3.44E-10	2.14E-08
240	572408.3	4148999	1.12E-07	9.66E-08	3.42E-10	2.09E-07	1.36E-07	1.31E-07	3.42E-10	2.68E-07	2.43E-08	2.38E-08	3.42E-10	4.84E-08	1.03E-08	1.06E-08	3.42E-10	2.13E-08
241	572482.3	4149052	2.91E-07	2.50E-07	8.85E-10	5.42E-07	3.54E-07	3.39E-07	8.85E-10	6.94E-07	6.31E-08	6.16E-08	8.85E-10	1.26E-07	2.68E-08	2.75E-08	8.85E-10	5.52E-08
242	572494.9	4149064	3.27E-07	2.81E-07	9.95E-10	6.09E-07	3.97E-07	3.81E-07	9.95E-10	7.79E-07	7.09E-08	6.92E-08	9.95E-10	1.41E-07	3.01E-08	3.09E-08	9.95E-10	6.20E-08
243	572507.5	4149076	3.40E-07	2.93E-07	1.03E-09	6.33E-07	4.13E-07	3.96E-07	1.03E-09	8.11E-07	7.37E-08	7.20E-08	1.03E-09	1.47E-07	3.13E-08	3.21E-08	1.03E-09	6.45E-08
244	572300.1	4148993	7.75E-08	6.68E-08	2.36E-10	1.44E-07	9.43E-08	9.04E-08	2.36E-10	1.85E-07	1.68E-08	1.64E-08	2.36E-10	3.35E-08	7.15E-09	7.33E-09	2.36E-10	1.47E-08
245	572334.6	4148992	9.97E-08	8.59E-08	3.04E-10	1.86E-07	1.21E-07	1.16E-07	3.04E-10	2.38E-07	2.16E-08	2.11E-08	3.04E-10	4.31E-08	9.20E-09	9.43E-09	3.04E-10	1.89E-08
246	572351.8	4148991	1.05E-07	9.04E-08	3.20E-10	1.96E-07	1.28E-07	1.22E-07	3.20E-10	2.50E-07	2.28E-08	2.22E-08	3.20E-10	4.53E-08	9.68E-09	9.92E-09	3.20E-10	1.99E-08
247	572369	4148991	1.06E-07	9.10E-08	3.22E-10	1.97E-07	1.29E-07	1.23E-07	3.22E-10	2.52E-07	2.29E-08	2.24E-08	3.22E-10	4.56E-08	9.74E-09	9.99E-09	3.22E-10	2.01E-08
248	572386.2	4148991	1.04E-07	8.97E-08	3.17E-10	1.94E-07	1.27E-07	1.21E-07	3.17E-10	2.48E-07	2.26E-08	2.21E-08	3.17E-10	4.50E-08	9.61E-09	9.84E-09	3.17E-10	1.98E-08
249	572403.4	4148990	1.03E-07	8.86E-08	3.13E-10	1.92E-07	1.25E-07	1.20E-07	3.13E-10	2.45E-07	2.23E-08	2.18E-08	3.13E-10	4.44E-08	9.49E-09	9.72E-09	3.13E-10	1.95E-08
250	572420.6	4148990	1.03E-07	8.91E-08	3.15E-10	1.93E-07	1.26E-07	1.21E-07	3.15E-10	2.47E-07	2.24E-08	2.19E-08	3.15E-10	4.47E-08	9.54E-09	9.78E-09	3.15E-10	1.96E-08
251	572498	4149054	2.96E-07	2.55E-07	9.02E-10	5.52E-07	3.60E-07	3.45E-07	9.02E-10	7.06E-07	6.42E-08	6.27E-08	9.02E-10	1.28E-07	2.73E-08	2.80E-08	9.02E-10	5.62E-08
252	572510.5	4149066	3.14E-07	2.71E-07	9.56E-10	5.86E-07	3.82E-07	3.66E-07	9.56E-10	7.49E-07	6.81E-08	6.65E-08	9.56E-10	1.36E-07	2.90E-08	2.97E-08	9.56E-10	5.96E-08
253	572523	4149078	3.12E-07	2.69E-07	9.52E-10	5.83E-07	3.80E-07	3.64E-07	9.52E-10	7.46E-07	6.78E-08	6.62E-08	9.52E-10	1.35E-07	2.88E-08	2.95E-08	9.52E-10	5.93E-08
254	572283.4	4148997	6.65E-08	5.73E-08	2.02E-10	1.24E-07	8.09E-08	7.75E-08	2.02E-10	1.59E-07	1.44E-08	1.41E-08	2.02E-10	2.87E-08	6.13E-09	6.28E-09	2.02E-10	1.26E-08
255	572267.2	4149004	5.68E-08	4.89E-08	1.73E-10	1.06E-07	6.91E-08	6.63E-08	1.73E-10	1.36E-07	1.23E-08	1.20E-08	1.73E-10	2.45E-08	5.24E-09	5.37E-09	1.73E-10	1.08E-08
256	572251	4149011	4.74E-08	4.09E-08	1.44E-10	8.84E-08	5.77E-08	5.53E-08	1.44E-10	1.13E-07	1.03E-08	1.01E-08	1.44E-10	2.05E-08	4.38E-09	4.48E-09	1.44E-10	9.00E-09
257	572296	4148984	7.00E-08	6.04E-08	2.13E-10	1.31E-07	8.52E-08	8.17E-08	2.13E-10	1.67E-07	1.52E-08	1.48E-08	2.13E-10	3.03E-08	6.46E-09	6.62E-09	2.13E-10	1.33E-08
258	572313.1	4148983	8.12E-08	7.00E-08	2.47E-10	1.51E-07	9.88E-08	9.47E-08	2.47E-10	1.94E-07	1.76E-08	1.72E-08	2.47E-10	3.51E-08	7.49E-09	7.68E-09	2.47E-10	1.54E-08
259	572330.2	4148983	9.05E-08	7.80E-08	2.76E-10	1.69E-07	1.10E-07	1.06E-07	2.76E-10	2.16E-07	1.96E-08	1.92E-08	2.76E-10	3.91E-08	8.35E-09	8.55E-09	2.76E-10	1.72E-08
260	572347.3	4148982	9.60E-08	8.27E-08	2.92E-10	1.79E-07	1.17E-07	1.12E-07	2.92E-10	2.29E-07	2.08E-08	2.03E-08	2.92E-10	4.15E-08	8.86E-09	9.08E-09	2.92E-10	1.82E-08
261	572364.4	4148982	9.74E-08	8.40E-08	2.97E-10	1.82E-07	1.19E-07	1.14E-07	2.97E-10	2.32E-07	2.11E-08	2.06E-08	2.97E-10	4.21E-08	8.99E-09	9.21E-09	2.97E-10	1.85E-08
262	572381.5	4148981	9.64E-08	8.31E-08	2.94E-10	1.80E-07	1.17E-07	1.12E-07	2.94E-10	2.30E-07	2.09E-08	2.04E-08	2.94E-10	4.16E-08	8.89E-09	9.11E-09	2.94E-10	1.83E-08
263	572398.6	4148981	9.50E-08	8.18E-08	2.89E-10	1.77E-07	1.16E-07	1.11E-07	2.89E-10	2.27E-07	2.06E-08	2.01E-08	2.89E-10	4.10E-08	8.76E-09	8.98E-09	2.89E-10	1.80E-08
264	572415.7	4148980	9.45E-08	8.14E-08	2.88E-10	1.76E-07	1.15E-07	1.10E-07	2.88E-10	2.26E-07	2.05E-08	2.00E-08	2.88E-10	4.08E-08	8.72E-09	8.93E-09	2.88E-10	1.79E-08
265	572501.1	4149045	2.68E-07	2.31E-07	8.15E-10	4.99E-07	3.26E-07	3.12E-07	8.15E-10	6.39E-07	5.81E-08	5.67E-08	8.15E-10	1.16E-07	2.47E-08	2.53E-08	8.15E-10	5.08E-08
266	572513.6	4149056	2.89E-07	2.49E-07	8.81E-10	5.39E-07	3.52E-07	3.37E-07	8.81E-10	6.90E-07	6.28E-08	6.13E-08	8.81E-10	1.25E-07	2.67E-08	2.73E-08	8.81E-10	5.49E-08
267	572526	4149068	2.93E-07	2.53E-07	8.94E-10	5.47E-07	3.57E-07	3.42E-07	8.94E-10	7.00E-07	6.37E-08	6.22E-08	8.94E-10	1.27E-07	2.71E-08	2.77E-08	8.94E-10	5.57E-08
268	572279.4	4148988	6.03E-08	5.20E-08	1.84E-10	1.12E-07	7.34E-08	7.04E-08	1.84E-10	1.44E-07	1.31E-08	1.28E-08	1.84E-10	2.61E-08	5.57E-09	5.70E-09	1.84E-10	1.15E-08
269	572263.2	4148995	5.18E-08	4.47E-08	1.58E-10	9.67E-08	6.31E-08	6.05E-08	1.58E-10	1.24E-07	1.13E-08	1.10E-08	1.58E-10	2.24E-08	4.78E-09	4.90E-09	1.58E-10	9.84E-09
270	572247	4149002	4.36E-08	3.76E-08	1.33E-10	8.13E-08	5.31E-08	5.08E-08	1.33E-10	1.04E-07	9.46E-09	9.24E-09	1.33E-10	1.88E-08	4.02E-09	4.12E-09	1.33E-10	8.28E-09
271	572291.9	4148975	6.36E-08	5.48E-08	1.94E-10	1.19E-07	7.74E-08	7.42E-08	1.94E-10	1.52E-07	1.38E-08	1.35E-08	1.94E-10	2.75E-08	5.87E-09	6.02E-09	1.94E-10	1.21E-08
272	572308.9	4148974	7.36E-08	6.34E-08	2.24E-10	1.37E-07	8.96E-08	8.58E-08	2.24E-10	1.76E-07	1.60E-08	1.56E-08	2.24E-10	3.18E-08	6.79E-09	6.96E-09	2.24E-10	1.40E-08
273	572325.9	4148974	8.23E-08	7.09E-08	2.51E-10	1.53E-07	1.00E-07	9.60E-08	2.51E-10	1.96E-07	1.79E-08	1.74E-08	2.51E-10	3.55E-08	7.59E-09	7.78E-09	2.51E-10	1.56E-08
274	572342.9	4148973	8.80E-08	7.58E-08	2.68E-10	1.64E-07	1.07E-07	1.03E-07	2.68E-10	2.10E-07	1.91E-08	1.86E-08	2.68E-10	3.80E-08	8.12E-09	8.32E-09	2.68E-10	1.67E-08
275	572359.9	4148973	9.00E-08	7.76E-08	2.74E-10	1.68E-07	1.10E-07	1.05E-07	2.74E-10	2.15E-07	1.95E-08	1.91E-08	2.74E-10	3.89E-08	8.31E-09	8.51E-09	2.74E-10	1.71E-08
276	572376.9	4148972	8.95E-08	7.71E-08	2.73E-10	1.67E-07	1.09E-07	1.04E-07	2.73E-10	2.14E-07	1.94E-08	1.90E-08	2.73E-10	3.87E-08	8.26E-09	8.46E-09	2.73E-10	1.70E-08
277	572393.9	4148972	8.81E-08	7.59E-08	2.68E-10	1.64E-07	1.07E-07	1.03E-07	2.68E-10	2.10E-07	1.91E-08	1.87E-08	2.68E-10	3.80E-08	8.13E-09	8.33E-09	2.68E-10	1.67E-08
278	572410.8	4148971	8.71E-08	7.50E-08	2.65E-10	1.62E-07	1.06E-07	1.02E-07	2.65E-10	2.08E-07	1.89E-08	1.85E-08	2.65E-10	3.76E-08	8.03E-09	8.23E-09	2.65E-10	1.65E-08
279	572516.6	4149047	2.65E-07	2.29E-07	8.08E-10	4.95E-07	3.23E-07	3.10E-07	8.08E-10	6.33E-07	5.76E-08	5.62E-08	8.08E-10	1.15E-07	2.45E-08	2.51E-08	8.08E-10	5.04E-08
280	572275.3	4148979	5.50E-08	4.74E-08	1.68E-10	1.03E-07	6.69E-08	6.42E-08	1.68E-10	1.31E-07	1.19E-08	1.17E-08	1.68E-10	2.38E-08	5.07E-09	5.20E-09	1.68E-10	1.04E-08
281	572259.1	4148986	4.75E-08	4.09E-08	1.45E-10	8.86E-08	5.78E-08	5.54E-08	1.45E-10	1.13E-07	1.03E-08	1.01E-08	1.45E-10	2.05E-08	4.38E-09	4.49E-09	1.45E-10	9.02E-09
282	572242.9	4148993	4.02E-08	3.46E-08	1.22E-10	7.50E-08	4.89E-08	4.69E-08	1.22E-10	9.59E-08	8.72E-09	8.52E-09	1.22E-10	1.74E-08	3.71E-09	3.80E-09	1.22E-10	7.63E-09
283	572287.8	4148966	5.80E-08	5.00E-08	1.77E-10	1.08E-07	7.06E-08	6.77E-08	1.77E-10	1.38E-07	1.26E-08	1.23E-08	1.77E-10	2.51E-08	5.35E-09	5.49E-09	1.77E-10	1.10E-08
284	572304.7	4148965	6.70E-08	5.77E-08	2.04E-10	1.25E-07	8.15E-08	7.81E-08	2.04E-10	1.60E-07	1.45E-08	1.42E-08	2.04E-10	2.89E-08	6.18E-09	6.33E-09	2.04E-10	1.27E-08
285	572321.6	4148965	7.50E-08	6.47E-08	2.29E-10	1.40E-07	9.13E-08	8.75E-08	2.29E-10	1.79E-07	1.63E-08	1.59E-08	2.29E-10	3.24E-08	6.92E-09	7.09E-09	2.29E-10	1.42E-08
286	572338.5	4148964	8.08E-08	6.96E-08	2.46E-10	1.51E-07	9.83E-08	9.42E-08	2.46E-10	1.93E-07	1.75E-08	1.71E-08	2.46E-10	3.49E-08	7.45E-09	7.63E-09	2.46E-10	1.53E-08
287	572355.4	4148964	8.33E-08	7.18E-08	2.54E-10	1.55E-07	1.01E-07	9.72E-08	2.54E-10	1.99E-07	1.81E-08	1.77E-08	2.54E-10	3.60E-08	7.69E-09	7.88E-09	2.54E-10	1.58E-08
288	572372.3	4148963	8.32E-08	7.17E-08	2.53E-10	1.55E-07	1.01E-07	9.70E-08	2.53E-10	1.99E-07	1.81E-08	1.76E-08	2.53E-10	3.59E-08	7.68E-09	7.87E-09	2.53E-10	1.58E-08
289	572389.2	4148963	8.20E-08	7.06E-08	2.50E-10	1.53E-07	9.98E-08	9.56E-08	2.50E-10	1.96E-07	1.78E-08	1.74E-08	2.50E-10	3.54E-08	7.56E-09	7.75E-09	2.50E-10	1.56E-08
290	572406.1	4148962	8.08E-08	6.96E-08	2.46E-10	1.51E-07	9.83E-08	9.42E-08	2.46E-10	1.93E-07	1.75E-08	1.71E-08	2.46E-10	3.49E-08	7.45E-09	7.64E-09	2.46E-10	1.53E-08
291	572271.2	4148969	5.04E-08	4.34E-08	1.53E-10	9.39E-08	6.13E-08	5.87E-08	1.53E-10	1.20E-07	1.09E-08	1.07E-08	1.53E-10	2.18E-08	4.65E-09	4.76E-09	1.53E-10	9.56E-09
292	572255	4148977	4.37E-08	3.76E-08	1.33E-10	8.14E-08	5.32E-08	5.09E-08	1.33E-10	1.04E-07	9.48E-09	9.26E-09	1.33E-10	1.89E-08	4.03E-09	4.13E-09	1.33E-10	8.29E-09
293	572238.8	4148984	3.72E-08	3.20E-08	1.13E-10	6.93E-08	4.52E-08	4.33E-08	1.13E-10	8.87E-08	8.07E-09	7.88E-09	1.13E-10	1.61E-08	3.43E-09	3.51E-09	1.13E-10	7.06E-09
294	572284.1	4148956	5.33E-08	4.60E-08	1.62E-10	9.94E-08	6.49E-08	6.22E-08	1.62E-10	1.27E-07	1.16E-08	1.13E-08	1.62E-10	2.30E-08	4.92E-09	5.04E-09	1.62E-10	1.01E-08
295	572301.8	4148956	6.18E-08	5.32E-08	1.88E-10	1.15E-07	7.52E-08	7.20E-08	1.88E-10	1.47E-07	1.34E-08	1.31E-08	1.88E-10	2.67E-08	5.70E-09	5.84E-09	1.88E-10	1.17E-08
296	572319.5	4148955	6.95E-08	5.99E-08	2.12E-10	1.30E-07	8.45E-08	8.10E-08	2.12E-10	1.66E-07	1.51E-08	1.47E-08	2.12E-10	3.00E-08	6.41E-09	6.57E-09	2.12E-10	1.32E-08
297	572337.2	4148955	7.50E-08	6.46E-08	2.28E-10	1.40E-07	9.12E-08	8.74E-08	2.28E-10	1.79E-07	1.63E-08	1.59E-08	2.28E-10	3.24E-08	6.92E-09	7.09E-09	2.28E-10	1.42E-08
298	572354.9	4148954	7.74E-08	6.67E-08	2.36E-10	1.44E-07	9.42E-08	9.03E-08	2.36E-10	1.85E-07	1.68E-08	1.64E-08	2.36E-10	3.35E-08	7.14E-09	7.32E-09	2.36E-10	1.47E-08
299	572372.6	4148954	7.73E-08	6.66E-08	2.35E-10	1.44E-07	9.41E-08	9.02E-08	2.35E-10	1.84E-07	1.68E-08	1.64E-08	2.35E-10	3.34E-08	7.13E-09	7.31E-09	2.35E-10	1.47E-08
300	572390.3	4148953	7.60E-08	6.55E-08	2.32E-10	1.42E-07	9.25E-08	8.87E-08	2.32E-10	1.81E-07	1.65E-08	1.61E-08	2.32E-10	3.28E-08	7.02E-09	7.19E-09	2.32E-10	1.44E-08
301	572408.1	4148953	7.49E-08	6.45E-08	2.28E-10	1.40E-07	9.11E-08	8.73E-08	2.28E-10	1.79E-07	1.62E-08	1.59E-08	2.28E-10	3.23E-08	6.91E-09	7.08E-09	2.28E-10	1.42E-08
302	572267.1	4148960	4.63E-08	3.99E-08	1.41E-10	8.63E-08	5.63E-08	5.39E-08	1.41E-10	1.10E-07	1.00E-08	9.80E-09	1.41E-10	2.00E-08	4.27E-09	4.37E-09	1.41E-10	8.78E-09
303	572250.9	4148967	4.03E-08	3.47E-08	1.23E-10	7.51E-08	4.90E-08	4.70E-08	1.23E-10	9.61E-08	8.74E-09	8.54E-09	1.23E-10	1.74E-08	3.72E-09	3.81E-09	1.23E-10	7.65E-09
304	572234.7	4148975	3.45E-08	2.97E-08	1.05E-10	6.43E-08	4.19E-08	4.02E-08	1.05E-10	8.22E-08	7.48E-09	7.30E-09	1.05E-10	1.49E-08	3.18E-09	3.26E-09	1.05E-10	6.54E-09
305	572279.9	4148947	4.89E-08	4.22E-08	1.49E-10	9.13E-08	5.96E-08	5.71E-08	1.49E-10	1.17E-07	1.06E-08	1.04E-08	1.49E-10	2.11E-08	4.52E-09	4.63E-09	1.49E-10	9.29E-09
306	572297.5	4148947	5.65E-08	4.87E-08	1.72E-10	1.05E-07	6.88E-08	6.59E-08	1.72E-10	1.35E-07	1.23E-08	1.20E-08	1.72E-10	2.44E-08	5.22E-09	5.35E-09	1.72E-10	1.07E-08

307	572315.1	4148946	6.37E-08	5.49E-08	1.94E-10	1.19E-07	7.75E-08	7.43E-08	1.94E-10	1.52E-07	1.38E-08	1.35E-08	1.94E-10	2.75E-08	5.88E-09	6.02E-09	1.94E-10	1.21E-08
308	572332.7	4148946	6.91E-08	5.96E-08	2.11E-10	1.29E-07	8.41E-08	8.06E-08	2.11E-10	1.65E-07	1.50E-08	1.46E-08	2.11E-10	2.99E-08	6.38E-09	6.53E-09	2.11E-10	1.31E-08
309	572350.3	4148945	7.19E-08	6.20E-08	2.19E-10	1.34E-07	8.75E-08	8.39E-08	2.19E-10	1.72E-07	1.56E-08	1.52E-08	2.19E-10	3.11E-08	6.64E-09	6.80E-09	2.19E-10	1.37E-08
310	572367.9	4148945	7.22E-08	6.22E-08	2.20E-10	1.35E-07	8.79E-08	8.42E-08	2.20E-10	1.72E-07	1.57E-08	1.53E-08	2.20E-10	3.12E-08	6.66E-09	6.83E-09	2.20E-10	1.37E-08
311	572385.5	4148944	7.11E-08	6.13E-08	2.17E-10	1.33E-07	8.66E-08	8.30E-08	2.17E-10	1.70E-07	1.54E-08	1.51E-08	2.17E-10	3.07E-08	6.56E-09	6.72E-09	2.17E-10	1.35E-08
312	572263	4148951	4.26E-08	3.67E-08	1.30E-10	7.95E-08	5.19E-08	4.97E-08	1.30E-10	1.02E-07	9.25E-09	9.03E-09	1.30E-10	1.84E-08	3.93E-09	4.03E-09	1.30E-10	8.09E-09
313	572246.8	4148958	3.73E-08	3.21E-08	1.14E-10	6.95E-08	4.54E-08	4.35E-08	1.14E-10	8.90E-08	8.09E-09	7.90E-09	1.14E-10	1.61E-08	3.44E-09	3.52E-09	1.14E-10	7.08E-09
314	572230.6	4148966	3.20E-08	2.76E-08	9.76E-11	5.98E-08	3.90E-08	3.74E-08	9.76E-11	7.65E-08	6.95E-09	6.79E-09	9.76E-11	1.38E-08	2.96E-09	3.03E-09	9.76E-11	6.08E-09
315	572275.8	4148938	4.51E-08	3.88E-08	1.37E-10	8.40E-08	5.48E-08	5.25E-08	1.37E-10	1.08E-07	9.78E-09	9.55E-09	1.37E-10	1.95E-08	4.16E-09	4.26E-09	1.37E-10	8.55E-09
316	572293.3	4148938	5.19E-08	4.47E-08	1.58E-10	9.68E-08	6.32E-08	6.06E-08	1.58E-10	1.24E-07	1.13E-08	1.10E-08	1.58E-10	2.24E-08	4.79E-09	4.91E-09	1.58E-10	9.86E-09
317	572310.8	4148937	5.85E-08	5.04E-08	1.78E-10	1.09E-07	7.12E-08	6.82E-08	1.78E-10	1.40E-07	1.27E-08	1.24E-08	1.78E-10	2.53E-08	5.40E-09	5.53E-09	1.78E-10	1.11E-08
318	572328.2	4148937	6.38E-08	5.50E-08	1.94E-10	1.19E-07	7.77E-08	7.44E-08	1.94E-10	1.52E-07	1.38E-08	1.35E-08	1.94E-10	2.76E-08	5.89E-09	6.03E-09	1.94E-10	1.21E-08
319	572345.7	4148936	6.69E-08	5.76E-08	2.04E-10	1.25E-07	8.14E-08	7.80E-08	2.04E-10	1.60E-07	1.45E-08	1.42E-08	2.04E-10	2.89E-08	6.17E-09	6.32E-09	2.04E-10	1.27E-08
320	572363.2	4148936	6.76E-08	5.83E-08	2.06E-10	1.26E-07	8.23E-08	7.89E-08	2.06E-10	1.61E-07	1.47E-08	1.43E-08	2.06E-10	2.92E-08	6.24E-09	6.39E-09	2.06E-10	1.28E-08
321	572259	4148942	3.94E-08	3.39E-08	1.20E-10	7.34E-08	4.79E-08	4.59E-08	1.20E-10	9.39E-08	8.54E-09	8.34E-09	1.20E-10	1.70E-08	3.63E-09	3.72E-09	1.20E-10	7.47E-09
322	572242.8	4148949	3.46E-08	2.98E-08	1.05E-10	6.45E-08	4.21E-08	4.03E-08	1.05E-10	8.25E-08	7.50E-09	7.33E-09	1.05E-10	1.49E-08	3.19E-09	3.27E-09	1.05E-10	6.56E-09
323	572226.6	4148956	2.99E-08	2.57E-08	9.10E-11	5.57E-08	3.64E-08	3.48E-08	9.10E-11	7.13E-08	6.48E-09	6.33E-09	9.10E-11	1.29E-08	2.76E-09	2.82E-09	9.10E-11	5.67E-09
324	572271.7	4148929	4.16E-08	3.59E-08	1.27E-10	7.76E-08	5.06E-08	4.85E-08	1.27E-10	9.93E-08	9.03E-09	8.82E-09	1.27E-10	1.80E-08	3.84E-09	3.93E-09	1.27E-10	7.90E-09
325	572289.1	4148929	4.78E-08	4.12E-08	1.46E-10	8.92E-08	5.82E-08	5.58E-08	1.46E-10	1.14E-07	1.04E-08	1.01E-08	1.46E-10	2.07E-08	4.41E-09	4.52E-09	1.46E-10	9.08E-09
326	572306.4	4148928	5.39E-08	4.64E-08	1.64E-10	1.01E-07	6.56E-08	6.29E-08	1.64E-10	1.29E-07	1.17E-08	1.14E-08	1.64E-10	2.33E-08	4.97E-09	5.10E-09	1.64E-10	1.02E-08
327	572323.8	4148928	5.90E-08	5.08E-08	1.80E-10	1.10E-07	7.18E-08	6.88E-08	1.80E-10	1.41E-07	1.28E-08	1.25E-08	1.80E-10	2.55E-08	5.44E-09	5.58E-09	1.80E-10	1.12E-08
328	572341.2	4148927	6.22E-08	5.36E-08	1.90E-10	1.16E-07	7.57E-08	7.26E-08	1.90E-10	1.49E-07	1.35E-08	1.32E-08	1.90E-10	2.69E-08	5.74E-09	5.88E-09	1.90E-10	1.18E-08
329	572254.9	4148933	3.65E-08	3.14E-08	1.11E-10	6.80E-08	4.44E-08	4.26E-08	1.11E-10	8.71E-08	7.92E-09	7.73E-09	1.11E-10	1.58E-08	3.37E-09	3.45E-09	1.11E-10	6.93E-09
330	572238.7	4148940	3.22E-08	2.77E-08	9.79E-11	6.00E-08	3.91E-08	3.75E-08	9.79E-11	7.67E-08	6.98E-09	6.81E-09	9.79E-11	1.39E-08	2.97E-09	3.04E-09	9.79E-11	6.10E-09
331	572222.5	4148947	2.79E-08	2.41E-08	8.50E-11	5.21E-08	3.40E-08	3.26E-08	8.50E-11	6.66E-08	6.06E-09	5.92E-09	8.50E-11	1.21E-08	2.58E-09	2.64E-09	8.50E-11	5.30E-09
332	572267.5	4148920	3.86E-08	3.32E-08	1.17E-10	7.19E-08	4.69E-08	4.50E-08	1.17E-10	9.20E-08	8.37E-09	8.17E-09	1.17E-10	1.67E-08	3.56E-09	3.65E-09	1.17E-10	7.32E-09
333	572284.8	4148919	4.42E-08	3.81E-08	1.34E-10	8.23E-08	5.37E-08	5.15E-08	1.34E-10	1.05E-07	9.58E-09	9.36E-09	1.34E-10	1.91E-08	4.07E-09	4.17E-09	1.34E-10	8.38E-09
334	572302.1	4148919	4.97E-08	4.29E-08	1.52E-10	9.28E-08	6.05E-08	5.80E-08	1.52E-10	1.19E-07	1.08E-08	1.05E-08	1.52E-10	2.15E-08	4.59E-09	4.70E-09	1.52E-10	9.44E-09
335	572319.4	4148918	5.46E-08	4.70E-08	1.66E-10	1.02E-07	6.64E-08	6.37E-08	1.66E-10	1.30E-07	1.18E-08	1.16E-08	1.66E-10	2.36E-08	5.04E-09	5.16E-09	1.66E-10	1.04E-08
336	572336.7	4148918	5.79E-08	4.99E-08	1.76E-10	1.08E-07	7.05E-08	6.75E-08	1.76E-10	1.38E-07	1.26E-08	1.23E-08	1.76E-10	2.50E-08	5.34E-09	5.47E-09	1.76E-10	1.10E-08
337	572577.2	4149027	1.89E-07	1.63E-07	5.75E-10	3.52E-07	2.30E-07	2.20E-07	5.75E-10	4.50E-07	4.09E-08	4.00E-08	5.75E-10	8.15E-08	1.74E-08	1.78E-08	5.75E-10	3.58E-08
338	572589.7	4149039	1.83E-07	1.58E-07	5.57E-10	3.41E-07	2.23E-07	2.13E-07	5.57E-10	4.37E-07	3.97E-08	3.88E-08	5.57E-10	7.91E-08	1.69E-08	1.73E-08	5.57E-10	3.47E-08
339	572234.6	4148931	3.00E-08	2.58E-08	9.13E-11	5.59E-08	3.65E-08	3.50E-08	9.13E-11	7.15E-08	6.51E-09	6.35E-09	9.13E-11	1.30E-08	2.77E-09	2.83E-09	9.13E-11	5.69E-09
340	572218.4	4148938	2.62E-08	2.25E-08	7.96E-11	4.88E-08	3.18E-08	3.05E-08	7.96E-11	6.24E-08	5.67E-09	5.54E-09	7.96E-11	1.13E-08	2.41E-09	2.47E-09	7.96E-11	4.96E-09
341	572567.6	4149006	1.76E-07	1.52E-07	5.37E-10	3.29E-07	2.14E-07	2.05E-07	5.37E-10	4.20E-07	3.82E-08	3.73E-08	5.37E-10	7.61E-08	1.63E-08	1.67E-08	5.37E-10	3.35E-08
342	572580.2	4149018	1.79E-07	1.54E-07	5.45E-10	3.34E-07	2.18E-07	2.09E-07	5.45E-10	4.27E-07	3.88E-08	3.79E-08	5.45E-10	7.73E-08	1.65E-08	1.69E-08	5.45E-10	3.40E-08
343	572592.7	4149029	1.76E-07	1.51E-07	5.35E-10	3.28E-07	2.14E-07	2.05E-07	5.35E-10	4.19E-07	3.81E-08	3.72E-08	5.35E-10	7.59E-08	1.62E-08	1.66E-08	5.35E-10	3.33E-08
344	572605.2	4149041	1.68E-07	1.45E-07	5.11E-10	3.13E-07	2.04E-07	1.96E-07	5.11E-10	4.01E-07	3.64E-08	3.56E-08	5.11E-10	7.25E-08	1.55E-08	1.59E-08	5.11E-10	3.19E-08
345	572570.7	4148996	1.65E-07	1.42E-07	5.03E-10	3.08E-07	2.01E-07	1.93E-07	5.03E-10	3.94E-07	3.58E-08	3.50E-08	5.03E-10	7.13E-08	1.52E-08	1.56E-08	5.03E-10	3.14E-08
346	572583.2	4149008	1.70E-07	1.46E-07	5.17E-10	3.16E-07	2.07E-07	1.98E-07	5.17E-10	4.05E-07	3.68E-08	3.60E-08	5.17E-10	7.33E-08	1.57E-08	1.60E-08	5.17E-10	3.22E-08
347	572595.6	4149020	1.68E-07	1.45E-07	5.12E-10	3.14E-07	2.05E-07	1.96E-07	5.12E-10	4.01E-07	3.65E-08	3.56E-08	5.12E-10	7.26E-08	1.55E-08	1.59E-08	5.12E-10	3.19E-08
348	572608.1	4149031	1.62E-07	1.40E-07	4.94E-10	3.03E-07	1.97E-07	1.89E-07	4.94E-10	3.87E-07	3.52E-08	3.44E-08	4.94E-10	7.01E-08	1.50E-08	1.53E-08	4.94E-10	3.08E-08
349	572573.9	4148986	1.55E-07	1.33E-07	4.71E-10	2.88E-07	1.88E-07	1.80E-07	4.71E-10	3.69E-07	3.36E-08	3.28E-08	4.71E-10	6.68E-08	1.43E-08	1.46E-08	4.71E-10	2.94E-08
350	572586.3	4148998	1.61E-07	1.38E-07	4.89E-10	2.99E-07	1.95E-07	1.87E-07	4.89E-10	3.83E-07	3.48E-08	3.40E-08	4.89E-10	6.93E-08	1.48E-08	1.52E-08	4.89E-10	3.05E-08
351	572598.7	4149010	1.61E-07	1.39E-07	4.90E-10	3.00E-07	1.96E-07	1.88E-07	4.90E-10	3.84E-07	3.49E-08	3.41E-08	4.90E-10	6.95E-08	1.48E-08	1.52E-08	4.90E-10	3.05E-08
352	572611.1	4149021	1.57E-07	1.35E-07	4.77E-10	2.92E-07	1.90E-07	1.83E-07	4.77E-10	3.74E-07	3.40E-08	3.32E-08	4.77E-10	6.76E-08	1.44E-08	1.48E-08	4.77E-10	2.97E-08
353	572623.5	4149033	1.49E-07	1.29E-07	4.55E-10	2.79E-07	1.82E-07	1.74E-07	4.55E-10	3.56E-07	3.24E-08	3.17E-08	4.55E-10	6.45E-08	1.38E-08	1.41E-08	4.55E-10	2.84E-08
354	572568.2	4148968	1.37E-07	1.18E-07	4.18E-10	2.56E-07	1.67E-07	1.60E-07	4.18E-10	3.28E-07	2.98E-08	2.91E-08	4.18E-10	5.93E-08	1.27E-08	1.30E-08	4.18E-10	2.61E-08
355	572581.1	4148980	1.48E-07	1.27E-07	4.49E-10	2.75E-07	1.80E-07	1.72E-07	4.49E-10	3.52E-07	3.20E-08	3.13E-08	4.49E-10	6.37E-08	1.36E-08	1.39E-08	4.49E-10	2.80E-08
356	572593.9	4148992	1.53E-07	1.32E-07	4.66E-10	2.85E-07	1.86E-07	1.78E-07	4.66E-10	3.65E-07	3.32E-08	3.24E-08	4.66E-10	6.60E-08	1.41E-08	1.45E-08	4.66E-10	2.90E-08
357	572606.7	4149005	1.53E-07	1.32E-07	4.66E-10	2.85E-07	1.86E-07	1.78E-07	4.66E-10	3.65E-07	3.32E-08	3.24E-08	4.66E-10	6.61E-08	1.41E-08	1.45E-08	4.66E-10	2.90E-08
358	572619.6	4149017	1.49E-07	1.28E-07	4.52E-10	2.77E-07	1.81E-07	1.73E-07	4.52E-10	3.54E-07	3.22E-08	3.15E-08	4.52E-10	6.42E-08	1.37E-08	1.40E-08	4.52E-10	2.82E-08
359	572632.4	4149029	1.41E-07	1.22E-07	4.31E-10	2.64E-07	1.72E-07	1.65E-07	4.31E-10	3.37E-07	3.07E-08	3.00E-08	4.31E-10	6.11E-08	1.30E-08	1.34E-08	4.31E-10	2.68E-08
360	572571.3	4148958	1.28E-07	1.10E-07	3.89E-10	2.38E-07	1.56E-07	1.49E-07	3.89E-10	3.05E-07	2.77E-08	2.71E-08	3.89E-10	5.52E-08	1.18E-08	1.21E-08	3.89E-10	2.43E-08
361	572584.1	4148970	1.38E-07	1.19E-07	4.21E-10	2.58E-07	1.68E-07	1.61E-07	4.21E-10	3.30E-07	3.00E-08	2.93E-08	4.21E-10	5.98E-08	1.28E-08	1.31E-08	4.21E-10	2.63E-08
362	572596.9	4148983	1.45E-07	1.25E-07	4.41E-10	2.70E-07	1.76E-07	1.69E-07	4.41E-10	3.45E-07	3.14E-08	3.07E-08	4.41E-10	6.25E-08	1.33E-08	1.37E-08	4.41E-10	2.75E-08
363	572609.6	4148995	1.46E-07	1.26E-07	4.46E-10	2.73E-07	1.78E-07	1.71E-07	4.46E-10	3.49E-07	3.18E-08	3.10E-08	4.46E-10	6.32E-08	1.35E-08	1.38E-08	4.46E-10	2.78E-08
364	572622.4	4149007	1.43E-07	1.24E-07	4.37E-10	2.68E-07	1.75E-07	1.67E-07	4.37E-10	3.42E-07	3.11E-08	3.04E-08	4.37E-10	6.20E-08	1.32E-08	1.36E-08	4.37E-10	2.72E-08
365	572635.2	4149019	1.38E-07	1.19E-07	4.19E-10	2.57E-07	1.67E-07	1.60E-07	4.19E-10	3.28E-07	2.99E-08	2.92E-08	4.19E-10	5.94E-08	1.27E-08	1.30E-08	4.19E-10	2.61E-08
366	572561.8	4148937	1.06E-07	9.15E-08	3.23E-10	1.98E-07	1.29E-07	1.24E-07	3.23E-10	2.53E-07	2.30E-08	2.25E-08	3.23E-10	4.59E-08	9.80E-09	1.00E-08	3.23E-10	2.02E-08
367	572574.5	4148949	1.19E-07	1.03E-07	3.63E-10	2.22E-07	1.45E-07	1.39E-07	3.63E-10	2.84E-07	2.59E-08	2.53E-08	3.63E-10	5.15E-08	1.10E-08	1.13E-08	3.63E-10	2.26E-08
368	572587.2	4148961	1.30E-07	1.12E-07	3.95E-10	2.42E-07	1.58E-07	1.51E-07	3.95E-10	3.09E-07	2.81E-08	2.75E-08	3.95E-10	5.60E-08	1.20E-08	1.23E-08	3.95E-10	2.46E-08
369	572599.9	4148973	1.37E-07	1.18E-07	4.16E-10	2.55E-07	1.66E-07	1.59E-07	4.16E-10	3.26E-07	2.97E-08	2.90E-08	4.16E-10	5.90E-08	1.26E-08	1.29E-08	4.16E-10	2.59E-08
370	572612.6	4148985	1.40E-07	1.20E-07	4.25E-10	2.60E-07	1.70E-07	1.63E-07	4.25E-10	3.33E-07	3.03E-08	2.96E-08	4.25E-10	6.03E-08	1.29E-08	1.32E-08	4.25E-10	2.65E-08
371	572625.3	4148997	1.38E-07	1.19E-07	4.21E-10	2.58E-07	1.68E-07	1.61E-07	4.21E-10	3.30E-07	3.00E-08	2.93E-08	4.21E-10	5.97E-08	1.28E-08	1.31E-08	4.21E-10	2.63E-08
372	572638	4149009	1.34E-07	1.15E-07	4.07E-10	2.49E-07	1.63E-07	1.56E-07	4.07E-10	3.19E-07	2.90E-08	2.83E-08	4.07E-10	5.77E-08	1.23E-08	1.26E-08	4.07E-10	2.54E-08
373	572650.7	4149021	1.27E-07	1.09E-07	3.87E-10	2.37E-07	1.55E-07	1.48E-07	3.87E-10	3.03E-07	2.76E-08	2.69E-08	3.87E-10	5.49E-08	1.17E-08	1.20E-08	3.87E-10	2.41E-08
374	572565	4148927	9.88E-08	8.51E-08	3.01E-10	1.84E-07	1.20E-07	1.15E-07	3.01E-10	2.36E-07	2.14E-08	2.09E-08	3.01E-10	4.27E-08	9.12E-09	9.34E-09	3.01E-10	1.88E-08
375	572577.6	4148939	1.11E-07	9.58E-08	3.39E-10	2.07E-07	1.35E-07	1.30E-07	3.39E-10	2.65E-07	2.41E-08	2.36E-08	3.39E-10	4.80E-08	1.03E-08	1.05E-08	3.39E-10	2.11E-08
376	572590.3	4148951	1.22E-07	1.05E-07	3.70E-10	2.27E-07	1.48E-07	1.42E-07	3.70E-10	2.90E-07	2.64E-08	2.58E-08	3.70E-10	5.25E-08	1.12E-08	1.15E-08	3.70E-10	2.31E-08
377	572602.9	4148963	1.29E-07	1.11E-07	3.93E-10	2.41E-07	1.57E-07	1.51E-07	3.93E-10	3.08E-07	2.80E-08	2.73E-08	3.93E-10	5.57E-08	1.19E-08	1.22E-08	3.93E-10	2.45E-08
378	572615.6	4148975	1.33E-07	1.15E-07	4.05E-10	2.48E-07	1.62E-07	1.55E-07	4.05E-10	3.17E-07	2.88E-08	2.82E-08	4.05E-10	5.74E-08	1.23E-08	1.26E-08	4.05E-10	2.52E-08
379	572628.2	4148987	1.33E-07	1.15E-07	4.05E-10	2.48E-07	1.62E-07	1.55E-07	4.05E-10	3.17E-07	2.89E-08	2.82E-08	4.05E-10	5.74E-08	1.23E-08	1.26E-08	4.05E-10	2.52E-08
380	572640.9	4148999	1.30E-07	1.12E-07	3.95E-10	2.42E-07	1.58E-07	1.51E-07	3.95E-10	3.09E-07	2.81E-08	2.75E-08	3.95E-10	5.60E-08	1.20E-08	1.23E-08	3.95E-10	2.46E-08
381	572653.5	4149011	1.24E-07	1.07E-07	3.77E-10	2.31E-07	1.51E-07	1.45E-07	3.77E-10	2.96E-07	2.69E-08	2.63E-08	3.77E-10	5.35E-08	1.14E-08	1.17E-08	3.77E-10	2.35E-08
382	572568.2	4148917	9.21E-08	7.93E-08	2.80E-10	1.72E-07	1.12E-07	1.07E-07	2.80E-10	2.20E-07	2.00E-08	1.95E-08	2.80E-10	3.98E-08	8.49E-09	8.70E-09	2.80E-10	1.75E-08
383	572580.8	4148929	1.04E-07	8.95E-08	3.16E-10	1.94E-07	1.26E-07	1.21E-07	3.16E-10	2.48E-07	2.25E-08	2.20E-08	3.16E-10	4.49E-08	9.58E-09	9.82E-09	3.16E-10	1.97E-08
384	572593.4	4148941	1.14E-07	9.83E-08	3.47E-10	2.13E-07	1.39E-07	1.33E-07	3.47E-10	2.72E-07	2.47E-08	2.42E-08	3.47E-10	4.93E-08	1.05E-08	1.08E-08	3.47E-10	2.17E-08
385	572606	4148953	1.22E-07	1.05E-07	3.71E-10	2.27E-07	1.48E-07	1.42E-07	3.71E-10	2.91E-07	2.64E-08	2.58E-08	3.71E-10	5.26E-08	1.12E-08	1.15E-08	3.71E-10	2.31E-08
386	572618.6	4148965	1.26E-07	1.09E-07	3.85E-10	2.36E-07	1.54E-07	1.47E-07	3.85E-10	3.02E-07	2.74E-08	2.68E-08	3.85E-10	5.46E-08	1.17E-08	1.19E-08	3.85E-10	2.40E-08
387	572631.2	4148977	1.28E-07	1.10E-07	3.88E-10	2.38E-07	1.55E-07	1.49E-07	3.88E-10	3.04E-07	2.77E-08	2.70E-08	3.88E-10	5.51E-08	1.18E-08	1.21E-08	3.88E-10	2.42E-08
388	572643.8	4148989	1.25E-07	1.08E-07	3.82E-10	2.34E-07	1.53E-07	1.46E-07	3.82E-10	2.99E-07	2.72E-08	2.66E-08	3.82E-10	5.42E-08	1.16E-08	1.19E-08	3.82E-10	2.38E-08
389	572656.4	4149001	1.21E-07	1.04E-07	3.68E-10	2.25E-07	1.47E-07	1.41E-07	3.68E-10	2.88E-07	2.62E-08	2.56E-08	3.68E-10	5.22E-08	1.11E-08	1.14E-08	3.68E-10	2.29E-08
390	572571.5	4148908	8.59E-08	7.40E-08	2.62E-10	1.60E-07	1.05E-07	1.00E-07	2.62E-10	2.05E-07	1.86E-08	1.82E-08	2.62E-10	3.71E-08	7.93E-09	8.12E-09	2.62E-10	1.63E-08
391	572584	4148920	9.71E-08	8.36E-08	2.96E-10	1.81E-07	1.18E-07	1.13E-07	2.96E-10	2.32E-07	2.11E-08	2.06E-08	2.96E-10	4.19E-08	8.96E-09	9.18E-09	2.96E-10	1.84E-08
392	572596.6	4148931	1.07E-07	9.22E-08	3.26E-10	2.00E-07	1.30E-07	1.25E-07	3.26E-10	2.55E-07	2.32E-08	2.27E-08	3.26E-10	4.62E-08	9.87E-09	1.01E-08	3.26E-10	2.03E-08
393	572609.1	4148943	1.15E-07	9.90E-08	3.50E-10	2.14E-07	1.40E-07	1.34E-07	3.50E-10	2.74E-07	2.49E-08	2.43E-08	3.50E-10	4.96E-08	1.06E-08	1.09E-08	3.50E-10	2.18E-08
394	572621.7	4148955	1.20E-07	1.03E-07	3.66E-10	2.24E-07	1.46E-07	1.40E-07	3.66E-10	2.86E-07	2.60E-08	2.54E-08	3.66E-10	5.19E-08	1.11E-08	1.13E-08	3.66E-10	2.28E-08
395	572634.2	4148967	1.22E-07	1.05E-07	3.72E-10	2.28E-07	1.49E-07	1.42E-07	3.72E-10	2.91E-07	2.65E-08	2.59E-08	3.72E-10	5.27E-08	1.13E-08	1.15E-08	3.72E-10	2.32E-08
396	572646.8	4148979	1.21E-07	1.04E-07	3.69E-10	2.26E-07	1.47E-07	1.41E-07	3.69E-10	2.89E-07	2.63E-08	2.57E-08	3.69E-10	5.23E-08	1.12E-08	1.15E-08	3.69E-10	2.30E-08
397	572659.3	4148991	1.18E-07	1.01E-07	3.58E-10	2.19E-07	1.43E-07	1.37E-07	3.58E-10	2.81E-07	2.55E-08	2.49E-08	3.58E-10	5.08E-08	1.08E-08	1.11E-08	3.58E-10	2.23E-08
398	572671.9	4149003	1.12E-07	9.68E-08	3.42E-10	2.09E-07	1.37E-07	1.31E-07	3.42E-10	2.68E-07	2.44E-08	2.38E-08	3.42E-10	4.85E-08	1.04E-08	1.06E-08	3.42E-10	2.13E-08
399	572574.7	4148898	8.03E-08	6.92E-08	2.45E-10	1.50E-07	9.78E-08	9.37E-08	2.45E-10	1.92E-07	1.74E-08	1.70E-08	2.45E-10	3.47E-08	7.41E-09	7.59E-09	2.45E-10	1.53E-08
400	572587.2	4148910	9.09E-08	7.83E-08	2.77E-10	1.69E-07	1.11E-07	1.06E-07	2.77E-10	2.17E-07	1.97E-08	1.93E-08	2.77E-10	3.93E-08	8.38E-09	8.59E-09	2.77E-10	1.73E-08
401	572599.8	4148922	1.00E-07	8.66E-08	3.06E-10	1.87E-07	1.22E-07	1.17E-07	3.06E-10	2.40E-07	2.18E-08	2.13E-08	3.06E-10	4.34E-08	9.27E-09	9.50E-09	3.06E-10	1.91E-08
402	572612.3	4148934	1.08E-07	9.34E-08	3.30E-10	2.02E-07	1.32E-07	1.26E-07	3.30E-10	2.59E-07	2.35E-08	2.30E-08	3.30E-10	4.68E-08	1.00E-08	1.02E-08	3.30E-10	2.06E-08
403	572624.8	4148945	1.14E-07	9.82E-08	3.47E-10	2.12E-07	1.39E-07	1.33E-07	3.47E-10	2.72E-07	2.47E-08	2.41E-08	3.47E-10	4.92E-08	1.05E-08	1.08E-08	3.47E-10	2.16E-08
404	572637.3	4148957	1.17E-07	1.01E-07	3.56E-10	2.18E-07	1.42E-07	1.36E-07	3.56E-10	2.79E-07	2.53E-08	2.47E-08	3.56E-10	5.04E-08	1.08E-08	1.10E-08	3.56E-10	2.22E-08
405	572649.8	4148969	1.17E-07	1.01E-07	3.56E-10	2.18E-07	1.42E-07	1.36E-07	3.56E-10	2.79E-07	2.53E-08	2.47E-08	3.56E-10	5.04E-08	1.08E-08	1.10E-08	3.56E-10	2.22E-08
406	572662.3	4148981	1.14E-07	9.84E-08	3.48E-10	2.13E-07	1.39E-07	1.33E-07	3.48E-10	2.72E-07	2.48E-08	2.42E-08	3.48E-10	4.93E-08	1.05E-08	1.08E-08	3.48E-10	2.17E-08
407	572674.8	4148993	1.10E-07	9.46E-08	3.34E-10	2.05E-07	1.34E-07	1.28E-07	3.34E-10	2.62E-07	2.38E-08	2.33E-08	3.34E-10	4.74E-08	1.01E-08	1.04E-08	3.34E-10	2.08E-08
408	572687.3	4149004	1.04E-07	8.99E-08	3.18E-10	1.95E-07	1.27E-07	1.22E-07	3.18E-10	2.49E-07	2.27E-08	2.21E-08	3.18E-10	4.51E-08	9.63E-09	9.87E-09	3.18E-10	1.98E-08
409	572580.6	4148891	7.73E-08	6.66E-08	2.35E-10	1.44E-07	9.40E-08	9.01E-08	2.35E-10	1.84E-07	1.68E-08	1.64E-08	2.35E-10	3.34E-08	7.13E-09	7.30E-09	2.35E-10	1.47E-08

410	572593.4	4148903	8.74E-08	7.53E-08	2.66E-10	1.63E-07	1.06E-07	1.02E-07	2.66E-10	2.09E-07	1.90E-08	1.85E-08	2.66E-10	3.78E-08	8.07E-09	8.27E-09	2.66E-10	1.66E-08
411	572606.3	4148915	9.67E-08	8.33E-08	2.94E-10	1.80E-07	1.18E-07	1.13E-07	2.94E-10	2.31E-07	2.10E-08	2.05E-08	2.94E-10	4.18E-08	8.92E-09	9.14E-09	2.94E-10	1.84E-08
412	572619.1	4148927	1.04E-07	8.98E-08	3.17E-10	1.94E-07	1.27E-07	1.22E-07	3.17E-10	2.49E-07	2.26E-08	2.21E-08	3.17E-10	4.50E-08	9.62E-09	9.85E-09	3.17E-10	1.98E-08
413	572632	4148939	1.09E-07	9.43E-08	3.33E-10	2.04E-07	1.33E-07	1.28E-07	3.33E-10	2.61E-07	2.38E-08	2.32E-08	3.33E-10	4.73E-08	1.01E-08	1.04E-08	3.33E-10	2.08E-08
414	572644.8	4148952	1.12E-07	9.66E-08	3.41E-10	2.09E-07	1.36E-07	1.31E-07	3.41E-10	2.67E-07	2.43E-08	2.38E-08	3.41E-10	4.84E-08	1.03E-08	1.06E-08	3.41E-10	2.13E-08
415	572657.7	4148964	1.12E-07	9.64E-08	3.41E-10	2.09E-07	1.36E-07	1.31E-07	3.41E-10	2.67E-07	2.43E-08	2.37E-08	3.41E-10	4.84E-08	1.03E-08	1.06E-08	3.41E-10	2.12E-08
416	572670.6	4148976	1.09E-07	9.42E-08	3.33E-10	2.04E-07	1.33E-07	1.27E-07	3.33E-10	2.61E-07	2.37E-08	2.32E-08	3.33E-10	4.72E-08	1.01E-08	1.03E-08	3.33E-10	2.08E-08
417	572683.4	4148988	1.05E-07	9.04E-08	3.20E-10	1.96E-07	1.28E-07	1.22E-07	3.20E-10	2.50E-07	2.28E-08	2.22E-08	3.20E-10	4.53E-08	9.68E-09	9.92E-09	3.20E-10	1.99E-08
418	572583.8	4148881	7.24E-08	6.24E-08	2.21E-10	1.35E-07	8.81E-08	8.45E-08	2.21E-10	1.73E-07	1.57E-08	1.53E-08	2.21E-10	3.13E-08	6.68E-09	6.85E-09	2.21E-10	1.37E-08
419	572596.6	4148893	8.20E-08	7.07E-08	2.50E-10	1.53E-07	9.98E-08	9.56E-08	2.50E-10	1.96E-07	1.78E-08	1.74E-08	2.50E-10	3.54E-08	7.57E-09	7.75E-09	2.50E-10	1.56E-08
420	572609.4	4148905	9.09E-08	7.83E-08	2.77E-10	1.70E-07	1.11E-07	1.06E-07	2.77E-10	2.17E-07	1.97E-08	1.93E-08	2.77E-10	3.93E-08	8.39E-09	8.60E-09	2.77E-10	1.73E-08
421	572622.2	4148917	9.84E-08	8.48E-08	3.00E-10	1.84E-07	1.20E-07	1.15E-07	3.00E-10	2.35E-07	2.14E-08	2.09E-08	3.00E-10	4.25E-08	9.08E-09	9.31E-09	3.00E-10	1.87E-08
422	572635	4148930	1.04E-07	8.96E-08	3.17E-10	1.94E-07	1.27E-07	1.21E-07	3.17E-10	2.48E-07	2.26E-08	2.20E-08	3.17E-10	4.49E-08	9.59E-09	9.83E-09	3.17E-10	1.97E-08
423	572647.8	4148942	1.07E-07	9.23E-08	3.26E-10	2.00E-07	1.30E-07	1.25E-07	3.26E-10	2.56E-07	2.33E-08	2.27E-08	3.26E-10	4.63E-08	9.89E-09	1.01E-08	3.26E-10	2.03E-08
424	572660.6	4148954	1.08E-07	9.29E-08	3.28E-10	2.01E-07	1.31E-07	1.26E-07	3.28E-10	2.57E-07	2.34E-08	2.29E-08	3.28E-10	4.66E-08	9.95E-09	1.02E-08	3.28E-10	2.05E-08
425	572673.4	4148966	1.06E-07	9.14E-08	3.23E-10	1.98E-07	1.29E-07	1.24E-07	3.23E-10	2.53E-07	2.30E-08	2.25E-08	3.23E-10	4.58E-08	9.79E-09	1.00E-08	3.23E-10	2.01E-08
426	572686.2	4148978	1.03E-07	8.83E-08	3.12E-10	1.91E-07	1.25E-07	1.20E-07	3.12E-10	2.45E-07	2.22E-08	2.17E-08	3.12E-10	4.43E-08	9.46E-09	9.69E-09	3.12E-10	1.95E-08
427	572699	4148990	9.79E-08	8.43E-08	2.98E-10	1.82E-07	1.19E-07	1.14E-07	2.98E-10	2.34E-07	2.12E-08	2.07E-08	2.98E-10	4.23E-08	9.03E-09	9.25E-09	2.98E-10	1.86E-08
428	572587	4148872	6.80E-08	5.86E-08	2.07E-10	1.27E-07	8.27E-08	7.93E-08	2.07E-10	1.62E-07	1.48E-08	1.44E-08	2.07E-10	2.94E-08	6.27E-09	6.43E-09	2.07E-10	1.29E-08
429	572599.8	4148884	7.70E-08	6.64E-08	2.35E-10	1.44E-07	9.37E-08	8.98E-08	2.35E-10	1.84E-07	1.67E-08	1.63E-08	2.35E-10	3.33E-08	7.11E-09	7.28E-09	2.35E-10	1.46E-08
430	572612.5	4148896	8.56E-08	7.37E-08	2.61E-10	1.60E-07	1.04E-07	9.98E-08	2.61E-10	2.04E-07	1.86E-08	1.81E-08	2.61E-10	3.70E-08	7.89E-09	8.09E-09	2.61E-10	1.62E-08
431	572625.3	4148908	9.30E-08	8.01E-08	2.83E-10	1.73E-07	1.13E-07	1.08E-07	2.83E-10	2.22E-07	2.02E-08	1.97E-08	2.83E-10	4.02E-08	8.58E-09	8.79E-09	2.83E-10	1.77E-08
432	572638.1	4148920	9.87E-08	8.51E-08	3.01E-10	1.84E-07	1.20E-07	1.15E-07	3.01E-10	2.36E-07	2.14E-08	2.09E-08	3.01E-10	4.26E-08	9.11E-09	9.33E-09	3.01E-10	1.87E-08
433	572650.8	4148932	1.02E-07	8.82E-08	3.12E-10	1.91E-07	1.25E-07	1.19E-07	3.12E-10	2.44E-07	2.22E-08	2.17E-08	3.12E-10	4.42E-08	9.44E-09	9.68E-09	3.12E-10	1.94E-08
434	572663.6	4148944	1.04E-07	8.94E-08	3.16E-10	1.93E-07	1.26E-07	1.21E-07	3.16E-10	2.47E-07	2.25E-08	2.20E-08	3.16E-10	4.48E-08	9.57E-09	9.80E-09	3.16E-10	1.97E-08
435	572676.3	4148956	1.03E-07	8.86E-08	3.13E-10	1.92E-07	1.25E-07	1.20E-07	3.13E-10	2.45E-07	2.23E-08	2.18E-08	3.13E-10	4.44E-08	9.49E-09	9.72E-09	3.13E-10	1.95E-08
436	572689.1	4148968	1.00E-07	8.62E-08	3.05E-10	1.86E-07	1.22E-07	1.17E-07	3.05E-10	2.39E-07	2.17E-08	2.12E-08	3.05E-10	4.32E-08	9.23E-09	9.45E-09	3.05E-10	1.90E-08
437	572701.8	4148980	9.59E-08	8.26E-08	2.92E-10	1.79E-07	1.17E-07	1.12E-07	2.92E-10	2.29E-07	2.08E-08	2.03E-08	2.92E-10	4.14E-08	8.85E-09	9.07E-09	2.92E-10	1.82E-08
438	572714.6	4148992	9.13E-08	7.87E-08	2.78E-10	1.70E-07	1.11E-07	1.07E-07	2.78E-10	2.18E-07	1.98E-08	1.94E-08	2.78E-10	3.95E-08	8.43E-09	8.64E-09	2.78E-10	1.73E-08
439	572590.3	4148862	6.39E-08	5.51E-08	1.95E-10	1.19E-07	7.78E-08	7.45E-08	1.95E-10	1.52E-07	1.39E-08	1.35E-08	1.95E-10	2.76E-08	5.89E-09	6.04E-09	1.95E-10	1.21E-08
440	572603	4148874	7.24E-08	6.24E-08	2.21E-10	1.35E-07	8.81E-08	8.45E-08	2.21E-10	1.73E-07	1.57E-08	1.53E-08	2.21E-10	3.13E-08	6.68E-09	6.85E-09	2.21E-10	1.38E-08
441	572615.7	4148886	8.06E-08	6.95E-08	2.46E-10	1.50E-07	9.81E-08	9.40E-08	2.46E-10	1.92E-07	1.75E-08	1.71E-08	2.46E-10	3.48E-08	7.44E-09	7.62E-09	2.46E-10	1.53E-08
442	572628.4	4148898	8.79E-08	7.57E-08	2.68E-10	1.64E-07	1.07E-07	1.02E-07	2.68E-10	2.10E-07	1.91E-08	1.86E-08	2.68E-10	3.80E-08	8.11E-09	8.31E-09	2.68E-10	1.67E-08
443	572641.1	4148910	9.37E-08	8.07E-08	2.85E-10	1.75E-07	1.14E-07	1.09E-07	2.85E-10	2.24E-07	2.03E-08	1.99E-08	2.85E-10	4.05E-08	8.64E-09	8.86E-09	2.85E-10	1.78E-08
444	572653.8	4148922	9.77E-08	8.42E-08	2.98E-10	1.82E-07	1.19E-07	1.14E-07	2.98E-10	2.33E-07	2.12E-08	2.07E-08	2.98E-10	4.22E-08	9.01E-09	9.24E-09	2.98E-10	1.85E-08
445	572666.5	4148934	9.96E-08	8.58E-08	3.03E-10	1.86E-07	1.21E-07	1.16E-07	3.03E-10	2.38E-07	2.16E-08	2.11E-08	3.03E-10	4.30E-08	9.19E-09	9.42E-09	3.03E-10	1.89E-08
446	572679.2	4148946	9.95E-08	8.57E-08	3.03E-10	1.85E-07	1.21E-07	1.16E-07	3.03E-10	2.37E-07	2.16E-08	2.11E-08	3.03E-10	4.30E-08	9.18E-09	9.40E-09	3.03E-10	1.89E-08
447	572692	4148958	9.74E-08	8.39E-08	2.97E-10	1.82E-07	1.19E-07	1.14E-07	2.97E-10	2.32E-07	2.11E-08	2.06E-08	2.97E-10	4.21E-08	8.99E-09	9.21E-09	2.97E-10	1.85E-08
448	572704.7	4148970	9.39E-08	8.09E-08	2.86E-10	1.75E-07	1.14E-07	1.10E-07	2.86E-10	2.24E-07	2.04E-08	1.99E-08	2.86E-10	4.06E-08	8.66E-09	8.88E-09	2.86E-10	1.78E-08
449	572717.4	4148982	8.97E-08	7.73E-08	2.73E-10	1.67E-07	1.09E-07	1.05E-07	2.73E-10	2.14E-07	1.95E-08	1.90E-08	2.73E-10	3.88E-08	8.28E-09	8.48E-09	2.73E-10	1.70E-08
450	572593.6	4148852	6.01E-08	5.18E-08	1.83E-10	1.12E-07	7.32E-08	7.01E-08	1.83E-10	1.44E-07	1.31E-08	1.27E-08	1.83E-10	2.60E-08	5.55E-09	5.69E-09	1.83E-10	1.14E-08
451	572606.2	4148864	6.82E-08	5.88E-08	2.08E-10	1.27E-07	8.30E-08	7.95E-08	2.08E-10	1.63E-07	1.48E-08	1.44E-08	2.08E-10	2.95E-08	6.29E-09	6.45E-09	2.08E-10	1.29E-08
452	572618.9	4148876	7.60E-08	6.55E-08	2.31E-10	1.42E-07	9.25E-08	8.86E-08	2.31E-10	1.81E-07	1.65E-08	1.61E-08	2.31E-10	3.28E-08	7.01E-09	7.18E-09	2.31E-10	1.44E-08
453	572631.6	4148888	8.31E-08	7.16E-08	2.53E-10	1.55E-07	1.01E-07	9.69E-08	2.53E-10	1.98E-07	1.80E-08	1.76E-08	2.53E-10	3.59E-08	7.66E-09	7.85E-09	2.53E-10	1.58E-08
454	572644.2	4148900	8.89E-08	7.66E-08	2.71E-10	1.66E-07	1.08E-07	1.04E-07	2.71E-10	2.12E-07	1.93E-08	1.88E-08	2.71E-10	3.84E-08	8.20E-09	8.41E-09	2.71E-10	1.69E-08
455	572656.9	4148912	9.32E-08	8.03E-08	2.84E-10	1.74E-07	1.13E-07	1.09E-07	2.84E-10	2.22E-07	2.02E-08	1.98E-08	2.84E-10	4.03E-08	8.60E-09	8.81E-09	2.84E-10	1.77E-08
456	572669.6	4148924	9.56E-08	8.24E-08	2.91E-10	1.78E-07	1.16E-07	1.11E-07	2.91E-10	2.28E-07	2.07E-08	2.03E-08	2.91E-10	4.13E-08	8.82E-09	9.04E-09	2.91E-10	1.82E-08
457	572682.2	4148936	9.61E-08	8.28E-08	2.93E-10	1.79E-07	1.17E-07	1.12E-07	2.93E-10	2.29E-07	2.08E-08	2.04E-08	2.93E-10	4.15E-08	8.86E-09	9.08E-09	2.93E-10	1.82E-08
458	572694.9	4148948	9.47E-08	8.16E-08	2.88E-10	1.77E-07	1.15E-07	1.10E-07	2.88E-10	2.26E-07	2.05E-08	2.01E-08	2.88E-10	4.09E-08	8.74E-09	8.95E-09	2.88E-10	1.80E-08
459	572707.5	4148960	9.18E-08	7.91E-08	2.80E-10	1.71E-07	1.12E-07	1.07E-07	2.80E-10	2.19E-07	1.99E-08	1.95E-08	2.80E-10	3.97E-08	8.47E-09	8.68E-09	2.80E-10	1.74E-08
460	572720.2	4148972	8.80E-08	7.59E-08	2.68E-10	1.64E-07	1.07E-07	1.03E-07	2.68E-10	2.10E-07	1.91E-08	1.87E-08	2.68E-10	3.80E-08	8.12E-09	8.32E-09	2.68E-10	1.67E-08
461	572732.9	4148984	8.40E-08	7.23E-08	2.56E-10	1.57E-07	1.02E-07	9.79E-08	2.56E-10	2.00E-07	1.82E-08	1.78E-08	2.56E-10	3.63E-08	7.75E-09	7.94E-09	2.56E-10	1.59E-08
462	572584.3	4148831	4.95E-08	4.27E-08	1.51E-10	9.23E-08	6.03E-08	5.78E-08	1.51E-10	1.18E-07	1.07E-08	1.05E-08	1.51E-10	2.14E-08	4.57E-09	4.68E-09	1.51E-10	9.40E-09
463	572596.9	4148843	5.67E-08	4.88E-08	1.73E-10	1.06E-07	6.90E-08	6.61E-08	1.73E-10	1.35E-07	1.23E-08	1.20E-08	1.73E-10	2.45E-08	5.23E-09	5.36E-09	1.73E-10	1.08E-08
464	572609.5	4148855	6.43E-08	5.54E-08	1.96E-10	1.20E-07	7.82E-08	7.49E-08	1.96E-10	1.53E-07	1.39E-08	1.36E-08	1.96E-10	2.78E-08	5.93E-09	6.07E-09	1.96E-10	1.22E-08
465	572622.1	4148867	7.17E-08	6.18E-08	2.18E-10	1.34E-07	8.73E-08	8.36E-08	2.18E-10	1.71E-07	1.56E-08	1.52E-08	2.18E-10	3.10E-08	6.62E-09	6.78E-09	2.18E-10	1.36E-08
466	572634.7	4148878	7.86E-08	6.77E-08	2.39E-10	1.47E-07	9.56E-08	9.16E-08	2.39E-10	1.87E-07	1.71E-08	1.67E-08	2.39E-10	3.39E-08	7.25E-09	7.43E-09	2.39E-10	1.49E-08
467	572647.4	4148890	8.44E-08	7.27E-08	2.57E-10	1.57E-07	1.03E-07	9.84E-08	2.57E-10	2.01E-07	1.83E-08	1.79E-08	2.57E-10	3.65E-08	7.79E-09	7.98E-09	2.57E-10	1.60E-08
468	572660	4148902	8.89E-08	7.66E-08	2.71E-10	1.66E-07	1.08E-07	1.04E-07	2.71E-10	2.12E-07	1.93E-08	1.88E-08	2.71E-10	3.84E-08	8.20E-09	8.40E-09	2.71E-10	1.69E-08
469	572672.6	4148914	9.17E-08	7.90E-08	2.79E-10	1.71E-07	1.12E-07	1.07E-07	2.79E-10	2.19E-07	1.99E-08	1.94E-08	2.79E-10	3.96E-08	8.46E-09	8.67E-09	2.79E-10	1.74E-08
470	572685.2	4148926	9.26E-08	7.98E-08	2.82E-10	1.73E-07	1.13E-07	1.08E-07	2.82E-10	2.21E-07	2.01E-08	1.96E-08	2.82E-10	4.00E-08	8.55E-09	8.76E-09	2.82E-10	1.76E-08
471	572697.8	4148938	9.19E-08	7.92E-08	2.80E-10	1.71E-07	1.12E-07	1.07E-07	2.80E-10	2.19E-07	1.99E-08	1.95E-08	2.80E-10	3.97E-08	8.48E-09	8.69E-09	2.80E-10	1.74E-08
472	572710.5	4148950	8.97E-08	7.73E-08	2.73E-10	1.67E-07	1.09E-07	1.05E-07	2.73E-10	2.14E-07	1.95E-08	1.90E-08	2.73E-10	3.87E-08	8.27E-09	8.48E-09	2.73E-10	1.70E-08
473	572723.1	4148962	8.63E-08	7.44E-08	2.63E-10	1.61E-07	1.05E-07	1.01E-07	2.63E-10	2.06E-07	1.87E-08	1.83E-08	2.63E-10	3.73E-08	7.97E-09	8.16E-09	2.63E-10	1.64E-08
474	572735.7	4148974	8.25E-08	7.11E-08	2.51E-10	1.54E-07	1.00E-07	9.62E-08	2.51E-10	1.97E-07	1.79E-08	1.75E-08	2.51E-10	3.56E-08	7.61E-09	7.80E-09	2.51E-10	1.57E-08
475	572587.6	4148821	4.68E-08	4.04E-08	1.43E-10	8.73E-08	5.70E-08	5.46E-08	1.43E-10	1.12E-07	1.02E-08	9.92E-09	1.43E-10	2.02E-08	4.32E-09	4.43E-09	1.43E-10	8.89E-09
476	572600.2	4148833	5.35E-08	4.61E-08	1.63E-10	9.98E-08	6.51E-08	6.24E-08	1.63E-10	1.28E-07	1.16E-08	1.13E-08	1.63E-10	2.31E-08	4.94E-09	5.06E-09	1.63E-10	1.02E-08
477	572612.8	4148845	6.06E-08	5.23E-08	1.85E-10	1.13E-07	7.38E-08	7.07E-08	1.85E-10	1.45E-07	1.32E-08	1.29E-08	1.85E-10	2.62E-08	5.59E-09	5.73E-09	1.85E-10	1.15E-08
478	572625.4	4148857	6.77E-08	5.84E-08	2.06E-10	1.26E-07	8.24E-08	7.90E-08	2.06E-10	1.62E-07	1.47E-08	1.44E-08	2.06E-10	2.93E-08	6.25E-09	6.40E-09	2.06E-10	1.29E-08
479	572637.9	4148869	7.44E-08	6.41E-08	2.27E-10	1.39E-07	9.05E-08	8.67E-08	2.27E-10	1.77E-07	1.61E-08	1.58E-08	2.27E-10	3.21E-08	6.86E-09	7.03E-09	2.27E-10	1.41E-08
480	572650.5	4148881	8.01E-08	6.91E-08	2.44E-10	1.49E-07	9.75E-08	9.35E-08	2.44E-10	1.91E-07	1.74E-08	1.70E-08	2.44E-10	3.46E-08	7.39E-09	7.58E-09	2.44E-10	1.52E-08
481	572663.1	4148893	8.47E-08	7.30E-08	2.58E-10	1.58E-07	1.03E-07	9.88E-08	2.58E-10	2.02E-07	1.84E-08	1.80E-08	2.58E-10	3.66E-08	7.81E-09	8.01E-09	2.58E-10	1.61E-08
482	572675.7	4148904	8.78E-08	7.57E-08	2.67E-10	1.64E-07	1.07E-07	1.02E-07	2.67E-10	2.10E-07	1.91E-08	1.86E-08	2.67E-10	3.79E-08	8.10E-09	8.30E-09	2.67E-10	1.67E-08
483	572688.3	4148916	8.93E-08	7.69E-08	2.72E-10	1.66E-07	1.09E-07	1.04E-07	2.72E-10	2.13E-07	1.94E-08	1.89E-08	2.72E-10	3.86E-08	8.24E-09	8.44E-09	2.72E-10	1.69E-08
484	572700.8	4148928	8.91E-08	7.67E-08	2.71E-10	1.66E-07	1.08E-07	1.04E-07	2.71E-10	2.13E-07	1.93E-08	1.89E-08	2.71E-10	3.85E-08	8.22E-09	8.42E-09	2.71E-10	1.69E-08
485	572713.4	4148940	8.74E-08	7.53E-08	2.66E-10	1.63E-07	1.06E-07	1.02E-07	2.66E-10	2.09E-07	1.90E-08	1.85E-08	2.66E-10	3.78E-08	8.06E-09	8.26E-09	2.66E-10	1.66E-08
486	572726	4148952	8.46E-08	7.29E-08	2.58E-10	1.58E-07	1.03E-07	9.86E-08	2.58E-10	2.02E-07	1.84E-08	1.79E-08	2.58E-10	3.65E-08	7.80E-09	8.00E-09	2.58E-10	1.61E-08
487	572738.6	4148964	8.11E-08	6.98E-08	2.47E-10	1.51E-07	9.87E-08	9.45E-08	2.47E-10	1.93E-07	1.76E-08	1.72E-08	2.47E-10	3.50E-08	7.48E-09	7.66E-09	2.47E-10	1.54E-08
488	572592.8	4148813	4.52E-08	3.90E-08	1.38E-10	8.43E-08	5.50E-08	5.27E-08	1.38E-10	1.08E-07	9.81E-09	9.58E-09	1.38E-10	1.95E-08	4.17E-09	4.28E-09	1.38E-10	8.59E-09
489	572605.7	4148826	5.17E-08	4.46E-08	1.58E-10	9.65E-08	6.29E-08	6.03E-08	1.58E-10	1.23E-07	1.12E-08	1.10E-08	1.58E-10	2.23E-08	4.77E-09	4.89E-09	1.58E-10	9.82E-09
490	572618.5	4148838	5.86E-08	5.05E-08	1.79E-10	1.09E-07	7.13E-08	6.84E-08	1.79E-10	1.40E-07	1.27E-08	1.24E-08	1.79E-10	2.53E-08	5.41E-09	5.54E-09	1.79E-10	1.11E-08
491	572631.4	4148850	6.55E-08	5.65E-08	2.00E-10	1.22E-07	7.97E-08	7.64E-08	2.00E-10	1.56E-07	1.42E-08	1.39E-08	2.00E-10	2.83E-08	6.04E-09	6.19E-09	2.00E-10	1.24E-08
492	572644.3	4148862	7.19E-08	6.20E-08	2.19E-10	1.34E-07	8.76E-08	8.39E-08	2.19E-10	1.72E-07	1.56E-08	1.52E-08	2.19E-10	3.11E-08	6.64E-09	6.80E-09	2.19E-10	1.37E-08
493	572657.2	4148874	7.75E-08	6.68E-08	2.36E-10	1.45E-07	9.43E-08	9.04E-08	2.36E-10	1.85E-07	1.68E-08	1.64E-08	2.36E-10	3.35E-08	7.15E-09	7.33E-09	2.36E-10	1.47E-08
494	572670	4148886	8.19E-08	7.06E-08	2.49E-10	1.53E-07	9.96E-08	9.55E-08	2.49E-10	1.95E-07	1.78E-08	1.74E-08	2.49E-10	3.54E-08	7.55E-09	7.74E-09	2.49E-10	1.55E-08
495	572682.9	4148899	8.48E-08	7.31E-08	2.58E-10	1.58E-07	1.03E-07	9.89E-08	2.58E-10	2.02E-07	1.84E-08	1.80E-08	2.58E-10	3.66E-08	7.83E-09	8.02E-09	2.58E-10	1.61E-08
496	572695.8	4148911	8.62E-08	7.43E-08	2.62E-10	1.61E-07	1.05E-07	1.01E-07	2.62E-10	2.06E-07	1.87E-08	1.83E-08	2.62E-10	3.72E-08	7.95E-09	8.15E-09	2.62E-10	1.64E-08
497	572708.7	4148923	8.59E-08	7.40E-08	2.62E-10	1.60E-07	1.05E-07	1.00E-07	2.62E-10	2.05E-07	1.86E-08	1.82E-08	2.62E-10	3.71E-08	7.93E-09	8.12E-09	2.62E-10	1.63E-08
498	572721.5	4148935	8.42E-08	7.26E-08	2.57E-10	1.57E-07	1.03E-07	9.82E-08	2.57E-10	2.01E-07	1.83E-08	1.79E-08	2.57E-10	3.64E-08	7.77E-09	7.96E-09	2.57E-10	1.60E-08
499	572734.4	4148947	8.14E-08	7.02E-08	2.48E-10	1.52E-07	9.91E-08	9.50E-08	2.48E-10	1.94E-07	1.77E-08	1.73E-08	2.48E-10	3.52E-08	7.51E-09	7.70E-09	2.48E-10	1.55E-08
500	572747.3	4148959	7.80E-08	6.72E-08	2.38E-10	1.45E-07	9.49E-08	9.10E-08	2.38E-10	1.86E-07	1.69E-08	1.65E-08	2.38E-10	3.37E-08	7.20E-09	7.37E-09	2.38E-10	1.48E-08
501	572760.2	4148972	7.45E-08	6.42E-08	2.27E-10	1.39E-07	9.06E-08	8.68E-08	2.27E-10	1.78E-07	1.62E-08	1.58E-08	2.27E-10	3.22E-08	6.87E-09	7.04E-09	2.27E-10	1.41E-08
502	572207.9	4148746	1.45E-08	1.25E-08	4.40E-11	2.69E-08	1.76E-08	1.69E-08	4.40E-11	3.45E-08	3.14E-09	3.06E-09	4.40E-11	6.24E-09	1.33E-09	1.37E-09	4.40E-11	2.74E-09
503	572596.1	4148804	4.29E-08	3.69E-08	1.31E-10	7.99E-08	5.22E-08	5.00E-08	1.31E-10	1.02E-07	9.30E-09	9.08E-09	1.31E-10	1.85E-08	3.95E-09	4.05E-09	1.31E-10	8.14E-09
504	572608.9	4148816	4.89E-08	4.22E-08	1.49E-10	9.12E-08	5.95E-08	5.71E-08	1.49E-10	1.17E-07	1.06E-08	1.04E-08	1.49E-10	2.11E-08	4.51E-09	4.63E-09	1.49E-10	9.29E-09
505	572621.8	4148828	5.54E-08	4.78E-08	1.69E-10	1.03E-07	6.75E-08	6.46E-08	1.69E-10	1.32E-07	1.20E-08	1.17E-08	1.69E-10	2.39E-08	5.11E-09	5.24E-09	1.69E-10	1.05E-08
506	572634.6	4148840	6.20E-08	5.34E-08	1.89E-10	1.16E-07	7.54E-08	7.23E-08	1.89E-10	1.48E-07	1.34E-08	1.31E-08	1.89E-10	2.68E-08	5.72E-09	5.86E-09	1.89E-10	1.18E-08
507	572647.4	4148852	6.82E-08	5.87E-08	2.08E-10	1.27E-07	8.30E-08	7.95E-08	2.08E-10	1.63E-07	1.48E-08	1.44E-08	2.08E-10	2.94E-08	6.29E-09	6.45E-09	2.08E-10	1.29E-08
508	572660.2	4148864	7.37E-08	6.35E-08	2.24E-10	1.37E-07	8.96E-08	8.59E-08	2.24E-10	1.76E-07	1.60E-08	1.56E-08	2.24E-10	3.18E-08	6.80E-09	6.96E-09	2.24E-10	1.40E-08
509	572673.1	4148877	7.81E-08	6.73E-08	2.38E-10	1.46E-07	9.50E-08	9.11E-08	2.38E-10	1.86E-07	1.69E-08	1.66E-08	2.38E-10	3.37E-08	7.21E-09	7.38E-09	2.38E-10	1.48E-08
510	572685.9	4148889	8.13E-08	7.00E-08	2.48E-10	1.52E-07	9.89E-08	9.48E-08	2.48E-10	1.94E-07	1.76E-08	1.72E-08	2.48E-10	3.51E-08	7.50E-09	7.68E-09	2.48E-10	1.54E-08
511	572698.7	4148901	8.30E-08	7.15E-08	2.53E-10	1.55E-07	1.01E-07	9.68E-08	2.53E-10	1.98E-07	1.80E-08	1.76E-08	2.53E-10	3.59E-08	7.66E-09	7.85E-09	2.53E-10	1.58E-08
512	572711.6	4148913	8.33E-08	7.17E-08	2.54E-10	1.55E-07	1.01E-07	9.71E-08	2.54E-10	1.99E-07	1.81E-08	1.76E-08	2.54E-10	3.60E-08	7.68E-09	7.87E-09	2.54E-10	1.58E-08

513	572724.4	4148925	8.21E-08	7.07E-08	2.50E-10	1.53E-07	9.99E-08	9.57E-08	2.50E-10	1.96E-07	1.78E-08	1.74E-08	2.50E-10	3.55E-08	7.57E-09	7.76E-09	2.50E-10	1.56E-08
514	572737.2	4148937	7.98E-08	6.87E-08	2.43E-10	1.49E-07	9.71E-08	9.30E-08	2.43E-10	1.90E-07	1.73E-08	1.69E-08	2.43E-10	3.45E-08	7.36E-09	7.54E-09	2.43E-10	1.51E-08
515	572750.1	4148949	7.67E-08	6.61E-08	2.34E-10	1.43E-07	9.33E-08	8.94E-08	2.34E-10	1.83E-07	1.66E-08	1.62E-08	2.34E-10	3.31E-08	7.07E-09	7.25E-09	2.34E-10	1.46E-08
516	572762.9	4148962	7.33E-08	6.32E-08	2.23E-10	1.37E-07	8.92E-08	8.55E-08	2.23E-10	1.75E-07	1.59E-08	1.55E-08	2.23E-10	3.17E-08	6.76E-09	6.93E-09	2.23E-10	1.39E-08
517	572203.7	4148737	1.38E-08	1.19E-08	4.21E-11	2.58E-08	1.68E-08	1.61E-08	4.21E-11	3.30E-08	3.00E-09	2.93E-09	4.21E-11	5.97E-09	1.27E-09	1.31E-09	4.21E-11	2.62E-09
518	572221.3	4148736	1.52E-08	1.31E-08	4.61E-11	2.83E-08	1.84E-08	1.77E-08	4.61E-11	3.62E-08	3.29E-09	3.21E-09	4.61E-11	6.55E-09	1.40E-09	1.43E-09	4.61E-11	2.88E-09
519	572599.4	4148794	4.07E-08	3.51E-08	1.24E-10	7.59E-08	4.95E-08	4.74E-08	1.24E-10	9.71E-08	8.83E-09	8.62E-09	1.24E-10	1.76E-08	3.75E-09	3.85E-09	1.24E-10	7.72E-09
520	572612.2	4148806	4.64E-08	3.99E-08	1.41E-10	8.64E-08	5.64E-08	5.41E-08	1.41E-10	1.11E-07	1.01E-08	9.82E-09	1.41E-10	2.00E-08	4.28E-09	4.38E-09	1.41E-10	8.80E-09
521	572625	4148818	5.25E-08	4.52E-08	1.60E-10	9.78E-08	6.38E-08	6.12E-08	1.60E-10	1.25E-07	1.14E-08	1.11E-08	1.60E-10	2.27E-08	4.84E-09	4.96E-09	1.60E-10	9.96E-09
522	572637.8	4148831	5.87E-08	5.06E-08	1.79E-10	1.09E-07	7.14E-08	6.84E-08	1.79E-10	1.40E-07	1.27E-08	1.24E-08	1.79E-10	2.53E-08	5.41E-09	5.55E-09	1.79E-10	1.11E-08
523	572650.6	4148843	6.46E-08	5.57E-08	1.97E-10	1.21E-07	7.87E-08	7.54E-08	1.97E-10	1.54E-07	1.40E-08	1.37E-08	1.97E-10	2.79E-08	5.96E-09	6.11E-09	1.97E-10	1.23E-08
524	572663.4	4148855	7.00E-08	6.03E-08	2.13E-10	1.31E-07	8.52E-08	8.17E-08	2.13E-10	1.67E-07	1.52E-08	1.48E-08	2.13E-10	3.02E-08	6.46E-09	6.62E-09	2.13E-10	1.33E-08
525	572676.2	4148867	7.45E-08	6.42E-08	2.27E-10	1.39E-07	9.06E-08	8.69E-08	2.27E-10	1.78E-07	1.62E-08	1.58E-08	2.27E-10	3.22E-08	6.87E-09	7.04E-09	2.27E-10	1.41E-08
526	572688.9	4148879	7.78E-08	6.71E-08	2.37E-10	1.45E-07	9.47E-08	9.08E-08	2.37E-10	1.86E-07	1.69E-08	1.65E-08	2.37E-10	3.36E-08	7.18E-09	7.36E-09	2.37E-10	1.48E-08
527	572701.7	4148891	7.99E-08	6.88E-08	2.43E-10	1.49E-07	9.72E-08	9.32E-08	2.43E-10	1.91E-07	1.73E-08	1.69E-08	2.43E-10	3.45E-08	7.37E-09	7.55E-09	2.43E-10	1.52E-08
528	572714.5	4148903	8.06E-08	6.94E-08	2.45E-10	1.50E-07	9.80E-08	9.40E-08	2.45E-10	1.92E-07	1.75E-08	1.71E-08	2.45E-10	3.48E-08	7.43E-09	7.62E-09	2.45E-10	1.53E-08
529	572727.3	4148915	7.99E-08	6.88E-08	2.43E-10	1.49E-07	9.72E-08	9.32E-08	2.43E-10	1.91E-07	1.73E-08	1.69E-08	2.43E-10	3.45E-08	7.37E-09	7.55E-09	2.43E-10	1.52E-08
530	572740.1	4148927	7.80E-08	6.72E-08	2.38E-10	1.46E-07	9.50E-08	9.10E-08	2.38E-10	1.86E-07	1.69E-08	1.65E-08	2.38E-10	3.37E-08	7.20E-09	7.38E-09	2.38E-10	1.48E-08
531	572752.9	4148939	7.53E-08	6.49E-08	2.29E-10	1.40E-07	9.17E-08	8.78E-08	2.29E-10	1.80E-07	1.63E-08	1.60E-08	2.29E-10	3.25E-08	6.95E-09	7.12E-09	2.29E-10	1.43E-08
532	572765.7	4148951	7.22E-08	6.22E-08	2.20E-10	1.35E-07	8.78E-08	8.42E-08	2.20E-10	1.72E-07	1.57E-08	1.53E-08	2.20E-10	3.12E-08	6.66E-09	6.82E-09	2.20E-10	1.37E-08
533	572199.5	4148728	1.32E-08	1.14E-08	4.03E-11	2.46E-08	1.61E-08	1.54E-08	4.03E-11	3.15E-08	2.87E-09	2.80E-09	4.03E-11	5.71E-09	1.22E-09	1.25E-09	4.03E-11	2.51E-09
534	572217.1	4148727	1.45E-08	1.25E-08	4.41E-11	2.70E-08	1.76E-08	1.69E-08	4.41E-11	3.45E-08	3.14E-09	3.07E-09	4.41E-11	6.25E-09	1.34E-09	1.37E-09	4.41E-11	2.75E-09
535	572234.6	4148727	1.58E-08	1.36E-08	4.81E-11	2.95E-08	1.92E-08	1.84E-08	4.81E-11	3.77E-08	3.43E-09	3.35E-09	4.81E-11	6.83E-09	1.46E-09	1.49E-09	4.81E-11	3.00E-09
536	572615.5	4148797	4.4E-08	3.79E-08	1.34E-10	8.20E-08	5.35E-08	5.13E-08	1.34E-10	1.05E-07	9.54E-09	9.32E-09	1.34E-10	1.90E-08	4.06E-09	4.16E-09	1.34E-10	8.35E-09
537	572628.3	4148809	4.97E-08	4.28E-08	1.51E-10	9.27E-08	6.05E-08	5.80E-08	1.51E-10	1.19E-07	1.08E-08	1.05E-08	1.51E-10	2.15E-08	4.59E-09	4.70E-09	1.51E-10	9.44E-09
538	572641	4148821	5.56E-08	4.79E-08	1.69E-10	1.04E-07	6.77E-08	6.49E-08	1.69E-10	1.33E-07	1.21E-08	1.18E-08	1.69E-10	2.40E-08	5.13E-09	5.26E-09	1.69E-10	1.06E-08
539	572653.8	4148833	6.13E-08	5.29E-08	1.87E-10	1.14E-07	7.46E-08	7.15E-08	1.87E-10	1.46E-07	1.33E-08	1.30E-08	1.87E-10	2.65E-08	5.66E-09	5.80E-09	1.87E-10	1.16E-08
540	572666.5	4148845	6.66E-08	5.74E-08	2.03E-10	1.24E-07	8.10E-08	7.76E-08	2.03E-10	1.59E-07	1.44E-08	1.41E-08	2.03E-10	2.88E-08	6.14E-09	6.29E-09	2.03E-10	1.26E-08
541	572679.3	4148857	7.1E-08	6.12E-08	2.16E-10	1.32E-07	8.65E-08	8.29E-08	2.16E-10	1.70E-07	1.54E-08	1.51E-08	2.16E-10	3.07E-08	6.55E-09	6.72E-09	2.16E-10	1.35E-08
542	572692	4148869	7.45E-08	6.42E-08	2.27E-10	1.39E-07	9.07E-08	8.69E-08	2.27E-10	1.78E-07	1.62E-08	1.58E-08	2.27E-10	3.22E-08	6.87E-09	7.04E-09	2.27E-10	1.41E-08
543	572704.7	4148881	7.68E-08	6.62E-08	2.34E-10	1.43E-07	9.35E-08	8.96E-08	2.34E-10	1.83E-07	1.67E-08	1.63E-08	2.34E-10	3.32E-08	7.09E-09	7.26E-09	2.34E-10	1.46E-08
544	572717.5	4148893	7.79E-08	6.71E-08	2.37E-10	1.45E-07	9.48E-08	9.08E-08	2.37E-10	1.86E-07	1.69E-08	1.65E-08	2.37E-10	3.36E-08	7.19E-09	7.36E-09	2.37E-10	1.48E-08
545	572730.2	4148905	7.76E-08	6.69E-08	2.36E-10	1.45E-07	9.45E-08	9.05E-08	2.36E-10	1.85E-07	1.68E-08	1.65E-08	2.36E-10	3.35E-08	7.16E-09	7.34E-09	2.36E-10	1.47E-08
546	572743	4148917	7.62E-08	6.57E-08	2.32E-10	1.42E-07	9.28E-08	8.89E-08	2.32E-10	1.82E-07	1.65E-08	1.62E-08	2.32E-10	3.29E-08	7.03E-09	7.21E-09	2.32E-10	1.45E-08
547	572755.7	4148929	7.39E-08	6.37E-08	2.25E-10	1.38E-07	9.00E-08	8.62E-08	2.25E-10	1.76E-07	1.60E-08	1.57E-08	2.25E-10	3.19E-08	6.82E-09	6.99E-09	2.25E-10	1.40E-08
548	572768.5	4148941	7.1E-08	6.12E-08	2.16E-10	1.32E-07	8.64E-08	8.28E-08	2.16E-10	1.70E-07	1.54E-08	1.51E-08	2.16E-10	3.07E-08	6.55E-09	6.72E-09	2.16E-10	1.35E-08
549	572781.2	4148953	6.8E-08	5.86E-08	2.07E-10	1.27E-07	8.28E-08	7.93E-08	2.07E-10	1.62E-07	1.48E-08	1.44E-08	2.07E-10	2.94E-08	6.27E-09	6.43E-09	2.07E-10	1.29E-08
550	572195.4	4148719	1.27E-08	1.09E-08	3.86E-11	2.36E-08	1.54E-08	1.48E-08	3.86E-11	3.02E-08	2.75E-09	2.68E-09	3.86E-11	5.47E-09	1.17E-09	1.20E-09	3.86E-11	2.40E-09
551	572212.8	4148718	1.38E-08	1.19E-08	4.21E-11	2.58E-08	1.68E-08	1.61E-08	4.21E-11	3.30E-08	3.00E-09	2.93E-09	4.21E-11	5.98E-09	1.28E-09	1.31E-09	4.21E-11	2.63E-09
552	572230.3	4148718	1.51E-08	1.3E-08	4.59E-11	2.81E-08	1.84E-08	1.76E-08	4.59E-11	3.60E-08	3.27E-09	3.20E-09	4.59E-11	6.52E-09	1.39E-09	1.43E-09	4.59E-11	2.86E-09
553	572247.8	4148717	1.64E-08	1.41E-08	4.99E-11	3.06E-08	1.99E-08	1.91E-08	4.99E-11	3.91E-08	3.56E-09	3.47E-09	4.99E-11	7.08E-09	1.51E-09	1.55E-09	4.99E-11	3.11E-09
554	572618.8	4148787	4.17E-08	3.6E-08	1.27E-10	7.78E-08	5.08E-08	4.87E-08	1.27E-10	9.96E-08	9.06E-09	8.85E-09	1.27E-10	1.80E-08	3.85E-09	3.95E-09	1.27E-10	7.92E-09
555	572631.5	4148799	4.71E-08	4.06E-08	1.44E-10	8.79E-08	5.74E-08	5.50E-08	1.44E-10	1.13E-07	1.02E-08	9.99E-09	1.44E-10	2.04E-08	4.35E-09	4.46E-09	1.44E-10	8.95E-09
556	572644.3	4148811	5.27E-08	4.55E-08	1.61E-10	9.84E-08	6.42E-08	6.15E-08	1.61E-10	1.26E-07	1.14E-08	1.12E-08	1.61E-10	2.28E-08	4.87E-09	4.99E-09	1.61E-10	1.00E-08
557	572657	4148823	5.82E-08	5.02E-08	1.77E-10	1.09E-07	7.09E-08	6.79E-08	1.77E-10	1.39E-07	1.26E-08	1.23E-08	1.77E-10	2.52E-08	5.37E-09	5.51E-09	1.77E-10	1.11E-08
558	572669.7	4148835	6.33E-08	5.46E-08	1.93E-10	1.18E-07	7.71E-08	7.39E-08	1.93E-10	1.51E-07	1.37E-08	1.34E-08	1.93E-10	2.74E-08	5.84E-09	5.99E-09	1.93E-10	1.20E-08
559	572682.4	4148847	6.78E-08	5.84E-08	2.06E-10	1.26E-07	8.25E-08	7.90E-08	2.06E-10	1.62E-07	1.47E-08	1.44E-08	2.06E-10	2.93E-08	6.25E-09	6.41E-09	2.06E-10	1.29E-08
560	572695.1	4148859	7.13E-08	6.15E-08	2.17E-10	1.33E-07	8.68E-08	8.32E-08	2.17E-10	1.70E-07	1.55E-08	1.51E-08	2.17E-10	3.08E-08	6.58E-09	6.74E-09	2.17E-10	1.35E-08
561	572707.8	4148871	7.38E-08	6.36E-08	2.25E-10	1.38E-07	8.99E-08	8.61E-08	2.25E-10	1.76E-07	1.60E-08	1.56E-08	2.25E-10	3.19E-08	6.81E-09	6.98E-09	2.25E-10	1.40E-08
562	572720.5	4148883	7.52E-08	6.48E-08	2.29E-10	1.40E-07	9.15E-08	8.77E-08	2.29E-10	1.79E-07	1.63E-08	1.59E-08	2.29E-10	3.25E-08	6.94E-09	7.11E-09	2.29E-10	1.43E-08
563	572733.2	4148895	7.54E-08	6.49E-08	2.30E-10	1.41E-07	9.17E-08	8.79E-08	2.30E-10	1.80E-07	1.64E-08	1.60E-08	2.30E-10	3.26E-08	6.95E-09	7.13E-09	2.30E-10	1.43E-08
564	572745.9	4148907	7.44E-08	6.41E-08	2.27E-10	1.39E-07	9.05E-08	8.68E-08	2.27E-10	1.78E-07	1.61E-08	1.58E-08	2.27E-10	3.21E-08	6.86E-09	7.03E-09	2.27E-10	1.41E-08
565	572758.6	4148919	7.25E-08	6.24E-08	2.21E-10	1.35E-07	8.82E-08	8.45E-08	2.21E-10	1.73E-07	1.57E-08	1.54E-08	2.21E-10	3.13E-08	6.68E-09	6.85E-09	2.21E-10	1.38E-08
566	572771.3	4148931	6.99E-08	6.02E-08	2.13E-10	1.30E-07	8.50E-08	8.15E-08	2.13E-10	1.67E-07	1.52E-08	1.48E-08	2.13E-10	3.02E-08	6.45E-09	6.60E-09	2.13E-10	1.33E-08
567	572784	4148943	6.7E-08	5.77E-08	2.04E-10	1.25E-07	8.15E-08	7.81E-08	2.04E-10	1.60E-07	1.45E-08	1.42E-08	2.04E-10	2.89E-08	6.18E-09	6.33E-09	2.04E-10	1.27E-08
568	572191.2	4148709	1.21E-08	1.05E-08	3.70E-11	2.26E-08	1.48E-08	1.42E-08	3.70E-11	2.90E-08	2.63E-09	2.57E-09	3.70E-11	5.24E-09	1.12E-09	1.15E-09	3.70E-11	2.30E-09
569	572208.6	4148709	1.32E-08	1.14E-08	4.04E-11	2.47E-08	1.61E-08	1.55E-08	4.04E-11	3.16E-08	2.88E-09	2.81E-09	4.04E-11	5.72E-09	1.22E-09	1.25E-09	4.04E-11	2.52E-09
570	572226.1	4148708	1.44E-08	1.24E-08	4.39E-11	2.69E-08	1.76E-08	1.68E-08	4.39E-11	3.44E-08	3.13E-09	3.06E-09	4.39E-11	6.23E-09	1.33E-09	1.36E-09	4.39E-11	2.74E-09
571	572243.5	4148708	1.57E-08	1.35E-08	4.77E-11	2.92E-08	1.90E-08	1.83E-08	4.77E-11	3.74E-08	3.40E-09	3.32E-09	4.77E-11	6.76E-09	1.44E-09	1.48E-09	4.77E-11	2.97E-09
572	572260.9	4148707	1.69E-08	1.46E-08	5.15E-11	3.15E-08	2.06E-08	1.97E-08	5.15E-11	4.03E-08	3.67E-09	3.58E-09	5.15E-11	7.30E-09	1.56E-09	1.60E-09	5.15E-11	3.21E-09
573	572622.2	4148778	3.97E-08	3.42E-08	1.21E-10	7.40E-08	4.83E-08	4.63E-08	1.21E-10	9.47E-08	8.61E-09	8.41E-09	1.21E-10	1.71E-08	3.66E-09	3.75E-09	1.21E-10	7.53E-09
574	572634.8	4148790	4.48E-08	3.86E-08	1.36E-10	8.35E-08	5.45E-08	5.22E-08	1.36E-10	1.07E-07	9.71E-09	9.49E-09	1.36E-10	1.93E-08	4.13E-09	4.23E-09	1.36E-10	8.50E-09
575	572647.5	4148802	5.01E-08	4.32E-08	1.53E-10	9.34E-08	6.10E-08	5.84E-08	1.53E-10	1.20E-07	1.09E-08	1.06E-08	1.53E-10	2.16E-08	4.62E-09	4.73E-09	1.53E-10	9.51E-09
576	572660.2	4148814	5.53E-08	4.77E-08	1.69E-10	1.03E-07	6.74E-08	6.45E-08	1.69E-10	1.32E-07	1.20E-08	1.17E-08	1.69E-10	2.39E-08	5.11E-09	5.23E-09	1.69E-10	1.05E-08
577	572672.9	4148826	6.03E-08	5.2E-08	1.84E-10	1.12E-07	7.34E-08	7.03E-08	1.84E-10	1.44E-07	1.31E-08	1.28E-08	1.84E-10	2.60E-08	5.56E-09	5.70E-09	1.84E-10	1.14E-08
578	572685.5	4148837	6.47E-08	5.57E-08	1.97E-10	1.21E-07	7.87E-08	7.54E-08	1.97E-10	1.54E-07	1.40E-08	1.37E-08	1.97E-10	2.79E-08	5.97E-09	6.11E-09	1.97E-10	1.23E-08
579	572698.2	4148849	6.83E-08	5.88E-08	2.08E-10	1.27E-07	8.31E-08	7.96E-08	2.08E-10	1.63E-07	1.48E-08	1.45E-08	2.08E-10	2.95E-08	6.30E-09	6.45E-09	2.08E-10	1.30E-08
580	572710.9	4148861	7.09E-08	6.11E-08	2.16E-10	1.32E-07	8.63E-08	8.27E-08	2.16E-10	1.69E-07	1.54E-08	1.50E-08	2.16E-10	3.06E-08	6.54E-09	6.71E-09	2.16E-10	1.35E-08
581	572723.5	4148873	7.26E-08	6.25E-08	2.21E-10	1.35E-07	8.83E-08	8.46E-08	2.21E-10	1.73E-07	1.57E-08	1.54E-08	2.21E-10	3.13E-08	6.69E-09	6.86E-09	2.21E-10	1.38E-08
582	572736.2	4148885	7.31E-08	6.3E-08	2.23E-10	1.36E-07	8.89E-08	8.52E-08	2.23E-10	1.74E-07	1.59E-08	1.55E-08	2.23E-10	3.16E-08	6.74E-09	6.91E-09	2.23E-10	1.39E-08
583	572748.9	4148897	7.25E-08	6.25E-08	2.21E-10	1.35E-07	8.82E-08	8.45E-08	2.21E-10	1.73E-07	1.57E-08	1.54E-08	2.21E-10	3.13E-08	6.69E-09	6.85E-09	2.21E-10	1.38E-08
584	572761.5	4148909	7.09E-08	6.11E-08	2.16E-10	1.32E-07	8.63E-08	8.27E-08	2.16E-10	1.69E-07	1.54E-08	1.50E-08	2.16E-10	3.06E-08	6.55E-09	6.71E-09	2.16E-10	1.35E-08
585	572774.2	4148921	6.87E-08	5.92E-08	2.09E-10	1.28E-07	8.36E-08	8.01E-08	2.09E-10	1.64E-07	1.49E-08	1.46E-08	2.09E-10	2.97E-08	6.33E-09	6.49E-09	2.09E-10	1.30E-08
586	572786.9	4148933	6.6E-08	5.69E-08	2.01E-10	1.23E-07	8.03E-08	7.70E-08	2.01E-10	1.57E-07	1.43E-08	1.40E-08	2.01E-10	2.85E-08	6.09E-09	6.24E-09	2.01E-10	1.25E-08
587	572799.6	4148945	6.33E-08	5.45E-08	1.93E-10	1.18E-07	7.70E-08	7.38E-08	1.93E-10	1.51E-07	1.37E-08	1.34E-08	1.93E-10	2.73E-08	5.84E-09	5.98E-09	1.93E-10	1.20E-08
588	572187	4148700	1.16E-08	1E-08	3.55E-11	2.17E-08	1.42E-08	1.36E-08	3.55E-11	2.78E-08	2.53E-09	2.47E-09	3.55E-11	5.03E-09	1.07E-09	1.10E-09	3.55E-11	2.21E-09
589	572204.4	4148700	1.27E-08	1.09E-08	3.87E-11	2.37E-08	1.55E-08	1.48E-08	3.87E-11	3.03E-08	2.76E-09	2.69E-09	3.87E-11	5.49E-09	1.17E-09	1.20E-09	3.87E-11	2.41E-09
590	572221.8	4148699	1.38E-08	1.19E-08	4.20E-11	2.57E-08	1.68E-08	1.61E-08	4.20E-11	3.29E-08	3.00E-09	2.93E-09	4.20E-11	5.96E-09	1.27E-09	1.31E-09	4.20E-11	2.62E-09
591	572239.2	4148699	1.5E-08	1.29E-08	4.56E-11	2.79E-08	1.82E-08	1.75E-08	4.56E-11	3.57E-08	3.25E-09	3.17E-09	4.56E-11	6.47E-09	1.38E-09	1.41E-09	4.56E-11	2.84E-09
592	572256.6	4148698	1.61E-08	1.39E-08	4.92E-11	3.01E-08	1.96E-08	1.88E-08	4.92E-11	3.85E-08	3.50E-09	3.42E-09	4.92E-11	6.97E-09	1.49E-09	1.53E-09	4.92E-11	3.07E-09
593	572625.5	4148768	3.78E-08	3.25E-08	1.15E-10	7.04E-08	4.60E-08	4.40E-08	1.15E-10	9.01E-08	8.19E-09	8.00E-09	1.15E-10	1.63E-08	3.48E-09	3.57E-09	1.15E-10	7.17E-09
594	572638.1	4148780	4.25E-08	3.67E-08	1.30E-10	7.93E-08	5.18E-08	4.96E-08	1.30E-10	1.02E-07	9.23E-09	9.02E-09	1.30E-10	1.84E-08	3.93E-09	4.02E-09	1.30E-10	8.08E-09
595	572650.8	4148792	4.76E-08	4.1E-08	1.45E-10	8.87E-08	5.79E-08	5.55E-08	1.45E-10	1.14E-07	1.03E-08	1.01E-08	1.45E-10	2.06E-08	4.39E-09	4.50E-09	1.45E-10	9.04E-09
596	572663.4	4148804	5.26E-08	4.54E-08	1.60E-10	9.81E-08	6.41E-08	6.14E-08	1.60E-10	1.26E-07	1.14E-08	1.12E-08	1.60E-10	2.27E-08	4.86E-09	4.98E-09	1.60E-10	9.99E-09
597	572676	4148816	5.74E-08	4.95E-08	1.75E-10	1.07E-07	6.99E-08	6.70E-08	1.75E-10	1.37E-07	1.25E-08	1.22E-08	1.75E-10	2.48E-08	5.30E-09	5.43E-09	1.75E-10	1.09E-08
598	572688.7	4148828	6.17E-08	5.32E-08	1.88E-10	1.15E-07	7.51E-08	7.20E-08	1.88E-10	1.47E-07	1.34E-08	1.31E-08	1.88E-10	2.67E-08	5.69E-09	5.83E-09	1.88E-10	1.17E-08
599	572701.3	4148840	6.53E-08	5.63E-08	1.99E-10	1.22E-07	7.95E-08	7.62E-08	1.99E-10	1.56E-07	1.42E-08	1.38E-08	1.99E-10	2.82E-08	6.03E-09	6.18E-09	1.99E-10	1.24E-08
600	572714	4148852	6.81E-08	5.87E-08	2.07E-10	1.27E-07	8.29E-08	7.94E-08	2.07E-10	1.63E-07	1.48E-08	1.44E-08	2.07E-10	2.94E-08	6.28E-09	6.44E-09	2.07E-10	1.29E-08
601	572726.6	4148864	7E-08	6.03E-08	2.13E-10	1.30E-07	8.51E-08	8.16E-08	2.13E-10	1.67E-07	1.52E-08	1.48E-08	2.13E-10	3.02E-08	6.45E-09	6.61E-09	2.13E-10	1.33E-08
602	572739.2	4148876	7.08E-08	6.1E-08	2.16E-10	1.32E-07	8.61E-08	8.25E-08	2.16E-10	1.69E-07	1.54E-08	1.50E-08	2.16E-10	3.06E-08	6.53E-09	6.69E-09	2.16E-10	1.34E-08
603	572751.9	4148888	7.06E-08	6.08E-08	2.15E-10	1.32E-07	8.59E-08	8.23E-08	2.15E-10	1.68E-07	1.53E-08	1.50E-08	2.15E-10	3.05E-08	6.51E-09	6.67E-09	2.15E-10	1.34E-08
604	572764.5	4148899	6.94E-08	5.98E-08	2.11E-10	1.29E-07	8.44E-08	8.09E-08	2.11E-10	1.66E-07	1.51E-08	1.47E-08	2.11E-10	3.00E-08	6.40E-09	6.56E-09	2.11E-10	1.32E-08
605	572777.1	4148911	6.74E-08	5.81E-08	2.05E-10	1.26E-07	8.21E-08	7.86E-08	2.05E-10	1.61E-07	1.46E-08	1.43E-08	2.05E-10	2.91E-08	6.22E-09	6.37E-09	2.05E-10	1.28E-08
606	572789.8	4148923	6.5E-08	5.6E-08	1.98E-10	1.21E-07	7.91E-08	7.58E-08	1.98E-10	1.55E-07	1.41E-08	1.38E-08	1.98E-10	2.81E-08	6.00E-09	6.14E-09	1.98E-10	1.23E-08
607	572802.4	4148935	6.24E-08	5.38E-08	1.90E-10	1.16E-07	7.59E-08	7.28E-08	1.90E-10	1.49E-07	1.35E-08	1.32E-08	1.90E-10	2.70E-08	5.76E-09	5.90E-09	1.90E-10	1.18E-08
608	572815	4148947	5.99E-08	5.16E-08	1.82E-10	1.12E-07	7.28E-08	6.98E-08	1.82E-10	1.43E-07	1.30E-08	1.27E-08	1.82E-10	2.59E-08	5.52E-09	5.66E-09	1.82E-10	1.14E-08
609	572287.6	4149264	2.19E-07	1.89E-07	6.66E-10	4.08E-07	2.66E-07	2.55E-07	6.66E-10	5.22E-07	4.75E-08	4.64E-08	6.66E-10	9.45E-08	2.02E-08	2.07E-08	6.66E-10	4.15E-08
610	572278.4	4149268	1.8E-07	1.55E-07	5.48E-10	3.36E-07	2.19E-07	2.10E-07	5.48E-10	4.29E-07	3.91E-08	3.81E-08	5.48E-10	7.77E-08	1.66E-08	1.70E-08	5.48E-10	3.42E-08
611	572246.3	4149221	5.71E-08	4.92E-08	1.74E-10	1.06E-07	6.94E-08	6.65E-08	1.74E-10	1.36E-07	1.24E-08	1.21E-08	1.74E-10	2.46E-08	5.26E-09	5.39E-09	1.74E-10	1.08E-08
612	572250.2	4149230	6.43E-08	5.54E-08	1.96E-10	1.20E-07	7.83E-08	7.50E-08	1.96E-10	1.54E-07	1.40E-08	1.36E-08	1.96E-10	2.78E-08	5.94E-09	6.08E-09	1.96E-10	1.22E-08
613	572254	4149238	7.54E-08	6.5E-08	2.30E-10	1.41E-07	9.18E-08	8.80E-08	2.30E-10	1.80E-07	1.64E-08	1.60E-08	2.30E-10	3.26E-08	6.96E-09	7.13E-09	2.30E-10	1.43E-08
614	572257.8	4149247	9.08E-08	7.82E-08	2.77E-10	1.69E-07	1.11E-07	1.06E-07	2.77E-10	2.17E-07	1.97E-08	1.92E-08	2.77E-10	3.92E-08	8.38E-09	8.59E-09	2.77E-10	1.72E-08
615	572261.7	4149255	1.1E-07	9.46E-08	3.34E-10	2.05E-07	1.34E-07	1.28E-07	3.34E-10	2.62E-07	2.38E-08	2.33E-08	3.34E-10	4.74E-08	1.01E-08	1.04E-08	3.34E-10	2.08E-08

616	572265.5	4149264	1.3E-07	1.12E-07	3.97E-10	2.43E-07	1.59E-07	1.52E-07	3.97E-10	3.11E-07	2.83E-08	2.76E-08	3.97E-10	5.63E-08	1.20E-08	1.23E-08	3.97E-10	2.47E-08
617	572269.3	4149272	1.49E-07	1.29E-07	4.55E-10	2.79E-07	1.82E-07	1.74E-07	4.55E-10	3.56E-07	3.24E-08	3.17E-08	4.55E-10	6.45E-08	1.38E-08	1.41E-08	4.55E-10	2.84E-08
618	572233.1	4149208	4.48E-08	3.86E-08	1.37E-10	8.36E-08	5.46E-08	5.23E-08	1.37E-10	1.07E-07	9.73E-09	9.50E-09	1.37E-10	1.94E-08	4.14E-09	4.24E-09	1.37E-10	8.51E-09
619	572232.6	4149191	4.53E-08	3.91E-08	1.38E-10	8.46E-08	5.52E-08	5.29E-08	1.38E-10	1.08E-07	9.84E-09	9.61E-09	1.38E-10	1.96E-08	4.18E-09	4.29E-09	1.38E-10	8.61E-09
620	572237.2	4149225	4.9E-08	4.22E-08	1.49E-10	9.14E-08	5.96E-08	5.71E-08	1.49E-10	1.17E-07	1.06E-08	1.04E-08	1.49E-10	2.12E-08	4.52E-09	4.63E-09	1.49E-10	9.30E-09
621	572241	4149234	5.5E-08	4.74E-08	1.68E-10	1.03E-07	6.70E-08	6.42E-08	1.68E-10	1.31E-07	1.19E-08	1.17E-08	1.68E-10	2.38E-08	5.08E-09	5.20E-09	1.68E-10	1.04E-08
622	572244.9	4149242	6.4E-08	5.51E-08	1.95E-10	1.19E-07	7.79E-08	7.46E-08	1.95E-10	1.53E-07	1.39E-08	1.36E-08	1.95E-10	2.76E-08	5.90E-09	6.05E-09	1.95E-10	1.21E-08
623	572248.7	4149251	7.63E-08	6.57E-08	2.32E-10	1.42E-07	9.28E-08	8.90E-08	2.32E-10	1.82E-07	1.66E-08	1.62E-08	2.32E-10	3.30E-08	7.04E-09	7.21E-09	2.32E-10	1.45E-08
624	572252.6	4149259	9.16E-08	7.89E-08	2.79E-10	1.71E-07	1.11E-07	1.07E-07	2.79E-10	2.19E-07	1.99E-08	1.94E-08	2.79E-10	3.96E-08	8.45E-09	8.66E-09	2.79E-10	1.74E-08
625	572256.4	4149268	1.08E-07	9.35E-08	3.30E-10	2.02E-07	1.32E-07	1.27E-07	3.30E-10	2.59E-07	2.35E-08	2.30E-08	3.30E-10	4.69E-08	1.00E-08	1.03E-08	3.30E-10	2.06E-08
626	572260.2	4149276	1.25E-07	1.08E-07	3.81E-10	2.33E-07	1.52E-07	1.46E-07	3.81E-10	2.98E-07	2.71E-08	2.65E-08	3.81E-10	5.40E-08	1.15E-08	1.18E-08	3.81E-10	2.37E-08
627	572224	4149212	3.89E-08	3.35E-08	1.18E-10	7.25E-08	4.73E-08	4.53E-08	1.18E-10	9.28E-08	8.44E-09	8.24E-09	1.18E-10	1.68E-08	3.59E-09	3.68E-09	1.18E-10	7.38E-09
628	572223.5	4149196	3.92E-08	3.38E-08	1.19E-10	7.31E-08	4.77E-08	4.57E-08	1.19E-10	9.36E-08	8.51E-09	8.31E-09	1.19E-10	1.69E-08	3.62E-09	3.71E-09	1.19E-10	7.44E-09
629	572228.1	4149229	4.26E-08	3.67E-08	1.30E-10	7.94E-08	5.18E-08	4.97E-08	1.30E-10	1.02E-07	9.24E-09	9.03E-09	1.30E-10	1.84E-08	3.93E-09	4.03E-09	1.30E-10	8.09E-09
630	572231.9	4149238	4.77E-08	4.11E-08	1.45E-10	8.89E-08	5.80E-08	5.56E-08	1.45E-10	1.14E-07	1.03E-08	1.01E-08	1.45E-10	2.06E-08	4.40E-09	4.51E-09	1.45E-10	9.05E-09
631	572235.8	4149246	5.5E-08	4.74E-08	1.68E-10	1.03E-07	6.69E-08	6.41E-08	1.68E-10	1.31E-07	1.19E-08	1.17E-08	1.68E-10	2.38E-08	5.07E-09	5.20E-09	1.68E-10	1.04E-08
632	572239.6	4149255	6.5E-08	5.6E-08	1.98E-10	1.21E-07	7.91E-08	7.58E-08	1.98E-10	1.55E-07	1.41E-08	1.38E-08	1.98E-10	2.81E-08	6.00E-09	6.14E-09	1.98E-10	1.23E-08
633	572243.4	4149263	7.75E-08	6.67E-08	2.36E-10	1.44E-07	9.43E-08	9.03E-08	2.36E-10	1.85E-07	1.68E-08	1.64E-08	2.36E-10	3.35E-08	7.15E-09	7.32E-09	2.36E-10	1.47E-08
634	572247.3	4149272	9.15E-08	7.88E-08	2.79E-10	1.71E-07	1.11E-07	1.07E-07	2.79E-10	2.18E-07	1.99E-08	1.94E-08	2.79E-10	3.95E-08	8.44E-09	8.65E-09	2.79E-10	1.74E-08
635	572251.1	4149280	1.06E-07	9.11E-08	3.22E-10	1.97E-07	1.29E-07	1.23E-07	3.22E-10	2.52E-07	2.29E-08	2.24E-08	3.22E-10	4.57E-08	9.75E-09	9.99E-09	3.22E-10	2.01E-08
636	572214.9	4149216	3.41E-08	2.93E-08	1.04E-10	6.35E-08	4.14E-08	3.97E-08	1.04E-10	8.13E-08	7.39E-09	7.22E-09	1.04E-10	1.47E-08	3.14E-09	3.22E-09	1.04E-10	6.47E-09
637	572214.6	4149207	3.41E-08	2.94E-08	1.04E-10	6.36E-08	4.15E-08	3.98E-08	1.04E-10	8.13E-08	7.40E-09	7.22E-09	1.04E-10	1.47E-08	3.14E-09	3.22E-09	1.04E-10	6.47E-09
638	572214.3	4149197	3.43E-08	2.96E-08	1.04E-10	6.40E-08	4.17E-08	4.00E-08	1.04E-10	8.19E-08	7.44E-09	7.27E-09	1.04E-10	1.48E-08	3.16E-09	3.24E-09	1.04E-10	6.51E-09
639	572215.2	4149225	3.45E-08	2.97E-08	1.05E-10	6.43E-08	4.20E-08	4.02E-08	1.05E-10	8.23E-08	7.48E-09	7.31E-09	1.05E-10	1.49E-08	3.18E-09	3.26E-09	1.05E-10	6.55E-09
640	572219	4149234	3.74E-08	3.23E-08	1.14E-10	6.98E-08	4.56E-08	4.37E-08	1.14E-10	8.93E-08	8.12E-09	7.93E-09	1.14E-10	1.62E-08	3.45E-09	3.54E-09	1.14E-10	7.11E-09
641	572222.8	4149242	4.17E-08	3.6E-08	1.27E-10	7.78E-08	5.08E-08	4.87E-08	1.27E-10	9.96E-08	9.05E-09	8.84E-09	1.27E-10	1.80E-08	3.85E-09	3.94E-09	1.27E-10	7.92E-09
642	572226.7	4149250	4.78E-08	4.12E-08	1.46E-10	8.92E-08	5.82E-08	5.58E-08	1.46E-10	1.14E-07	1.04E-08	1.01E-08	1.46E-10	2.07E-08	4.41E-09	4.52E-09	1.46E-10	9.08E-09
643	572230.5	4149259	5.6E-08	4.83E-08	1.71E-10	1.05E-07	6.82E-08	6.54E-08	1.71E-10	1.34E-07	1.22E-08	1.19E-08	1.71E-10	2.42E-08	5.17E-09	5.30E-09	1.71E-10	1.06E-08
644	572234.3	4149267	6.63E-08	5.72E-08	2.02E-10	1.24E-07	8.07E-08	7.74E-08	2.02E-10	1.58E-07	1.44E-08	1.41E-08	2.02E-10	2.87E-08	6.12E-09	6.27E-09	2.02E-10	1.26E-08
645	572238.2	4149276	7.8E-08	6.73E-08	2.38E-10	1.46E-07	9.50E-08	9.10E-08	2.38E-10	1.86E-07	1.69E-08	1.65E-08	2.38E-10	3.37E-08	7.20E-09	7.38E-09	2.38E-10	1.48E-08
646	572242	4149284	9.02E-08	7.77E-08	2.75E-10	1.68E-07	1.10E-07	1.05E-07	2.75E-10	2.15E-07	1.96E-08	1.91E-08	2.75E-10	3.90E-08	8.32E-09	8.53E-09	2.75E-10	1.71E-08
647	572205.8	4149220	3.01E-08	2.6E-08	9.18E-11	5.62E-08	3.67E-08	3.51E-08	9.18E-11	7.19E-08	6.54E-09	6.39E-09	9.18E-11	1.30E-08	2.78E-09	2.85E-09	9.18E-11	5.72E-09
648	572205.5	4149211	3E-08	2.59E-08	9.15E-11	5.60E-08	3.66E-08	3.50E-08	9.15E-11	7.17E-08	6.52E-09	6.37E-09	9.15E-11	1.30E-08	2.77E-09	2.84E-09	9.15E-11	5.70E-09
649	572205.2	4149202	3.02E-08	2.6E-08	9.20E-11	5.63E-08	3.68E-08	3.52E-08	9.20E-11	7.21E-08	6.56E-09	6.40E-09	9.20E-11	1.30E-08	2.79E-09	2.86E-09	9.20E-11	5.74E-09
650	572204.9	4149193	3.05E-08	2.62E-08	9.28E-11	5.68E-08	3.71E-08	3.55E-08	9.28E-11	7.27E-08	6.61E-09	6.46E-09	9.28E-11	1.32E-08	2.81E-09	2.88E-09	9.28E-11	5.78E-09
651	572206	4149229	3.06E-08	2.64E-08	9.32E-11	5.71E-08	3.73E-08	3.57E-08	9.32E-11	7.31E-08	6.64E-09	6.49E-09	9.32E-11	1.32E-08	2.82E-09	2.89E-09	9.32E-11	5.81E-09
652	572209.9	4149238	3.32E-08	2.86E-08	1.01E-10	6.19E-08	4.04E-08	3.87E-08	1.01E-10	7.92E-08	7.20E-09	7.04E-09	1.01E-10	1.43E-08	3.06E-09	3.14E-09	1.01E-10	6.30E-09
653	572213.7	4149246	3.69E-08	3.18E-08	1.12E-10	6.88E-08	4.49E-08	4.30E-08	1.12E-10	8.80E-08	8.00E-09	7.82E-09	1.12E-10	1.59E-08	3.40E-09	3.49E-09	1.12E-10	7.00E-09
654	572217.5	4149255	4.2E-08	3.62E-08	1.28E-10	7.83E-08	5.11E-08	4.90E-08	1.28E-10	1.00E-07	9.11E-09	8.90E-09	1.28E-10	1.81E-08	3.87E-09	3.97E-09	1.28E-10	7.97E-09
655	572221.4	4149263	4.88E-08	4.21E-08	1.49E-10	9.11E-08	5.94E-08	5.70E-08	1.49E-10	1.17E-07	1.06E-08	1.04E-08	1.49E-10	2.11E-08	4.51E-09	4.62E-09	1.49E-10	9.27E-09
656	572225.2	4149272	5.74E-08	4.95E-08	1.75E-10	1.07E-07	6.99E-08	6.69E-08	1.75E-10	1.37E-07	1.25E-08	1.22E-08	1.75E-10	2.48E-08	5.30E-09	5.43E-09	1.75E-10	1.09E-08
657	572229.1	4149280	6.73E-08	5.8E-08	2.05E-10	1.25E-07	8.18E-08	7.84E-08	2.05E-10	1.60E-07	1.46E-08	1.43E-08	2.05E-10	2.91E-08	6.20E-09	6.36E-09	2.05E-10	1.28E-08
658	572232.9	4149289	7.77E-08	6.69E-08	2.37E-10	1.45E-07	9.45E-08	9.06E-08	2.37E-10	1.85E-07	1.69E-08	1.65E-08	2.37E-10	3.35E-08	7.16E-09	7.34E-09	2.37E-10	1.47E-08
659	572196.7	4149224	2.69E-08	2.32E-08	8.19E-11	5.01E-08	3.27E-08	3.14E-08	8.19E-11	6.42E-08	5.84E-09	5.70E-09	8.19E-11	1.16E-08	2.48E-09	2.54E-09	8.19E-11	5.11E-09
660	572196.1	4149206	2.68E-08	2.31E-08	8.16E-11	5.00E-08	3.26E-08	3.13E-08	8.16E-11	6.40E-08	5.82E-09	5.68E-09	8.16E-11	1.16E-08	2.47E-09	2.53E-09	8.16E-11	5.09E-09
661	572195.8	4149197	2.7E-08	2.33E-08	8.22E-11	5.03E-08	3.28E-08	3.15E-08	8.22E-11	6.44E-08	5.86E-09	5.72E-09	8.22E-11	1.17E-08	2.49E-09	2.55E-09	8.22E-11	5.12E-09
662	572196.9	4149233	2.74E-08	2.36E-08	8.35E-11	5.11E-08	3.33E-08	3.20E-08	8.35E-11	6.54E-08	5.95E-09	5.81E-09	8.35E-11	1.18E-08	2.53E-09	2.59E-09	8.35E-11	5.20E-09
663	572200.8	4149242	2.97E-08	2.56E-08	9.04E-11	5.53E-08	3.61E-08	3.46E-08	9.04E-11	7.08E-08	6.44E-09	6.29E-09	9.04E-11	1.28E-08	2.74E-09	2.81E-09	9.04E-11	5.63E-09
664	572204.6	4149250	3.29E-08	2.83E-08	1.00E-10	6.13E-08	4.00E-08	3.83E-08	1.00E-10	7.84E-08	7.13E-09	6.96E-09	1.00E-10	1.42E-08	3.03E-09	3.11E-09	1.00E-10	6.24E-09
665	572208.4	4149259	3.72E-08	3.21E-08	1.13E-10	6.94E-08	4.53E-08	4.34E-08	1.13E-10	8.88E-08	8.07E-09	7.88E-09	1.13E-10	1.61E-08	3.43E-09	3.52E-09	1.13E-10	7.06E-09
666	572212.3	4149267	4.3E-08	3.7E-08	1.31E-10	8.01E-08	5.23E-08	5.01E-08	1.31E-10	1.03E-07	9.32E-09	9.11E-09	1.31E-10	1.86E-08	3.96E-09	4.06E-09	1.31E-10	8.16E-09
667	572216.1	4149276	5.01E-08	4.32E-08	1.53E-10	9.35E-08	6.10E-08	5.85E-08	1.53E-10	1.20E-07	1.09E-08	1.06E-08	1.53E-10	2.17E-08	4.63E-09	4.74E-09	1.53E-10	9.52E-09
668	572219.9	4149284	5.85E-08	5.04E-08	1.78E-10	1.09E-07	7.12E-08	6.82E-08	1.78E-10	1.40E-07	1.27E-08	1.24E-08	1.78E-10	2.53E-08	5.40E-09	5.53E-09	1.78E-10	1.11E-08
669	572223.8	4149293	6.74E-08	5.81E-08	2.05E-10	1.26E-07	8.20E-08	7.86E-08	2.05E-10	1.61E-07	1.46E-08	1.43E-08	2.05E-10	2.91E-08	6.22E-09	6.37E-09	2.05E-10	1.28E-08
670	572187	4149211	2.39E-08	2.06E-08	7.29E-11	4.47E-08	2.91E-08	2.79E-08	7.29E-11	5.71E-08	5.20E-09	5.08E-09	7.29E-11	1.03E-08	2.21E-09	2.26E-09	7.29E-11	4.55E-09
671	572207	4149280	4.42E-08	3.81E-08	1.35E-10	8.24E-08	5.38E-08	5.15E-08	1.35E-10	1.05E-07	9.59E-09	9.36E-09	1.35E-10	1.91E-08	4.08E-09	4.18E-09	1.35E-10	8.39E-09
672	572210.8	4149288	5.13E-08	4.42E-08	1.56E-10	9.56E-08	6.24E-08	5.98E-08	1.56E-10	1.22E-07	1.11E-08	1.09E-08	1.56E-10	2.21E-08	4.73E-09	4.85E-09	1.56E-10	9.73E-09
673	572214.7	4149297	5.9E-08	5.08E-08	1.80E-10	1.10E-07	7.18E-08	6.88E-08	1.80E-10	1.41E-07	1.28E-08	1.25E-08	1.80E-10	2.55E-08	5.44E-09	5.58E-09	1.80E-10	1.12E-08
674	572197.9	4149284	3.92E-08	3.38E-08	1.19E-10	7.31E-08	4.77E-08	4.57E-08	1.19E-10	9.36E-08	8.51E-09	8.31E-09	1.19E-10	1.69E-08	3.62E-09	3.71E-09	1.19E-10	7.44E-09
675	572201.7	4149292	4.53E-08	3.9E-08	1.38E-10	8.45E-08	5.51E-08	5.28E-08	1.38E-10	1.08E-07	9.83E-09	9.60E-09	1.38E-10	1.96E-08	4.18E-09	4.28E-09	1.38E-10	8.60E-09
676	572205.6	4149301	5.2E-08	4.48E-08	1.58E-10	9.69E-08	6.32E-08	6.06E-08	1.58E-10	1.24E-07	1.13E-08	1.10E-08	1.58E-10	2.24E-08	4.79E-09	4.91E-09	1.58E-10	9.86E-09
677	572188.8	4149288	3.5E-08	3.02E-08	1.07E-10	6.53E-08	4.26E-08	4.09E-08	1.07E-10	8.36E-08	7.60E-09	7.43E-09	1.07E-10	1.51E-08	3.23E-09	3.31E-09	1.07E-10	6.65E-09
678	572192.6	4149297	4.03E-08	3.47E-08	1.23E-10	7.51E-08	4.90E-08	4.70E-08	1.23E-10	9.61E-08	8.74E-09	8.54E-09	1.23E-10	1.74E-08	3.72E-09	3.81E-09	1.23E-10	7.65E-09
679	572196.4	4149305	4.61E-08	3.97E-08	1.40E-10	8.59E-08	5.61E-08	5.37E-08	1.40E-10	1.10E-07	1.00E-08	9.76E-09	1.40E-10	1.99E-08	4.25E-09	4.36E-09	1.40E-10	8.75E-09
680	572244.7	4149018	4.45E-08	3.84E-08	1.36E-10	8.30E-08	5.42E-08	5.19E-08	1.36E-10	1.06E-07	9.66E-09	9.43E-09	1.36E-10	1.92E-08	4.11E-09	4.21E-09	1.36E-10	8.45E-09
681	572179.7	4149292	3.15E-08	2.71E-08	9.60E-11	5.87E-08	3.83E-08	3.67E-08	9.60E-11	7.52E-08	6.84E-09	6.68E-09	9.60E-11	1.36E-08	2.91E-09	2.98E-09	9.60E-11	5.98E-09
682	572183.5	4149301	3.6E-08	3.11E-08	1.10E-10	6.72E-08	4.39E-08	4.20E-08	1.10E-10	8.60E-08	7.82E-09	7.64E-09	1.10E-10	1.56E-08	3.33E-09	3.41E-09	1.10E-10	6.84E-09
683	572187.3	4149309	4.11E-08	3.54E-08	1.25E-10	7.66E-08	5.00E-08	4.79E-08	1.25E-10	9.81E-08	8.92E-09	8.71E-09	1.25E-10	1.78E-08	3.79E-09	3.89E-09	1.25E-10	7.80E-09
684	572228.2	4149022	3.6E-08	3.1E-08	1.10E-10	6.72E-08	4.38E-08	4.20E-08	1.10E-10	8.59E-08	7.82E-09	7.63E-09	1.10E-10	1.56E-08	3.32E-09	3.41E-09	1.10E-10	6.84E-09
685	572234.4	4149015	3.85E-08	3.32E-08	1.17E-10	7.18E-08	4.69E-08	4.49E-08	1.17E-10	9.19E-08	8.36E-09	8.16E-09	1.17E-10	1.66E-08	3.55E-09	3.64E-09	1.17E-10	7.31E-09
686	572240.7	4149009	4.11E-08	3.54E-08	1.25E-10	7.66E-08	5.00E-08	4.79E-08	1.25E-10	9.80E-08	8.91E-09	8.70E-09	1.25E-10	1.77E-08	3.79E-09	3.88E-09	1.25E-10	7.79E-09
687	572170.6	4149296	2.85E-08	2.45E-08	8.67E-11	5.31E-08	3.47E-08	3.32E-08	8.67E-11	6.80E-08	6.18E-09	6.04E-09	8.67E-11	1.23E-08	2.63E-09	2.69E-09	8.67E-11	5.41E-09
688	572174.4	4149305	3.24E-08	2.8E-08	9.88E-11	6.05E-08	3.95E-08	3.78E-08	9.88E-11	7.74E-08	7.04E-09	6.88E-09	9.88E-11	1.40E-08	2.99E-09	3.07E-09	9.88E-11	6.16E-09
689	572178.2	4149313	3.69E-08	3.18E-08	1.12E-10	6.87E-08	4.49E-08	4.30E-08	1.12E-10	8.80E-08	8.00E-09	7.81E-09	1.12E-10	1.59E-08	3.40E-09	3.49E-09	1.12E-10	7.00E-09
690	572205.7	4149032	2.75E-08	2.37E-08	8.37E-11	5.12E-08	3.34E-08	3.20E-08	8.37E-11	6.56E-08	5.96E-09	5.82E-09	8.37E-11	1.19E-08	2.53E-09	2.60E-09	8.37E-11	5.22E-09
691	572211.9	4149026	2.94E-08	2.53E-08	8.95E-11	5.48E-08	3.58E-08	3.43E-08	8.95E-11	7.01E-08	6.38E-09	6.23E-09	8.95E-11	1.27E-08	2.71E-09	2.78E-09	8.95E-11	5.58E-09
692	572224.3	4149013	3.35E-08	2.89E-08	1.02E-10	6.25E-08	4.08E-08	3.91E-08	1.02E-10	8.00E-08	7.28E-09	7.11E-09	1.02E-10	1.45E-08	3.09E-09	3.17E-09	1.02E-10	6.37E-09
693	572230.5	4149006	3.57E-08	3.08E-08	1.09E-10	6.66E-08	4.35E-08	4.17E-08	1.09E-10	8.52E-08	7.75E-09	7.57E-09	1.09E-10	1.54E-08	3.30E-09	3.38E-09	1.09E-10	6.78E-09
694	572161.4	4149300	2.59E-08	2.23E-08	7.88E-11	4.82E-08	3.15E-08	3.02E-08	7.88E-11	6.17E-08	5.61E-09	5.48E-09	7.88E-11	1.12E-08	2.39E-09	2.45E-09	7.88E-11	4.91E-09
695	572165.3	4149309	2.93E-08	2.53E-08	8.94E-11	5.47E-08	3.57E-08	3.42E-08	8.94E-11	7.00E-08	6.37E-09	6.22E-09	8.94E-11	1.27E-08	2.71E-09	2.77E-09	8.94E-11	5.57E-09
696	572169.1	4149317	3.32E-08	2.86E-08	1.01E-10	6.20E-08	4.05E-08	3.88E-08	1.01E-10	7.93E-08	7.21E-09	7.04E-09	1.01E-10	1.44E-08	3.07E-09	3.14E-09	1.01E-10	6.31E-09
697	572195.8	4149029	2.43E-08	2.09E-08	7.39E-11	4.53E-08	2.95E-08	2.83E-08	7.39E-11	5.79E-08	5.27E-09	5.15E-09	7.39E-11	1.05E-08	2.24E-09	2.30E-09	7.39E-11	4.61E-09
698	572208.1	4149016	2.76E-08	2.38E-08	8.41E-11	5.15E-08	3.36E-08	3.22E-08	8.41E-11	6.59E-08	5.99E-09	5.85E-09	8.41E-11	1.19E-08	2.55E-09	2.61E-09	8.41E-11	5.24E-09
699	572220.4	4149003	3.13E-08	2.69E-08	9.52E-11	5.83E-08	3.81E-08	3.65E-08	9.52E-11	7.46E-08	6.79E-09	6.63E-09	9.52E-11	1.35E-08	2.88E-09	2.96E-09	9.52E-11	5.94E-09
700	572148.5	4149296	2.1E-08	1.81E-08	6.40E-11	3.92E-08	2.56E-08	2.45E-08	6.40E-11	5.01E-08	4.56E-09	4.45E-09	6.40E-11	9.08E-09	1.94E-09	1.99E-09	6.40E-11	3.99E-09
701	572152.3	4149305	2.36E-08	2.03E-08	7.19E-11	4.40E-08	2.87E-08	2.75E-08	7.19E-11	5.63E-08	5.12E-09	5.00E-09	7.19E-11	1.02E-08	2.18E-09	2.23E-09	7.19E-11	4.48E-09
702	572156.2	4149313	2.67E-08	2.3E-08	8.12E-11	4.97E-08	3.25E-08	3.11E-08	8.12E-11	6.36E-08	5.79E-09	5.65E-09	8.12E-11	1.15E-08	2.46E-09	2.52E-09	8.12E-11	5.06E-09
703	572160	4149321	3.01E-08	2.59E-08	9.17E-11	5.62E-08	3.66E-08	3.51E-08	9.17E-11	7.19E-08	6.53E-09	6.38E-09	9.17E-11	1.30E-08	2.78E-09	2.85E-09	9.17E-11	5.72E-09
704	572173.7	4149039	1.9E-08	1.64E-08	5.79E-11	3.54E-08	2.31E-08	2.22E-08	5.79E-11	4.53E-08	4.12E-09	4.03E-09	5.79E-11	8.21E-09	1.75E-09	1.80E-09	5.79E-11	3.61E-09
705	572185.9	4149026	2.16E-08	1.86E-08	6.58E-11	4.03E-08	2.63E-08	2.52E-08	6.58E-11	5.16E-08	4.69E-09	4.58E-09	6.58E-11	9.33E-09	1.99E-09	2.04E-09	6.58E-11	4.10E-09
706	572198.1	4149014	2.44E-08	2.11E-08	7.44E-11	4.56E-08	2.97E-08	2.85E-08	7.44E-11	5.83E-08	5.30E-09	5.18E-09	7.44E-11	1.06E-08	2.25E-09	2.31E-09	7.44E-11	4.64E-09
707	572210.3	4149001	2.75E-08	2.37E-08	8.39E-11	5.13E-08	3.35E-08	3.21E-08	8.39E-11	6.57E-08	5.98E-09	5.84E-09	8.39E-11	1.19E-08	2.54E-09	2.60E-09	8.39E-11	5.23E-09
708	572222.5	4148988	3.09E-08	2.67E-08	9.42E-11	5.77E-08	3.76E-08	3.61E-08	9.42E-11	7.38E-08	6.71E-09	6.56E-09	9.42E-11	1.34E-08	2.85E-09	2.92E-09	9.42E-11	5.87E-09
709	572147.1	4149317	2.43E-08	2.1E-08	7.41E-11	4.54E-08	2.96E-08	2.84E-08	7.41E-11	5.81E-08	5.28E-09	5.16E-09	7.41E-11	1.05E-08	2.25E-09	2.30E-09	7.41E-11	4.62E-09
710	572154.1	4149047	1.55E-08	1.33E-08	4.71E-11	2.88E-08	1.88E-08	1.80E-08	4.71E-11	3.69E-08	3.35E-09	3.27E-09	4.71E-11	6.68E-09	1.43E-09	1.46E-09	4.71E-11	2.93E-09
711	572160.5	4149040	1.65E-08	1.42E-08	5.02E-11	3.07E-08	2.01E-08	1.92E-08	5.02E-11	3.93E-08	3.58E-09	3.49E-09	5.02E-11	7.12E-09	1.52E-09	1.56E-09	5.02E-11	3.13E-09
712	572166.9	4149033	1.76E-08	1.52E-08	5.36E-11	3.28E-08	2.14E-08	2.05E-08	5.36E-11	4.20E-08	3.82E-09	3.73E-09	5.36E-11	7.60E-09	1.62E-09	1.66E-09	5.36E-11	3.34E-09
713	572173.2	4149026	1.88E-08	1.62E-08	5.72E-11	3.50E-08	2.29E-08	2.19E-08	5.72E-11	4.48E-08	4.08E-09	3.98E-09	5.72E-11	8.11E-09	1.73E-09	1.78E-09	5.72E-11	3.57E-09
714	572179.6	4149020	2E-08	1.73E-08	6.10E-11	3.73E-08	2.44E-08	2.34E-08	6.10E-11	4.78E-08	4.35E-09	4.24E-09	6.10E-11	8.65E-09	1.85E-09	1.89E-09	6.10E-11	3.80E-09
715	572186	4149013	2.13E-08	1.84E-08	6.49E-11	3.97E-08	2.59E-08	2.49E-08	6.49E-11	5.09E-08	4.63E-09	4.52E-09	6.49E-11	9.21E-09	1.97E-09	2.02E-09	6.49E-11	4.05E-09
716	572192.4	4149006	2.26E-08	1.95E-08	6.90E-11	4.22E-08	2.76E-08	2.64E-08	6.90E-11	5.40E-08	4.91E-09	4.80E-09	6.90E-11	9.78E-09	2.09E-09	2.14E-09	6.90E-11	4.30E-09
717	572198.8	4148999	2.41E-08	2.07E-08	7.33E-11	4.49E-08	2.93E-08	2.81E-08	7.33E-11	5.74E-08	5.22E-09	5.10E-09	7.33E-11	1.04E-08	2.22E-09	2.27E-09	7.33E-11	4.57E-09
718	572205.1	4148993	2.55E-08	2.2E-08	7.78E-11	4.76E-08	3.11E-08	2.98E-08	7.78E-11	6.09E-08	5.54E-09	5.41E-09	7.78E-11	1.10E-08	2.36E-09	2.41E-09	7.78E-11	4.85E-09

719	572211.5	4148986	2.71E-08	2.33E-08	8.25E-11	5.05E-08	3.30E-08	3.16E-08	8.25E-11	6.46E-08	5.88E-09	5.74E-09	8.25E-11	1.17E-08	2.50E-09	2.56E-09	8.25E-11	5.14E-09
720	572217.9	4148979	2.87E-08	2.48E-08	8.75E-11	5.36E-08	3.50E-08	3.35E-08	8.75E-11	6.86E-08	6.24E-09	6.09E-09	8.75E-11	1.24E-08	2.65E-09	2.72E-09	8.75E-11	5.45E-09
721	572224.3	4148972	3.04E-08	2.62E-08	9.26E-11	5.67E-08	3.70E-08	3.54E-08	9.26E-11	7.25E-08	6.60E-09	6.44E-09	9.26E-11	1.31E-08	2.80E-09	2.87E-09	9.26E-11	5.77E-09
722	572138	4149050	1.32E-08	1.14E-08	4.03E-11	2.46E-08	1.61E-08	1.54E-08	4.03E-11	3.15E-08	2.87E-09	2.80E-09	4.03E-11	5.71E-09	1.22E-09	1.25E-09	4.03E-11	2.51E-09
723	572144.4	4149044	1.4E-08	1.21E-08	4.27E-11	2.61E-08	1.71E-08	1.63E-08	4.27E-11	3.35E-08	3.04E-09	2.97E-09	4.27E-11	6.06E-09	1.29E-09	1.33E-09	4.27E-11	2.66E-09
724	572150.7	4149037	1.49E-08	1.28E-08	4.54E-11	2.78E-08	1.81E-08	1.74E-08	4.54E-11	3.56E-08	3.23E-09	3.16E-09	4.54E-11	6.44E-09	1.37E-09	1.41E-09	4.54E-11	2.83E-09
725	572157	4149030	1.59E-08	1.37E-08	4.83E-11	2.96E-08	1.93E-08	1.85E-08	4.83E-11	3.78E-08	3.44E-09	3.36E-09	4.83E-11	6.85E-09	1.46E-09	1.50E-09	4.83E-11	3.01E-09
726	572163.3	4149023	1.69E-08	1.45E-08	5.14E-11	3.15E-08	2.05E-08	1.97E-08	5.14E-11	4.03E-08	3.66E-09	3.58E-09	5.14E-11	7.29E-09	1.56E-09	1.60E-09	5.14E-11	3.21E-09
727	572169.7	4149017	1.8E-08	1.55E-08	5.47E-11	3.35E-08	2.19E-08	2.09E-08	5.47E-11	4.29E-08	3.90E-09	3.81E-09	5.47E-11	7.76E-09	1.66E-09	1.70E-09	5.47E-11	3.41E-09
728	572176	4149010	1.91E-08	1.64E-08	5.81E-11	3.56E-08	2.32E-08	2.22E-08	5.81E-11	4.55E-08	4.14E-09	4.04E-09	5.81E-11	8.24E-09	1.76E-09	1.80E-09	5.81E-11	3.62E-09
729	572182.3	4149003	2.02E-08	1.74E-08	6.16E-11	3.77E-08	2.46E-08	2.36E-08	6.16E-11	4.83E-08	4.39E-09	4.29E-09	6.16E-11	8.74E-09	1.87E-09	1.91E-09	6.16E-11	3.84E-09
730	572188.6	4148997	2.14E-08	1.85E-08	6.53E-11	4.00E-08	2.61E-08	2.50E-08	6.53E-11	5.11E-08	4.65E-09	4.54E-09	6.53E-11	9.26E-09	1.98E-09	2.03E-09	6.53E-11	4.07E-09
731	572194.9	4148990	2.27E-08	1.96E-08	6.91E-11	4.23E-08	2.76E-08	2.65E-08	6.91E-11	5.42E-08	4.93E-09	4.81E-09	6.91E-11	9.81E-09	2.09E-09	2.15E-09	6.91E-11	4.31E-09
732	572201.3	4148983	2.4E-08	2.07E-08	7.32E-11	4.48E-08	2.93E-08	2.80E-08	7.32E-11	5.74E-08	5.22E-09	5.10E-09	7.32E-11	1.04E-08	2.22E-09	2.27E-09	7.32E-11	4.57E-09
733	572207.6	4148977	2.55E-08	2.19E-08	7.75E-11	4.75E-08	3.10E-08	2.97E-08	7.75E-11	6.08E-08	5.52E-09	5.40E-09	7.75E-11	1.10E-08	2.35E-09	2.41E-09	7.75E-11	4.83E-09
734	572213.9	4148970	2.69E-08	2.32E-08	8.20E-11	5.02E-08	3.28E-08	3.14E-08	8.20E-11	6.42E-08	5.84E-09	5.70E-09	8.20E-11	1.16E-08	2.48E-09	2.54E-09	8.20E-11	5.11E-09
735	572220.2	4148963	2.84E-08	2.45E-08	8.65E-11	5.30E-08	3.46E-08	3.31E-08	8.65E-11	6.78E-08	6.16E-09	6.02E-09	8.65E-11	1.23E-08	2.62E-09	2.68E-09	8.65E-11	5.39E-09
736	572115.9	4149060	1.09E-08	9.42E-09	3.33E-11	2.04E-08	1.33E-08	1.27E-08	3.33E-11	2.61E-08	2.37E-09	2.32E-09	3.33E-11	4.72E-09	1.01E-09	1.03E-09	3.33E-11	2.08E-09
737	572122.1	4149054	1.15E-08	9.9E-09	3.50E-11	2.14E-08	1.40E-08	1.34E-08	3.50E-11	2.74E-08	2.49E-09	2.43E-09	3.50E-11	4.96E-09	1.06E-09	1.09E-09	3.50E-11	2.18E-09
738	572128.4	4149047	1.21E-08	1.04E-08	3.69E-11	2.26E-08	1.47E-08	1.41E-08	3.69E-11	2.89E-08	2.63E-09	2.57E-09	3.69E-11	5.23E-09	1.12E-09	1.14E-09	3.69E-11	2.30E-09
739	572134.7	4149040	1.28E-08	1.1E-08	3.89E-11	2.38E-08	1.56E-08	1.49E-08	3.89E-11	3.05E-08	2.78E-09	2.71E-09	3.89E-11	5.52E-09	1.18E-09	1.21E-09	3.89E-11	2.43E-09
740	572140.9	4149034	1.35E-08	1.17E-08	4.13E-11	2.53E-08	1.65E-08	1.58E-08	4.13E-11	3.23E-08	2.94E-09	2.87E-09	4.13E-11	5.85E-09	1.25E-09	1.28E-09	4.13E-11	2.57E-09
741	572147.2	4149027	1.44E-08	1.24E-08	4.38E-11	2.68E-08	1.75E-08	1.68E-08	4.38E-11	3.43E-08	3.12E-09	3.05E-09	4.38E-11	6.21E-09	1.33E-09	1.36E-09	4.38E-11	2.73E-09
742	572153.5	4149020	1.53E-08	1.31E-08	4.65E-11	2.84E-08	1.86E-08	1.78E-08	4.65E-11	3.64E-08	3.31E-09	3.23E-09	4.65E-11	6.59E-09	1.41E-09	1.44E-09	4.65E-11	2.90E-09
743	572159.8	4149014	1.62E-08	1.4E-08	4.93E-11	3.02E-08	1.97E-08	1.89E-08	4.93E-11	3.86E-08	3.51E-09	3.43E-09	4.93E-11	6.99E-09	1.49E-09	1.53E-09	4.93E-11	3.07E-09
744	572166	4149007	1.72E-08	1.48E-08	5.23E-11	3.20E-08	2.09E-08	2.00E-08	5.23E-11	4.10E-08	3.72E-09	3.64E-09	5.23E-11	7.41E-09	1.58E-09	1.62E-09	5.23E-11	3.26E-09
745	572172.3	4149000	1.82E-08	1.57E-08	5.53E-11	3.39E-08	2.21E-08	2.12E-08	5.53E-11	4.34E-08	3.94E-09	3.85E-09	5.53E-11	7.85E-09	1.68E-09	1.72E-09	5.53E-11	3.45E-09
746	572178.6	4148994	1.92E-08	1.66E-08	5.85E-11	3.58E-08	2.34E-08	2.24E-08	5.85E-11	4.58E-08	4.17E-09	4.07E-09	5.85E-11	8.30E-09	1.77E-09	1.82E-09	5.85E-11	3.65E-09
747	572184.8	4148987	2.03E-08	1.75E-08	6.18E-11	3.79E-08	2.47E-08	2.37E-08	6.18E-11	4.84E-08	4.41E-09	4.30E-09	6.18E-11	8.77E-09	1.87E-09	1.92E-09	6.18E-11	3.85E-09
748	572191.1	4148981	2.15E-08	1.85E-08	6.54E-11	4.00E-08	2.61E-08	2.50E-08	6.54E-11	5.12E-08	4.66E-09	4.55E-09	6.54E-11	9.27E-09	1.98E-09	2.03E-09	6.54E-11	4.07E-09
749	572197.4	4148974	2.27E-08	1.96E-08	6.91E-11	4.23E-08	2.76E-08	2.65E-08	6.91E-11	5.41E-08	4.92E-09	4.81E-09	6.91E-11	9.80E-09	2.09E-09	2.15E-09	6.91E-11	4.31E-09
750	572203.7	4148967	2.4E-08	2.06E-08	7.30E-11	4.47E-08	2.92E-08	2.79E-08	7.30E-11	5.72E-08	5.20E-09	5.08E-09	7.30E-11	1.04E-08	2.21E-09	2.27E-09	7.30E-11	4.55E-09
751	572209.9	4148961	2.53E-08	2.18E-08	7.70E-11	4.71E-08	3.08E-08	2.95E-08	7.70E-11	6.03E-08	5.48E-09	5.36E-09	7.70E-11	1.09E-08	2.33E-09	2.39E-09	7.70E-11	4.80E-09
752	572216.2	4148954	2.66E-08	2.29E-08	8.10E-11	4.96E-08	3.24E-08	3.10E-08	8.10E-11	6.35E-08	5.77E-09	5.64E-09	8.10E-11	1.15E-08	2.45E-09	2.51E-09	8.10E-11	5.05E-09
753	572106.3	4149057	1.01E-08	8.72E-09	3.08E-11	1.89E-08	1.23E-08	1.18E-08	3.08E-11	2.41E-08	2.19E-09	2.14E-09	3.08E-11	4.37E-09	9.33E-10	9.56E-10	3.08E-11	1.92E-09
754	572112.5	4149050	1.06E-08	9.13E-09	3.23E-11	1.98E-08	1.29E-08	1.24E-08	3.23E-11	2.53E-08	2.30E-09	2.25E-09	3.23E-11	4.58E-09	9.78E-10	1.00E-09	3.23E-11	2.01E-09
755	572125	4149037	1.17E-08	1.01E-08	3.57E-11	2.19E-08	1.43E-08	1.37E-08	3.57E-11	2.80E-08	2.54E-09	2.48E-09	3.57E-11	5.06E-09	1.08E-09	1.11E-09	3.57E-11	2.22E-09
756	572131.2	4149031	1.24E-08	1.07E-08	3.77E-11	2.31E-08	1.51E-08	1.44E-08	3.77E-11	2.95E-08	2.69E-09	2.62E-09	3.77E-11	5.35E-09	1.14E-09	1.17E-09	3.77E-11	2.35E-09
757	572143.7	4149017	1.39E-08	1.19E-08	4.22E-11	2.58E-08	1.69E-08	1.62E-08	4.22E-11	3.31E-08	3.01E-09	2.94E-09	4.22E-11	5.99E-09	1.28E-09	1.31E-09	4.22E-11	2.63E-09
758	572156.1	4149004	1.55E-08	1.34E-08	4.73E-11	2.90E-08	1.89E-08	1.81E-08	4.73E-11	3.71E-08	3.37E-09	3.29E-09	4.73E-11	6.71E-09	1.43E-09	1.47E-09	4.73E-11	2.95E-09
759	572162.4	4148998	1.64E-08	1.41E-08	5.00E-11	3.06E-08	2.00E-08	1.91E-08	5.00E-11	3.92E-08	3.56E-09	3.48E-09	5.00E-11	7.09E-09	1.51E-09	1.55E-09	5.00E-11	3.12E-09
760	572174.8	4148984	1.83E-08	1.57E-08	5.56E-11	3.41E-08	2.22E-08	2.13E-08	5.56E-11	4.36E-08	3.96E-09	3.87E-09	5.56E-11	7.89E-09	1.68E-09	1.73E-09	5.56E-11	3.47E-09
761	572181	4148978	1.93E-08	1.66E-08	5.87E-11	3.59E-08	2.34E-08	2.25E-08	5.87E-11	4.60E-08	4.18E-09	4.08E-09	5.87E-11	8.32E-09	1.78E-09	1.82E-09	5.87E-11	3.66E-09
762	572193.5	4148965	2.14E-08	1.85E-08	6.53E-11	4.00E-08	2.61E-08	2.50E-08	6.53E-11	5.12E-08	4.65E-09	4.54E-09	6.53E-11	9.26E-09	1.98E-09	2.03E-09	6.53E-11	4.07E-09
763	572205.9	4148951	2.38E-08	2.05E-08	7.24E-11	4.43E-08	2.89E-08	2.77E-08	7.24E-11	5.67E-08	5.16E-09	5.04E-09	7.24E-11	1.03E-08	2.19E-09	2.25E-09	7.24E-11	4.51E-09
764	572090.6	4149060	8.99E-09	7.75E-09	2.74E-11	1.68E-08	1.09E-08	1.05E-08	2.74E-11	2.15E-08	1.95E-09	1.91E-09	2.74E-11	3.88E-09	8.30E-10	8.50E-10	2.74E-11	1.71E-09
765	572103	4149047	9.81E-09	8.45E-09	2.99E-11	1.83E-08	1.19E-08	1.14E-08	2.99E-11	2.34E-08	2.13E-09	2.08E-09	2.99E-11	4.24E-09	9.05E-10	9.27E-10	2.99E-11	1.86E-09
766	572115.4	4149034	1.08E-08	9.29E-09	3.28E-11	2.01E-08	1.31E-08	1.26E-08	3.28E-11	2.57E-08	2.34E-09	2.28E-09	3.28E-11	4.66E-09	9.94E-10	1.02E-09	3.28E-11	2.05E-09
767	572121.5	4149027	1.13E-08	9.78E-09	3.46E-11	2.12E-08	1.38E-08	1.32E-08	3.46E-11	2.71E-08	2.46E-09	2.40E-09	3.46E-11	4.90E-09	1.05E-09	1.07E-09	3.46E-11	2.15E-09
768	572133.9	4149014	1.26E-08	1.09E-08	3.85E-11	2.36E-08	1.54E-08	1.48E-08	3.85E-11	3.02E-08	2.74E-09	2.68E-09	3.85E-11	5.46E-09	1.17E-09	1.20E-09	3.85E-11	2.40E-09
769	572146.3	4149001	1.41E-08	1.22E-08	4.30E-11	2.63E-08	1.72E-08	1.65E-08	4.30E-11	3.37E-08	3.06E-09	2.99E-09	4.30E-11	6.10E-09	1.30E-09	1.34E-09	4.30E-11	2.68E-09
770	572152.5	4148995	1.49E-08	1.28E-08	4.54E-11	2.78E-08	1.81E-08	1.74E-08	4.54E-11	3.55E-08	3.23E-09	3.16E-09	4.54E-11	6.43E-09	1.37E-09	1.41E-09	4.54E-11	2.83E-09
771	572164.8	4148981	1.65E-08	1.42E-08	5.03E-11	3.08E-08	2.01E-08	1.93E-08	5.03E-11	3.94E-08	3.58E-09	3.50E-09	5.03E-11	7.13E-09	1.52E-09	1.56E-09	5.03E-11	3.13E-09
772	572177.2	4148968	1.83E-08	1.58E-08	5.57E-11	3.41E-08	2.23E-08	2.13E-08	5.57E-11	4.37E-08	3.97E-09	3.88E-09	5.57E-11	7.90E-09	1.69E-09	1.73E-09	5.57E-11	3.47E-09
773	572183.4	4148962	1.93E-08	1.66E-08	5.87E-11	3.59E-08	2.34E-08	2.25E-08	5.87E-11	4.60E-08	4.18E-09	4.08E-09	5.87E-11	8.32E-09	1.78E-09	1.82E-09	5.87E-11	3.66E-09
774	572195.8	4148949	2.13E-08	1.84E-08	6.50E-11	3.98E-08	2.60E-08	2.49E-08	6.50E-11	5.09E-08	4.63E-09	4.52E-09	6.50E-11	9.21E-09	1.97E-09	2.02E-09	6.50E-11	4.05E-09
775	572068.9	4149070	7.77E-09	6.7E-09	2.37E-11	1.45E-08	9.46E-09	9.06E-09	2.37E-11	1.85E-08	1.69E-09	1.65E-09	2.37E-11	3.36E-09	7.17E-10	7.35E-10	2.37E-11	1.48E-09
776	572081.2	4149057	8.38E-09	7.22E-09	2.55E-11	1.56E-08	1.02E-08	9.77E-09	2.55E-11	2.00E-08	1.82E-09	1.78E-09	2.55E-11	3.62E-09	7.73E-10	7.92E-10	2.55E-11	1.59E-09
777	572093.4	4149044	9.1E-09	7.84E-09	2.77E-11	1.70E-08	1.11E-08	1.06E-08	2.77E-11	2.17E-08	1.97E-09	1.93E-09	2.77E-11	3.93E-09	8.40E-10	8.60E-10	2.77E-11	1.73E-09
778	572105.7	4149031	9.95E-09	8.57E-09	3.03E-11	1.85E-08	1.21E-08	1.16E-08	3.03E-11	2.37E-08	2.16E-09	2.11E-09	3.03E-11	4.30E-09	9.18E-10	9.40E-10	3.03E-11	1.89E-09
779	572111.9	4149024	1.04E-08	9E-09	3.18E-11	1.95E-08	1.27E-08	1.22E-08	3.18E-11	2.49E-08	2.27E-09	2.21E-09	3.18E-11	4.51E-09	9.64E-10	9.87E-10	3.18E-11	1.98E-09
780	572124.2	4149011	1.16E-08	9.99E-09	3.53E-11	2.16E-08	1.41E-08	1.35E-08	3.53E-11	2.77E-08	2.52E-09	2.46E-09	3.53E-11	5.01E-09	1.07E-09	1.10E-09	3.53E-11	2.20E-09
781	572136.5	4148998	1.29E-08	1.11E-08	3.93E-11	2.40E-08	1.57E-08	1.50E-08	3.93E-11	3.08E-08	2.80E-09	2.73E-09	3.93E-11	5.57E-09	1.19E-09	1.22E-09	3.93E-11	2.45E-09
782	572148.8	4148985	1.43E-08	1.23E-08	4.35E-11	2.66E-08	1.74E-08	1.67E-08	4.35E-11	3.41E-08	3.10E-09	3.03E-09	4.35E-11	6.17E-09	1.32E-09	1.35E-09	4.35E-11	2.71E-09
783	572161.1	4148972	1.58E-08	1.36E-08	4.80E-11	2.94E-08	1.92E-08	1.84E-08	4.80E-11	3.76E-08	3.42E-09	3.34E-09	4.80E-11	6.80E-09	1.45E-09	1.49E-09	4.80E-11	2.99E-09
784	572173.4	4148959	1.74E-08	1.5E-08	5.30E-11	3.24E-08	2.12E-08	2.03E-08	5.30E-11	4.15E-08	3.77E-09	3.69E-09	5.30E-11	7.51E-09	1.60E-09	1.64E-09	5.30E-11	3.30E-09
785	572059.7	4149066	7.3E-09	6.29E-09	2.22E-11	1.36E-08	8.88E-09	8.51E-09	2.22E-11	1.74E-08	1.58E-09	1.55E-09	2.22E-11	3.15E-09	6.73E-10	6.90E-10	2.22E-11	1.39E-09
786	572066.1	4149059	7.57E-09	6.52E-09	2.30E-11	1.41E-08	9.21E-09	8.83E-09	2.30E-11	1.81E-08	1.64E-09	1.60E-09	2.30E-11	3.27E-09	6.98E-10	7.15E-10	2.30E-11	1.44E-09
787	572072.5	4149052	7.87E-09	6.78E-09	2.40E-11	1.47E-08	9.57E-09	9.17E-09	2.40E-11	1.88E-08	1.71E-09	1.67E-09	2.40E-11	3.40E-09	7.26E-10	7.44E-10	2.40E-11	1.49E-09
788	572078.8	4149046	8.19E-09	7.06E-09	2.49E-11	1.53E-08	9.96E-09	9.55E-09	2.49E-11	1.95E-08	1.78E-09	1.74E-09	2.49E-11	3.54E-09	7.55E-10	7.74E-10	2.49E-11	1.55E-09
789	572085.2	4149039	8.54E-09	7.36E-09	2.60E-11	1.59E-08	1.04E-08	9.95E-09	2.60E-11	2.04E-08	1.85E-09	1.81E-09	2.60E-11	3.69E-09	7.88E-10	8.07E-10	2.60E-11	1.62E-09
790	572091.6	4149032	8.92E-09	7.68E-09	2.72E-11	1.66E-08	1.09E-08	1.04E-08	2.72E-11	2.13E-08	1.94E-09	1.89E-09	2.72E-11	3.85E-09	8.23E-10	8.43E-10	2.72E-11	1.69E-09
791	572097.9	4149025	9.34E-09	8.05E-09	2.84E-11	1.74E-08	1.14E-08	1.09E-08	2.84E-11	2.23E-08	2.03E-09	1.98E-09	2.84E-11	4.03E-09	8.61E-10	8.83E-10	2.84E-11	1.77E-09
792	572104.3	4149019	9.8E-09	8.45E-09	2.99E-11	1.83E-08	1.19E-08	1.14E-08	2.99E-11	2.34E-08	2.13E-09	2.08E-09	2.99E-11	4.23E-09	9.04E-10	9.27E-10	2.99E-11	1.86E-09
793	572110.7	4149012	1.03E-08	8.9E-09	3.14E-11	1.93E-08	1.26E-08	1.20E-08	3.14E-11	2.46E-08	2.24E-09	2.19E-09	3.14E-11	4.46E-09	9.52E-10	9.76E-10	3.14E-11	1.96E-09
794	572117	4149005	1.09E-08	9.39E-09	3.32E-11	2.03E-08	1.33E-08	1.27E-08	3.32E-11	2.60E-08	2.36E-09	2.31E-09	3.32E-11	4.71E-09	1.00E-09	1.03E-09	3.32E-11	2.07E-09
795	572123.4	4148998	1.15E-08	9.9E-09	3.50E-11	2.14E-08	1.40E-08	1.34E-08	3.50E-11	2.74E-08	2.49E-09	2.44E-09	3.50E-11	4.97E-09	1.06E-09	1.09E-09	3.50E-11	2.18E-09
796	572129.8	4148992	1.21E-08	1.04E-08	3.69E-11	2.26E-08	1.47E-08	1.41E-08	3.69E-11	2.89E-08	2.63E-09	2.57E-09	3.69E-11	5.23E-09	1.12E-09	1.15E-09	3.69E-11	2.30E-09
797	572136.1	4148985	1.28E-08	1.1E-08	3.89E-11	2.38E-08	1.55E-08	1.49E-08	3.89E-11	3.05E-08	2.77E-09	2.70E-09	3.89E-11	5.51E-09	1.18E-09	1.21E-09	3.89E-11	2.42E-09
798	572142.5	4148978	1.34E-08	1.16E-08	4.09E-11	2.50E-08	1.63E-08	1.56E-08	4.09E-11	3.20E-08	2.91E-09	2.84E-09	4.09E-11	5.80E-09	1.24E-09	1.27E-09	4.09E-11	2.55E-09
799	572148.9	4148972	1.41E-08	1.21E-08	4.29E-11	2.63E-08	1.72E-08	1.64E-08	4.29E-11	3.36E-08	3.06E-09	2.99E-09	4.29E-11	6.09E-09	1.30E-09	1.33E-09	4.29E-11	2.68E-09
800	572155.2	4148965	1.48E-08	1.28E-08	4.51E-11	2.76E-08	1.80E-08	1.73E-08	4.51E-11	3.53E-08	3.21E-09	3.14E-09	4.51E-11	6.40E-09	1.37E-09	1.40E-09	4.51E-11	2.81E-09
801	572161.6	4148958	1.56E-08	1.34E-08	4.74E-11	2.90E-08	1.89E-08	1.81E-08	4.74E-11	3.71E-08	3.38E-09	3.30E-09	4.74E-11	6.72E-09	1.44E-09	1.47E-09	4.74E-11	2.95E-09
802	572060.3	4149295	8.89E-09	7.66E-09	2.71E-11	1.66E-08	1.08E-08	1.04E-08	2.71E-11	2.12E-08	1.93E-09	1.88E-09	2.71E-11	3.84E-09	8.20E-10	8.40E-10	2.71E-11	1.69E-09
803	572064.1	4149304	9.43E-09	8.12E-09	2.87E-11	1.76E-08	1.15E-08	1.10E-08	2.87E-11	2.25E-08	2.05E-09	2.00E-09	2.87E-11	4.07E-09	8.70E-10	8.91E-10	2.87E-11	1.79E-09
804	572067.9	4149312	1.01E-08	8.68E-09	3.07E-11	1.88E-08	1.23E-08	1.17E-08	3.07E-11	2.40E-08	2.19E-09	2.14E-09	3.07E-11	4.35E-09	9.29E-10	9.52E-10	3.07E-11	1.91E-09
805	572071.8	4149321	1.09E-08	9.35E-09	3.31E-11	2.02E-08	1.32E-08	1.27E-08	3.31E-11	2.59E-08	2.36E-09	2.30E-09	3.31E-11	4.69E-09	1.00E-09	1.03E-09	3.31E-11	2.06E-09
806	572050.9	4149290	8.19E-09	7.06E-09	2.49E-11	1.53E-08	9.96E-09	9.55E-09	2.49E-11	1.95E-08	1.78E-09	1.74E-09	2.49E-11	3.54E-09	7.55E-10	7.74E-10	2.49E-11	1.55E-09
807	572050.6	4149281	8E-09	6.89E-09	2.44E-11	1.49E-08	9.74E-09	9.33E-09	2.44E-11	1.91E-08	1.74E-09	1.70E-09	2.44E-11	3.46E-09	7.38E-10	7.56E-10	2.44E-11	1.52E-09
808	572050.3	4149272	7.85E-09	6.76E-09	2.39E-11	1.46E-08	9.55E-09	9.16E-09	2.39E-11	1.87E-08	1.70E-09	1.66E-09	2.39E-11	3.39E-09	7.24E-10	7.42E-10	2.39E-11	1.49E-09
809	572050	4149262	7.73E-09	6.66E-09	2.35E-11	1.44E-08	9.40E-09	9.01E-09	2.35E-11	1.84E-08	1.68E-09	1.64E-09	2.35E-11	3.34E-09	7.13E-10	7.30E-10	2.35E-11	1.47E-09
810	572044.3	4149078	6.71E-09	5.78E-09	2.04E-11	1.25E-08	8.17E-09	7.83E-09	2.04E-11	1.60E-08	1.46E-09	1.42E-09	2.04E-11	2.90E-09	6.19E-10	6.35E-10	2.04E-11	1.27E-09
811	572050.3	4149062	6.85E-09	5.91E-09	2.09E-11	1.28E-08	8.34E-09	7.99E-09	2.09E-11	1.64E-08	1.49E-09	1.45E-09	2.09E-11	2.96E-09	6.32E-10	6.48E-10	2.09E-11	1.30E-09
812	572056.7	4149056	7.1E-09	6.12E-09	2.16E-11	1.32E-08	8.64E-09	8.28E-09	2.16E-11	1.69E-08	1.54E-09	1.50E-09	2.16E-11	3.07E-09	6.55E-10	6.71E-10	2.16E-11	1.35E-09
813	572063	4149049	7.36E-09	6.34E-09	2.24E-11	1.37E-08	8.96E-09	8.58E-09	2.24E-11	1.76E-08	1.60E-09	1.56E-09	2.24E-11	3.18E-09	6.79E-10	6.96E-10	2.24E-11	1.40E-09
814	572069.3	4149042	7.65E-09	6.59E-09	2.33E-11	1.43E-08	9.31E-09	8.92E-09	2.33E-11	1.83E-08	1.66E-09	1.62E-09	2.33E-11	3.30E-09	7.06E-10	7.23E-10	2.33E-11	1.45E-09
815	572075.6	4149036	7.96E-09	6.86E-09	2.42E-11	1.48E-08	9.69E-09	9.28E-09	2.42E-11	1.90E-08	1.73E-09	1.69E-09	2.42E-11	3.44E-09	7.34E-10	7.52E-10	2.42E-11	1.51E-09
816	572082	4149029	8.3E-09	7.15E-09	2.53E-11	1.55E-08	1.01E-08	9.67E-09	2.53E-11	1.98E-08	1.80E-09	1.76E-09	2.53E-11	3.58E-09	7.65E-10	7.84E-10	2.53E-11	1.57E-09
817	572088.3	4149022	8.67E-09	7.47E-09	2.64E-11	1.62E-08	1.05E-08	1.01E-08	2.64E-11	2.07E-08	1.88E-09	1.84E-09	2.64E-11	3.74E-09	7.99E-10	8.19E-10	2.64E-11	1.65E-09
818	572094.6	4149016	9.08E-09	7.82E-09	2.76E-11	1.69E-08	1.10E-08	1.06E-08	2.76E-11	2.17E-08	1.97E-09	1.92E-09	2.76E-11	3.92E-09	8.37E-10	8.58E-10	2.76E-11	1.72E-09
819	572100.9	4149009	9.53E-09	8.22E-09	2.90E-11	1.78E-08	1.16E-08	1.11E-08	2.90E-11	2.28E-08	2.07E-09	2.02E-09	2.90E-11	4.12E-09	8.80E-10	9.01E-10	2.90E-11	1.81E-09
820	572107.2	4149002	1E-08	8.64E-09	3.06E-11	1.87E-08	1.22E-08	1.17E-08	3.06E-11	2.39E-08	2.18E-09	2.13E-09	3.06E-11	4.33E-09	9.26E-10	9.49E-10	3.06E-11	1.90E-09
821	572113.6	4148995	1.06E-08	9.11E-09	3.22E-11	1.97E-08	1.29E-08	1.23E-08	3.22E-11	2.52E-08	2.29E-09	2.24E-09	3.22E-11	4.56E-09	9.75E-10	9.99E-10	3.22E-11	2.01E-09

822	572119.9	4148989	1.11E-08	9.59E-09	3.39E-11	2.07E-08	1.35E-08	1.30E-08	3.39E-11	2.65E-08	2.41E-09	2.36E-09	3.39E-11	4.81E-09	1.03E-09	1.05E-09	3.39E-11	2.11E-09
823	572126.2	4148982	1.17E-08	1.01E-08	3.56E-11	2.18E-08	1.42E-08	1.36E-08	3.56E-11	2.79E-08	2.54E-09	2.48E-09	3.56E-11	5.05E-09	1.08E-09	1.11E-09	3.56E-11	2.22E-09
824	572132.5	4148975	1.23E-08	1.06E-08	3.74E-11	2.29E-08	1.50E-08	1.43E-08	3.74E-11	2.93E-08	2.67E-09	2.60E-09	3.74E-11	5.31E-09	1.13E-09	1.16E-09	3.74E-11	2.33E-09
825	572138.9	4148969	1.29E-08	1.11E-08	3.93E-11	2.40E-08	1.57E-08	1.50E-08	3.93E-11	3.08E-08	2.80E-09	2.73E-09	3.93E-11	5.57E-09	1.19E-09	1.22E-09	3.93E-11	2.45E-09
826	572051.2	4149299	8.42E-09	7.25E-09	2.56E-11	1.57E-08	1.02E-08	9.82E-09	2.56E-11	2.01E-08	1.83E-09	1.78E-09	2.56E-11	3.64E-09	7.77E-10	7.96E-10	2.56E-11	1.60E-09
827	572055	4149308	8.92E-09	7.69E-09	2.72E-11	1.66E-08	1.09E-08	1.04E-08	2.72E-11	2.13E-08	1.94E-09	1.89E-09	2.72E-11	3.85E-09	8.23E-10	8.43E-10	2.72E-11	1.69E-09
828	572058.8	4149316	9.52E-09	8.2E-09	2.90E-11	1.77E-08	1.16E-08	1.11E-08	2.90E-11	2.27E-08	2.07E-09	2.02E-09	2.90E-11	4.11E-09	8.78E-10	9.00E-10	2.90E-11	1.81E-09
829	572062.7	4149325	1.02E-08	8.82E-09	3.12E-11	1.91E-08	1.25E-08	1.19E-08	3.12E-11	2.44E-08	2.22E-09	2.17E-09	3.12E-11	4.42E-09	9.44E-10	9.68E-10	3.12E-11	1.94E-09
830	572041.8	4149294	7.77E-09	6.7E-09	2.37E-11	1.45E-08	9.46E-09	9.06E-09	2.37E-11	1.85E-08	1.69E-09	1.65E-09	2.37E-11	3.36E-09	7.17E-10	7.35E-10	2.37E-11	1.48E-09
831	572041.5	4149285	7.6E-09	6.54E-09	2.31E-11	1.42E-08	9.24E-09	8.86E-09	2.31E-11	1.81E-08	1.65E-09	1.61E-09	2.31E-11	3.28E-09	7.01E-10	7.18E-10	2.31E-11	1.44E-09
832	572041.2	4149276	7.45E-09	6.42E-09	2.27E-11	1.39E-08	9.07E-09	8.69E-09	2.27E-11	1.78E-08	1.62E-09	1.58E-09	2.27E-11	3.22E-09	6.88E-10	7.05E-10	2.27E-11	1.41E-09
833	572040.9	4149267	7.33E-09	6.32E-09	2.23E-11	1.37E-08	8.92E-09	8.55E-09	2.23E-11	1.75E-08	1.59E-09	1.55E-09	2.23E-11	3.17E-09	6.77E-10	6.93E-10	2.23E-11	1.39E-09
834	572040.6	4149258	7.23E-09	6.23E-09	2.20E-11	1.35E-08	8.80E-09	8.43E-09	2.20E-11	1.73E-08	1.57E-09	1.53E-09	2.20E-11	3.12E-09	6.67E-10	6.84E-10	2.20E-11	1.37E-09
835	572040.3	4149248	7.15E-09	6.16E-09	2.18E-11	1.33E-08	8.70E-09	8.34E-09	2.18E-11	1.71E-08	1.55E-09	1.51E-09	2.18E-11	3.09E-09	6.59E-10	6.76E-10	2.18E-11	1.36E-09
836	572040.1	4149239	7.08E-09	6.1E-09	2.16E-11	1.32E-08	8.61E-09	8.25E-09	2.16E-11	1.69E-08	1.54E-09	1.50E-09	2.16E-11	3.06E-09	6.53E-10	6.69E-10	2.16E-11	1.34E-09
837	572035	4149075	6.32E-09	5.45E-09	1.93E-11	1.18E-08	7.69E-09	7.37E-09	1.93E-11	1.51E-08	1.37E-09	1.34E-09	1.93E-11	2.73E-09	5.83E-10	5.98E-10	1.93E-11	1.20E-09
838	572040.9	4149059	6.45E-09	5.56E-09	1.96E-11	1.20E-08	7.85E-09	7.52E-09	1.96E-11	1.54E-08	1.40E-09	1.37E-09	1.96E-11	2.79E-09	5.95E-10	6.10E-10	1.96E-11	1.22E-09
839	572047.2	4149052	6.67E-09	5.75E-09	2.03E-11	1.24E-08	8.12E-09	7.78E-09	2.03E-11	1.59E-08	1.45E-09	1.41E-09	2.03E-11	2.88E-09	6.16E-10	6.31E-10	2.03E-11	1.27E-09
840	572053.5	4149046	6.91E-09	5.95E-09	2.10E-11	1.29E-08	8.41E-09	8.06E-09	2.10E-11	1.65E-08	1.50E-09	1.46E-09	2.10E-11	2.98E-09	6.37E-10	6.53E-10	2.10E-11	1.31E-09
841	572059.8	4149039	7.17E-09	6.17E-09	2.18E-11	1.34E-08	8.72E-09	8.36E-09	2.18E-11	1.71E-08	1.56E-09	1.52E-09	2.18E-11	3.10E-09	6.61E-10	6.77E-10	2.18E-11	1.36E-09
842	572066.1	4149032	7.44E-09	6.41E-09	2.27E-11	1.39E-08	9.06E-09	8.68E-09	2.27E-11	1.78E-08	1.61E-09	1.58E-09	2.27E-11	3.21E-09	6.87E-10	7.04E-10	2.27E-11	1.41E-09
843	572072.4	4149026	7.74E-09	6.67E-09	2.36E-11	1.44E-08	9.42E-09	9.03E-09	2.36E-11	1.85E-08	1.68E-09	1.64E-09	2.36E-11	3.34E-09	7.14E-10	7.32E-10	2.36E-11	1.47E-09
844	572078.6	4149019	8.07E-09	6.95E-09	2.46E-11	1.50E-08	9.82E-09	9.41E-09	2.46E-11	1.93E-08	1.75E-09	1.71E-09	2.46E-11	3.49E-09	7.44E-10	7.63E-10	2.46E-11	1.53E-09
845	572084.9	4149012	8.43E-09	7.26E-09	2.57E-11	1.57E-08	1.03E-08	9.83E-09	2.57E-11	2.01E-08	1.83E-09	1.79E-09	2.57E-11	3.64E-09	7.78E-10	7.97E-10	2.57E-11	1.60E-09
846	572091.2	4149006	8.83E-09	7.61E-09	2.69E-11	1.65E-08	1.07E-08	1.03E-08	2.69E-11	2.11E-08	1.92E-09	1.87E-09	2.69E-11	3.82E-09	8.15E-10	8.35E-10	2.69E-11	1.68E-09
847	572097.5	4148999	9.27E-09	7.99E-09	2.82E-11	1.73E-08	1.13E-08	1.08E-08	2.82E-11	2.21E-08	2.01E-09	1.97E-09	2.82E-11	4.01E-09	8.56E-10	8.77E-10	2.82E-11	1.76E-09
848	572103.8	4148992	9.75E-09	8.4E-09	2.97E-11	1.82E-08	1.19E-08	1.14E-08	2.97E-11	2.33E-08	2.12E-09	2.07E-09	2.97E-11	4.21E-09	8.99E-10	9.21E-10	2.97E-11	1.85E-09
849	572110.1	4148986	1.02E-08	8.83E-09	3.12E-11	1.91E-08	1.25E-08	1.19E-08	3.12E-11	2.45E-08	2.22E-09	2.17E-09	3.12E-11	4.43E-09	9.45E-10	9.69E-10	3.12E-11	1.95E-09
850	572116.3	4148979	1.08E-08	9.27E-09	3.28E-11	2.01E-08	1.31E-08	1.26E-08	3.28E-11	2.57E-08	2.34E-09	2.28E-09	3.28E-11	4.65E-09	9.93E-10	1.02E-09	3.28E-11	2.04E-09
851	572122.6	4148972	1.13E-08	9.73E-09	3.44E-11	2.11E-08	1.37E-08	1.32E-08	3.44E-11	2.69E-08	2.45E-09	2.39E-09	3.44E-11	4.88E-09	1.04E-09	1.07E-09	3.44E-11	2.14E-09
852	572042	4149303	7.99E-09	6.88E-09	2.43E-11	1.49E-08	9.72E-09	9.32E-09	2.43E-11	1.91E-08	1.73E-09	1.69E-09	2.43E-11	3.45E-09	7.37E-10	7.55E-10	2.43E-11	1.52E-09
853	572045.9	4149312	8.45E-09	7.28E-09	2.57E-11	1.58E-08	1.03E-08	9.86E-09	2.57E-11	2.02E-08	1.83E-09	1.79E-09	2.57E-11	3.65E-09	7.80E-10	7.99E-10	2.57E-11	1.60E-09
854	572049.7	4149320	9.01E-09	7.76E-09	2.74E-11	1.68E-08	1.10E-08	1.05E-08	2.74E-11	2.15E-08	1.95E-09	1.91E-09	2.74E-11	3.89E-09	8.31E-10	8.52E-10	2.74E-11	1.71E-09
855	572032.7	4149298	7.39E-09	6.37E-09	2.25E-11	1.38E-08	9.00E-09	8.62E-09	2.25E-11	1.76E-08	1.60E-09	1.57E-09	2.25E-11	3.19E-09	6.82E-10	6.99E-10	2.25E-11	1.40E-09
856	572032.4	4149289	7.22E-09	6.22E-09	2.20E-11	1.35E-08	8.79E-09	8.42E-09	2.20E-11	1.72E-08	1.57E-09	1.53E-09	2.20E-11	3.12E-09	6.66E-10	6.83E-10	2.20E-11	1.37E-09
857	572032.1	4149280	7.09E-09	6.11E-09	2.16E-11	1.32E-08	8.62E-09	8.26E-09	2.16E-11	1.69E-08	1.54E-09	1.50E-09	2.16E-11	3.06E-09	6.54E-10	6.70E-10	2.16E-11	1.35E-09
858	572031.8	4149271	6.97E-09	6.01E-09	2.12E-11	1.30E-08	8.49E-09	8.13E-09	2.12E-11	1.66E-08	1.51E-09	1.48E-09	2.12E-11	3.01E-09	6.43E-10	6.59E-10	2.12E-11	1.32E-09
859	572031.5	4149262	6.88E-09	5.92E-09	2.09E-11	1.28E-08	8.37E-09	8.02E-09	2.09E-11	1.64E-08	1.49E-09	1.46E-09	2.09E-11	2.97E-09	6.34E-10	6.50E-10	2.09E-11	1.31E-09
860	572031.2	4149253	6.79E-09	5.85E-09	2.07E-11	1.27E-08	8.27E-09	7.92E-09	2.07E-11	1.62E-08	1.47E-09	1.44E-09	2.07E-11	2.93E-09	6.27E-10	6.42E-10	2.07E-11	1.29E-09
861	572031	4149244	6.72E-09	5.79E-09	2.05E-11	1.25E-08	8.18E-09	7.84E-09	2.05E-11	1.60E-08	1.46E-09	1.42E-09	2.05E-11	2.90E-09	6.20E-10	6.35E-10	2.05E-11	1.28E-09
862	572030.7	4149235	6.66E-09	5.74E-09	2.03E-11	1.24E-08	8.11E-09	7.77E-09	2.03E-11	1.59E-08	1.45E-09	1.41E-09	2.03E-11	2.88E-09	6.15E-10	6.30E-10	2.03E-11	1.26E-09
863	572030.4	4149226	6.63E-09	5.71E-09	2.02E-11	1.24E-08	8.07E-09	7.73E-09	2.02E-11	1.58E-08	1.44E-09	1.40E-09	2.02E-11	2.86E-09	6.11E-10	6.27E-10	2.02E-11	1.26E-09
864	572030.1	4149217	6.62E-09	5.7E-09	2.02E-11	1.23E-08	8.05E-09	7.72E-09	2.02E-11	1.58E-08	1.44E-09	1.40E-09	2.02E-11	2.86E-09	6.11E-10	6.26E-10	2.02E-11	1.26E-09
865	572029.8	4149207	6.64E-09	5.72E-09	2.02E-11	1.24E-08	8.08E-09	7.74E-09	2.02E-11	1.58E-08	1.44E-09	1.41E-09	2.02E-11	2.87E-09	6.13E-10	6.28E-10	2.02E-11	1.26E-09
866	572025.9	4149080	6.05E-09	5.21E-09	1.84E-11	1.13E-08	7.36E-09	7.06E-09	1.84E-11	1.44E-08	1.31E-09	1.28E-09	1.84E-11	2.61E-09	5.58E-10	5.72E-10	1.84E-11	1.15E-09
867	572025.6	4149071	5.97E-09	5.14E-09	1.82E-11	1.11E-08	7.26E-09	6.96E-09	1.82E-11	1.42E-08	1.29E-09	1.26E-09	1.82E-11	2.58E-09	5.50E-10	5.64E-10	1.82E-11	1.13E-09
868	572031.6	4149055	6.08E-09	5.24E-09	1.85E-11	1.13E-08	7.40E-09	7.10E-09	1.85E-11	1.45E-08	1.32E-09	1.29E-09	1.85E-11	2.63E-09	5.61E-10	5.75E-10	1.85E-11	1.15E-09
869	572037.8	4149049	6.28E-09	5.41E-09	1.91E-11	1.17E-08	7.65E-09	7.33E-09	1.91E-11	1.50E-08	1.36E-09	1.33E-09	1.91E-11	2.71E-09	5.80E-10	5.94E-10	1.91E-11	1.19E-09
870	572044.1	4149042	6.5E-09	5.6E-09	1.98E-11	1.21E-08	7.91E-09	7.58E-09	1.98E-11	1.55E-08	1.41E-09	1.38E-09	1.98E-11	2.81E-09	6.00E-10	6.15E-10	1.98E-11	1.23E-09
871	572050.3	4149036	6.73E-09	5.8E-09	2.05E-11	1.26E-08	8.19E-09	7.85E-09	2.05E-11	1.61E-08	1.46E-09	1.43E-09	2.05E-11	2.91E-09	6.21E-10	6.37E-10	2.05E-11	1.28E-09
872	572056.5	4149029	6.98E-09	6.01E-09	2.13E-11	1.30E-08	8.49E-09	8.14E-09	2.13E-11	1.67E-08	1.51E-09	1.48E-09	2.13E-11	3.01E-09	6.44E-10	6.60E-10	2.13E-11	1.33E-09
873	572062.8	4149022	7.24E-09	6.24E-09	2.21E-11	1.35E-08	8.82E-09	8.45E-09	2.21E-11	1.73E-08	1.57E-09	1.54E-09	2.21E-11	3.13E-09	6.68E-10	6.85E-10	2.21E-11	1.38E-09
874	572069	4149016	7.53E-09	6.49E-09	2.29E-11	1.40E-08	9.17E-09	8.79E-09	2.29E-11	1.80E-08	1.63E-09	1.60E-09	2.29E-11	3.25E-09	6.95E-10	7.12E-10	2.29E-11	1.43E-09
875	572075.3	4149009	7.85E-09	6.77E-09	2.39E-11	1.46E-08	9.56E-09	9.16E-09	2.39E-11	1.87E-08	1.70E-09	1.66E-09	2.39E-11	3.39E-09	7.25E-10	7.43E-10	2.39E-11	1.49E-09
876	572081.5	4149002	8.21E-09	7.07E-09	2.50E-11	1.53E-08	9.99E-09	9.57E-09	2.50E-11	1.96E-08	1.78E-09	1.74E-09	2.50E-11	3.55E-09	7.57E-10	7.76E-10	2.50E-11	1.56E-09
877	572087.8	4148996	8.6E-09	7.41E-09	2.62E-11	1.60E-08	1.05E-08	1.00E-08	2.62E-11	2.05E-08	1.87E-09	1.82E-09	2.62E-11	3.71E-09	7.93E-10	8.13E-10	2.62E-11	1.63E-09
878	572094	4148989	9.02E-09	7.77E-09	2.75E-11	1.68E-08	1.10E-08	1.05E-08	2.75E-11	2.15E-08	1.96E-09	1.91E-09	2.75E-11	3.90E-09	8.32E-10	8.53E-10	2.75E-11	1.71E-09
879	572100.3	4148983	9.47E-09	8.16E-09	2.88E-11	1.76E-08	1.15E-08	1.10E-08	2.88E-11	2.26E-08	2.05E-09	2.01E-09	2.88E-11	4.09E-09	8.73E-10	8.95E-10	2.88E-11	1.80E-09
880	572106.5	4148976	9.93E-09	8.56E-09	3.02E-11	1.85E-08	1.21E-08	1.16E-08	3.02E-11	2.37E-08	2.16E-09	2.10E-09	3.02E-11	4.29E-09	9.16E-10	9.39E-10	3.02E-11	1.89E-09
881	572032.9	4149307	7.6E-09	6.55E-09	2.31E-11	1.42E-08	9.24E-09	8.86E-09	2.31E-11	1.81E-08	1.65E-09	1.61E-09	2.31E-11	3.28E-09	7.01E-10	7.18E-10	2.31E-11	1.44E-09
882	572036.8	4149316	8.03E-09	6.92E-09	2.45E-11	1.50E-08	9.77E-09	9.36E-09	2.45E-11	1.92E-08	1.74E-09	1.70E-09	2.45E-11	3.47E-09	7.41E-10	7.59E-10	2.45E-11	1.52E-09
883	572040.6	4149324	8.54E-09	7.36E-09	2.60E-11	1.59E-08	1.04E-08	9.96E-09	2.60E-11	2.04E-08	1.85E-09	1.81E-09	2.60E-11	3.69E-09	7.88E-10	8.08E-10	2.60E-11	1.62E-09
884	572023.5	4149303	7.04E-09	6.07E-09	2.14E-11	1.31E-08	8.57E-09	8.21E-09	2.14E-11	1.68E-08	1.53E-09	1.49E-09	2.14E-11	3.04E-09	6.50E-10	6.66E-10	2.14E-11	1.34E-09
885	572023.3	4149294	6.88E-09	5.93E-09	2.10E-11	1.28E-08	8.38E-09	8.03E-09	2.10E-11	1.64E-08	1.49E-09	1.46E-09	2.10E-11	2.97E-09	6.35E-10	6.51E-10	2.10E-11	1.31E-09
886	572023	4149284	6.75E-09	5.82E-09	2.06E-11	1.26E-08	8.22E-09	7.87E-09	2.06E-11	1.61E-08	1.47E-09	1.43E-09	2.06E-11	2.92E-09	6.23E-10	6.38E-10	2.06E-11	1.28E-09
887	572022.7	4149275	6.64E-09	5.72E-09	2.02E-11	1.24E-08	8.08E-09	7.75E-09	2.02E-11	1.59E-08	1.44E-09	1.41E-09	2.02E-11	2.87E-09	6.13E-10	6.28E-10	2.02E-11	1.26E-09
888	572022.4	4149266	6.55E-09	5.64E-09	1.99E-11	1.22E-08	7.97E-09	7.64E-09	1.99E-11	1.56E-08	1.42E-09	1.39E-09	1.99E-11	2.83E-09	6.04E-10	6.19E-10	1.99E-11	1.24E-09
889	572022.1	4149257	6.47E-09	5.57E-09	1.97E-11	1.21E-08	7.87E-09	7.54E-09	1.97E-11	1.54E-08	1.40E-09	1.37E-09	1.97E-11	2.79E-09	5.97E-10	6.11E-10	1.97E-11	1.23E-09
890	572021.9	4149248	6.39E-09	5.51E-09	1.95E-11	1.19E-08	7.78E-09	7.46E-09	1.95E-11	1.53E-08	1.39E-09	1.36E-09	1.95E-11	2.76E-09	5.90E-10	6.05E-10	1.95E-11	1.21E-09
891	572021.6	4149239	6.33E-09	5.46E-09	1.93E-11	1.18E-08	7.71E-09	7.39E-09	1.93E-11	1.51E-08	1.37E-09	1.34E-09	1.93E-11	2.74E-09	5.84E-10	5.99E-10	1.93E-11	1.20E-09
892	572021.3	4149230	6.29E-09	5.42E-09	1.92E-11	1.17E-08	7.66E-09	7.34E-09	1.92E-11	1.50E-08	1.36E-09	1.33E-09	1.92E-11	2.72E-09	5.80E-10	5.95E-10	1.92E-11	1.19E-09
893	572021	4149221	6.27E-09	5.4E-09	1.91E-11	1.17E-08	7.63E-09	7.31E-09	1.91E-11	1.50E-08	1.36E-09	1.33E-09	1.91E-11	2.71E-09	5.78E-10	5.93E-10	1.91E-11	1.19E-09
894	572020.7	4149212	6.27E-09	5.41E-09	1.91E-11	1.17E-08	7.63E-09	7.32E-09	1.91E-11	1.50E-08	1.36E-09	1.33E-09	1.91E-11	2.71E-09	5.79E-10	5.93E-10	1.91E-11	1.19E-09
895	572020.5	4149203	6.31E-09	5.43E-09	1.92E-11	1.18E-08	7.68E-09	7.36E-09	1.92E-11	1.51E-08	1.37E-09	1.34E-09	1.92E-11	2.72E-09	5.82E-10	5.96E-10	1.92E-11	1.20E-09
896	572020.2	4149194	6.37E-09	5.49E-09	1.94E-11	1.19E-08	7.75E-09	7.42E-09	1.94E-11	1.52E-08	1.38E-09	1.35E-09	1.94E-11	2.75E-09	5.87E-10	6.02E-10	1.94E-11	1.21E-09
897	572019.9	4149185	6.45E-09	5.55E-09	1.96E-11	1.20E-08	7.85E-09	7.52E-09	1.96E-11	1.54E-08	1.40E-09	1.37E-09	1.96E-11	2.78E-09	5.95E-10	6.09E-10	1.96E-11	1.22E-09
898	572016.8	4149086	5.82E-09	5.01E-09	1.77E-11	1.08E-08	7.08E-09	6.78E-09	1.77E-11	1.39E-08	1.26E-09	1.23E-09	1.77E-11	2.51E-09	5.37E-10	5.50E-10	1.77E-11	1.10E-09
899	572016.5	4149077	5.72E-09	4.93E-09	1.74E-11	1.07E-08	6.96E-09	6.67E-09	1.74E-11	1.36E-08	1.24E-09	1.21E-09	1.74E-11	2.47E-09	5.28E-10	5.41E-10	1.74E-11	1.09E-09
900	572016.2	4149068	5.64E-09	4.86E-09	1.72E-11	1.05E-08	6.86E-09	6.58E-09	1.72E-11	1.35E-08	1.22E-09	1.20E-09	1.72E-11	2.44E-09	5.20E-10	5.33E-10	1.72E-11	1.07E-09
901	572022.2	4149052	5.75E-09	4.95E-09	1.75E-11	1.07E-08	6.99E-09	6.70E-09	1.75E-11	1.37E-08	1.25E-09	1.22E-09	1.75E-11	2.48E-09	5.30E-10	5.43E-10	1.75E-11	1.09E-09
902	572028.4	4149045	5.93E-09	5.11E-09	1.81E-11	1.11E-08	7.22E-09	6.92E-09	1.81E-11	1.42E-08	1.29E-09	1.26E-09	1.81E-11	2.56E-09	5.47E-10	5.61E-10	1.81E-11	1.13E-09
903	572040.8	4149032	6.34E-09	5.46E-09	1.93E-11	1.18E-08	7.71E-09	7.39E-09	1.93E-11	1.51E-08	1.38E-09	1.34E-09	1.93E-11	2.74E-09	5.85E-10	5.99E-10	1.93E-11	1.20E-09
904	572047	4149026	6.56E-09	5.65E-09	2.00E-11	1.22E-08	7.98E-09	7.65E-09	2.00E-11	1.57E-08	1.42E-09	1.39E-09	2.00E-11	2.83E-09	6.05E-10	6.20E-10	2.00E-11	1.25E-09
905	572053.2	4149019	6.8E-09	5.86E-09	2.07E-11	1.27E-08	8.27E-09	7.93E-09	2.07E-11	1.62E-08	1.47E-09	1.44E-09	2.07E-11	2.94E-09	6.27E-10	6.43E-10	2.07E-11	1.29E-09
906	572065.6	4149006	7.34E-09	6.32E-09	2.23E-11	1.37E-08	8.93E-09	8.56E-09	2.23E-11	1.75E-08	1.59E-09	1.55E-09	2.23E-11	3.17E-09	6.77E-10	6.94E-10	2.23E-11	1.39E-09
907	572071.9	4148999	7.65E-09	6.59E-09	2.33E-11	1.43E-08	9.31E-09	8.92E-09	2.33E-11	1.83E-08	1.66E-09	1.62E-09	2.33E-11	3.30E-09	7.06E-10	7.23E-10	2.33E-11	1.45E-09
908	572084.3	4148986	8.37E-09	7.21E-09	2.55E-11	1.56E-08	1.02E-08	9.76E-09	2.55E-11	2.00E-08	1.82E-09	1.77E-09	2.55E-11	3.62E-09	7.72E-10	7.91E-10	2.55E-11	1.59E-09
909	572023.8	4149312	7.23E-09	6.23E-09	2.20E-11	1.35E-08	8.80E-09	8.43E-09	2.20E-11	1.73E-08	1.57E-09	1.53E-09	2.20E-11	3.12E-09	6.67E-10	6.84E-10	2.20E-11	1.37E-09
910	572027.7	4149320	7.64E-09	6.58E-09	2.33E-11	1.42E-08	9.29E-09	8.91E-09	2.33E-11	1.82E-08	1.66E-09	1.62E-09	2.33E-11	3.30E-09	7.05E-10	7.22E-10	2.33E-11	1.45E-09
911	572014.4	4149307	6.71E-09	5.78E-09	2.04E-11	1.25E-08	8.17E-09	7.83E-09	2.04E-11	1.60E-08	1.46E-09	1.42E-09	2.04E-11	2.90E-09	6.19E-10	6.35E-10	2.04E-11	1.27E-09
912	572014.2	4149298	6.56E-09	5.66E-09	2.00E-11	1.22E-08	7.99E-09	7.66E-09	2.00E-11	1.57E-08	1.42E-09	1.39E-09	2.00E-11	2.84E-09	6.06E-10	6.21E-10	2.00E-11	1.25E-09
913	572013.9	4149289	6.44E-09	5.55E-09	1.96E-11	1.20E-08	7.84E-09	7.51E-09	1.96E-11	1.54E-08	1.40E-09	1.37E-09	1.96E-11	2.78E-09	5.94E-10	6.09E-10	1.96E-11	1.22E-09
914	572013.6	4149280	6.34E-09	5.46E-09	1.93E-11	1.18E-08	7.71E-09	7.39E-09	1.93E-11	1.51E-08	1.38E-09	1.34E-09	1.93E-11	2.74E-09	5.85E-10	5.99E-10	1.93E-11	1.20E-09
915	572013.3	4149271	6.25E-09	5.39E-09	1.90E-11	1.17E-08	7.61E-09	7.29E-09	1.90E-11	1.49E-08	1.36E-09	1.32E-09	1.90E-11	2.70E-09	5.77E-10	5.91E-10	1.90E-11	1.19E-09
916	572013	4149262	6.17E-09	5.32E-09	1.88E-11	1.15E-08	7.51E-09	7.20E-09	1.88E-11	1.47E-08	1.34E-09	1.31E-09	1.88E-11	2.67E-09	5.69E-10	5.83E-10	1.88E-11	1.17E-09
917	572012.8	4149253	6.1E-09	5.26E-09	1.86E-11	1.14E-08	7.42E-09	7.11E-09	1.86E-11	1.46E-08	1.32E-09	1.29E-09	1.86E-11	2.63E-09	5.63E-10	5.77E-10	1.86E-11	1.16E-09
918	572012.5	4149244	6.04E-09	5.2E-09	1.84E-11	1.13E-08	7.35E-09	7.04E-09	1.84E-11	1.44E-08	1.31E-09	1.28E-09	1.84E-11	2.61E-09	5.57E-10	5.71E-10	1.84E-11	1.15E-09
919	572012.2	4149235	5.99E-09	5.16E-09	1.82E-11	1.12E-08	7.28E-09	6.98E-09	1.82E-11	1.43E-08	1.30E-09	1.27E-09	1.82E-11	2.59E-09	5.52E-10	5.66E-10	1.82E-11	1.14E-09
920	572011.9	4149226	5.95E-09	5.13E-09	1.81E-11	1.11E-08	7.25E-09	6.94E-09	1.81E-11	1.42E-08	1.29E-09	1.26E-09	1.81E-11	2.57E-09	5.49E-10	5.63E-10	1.81E-11	1.13E-09
921	572011.6	4149217	5.94E-09	5.12E-09	1.81E-11	1.11E-08	7.23E-09	6.93E-09	1.81E-11	1.42E-08	1.29E-09	1.26E-09	1.81E-11	2.57E-09	5.48E-10	5.62E-10	1.81E-11	1.13E-09
922	572011.4	4149208	5.96E-09	5.14E-09	1.82E-11	1.11E-08	7.26E-09	6.95E-09	1.82E-11	1.42E-08	1.29E-09	1.26E-09	1.82E-11	2.58E-09	5.50E-10	5.64E-10	1.82E-11	1.13E-09
923	572011.1	4149199	6.01E-09	5.17E-09	1.83E-11	1.12E-08	7.31E-09	7.00E-09	1.83E-11	1.43E-08	1.30E-09	1.27E-09	1.83E-11	2.59E-09	5.54E-10	5.68E-10	1.83E-11	1.14E-09
924	572010.8	4149190	6.07E-09	5.23E-09	1.85E-11	1.13E-08	7.39E-09	7.08E-09	1.85E-11	1.45E-08	1.32E-09	1.29E-09	1.85E-11	2.62E-09	5.60E-10	5.74E-10	1.85E-11	1.15E-09

925	572010.5	4149181	6.15E-09	5.3E-09	1.87E-11	1.15E-08	7.49E-09	7.17E-09	1.87E-11	1.47E-08	1.33E-09	1.30E-09	1.87E-11	2.66E-09	5.67E-10	5.81E-10	1.87E-11	1.17E-09
926	572010.2	4149172	6.23E-09	5.36E-09	1.90E-11	1.16E-08	7.58E-09	7.26E-09	1.90E-11	1.49E-08	1.35E-09	1.32E-09	1.90E-11	2.69E-09	5.74E-10	5.89E-10	1.90E-11	1.18E-09
927	572010	4149163	6.28E-09	5.41E-09	1.91E-11	1.17E-08	7.64E-09	7.33E-09	1.91E-11	1.50E-08	1.36E-09	1.33E-09	1.91E-11	2.71E-09	5.79E-10	5.94E-10	1.91E-11	1.19E-09
928	572009.7	4149154	6.31E-09	5.43E-09	1.92E-11	1.18E-08	7.67E-09	7.35E-09	1.92E-11	1.50E-08	1.37E-09	1.34E-09	1.92E-11	2.72E-09	5.82E-10	5.96E-10	1.92E-11	1.20E-09
929	572007.5	4149082	5.5E-09	4.74E-09	1.68E-11	1.03E-08	6.70E-09	6.42E-09	1.68E-11	1.31E-08	1.19E-09	1.17E-09	1.68E-11	2.38E-09	5.08E-10	5.20E-10	1.68E-11	1.04E-09
930	572007.2	4149073	5.41E-09	4.66E-09	1.65E-11	1.01E-08	6.59E-09	6.31E-09	1.65E-11	1.29E-08	1.17E-09	1.15E-09	1.65E-11	2.34E-09	4.99E-10	5.12E-10	1.65E-11	1.03E-09
931	572006.9	4149064	5.34E-09	4.6E-09	1.63E-11	9.96E-09	6.50E-09	6.23E-09	1.63E-11	1.27E-08	1.16E-09	1.13E-09	1.63E-11	2.31E-09	4.93E-10	5.05E-10	1.63E-11	1.01E-09
932	572012.8	4149048	5.44E-09	4.69E-09	1.66E-11	1.01E-08	6.62E-09	6.34E-09	1.66E-11	1.30E-08	1.18E-09	1.15E-09	1.66E-11	2.35E-09	5.02E-10	5.14E-10	1.66E-11	1.03E-09
933	572025.2	4149035	5.79E-09	4.99E-09	1.76E-11	1.08E-08	7.04E-09	6.75E-09	1.76E-11	1.38E-08	1.26E-09	1.23E-09	1.76E-11	2.50E-09	5.34E-10	5.47E-10	1.76E-11	1.10E-09
934	572037.5	4149022	6.18E-09	5.32E-09	1.88E-11	1.15E-08	7.52E-09	7.20E-09	1.88E-11	1.47E-08	1.34E-09	1.31E-09	1.88E-11	2.67E-09	5.70E-10	5.84E-10	1.88E-11	1.17E-09
935	572049.9	4149009	6.62E-09	5.7E-09	2.02E-11	1.23E-08	8.06E-09	7.72E-09	2.02E-11	1.58E-08	1.44E-09	1.40E-09	2.02E-11	2.86E-09	6.11E-10	6.26E-10	2.02E-11	1.26E-09
936	572062.2	4148996	7.15E-09	6.16E-09	2.18E-11	1.33E-08	8.70E-09	8.34E-09	2.18E-11	1.71E-08	1.55E-09	1.52E-09	2.18E-11	3.09E-09	6.60E-10	6.76E-10	2.18E-11	1.36E-09
937	572014.7	4149316	6.89E-09	5.94E-09	2.10E-11	1.29E-08	8.39E-09	8.04E-09	2.10E-11	1.65E-08	1.50E-09	1.46E-09	2.10E-11	2.98E-09	6.36E-10	6.52E-10	2.10E-11	1.31E-09
938	572018.5	4149324	7.27E-09	6.27E-09	2.22E-11	1.36E-08	8.85E-09	8.48E-09	2.22E-11	1.74E-08	1.58E-09	1.54E-09	2.22E-11	3.14E-09	6.71E-10	6.88E-10	2.22E-11	1.38E-09
939	572005.3	4149311	6.4E-09	5.52E-09	1.95E-11	1.19E-08	7.79E-09	7.47E-09	1.95E-11	1.53E-08	1.39E-09	1.36E-09	1.95E-11	2.77E-09	5.91E-10	6.05E-10	1.95E-11	1.22E-09
940	572005	4149301	6.26E-09	5.39E-09	1.91E-11	1.17E-08	7.62E-09	7.30E-09	1.91E-11	1.49E-08	1.36E-09	1.33E-09	1.91E-11	2.70E-09	5.77E-10	5.92E-10	1.91E-11	1.19E-09
941	572004.7	4149292	6.14E-09	5.29E-09	1.87E-11	1.14E-08	7.47E-09	7.16E-09	1.87E-11	1.46E-08	1.33E-09	1.30E-09	1.87E-11	2.65E-09	5.66E-10	5.80E-10	1.87E-11	1.17E-09
942	572004.5	4149283	6.04E-09	5.21E-09	1.84E-11	1.13E-08	7.35E-09	7.05E-09	1.84E-11	1.44E-08	1.31E-09	1.28E-09	1.84E-11	2.61E-09	5.57E-10	5.71E-10	1.84E-11	1.15E-09
943	572004.2	4149274	5.96E-09	5.13E-09	1.81E-11	1.11E-08	7.25E-09	6.95E-09	1.81E-11	1.42E-08	1.29E-09	1.26E-09	1.81E-11	2.57E-09	5.50E-10	5.63E-10	1.81E-11	1.13E-09
944	572003.9	4149264	5.88E-09	5.07E-09	1.79E-11	1.10E-08	7.16E-09	6.86E-09	1.79E-11	1.40E-08	1.28E-09	1.25E-09	1.79E-11	2.54E-09	5.43E-10	5.56E-10	1.79E-11	1.12E-09
945	572003.6	4149255	5.81E-09	5.01E-09	1.77E-11	1.08E-08	7.07E-09	6.78E-09	1.77E-11	1.39E-08	1.26E-09	1.23E-09	1.77E-11	2.51E-09	5.36E-10	5.49E-10	1.77E-11	1.10E-09
946	572003.3	4149246	5.75E-09	4.95E-09	1.75E-11	1.07E-08	7.00E-09	6.71E-09	1.75E-11	1.37E-08	1.25E-09	1.22E-09	1.75E-11	2.48E-09	5.30E-10	5.44E-10	1.75E-11	1.09E-09
947	572003	4149237	5.7E-09	4.91E-09	1.74E-11	1.06E-08	6.93E-09	6.65E-09	1.74E-11	1.36E-08	1.24E-09	1.21E-09	1.74E-11	2.46E-09	5.26E-10	5.39E-10	1.74E-11	1.08E-09
948	572002.7	4149227	5.66E-09	4.88E-09	1.72E-11	1.06E-08	6.89E-09	6.60E-09	1.72E-11	1.35E-08	1.23E-09	1.20E-09	1.72E-11	2.45E-09	5.22E-10	5.35E-10	1.72E-11	1.07E-09
949	572002.4	4149218	5.65E-09	4.87E-09	1.72E-11	1.05E-08	6.87E-09	6.59E-09	1.72E-11	1.35E-08	1.23E-09	1.20E-09	1.72E-11	2.44E-09	5.21E-10	5.34E-10	1.72E-11	1.07E-09
950	572002.2	4149209	5.66E-09	4.88E-09	1.72E-11	1.06E-08	6.89E-09	6.60E-09	1.72E-11	1.35E-08	1.23E-09	1.20E-09	1.72E-11	2.44E-09	5.22E-10	5.35E-10	1.72E-11	1.07E-09
951	572001.9	4149199	5.7E-09	4.91E-09	1.74E-11	1.06E-08	6.94E-09	6.65E-09	1.74E-11	1.36E-08	1.24E-09	1.21E-09	1.74E-11	2.46E-09	5.26E-10	5.39E-10	1.74E-11	1.08E-09
952	572001.6	4149190	5.76E-09	4.97E-09	1.76E-11	1.07E-08	7.01E-09	6.72E-09	1.76E-11	1.38E-08	1.25E-09	1.22E-09	1.76E-11	2.49E-09	5.32E-10	5.45E-10	1.76E-11	1.09E-09
953	572001.3	4149181	5.84E-09	5.03E-09	1.78E-11	1.09E-08	7.11E-09	6.81E-09	1.78E-11	1.39E-08	1.27E-09	1.24E-09	1.78E-11	2.52E-09	5.39E-10	5.52E-10	1.78E-11	1.11E-09
954	572001	4149172	5.92E-09	5.1E-09	1.80E-11	1.10E-08	7.20E-09	6.90E-09	1.80E-11	1.41E-08	1.28E-09	1.25E-09	1.80E-11	2.56E-09	5.46E-10	5.59E-10	1.80E-11	1.12E-09
955	572000.7	4149162	5.97E-09	5.15E-09	1.82E-11	1.11E-08	7.27E-09	6.97E-09	1.82E-11	1.43E-08	1.30E-09	1.27E-09	1.82E-11	2.58E-09	5.51E-10	5.65E-10	1.82E-11	1.13E-09
956	572000.4	4149153	6E-09	5.17E-09	1.83E-11	1.12E-08	7.30E-09	7.00E-09	1.83E-11	1.43E-08	1.30E-09	1.27E-09	1.83E-11	2.59E-09	5.54E-10	5.67E-10	1.83E-11	1.14E-09
957	572000.1	4149144	5.99E-09	5.16E-09	1.82E-11	1.12E-08	7.29E-09	6.98E-09	1.82E-11	1.43E-08	1.30E-09	1.27E-09	1.82E-11	2.59E-09	5.53E-10	5.66E-10	1.82E-11	1.14E-09
958	571999.9	4149135	5.93E-09	5.11E-09	1.81E-11	1.11E-08	7.22E-09	6.92E-09	1.81E-11	1.42E-08	1.29E-09	1.26E-09	1.81E-11	2.56E-09	5.47E-10	5.61E-10	1.81E-11	1.13E-09
959	571999.6	4149125	5.84E-09	5.03E-09	1.78E-11	1.09E-08	7.11E-09	6.81E-09	1.78E-11	1.39E-08	1.27E-09	1.24E-09	1.78E-11	2.52E-09	5.39E-10	5.52E-10	1.78E-11	1.11E-09
960	571998.4	4149088	5.33E-09	4.59E-09	1.62E-11	9.94E-09	6.49E-09	6.22E-09	1.62E-11	1.27E-08	1.16E-09	1.13E-09	1.62E-11	2.30E-09	4.92E-10	5.04E-10	1.62E-11	1.01E-09
961	571998.1	4149079	5.22E-09	4.5E-09	1.59E-11	9.74E-09	6.36E-09	6.09E-09	1.59E-11	1.25E-08	1.13E-09	1.11E-09	1.59E-11	2.26E-09	4.82E-10	4.94E-10	1.59E-11	9.92E-10
962	571997.8	4149070	5.13E-09	4.42E-09	1.56E-11	9.57E-09	6.25E-09	5.99E-09	1.56E-11	1.23E-08	1.11E-09	1.09E-09	1.56E-11	2.22E-09	4.74E-10	4.85E-10	1.56E-11	9.75E-10
963	571997.6	4149061	5.06E-09	4.36E-09	1.54E-11	9.44E-09	6.16E-09	5.91E-09	1.54E-11	1.21E-08	1.10E-09	1.07E-09	1.54E-11	2.19E-09	4.67E-10	4.79E-10	1.54E-11	9.62E-10
964	572003.6	4149045	5.15E-09	4.44E-09	1.57E-11	9.61E-09	6.27E-09	6.01E-09	1.57E-11	1.23E-08	1.12E-09	1.09E-09	1.57E-11	2.23E-09	4.75E-10	4.87E-10	1.57E-11	9.78E-10
965	572010	4149038	5.32E-09	4.58E-09	1.62E-11	9.91E-09	6.47E-09	6.20E-09	1.62E-11	1.27E-08	1.15E-09	1.13E-09	1.62E-11	2.30E-09	4.90E-10	5.03E-10	1.62E-11	1.01E-09
966	572016.3	4149031	5.49E-09	4.73E-09	1.67E-11	1.02E-08	6.68E-09	6.40E-09	1.67E-11	1.31E-08	1.19E-09	1.16E-09	1.67E-11	2.37E-09	5.06E-10	5.19E-10	1.67E-11	1.04E-09
967	572022.7	4149024	5.67E-09	4.89E-09	1.73E-11	1.06E-08	6.90E-09	6.61E-09	1.73E-11	1.35E-08	1.23E-09	1.20E-09	1.73E-11	2.45E-09	5.23E-10	5.36E-10	1.73E-11	1.08E-09
968	572029.1	4149018	5.86E-09	5.05E-09	1.78E-11	1.09E-08	7.13E-09	6.83E-09	1.78E-11	1.40E-08	1.27E-09	1.24E-09	1.78E-11	2.53E-09	5.41E-10	5.54E-10	1.78E-11	1.11E-09
969	572035.4	4149011	6.06E-09	5.22E-09	1.85E-11	1.13E-08	7.38E-09	7.07E-09	1.85E-11	1.45E-08	1.32E-09	1.28E-09	1.85E-11	2.62E-09	5.59E-10	5.73E-10	1.85E-11	1.15E-09
970	572041.8	4149004	6.28E-09	5.41E-09	1.91E-11	1.17E-08	7.64E-09	7.32E-09	1.91E-11	1.50E-08	1.36E-09	1.33E-09	1.91E-11	2.71E-09	5.79E-10	5.94E-10	1.91E-11	1.19E-09
971	572048.1	4148997	6.52E-09	5.62E-09	1.99E-11	1.22E-08	7.93E-09	7.60E-09	1.99E-11	1.56E-08	1.41E-09	1.38E-09	1.99E-11	2.82E-09	6.01E-10	6.16E-10	1.99E-11	1.24E-09
972	572054.5	4148991	6.78E-09	5.85E-09	2.07E-11	1.27E-08	8.26E-09	7.91E-09	2.07E-11	1.62E-08	1.47E-09	1.44E-09	2.07E-11	2.93E-09	6.26E-10	6.41E-10	2.07E-11	1.29E-09
973	572005.6	4149320	6.58E-09	5.67E-09	2.00E-11	1.23E-08	8.01E-09	7.67E-09	2.00E-11	1.57E-08	1.43E-09	1.39E-09	2.00E-11	2.84E-09	6.07E-10	6.22E-10	2.00E-11	1.25E-09
974	571996.2	4149315	6.12E-09	5.27E-09	1.86E-11	1.14E-08	7.45E-09	7.14E-09	1.86E-11	1.46E-08	1.33E-09	1.30E-09	1.86E-11	2.64E-09	5.64E-10	5.78E-10	1.86E-11	1.16E-09
975	571995.9	4149306	5.98E-09	5.15E-09	1.82E-11	1.12E-08	7.28E-09	6.98E-09	1.82E-11	1.43E-08	1.30E-09	1.27E-09	1.82E-11	2.58E-09	5.52E-10	5.65E-10	1.82E-11	1.14E-09
976	571995.6	4149296	5.87E-09	5.06E-09	1.79E-11	1.09E-08	7.14E-09	6.84E-09	1.79E-11	1.40E-08	1.27E-09	1.24E-09	1.79E-11	2.54E-09	5.41E-10	5.55E-10	1.79E-11	1.11E-09
977	571995.3	4149287	5.77E-09	4.98E-09	1.76E-11	1.08E-08	7.03E-09	6.73E-09	1.76E-11	1.38E-08	1.25E-09	1.22E-09	1.76E-11	2.49E-09	5.33E-10	5.46E-10	1.76E-11	1.10E-09
978	571995.1	4149278	5.7E-09	4.91E-09	1.73E-11	1.06E-08	6.93E-09	6.64E-09	1.73E-11	1.36E-08	1.24E-09	1.21E-09	1.73E-11	2.46E-09	5.25E-10	5.38E-10	1.73E-11	1.08E-09
979	571994.8	4149269	5.62E-09	4.85E-09	1.71E-11	1.05E-08	6.84E-09	6.56E-09	1.71E-11	1.34E-08	1.22E-09	1.19E-09	1.71E-11	2.43E-09	5.19E-10	5.32E-10	1.71E-11	1.07E-09
980	571994.5	4149260	5.56E-09	4.79E-09	1.69E-11	1.04E-08	6.76E-09	6.48E-09	1.69E-11	1.33E-08	1.21E-09	1.18E-09	1.69E-11	2.40E-09	5.13E-10	5.25E-10	1.69E-11	1.05E-09
981	571994.2	4149250	5.5E-09	4.74E-09	1.67E-11	1.02E-08	6.69E-09	6.41E-09	1.67E-11	1.31E-08	1.19E-09	1.16E-09	1.67E-11	2.37E-09	5.07E-10	5.20E-10	1.67E-11	1.04E-09
982	571993.9	4149241	5.44E-09	4.69E-09	1.66E-11	1.01E-08	6.62E-09	6.35E-09	1.66E-11	1.30E-08	1.18E-09	1.15E-09	1.66E-11	2.35E-09	5.02E-10	5.15E-10	1.66E-11	1.03E-09
983	571993.6	4149232	5.4E-09	4.65E-09	1.64E-11	1.01E-08	6.57E-09	6.30E-09	1.64E-11	1.29E-08	1.17E-09	1.14E-09	1.64E-11	2.33E-09	4.98E-10	5.11E-10	1.64E-11	1.03E-09
984	571993.3	4149223	5.38E-09	4.63E-09	1.64E-11	1.00E-08	6.54E-09	6.27E-09	1.64E-11	1.28E-08	1.17E-09	1.14E-09	1.64E-11	2.32E-09	4.96E-10	5.08E-10	1.64E-11	1.02E-09
985	571993.1	4149214	5.37E-09	4.63E-09	1.64E-11	1.00E-08	6.54E-09	6.27E-09	1.64E-11	1.28E-08	1.17E-09	1.14E-09	1.64E-11	2.32E-09	4.96E-10	5.08E-10	1.64E-11	1.02E-09
986	571992.8	4149204	5.4E-09	4.65E-09	1.64E-11	1.01E-08	6.57E-09	6.30E-09	1.64E-11	1.29E-08	1.17E-09	1.14E-09	1.64E-11	2.33E-09	4.98E-10	5.10E-10	1.64E-11	1.02E-09
987	571992.5	4149195	5.44E-09	4.69E-09	1.66E-11	1.02E-08	6.63E-09	6.35E-09	1.66E-11	1.30E-08	1.18E-09	1.15E-09	1.66E-11	2.35E-09	5.02E-10	5.15E-10	1.66E-11	1.03E-09
988	571992.2	4149186	5.51E-09	4.75E-09	1.68E-11	1.03E-08	6.71E-09	6.43E-09	1.68E-11	1.32E-08	1.20E-09	1.17E-09	1.68E-11	2.38E-09	5.09E-10	5.21E-10	1.68E-11	1.05E-09
989	571991.9	4149177	5.59E-09	4.81E-09	1.70E-11	1.04E-08	6.80E-09	6.52E-09	1.70E-11	1.33E-08	1.21E-09	1.18E-09	1.70E-11	2.41E-09	5.15E-10	5.28E-10	1.70E-11	1.06E-09
990	571991.6	4149167	5.65E-09	4.87E-09	1.72E-11	1.05E-08	6.88E-09	6.59E-09	1.72E-11	1.35E-08	1.23E-09	1.20E-09	1.72E-11	2.44E-09	5.22E-10	5.35E-10	1.72E-11	1.07E-09
991	571991.3	4149158	5.7E-09	4.91E-09	1.74E-11	1.06E-08	6.94E-09	6.65E-09	1.74E-11	1.36E-08	1.24E-09	1.21E-09	1.74E-11	2.46E-09	5.26E-10	5.39E-10	1.74E-11	1.08E-09
992	571991.1	4149149	5.72E-09	4.93E-09	1.74E-11	1.07E-08	6.96E-09	6.67E-09	1.74E-11	1.36E-08	1.24E-09	1.21E-09	1.74E-11	2.47E-09	5.27E-10	5.41E-10	1.74E-11	1.09E-09
993	571990.8	4149140	5.69E-09	4.91E-09	1.73E-11	1.06E-08	6.93E-09	6.64E-09	1.73E-11	1.36E-08	1.24E-09	1.21E-09	1.73E-11	2.46E-09	5.25E-10	5.38E-10	1.73E-11	1.08E-09
994	571990.5	4149131	5.63E-09	4.85E-09	1.72E-11	1.05E-08	6.86E-09	6.57E-09	1.72E-11	1.34E-08	1.22E-09	1.19E-09	1.72E-11	2.43E-09	5.20E-10	5.33E-10	1.72E-11	1.07E-09
995	571990.2	4149121	5.54E-09	4.78E-09	1.69E-11	1.03E-08	6.74E-09	6.46E-09	1.69E-11	1.32E-08	1.20E-09	1.17E-09	1.69E-11	2.39E-09	5.11E-10	5.24E-10	1.69E-11	1.05E-09
996	571989.4	4149094	5.17E-09	4.46E-09	1.57E-11	9.64E-09	6.29E-09	6.03E-09	1.57E-11	1.23E-08	1.12E-09	1.10E-09	1.57E-11	2.23E-09	4.77E-10	4.89E-10	1.57E-11	9.82E-10
997	571989.1	4149085	5.05E-09	4.36E-09	1.54E-11	9.43E-09	6.15E-09	5.90E-09	1.54E-11	1.21E-08	1.10E-09	1.07E-09	1.54E-11	2.18E-09	4.66E-10	4.78E-10	1.54E-11	9.60E-10
998	571988.8	4149075	4.96E-09	4.27E-09	1.51E-11	9.24E-09	6.03E-09	5.78E-09	1.51E-11	1.18E-08	1.08E-09	1.05E-09	1.51E-11	2.14E-09	4.57E-10	4.68E-10	1.51E-11	9.41E-10
999	571988.5	4149066	4.87E-09	4.2E-09	1.48E-11	9.08E-09	5.93E-09	5.68E-09	1.48E-11	1.16E-08	1.06E-09	1.03E-09	1.48E-11	2.10E-09	4.49E-10	4.61E-10	1.48E-11	9.25E-10
1000	571988.2	4149057	4.81E-09	4.14E-09	1.47E-11	8.97E-09	5.85E-09	5.61E-09	1.47E-11	1.15E-08	1.04E-09	1.02E-09	1.47E-11	2.08E-09	4.44E-10	4.55E-10	1.47E-11	9.13E-10
1001	571994.2	4149041	4.9E-09	4.22E-09	1.49E-11	9.13E-09	5.96E-09	5.71E-09	1.49E-11	1.17E-08	1.06E-09	1.04E-09	1.49E-11	2.12E-09	4.52E-10	4.63E-10	1.49E-11	9.30E-10
1002	572000.6	4149034	5.05E-09	4.35E-09	1.54E-11	9.41E-09	6.14E-09	5.89E-09	1.54E-11	1.20E-08	1.10E-09	1.07E-09	1.54E-11	2.18E-09	4.66E-10	4.77E-10	1.54E-11	9.58E-10
1003	572006.9	4149028	5.2E-09	4.48E-09	1.59E-11	9.70E-09	6.33E-09	6.07E-09	1.59E-11	1.24E-08	1.13E-09	1.10E-09	1.59E-11	2.25E-09	4.80E-10	4.92E-10	1.59E-11	9.88E-10
1004	572013.2	4149021	5.37E-09	4.63E-09	1.63E-11	1.00E-08	6.53E-09	6.26E-09	1.63E-11	1.28E-08	1.16E-09	1.14E-09	1.63E-11	2.32E-09	4.95E-10	5.08E-10	1.63E-11	1.02E-09
1005	572019.5	4149014	5.54E-09	4.77E-09	1.69E-11	1.03E-08	6.74E-09	6.46E-09	1.69E-11	1.32E-08	1.20E-09	1.17E-09	1.69E-11	2.39E-09	5.11E-10	5.24E-10	1.69E-11	1.05E-09
1006	572025.9	4149008	5.72E-09	4.93E-09	1.74E-11	1.07E-08	6.96E-09	6.67E-09	1.74E-11	1.37E-08	1.24E-09	1.21E-09	1.74E-11	2.47E-09	5.28E-10	5.41E-10	1.74E-11	1.09E-09
1007	572032.2	4149001	5.92E-09	5.1E-09	1.80E-11	1.10E-08	7.20E-09	6.90E-09	1.80E-11	1.41E-08	1.28E-09	1.25E-09	1.80E-11	2.56E-09	5.46E-10	5.60E-10	1.80E-11	1.12E-09
1008	571996.5	4149324	6.28E-09	5.42E-09	1.91E-11	1.17E-08	7.65E-09	7.33E-09	1.91E-11	1.50E-08	1.36E-09	1.33E-09	1.91E-11	2.71E-09	5.80E-10	5.94E-10	1.91E-11	1.19E-09
1009	571987.1	4149319	5.85E-09	5.04E-09	1.78E-11	1.09E-08	7.12E-09	6.83E-09	1.78E-11	1.40E-08	1.27E-09	1.24E-09	1.78E-11	2.53E-09	5.40E-10	5.53E-10	1.78E-11	1.11E-09
1010	571986.8	4149310	5.72E-09	4.93E-09	1.74E-11	1.07E-08	6.96E-09	6.67E-09	1.74E-11	1.37E-08	1.24E-09	1.21E-09	1.74E-11	2.47E-09	5.28E-10	5.41E-10	1.74E-11	1.09E-09
1011	571986.5	4149301	5.61E-09	4.84E-09	1.71E-11	1.05E-08	6.83E-09	6.55E-09	1.71E-11	1.34E-08	1.22E-09	1.19E-09	1.71E-11	2.43E-09	5.18E-10	5.31E-10	1.71E-11	1.07E-09
1012	571986.2	4149291	5.53E-09	4.76E-09	1.68E-11	1.03E-08	6.73E-09	6.45E-09	1.68E-11	1.32E-08	1.20E-09	1.17E-09	1.68E-11	2.39E-09	5.10E-10	5.23E-10	1.68E-11	1.05E-09
1013	571986	4149282	5.45E-09	4.7E-09	1.66E-11	1.02E-08	6.63E-09	6.36E-09	1.66E-11	1.30E-08	1.18E-09	1.16E-09	1.66E-11	2.35E-09	5.03E-10	5.15E-10	1.66E-11	1.03E-09
1014	571985.7	4149273	5.38E-09	4.64E-09	1.64E-11	1.00E-08	6.55E-09	6.28E-09	1.64E-11	1.28E-08	1.17E-09	1.14E-09	1.64E-11	2.33E-09	4.97E-10	5.09E-10	1.64E-11	1.02E-09
1015	571985.4	4149264	5.32E-09	4.58E-09	1.62E-11	9.92E-09	6.47E-09	6.20E-09	1.62E-11	1.27E-08	1.15E-09	1.13E-09	1.62E-11	2.30E-09	4.91E-10	5.03E-10	1.62E-11	1.01E-09
1016	571985.1	4149255	5.26E-09	4.53E-09	1.60E-11	9.81E-09	6.40E-09	6.14E-09	1.60E-11	1.26E-08	1.14E-09	1.12E-09	1.60E-11	2.27E-09	4.85E-10	4.97E-10	1.60E-11	9.99E-10
1017	571984.8	4149246	5.21E-09	4.49E-09	1.59E-11	9.71E-09	6.34E-09	6.07E-09	1.59E-11	1.24E-08	1.13E-09	1.10E-09	1.59E-11	2.25E-09	4.81E-10	4.92E-10	1.59E-11	9.89E-10
1018	571984.5	4149237	5.16E-09	4.45E-09	1.57E-11	9.63E-09	6.28E-09	6.02E-09	1.57E-11	1.23E-08	1.12E-09	1.09E-09	1.57E-11	2.23E-09	4.76E-10	4.88E-10	1.57E-11	9.80E-10
1019	571984.3	4149227	5.13E-09	4.42E-09	1.56E-11	9.57E-09	6.25E-09	5.99E-09	1.56E-11	1.22E-08	1.11E-09	1.09E-09	1.56E-11	2.22E-09	4.74E-10	4.85E-10	1.56E-11	9.74E-10
1020	571984	4149218	5.12E-09	4.41E-09	1.56E-11	9.55E-09	6.23E-09	5.97E-09	1.56E-11	1.22E-08	1.11E-09	1.09E-09	1.56E-11	2.21E-09	4.72E-10	4.84E-10	1.56E-11	9.72E-10
1021	571983.7	4149209	5.13E-09	4.42E-09	1.56E-11	9.57E-09	6.24E-09	5.98E-09	1.56E-11	1.22E-08	1.11E-09	1.09E-09	1.56E-11	2.22E-09	4.73E-10	4.85E-10	1.56E-11	9.74E-10
1022	571983.4	4149200	5.16E-09	4.45E-09	1.57E-11	9.63E-09	6.28E-09	6.02E-09	1.57E-11	1.23E-08	1.12E-09	1.09E-09	1.57E-11	2.23E-09	4.76E-10	4.88E-10	1.57E-11	9.80E-10
1023	571983.1	4149191	5.22E-09	4.49E-09	1.59E-11	9.73E-09	6.35E-09	6.08E-09	1.59E-11	1.24E-08	1.13E-09	1.11E-09	1.59E-11	2.25E-09	4.81E-10	4.93E-10	1.59E-11	9.90E-10
1024	571982.8	4149182	5.28E-09	4.55E-09	1.61E-11	9.85E-09	6.43E-09	6.16E-09	1.61E-11	1.26E-08	1.15E-09	1.12E-09	1.61E-11	2.28E-09	4.87E-10	5.00E-10	1.61E-11	1.00E-09
1025	571982.5	4149172	5.35E-09	4.61E-09	1.63E-11	9.98E-09	6.52E-09	6.24E-09	1.63E-11	1.28E-08	1.16E-09	1.13E-09	1.63E-11	2.31E-09	4.94E-10	5.06E-10	1.63E-11	1.02E-09
1026	571982.3	4149163	5.41E-09	4.66E-09	1.65E-11	1.01E-08	6.59E-09	6.31E-09	1.65E-11	1.29E-08	1.17E-09	1.15E-09	1.65E-11	2.34E-09	4.99E-10	5.12E-10	1.65E-11	1.03E-09
1027	571982	4149154	5.45E-09	4.69E-09	1.66E-11	1.02E-08	6.63E-09	6.35E-09	1.66E-11	1.30E-08	1.18E-09	1.15E-09	1.66E-11	2.35E-09	5.03E-10	5.15E-10	1.66E-11	1.03E-09

1028	571981.7	4149145	5.45E-09	4.7E-09	1.66E-11	1.02E-08	6.63E-09	6.36E-09	1.66E-11	1.30E-08	1.18E-09	1.16E-09	1.66E-11	2.35E-09	5.03E-10	5.15E-10	1.66E-11	1.03E-09
1029	571981.4	4149136	5.42E-09	4.67E-09	1.65E-11	1.01E-08	6.59E-09	6.32E-09	1.65E-11	1.29E-08	1.18E-09	1.15E-09	1.65E-11	2.34E-09	5.00E-10	5.12E-10	1.65E-11	1.03E-09
1030	571981.1	4149127	5.35E-09	4.61E-09	1.63E-11	9.98E-09	6.51E-09	6.24E-09	1.63E-11	1.28E-08	1.16E-09	1.13E-09	1.63E-11	2.31E-09	4.94E-10	5.06E-10	1.63E-11	1.02E-09
1031	571980.8	4149118	5.26E-09	4.53E-09	1.60E-11	9.81E-09	6.40E-09	6.13E-09	1.60E-11	1.26E-08	1.14E-09	1.11E-09	1.60E-11	2.27E-09	4.85E-10	4.97E-10	1.60E-11	9.99E-10
1032	571980	4149090	4.9E-09	4.23E-09	1.49E-11	9.15E-09	5.97E-09	5.72E-09	1.49E-11	1.17E-08	1.06E-09	1.04E-09	1.49E-11	2.12E-09	4.53E-10	4.64E-10	1.49E-11	9.31E-10
1033	571979.7	4149081	4.8E-09	4.14E-09	1.46E-11	8.95E-09	5.84E-09	5.60E-09	1.46E-11	1.15E-08	1.04E-09	1.02E-09	1.46E-11	2.07E-09	4.43E-10	4.54E-10	1.46E-11	9.12E-10
1034	571979.4	4149072	4.71E-09	4.06E-09	1.43E-11	8.78E-09	5.73E-09	5.49E-09	1.43E-11	1.12E-08	1.02E-09	9.97E-10	1.43E-11	2.03E-09	4.34E-10	4.45E-10	1.43E-11	8.93E-10
1035	571979.1	4149063	4.63E-09	3.99E-09	1.41E-11	8.63E-09	5.63E-09	5.40E-09	1.41E-11	1.10E-08	1.00E-09	9.81E-10	1.41E-11	2.00E-09	4.27E-10	4.38E-10	1.41E-11	8.79E-10
1036	571978.9	4149053	4.57E-09	3.94E-09	1.39E-11	8.53E-09	5.56E-09	5.33E-09	1.39E-11	1.09E-08	9.92E-10	9.69E-10	1.39E-11	1.98E-09	4.22E-10	4.32E-10	1.39E-11	8.68E-10
1037	571984.9	4149038	4.66E-09	4.01E-09	1.42E-11	8.68E-09	5.67E-09	5.43E-09	1.42E-11	1.11E-08	1.01E-09	9.87E-10	1.42E-11	2.01E-09	4.30E-10	4.40E-10	1.42E-11	8.84E-10
1038	571991.2	4149031	4.8E-09	4.13E-09	1.46E-11	8.94E-09	5.84E-09	5.59E-09	1.46E-11	1.14E-08	1.04E-09	1.02E-09	1.46E-11	2.07E-09	4.42E-10	4.53E-10	1.46E-11	9.10E-10
1039	571997.4	4149024	4.94E-09	4.26E-09	1.51E-11	9.21E-09	6.01E-09	5.76E-09	1.51E-11	1.18E-08	1.07E-09	1.05E-09	1.51E-11	2.13E-09	4.56E-10	4.67E-10	1.51E-11	9.38E-10
1040	572003.7	4149018	5.09E-09	4.39E-09	1.55E-11	9.50E-09	6.20E-09	5.94E-09	1.55E-11	1.22E-08	1.11E-09	1.08E-09	1.55E-11	2.20E-09	4.70E-10	4.81E-10	1.55E-11	9.67E-10
1041	572010	4149011	5.25E-09	4.52E-09	1.60E-11	9.79E-09	6.39E-09	6.12E-09	1.60E-11	1.25E-08	1.14E-09	1.11E-09	1.60E-11	2.27E-09	4.84E-10	4.96E-10	1.60E-11	9.97E-10
1042	572016.3	4149004	5.42E-09	4.67E-09	1.65E-11	1.01E-08	6.59E-09	6.32E-09	1.65E-11	1.29E-08	1.18E-09	1.15E-09	1.65E-11	2.34E-09	5.00E-10	5.12E-10	1.65E-11	1.03E-09
1043	571978	4149323	5.61E-09	4.83E-09	1.71E-11	1.05E-08	6.82E-09	6.54E-09	1.71E-11	1.34E-08	1.22E-09	1.19E-09	1.71E-11	2.42E-09	5.17E-10	5.30E-10	1.71E-11	1.06E-09
1044	571977.7	4149314	5.48E-09	4.72E-09	1.67E-11	1.02E-08	6.67E-09	6.39E-09	1.67E-11	1.31E-08	1.19E-09	1.16E-09	1.67E-11	2.37E-09	5.06E-10	5.18E-10	1.67E-11	1.04E-09
1045	571977.4	4149305	5.38E-09	4.64E-09	1.64E-11	1.00E-08	6.55E-09	6.27E-09	1.64E-11	1.28E-08	1.17E-09	1.14E-09	1.64E-11	2.32E-09	4.96E-10	5.09E-10	1.64E-11	1.02E-09
1046	571977.1	4149296	5.29E-09	4.56E-09	1.61E-11	9.87E-09	6.44E-09	6.17E-09	1.61E-11	1.26E-08	1.15E-09	1.12E-09	1.61E-11	2.29E-09	4.88E-10	5.00E-10	1.61E-11	1.01E-09
1047	571976.9	4149287	5.22E-09	4.5E-09	1.59E-11	9.74E-09	6.35E-09	6.09E-09	1.59E-11	1.25E-08	1.13E-09	1.11E-09	1.59E-11	2.26E-09	4.82E-10	4.94E-10	1.59E-11	9.91E-10
1048	571976.6	4149278	5.16E-09	4.44E-09	1.57E-11	9.62E-09	6.28E-09	6.01E-09	1.57E-11	1.23E-08	1.12E-09	1.09E-09	1.57E-11	2.23E-09	4.76E-10	4.88E-10	1.57E-11	9.79E-10
1049	571976.3	4149268	5.1E-09	4.39E-09	1.55E-11	9.51E-09	6.20E-09	5.95E-09	1.55E-11	1.22E-08	1.11E-09	1.08E-09	1.55E-11	2.20E-09	4.70E-10	4.82E-10	1.55E-11	9.68E-10
1050	571976	4149259	5.04E-09	4.35E-09	1.54E-11	9.40E-09	6.14E-09	5.88E-09	1.54E-11	1.20E-08	1.09E-09	1.07E-09	1.54E-11	2.18E-09	4.65E-10	4.77E-10	1.54E-11	9.57E-10
1051	571975.7	4149250	4.99E-09	4.3E-09	1.52E-11	9.31E-09	6.07E-09	5.82E-09	1.52E-11	1.19E-08	1.08E-09	1.06E-09	1.52E-11	2.16E-09	4.60E-10	4.72E-10	1.52E-11	9.47E-10
1052	571975.4	4149241	4.94E-09	4.26E-09	1.51E-11	9.22E-09	6.02E-09	5.77E-09	1.51E-11	1.18E-08	1.07E-09	1.05E-09	1.51E-11	2.14E-09	4.56E-10	4.67E-10	1.51E-11	9.39E-10
1053	571975.2	4149232	4.91E-09	4.23E-09	1.49E-11	9.15E-09	5.97E-09	5.72E-09	1.49E-11	1.17E-08	1.07E-09	1.04E-09	1.49E-11	2.12E-09	4.53E-10	4.64E-10	1.49E-11	9.32E-10
1054	571974.9	4149223	4.89E-09	4.21E-09	1.49E-11	9.11E-09	5.95E-09	5.70E-09	1.49E-11	1.17E-08	1.06E-09	1.04E-09	1.49E-11	2.11E-09	4.51E-10	4.62E-10	1.49E-11	9.28E-10
1055	571974.6	4149214	4.89E-09	4.21E-09	1.49E-11	9.11E-09	5.95E-09	5.70E-09	1.49E-11	1.17E-08	1.06E-09	1.04E-09	1.49E-11	2.11E-09	4.51E-10	4.62E-10	1.49E-11	9.28E-10
1056	571974.3	4149205	4.91E-09	4.23E-09	1.49E-11	9.15E-09	5.97E-09	5.72E-09	1.49E-11	1.17E-08	1.07E-09	1.04E-09	1.49E-11	2.12E-09	4.53E-10	4.64E-10	1.49E-11	9.32E-10
1057	571974	4149196	4.95E-09	4.26E-09	1.51E-11	9.23E-09	6.02E-09	5.77E-09	1.51E-11	1.18E-08	1.07E-09	1.05E-09	1.51E-11	2.14E-09	4.56E-10	4.68E-10	1.51E-11	9.39E-10
1058	571973.7	4149186	5.01E-09	4.31E-09	1.52E-11	9.33E-09	6.09E-09	5.84E-09	1.52E-11	1.19E-08	1.09E-09	1.06E-09	1.52E-11	2.16E-09	4.62E-10	4.73E-10	1.52E-11	9.50E-10
1059	571973.5	4149177	5.07E-09	4.37E-09	1.54E-11	9.46E-09	6.17E-09	5.92E-09	1.54E-11	1.21E-08	1.10E-09	1.07E-09	1.54E-11	2.19E-09	4.68E-10	4.80E-10	1.54E-11	9.63E-10
1060	571973.2	4149168	5.14E-09	4.43E-09	1.56E-11	9.58E-09	6.25E-09	5.99E-09	1.56E-11	1.23E-08	1.11E-09	1.09E-09	1.56E-11	2.22E-09	4.74E-10	4.86E-10	1.56E-11	9.75E-10
1061	571972.9	4149159	5.19E-09	4.47E-09	1.58E-11	9.67E-09	6.31E-09	6.05E-09	1.58E-11	1.24E-08	1.13E-09	1.10E-09	1.58E-11	2.24E-09	4.78E-10	4.90E-10	1.58E-11	9.84E-10
1062	571972.6	4149150	5.21E-09	4.49E-09	1.59E-11	9.72E-09	6.34E-09	6.08E-09	1.59E-11	1.24E-08	1.13E-09	1.10E-09	1.59E-11	2.25E-09	4.81E-10	4.93E-10	1.59E-11	9.89E-10
1063	571972.3	4149141	5.21E-09	4.49E-09	1.59E-11	9.71E-09	6.34E-09	6.07E-09	1.59E-11	1.24E-08	1.13E-09	1.10E-09	1.59E-11	2.25E-09	4.80E-10	4.92E-10	1.59E-11	9.88E-10
1064	571972.1	4149132	5.17E-09	4.45E-09	1.57E-11	9.64E-09	6.29E-09	6.03E-09	1.57E-11	1.23E-08	1.12E-09	1.10E-09	1.57E-11	2.23E-09	4.77E-10	4.89E-10	1.57E-11	9.81E-10
1065	571971.8	4149123	5.1E-09	4.39E-09	1.55E-11	9.51E-09	6.21E-09	5.95E-09	1.55E-11	1.22E-08	1.11E-09	1.08E-09	1.55E-11	2.20E-09	4.70E-10	4.82E-10	1.55E-11	9.68E-10
1066	571970.9	4149095	4.78E-09	4.12E-09	1.46E-11	8.91E-09	5.81E-09	5.57E-09	1.46E-11	1.14E-08	1.04E-09	1.01E-09	1.46E-11	2.06E-09	4.41E-10	4.52E-10	1.46E-11	9.07E-10
1067	571970.6	4149086	4.66E-09	4.02E-09	1.42E-11	8.70E-09	5.68E-09	5.44E-09	1.42E-11	1.11E-08	1.01E-09	9.88E-10	1.42E-11	2.01E-09	4.30E-10	4.41E-10	1.42E-11	8.85E-10
1068	571970.4	4149077	4.56E-09	3.93E-09	1.39E-11	8.51E-09	5.55E-09	5.32E-09	1.39E-11	1.09E-08	9.90E-10	9.67E-10	1.39E-11	1.97E-09	4.21E-10	4.31E-10	1.39E-11	8.66E-10
1069	571970.1	4149068	4.48E-09	3.86E-09	1.36E-11	8.35E-09	5.45E-09	5.22E-09	1.36E-11	1.07E-08	9.71E-10	9.49E-10	1.36E-11	1.93E-09	4.13E-10	4.23E-10	1.36E-11	8.50E-10
1070	571969.8	4149059	4.41E-09	3.8E-09	1.34E-11	8.22E-09	5.36E-09	5.14E-09	1.34E-11	1.05E-08	9.56E-10	9.34E-10	1.34E-11	1.90E-09	4.07E-10	4.17E-10	1.34E-11	8.37E-10
1071	571969.5	4149050	4.35E-09	3.75E-09	1.33E-11	8.12E-09	5.30E-09	5.08E-09	1.33E-11	1.04E-08	9.45E-10	9.23E-10	1.33E-11	1.88E-09	4.02E-10	4.12E-10	1.33E-11	8.26E-10
1072	571975.5	4149034	4.43E-09	3.82E-09	1.35E-11	8.27E-09	5.39E-09	5.17E-09	1.35E-11	1.06E-08	9.62E-10	9.39E-10	1.35E-11	1.91E-09	4.09E-10	4.19E-10	1.35E-11	8.42E-10
1073	571981.7	4149027	4.56E-09	3.93E-09	1.39E-11	8.50E-09	5.55E-09	5.32E-09	1.39E-11	1.09E-08	9.90E-10	9.66E-10	1.39E-11	1.97E-09	4.21E-10	4.31E-10	1.39E-11	8.66E-10
1074	571988	4149021	4.7E-09	4.05E-09	1.43E-11	8.76E-09	5.71E-09	5.48E-09	1.43E-11	1.12E-08	1.02E-09	9.95E-10	1.43E-11	2.03E-09	4.33E-10	4.44E-10	1.43E-11	8.91E-10
1075	571994.3	4149014	4.84E-09	4.17E-09	1.47E-11	9.02E-09	5.88E-09	5.64E-09	1.47E-11	1.15E-08	1.05E-09	1.02E-09	1.47E-11	2.09E-09	4.46E-10	4.57E-10	1.47E-11	9.18E-10
1076	572000.5	4149008	4.98E-09	4.29E-09	1.52E-11	9.29E-09	6.06E-09	5.81E-09	1.52E-11	1.19E-08	1.08E-09	1.06E-09	1.52E-11	2.15E-09	4.59E-10	4.71E-10	1.52E-11	9.45E-10
1077	571968.6	4149318	5.26E-09	4.53E-09	1.60E-11	9.80E-09	6.40E-09	6.13E-09	1.60E-11	1.25E-08	1.14E-09	1.11E-09	1.60E-11	2.27E-09	4.85E-10	4.97E-10	1.60E-11	9.98E-10
1078	571968.3	4149309	5.16E-09	4.44E-09	1.57E-11	9.62E-09	6.28E-09	6.02E-09	1.57E-11	1.23E-08	1.12E-09	1.09E-09	1.57E-11	2.23E-09	4.76E-10	4.88E-10	1.57E-11	9.79E-10
1079	571968	4149300	5.08E-09	4.37E-09	1.55E-11	9.47E-09	6.18E-09	5.92E-09	1.55E-11	1.21E-08	1.10E-09	1.08E-09	1.55E-11	2.19E-09	4.68E-10	4.80E-10	1.55E-11	9.64E-10
1080	571967.7	4149291	5.01E-09	4.31E-09	1.53E-11	9.34E-09	6.09E-09	5.84E-09	1.53E-11	1.19E-08	1.09E-09	1.06E-09	1.53E-11	2.16E-09	4.62E-10	4.73E-10	1.53E-11	9.51E-10
1081	571967.5	4149282	4.95E-09	4.26E-09	1.51E-11	9.22E-09	6.02E-09	5.77E-09	1.51E-11	1.18E-08	1.07E-09	1.05E-09	1.51E-11	2.14E-09	4.56E-10	4.68E-10	1.51E-11	9.39E-10
1082	571967.2	4149273	4.89E-09	4.21E-09	1.49E-11	9.12E-09	5.95E-09	5.70E-09	1.49E-11	1.17E-08	1.06E-09	1.04E-09	1.49E-11	2.11E-09	4.51E-10	4.62E-10	1.49E-11	9.28E-10
1083	571966.9	4149264	4.84E-09	4.17E-09	1.47E-11	9.02E-09	5.89E-09	5.64E-09	1.47E-11	1.15E-08	1.05E-09	1.02E-09	1.47E-11	2.09E-09	4.46E-10	4.57E-10	1.47E-11	9.18E-10
1084	571966.6	4149255	4.79E-09	4.12E-09	1.46E-11	8.92E-09	5.82E-09	5.58E-09	1.46E-11	1.14E-08	1.04E-09	1.01E-09	1.46E-11	2.07E-09	4.42E-10	4.52E-10	1.46E-11	9.09E-10
1085	571966.3	4149246	4.74E-09	4.08E-09	1.44E-11	8.84E-09	5.77E-09	5.53E-09	1.44E-11	1.13E-08	1.03E-09	1.00E-09	1.44E-11	2.05E-09	4.37E-10	4.48E-10	1.44E-11	9.00E-10
1086	571966.1	4149237	4.7E-09	4.05E-09	1.43E-11	8.77E-09	5.72E-09	5.48E-09	1.43E-11	1.12E-08	1.02E-09	9.96E-10	1.43E-11	2.03E-09	4.34E-10	4.44E-10	1.43E-11	8.92E-10
1087	571965.8	4149228	4.67E-09	4.03E-09	1.42E-11	8.72E-09	5.69E-09	5.45E-09	1.42E-11	1.12E-08	1.01E-09	9.91E-10	1.42E-11	2.02E-09	4.31E-10	4.42E-10	1.42E-11	8.87E-10
1088	571965.5	4149218	4.66E-09	4.02E-09	1.42E-11	8.70E-09	5.68E-09	5.44E-09	1.42E-11	1.11E-08	1.01E-09	9.88E-10	1.42E-11	2.01E-09	4.30E-10	4.41E-10	1.42E-11	8.85E-10
1089	571965.2	4149209	4.67E-09	4.03E-09	1.42E-11	8.71E-09	5.69E-09	5.45E-09	1.42E-11	1.11E-08	1.01E-09	9.90E-10	1.42E-11	2.02E-09	4.31E-10	4.42E-10	1.42E-11	8.87E-10
1090	571964.9	4149200	4.7E-09	4.05E-09	1.43E-11	8.77E-09	5.72E-09	5.48E-09	1.43E-11	1.12E-08	1.02E-09	9.96E-10	1.43E-11	2.03E-09	4.34E-10	4.44E-10	1.43E-11	8.93E-10
1091	571964.7	4149191	4.75E-09	4.09E-09	1.45E-11	8.86E-09	5.78E-09	5.54E-09	1.45E-11	1.13E-08	1.03E-09	1.01E-09	1.45E-11	2.05E-09	4.38E-10	4.49E-10	1.45E-11	9.02E-10
1092	571964.4	4149182	4.81E-09	4.14E-09	1.46E-11	8.97E-09	5.85E-09	5.61E-09	1.46E-11	1.15E-08	1.04E-09	1.02E-09	1.46E-11	2.08E-09	4.44E-10	4.55E-10	1.46E-11	9.13E-10
1093	571964.1	4149173	4.87E-09	4.2E-09	1.48E-11	9.09E-09	5.93E-09	5.68E-09	1.48E-11	1.16E-08	1.06E-09	1.03E-09	1.48E-11	2.11E-09	4.50E-10	4.61E-10	1.48E-11	9.25E-10
1094	571963.8	4149164	4.93E-09	4.25E-09	1.50E-11	9.20E-09	6.00E-09	5.75E-09	1.50E-11	1.18E-08	1.07E-09	1.05E-09	1.50E-11	2.13E-09	4.55E-10	4.66E-10	1.50E-11	9.36E-10
1095	571963.5	4149155	4.97E-09	4.29E-09	1.51E-11	9.27E-09	6.05E-09	5.80E-09	1.51E-11	1.19E-08	1.08E-09	1.05E-09	1.51E-11	2.15E-09	4.59E-10	4.70E-10	1.51E-11	9.44E-10
1096	571963.3	4149146	4.99E-09	4.3E-09	1.52E-11	9.30E-09	6.07E-09	5.82E-09	1.52E-11	1.19E-08	1.08E-09	1.06E-09	1.52E-11	2.16E-09	4.60E-10	4.72E-10	1.52E-11	9.47E-10
1097	571963	4149137	4.98E-09	4.29E-09	1.52E-11	9.28E-09	6.06E-09	5.80E-09	1.52E-11	1.19E-08	1.08E-09	1.05E-09	1.52E-11	2.15E-09	4.59E-10	4.70E-10	1.52E-11	9.45E-10
1098	571962.7	4149128	4.93E-09	4.25E-09	1.50E-11	9.19E-09	6.00E-09	5.75E-09	1.50E-11	1.18E-08	1.07E-09	1.04E-09	1.50E-11	2.13E-09	4.55E-10	4.66E-10	1.50E-11	9.36E-10
1099	571962.4	4149119	4.86E-09	4.18E-09	1.48E-11	9.06E-09	5.91E-09	5.66E-09	1.48E-11	1.16E-08	1.05E-09	1.03E-09	1.48E-11	2.10E-09	4.48E-10	4.59E-10	1.48E-11	9.22E-10
1100	571961.8	4149101	4.65E-09	4.01E-09	1.42E-11	8.68E-09	5.66E-09	5.43E-09	1.42E-11	1.11E-08	1.01E-09	9.86E-10	1.42E-11	2.01E-09	4.29E-10	4.40E-10	1.42E-11	8.83E-10
1101	571961.6	4149092	4.54E-09	3.91E-09	1.38E-11	8.47E-09	5.53E-09	5.30E-09	1.38E-11	1.08E-08	9.86E-10	9.63E-10	1.38E-11	1.96E-09	4.19E-10	4.30E-10	1.38E-11	8.62E-10
1102	571961.3	4149082	4.44E-09	3.82E-09	1.35E-11	8.28E-09	5.40E-09	5.18E-09	1.35E-11	1.06E-08	9.63E-10	9.41E-10	1.35E-11	1.92E-09	4.09E-10	4.20E-10	1.35E-11	8.43E-10
1103	571961	4149073	4.34E-09	3.74E-09	1.32E-11	8.10E-09	5.29E-09	5.07E-09	1.32E-11	1.04E-08	9.43E-10	9.21E-10	1.32E-11	1.88E-09	4.01E-10	4.11E-10	1.32E-11	8.25E-10
1104	571960.7	4149064	4.26E-09	3.67E-09	1.30E-11	7.95E-09	5.19E-09	4.97E-09	1.30E-11	1.02E-08	9.25E-10	9.03E-10	1.30E-11	1.84E-09	3.93E-10	4.03E-10	1.30E-11	8.09E-10
1105	571960.4	4149055	4.2E-09	3.62E-09	1.28E-11	7.83E-09	5.11E-09	4.90E-09	1.28E-11	1.00E-08	9.11E-10	8.90E-10	1.28E-11	1.81E-09	3.87E-10	3.97E-10	1.28E-11	7.97E-10
1106	571960.2	4149046	4.15E-09	3.58E-09	1.26E-11	7.74E-09	5.05E-09	4.84E-09	1.26E-11	9.90E-09	9.01E-10	8.80E-10	1.26E-11	1.79E-09	3.83E-10	3.92E-10	1.26E-11	7.88E-10
1107	571966.1	4149031	4.23E-09	3.64E-09	1.29E-11	7.88E-09	5.14E-09	4.93E-09	1.29E-11	1.01E-08	9.17E-10	8.96E-10	1.29E-11	1.83E-09	3.90E-10	4.00E-10	1.29E-11	8.02E-10
1108	571978.6	4149017	4.47E-09	3.85E-09	1.36E-11	8.33E-09	5.44E-09	5.21E-09	1.36E-11	1.07E-08	9.70E-10	9.47E-10	1.36E-11	1.93E-09	4.12E-10	4.22E-10	1.36E-11	8.48E-10
1109	571959.5	4149322	5.04E-09	4.34E-09	1.54E-11	9.40E-09	6.13E-09	5.88E-09	1.54E-11	1.20E-08	1.09E-09	1.07E-09	1.54E-11	2.18E-09	4.65E-10	4.77E-10	1.54E-11	9.57E-10
1110	571959.2	4149313	4.94E-09	4.26E-09	1.51E-11	9.22E-09	6.02E-09	5.77E-09	1.51E-11	1.18E-08	1.07E-09	1.05E-09	1.51E-11	2.14E-09	4.56E-10	4.67E-10	1.51E-11	9.39E-10
1111	571958.9	4149303	4.87E-09	4.19E-09	1.48E-11	9.07E-09	5.92E-09	5.67E-09	1.48E-11	1.16E-08	1.06E-09	1.03E-09	1.48E-11	2.10E-09	4.49E-10	4.60E-10	1.48E-11	9.24E-10
1112	571958.6	4149294	4.8E-09	4.13E-09	1.46E-11	8.95E-09	5.84E-09	5.60E-09	1.46E-11	1.15E-08	1.04E-09	1.02E-09	1.46E-11	2.07E-09	4.43E-10	4.54E-10	1.46E-11	9.11E-10
1113	571958.3	4149285	4.74E-09	4.08E-09	1.44E-11	8.84E-09	5.77E-09	5.53E-09	1.44E-11	1.13E-08	1.03E-09	1.00E-09	1.44E-11	2.05E-09	4.37E-10	4.48E-10	1.44E-11	9.00E-10
1114	571958	4149275	4.69E-09	4.04E-09	1.43E-11	8.74E-09	5.70E-09	5.46E-09	1.43E-11	1.12E-08	1.02E-09	9.93E-10	1.43E-11	2.02E-09	4.32E-10	4.43E-10	1.43E-11	8.89E-10
1115	571957.7	4149266	4.63E-09	3.99E-09	1.41E-11	8.64E-09	5.64E-09	5.40E-09	1.41E-11	1.11E-08	1.01E-09	9.82E-10	1.41E-11	2.00E-09	4.27E-10	4.38E-10	1.41E-11	8.80E-10
1116	571957.4	4149257	4.58E-09	3.95E-09	1.40E-11	8.55E-09	5.58E-09	5.34E-09	1.40E-11	1.09E-08	9.94E-10	9.71E-10	1.40E-11	1.98E-09	4.23E-10	4.33E-10	1.40E-11	8.70E-10
1117	571957.2	4149247	4.54E-09	3.91E-09	1.38E-11	8.46E-09	5.52E-09	5.29E-09	1.38E-11	1.08E-08	9.84E-10	9.61E-10	1.38E-11	1.96E-09	4.19E-10	4.29E-10	1.38E-11	8.61E-10
1118	571956.9	4149238	4.5E-09	3.87E-09	1.37E-11	8.39E-09	5.47E-09	5.24E-09	1.37E-11	1.07E-08	9.76E-10	9.53E-10	1.37E-11	1.94E-09	4.15E-10	4.25E-10	1.37E-11	8.54E-10
1119	571956.6	4149229	4.47E-09	3.85E-09	1.36E-11	8.33E-09	5.44E-09	5.21E-09	1.36E-11	1.07E-08	9.70E-10	9.47E-10	1.36E-11	1.93E-09	4.12E-10	4.22E-10	1.36E-11	8.48E-10
1120	571956.3	4149220	4.46E-09	3.84E-09	1.36E-11	8.31E-09	5.42E-09	5.20E-09	1.36E-11	1.06E-08	9.67E-10	9.44E-10	1.36E-11	1.93E-09	4.11E-10	4.21E-10	1.36E-11	8.46E-10
1121	571956	4149210	4.46E-09	3.85E-09	1.36E-11	8.32E-09	5.43E-09	5.21E-09	1.36E-11	1.07E-08	9.69E-10	9.46E-10	1.36E-11	1.93E-09	4.12E-10	4.22E-10	1.36E-11	8.47E-10
1122	571955.7	4149201	4.49E-09	3.87E-09	1.37E-11	8.37E-09	5.46E-09	5.24E-09	1.37E-11	1.07E-08	9.74E-10	9.52E-10	1.37E-11	1.94E-09	4.14E-10	4.25E-10	1.37E-11	8.53E-10
1123	571955.4	4149192	4.54E-09	3.91E-09	1.38E-11	8.46E-09	5.52E-09	5.29E-09	1.38E-11	1.08E-08	9.84E-10	9.61E-10	1.38E-11	1.96E-09	4.18E-10	4.29E-10	1.38E-11	8.61E-10
1124	571955.1	4149182	4.6E-09	3.96E-09	1.40E-11	8.57E-09	5.59E-09	5.36E-09	1.40E-11	1.10E-08	9.97E-10	9.74E-10	1.40E-11	1.98E-09	4.24E-10	4.34E-10	1.40E-11	8.72E-10
1125	571954.9	4149173	4.66E-09	4.01E-09	1.42E-11	8.69E-09	5.67E-09	5.43E-09	1.42E-11	1.11E-08	1.01E-09	9.87E-10	1.42E-11	2.01E-09	4.30E-10	4.41E-10	1.42E-11	8.85E-10
1126	571954.6	4149164	4.72E-09	4.06E-09	1.44E-11	8.80E-09	5.74E-09	5.50E-09	1.44E-11	1.13E-08	1.02E-09	1.00E-09	1.44E-11	2.04E-09	4.35E-10	4.46E-10	1.44E-11	8.95E-10
1127	571954.3	4149154	4.76E-09	4.1E-09	1.45E-11	8.87E-09	5.79E-09	5.55E-09	1.45E-11	1.14E-08	1.03E-09	1.01E-09	1.45E-11	2.06E-09	4.39E-10	4.50E-10	1.45E-11	9.03E-10
1128	571954	4149145	4.78E-09	4.12E-09	1.45E-11	8.91E-09	5.81E-09	5.57E-09	1.45E-11	1.14E-08	1.04E-09	1.01E-09	1.45E-11	2.06E-09	4.41E-10	4.52E-10	1.45E-11	9.07E-10
1129	571953.7	4149136	4.76E-09	4.11E-09	1.45E-11	8.88E-09	5.80E-09	5.56E-09	1.45E-11	1.14E-08	1.03E-09	1.01E-09	1.45E-11	2.06E-09	4.40E-10	4.50E-10	1.45E-11	9.04E-10
1130	571953.4	4149127	4.72E-09	4.07E-09	1.44E-11	8.80E-09	5.75E-09	5.51E-09	1.44E-11	1.13E-08	1.02E-09	1.00E-09	1.44E-11	2.04E-09	4.36E-10	4.46E-10	1.44E-11	8.96E-10

1131	571952.5	4149099	4.45E-09	3.84E-09	1.36E-11	8.31E-09	5.42E-09	5.19E-09	1.36E-11	1.06E-08	9.67E-10	9.44E-10	1.36E-11	1.92E-09	4.11E-10	4.21E-10	1.36E-11	8.46E-10
1132	571952.3	4149089	4.35E-09	3.74E-09	1.32E-11	8.10E-09	5.29E-09	5.07E-09	1.32E-11	1.04E-08	9.43E-10	9.21E-10	1.32E-11	1.88E-09	4.01E-10	4.11E-10	1.32E-11	8.25E-10
1133	571952	4149080	4.24E-09	3.66E-09	1.29E-11	7.91E-09	5.16E-09	4.95E-09	1.29E-11	1.01E-08	9.21E-10	8.99E-10	1.29E-11	1.83E-09	3.91E-10	4.01E-10	1.29E-11	8.06E-10
1134	571951.7	4149071	4.15E-09	3.58E-09	1.26E-11	7.74E-09	5.05E-09	4.84E-09	1.26E-11	9.90E-09	9.01E-10	8.80E-10	1.26E-11	1.79E-09	3.83E-10	3.92E-10	1.26E-11	7.88E-10
1135	571951.4	4149062	4.07E-09	3.51E-09	1.24E-11	7.59E-09	4.96E-09	4.75E-09	1.24E-11	9.72E-09	8.84E-10	8.63E-10	1.24E-11	1.76E-09	3.76E-10	3.85E-10	1.24E-11	7.73E-10
1136	571951.1	4149052	4.01E-09	3.46E-09	1.22E-11	7.48E-09	4.88E-09	4.68E-09	1.22E-11	9.57E-09	8.70E-10	8.50E-10	1.22E-11	1.73E-09	3.70E-10	3.79E-10	1.22E-11	7.61E-10
1137	571950.8	4149043	3.96E-09	3.42E-09	1.21E-11	7.39E-09	4.82E-09	4.62E-09	1.21E-11	9.46E-09	8.60E-10	8.40E-10	1.21E-11	1.71E-09	3.66E-10	3.75E-10	1.21E-11	7.53E-10
1138	571956.9	4149027	4.04E-09	3.48E-09	1.23E-11	7.53E-09	4.91E-09	4.71E-09	1.23E-11	9.63E-09	8.76E-10	8.55E-10	1.23E-11	1.74E-09	3.72E-10	3.82E-10	1.23E-11	7.66E-10
1139	571963.3	4149020	4.15E-09	3.58E-09	1.26E-11	7.74E-09	5.05E-09	4.84E-09	1.26E-11	9.90E-09	9.00E-10	8.79E-10	1.26E-11	1.79E-09	3.83E-10	3.92E-10	1.26E-11	7.88E-10
1140	571950.4	4149326	4.84E-09	4.17E-09	1.48E-11	9.03E-09	5.90E-09	5.65E-09	1.48E-11	1.16E-08	1.05E-09	1.03E-09	1.48E-11	2.09E-09	4.47E-10	4.58E-10	1.48E-11	9.20E-10
1141	571950.1	4149317	4.75E-09	4.1E-09	1.45E-11	8.86E-09	5.78E-09	5.54E-09	1.45E-11	1.13E-08	1.03E-09	1.01E-09	1.45E-11	2.05E-09	4.38E-10	4.49E-10	1.45E-11	9.02E-10
1142	571949.8	4149308	4.68E-09	4.03E-09	1.42E-11	8.72E-09	5.69E-09	5.45E-09	1.42E-11	1.12E-08	1.01E-09	9.91E-10	1.42E-11	2.02E-09	4.31E-10	4.42E-10	1.42E-11	8.88E-10
1143	571949.5	4149298	4.61E-09	3.97E-09	1.40E-11	8.60E-09	5.61E-09	5.38E-09	1.40E-11	1.10E-08	1.00E-09	9.77E-10	1.40E-11	1.99E-09	4.25E-10	4.36E-10	1.40E-11	8.76E-10
1144	571949.2	4149289	4.56E-09	3.93E-09	1.39E-11	8.50E-09	5.54E-09	5.31E-09	1.39E-11	1.09E-08	9.89E-10	9.66E-10	1.39E-11	1.97E-09	4.20E-10	4.31E-10	1.39E-11	8.65E-10
1145	571948.9	4149280	4.5E-09	3.88E-09	1.37E-11	8.40E-09	5.48E-09	5.25E-09	1.37E-11	1.07E-08	9.77E-10	9.55E-10	1.37E-11	1.95E-09	4.16E-10	4.26E-10	1.37E-11	8.55E-10
1146	571948.6	4149271	4.45E-09	3.84E-09	1.36E-11	8.31E-09	5.42E-09	5.20E-09	1.36E-11	1.06E-08	9.67E-10	9.44E-10	1.36E-11	1.92E-09	4.11E-10	4.21E-10	1.36E-11	8.46E-10
1147	571948.4	4149261	4.41E-09	3.8E-09	1.34E-11	8.22E-09	5.36E-09	5.14E-09	1.34E-11	1.05E-08	9.56E-10	9.34E-10	1.34E-11	1.90E-09	4.07E-10	4.17E-10	1.34E-11	8.37E-10
1148	571948.1	4149252	4.36E-09	3.76E-09	1.33E-11	8.13E-09	5.31E-09	5.08E-09	1.33E-11	1.04E-08	9.46E-10	9.24E-10	1.33E-11	1.88E-09	4.02E-10	4.12E-10	1.33E-11	8.28E-10
1149	571947.8	4149243	4.32E-09	3.72E-09	1.32E-11	8.05E-09	5.26E-09	5.04E-09	1.32E-11	1.03E-08	9.37E-10	9.15E-10	1.32E-11	1.87E-09	3.98E-10	4.08E-10	1.32E-11	8.20E-10
1150	571947.5	4149234	4.29E-09	3.69E-09	1.31E-11	7.99E-09	5.22E-09	5.00E-09	1.31E-11	1.02E-08	9.30E-10	9.08E-10	1.31E-11	1.85E-09	3.95E-10	4.05E-10	1.31E-11	8.14E-10
1151	571947.2	4149224	4.27E-09	3.68E-09	1.30E-11	7.96E-09	5.19E-09	4.98E-09	1.30E-11	1.02E-08	9.26E-10	9.04E-10	1.30E-11	1.84E-09	3.94E-10	4.03E-10	1.30E-11	8.10E-10
1152	571946.9	4149215	4.26E-09	3.67E-09	1.30E-11	7.95E-09	5.19E-09	4.97E-09	1.30E-11	1.02E-08	9.25E-10	9.04E-10	1.30E-11	1.84E-09	3.93E-10	4.03E-10	1.30E-11	8.09E-10
1153	571946.6	4149206	4.28E-09	3.69E-09	1.30E-11	7.98E-09	5.21E-09	4.99E-09	1.30E-11	1.02E-08	9.29E-10	9.07E-10	1.30E-11	1.85E-09	3.95E-10	4.05E-10	1.30E-11	8.13E-10
1154	571946.3	4149197	4.31E-09	3.72E-09	1.31E-11	8.04E-09	5.25E-09	5.03E-09	1.31E-11	1.03E-08	9.36E-10	9.14E-10	1.31E-11	1.86E-09	3.98E-10	4.08E-10	1.31E-11	8.19E-10
1155	571946.1	4149187	4.36E-09	3.76E-09	1.33E-11	8.14E-09	5.31E-09	5.09E-09	1.33E-11	1.04E-08	9.47E-10	9.25E-10	1.33E-11	1.88E-09	4.03E-10	4.12E-10	1.33E-11	8.28E-10
1156	571945.8	4149178	4.42E-09	3.81E-09	1.35E-11	8.25E-09	5.38E-09	5.16E-09	1.35E-11	1.06E-08	9.60E-10	9.37E-10	1.35E-11	1.91E-09	4.08E-10	4.18E-10	1.35E-11	8.40E-10
1157	571945.5	4149169	4.48E-09	3.86E-09	1.37E-11	8.36E-09	5.46E-09	5.23E-09	1.37E-11	1.07E-08	9.73E-10	9.50E-10	1.37E-11	1.94E-09	4.14E-10	4.24E-10	1.37E-11	8.51E-10
1158	571945.2	4149160	4.53E-09	3.91E-09	1.38E-11	8.46E-09	5.52E-09	5.29E-09	1.38E-11	1.08E-08	9.84E-10	9.61E-10	1.38E-11	1.96E-09	4.18E-10	4.29E-10	1.38E-11	8.61E-10
1159	571944.9	4149150	4.57E-09	3.94E-09	1.39E-11	8.52E-09	5.56E-09	5.33E-09	1.39E-11	1.09E-08	9.91E-10	9.68E-10	1.39E-11	1.97E-09	4.21E-10	4.32E-10	1.39E-11	8.67E-10
1160	571944.6	4149141	4.58E-09	3.94E-09	1.39E-11	8.54E-09	5.57E-09	5.34E-09	1.39E-11	1.09E-08	9.93E-10	9.70E-10	1.39E-11	1.98E-09	4.22E-10	4.33E-10	1.39E-11	8.69E-10
1161	571944.3	4149132	4.56E-09	3.93E-09	1.39E-11	8.50E-09	5.55E-09	5.32E-09	1.39E-11	1.09E-08	9.89E-10	9.66E-10	1.39E-11	1.97E-09	4.20E-10	4.31E-10	1.39E-11	8.65E-10
1162	571944	4149123	4.51E-09	3.89E-09	1.37E-11	8.41E-09	5.49E-09	5.26E-09	1.37E-11	1.08E-08	9.79E-10	9.56E-10	1.37E-11	1.95E-09	4.16E-10	4.26E-10	1.37E-11	8.56E-10
1163	571943.5	4149104	4.35E-09	3.75E-09	1.32E-11	8.11E-09	5.29E-09	5.07E-09	1.32E-11	1.04E-08	9.43E-10	9.21E-10	1.32E-11	1.88E-09	4.01E-10	4.11E-10	1.32E-11	8.25E-10
1164	571943.2	4149095	4.25E-09	3.66E-09	1.29E-11	7.92E-09	5.17E-09	4.95E-09	1.29E-11	1.01E-08	9.21E-10	9.00E-10	1.29E-11	1.83E-09	3.92E-10	4.01E-10	1.29E-11	8.06E-10
1165	571942.9	4149086	4.14E-09	3.57E-09	1.26E-11	7.73E-09	5.04E-09	4.83E-09	1.26E-11	9.89E-09	8.99E-10	8.78E-10	1.26E-11	1.79E-09	3.82E-10	3.92E-10	1.26E-11	7.87E-10
1166	571942.6	4149076	4.05E-09	3.49E-09	1.23E-11	7.55E-09	4.93E-09	4.72E-09	1.23E-11	9.66E-09	8.78E-10	8.58E-10	1.23E-11	1.75E-09	3.73E-10	3.83E-10	1.23E-11	7.68E-10
1167	571942.3	4149067	3.96E-09	3.41E-09	1.21E-11	7.38E-09	4.82E-09	4.62E-09	1.21E-11	9.45E-09	8.59E-10	8.39E-10	1.21E-11	1.71E-09	3.65E-10	3.74E-10	1.21E-11	7.52E-10
1168	571942	4149058	3.89E-09	3.35E-09	1.18E-11	7.25E-09	4.73E-09	4.53E-09	1.18E-11	9.28E-09	8.44E-10	8.24E-10	1.18E-11	1.68E-09	3.59E-10	3.68E-10	1.18E-11	7.38E-10
1169	571941.8	4149049	3.83E-09	3.3E-09	1.17E-11	7.14E-09	4.66E-09	4.47E-09	1.17E-11	9.14E-09	8.31E-10	8.12E-10	1.17E-11	1.65E-09	3.53E-10	3.62E-10	1.17E-11	7.27E-10
1170	571941.5	4149039	3.79E-09	3.26E-09	1.15E-11	7.06E-09	4.61E-09	4.42E-09	1.15E-11	9.04E-09	8.22E-10	8.03E-10	1.15E-11	1.64E-09	3.50E-10	3.58E-10	1.15E-11	7.19E-10
1171	571947.5	4149023	3.86E-09	3.32E-09	1.17E-11	7.19E-09	4.69E-09	4.50E-09	1.17E-11	9.20E-09	8.37E-10	8.17E-10	1.17E-11	1.67E-09	3.56E-10	3.65E-10	1.17E-11	7.32E-10
1172	571953.9	4149017	3.96E-09	3.41E-09	1.21E-11	7.39E-09	4.82E-09	4.62E-09	1.21E-11	9.45E-09	8.60E-10	8.40E-10	1.21E-11	1.71E-09	3.66E-10	3.75E-10	1.21E-11	7.52E-10
1173	571941	4149321	4.57E-09	3.94E-09	1.39E-11	8.53E-09	5.56E-09	5.33E-09	1.39E-11	1.09E-08	9.92E-10	9.69E-10	1.39E-11	1.98E-09	4.22E-10	4.32E-10	1.39E-11	8.68E-10
1174	571940.7	4149312	4.5E-09	3.88E-09	1.37E-11	8.39E-09	5.48E-09	5.25E-09	1.37E-11	1.07E-08	9.76E-10	9.54E-10	1.37E-11	1.94E-09	4.15E-10	4.25E-10	1.37E-11	8.54E-10
1175	571940.4	4149303	4.44E-09	3.82E-09	1.35E-11	8.27E-09	5.40E-09	5.18E-09	1.35E-11	1.06E-08	9.63E-10	9.40E-10	1.35E-11	1.92E-09	4.09E-10	4.20E-10	1.35E-11	8.42E-10
1176	571940.1	4149293	4.38E-09	3.78E-09	1.34E-11	8.17E-09	5.33E-09	5.11E-09	1.34E-11	1.05E-08	9.51E-10	9.29E-10	1.34E-11	1.89E-09	4.04E-10	4.14E-10	1.34E-11	8.32E-10
1177	571939.8	4149284	4.33E-09	3.74E-09	1.32E-11	8.08E-09	5.28E-09	5.06E-09	1.32E-11	1.03E-08	9.41E-10	9.19E-10	1.32E-11	1.87E-09	4.00E-10	4.10E-10	1.32E-11	8.23E-10
1178	571939.5	4149275	4.29E-09	3.69E-09	1.31E-11	7.99E-09	5.22E-09	5.00E-09	1.31E-11	1.02E-08	9.30E-10	9.09E-10	1.31E-11	1.85E-09	3.96E-10	4.05E-10	1.31E-11	8.14E-10
1179	571939.3	4149266	4.24E-09	3.65E-09	1.29E-11	7.91E-09	5.16E-09	4.95E-09	1.29E-11	1.01E-08	9.20E-10	8.99E-10	1.29E-11	1.83E-09	3.91E-10	4.01E-10	1.29E-11	8.05E-10
1180	571939	4149257	4.2E-09	3.62E-09	1.28E-11	7.82E-09	5.11E-09	4.89E-09	1.28E-11	1.00E-08	9.11E-10	8.89E-10	1.28E-11	1.81E-09	3.87E-10	3.97E-10	1.28E-11	7.97E-10
1181	571938.7	4149247	4.15E-09	3.58E-09	1.27E-11	7.75E-09	5.06E-09	4.85E-09	1.27E-11	9.91E-09	9.02E-10	8.80E-10	1.27E-11	1.79E-09	3.83E-10	3.93E-10	1.27E-11	7.89E-10
1182	571938.4	4149238	4.12E-09	3.55E-09	1.25E-11	7.68E-09	5.01E-09	4.80E-09	1.25E-11	9.83E-09	8.94E-10	8.73E-10	1.25E-11	1.78E-09	3.80E-10	3.89E-10	1.25E-11	7.82E-10
1183	571938.1	4149229	4.09E-09	3.53E-09	1.25E-11	7.63E-09	4.98E-09	4.77E-09	1.25E-11	9.77E-09	8.88E-10	8.68E-10	1.25E-11	1.77E-09	3.78E-10	3.87E-10	1.25E-11	7.77E-10
1184	571937.8	4149220	4.08E-09	3.52E-09	1.24E-11	7.61E-09	4.97E-09	4.76E-09	1.24E-11	9.74E-09	8.86E-10	8.65E-10	1.24E-11	1.76E-09	3.77E-10	3.86E-10	1.24E-11	7.75E-10
1185	571937.5	4149211	4.09E-09	3.52E-09	1.24E-11	7.62E-09	4.97E-09	4.77E-09	1.24E-11	9.75E-09	8.87E-10	8.66E-10	1.24E-11	1.77E-09	3.77E-10	3.86E-10	1.24E-11	7.76E-10
1186	571937.3	4149201	4.11E-09	3.54E-09	1.25E-11	7.67E-09	5.00E-09	4.79E-09	1.25E-11	9.81E-09	8.92E-10	8.71E-10	1.25E-11	1.78E-09	3.79E-10	3.89E-10	1.25E-11	7.80E-10
1187	571937	4149192	4.15E-09	3.58E-09	1.26E-11	7.74E-09	5.05E-09	4.84E-09	1.26E-11	9.90E-09	9.01E-10	8.80E-10	1.26E-11	1.79E-09	3.83E-10	3.92E-10	1.26E-11	7.88E-10
1188	571936.7	4149183	4.2E-09	3.62E-09	1.28E-11	7.84E-09	5.12E-09	4.90E-09	1.28E-11	1.00E-08	9.12E-10	8.91E-10	1.28E-11	1.82E-09	3.88E-10	3.97E-10	1.28E-11	7.98E-10
1189	571936.4	4149174	4.26E-09	3.67E-09	1.30E-11	7.95E-09	5.19E-09	4.97E-09	1.30E-11	1.02E-08	9.25E-10	9.03E-10	1.30E-11	1.84E-09	3.93E-10	4.03E-10	1.30E-11	8.09E-10
1190	571936.1	4149165	4.32E-09	3.72E-09	1.32E-11	8.05E-09	5.26E-09	5.04E-09	1.32E-11	1.03E-08	9.37E-10	9.15E-10	1.32E-11	1.87E-09	3.98E-10	4.08E-10	1.32E-11	8.20E-10
1191	571935.8	4149155	4.36E-09	3.76E-09	1.33E-11	8.13E-09	5.31E-09	5.09E-09	1.33E-11	1.04E-08	9.47E-10	9.25E-10	1.33E-11	1.88E-09	4.02E-10	4.12E-10	1.33E-11	8.28E-10
1192	571935.5	4149146	4.39E-09	3.78E-09	1.34E-11	8.18E-09	5.34E-09	5.12E-09	1.34E-11	1.05E-08	9.52E-10	9.30E-10	1.34E-11	1.90E-09	4.05E-10	4.15E-10	1.34E-11	8.33E-10
1193	571935.3	4149137	4.39E-09	3.78E-09	1.34E-11	8.19E-09	5.34E-09	5.12E-09	1.34E-11	1.05E-08	9.53E-10	9.30E-10	1.34E-11	1.90E-09	4.05E-10	4.15E-10	1.34E-11	8.33E-10
1194	571935	4149128	4.36E-09	3.76E-09	1.33E-11	8.14E-09	5.31E-09	5.09E-09	1.33E-11	1.04E-08	9.47E-10	9.25E-10	1.33E-11	1.88E-09	4.03E-10	4.13E-10	1.33E-11	8.28E-10
1195	571934.1	4149100	4.15E-09	3.58E-09	1.26E-11	7.74E-09	5.05E-09	4.84E-09	1.26E-11	9.90E-09	9.01E-10	8.79E-10	1.26E-11	1.79E-09	3.83E-10	3.92E-10	1.26E-11	7.88E-10
1196	571933.8	4149091	4.05E-09	3.49E-09	1.23E-11	7.56E-09	4.93E-09	4.73E-09	1.23E-11	9.67E-09	8.80E-10	8.59E-10	1.23E-11	1.75E-09	3.74E-10	3.83E-10	1.23E-11	7.69E-10
1197	571933.5	4149082	3.96E-09	3.41E-09	1.21E-11	7.38E-09	4.82E-09	4.61E-09	1.21E-11	9.44E-09	8.59E-10	8.38E-10	1.21E-11	1.71E-09	3.65E-10	3.74E-10	1.21E-11	7.51E-10
1198	571933.3	4149073	3.86E-09	3.33E-09	1.18E-11	7.21E-09	4.70E-09	4.51E-09	1.18E-11	9.22E-09	8.39E-10	8.19E-10	1.18E-11	1.67E-09	3.57E-10	3.65E-10	1.18E-11	7.34E-10
1199	571933	4149063	3.78E-09	3.26E-09	1.15E-11	7.05E-09	4.60E-09	4.41E-09	1.15E-11	9.03E-09	8.21E-10	8.02E-10	1.15E-11	1.63E-09	3.49E-10	3.58E-10	1.15E-11	7.18E-10
1200	571932.7	4149054	3.72E-09	3.2E-09	1.13E-11	6.93E-09	4.52E-09	4.33E-09	1.13E-11	8.87E-09	8.06E-10	7.87E-10	1.13E-11	1.61E-09	3.43E-10	3.51E-10	1.13E-11	7.05E-10
1201	571932.4	4149045	3.66E-09	3.16E-09	1.12E-11	6.83E-09	4.46E-09	4.27E-09	1.12E-11	8.74E-09	7.95E-10	7.76E-10	1.12E-11	1.58E-09	3.38E-10	3.46E-10	1.12E-11	6.95E-10
1202	571932.1	4149036	3.63E-09	3.12E-09	1.10E-11	6.76E-09	4.41E-09	4.23E-09	1.10E-11	8.65E-09	7.87E-10	7.68E-10	1.10E-11	1.57E-09	3.34E-10	3.43E-10	1.10E-11	6.88E-10
1203	571938.2	4149020	3.69E-09	3.18E-09	1.12E-11	6.88E-09	4.49E-09	4.30E-09	1.12E-11	8.80E-09	8.01E-10	7.82E-10	1.12E-11	1.59E-09	3.40E-10	3.49E-10	1.12E-11	7.00E-10
1204	571931.9	4149325	4.41E-09	3.8E-09	1.34E-11	8.22E-09	5.36E-09	5.14E-09	1.34E-11	1.05E-08	9.56E-10	9.34E-10	1.34E-11	1.90E-09	4.06E-10	4.17E-10	1.34E-11	8.36E-10
1205	571931.6	4149316	4.34E-09	3.74E-09	1.32E-11	8.08E-09	5.28E-09	5.06E-09	1.32E-11	1.03E-08	9.41E-10	9.19E-10	1.32E-11	1.87E-09	4.00E-10	4.10E-10	1.32E-11	8.23E-10
1206	571931.3	4149307	4.28E-09	3.68E-09	1.30E-11	7.97E-09	5.20E-09	4.99E-09	1.30E-11	1.02E-08	9.28E-10	9.06E-10	1.30E-11	1.85E-09	3.94E-10	4.04E-10	1.30E-11	8.12E-10
1207	571931	4149298	4.22E-09	3.64E-09	1.29E-11	7.87E-09	5.14E-09	4.92E-09	1.29E-11	1.01E-08	9.16E-10	8.95E-10	1.29E-11	1.82E-09	3.89E-10	3.99E-10	1.29E-11	8.01E-10
1208	571930.7	4149289	4.18E-09	3.6E-09	1.27E-11	7.79E-09	5.08E-09	4.87E-09	1.27E-11	9.96E-09	9.06E-10	8.85E-10	1.27E-11	1.80E-09	3.85E-10	3.95E-10	1.27E-11	7.93E-10
1209	571930.4	4149280	4.13E-09	3.56E-09	1.26E-11	7.70E-09	5.03E-09	4.82E-09	1.26E-11	9.86E-09	8.96E-10	8.75E-10	1.26E-11	1.78E-09	3.81E-10	3.90E-10	1.26E-11	7.84E-10
1210	571930.2	4149270	4.09E-09	3.52E-09	1.24E-11	7.62E-09	4.97E-09	4.77E-09	1.24E-11	9.75E-09	8.87E-10	8.66E-10	1.24E-11	1.77E-09	3.77E-10	3.86E-10	1.24E-11	7.76E-10
1211	571929.9	4149261	4.04E-09	3.48E-09	1.23E-11	7.54E-09	4.92E-09	4.72E-09	1.23E-11	9.65E-09	8.77E-10	8.57E-10	1.23E-11	1.75E-09	3.73E-10	3.82E-10	1.23E-11	7.68E-10
1212	571929.6	4149252	4E-09	3.45E-09	1.22E-11	7.46E-09	4.87E-09	4.67E-09	1.22E-11	9.55E-09	8.68E-10	8.48E-10	1.22E-11	1.73E-09	3.69E-10	3.78E-10	1.22E-11	7.60E-10
1213	571929.3	4149243	3.96E-09	3.42E-09	1.21E-11	7.39E-09	4.82E-09	4.62E-09	1.21E-11	9.46E-09	8.60E-10	8.40E-10	1.21E-11	1.71E-09	3.66E-10	3.75E-10	1.21E-11	7.53E-10
1214	571929	4149234	3.94E-09	3.39E-09	1.20E-11	7.34E-09	4.79E-09	4.59E-09	1.20E-11	9.39E-09	8.54E-10	8.34E-10	1.20E-11	1.70E-09	3.63E-10	3.72E-10	1.20E-11	7.47E-10
1215	571928.7	4149225	3.92E-09	3.38E-09	1.19E-11	7.30E-09	4.77E-09	4.57E-09	1.19E-11	9.35E-09	8.50E-10	8.30E-10	1.19E-11	1.69E-09	3.61E-10	3.70E-10	1.19E-11	7.44E-10
1216	571928.4	4149215	3.91E-09	3.37E-09	1.19E-11	7.30E-09	4.76E-09	4.56E-09	1.19E-11	9.34E-09	8.49E-10	8.29E-10	1.19E-11	1.69E-09	3.61E-10	3.70E-10	1.19E-11	7.43E-10
1217	571928.2	4149206	3.93E-09	3.38E-09	1.20E-11	7.32E-09	4.78E-09	4.58E-09	1.20E-11	9.37E-09	8.52E-10	8.32E-10	1.20E-11	1.70E-09	3.62E-10	3.71E-10	1.20E-11	7.46E-10
1218	571927.9	4149197	3.96E-09	3.41E-09	1.20E-11	7.38E-09	4.81E-09	4.61E-09	1.20E-11	9.44E-09	8.59E-10	8.38E-10	1.20E-11	1.71E-09	3.65E-10	3.74E-10	1.20E-11	7.51E-10
1219	571927.6	4149188	4E-09	3.45E-09	1.22E-11	7.46E-09	4.87E-09	4.67E-09	1.22E-11	9.55E-09	8.68E-10	8.48E-10	1.22E-11	1.73E-09	3.69E-10	3.78E-10	1.22E-11	7.60E-10
1220	571927.3	4149179	4.05E-09	3.49E-09	1.24E-11	7.56E-09	4.93E-09	4.73E-09	1.24E-11	9.68E-09	8.80E-10	8.59E-10	1.24E-11	1.75E-09	3.74E-10	3.83E-10	1.24E-11	7.70E-10
1221	571927	4149170	4.11E-09	3.54E-09	1.25E-11	7.67E-09	5.00E-09	4.79E-09	1.25E-11	9.81E-09	8.92E-10	8.71E-10	1.25E-11	1.78E-09	3.79E-10	3.89E-10	1.25E-11	7.81E-10
1222	571926.7	4149160	4.16E-09	3.59E-09	1.27E-11	7.76E-09	5.07E-09	4.85E-09	1.27E-11	9.93E-09	9.03E-10	8.82E-10	1.27E-11	1.80E-09	3.84E-10	3.94E-10	1.27E-11	7.90E-10
1223	571926.5	4149151	4.2E-09	3.62E-09	1.28E-11	7.83E-09	5.11E-09	4.90E-09	1.28E-11	1.00E-08	9.11E-10	8.90E-10	1.28E-11	1.81E-09	3.87E-10	3.97E-10	1.28E-11	7.97E-10
1224	571926.2	4149142	4.22E-09	3.63E-09	1.28E-11	7.87E-09	5.13E-09	4.92E-09	1.28E-11	1.01E-08	9.15E-10	8.94E-10	1.28E-11	1.82E-09	3.89E-10	3.99E-10	1.28E-11	8.01E-10
1225	571925.9	4149133	4.21E-09	3.63E-09	1.28E-11	7.86E-09	5.13E-09	4.91E-09	1.28E-11	1.01E-08	9.14E-10	8.93E-10	1.28E-11	1.82E-09	3.89E-10	3.98E-10	1.28E-11	8.00E-10
1226	571925	4149105	4.05E-09	3.49E-09	1.23E-11	7.56E-09	4.93E-09	4.73E-09	1.23E-11	9.67E-09	8.79E-10	8.59E-10	1.23E-11	1.75E-09	3.74E-10	3.83E-10	1.23E-11	7.69E-10
1227	571924.8	4149096	3.97E-09	3.42E-09	1.21E-11	7.39E-09	4.83E-09	4.62E-09	1.21E-11	9.46E-09	8.61E-10	8.40E-10	1.21E-11	1.71E-09	3.66E-10	3.75E-10	1.21E-11	7.53E-10
1228	571924.5	4149087	3.87E-09	3.34E-09	1.18E-11	7.22E-09	4.71E-09	4.52E-09	1.18E-11	9.24E-09	8.40E-10	8.21E-10	1.18E-11	1.67E-09	3.57E-10	3.66E-10	1.18E-11	7.35E-10
1229	571924.2	4149078	3.78E-09	3.26E-09	1.15E-11	7.05E-09	4.60E-09	4.41E-09	1.15E-11	9.02E-09	8.20E-10	8.01E-10	1.15E-11	1.63E-09	3.49E-10	3.57E-10	1.15E-11	7.18E-10
1230	571923.9	4149069	3.69E-09	3.18E-09	1.13E-11	6.89E-09	4.50E-09	4.31E-09	1.13E-11	8.81E-09	8.02E-10	7.83E-10	1.13E-11	1.60E-09	3.41E-10	3.49E-10	1.13E-11	7.01E-10
1231	571923.6	4149060	3.62E-09	3.12E-09	1.10E-11	6.75E-09	4.40E-09	4.22E-09	1.10E-11	8.63E-09	7.85E-10	7.67E-10	1.10E-11	1.56E-09	3.34E-10	3.42E-10	1.10E-11	6.87E-10
1232	571923.3	4149050	3.56E-09	3.06E-09	1.08E-11	6.63E-09	4.33E-09	4.15E-09	1.08E-11	8.48E-09	7.71E-10	7.53E-10	1.08E-11	1.54E-09	3.28E-10	3.36E-10	1.08E-11	6.75E-10
1233	571923	4149041	3.51E-09	3.02E-09	1.07E-11	6.54E-09	4.27E-09	4.09E-09	1.07E-11	8.37E-09	7.61E-10	7.43E-10	1.07E-11	1.52E-09	3.24E-10	3.32E-10	1.07E-11	6.66E-10

1234	571922.8	4149032	3.47E-09	2.99E-09	1.06E-11	6.48E-09	4.23E-09	4.05E-09	1.06E-11	8.29E-09	7.54E-10	7.36E-10	1.06E-11	1.50E-09	3.20E-10	3.28E-10	1.06E-11	6.59E-10
1235	571922.5	4149320	4.18E-09	3.6E-09	1.27E-11	7.79E-09	5.09E-09	4.87E-09	1.27E-11	9.97E-09	9.07E-10	8.86E-10	1.27E-11	1.81E-09	3.86E-10	3.95E-10	1.27E-11	7.93E-10
1236	571922.2	4149311	4.12E-09	3.55E-09	1.26E-11	7.69E-09	5.02E-09	4.81E-09	1.26E-11	9.84E-09	8.94E-10	8.74E-10	1.26E-11	1.78E-09	3.80E-10	3.90E-10	1.26E-11	7.83E-10
1237	571921.9	4149302	4.07E-09	3.51E-09	1.24E-11	7.59E-09	4.96E-09	4.75E-09	1.24E-11	9.72E-09	8.84E-10	8.63E-10	1.24E-11	1.76E-09	3.76E-10	3.85E-10	1.24E-11	7.73E-10
1238	571921.6	4149293	4.03E-09	3.47E-09	1.23E-11	7.51E-09	4.90E-09	4.70E-09	1.23E-11	9.61E-09	8.74E-10	8.53E-10	1.23E-11	1.74E-09	3.72E-10	3.81E-10	1.23E-11	7.65E-10
1239	571921.3	4149284	3.98E-09	3.43E-09	1.21E-11	7.43E-09	4.85E-09	4.65E-09	1.21E-11	9.51E-09	8.65E-10	8.44E-10	1.21E-11	1.72E-09	3.68E-10	3.77E-10	1.21E-11	7.56E-10
1240	571921.1	4149275	3.94E-09	3.4E-09	1.20E-11	7.35E-09	4.80E-09	4.60E-09	1.20E-11	9.41E-09	8.56E-10	8.36E-10	1.20E-11	1.70E-09	3.64E-10	3.73E-10	1.20E-11	7.48E-10
1241	571920.8	4149266	3.9E-09	3.36E-09	1.19E-11	7.27E-09	4.75E-09	4.55E-09	1.19E-11	9.31E-09	8.46E-10	8.27E-10	1.19E-11	1.69E-09	3.60E-10	3.69E-10	1.19E-11	7.41E-10
1242	571920.5	4149257	3.86E-09	3.33E-09	1.18E-11	7.20E-09	4.70E-09	4.50E-09	1.18E-11	9.21E-09	8.37E-10	8.18E-10	1.18E-11	1.67E-09	3.56E-10	3.65E-10	1.18E-11	7.33E-10
1243	571920.2	4149247	3.82E-09	3.29E-09	1.16E-11	7.13E-09	4.65E-09	4.46E-09	1.16E-11	9.12E-09	8.29E-10	8.10E-10	1.16E-11	1.65E-09	3.53E-10	3.61E-10	1.16E-11	7.25E-10
1244	571919.9	4149238	3.79E-09	3.26E-09	1.15E-11	7.07E-09	4.61E-09	4.42E-09	1.15E-11	9.04E-09	8.22E-10	8.03E-10	1.15E-11	1.64E-09	3.50E-10	3.58E-10	1.15E-11	7.19E-10
1245	571919.6	4149229	3.77E-09	3.24E-09	1.15E-11	7.02E-09	4.58E-09	4.39E-09	1.15E-11	8.99E-09	8.17E-10	7.98E-10	1.15E-11	1.63E-09	3.47E-10	3.56E-10	1.15E-11	7.15E-10
1246	571919.4	4149220	3.76E-09	3.24E-09	1.14E-11	7.00E-09	4.57E-09	4.38E-09	1.14E-11	8.96E-09	8.15E-10	7.96E-10	1.14E-11	1.62E-09	3.46E-10	3.55E-10	1.14E-11	7.13E-10
1247	571919.1	4149211	3.76E-09	3.24E-09	1.15E-11	7.01E-09	4.58E-09	4.38E-09	1.15E-11	8.97E-09	8.16E-10	7.97E-10	1.15E-11	1.62E-09	3.47E-10	3.55E-10	1.15E-11	7.14E-10
1248	571918.8	4149202	3.78E-09	3.26E-09	1.15E-11	7.05E-09	4.60E-09	4.41E-09	1.15E-11	9.02E-09	8.20E-10	8.01E-10	1.15E-11	1.63E-09	3.49E-10	3.57E-10	1.15E-11	7.18E-10
1249	571918.5	4149193	3.81E-09	3.29E-09	1.16E-11	7.11E-09	4.64E-09	4.45E-09	1.16E-11	9.10E-09	8.28E-10	8.08E-10	1.16E-11	1.65E-09	3.52E-10	3.61E-10	1.16E-11	7.24E-10
1250	571918.2	4149184	3.86E-09	3.33E-09	1.18E-11	7.20E-09	4.70E-09	4.50E-09	1.18E-11	9.22E-09	8.38E-10	8.18E-10	1.18E-11	1.67E-09	3.56E-10	3.65E-10	1.18E-11	7.33E-10
1251	571917.9	4149174	3.92E-09	3.37E-09	1.19E-11	7.30E-09	4.77E-09	4.57E-09	1.19E-11	9.34E-09	8.50E-10	8.30E-10	1.19E-11	1.69E-09	3.61E-10	3.70E-10	1.19E-11	7.43E-10
1252	571917.7	4149165	3.97E-09	3.42E-09	1.21E-11	7.40E-09	4.83E-09	4.63E-09	1.21E-11	9.47E-09	8.61E-10	8.41E-10	1.21E-11	1.71E-09	3.66E-10	3.75E-10	1.21E-11	7.54E-10
1253	571917.4	4149156	4.02E-09	3.46E-09	1.22E-11	7.49E-09	4.89E-09	4.68E-09	1.22E-11	9.58E-09	8.71E-10	8.51E-10	1.22E-11	1.73E-09	3.70E-10	3.80E-10	1.22E-11	7.62E-10
1254	571917.1	4149147	4.05E-09	3.49E-09	1.23E-11	7.54E-09	4.92E-09	4.72E-09	1.23E-11	9.66E-09	8.78E-10	8.57E-10	1.23E-11	1.75E-09	3.73E-10	3.83E-10	1.23E-11	7.68E-10
1255	571916.8	4149138	4.06E-09	3.5E-09	1.24E-11	7.56E-09	4.94E-09	4.73E-09	1.24E-11	9.68E-09	8.80E-10	8.60E-10	1.24E-11	1.75E-09	3.74E-10	3.84E-10	1.24E-11	7.70E-10
1256	571916	4149111	3.95E-09	3.41E-09	1.20E-11	7.37E-09	4.81E-09	4.61E-09	1.20E-11	9.43E-09	8.58E-10	8.37E-10	1.20E-11	1.71E-09	3.65E-10	3.74E-10	1.20E-11	7.50E-10
1257	571915.7	4149102	3.88E-09	3.34E-09	1.18E-11	7.23E-09	4.72E-09	4.52E-09	1.18E-11	9.25E-09	8.42E-10	8.22E-10	1.18E-11	1.68E-09	3.58E-10	3.67E-10	1.18E-11	7.36E-10
1258	571915.4	4149092	3.79E-09	3.27E-09	1.16E-11	7.07E-09	4.62E-09	4.42E-09	1.16E-11	9.05E-09	8.23E-10	8.04E-10	1.16E-11	1.64E-09	3.50E-10	3.59E-10	1.16E-11	7.20E-10
1259	571915.1	4149083	3.7E-09	3.19E-09	1.13E-11	6.91E-09	4.51E-09	4.32E-09	1.13E-11	8.84E-09	8.04E-10	7.85E-10	1.13E-11	1.60E-09	3.42E-10	3.50E-10	1.13E-11	7.03E-10
1260	571914.8	4149074	3.62E-09	3.12E-09	1.10E-11	6.74E-09	4.40E-09	4.22E-09	1.10E-11	8.63E-09	7.85E-10	7.66E-10	1.10E-11	1.56E-09	3.34E-10	3.42E-10	1.10E-11	6.87E-10
1261	571914.5	4149065	3.53E-09	3.05E-09	1.08E-11	6.59E-09	4.30E-09	4.12E-09	1.08E-11	8.43E-09	7.67E-10	7.49E-10	1.08E-11	1.53E-09	3.26E-10	3.34E-10	1.08E-11	6.71E-10
1262	571914.3	4149056	3.46E-09	2.98E-09	1.05E-11	6.46E-09	4.21E-09	4.04E-09	1.05E-11	8.26E-09	7.52E-10	7.34E-10	1.05E-11	1.50E-09	3.20E-10	3.27E-10	1.05E-11	6.58E-10
1263	571914	4149047	3.41E-09	2.93E-09	1.04E-11	6.35E-09	4.14E-09	3.97E-09	1.04E-11	8.13E-09	7.39E-10	7.22E-10	1.04E-11	1.47E-09	3.14E-10	3.22E-10	1.04E-11	6.46E-10
1264	571913.7	4149038	3.36E-09	2.9E-09	1.02E-11	6.27E-09	4.09E-09	3.92E-09	1.02E-11	8.02E-09	7.30E-10	7.12E-10	1.02E-11	1.45E-09	3.10E-10	3.18E-10	1.02E-11	6.38E-10
1265	571913.4	4149029	3.33E-09	2.87E-09	1.01E-11	6.21E-09	4.05E-09	3.88E-09	1.01E-11	7.95E-09	7.23E-10	7.06E-10	1.01E-11	1.44E-09	3.07E-10	3.15E-10	1.01E-11	6.32E-10
1266	571913.4	4149325	4.03E-09	3.47E-09	1.23E-11	7.52E-09	4.91E-09	4.70E-09	1.23E-11	9.62E-09	8.75E-10	8.54E-10	1.23E-11	1.74E-09	3.72E-10	3.81E-10	1.23E-11	7.65E-10
1267	571913.1	4149316	3.98E-09	3.43E-09	1.21E-11	7.41E-09	4.84E-09	4.64E-09	1.21E-11	9.49E-09	8.63E-10	8.43E-10	1.21E-11	1.72E-09	3.67E-10	3.76E-10	1.21E-11	7.55E-10
1268	571912.8	4149307	3.93E-09	3.39E-09	1.20E-11	7.33E-09	4.78E-09	4.58E-09	1.20E-11	9.38E-09	8.53E-10	8.33E-10	1.20E-11	1.70E-09	3.62E-10	3.71E-10	1.20E-11	7.46E-10
1269	571912.5	4149297	3.89E-09	3.35E-09	1.18E-11	7.25E-09	4.73E-09	4.53E-09	1.18E-11	9.27E-09	8.43E-10	8.24E-10	1.18E-11	1.68E-09	3.59E-10	3.67E-10	1.18E-11	7.38E-10
1270	571912.2	4149288	3.85E-09	3.31E-09	1.17E-11	7.17E-09	4.68E-09	4.49E-09	1.17E-11	9.18E-09	8.35E-10	8.15E-10	1.17E-11	1.66E-09	3.55E-10	3.64E-10	1.17E-11	7.30E-10
1271	571912	4149279	3.81E-09	3.28E-09	1.16E-11	7.10E-09	4.63E-09	4.44E-09	1.16E-11	9.08E-09	8.26E-10	8.07E-10	1.16E-11	1.64E-09	3.51E-10	3.60E-10	1.16E-11	7.23E-10
1272	571911.7	4149270	3.77E-09	3.25E-09	1.15E-11	7.02E-09	4.58E-09	4.39E-09	1.15E-11	8.99E-09	8.17E-10	7.98E-10	1.15E-11	1.63E-09	3.47E-10	3.56E-10	1.15E-11	7.15E-10
1273	571911.4	4149261	3.73E-09	3.21E-09	1.13E-11	6.95E-09	4.53E-09	4.34E-09	1.13E-11	8.89E-09	8.08E-10	7.90E-10	1.13E-11	1.61E-09	3.44E-10	3.52E-10	1.13E-11	7.07E-10
1274	571911.1	4149252	3.69E-09	3.18E-09	1.12E-11	6.88E-09	4.49E-09	4.30E-09	1.12E-11	8.80E-09	8.00E-10	7.81E-10	1.12E-11	1.59E-09	3.40E-10	3.49E-10	1.12E-11	7.00E-10
1275	571910.8	4149243	3.65E-09	3.15E-09	1.11E-11	6.81E-09	4.45E-09	4.26E-09	1.11E-11	8.72E-09	7.93E-10	7.74E-10	1.11E-11	1.58E-09	3.37E-10	3.45E-10	1.11E-11	6.94E-10
1276	571910.5	4149234	3.63E-09	3.12E-09	1.10E-11	6.76E-09	4.41E-09	4.23E-09	1.10E-11	8.65E-09	7.87E-10	7.69E-10	1.10E-11	1.57E-09	3.35E-10	3.43E-10	1.10E-11	6.88E-10
1277	571910.3	4149225	3.61E-09	3.11E-09	1.10E-11	6.73E-09	4.39E-09	4.21E-09	1.10E-11	8.61E-09	7.83E-10	7.65E-10	1.10E-11	1.56E-09	3.33E-10	3.41E-10	1.10E-11	6.85E-10
1278	571910	4149216	3.61E-09	3.11E-09	1.10E-11	6.73E-09	4.39E-09	4.21E-09	1.10E-11	8.61E-09	7.83E-10	7.64E-10	1.10E-11	1.56E-09	3.33E-10	3.41E-10	1.10E-11	6.85E-10
1279	571909.7	4149207	3.62E-09	3.12E-09	1.10E-11	6.75E-09	4.40E-09	4.22E-09	1.10E-11	8.64E-09	7.85E-10	7.67E-10	1.10E-11	1.56E-09	3.34E-10	3.42E-10	1.10E-11	6.87E-10
1280	571909.4	4149198	3.64E-09	3.14E-09	1.11E-11	6.80E-09	4.43E-09	4.25E-09	1.11E-11	8.70E-09	7.91E-10	7.72E-10	1.11E-11	1.57E-09	3.36E-10	3.45E-10	1.11E-11	6.92E-10
1281	571909.1	4149188	3.68E-09	3.17E-09	1.12E-11	6.87E-09	4.48E-09	4.30E-09	1.12E-11	8.79E-09	7.99E-10	7.81E-10	1.12E-11	1.59E-09	3.40E-10	3.48E-10	1.12E-11	6.99E-10
1282	571908.9	4149179	3.73E-09	3.22E-09	1.14E-11	6.96E-09	4.54E-09	4.35E-09	1.14E-11	8.91E-09	8.10E-10	7.91E-10	1.14E-11	1.61E-09	3.44E-10	3.53E-10	1.14E-11	7.09E-10
1283	571908.6	4149170	3.79E-09	3.26E-09	1.15E-11	7.06E-09	4.61E-09	4.41E-09	1.15E-11	9.03E-09	8.21E-10	8.02E-10	1.15E-11	1.64E-09	3.49E-10	3.58E-10	1.15E-11	7.19E-10
1284	571908.3	4149161	3.84E-09	3.3E-09	1.17E-11	7.15E-09	4.67E-09	4.47E-09	1.17E-11	9.15E-09	8.32E-10	8.13E-10	1.17E-11	1.66E-09	3.54E-10	3.63E-10	1.17E-11	7.28E-10
1285	571908	4149152	3.87E-09	3.34E-09	1.18E-11	7.23E-09	4.72E-09	4.52E-09	1.18E-11	9.25E-09	8.41E-10	8.21E-10	1.18E-11	1.67E-09	3.57E-10	3.66E-10	1.18E-11	7.36E-10
1286	571907.7	4149143	3.9E-09	3.36E-09	1.19E-11	7.27E-09	4.75E-09	4.55E-09	1.19E-11	9.30E-09	8.46E-10	8.26E-10	1.19E-11	1.68E-09	3.60E-10	3.69E-10	1.19E-11	7.40E-10
1287	571907.4	4149134	3.9E-09	3.36E-09	1.19E-11	7.28E-09	4.75E-09	4.55E-09	1.19E-11	9.31E-09	8.47E-10	8.27E-10	1.19E-11	1.69E-09	3.60E-10	3.69E-10	1.19E-11	7.41E-10
1288	571906.9	4149116	3.85E-09	3.31E-09	1.17E-11	7.17E-09	4.68E-09	4.49E-09	1.17E-11	9.18E-09	8.35E-10	8.15E-10	1.17E-11	1.66E-09	3.55E-10	3.64E-10	1.17E-11	7.30E-10
1289	571906.6	4149107	3.79E-09	3.26E-09	1.15E-11	7.06E-09	4.61E-09	4.42E-09	1.15E-11	9.04E-09	8.22E-10	8.03E-10	1.15E-11	1.64E-09	3.49E-10	3.58E-10	1.15E-11	7.19E-10
1290	571906.3	4149098	3.71E-09	3.2E-09	1.13E-11	6.92E-09	4.52E-09	4.33E-09	1.13E-11	8.86E-09	8.06E-10	7.87E-10	1.13E-11	1.60E-09	3.43E-10	3.51E-10	1.13E-11	7.05E-10
1291	571906	4149089	3.63E-09	3.13E-09	1.11E-11	6.77E-09	4.42E-09	4.23E-09	1.11E-11	8.67E-09	7.88E-10	7.70E-10	1.11E-11	1.57E-09	3.35E-10	3.43E-10	1.11E-11	6.89E-10
1292	571905.8	4149079	3.55E-09	3.06E-09	1.08E-11	6.61E-09	4.32E-09	4.14E-09	1.08E-11	8.46E-09	7.70E-10	7.52E-10	1.08E-11	1.53E-09	3.27E-10	3.35E-10	1.08E-11	6.73E-10
1293	571905.5	4149070	3.46E-09	2.98E-09	1.05E-11	6.46E-09	4.21E-09	4.04E-09	1.05E-11	8.26E-09	7.51E-10	7.34E-10	1.05E-11	1.50E-09	3.19E-10	3.27E-10	1.05E-11	6.57E-10
1294	571905.2	4149061	3.39E-09	2.92E-09	1.03E-11	6.31E-09	4.12E-09	3.95E-09	1.03E-11	8.08E-09	7.35E-10	7.17E-10	1.03E-11	1.46E-09	3.12E-10	3.20E-10	1.03E-11	6.43E-10
1295	571904.9	4149052	3.32E-09	2.86E-09	1.01E-11	6.19E-09	4.04E-09	3.87E-09	1.01E-11	7.92E-09	7.20E-10	7.03E-10	1.01E-11	1.43E-09	3.06E-10	3.14E-10	1.01E-11	6.30E-10
1296	571904.6	4149043	3.27E-09	2.81E-09	9.95E-12	6.09E-09	3.97E-09	3.81E-09	9.95E-12	7.79E-09	7.09E-10	6.92E-10	9.95E-12	1.41E-09	3.01E-10	3.09E-10	9.95E-12	6.20E-10
1297	571904.3	4149034	3.23E-09	2.78E-09	9.82E-12	6.01E-09	3.93E-09	3.76E-09	9.82E-12	7.70E-09	7.00E-10	6.84E-10	9.82E-12	1.39E-09	2.98E-10	3.05E-10	9.82E-12	6.12E-10
1298	571903.9	4149319	3.83E-09	3.3E-09	1.17E-11	7.15E-09	4.66E-09	4.47E-09	1.17E-11	9.14E-09	8.31E-10	8.12E-10	1.17E-11	1.66E-09	3.54E-10	3.62E-10	1.17E-11	7.27E-10
1299	571903.7	4149309	3.79E-09	3.26E-09	1.15E-11	7.06E-09	4.61E-09	4.42E-09	1.15E-11	9.04E-09	8.22E-10	8.02E-10	1.15E-11	1.64E-09	3.49E-10	3.58E-10	1.15E-11	7.19E-10
1300	571903.4	4149300	3.75E-09	3.23E-09	1.14E-11	6.98E-09	4.56E-09	4.37E-09	1.14E-11	8.94E-09	8.13E-10	7.94E-10	1.14E-11	1.62E-09	3.46E-10	3.54E-10	1.14E-11	7.11E-10
1301	571903.1	4149291	3.71E-09	3.19E-09	1.13E-11	6.91E-09	4.51E-09	4.32E-09	1.13E-11	8.85E-09	8.05E-10	7.86E-10	1.13E-11	1.60E-09	3.42E-10	3.51E-10	1.13E-11	7.04E-10
1302	571902.8	4149282	3.67E-09	3.16E-09	1.12E-11	6.84E-09	4.47E-09	4.28E-09	1.12E-11	8.76E-09	7.96E-10	7.78E-10	1.12E-11	1.58E-09	3.39E-10	3.47E-10	1.12E-11	6.97E-10
1303	571902.5	4149272	3.63E-09	3.13E-09	1.11E-11	6.77E-09	4.42E-09	4.23E-09	1.11E-11	8.66E-09	7.88E-10	7.69E-10	1.11E-11	1.57E-09	3.35E-10	3.43E-10	1.11E-11	6.89E-10
1304	571902.2	4149263	3.59E-09	3.09E-09	1.09E-11	6.70E-09	4.37E-09	4.19E-09	1.09E-11	8.57E-09	7.79E-10	7.61E-10	1.09E-11	1.55E-09	3.31E-10	3.40E-10	1.09E-11	6.82E-10
1305	571901.9	4149254	3.55E-09	3.06E-09	1.08E-11	6.62E-09	4.32E-09	4.14E-09	1.08E-11	8.47E-09	7.71E-10	7.53E-10	1.08E-11	1.53E-09	3.28E-10	3.36E-10	1.08E-11	6.74E-10
1306	571901.6	4149244	3.52E-09	3.03E-09	1.07E-11	6.56E-09	4.28E-09	4.10E-09	1.07E-11	8.39E-09	7.63E-10	7.45E-10	1.07E-11	1.52E-09	3.24E-10	3.33E-10	1.07E-11	6.68E-10
1307	571901.3	4149235	3.49E-09	3.01E-09	1.06E-11	6.51E-09	4.25E-09	4.07E-09	1.06E-11	8.33E-09	7.57E-10	7.39E-10	1.06E-11	1.51E-09	3.22E-10	3.30E-10	1.06E-11	6.62E-10
1308	571901.1	4149226	3.47E-09	2.99E-09	1.06E-11	6.47E-09	4.22E-09	4.05E-09	1.06E-11	8.28E-09	7.53E-10	7.36E-10	1.06E-11	1.50E-09	3.20E-10	3.28E-10	1.06E-11	6.59E-10
1309	571900.8	4149217	3.47E-09	2.99E-09	1.06E-11	6.46E-09	4.22E-09	4.04E-09	1.06E-11	8.27E-09	7.52E-10	7.35E-10	1.06E-11	1.50E-09	3.20E-10	3.28E-10	1.06E-11	6.58E-10
1310	571900.5	4149207	3.48E-09	3E-09	1.06E-11	6.48E-09	4.23E-09	4.05E-09	1.06E-11	8.30E-09	7.54E-10	7.37E-10	1.06E-11	1.50E-09	3.21E-10	3.29E-10	1.06E-11	6.60E-10
1311	571900.2	4149198	3.5E-09	3.02E-09	1.07E-11	6.53E-09	4.26E-09	4.08E-09	1.07E-11	8.35E-09	7.60E-10	7.42E-10	1.07E-11	1.51E-09	3.23E-10	3.31E-10	1.07E-11	6.65E-10
1312	571899.9	4149189	3.54E-09	3.05E-09	1.08E-11	6.60E-09	4.31E-09	4.13E-09	1.08E-11	8.45E-09	7.68E-10	7.50E-10	1.08E-11	1.53E-09	3.27E-10	3.35E-10	1.08E-11	6.72E-10
1313	571899.6	4149179	3.59E-09	3.09E-09	1.09E-11	6.69E-09	4.37E-09	4.18E-09	1.09E-11	8.56E-09	7.78E-10	7.60E-10	1.09E-11	1.55E-09	3.31E-10	3.39E-10	1.09E-11	6.81E-10
1314	571899.3	4149170	3.64E-09	3.14E-09	1.11E-11	6.79E-09	4.43E-09	4.24E-09	1.11E-11	8.68E-09	7.90E-10	7.71E-10	1.11E-11	1.57E-09	3.36E-10	3.44E-10	1.11E-11	6.91E-10
1315	571899	4149161	3.69E-09	3.18E-09	1.12E-11	6.88E-09	4.49E-09	4.30E-09	1.12E-11	8.80E-09	8.01E-10	7.82E-10	1.12E-11	1.59E-09	3.40E-10	3.49E-10	1.12E-11	7.00E-10
1316	571898.8	4149152	3.73E-09	3.21E-09	1.14E-11	6.95E-09	4.54E-09	4.35E-09	1.14E-11	8.90E-09	8.09E-10	7.90E-10	1.14E-11	1.61E-09	3.44E-10	3.53E-10	1.14E-11	7.08E-10
1317	571898.5	4149142	3.75E-09	3.24E-09	1.14E-11	7.00E-09	4.57E-09	4.38E-09	1.14E-11	8.96E-09	8.15E-10	7.96E-10	1.14E-11	1.62E-09	3.46E-10	3.55E-10	1.14E-11	7.13E-10
1318	571897.6	4149114	3.71E-09	3.19E-09	1.13E-11	6.91E-09	4.51E-09	4.32E-09	1.13E-11	8.84E-09	8.04E-10	7.85E-10	1.13E-11	1.60E-09	3.42E-10	3.50E-10	1.13E-11	7.04E-10
1319	571897.3	4149105	3.65E-09	3.14E-09	1.11E-11	6.80E-09	4.44E-09	4.26E-09	1.11E-11	8.71E-09	7.92E-10	7.73E-10	1.11E-11	1.58E-09	3.37E-10	3.45E-10	1.11E-11	6.93E-10
1320	571897	4149096	3.58E-09	3.08E-09	1.09E-11	6.67E-09	4.35E-09	4.17E-09	1.09E-11	8.54E-09	7.76E-10	7.58E-10	1.09E-11	1.55E-09	3.30E-10	3.38E-10	1.09E-11	6.79E-10
1321	571896.7	4149087	3.5E-09	3.01E-09	1.06E-11	6.52E-09	4.26E-09	4.08E-09	1.06E-11	8.34E-09	7.59E-10	7.41E-10	1.06E-11	1.51E-09	3.23E-10	3.31E-10	1.06E-11	6.64E-10
1322	571896.4	4149077	3.41E-09	2.94E-09	1.04E-11	6.36E-09	4.15E-09	3.98E-09	1.04E-11	8.14E-09	7.41E-10	7.23E-10	1.04E-11	1.47E-09	3.15E-10	3.23E-10	1.04E-11	6.48E-10
1323	571896.2	4149068	3.33E-09	2.87E-09	1.01E-11	6.21E-09	4.05E-09	3.88E-09	1.01E-11	7.95E-09	7.23E-10	7.06E-10	1.01E-11	1.44E-09	3.07E-10	3.15E-10	1.01E-11	6.32E-10
1324	571895.9	4149059	3.25E-09	2.8E-09	9.91E-12	6.07E-09	3.96E-09	3.80E-09	9.91E-12	7.77E-09	7.06E-10	6.90E-10	9.91E-12	1.41E-09	3.00E-10	3.08E-10	9.91E-12	6.18E-10
1325	571895.6	4149049	3.19E-09	2.75E-09	9.71E-12	5.95E-09	3.88E-09	3.72E-09	9.71E-12	7.61E-09	6.92E-10	6.76E-10	9.71E-12	1.38E-09	2.94E-10	3.02E-10	9.71E-12	6.06E-10
1326	571895.3	4149040	3.14E-09	2.7E-09	9.56E-12	5.85E-09	3.82E-09	3.66E-09	9.56E-12	7.49E-09	6.81E-10	6.65E-10	9.56E-12	1.36E-09	2.90E-10	2.97E-10	9.56E-12	5.96E-10
1327	571895	4149031	3.1E-09	2.67E-09	9.44E-12	5.78E-09	3.77E-09	3.61E-09	9.44E-12	7.39E-09	6.72E-10	6.57E-10	9.44E-12	1.34E-09	2.86E-10	2.93E-10	9.44E-12	5.88E-10
1328	571894.8	4149323	3.7E-09	3.19E-09	1.13E-11	6.90E-09	4.50E-09	4.32E-09	1.13E-11	8.83E-09	8.03E-10	7.84E-10	1.13E-11	1.60E-09	3.42E-10	3.50E-10	1.13E-11	7.03E-10
1329	571894.5	4149314	3.66E-09	3.15E-09	1.11E-11	6.82E-09	4.45E-09	4.27E-09	1.11E-11	8.73E-09	7.94E-10	7.75E-10	1.11E-11	1.58E-09	3.37E-10	3.46E-10	1.11E-11	6.94E-10
1330	571894.3	4149305	3.62E-09	3.12E-09	1.10E-11	6.75E-09	4.40E-09	4.22E-09	1.10E-11	8.64E-09	7.85E-10	7.67E-10	1.10E-11	1.56E-09	3.34E-10	3.42E-10	1.10E-11	6.87E-10
1331	571894	4149295	3.58E-09	3.09E-09	1.09E-11	6.68E-09	4.36E-09	4.18E-09	1.09E-11	8.55E-09	7.77E-10	7.59E-10	1.09E-11	1.55E-09	3.31E-10	3.39E-10	1.09E-11	6.80E-10
1332	571893.7	4149286	3.55E-09	3.06E-09	1.08E-11	6.61E-09	4.32E-09	4.14E-09	1.08E-11	8.47E-09	7.70E-10	7.52E-10	1.08E-11	1.53E-09	3.27E-10	3.35E-10	1.08E-11	6.73E-10
1333	571893.4	4149277	3.51E-09	3.02E-09	1.07E-11	6.55E-09	4.27E-09	4.09E-09	1.07E-11	8.38E-09	7.62E-10	7.44E-10	1.07E-11	1.52E-09	3.24E-10	3.32E-10	1.07E-11	6.66E-10
1334	571893.1	4149268	3.47E-09	2.99E-09	1.06E-11	6.48E-09	4.23E-09	4.05E-09	1.06E-11	8.29E-09	7.54E-10	7.36E-10	1.06E-11	1.50E-09	3.20E-10	3.28E-10	1.06E-11	6.59E-10
1335	571892.8	4149258	3.44E-09	2.96E-09	1.05E-11	6.41E-09	4.18E-09	4.01E-09	1.05E-11	8.20E-09	7.46E-10	7.28E-10	1.05E-11	1.48E-09	3.17E-10	3.25E-10	1.05E-11	6.52E-10
1336	571892.5	4149249	3.4E-09	2.93E-09	1.04E-11	6.34E-09	4.14E-09	3.97E-09	1.04E-11	8.12E-09	7.38E-10	7.21E-10	1.04E-11	1.47E-09	3.14E-10	3.22E-10	1.04E-11	6.46E-10

1337	571892.3	4149240	3.37E-09	2.9E-09	1.03E-11	6.29E-09	4.10E-09	3.93E-09	1.03E-11	8.04E-09	7.32E-10	7.14E-10	1.03E-11	1.46E-09	3.11E-10	3.19E-10	1.03E-11	6.40E-10
1338	571892	4149231	3.35E-09	2.88E-09	1.02E-11	6.24E-09	4.07E-09	3.90E-09	1.02E-11	7.99E-09	7.26E-10	7.09E-10	1.02E-11	1.45E-09	3.09E-10	3.17E-10	1.02E-11	6.36E-10
1339	571891.7	4149221	3.34E-09	2.87E-09	1.02E-11	6.22E-09	4.06E-09	3.89E-09	1.02E-11	7.96E-09	7.24E-10	7.07E-10	1.02E-11	1.44E-09	3.08E-10	3.15E-10	1.02E-11	6.33E-10
1340	571891.4	4149212	3.34E-09	2.88E-09	1.02E-11	6.23E-09	4.06E-09	3.89E-09	1.02E-11	7.97E-09	7.24E-10	7.08E-10	1.02E-11	1.44E-09	3.08E-10	3.16E-10	1.02E-11	6.34E-10
1341	571891.1	4149203	3.35E-09	2.89E-09	1.02E-11	6.25E-09	4.08E-09	3.91E-09	1.02E-11	8.00E-09	7.28E-10	7.11E-10	1.02E-11	1.45E-09	3.09E-10	3.17E-10	1.02E-11	6.37E-10
1342	571890.8	4149194	3.38E-09	2.92E-09	1.03E-11	6.31E-09	4.12E-09	3.95E-09	1.03E-11	8.07E-09	7.34E-10	7.17E-10	1.03E-11	1.46E-09	3.12E-10	3.20E-10	1.03E-11	6.42E-10
1343	571890.5	4149184	3.42E-09	2.95E-09	1.04E-11	6.39E-09	4.17E-09	3.99E-09	1.04E-11	8.17E-09	7.43E-10	7.26E-10	1.04E-11	1.48E-09	3.16E-10	3.24E-10	1.04E-11	6.50E-10
1344	571890.2	4149175	3.47E-09	2.99E-09	1.06E-11	6.48E-09	4.23E-09	4.05E-09	1.06E-11	8.29E-09	7.54E-10	7.36E-10	1.06E-11	1.50E-09	3.20E-10	3.28E-10	1.06E-11	6.59E-10
1345	571890	4149166	3.52E-09	3.04E-09	1.07E-11	6.57E-09	4.29E-09	4.11E-09	1.07E-11	8.41E-09	7.65E-10	7.47E-10	1.07E-11	1.52E-09	3.25E-10	3.33E-10	1.07E-11	6.69E-10
1346	571889.7	4149157	3.57E-09	3.08E-09	1.09E-11	6.66E-09	4.34E-09	4.16E-09	1.09E-11	8.52E-09	7.75E-10	7.56E-10	1.09E-11	1.54E-09	3.29E-10	3.37E-10	1.09E-11	6.78E-10
1347	571889.4	4149147	3.6E-09	3.11E-09	1.10E-11	6.72E-09	4.39E-09	4.20E-09	1.10E-11	8.60E-09	7.82E-10	7.64E-10	1.10E-11	1.56E-09	3.33E-10	3.41E-10	1.10E-11	6.84E-10
1348	571889.1	4149138	3.62E-09	3.12E-09	1.10E-11	6.76E-09	4.41E-09	4.23E-09	1.10E-11	8.65E-09	7.86E-10	7.68E-10	1.10E-11	1.57E-09	3.34E-10	3.43E-10	1.10E-11	6.88E-10
1349	571888.5	4149120	3.6E-09	3.1E-09	1.10E-11	6.72E-09	4.38E-09	4.20E-09	1.10E-11	8.59E-09	7.82E-10	7.63E-10	1.10E-11	1.56E-09	3.32E-10	3.40E-10	1.10E-11	6.84E-10
1350	571888.2	4149110	3.56E-09	3.07E-09	1.08E-11	6.64E-09	4.33E-09	4.15E-09	1.08E-11	8.50E-09	7.73E-10	7.55E-10	1.08E-11	1.54E-09	3.28E-10	3.37E-10	1.08E-11	6.76E-10
1351	571888	4149101	3.5E-09	3.02E-09	1.07E-11	6.53E-09	4.26E-09	4.08E-09	1.07E-11	8.36E-09	7.60E-10	7.42E-10	1.07E-11	1.51E-09	3.23E-10	3.31E-10	1.07E-11	6.65E-10
1352	571887.7	4149092	3.43E-09	2.96E-09	1.05E-11	6.40E-09	4.18E-09	4.00E-09	1.05E-11	8.19E-09	7.45E-10	7.27E-10	1.05E-11	1.48E-09	3.17E-10	3.24E-10	1.05E-11	6.51E-10
1353	571887.4	4149083	3.35E-09	2.89E-09	1.02E-11	6.25E-09	4.08E-09	3.91E-09	1.02E-11	8.00E-09	7.28E-10	7.11E-10	1.02E-11	1.45E-09	3.09E-10	3.17E-10	1.02E-11	6.37E-10
1354	571887.1	4149073	3.27E-09	2.82E-09	9.97E-12	6.10E-09	3.98E-09	3.82E-09	9.97E-12	7.81E-09	7.10E-10	6.94E-10	9.97E-12	1.41E-09	3.02E-10	3.09E-10	9.97E-12	6.21E-10
1355	571886.8	4149064	3.19E-09	2.75E-09	9.73E-12	5.96E-09	3.89E-09	3.72E-09	9.73E-12	7.62E-09	6.93E-10	6.77E-10	9.73E-12	1.38E-09	2.95E-10	3.02E-10	9.73E-12	6.06E-10
1356	571886.5	4149055	3.12E-09	2.69E-09	9.51E-12	5.82E-09	3.80E-09	3.64E-09	9.51E-12	7.45E-09	6.78E-10	6.62E-10	9.51E-12	1.35E-09	2.88E-10	2.95E-10	9.51E-12	5.93E-10
1357	571886.2	4149046	3.06E-09	2.64E-09	9.33E-12	5.71E-09	3.73E-09	3.57E-09	9.33E-12	7.31E-09	6.65E-10	6.49E-10	9.33E-12	1.32E-09	2.83E-10	2.90E-10	9.33E-12	5.81E-10
1358	571885.9	4149037	3.01E-09	2.6E-09	9.18E-12	5.62E-09	3.67E-09	3.52E-09	9.18E-12	7.19E-09	6.54E-10	6.39E-10	9.18E-12	1.30E-09	2.78E-10	2.85E-10	9.18E-12	5.72E-10
1359	571885.7	4149327	3.58E-09	3.08E-09	1.09E-11	6.67E-09	4.35E-09	4.17E-09	1.09E-11	8.54E-09	7.76E-10	7.58E-10	1.09E-11	1.55E-09	3.30E-10	3.38E-10	1.09E-11	6.79E-10
1360	571885.4	4149318	3.54E-09	3.05E-09	1.08E-11	6.59E-09	4.30E-09	4.12E-09	1.08E-11	8.44E-09	7.67E-10	7.49E-10	1.08E-11	1.53E-09	3.26E-10	3.34E-10	1.08E-11	6.71E-10
1361	571885.2	4149309	3.5E-09	3.01E-09	1.07E-11	6.52E-09	4.26E-09	4.08E-09	1.07E-11	8.35E-09	7.59E-10	7.41E-10	1.07E-11	1.51E-09	3.23E-10	3.31E-10	1.07E-11	6.64E-10
1362	571884.9	4149300	3.46E-09	2.99E-09	1.06E-11	6.46E-09	4.22E-09	4.04E-09	1.06E-11	8.27E-09	7.52E-10	7.34E-10	1.06E-11	1.50E-09	3.20E-10	3.28E-10	1.06E-11	6.58E-10
1363	571884.6	4149291	3.43E-09	2.96E-09	1.04E-11	6.40E-09	4.18E-09	4.00E-09	1.04E-11	8.19E-09	7.45E-10	7.27E-10	1.04E-11	1.48E-09	3.17E-10	3.24E-10	1.04E-11	6.51E-10
1364	571884.3	4149281	3.4E-09	2.93E-09	1.03E-11	6.33E-09	4.13E-09	3.96E-09	1.03E-11	8.11E-09	7.37E-10	7.20E-10	1.03E-11	1.47E-09	3.13E-10	3.21E-10	1.03E-11	6.45E-10
1365	571884	4149272	3.36E-09	2.9E-09	1.02E-11	6.27E-09	4.09E-09	3.92E-09	1.02E-11	8.02E-09	7.30E-10	7.12E-10	1.02E-11	1.45E-09	3.10E-10	3.18E-10	1.02E-11	6.38E-10
1366	571883.7	4149263	3.33E-09	2.87E-09	1.01E-11	6.20E-09	4.05E-09	3.88E-09	1.01E-11	7.94E-09	7.22E-10	7.05E-10	1.01E-11	1.44E-09	3.07E-10	3.14E-10	1.01E-11	6.31E-10
1367	571883.4	4149254	3.29E-09	2.84E-09	1.00E-11	6.14E-09	4.01E-09	3.84E-09	1.00E-11	7.85E-09	7.14E-10	6.98E-10	1.00E-11	1.42E-09	3.04E-10	3.11E-10	1.00E-11	6.25E-10
1368	571883.2	4149245	3.26E-09	2.81E-09	9.93E-12	6.08E-09	3.97E-09	3.80E-09	9.93E-12	7.78E-09	7.07E-10	6.91E-10	9.93E-12	1.41E-09	3.01E-10	3.08E-10	9.93E-12	6.19E-10
1369	571882.9	4149235	3.23E-09	2.79E-09	9.85E-12	6.03E-09	3.94E-09	3.77E-09	9.85E-12	7.72E-09	7.02E-10	6.85E-10	9.85E-12	1.40E-09	2.98E-10	3.06E-10	9.85E-12	6.14E-10
1370	571882.6	4149226	3.22E-09	2.77E-09	9.80E-12	6.00E-09	3.92E-09	3.75E-09	9.80E-12	7.68E-09	6.98E-10	6.82E-10	9.80E-12	1.39E-09	2.97E-10	3.04E-10	9.80E-12	6.11E-10
1371	571882.3	4149217	3.21E-09	2.77E-09	9.79E-12	5.99E-09	3.91E-09	3.75E-09	9.79E-12	7.67E-09	6.97E-10	6.81E-10	9.79E-12	1.39E-09	2.96E-10	3.04E-10	9.79E-12	6.10E-10
1372	571882	4149208	3.22E-09	2.78E-09	9.81E-12	6.01E-09	3.92E-09	3.76E-09	9.81E-12	7.69E-09	6.99E-10	6.83E-10	9.81E-12	1.39E-09	2.97E-10	3.04E-10	9.81E-12	6.11E-10
1373	571881.7	4149199	3.24E-09	2.79E-09	9.87E-12	6.04E-09	3.94E-09	3.78E-09	9.87E-12	7.73E-09	7.03E-10	6.87E-10	9.87E-12	1.40E-09	2.99E-10	3.06E-10	9.87E-12	6.15E-10
1374	571881.4	4149189	3.28E-09	2.82E-09	9.97E-12	6.11E-09	3.99E-09	3.82E-09	9.97E-12	7.82E-09	7.11E-10	6.94E-10	9.97E-12	1.41E-09	3.02E-10	3.10E-10	9.97E-12	6.22E-10
1375	571881.2	4149180	3.32E-09	2.86E-09	1.01E-11	6.19E-09	4.04E-09	3.87E-09	1.01E-11	7.92E-09	7.20E-10	7.03E-10	1.01E-11	1.43E-09	3.06E-10	3.14E-10	1.01E-11	6.30E-10
1376	571880.9	4149171	3.37E-09	2.9E-09	1.03E-11	6.28E-09	4.10E-09	3.93E-09	1.03E-11	8.03E-09	7.31E-10	7.13E-10	1.03E-11	1.45E-09	3.11E-10	3.18E-10	1.03E-11	6.39E-10
1377	571880.6	4149162	3.41E-09	2.94E-09	1.04E-11	6.37E-09	4.15E-09	3.98E-09	1.04E-11	8.15E-09	7.41E-10	7.23E-10	1.04E-11	1.47E-09	3.15E-10	3.23E-10	1.04E-11	6.48E-10
1378	571880.3	4149153	3.45E-09	2.98E-09	1.05E-11	6.44E-09	4.20E-09	4.03E-09	1.05E-11	8.24E-09	7.50E-10	7.32E-10	1.05E-11	1.49E-09	3.19E-10	3.27E-10	1.05E-11	6.56E-10
1379	571880	4149143	3.48E-09	3E-09	1.06E-11	6.50E-09	4.24E-09	4.06E-09	1.06E-11	8.31E-09	7.56E-10	7.38E-10	1.06E-11	1.50E-09	3.21E-10	3.29E-10	1.06E-11	6.61E-10
1380	571879.2	4149116	3.47E-09	2.99E-09	1.06E-11	6.46E-09	4.22E-09	4.04E-09	1.06E-11	8.27E-09	7.52E-10	7.34E-10	1.06E-11	1.50E-09	3.20E-10	3.28E-10	1.06E-11	6.58E-10
1381	571878.9	4149106	3.42E-09	2.95E-09	1.04E-11	6.38E-09	4.16E-09	3.99E-09	1.04E-11	8.17E-09	7.43E-10	7.25E-10	1.04E-11	1.48E-09	3.16E-10	3.24E-10	1.04E-11	6.50E-10
1382	571878.6	4149097	3.36E-09	2.9E-09	1.02E-11	6.27E-09	4.09E-09	3.92E-09	1.02E-11	8.03E-09	7.30E-10	7.13E-10	1.02E-11	1.45E-09	3.10E-10	3.18E-10	1.02E-11	6.39E-10
1383	571878.3	4149088	3.29E-09	2.84E-09	1.00E-11	6.14E-09	4.01E-09	3.84E-09	1.00E-11	7.86E-09	7.15E-10	6.98E-10	1.00E-11	1.42E-09	3.04E-10	3.11E-10	1.00E-11	6.25E-10
1384	571878	4149079	3.22E-09	2.77E-09	9.80E-12	6.00E-09	3.92E-09	3.75E-09	9.80E-12	7.68E-09	6.98E-10	6.82E-10	9.80E-12	1.39E-09	2.97E-10	3.04E-10	9.80E-12	6.11E-10
1385	571877.7	4149070	3.14E-09	2.71E-09	9.57E-12	5.86E-09	3.82E-09	3.66E-09	9.57E-12	7.49E-09	6.82E-10	6.66E-10	9.57E-12	1.36E-09	2.90E-10	2.97E-10	9.57E-12	5.96E-10
1386	571877.4	4149060	3.07E-09	2.64E-09	9.34E-12	5.72E-09	3.73E-09	3.58E-09	9.34E-12	7.32E-09	6.65E-10	6.50E-10	9.34E-12	1.32E-09	2.83E-10	2.90E-10	9.34E-12	5.82E-10
1387	571877.2	4149051	3E-09	2.58E-09	9.14E-12	5.59E-09	3.65E-09	3.50E-09	9.14E-12	7.16E-09	6.51E-10	6.36E-10	9.14E-12	1.30E-09	2.77E-10	2.84E-10	9.14E-12	5.69E-10
1388	571876.9	4149042	2.94E-09	2.54E-09	8.97E-12	5.49E-09	3.58E-09	3.43E-09	8.97E-12	7.03E-09	6.39E-10	6.24E-10	8.97E-12	1.27E-09	2.72E-10	2.78E-10	8.97E-12	5.59E-10
1389	571876.6	4149033	2.9E-09	2.5E-09	8.83E-12	5.41E-09	3.53E-09	3.38E-09	8.83E-12	6.92E-09	6.29E-10	6.14E-10	8.83E-12	1.25E-09	2.67E-10	2.74E-10	8.83E-12	5.50E-10
1390	571876.3	4149323	3.42E-09	2.95E-09	1.04E-11	6.38E-09	4.16E-09	3.99E-09	1.04E-11	8.16E-09	7.42E-10	7.25E-10	1.04E-11	1.48E-09	3.15E-10	3.23E-10	1.04E-11	6.49E-10
1391	571876.1	4149313	3.38E-09	2.92E-09	1.03E-11	6.31E-09	4.12E-09	3.95E-09	1.03E-11	8.08E-09	7.34E-10	7.17E-10	1.03E-11	1.46E-09	3.12E-10	3.20E-10	1.03E-11	6.42E-10
1392	571875.8	4149304	3.35E-09	2.89E-09	1.02E-11	6.25E-09	4.08E-09	3.91E-09	1.02E-11	8.00E-09	7.27E-10	7.10E-10	1.02E-11	1.45E-09	3.09E-10	3.17E-10	1.02E-11	6.36E-10
1393	571875.5	4149295	3.32E-09	2.86E-09	1.01E-11	6.19E-09	4.04E-09	3.87E-09	1.01E-11	7.92E-09	7.21E-10	7.04E-10	1.01E-11	1.43E-09	3.06E-10	3.14E-10	1.01E-11	6.30E-10
1394	571875.2	4149286	3.29E-09	2.83E-09	1.00E-11	6.13E-09	4.00E-09	3.84E-09	1.00E-11	7.85E-09	7.14E-10	6.97E-10	1.00E-11	1.42E-09	3.03E-10	3.11E-10	1.00E-11	6.24E-10
1395	571874.9	4149277	3.26E-09	2.81E-09	9.92E-12	6.07E-09	3.96E-09	3.80E-09	9.92E-12	7.77E-09	7.06E-10	6.90E-10	9.92E-12	1.41E-09	3.00E-10	3.08E-10	9.92E-12	6.18E-10
1396	571874.6	4149268	3.22E-09	2.78E-09	9.81E-12	6.01E-09	3.92E-09	3.76E-09	9.81E-12	7.69E-09	6.99E-10	6.83E-10	9.81E-12	1.39E-09	2.97E-10	3.05E-10	9.81E-12	6.12E-10
1397	571874.3	4149258	3.19E-09	2.75E-09	9.71E-12	5.94E-09	3.88E-09	3.72E-09	9.71E-12	7.61E-09	6.92E-10	6.76E-10	9.71E-12	1.38E-09	2.94E-10	3.01E-10	9.71E-12	6.05E-10
1398	571874.1	4149249	3.16E-09	2.72E-09	9.61E-12	5.89E-09	3.84E-09	3.68E-09	9.61E-12	7.53E-09	6.85E-10	6.69E-10	9.61E-12	1.36E-09	2.91E-10	2.98E-10	9.61E-12	5.99E-10
1399	571873.8	4149240	3.13E-09	2.7E-09	9.53E-12	5.83E-09	3.81E-09	3.65E-09	9.53E-12	7.47E-09	6.79E-10	6.63E-10	9.53E-12	1.35E-09	2.89E-10	2.96E-10	9.53E-12	5.94E-10
1400	571873.5	4149231	3.11E-09	2.68E-09	9.47E-12	5.80E-09	3.78E-09	3.63E-09	9.47E-12	7.42E-09	6.75E-10	6.59E-10	9.47E-12	1.34E-09	2.87E-10	2.94E-10	9.47E-12	5.90E-10
1401	571873.2	4149222	3.1E-09	2.67E-09	9.44E-12	5.78E-09	3.77E-09	3.61E-09	9.44E-12	7.39E-09	6.72E-10	6.57E-10	9.44E-12	1.34E-09	2.86E-10	2.93E-10	9.44E-12	5.88E-10
1402	571872.9	4149213	3.1E-09	2.67E-09	9.44E-12	5.78E-09	3.77E-09	3.62E-09	9.44E-12	7.40E-09	6.73E-10	6.57E-10	9.44E-12	1.34E-09	2.86E-10	2.93E-10	9.44E-12	5.89E-10
1403	571872.6	4149203	3.11E-09	2.68E-09	9.48E-12	5.81E-09	3.79E-09	3.63E-09	9.48E-12	7.43E-09	6.76E-10	6.60E-10	9.48E-12	1.34E-09	2.87E-10	2.94E-10	9.48E-12	5.91E-10
1404	571872.4	4149194	3.14E-09	2.7E-09	9.56E-12	5.85E-09	3.82E-09	3.66E-09	9.56E-12	7.49E-09	6.81E-10	6.65E-10	9.56E-12	1.36E-09	2.90E-10	2.97E-10	9.56E-12	5.96E-10
1405	571872.1	4149185	3.18E-09	2.74E-09	9.67E-12	5.92E-09	3.87E-09	3.70E-09	9.67E-12	7.58E-09	6.89E-10	6.73E-10	9.67E-12	1.37E-09	2.93E-10	3.00E-10	9.67E-12	6.03E-10
1406	571871.8	4149176	3.22E-09	2.77E-09	9.81E-12	6.00E-09	3.92E-09	3.76E-09	9.81E-12	7.68E-09	6.99E-10	6.82E-10	9.81E-12	1.39E-09	2.97E-10	3.04E-10	9.81E-12	6.11E-10
1407	571871.5	4149167	3.27E-09	2.81E-09	9.95E-12	6.09E-09	3.98E-09	3.81E-09	9.95E-12	7.79E-09	7.09E-10	6.92E-10	9.95E-12	1.41E-09	3.01E-10	3.09E-10	9.95E-12	6.20E-10
1408	571871.2	4149158	3.31E-09	2.85E-09	1.01E-11	6.17E-09	4.03E-09	3.86E-09	1.01E-11	7.90E-09	7.18E-10	7.02E-10	1.01E-11	1.43E-09	3.05E-10	3.13E-10	1.01E-11	6.28E-10
1409	571870.9	4149148	3.35E-09	2.88E-09	1.02E-11	6.24E-09	4.07E-09	3.90E-09	1.02E-11	7.98E-09	7.26E-10	7.09E-10	1.02E-11	1.45E-09	3.09E-10	3.16E-10	1.02E-11	6.35E-10
1410	571870.1	4149121	3.37E-09	2.9E-09	1.03E-11	6.28E-09	4.10E-09	3.92E-09	1.03E-11	8.03E-09	7.30E-10	7.13E-10	1.03E-11	1.45E-09	3.10E-10	3.18E-10	1.03E-11	6.39E-10
1411	571869.8	4149112	3.34E-09	2.87E-09	1.02E-11	6.22E-09	4.06E-09	3.89E-09	1.02E-11	7.96E-09	7.24E-10	7.07E-10	1.02E-11	1.44E-09	3.08E-10	3.15E-10	1.02E-11	6.33E-10
1412	571869.5	4149103	3.29E-09	2.84E-09	1.00E-11	6.14E-09	4.00E-09	3.84E-09	1.00E-11	7.85E-09	7.14E-10	6.97E-10	1.00E-11	1.42E-09	3.04E-10	3.11E-10	1.00E-11	6.25E-10
1413	571869.2	4149093	3.23E-09	2.78E-09	9.84E-12	6.03E-09	3.93E-09	3.77E-09	9.84E-12	7.71E-09	7.01E-10	6.85E-10	9.84E-12	1.40E-09	2.98E-10	3.06E-10	9.84E-12	6.14E-10
1414	571868.9	4149084	3.16E-09	2.73E-09	9.64E-12	5.90E-09	3.85E-09	3.69E-09	9.64E-12	7.55E-09	6.86E-10	6.70E-10	9.64E-12	1.37E-09	2.92E-10	2.99E-10	9.64E-12	6.01E-10
1415	571868.7	4149075	3.09E-09	2.66E-09	9.42E-12	5.77E-09	3.76E-09	3.61E-09	9.42E-12	7.38E-09	6.71E-10	6.55E-10	9.42E-12	1.34E-09	2.85E-10	2.92E-10	9.42E-12	5.87E-10
1416	571868.4	4149066	3.02E-09	2.6E-09	9.19E-12	5.63E-09	3.67E-09	3.52E-09	9.19E-12	7.20E-09	6.55E-10	6.39E-10	9.19E-12	1.30E-09	2.78E-10	2.85E-10	9.19E-12	5.73E-10
1417	571868.1	4149057	2.95E-09	2.54E-09	8.97E-12	5.49E-09	3.58E-09	3.44E-09	8.97E-12	7.03E-09	6.39E-10	6.24E-10	8.97E-12	1.27E-09	2.72E-10	2.78E-10	8.97E-12	5.59E-10
1418	571867.8	4149048	2.88E-09	2.48E-09	8.78E-12	5.38E-09	3.51E-09	3.36E-09	8.78E-12	6.88E-09	6.26E-10	6.11E-10	8.78E-12	1.25E-09	2.66E-10	2.73E-10	8.78E-12	5.47E-10
1419	571867.5	4149038	2.83E-09	2.44E-09	8.62E-12	5.28E-09	3.44E-09	3.30E-09	8.62E-12	6.75E-09	6.14E-10	6.00E-10	8.62E-12	1.22E-09	2.61E-10	2.68E-10	8.62E-12	5.37E-10
1420	571867.2	4149327	3.31E-09	2.85E-09	1.01E-11	6.17E-09	4.03E-09	3.86E-09	1.01E-11	7.90E-09	7.18E-10	7.01E-10	1.01E-11	1.43E-09	3.05E-10	3.13E-10	1.01E-11	6.28E-10
1421	571867	4149318	3.28E-09	2.82E-09	9.98E-12	6.11E-09	3.99E-09	3.82E-09	9.98E-12	7.82E-09	7.11E-10	6.94E-10	9.98E-12	1.42E-09	3.02E-10	3.10E-10	9.98E-12	6.22E-10
1422	571866.7	4149309	3.24E-09	2.8E-09	9.88E-12	6.05E-09	3.95E-09	3.78E-09	9.88E-12	7.74E-09	7.04E-10	6.88E-10	9.88E-12	1.40E-09	2.99E-10	3.07E-10	9.88E-12	6.16E-10
1423	571866.4	4149299	3.22E-09	2.77E-09	9.79E-12	6.00E-09	3.91E-09	3.75E-09	9.79E-12	7.67E-09	6.98E-10	6.81E-10	9.79E-12	1.39E-09	2.97E-10	3.04E-10	9.79E-12	6.10E-10
1424	571866.1	4149290	3.19E-09	2.74E-09	9.70E-12	5.94E-09	3.88E-09	3.71E-09	9.70E-12	7.60E-09	6.91E-10	6.75E-10	9.70E-12	1.38E-09	2.94E-10	3.01E-10	9.70E-12	6.05E-10
1425	571865.8	4149281	3.15E-09	2.72E-09	9.61E-12	5.88E-09	3.84E-09	3.68E-09	9.61E-12	7.53E-09	6.84E-10	6.68E-10	9.61E-12	1.36E-09	2.91E-10	2.98E-10	9.61E-12	5.99E-10
1426	571865.5	4149272	3.12E-09	2.69E-09	9.51E-12	5.82E-09	3.80E-09	3.64E-09	9.51E-12	7.45E-09	6.77E-10	6.62E-10	9.51E-12	1.35E-09	2.88E-10	2.95E-10	9.51E-12	5.93E-10
1427	571865.3	4149263	3.09E-09	2.66E-09	9.41E-12	5.76E-09	3.76E-09	3.60E-09	9.41E-12	7.37E-09	6.70E-10	6.55E-10	9.41E-12	1.33E-09	2.85E-10	2.92E-10	9.41E-12	5.86E-10
1428	571865	4149254	3.06E-09	2.64E-09	9.31E-12	5.70E-09	3.72E-09	3.57E-09	9.31E-12	7.30E-09	6.64E-10	6.48E-10	9.31E-12	1.32E-09	2.82E-10	2.89E-10	9.31E-12	5.81E-10
1429	571864.7	4149245	3.03E-09	2.61E-09	9.23E-12	5.65E-09	3.69E-09	3.53E-09	9.23E-12	7.23E-09	6.57E-10	6.42E-10	9.23E-12	1.31E-09	2.80E-10	2.86E-10	9.23E-12	5.75E-10
1430	571864.4	4149236	3.01E-09	2.59E-09	9.16E-12	5.61E-09	3.66E-09	3.51E-09	9.16E-12	7.17E-09	6.52E-10	6.37E-10	9.16E-12	1.30E-09	2.77E-10	2.84E-10	9.16E-12	5.71E-10
1431	571864.1	4149226	2.99E-09	2.58E-09	9.11E-12	5.58E-09	3.64E-09	3.49E-09	9.11E-12	7.14E-09	6.49E-10	6.34E-10	9.11E-12	1.29E-09	2.76E-10	2.83E-10	9.11E-12	5.68E-10
1432	571863.8	4149217	2.99E-09	2.57E-09	9.10E-12	5.57E-09	3.64E-09	3.48E-09	9.10E-12	7.13E-09	6.48E-10	6.33E-10	9.10E-12	1.29E-09	2.76E-10	2.82E-10	9.10E-12	5.67E-10
1433	571863.6	4149208	2.99E-09	2.58E-09	9.12E-12	5.58E-09	3.64E-09	3.49E-09	9.12E-12	7.14E-09	6.50E-10	6.35E-10	9.12E-12	1.29E-09	2.76E-10	2.83E-10	9.12E-12	5.68E-10
1434	571863.3	4149199	3.01E-09	2.6E-09	9.18E-12	5.62E-09	3.67E-09	3.51E-09	9.18E-12	7.19E-09	6.54E-10	6.39E-10	9.18E-12	1.30E-09	2.78E-10	2.85E-10	9.18E-12	5.72E-10
1435	571863	4149190	3.04E-09	2.62E-09	9.27E-12	5.68E-09	3.70E-09	3.55E-09	9.27E-12	7.26E-09	6.60E-10	6.45E-10	9.27E-12	1.31E-09	2.81E-10	2.88E-10	9.27E-12	5.78E-10
1436	571862.7	4149181	3.08E-09	2.66E-09	9.39E-12	5.75E-09	3.75E-09	3.60E-09	9.39E-12	7.36E-09	6.69E-10	6.53E-10	9.39E-12	1.33E-09	2.84E-10	2.91E-10	9.39E-12	5.85E-10
1437	571862.4	4149172	3.13E-09	2.69E-09	9.52E-12	5.83E-09	3.81E-09	3.65E-09	9.52E-12	7.46E-09	6.79E-10	6.63E-10	9.52E-12	1.35E-09	2.88E-10	2.96E-10	9.52E-12	5.94E-10
1438	571862.1	4149163	3.17E-09	2.73E-09	9.66E-12	5.92E-09	3.86E-09	3.70E-09	9.66E-12	7.57E-09	6.88E-10	6.72E-10	9.66E-12	1.37E-09	2.93E-10	3.00E-10	9.66E-12	6.02E-10
1439	571861.9	4149153	3.21E-09	2.77E-09	9.78E-12	5.99E-09	3.91E-09	3.75E-09	9.78E-12	7.67E-09	6.97E-10	6.81E-10	9.78E-12	1.39E-09	2.96E-10	3.04E-10	9.78E-12	6.10E-10

1440	571861.6	4149144	3.24E-09	2.79E-09	9.88E-12	6.05E-09	3.95E-09	3.78E-09	9.88E-12	7.74E-09	7.04E-10	6.87E-10	9.88E-12	1.40E-09	2.99E-10	3.07E-10	9.88E-12	6.16E-10
1441	571861	4149126	3.26E-09	2.81E-09	9.94E-12	6.09E-09	3.97E-09	3.81E-09	9.94E-12	7.79E-09	7.08E-10	6.92E-10	9.94E-12	1.41E-09	3.01E-10	3.09E-10	9.94E-12	6.20E-10
1442	571860.7	4149117	3.25E-09	2.8E-09	9.90E-12	6.06E-09	3.95E-09	3.79E-09	9.90E-12	7.75E-09	7.05E-10	6.89E-10	9.90E-12	1.40E-09	3.00E-10	3.07E-10	9.90E-12	6.17E-10
1443	571860.4	4149108	3.22E-09	2.77E-09	9.80E-12	6.00E-09	3.91E-09	3.75E-09	9.80E-12	7.68E-09	6.98E-10	6.82E-10	9.80E-12	1.39E-09	2.97E-10	3.04E-10	9.80E-12	6.11E-10
1444	571860.2	4149099	3.17E-09	2.73E-09	9.66E-12	5.91E-09	3.86E-09	3.70E-09	9.66E-12	7.56E-09	6.88E-10	6.72E-10	9.66E-12	1.37E-09	2.92E-10	3.00E-10	9.66E-12	6.02E-10
1445	571859.9	4149089	3.11E-09	2.68E-09	9.47E-12	5.80E-09	3.79E-09	3.63E-09	9.47E-12	7.42E-09	6.75E-10	6.59E-10	9.47E-12	1.34E-09	2.87E-10	2.94E-10	9.47E-12	5.90E-10
1446	571859.6	4149080	3.04E-09	2.62E-09	9.27E-12	5.67E-09	3.70E-09	3.55E-09	9.27E-12	7.26E-09	6.60E-10	6.45E-10	9.27E-12	1.31E-09	2.81E-10	2.88E-10	9.27E-12	5.78E-10
1447	571859.3	4149071	2.97E-09	2.56E-09	9.05E-12	5.54E-09	3.62E-09	3.46E-09	9.05E-12	7.09E-09	6.45E-10	6.30E-10	9.05E-12	1.28E-09	2.74E-10	2.81E-10	9.05E-12	5.64E-10
1448	571859	4149062	2.9E-09	2.5E-09	8.83E-12	5.41E-09	3.53E-09	3.38E-09	8.83E-12	6.92E-09	6.29E-10	6.14E-10	8.83E-12	1.25E-09	2.67E-10	2.74E-10	8.83E-12	5.50E-10
1449	571858.7	4149053	2.83E-09	2.44E-09	8.63E-12	5.28E-09	3.45E-09	3.30E-09	8.63E-12	6.76E-09	6.15E-10	6.00E-10	8.63E-12	1.22E-09	2.61E-10	2.68E-10	8.63E-12	5.38E-10
1450	571858.5	4149044	2.77E-09	2.39E-09	8.45E-12	5.17E-09	3.38E-09	3.23E-09	8.45E-12	6.62E-09	6.02E-10	5.88E-10	8.45E-12	1.20E-09	2.56E-10	2.62E-10	8.45E-12	5.27E-10
1451	572365.5	4149252	6.81E-07	5.87E-07	2.08E-09	1.27E-06	8.29E-07	7.95E-07	2.08E-09	1.63E-06	1.48E-07	1.44E-07	2.08E-09	2.94E-07	6.29E-08	6.44E-08	2.08E-09	1.29E-07
1452	572382.6	4149247	6.5E-07	5.6E-07	1.98E-09	1.21E-06	7.91E-07	7.58E-07	1.98E-09	1.55E-06	1.41E-07	1.38E-07	1.98E-09	2.81E-07	6.00E-08	6.15E-08	1.98E-09	1.23E-07
1453	572352.8	4149263	5.21E-07	4.49E-07	1.59E-09	9.71E-07	6.33E-07	6.07E-07	1.59E-09	1.24E-06	1.13E-07	1.10E-07	1.59E-09	2.25E-07	4.80E-08	4.92E-08	1.59E-09	9.88E-08
1454	572368.3	4149261	5.3E-07	4.57E-07	1.61E-09	9.89E-07	6.45E-07	6.18E-07	1.61E-09	1.27E-06	1.15E-07	1.12E-07	1.61E-09	2.29E-07	4.89E-08	5.01E-08	1.61E-09	1.01E-07
1455	572385.4	4149256	5.03E-07	4.33E-07	1.53E-09	9.38E-07	6.12E-07	5.86E-07	1.53E-09	1.20E-06	1.09E-07	1.07E-07	1.53E-09	2.17E-07	4.64E-08	4.75E-08	1.53E-09	9.55E-08
1456	572402.5	4149251	4.42E-07	3.81E-07	1.35E-09	8.24E-07	5.37E-07	5.15E-07	1.35E-09	1.05E-06	9.58E-08	9.36E-08	1.35E-09	1.91E-07	4.07E-08	4.18E-08	1.35E-09	8.38E-08
1457	572355.6	4149273	4.18E-07	3.61E-07	1.27E-09	7.80E-07	5.09E-07	4.88E-07	1.27E-09	9.98E-07	9.08E-08	8.87E-08	1.27E-09	1.81E-07	3.86E-08	3.96E-08	1.27E-09	7.94E-08
1458	572341.6	4149272	4.22E-07	3.63E-07	1.28E-09	7.86E-07	5.13E-07	4.92E-07	1.28E-09	1.01E-06	9.15E-08	8.94E-08	1.28E-09	1.82E-07	3.89E-08	3.99E-08	1.28E-09	8.01E-08
1459	572329.7	4149266	4.37E-07	3.76E-07	1.33E-09	8.14E-07	5.31E-07	5.09E-07	1.33E-09	1.04E-06	9.48E-08	9.25E-08	1.33E-09	1.89E-07	4.03E-08	4.13E-08	1.33E-09	8.29E-08
1460	572371.1	4149271	4.19E-07	3.61E-07	1.28E-09	7.81E-07	5.10E-07	4.88E-07	1.28E-09	9.99E-07	9.09E-08	8.87E-08	1.28E-09	1.81E-07	3.86E-08	3.96E-08	1.28E-09	7.95E-08
1461	572388.2	4149266	4E-07	3.45E-07	1.22E-09	7.46E-07	4.87E-07	4.67E-07	1.22E-09	9.55E-07	8.68E-08	8.48E-08	1.22E-09	1.73E-07	3.69E-08	3.78E-08	1.22E-09	7.59E-08
1462	572339.2	4149281	3.49E-07	3.01E-07	1.06E-09	6.52E-07	4.25E-07	4.08E-07	1.06E-09	8.34E-07	7.58E-08	7.41E-08	1.06E-09	1.51E-07	3.22E-08	3.30E-08	1.06E-09	6.63E-08
1463	572324.3	4149274	3.64E-07	3.14E-07	1.11E-09	6.80E-07	4.44E-07	4.25E-07	1.11E-09	8.70E-07	7.91E-08	7.72E-08	1.11E-09	1.57E-07	3.36E-08	3.45E-08	1.11E-09	6.92E-08
1464	572320.3	4149283	3.05E-07	2.63E-07	9.29E-10	5.69E-07	3.71E-07	3.56E-07	9.29E-10	7.28E-07	6.62E-08	6.46E-08	9.29E-10	1.32E-07	2.81E-08	2.88E-08	9.29E-10	5.79E-08
1465	572316.3	4149293	2.59E-07	2.23E-07	7.89E-10	4.83E-07	3.15E-07	3.02E-07	7.89E-10	6.18E-07	5.62E-08	5.49E-08	7.89E-10	1.12E-07	2.39E-08	2.45E-08	7.89E-10	4.92E-08
1466	572304.8	4149281	2.7E-07	2.33E-07	8.22E-10	5.03E-07	3.29E-07	3.15E-07	8.22E-10	6.44E-07	5.86E-08	5.72E-08	8.22E-10	1.17E-07	2.49E-08	2.55E-08	8.22E-10	5.13E-08
1467	572301	4149291	2.35E-07	2.02E-07	7.15E-10	4.38E-07	2.86E-07	2.74E-07	7.15E-10	5.60E-07	5.09E-08	4.97E-08	7.15E-10	1.01E-07	2.17E-08	2.22E-08	7.15E-10	4.46E-08
1468	572289.7	4149279	2.21E-07	1.91E-07	6.73E-10	4.12E-07	2.69E-07	2.58E-07	6.73E-10	5.28E-07	4.80E-08	4.69E-08	6.73E-10	9.55E-08	2.04E-08	2.09E-08	6.73E-10	4.20E-08
1469	572297.1	4149300	2.06E-07	1.77E-07	6.26E-10	3.83E-07	2.50E-07	2.40E-07	6.26E-10	4.91E-07	4.46E-08	4.36E-08	6.26E-10	8.88E-08	1.90E-08	1.94E-08	6.26E-10	3.90E-08
1470	572286	4149289	1.99E-07	1.71E-07	6.05E-10	3.71E-07	2.42E-07	2.32E-07	6.05E-10	4.74E-07	4.31E-08	4.21E-08	6.05E-10	8.58E-08	1.83E-08	1.88E-08	6.05E-10	3.77E-08
1471	572278.7	4149295	1.74E-07	1.5E-07	5.30E-10	3.25E-07	2.12E-07	2.03E-07	5.30E-10	4.15E-07	3.78E-08	3.69E-08	5.30E-10	7.52E-08	1.61E-08	1.65E-08	5.30E-10	3.31E-08
1472	572275.2	4149305	1.58E-07	1.36E-07	4.82E-10	2.95E-07	1.92E-07	1.84E-07	4.82E-10	3.77E-07	3.43E-08	3.35E-08	4.82E-10	6.83E-08	1.46E-08	1.49E-08	4.82E-10	3.00E-08
1473	572263.2	4149292	1.38E-07	1.19E-07	4.19E-10	2.57E-07	1.67E-07	1.60E-07	4.19E-10	3.28E-07	2.99E-08	2.92E-08	4.19E-10	5.94E-08	1.27E-08	1.30E-08	4.19E-10	2.61E-08
1474	572271.6	4149314	1.43E-07	1.24E-07	4.37E-10	2.67E-07	1.74E-07	1.67E-07	4.37E-10	3.42E-07	3.11E-08	3.04E-08	4.37E-10	6.19E-08	1.32E-08	1.36E-08	4.37E-10	2.72E-08
1475	572259.8	4149302	1.29E-07	1.11E-07	3.94E-10	2.41E-07	1.57E-07	1.51E-07	3.94E-10	3.09E-07	2.81E-08	2.74E-08	3.94E-10	5.59E-08	1.19E-08	1.22E-08	3.94E-10	2.46E-08
1476	572256.2	4149312	1.21E-07	1.04E-07	3.68E-10	2.25E-07	1.47E-07	1.41E-07	3.68E-10	2.88E-07	2.62E-08	2.56E-08	3.68E-10	5.21E-08	1.11E-08	1.14E-08	3.68E-10	2.29E-08
1477	572244.5	4149300	1.01E-07	8.74E-08	3.09E-10	1.89E-07	1.23E-07	1.18E-07	3.09E-10	2.42E-07	2.20E-08	2.15E-08	3.09E-10	4.38E-08	9.36E-09	9.59E-09	3.09E-10	1.93E-08
1478	572252.6	4149322	1.12E-07	9.66E-08	3.42E-10	2.09E-07	1.36E-07	1.31E-07	3.42E-10	2.68E-07	2.43E-08	2.38E-08	3.42E-10	4.84E-08	1.03E-08	1.06E-08	3.42E-10	2.13E-08
1479	572241	4149310	9.75E-08	8.4E-08	2.97E-10	1.82E-07	1.19E-07	1.14E-07	2.97E-10	2.33E-07	2.12E-08	2.07E-08	2.97E-10	4.21E-08	9.00E-09	9.22E-09	2.97E-10	1.85E-08
1480	572233.2	4149315	8.73E-08	7.52E-08	2.66E-10	1.63E-07	1.06E-07	1.02E-07	2.66E-10	2.08E-07	1.89E-08	1.85E-08	2.66E-10	3.77E-08	8.05E-09	8.25E-09	2.66E-10	1.66E-08
1481	572217.7	4149313	6.85E-08	5.9E-08	2.09E-10	1.28E-07	8.33E-08	7.99E-08	2.09E-10	1.63E-07	1.49E-08	1.45E-08	2.09E-10	2.96E-08	6.32E-09	6.47E-09	2.09E-10	1.30E-08
1482	572199.2	4149321	5.35E-08	4.61E-08	1.63E-10	9.98E-08	6.51E-08	6.24E-08	1.63E-10	1.28E-07	1.16E-08	1.13E-08	1.63E-10	2.31E-08	4.94E-09	5.06E-09	1.63E-10	1.02E-08

			UnMitigation			T2			T2L3			T4		
			0.067	0.057	0.000	0.081	0.078	0.000	0.0145	0.0141	0.000	0.0062	0.0063	0.000
#	X	Y	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
1	572406	4149236	5.31E-02	0.045748	0.000162	6.46E-02	6.19E-02	1.62E-04	1.15E-02	1.13E-02	1.62E-04	4.90E-03	5.02E-03	1.62E-04
2	572415	4149240	4.23E-02	0.036407	0.000129	5.14E-02	4.93E-02	1.29E-04	9.17E-03	8.95E-03	1.29E-04	3.90E-03	3.99E-03	1.29E-04
3	572430.4	4149231	5.09E-02	0.043899	0.000155	6.20E-02	5.94E-02	1.55E-04	1.11E-02	1.08E-02	1.55E-04	4.70E-03	4.82E-03	1.55E-04
4	572424.1	4149245	3.43E-02	0.029581	0.000105	4.18E-02	4.00E-02	1.05E-04	7.45E-03	7.28E-03	1.05E-04	3.17E-03	3.25E-03	1.05E-04
5	572411.5	4149255	2.79E-02	0.023998	8.48E-05	3.39E-02	3.25E-02	8.48E-05	6.04E-03	5.90E-03	8.48E-05	2.57E-03	2.63E-03	8.48E-05
6	572439.6	4149227	5.11E-02	0.044041	0.000156	6.22E-02	5.96E-02	1.56E-04	1.11E-02	1.08E-02	1.56E-04	4.72E-03	4.83E-03	1.56E-04
7	572433.2	4149249	2.82E-02	0.024265	8.58E-05	3.43E-02	3.28E-02	8.58E-05	6.11E-03	5.97E-03	8.58E-05	2.60E-03	2.66E-03	8.58E-05
8	572448.7	4149223	4.96E-02	0.042712	0.000151	6.03E-02	5.78E-02	1.51E-04	1.08E-02	1.05E-02	1.51E-04	4.57E-03	4.69E-03	1.51E-04
9	572448.6	4149239	3.31E-02	0.028495	0.000101	4.02E-02	3.86E-02	1.01E-04	7.18E-03	7.01E-03	1.01E-04	3.05E-03	3.13E-03	1.01E-04
10	572457.8	4149219	4.72E-02	0.040646	0.000144	5.74E-02	5.50E-02	1.44E-04	1.02E-02	1.00E-02	1.44E-04	4.35E-03	4.46E-03	1.44E-04
11	572457.7	4149235	3.38E-02	0.029096	0.000103	4.11E-02	3.94E-02	1.03E-04	7.33E-03	7.16E-03	1.03E-04	3.12E-03	3.19E-03	1.03E-04
12	572466.9	4149215	4.43E-02	0.038173	0.000135	5.39E-02	5.17E-02	1.35E-04	9.61E-03	9.39E-03	1.35E-04	4.09E-03	4.19E-03	1.35E-04
13	572466.8	4149231	3.38E-02	0.02911	0.000103	4.11E-02	3.94E-02	1.03E-04	7.33E-03	7.16E-03	1.03E-04	3.12E-03	3.19E-03	1.03E-04
14	572438	4149125	6.13E-02	0.052807	0.000187	7.46E-02	7.15E-02	1.87E-04	1.33E-02	1.30E-02	1.87E-04	5.65E-03	5.79E-03	1.87E-04
15	572476.1	4149211	4.12E-02	0.035505	0.000126	5.01E-02	4.81E-02	1.26E-04	8.94E-03	8.73E-03	1.26E-04	3.80E-03	3.90E-03	1.26E-04
16	572476	4149227	3.31E-02	0.028526	0.000101	4.03E-02	3.86E-02	1.01E-04	7.18E-03	7.02E-03	1.01E-04	3.05E-03	3.13E-03	1.01E-04
17	572450.8	4149129	5.80E-02	0.050014	0.000177	7.06E-02	6.77E-02	1.77E-04	1.26E-02	1.23E-02	1.77E-04	5.35E-03	5.49E-03	1.77E-04
18	572485.2	4149206	3.81E-02	0.032823	0.000116	4.64E-02	4.44E-02	1.16E-04	8.27E-03	8.07E-03	1.16E-04	3.51E-03	3.60E-03	1.16E-04
19	572485.1	4149223	3.18E-02	0.027417	9.69E-05	3.87E-02	3.71E-02	9.69E-05	6.90E-03	6.74E-03	9.69E-05	2.94E-03	3.01E-03	9.69E-05
20	572456.3	4149117	4.94E-02	0.042554	0.00015	6.01E-02	5.76E-02	1.50E-04	1.07E-02	1.05E-02	1.50E-04	4.56E-03	4.67E-03	1.50E-04
21	572494.3	4149202	3.51E-02	0.030231	0.000107	4.27E-02	4.09E-02	1.07E-04	7.61E-03	7.44E-03	1.07E-04	3.24E-03	3.32E-03	1.07E-04
22	572494.2	4149219	3.02E-02	0.025991	9.19E-05	3.67E-02	3.52E-02	9.19E-05	6.55E-03	6.39E-03	9.19E-05	2.78E-03	2.85E-03	9.19E-05
23	572465.4	4149113	4.46E-02	0.038431	0.000136	5.43E-02	5.20E-02	1.36E-04	9.68E-03	9.45E-03	1.36E-04	4.11E-03	4.22E-03	1.36E-04
24	572503.5	4149198	3.23E-02	0.027866	9.85E-05	3.94E-02	3.77E-02	9.85E-05	7.02E-03	6.85E-03	9.85E-05	2.98E-03	3.06E-03	9.85E-05
25	572503.3	4149215	2.85E-02	0.024516	8.67E-05	3.46E-02	3.32E-02	8.67E-05	6.17E-03	6.03E-03	8.67E-05	2.62E-03	2.69E-03	8.67E-05
26	572478.1	4149117	4.13E-02	0.03561	0.000126	5.03E-02	4.82E-02	1.26E-04	8.97E-03	8.76E-03	1.26E-04	3.81E-03	3.91E-03	1.26E-04
27	572512.6	4149194	2.98E-02	0.025689	9.08E-05	3.63E-02	3.48E-02	9.08E-05	6.47E-03	6.32E-03	9.08E-05	2.75E-03	2.82E-03	9.08E-05
28	572512.5	4149211	2.68E-02	0.023056	8.15E-05	3.26E-02	3.12E-02	8.15E-05	5.81E-03	5.67E-03	8.15E-05	2.47E-03	2.53E-03	8.15E-05
29	572521.7	4149190	2.75E-02	0.023703	8.38E-05	3.35E-02	3.21E-02	8.38E-05	5.97E-03	5.83E-03	8.38E-05	2.54E-03	2.60E-03	8.38E-05
30	572521.6	4149207	2.52E-02	0.021689	7.67E-05	3.06E-02	2.94E-02	7.67E-05	5.46E-03	5.33E-03	7.67E-05	2.32E-03	2.38E-03	7.67E-05
31	572530.8	4149197	2.44E-02	0.021034	7.43E-05	2.97E-02	2.85E-02	7.43E-05	5.30E-03	5.17E-03	7.43E-05	2.25E-03	2.31E-03	7.43E-05
32	572505.5	4149104	3.06E-02	0.026392	9.33E-05	3.73E-02	3.57E-02	9.33E-05	6.65E-03	6.49E-03	9.33E-05	2.83E-03	2.90E-03	9.33E-05
33	572540	4149184	2.35E-02	0.020219	7.15E-05	2.86E-02	2.74E-02	7.15E-05	5.09E-03	4.97E-03	7.15E-05	2.16E-03	2.22E-03	7.15E-05
34	572539.9	4149192	2.28E-02	0.019626	6.94E-05	2.77E-02	2.66E-02	6.94E-05	4.94E-03	4.83E-03	6.94E-05	2.10E-03	2.15E-03	6.94E-05
35	572518.3	4149108	2.77E-02	0.023893	8.45E-05	3.37E-02	3.23E-02	8.45E-05	6.02E-03	5.88E-03	8.45E-05	2.56E-03	2.62E-03	8.45E-05
36	572511	4149092	2.79E-02	0.024061	8.5E-05	3.40E-02	3.26E-02	8.50E-05	6.06E-03	5.92E-03	8.50E-05	2.58E-03	2.64E-03	8.50E-05
37	572549.1	4149179	2.18E-02	0.018766	6.63E-05	2.65E-02	2.54E-02	6.63E-05	4.73E-03	4.62E-03	6.63E-05	2.01E-03	2.06E-03	6.63E-05
38	572549	4149197	2.05E-02	0.017662	6.24E-05	2.49E-02	2.39E-02	6.24E-05	4.45E-03	4.34E-03	6.24E-05	1.89E-03	1.94E-03	6.24E-05
39	572527.4	4149104	2.54E-02	0.021879	7.73E-05	3.09E-02	2.96E-02	7.73E-05	5.51E-03	5.38E-03	7.73E-05	2.34E-03	2.40E-03	7.73E-05
40	572520.2	4149088	2.57E-02	0.022128	7.82E-05	3.13E-02	2.99E-02	7.82E-05	5.57E-03	5.44E-03	7.82E-05	2.37E-03	2.43E-03	7.82E-05
41	572558.2	4149175	2.03E-02	0.017453	6.17E-05	2.46E-02	2.36E-02	6.17E-05	4.40E-03	4.29E-03	6.17E-05	1.87E-03	1.91E-03	6.17E-05
42	572558.1	4149193	1.92E-02	0.016543	5.85E-05	2.34E-02	2.24E-02	5.85E-05	4.17E-03	4.07E-03	5.85E-05	1.77E-03	1.82E-03	5.85E-05
43	572532.9	4149092	2.36E-02	0.020335	7.19E-05	2.87E-02	2.75E-02	7.19E-05	5.12E-03	5.00E-03	7.19E-05	2.18E-03	2.23E-03	7.19E-05
44	572567.3	4149171	1.89E-02	0.016279	5.75E-05	2.30E-02	2.20E-02	5.75E-05	4.10E-03	4.00E-03	5.75E-05	1.74E-03	1.79E-03	5.75E-05
45	572567.2	4149189	1.80E-02	0.015519	5.49E-05	2.19E-02	2.10E-02	5.49E-05	3.91E-03	3.82E-03	5.49E-05	1.66E-03	1.70E-03	5.49E-05
46	572576.5	4149167	1.77E-02	0.015226	5.38E-05	2.15E-02	2.06E-02	5.38E-05	3.83E-03	3.74E-03	5.38E-05	1.63E-03	1.67E-03	5.38E-05
47	572576.4	4149184	1.69E-02	0.0146	5.16E-05	2.06E-02	1.98E-02	5.16E-05	3.68E-03	3.59E-03	5.16E-05	1.56E-03	1.60E-03	5.16E-05
48	572585.5	4149180	1.60E-02	0.013768	4.87E-05	1.94E-02	1.86E-02	4.87E-05	3.47E-03	3.39E-03	4.87E-05	1.47E-03	1.51E-03	4.87E-05
49	572607.7	4149088	1.36E-02	0.011694	4.13E-05	1.65E-02	1.58E-02	4.13E-05	2.94E-03	2.88E-03	4.13E-05	1.25E-03	1.28E-03	4.13E-05
50	572600.4	4149072	1.40E-02	0.012031	4.25E-05	1.70E-02	1.63E-02	4.25E-05	3.03E-03	2.96E-03	4.25E-05	1.29E-03	1.32E-03	4.25E-05
51	572593.2	4149055	1.43E-02	0.012337	4.36E-05	1.74E-02	1.67E-02	4.36E-05	3.11E-03	3.03E-03	4.36E-05	1.32E-03	1.35E-03	4.36E-05
52	572616.8	4149084	1.27E-02	0.010977	3.88E-05	1.55E-02	1.49E-02	3.88E-05	2.76E-03	2.70E-03	3.88E-05	1.18E-03	1.20E-03	3.88E-05
53	572609.6	4149068	1.31E-02	0.011285	3.99E-05	1.59E-02	1.53E-02	3.99E-05	2.84E-03	2.78E-03	3.99E-05	1.21E-03	1.24E-03	3.99E-05
54	572602.3	4149051	1.34E-02	0.011577	4.09E-05	1.64E-02	1.57E-02	4.09E-05	2.92E-03	2.85E-03	4.09E-05	1.24E-03	1.27E-03	4.09E-05
55	572622.3	4149072	1.21E-02	0.010464	3.7E-05	1.48E-02	1.42E-02	3.70E-05	2.64E-03	2.57E-03	3.70E-05	1.12E-03	1.15E-03	3.70E-05
56	572615.1	4149055	1.25E-02	0.010753	3.8E-05	1.52E-02	1.46E-02	3.80E-05	2.71E-03	2.64E-03	3.80E-05	1.15E-03	1.18E-03	3.80E-05
57	572635.1	4149076	1.13E-02	0.009733	3.44E-05	1.37E-02	1.32E-02	3.44E-05	2.45E-03	2.39E-03	3.44E-05	1.04E-03	1.07E-03	3.44E-05
58	572627.8	4149059	1.16E-02	0.009994	3.53E-05	1.41E-02	1.35E-02	3.53E-05	2.52E-03	2.46E-03	3.53E-05	1.07E-03	1.10E-03	3.53E-05
59	572620.6	4149043	1.19E-02	0.010256	3.63E-05	1.45E-02	1.39E-02	3.63E-05	2.58E-03	2.52E-03	3.63E-05	1.10E-03	1.13E-03	3.63E-05
60	572647.9	4149080	1.05E-02	0.009083	3.21E-05	1.28E-02	1.23E-02	3.21E-05	2.29E-03	2.23E-03	3.21E-05	9.73E-04	9.97E-04	3.21E-05
61	572640.6	4149063	1.08E-02	0.009309	3.29E-05	1.31E-02	1.26E-02	3.29E-05	2.34E-03	2.29E-03	3.29E-05	9.97E-04	1.02E-03	3.29E-05
62	572633.3	4149047	1.11E-02	0.009557	3.38E-05	1.35E-02	1.29E-02	3.38E-05	2.41E-03	2.35E-03	3.38E-05	1.02E-03	1.05E-03	3.38E-05
63	572657	4149076	9.98E-03	0.008597	3.04E-05	1.21E-02	1.16E-02	3.04E-05	2.17E-03	2.11E-03	3.04E-05	9.20E-04	9.43E-04	3.04E-05
64	572649.7	4149059	1.02E-02	0.008805	3.11E-05	1.24E-02	1.19E-02	3.11E-05	2.22E-03	2.17E-03	3.11E-05	9.43E-04	9.66E-04	3.11E-05
65	572642.4	4149043	1.05E-02	0.009039	3.19E-05	1.28E-02	1.22E-02	3.19E-05	2.28E-03	2.22E-03	3.19E-05	9.68E-04	9.92E-04	3.19E-05
66	572662.5	4149063	9.57E-03	0.008243	2.91E-05	1.16E-02	1.12E-02	2.91E-05	2.08E-03	2.03E-03	2.91E-05	8.83E-04	9.04E-04	2.91E-05
67	572655.2	4149047	9.80E-03	0.008446	2.99E-05	1.19E-02	1.14E-02	2.99E-05	2.13E-03	2.08E-03	2.99E-05	9.04E-04	9.27E-04	2.99E-05
68	572647.9	4149031	1.01E-02	0.008678	3.07E-05	1.23E-02	1.17E-02	3.07E-05	2.19E-03	2.13E-03	3.07E-05	9.29E-04	9.52E-04	3.07E-05
69	572675.2	4149067	8.99E-03	0.00775	2.74E-05	1.09E-02	1.05E-02	2.74E-05	1.95E-03	1.91E-03	2.74E-05	8.30E-04	8.50E-04	2.74E-05
70	572668	4149051	9.19E-03	0.007919	2.8E-05	1.12E-02	1.07E-02	2.80E-05	1.99E-03	1.95E-03	2.80E-05	8.48E-04	8.69E-04	2.80E-05
71	572660.7	4149035	9.43E-03	0.008124	2.87E-05	1.15E-02	1.10E-02	2.87E-05	2.05E-03	2.00E-03	2.87E-05	8.70E-04	8.91E-04	2.87E-05
72	572684.4	4149063	8.56E-03	0.007378	2.61E-05	1.04E-02	9.99E-03	2.61E-05	1.86E-03	1.81E-03	2.61E-05	7.90E-04	8.10E-04	2.61E-05
73	572677.1	4149047	8.74E-03	0.007534	2.66E-05	1.06E-02	1.02E-02	2.66E-05	1.90E-03	1.85E-03	2.66E-05	8.07E-04	8.27E-04	2.66E-05
74	572669.8	4149031	8.97E-03	0.007726	2.73E-05	1.09E-02	1.05E-02	2.73E-05	1.95E-03	1.90E-03	2.73E-05	8.27E-04	8.48E-04	2.73E-05
75	572697.1	4149067	8.08E-03	0.006965	2.46E-05	9.84E-03	9.43E-03	2.46E-05	1.75E-03	1.71E-03	2.46E-05	7.46E-04	7.64E-04	2.46E-05
76	572689.9	4149051	8.24E-03	0.007102	2.51E-05	1.00E-02	9.61E-03	2.51E-05	1.79E-03	1.75E-03	2.51E-05	7.60E-04	7.79E-04	2.51E-05
77	572682.6	4149035	8.43E-03	0.007267	2.57E-05	1.03E-02	9.83E-03	2.57E-05	1.83E-03	1.79E-03	2.57E-05	7.78E-04	7.97E-04	2.57E-05
78	572675.3	4149019	8.65E-03	0.007452	2.63E-05	1.05E-02	1.01E-02	2.63E-05	1.88E-03	1.83E-03	2.63E-05	7.98E-04	8.18E-04	2.63E-05
79	572702.6	4149055	7.79E-03	0.00671	2.37E-05	9.48E-03	9.08E-03	2.37E-05	1.69E-03	1.65E-03	2.37E-05	7.18E-04	7.36E-04	2.37E-05
80	572695.4	4149039	7.95E-03	0.006851	2.42E-05	9.68E-03	9.27E-03	2.42E-05	1.73E-03	1.68E-03	2.42E-05	7.33E-04	7.52E-04	2.42E-05
81	572688.1	4149023	8.14E-03	0.007018	2.48E-05	9.91E-03	9.50E-03	2.48E-05	1.77E-03	1.73E-03	2.48E-05	7.51E-04	7.70E-04	2.48E-05
82	572711.8	4149051	7.44E-03	0.006412	2.27E-05	9.06E-03	8.68E-03	2.27E-05	1.61E-03	1.58E-03	2.27E-05	6.87E-04	7.04E-04	2.27E-05
83	572704.5	4149035	7.60E-03	0.006545	2.31E-05	9.24E-03	8.86E-03	2.31E-05	1.65E-03	1.61E-03	2.31E-05	7.01E-04	7.18E-04	2.31E-05
84	572697.2	4149019	7.78E-03	0.006701	2.37E-05	9.46E-03	9.07E-03	2.37E-05	1.69E-03	1.65E-03	2.37E-05	7.17E-04	7.35E-04	2.37E-05

85	572724.5	4149055	7.05E-03	0.006079	2.15E-05	8.59E-03	8.23E-03	2.15E-05	1.53E-03	1.50E-03	2.15E-05	6.51E-04	6.67E-04	2.15E-05
86	572717.2	4149039	7.19E-03	0.006195	2.19E-05	8.75E-03	8.39E-03	2.19E-05	1.56E-03	1.52E-03	2.19E-05	6.63E-04	6.80E-04	2.19E-05
87	572710	4149023	7.35E-03	0.00633	2.24E-05	8.94E-03	8.57E-03	2.24E-05	1.59E-03	1.56E-03	2.24E-05	6.78E-04	6.95E-04	2.24E-05
88	572702.7	4149006	7.53E-03	0.006485	2.29E-05	9.16E-03	8.78E-03	2.29E-05	1.63E-03	1.59E-03	2.29E-05	6.94E-04	7.11E-04	2.29E-05
89	572730	4149043	6.82E-03	0.005879	2.08E-05	8.30E-03	7.96E-03	2.08E-05	1.48E-03	1.45E-03	2.08E-05	6.29E-04	6.45E-04	2.08E-05
90	572722.7	4149027	6.96E-03	0.005994	2.12E-05	8.47E-03	8.11E-03	2.12E-05	1.51E-03	1.47E-03	2.12E-05	6.42E-04	6.58E-04	2.12E-05
91	572715.5	4149010	7.11E-03	0.00613	2.17E-05	8.66E-03	8.30E-03	2.17E-05	1.54E-03	1.51E-03	2.17E-05	6.56E-04	6.73E-04	2.17E-05
92	572746.4	4149055	6.43E-03	0.005541	1.96E-05	7.83E-03	7.50E-03	1.96E-05	1.40E-03	1.36E-03	1.96E-05	5.93E-04	6.08E-04	1.96E-05
93	572739.1	4149039	6.54E-03	0.005638	1.99E-05	7.96E-03	7.63E-03	1.99E-05	1.42E-03	1.39E-03	1.99E-05	6.04E-04	6.19E-04	1.99E-05
94	572731.9	4149023	6.67E-03	0.005745	2.03E-05	8.11E-03	7.78E-03	2.03E-05	1.45E-03	1.41E-03	2.03E-05	6.15E-04	6.30E-04	2.03E-05
95	572724.6	4149006	6.82E-03	0.005873	2.08E-05	8.29E-03	7.95E-03	2.08E-05	1.48E-03	1.44E-03	2.08E-05	6.29E-04	6.44E-04	2.08E-05
96	572755.5	4149051	6.18E-03	0.005323	1.88E-05	7.52E-03	7.20E-03	1.88E-05	1.34E-03	1.31E-03	1.88E-05	5.70E-04	5.84E-04	1.88E-05
97	572751.9	4149043	6.23E-03	0.005367	1.9E-05	7.58E-03	7.26E-03	1.90E-05	1.35E-03	1.32E-03	1.90E-05	5.75E-04	5.89E-04	1.90E-05
98	572744.6	4149027	6.34E-03	0.00546	1.93E-05	7.71E-03	7.39E-03	1.93E-05	1.38E-03	1.34E-03	1.93E-05	5.85E-04	5.99E-04	1.93E-05
99	572737.4	4149010	6.46E-03	0.00557	1.97E-05	7.87E-03	7.54E-03	1.97E-05	1.40E-03	1.37E-03	1.97E-05	5.96E-04	6.11E-04	1.97E-05
100	572730.1	4148994	6.61E-03	0.005697	2.01E-05	8.05E-03	7.71E-03	2.01E-05	1.43E-03	1.40E-03	2.01E-05	6.10E-04	6.25E-04	2.01E-05
101	572764.7	4149047	5.94E-03	0.005121	1.81E-05	7.23E-03	6.93E-03	1.81E-05	1.29E-03	1.26E-03	1.81E-05	5.48E-04	5.62E-04	1.81E-05
102	572757.4	4149031	6.04E-03	0.005201	1.84E-05	7.35E-03	7.04E-03	1.84E-05	1.31E-03	1.28E-03	1.84E-05	5.57E-04	5.71E-04	1.84E-05
103	572750.1	4149014	6.14E-03	0.005294	1.87E-05	7.48E-03	7.17E-03	1.87E-05	1.33E-03	1.30E-03	1.87E-05	5.67E-04	5.81E-04	1.87E-05
104	572742.8	4148998	6.27E-03	0.005406	1.91E-05	7.63E-03	7.32E-03	1.91E-05	1.36E-03	1.33E-03	1.91E-05	5.79E-04	5.93E-04	1.91E-05
105	572773.8	4149043	5.72E-03	0.004931	1.74E-05	6.96E-03	6.67E-03	1.74E-05	1.24E-03	1.21E-03	1.74E-05	5.28E-04	5.41E-04	1.74E-05
106	572766.5	4149027	5.81E-03	0.005003	1.77E-05	7.07E-03	6.77E-03	1.77E-05	1.26E-03	1.23E-03	1.77E-05	5.36E-04	5.49E-04	1.77E-05
107	572759.2	4149010	5.91E-03	0.005089	1.8E-05	7.19E-03	6.89E-03	1.80E-05	1.28E-03	1.25E-03	1.80E-05	5.45E-04	5.58E-04	1.80E-05
108	572752	4148994	6.03E-03	0.005194	1.84E-05	7.34E-03	7.03E-03	1.84E-05	1.31E-03	1.28E-03	1.84E-05	5.56E-04	5.70E-04	1.84E-05
109	572782.9	4149039	5.51E-03	0.00475	1.68E-05	6.71E-03	6.43E-03	1.68E-05	1.20E-03	1.17E-03	1.68E-05	5.09E-04	5.21E-04	1.68E-05
110	572779.3	4149031	5.55E-03	0.004782	1.69E-05	6.75E-03	6.47E-03	1.69E-05	1.20E-03	1.18E-03	1.69E-05	5.12E-04	5.25E-04	1.69E-05
111	572772	4149014	5.63E-03	0.004853	1.72E-05	6.85E-03	6.57E-03	1.72E-05	1.22E-03	1.19E-03	1.72E-05	5.20E-04	5.32E-04	1.72E-05
112	572764.7	4148998	5.73E-03	0.004941	1.75E-05	6.98E-03	6.69E-03	1.75E-05	1.24E-03	1.22E-03	1.75E-05	5.29E-04	5.42E-04	1.75E-05
113	572757.5	4148982	5.86E-03	0.005047	1.78E-05	7.13E-03	6.83E-03	1.78E-05	1.27E-03	1.24E-03	1.78E-05	5.40E-04	5.54E-04	1.78E-05
114	572792	4149035	5.31E-03	0.004576	1.62E-05	6.46E-03	6.19E-03	1.62E-05	1.15E-03	1.13E-03	1.62E-05	4.90E-04	5.02E-04	1.62E-05
115	572784.8	4149018	5.38E-03	0.004639	1.64E-05	6.55E-03	6.28E-03	1.64E-05	1.17E-03	1.14E-03	1.64E-05	4.97E-04	5.09E-04	1.64E-05
116	572777.5	4149002	5.47E-03	0.004711	1.67E-05	6.65E-03	6.38E-03	1.67E-05	1.19E-03	1.16E-03	1.67E-05	5.04E-04	5.17E-04	1.67E-05
117	572770.2	4148986	5.57E-03	0.004802	1.7E-05	6.78E-03	6.50E-03	1.70E-05	1.21E-03	1.18E-03	1.70E-05	5.14E-04	5.27E-04	1.70E-05
118	572804.8	4149039	5.09E-03	0.004383	1.55E-05	6.19E-03	5.93E-03	1.55E-05	1.10E-03	1.08E-03	1.55E-05	4.69E-04	4.81E-04	1.55E-05
119	572797.5	4149022	5.15E-03	0.004441	1.57E-05	6.27E-03	6.01E-03	1.57E-05	1.12E-03	1.09E-03	1.57E-05	4.76E-04	4.87E-04	1.57E-05
120	572793.9	4149014	5.19E-03	0.004471	1.58E-05	6.31E-03	6.05E-03	1.58E-05	1.13E-03	1.10E-03	1.58E-05	4.79E-04	4.91E-04	1.58E-05
121	572786.6	4148998	5.27E-03	0.004538	1.6E-05	6.41E-03	6.14E-03	1.60E-05	1.14E-03	1.12E-03	1.60E-05	4.86E-04	4.98E-04	1.60E-05
122	572779.4	4148982	5.37E-03	0.004623	1.63E-05	6.53E-03	6.26E-03	1.63E-05	1.16E-03	1.14E-03	1.63E-05	4.95E-04	5.07E-04	1.63E-05
123	572813.9	4149035	4.91E-03	0.00423	1.5E-05	5.97E-03	5.73E-03	1.50E-05	1.07E-03	1.04E-03	1.50E-05	4.53E-04	4.64E-04	1.50E-05
124	572806.7	4149018	4.97E-03	0.004285	1.51E-05	6.05E-03	5.80E-03	1.51E-05	1.08E-03	1.05E-03	1.51E-05	4.59E-04	4.70E-04	1.51E-05
125	572799.4	4149002	5.04E-03	0.004343	1.54E-05	6.13E-03	5.88E-03	1.54E-05	1.09E-03	1.07E-03	1.54E-05	4.65E-04	4.77E-04	1.54E-05
126	572792.1	4148986	5.12E-03	0.004413	1.56E-05	6.23E-03	5.97E-03	1.56E-05	1.11E-03	1.09E-03	1.56E-05	4.73E-04	4.84E-04	1.56E-05
127	572784.8	4148970	5.23E-03	0.004503	1.59E-05	6.36E-03	6.09E-03	1.59E-05	1.13E-03	1.11E-03	1.59E-05	4.82E-04	4.94E-04	1.59E-05
128	572819.4	4149022	4.77E-03	0.004111	1.45E-05	5.81E-03	5.56E-03	1.45E-05	1.04E-03	1.01E-03	1.45E-05	4.40E-04	4.51E-04	1.45E-05
129	572812.2	4149006	4.83E-03	0.004163	1.47E-05	5.88E-03	5.63E-03	1.47E-05	1.05E-03	1.02E-03	1.47E-05	4.46E-04	4.57E-04	1.47E-05
130	572804.9	4148990	4.90E-03	0.004223	1.49E-05	5.96E-03	5.71E-03	1.49E-05	1.06E-03	1.04E-03	1.49E-05	4.52E-04	4.63E-04	1.49E-05
131	572797.6	4148974	4.99E-03	0.0043	1.52E-05	6.07E-03	5.82E-03	1.52E-05	1.08E-03	1.06E-03	1.52E-05	4.60E-04	4.72E-04	1.52E-05
132	572832.2	4149026	4.58E-03	0.003948	1.4E-05	5.58E-03	5.34E-03	1.40E-05	9.94E-04	9.71E-04	1.40E-05	4.23E-04	4.33E-04	1.40E-05
133	572824.9	4149010	4.64E-03	0.003996	1.41E-05	5.64E-03	5.41E-03	1.41E-05	1.01E-03	9.83E-04	1.41E-05	4.28E-04	4.38E-04	1.41E-05
134	572817.6	4148994	4.70E-03	0.004048	1.43E-05	5.72E-03	5.48E-03	1.43E-05	1.02E-03	9.96E-04	1.43E-05	4.33E-04	4.44E-04	1.43E-05
135	572810.4	4148978	4.77E-03	0.004113	1.45E-05	5.81E-03	5.57E-03	1.45E-05	1.04E-03	1.01E-03	1.45E-05	4.40E-04	4.51E-04	1.45E-05
136	572803.1	4148961	4.87E-03	0.004193	1.48E-05	5.92E-03	5.67E-03	1.48E-05	1.06E-03	1.03E-03	1.48E-05	4.49E-04	4.60E-04	1.48E-05
137	572837.7	4149014	4.46E-03	0.00384	1.36E-05	5.42E-03	5.20E-03	1.36E-05	9.67E-04	9.45E-04	1.36E-05	4.11E-04	4.21E-04	1.36E-05
138	572834	4149006	4.48E-03	0.003863	1.37E-05	5.46E-03	5.23E-03	1.37E-05	9.73E-04	9.50E-04	1.37E-05	4.14E-04	4.24E-04	1.37E-05
139	572826.8	4148990	4.54E-03	0.003912	1.38E-05	5.53E-03	5.29E-03	1.38E-05	9.85E-04	9.62E-04	1.38E-05	4.19E-04	4.29E-04	1.38E-05
140	572819.5	4148974	4.61E-03	0.003974	1.4E-05	5.61E-03	5.38E-03	1.40E-05	1.00E-03	9.77E-04	1.40E-05	4.25E-04	4.36E-04	1.40E-05
141	572812.2	4148957	4.70E-03	0.00405	1.43E-05	5.72E-03	5.48E-03	1.43E-05	1.02E-03	9.96E-04	1.43E-05	4.34E-04	4.44E-04	1.43E-05
142	572850.4	4149027	4.32E-03	0.003718	1.31E-05	5.25E-03	5.03E-03	1.31E-05	9.36E-04	9.15E-04	1.31E-05	3.98E-04	4.08E-04	1.31E-05
143	572846.8	4149010	4.31E-03	0.003716	1.31E-05	5.25E-03	5.03E-03	1.31E-05	9.36E-04	9.14E-04	1.31E-05	3.98E-04	4.08E-04	1.31E-05
144	572839.5	4148994	4.36E-03	0.003759	1.33E-05	5.31E-03	5.09E-03	1.33E-05	9.47E-04	9.25E-04	1.33E-05	4.02E-04	4.12E-04	1.33E-05
145	572832.3	4148978	4.42E-03	0.00381	1.35E-05	5.38E-03	5.16E-03	1.35E-05	9.60E-04	9.37E-04	1.35E-05	4.08E-04	4.18E-04	1.35E-05
146	572825	4148961	4.50E-03	0.003875	1.37E-05	5.47E-03	5.24E-03	1.37E-05	9.76E-04	9.53E-04	1.37E-05	4.15E-04	4.25E-04	1.37E-05
147	572388.4	4149116	4.83E-02	0.041591	0.000147	5.87E-02	5.63E-02	1.47E-04	1.05E-02	1.02E-02	1.47E-04	4.45E-03	4.56E-03	1.47E-04
148	572399.5	4149127	6.67E-02	0.057471	0.000203	8.12E-02	7.78E-02	2.03E-04	1.45E-02	1.41E-02	2.03E-04	6.15E-03	6.31E-03	2.03E-04
149	572392	4149107	3.94E-02	0.03396	0.00012	4.80E-02	4.60E-02	1.20E-04	8.55E-03	8.35E-03	1.20E-04	3.64E-03	3.73E-03	1.20E-04
150	572403.1	4149117	5.36E-02	0.046149	0.000163	6.52E-02	6.25E-02	1.63E-04	1.16E-02	1.14E-02	1.63E-04	4.94E-03	5.06E-03	1.63E-04
151	572332.4	4149106	2.90E-02	0.025005	8.84E-05	3.53E-02	3.38E-02	8.84E-05	6.30E-03	6.15E-03	8.84E-05	2.68E-03	2.74E-03	8.84E-05
152	572316.2	4149114	2.28E-02	0.019672	6.95E-05	2.78E-02	2.66E-02	6.95E-05	4.95E-03	4.84E-03	6.95E-05	2.11E-03	2.16E-03	6.95E-05
153	572374.7	4149093	2.87E-02	0.024751	8.75E-05	3.50E-02	3.35E-02	8.75E-05	6.23E-03	6.09E-03	8.75E-05	2.65E-03	2.72E-03	8.75E-05
154	572395.5	4149097	3.28E-02	0.028242	9.98E-05	3.99E-02	3.82E-02	9.98E-05	7.11E-03	6.95E-03	9.98E-05	3.02E-03	3.10E-03	9.98E-05
155	572406.6	4149108	4.38E-02	0.037742	0.000133	5.33E-02	5.11E-02	1.33E-04	9.51E-03	9.28E-03	1.33E-04	4.04E-03	4.14E-03	1.33E-04
156	572417.8	4149118	5.77E-02	0.049681	0.000176	7.02E-02	6.72E-02	1.76E-04	1.25E-02	1.22E-02	1.76E-04	5.32E-03	5.45E-03	1.76E-04
157	572328.3	4149097	2.36E-02	0.020321	7.18E-05	2.87E-02	2.75E-02	7.18E-05	5.12E-03	5.00E-03	7.18E-05	2.18E-03	2.23E-03	7.18E-05
158	572312.1	4149104	1.87E-02	0.016084	5.69E-05	2.27E-02	2.18E-02	5.69E-05	4.05E-03	3.96E-03	5.69E-05	1.72E-03	1.76E-03	5.69E-05
159	572376	4149083	2.45E-02	0.021109	7.46E-05	2.98E-02	2.86E-02	7.46E-05	5.32E-03	5.19E-03	7.46E-05	2.26E-03	2.32E-03	7.46E-05
160	572399.9	4149089	2.82E-02	0.024315	8.59E-05	3.43E-02	3.29E-02	8.59E-05	6.12E-03	5.98E-03	8.59E-05	2.60E-03	2.67E-03	8.59E-05
161	572412.6	4149101	3.88E-02	0.033407	0.000118	4.72E-02	4.52E-02	1.18E-04	8.41E-03	8.22E-03	1.18E-04	3.58E-03	3.67E-03	1.18E-04
162	572425.3	4149113	5.19E-02	0.044744	0.000158	6.32E-02	6.06E-02	1.58E-04	1.13E-02	1.10E-02	1.58E-04	4.79E-03	4.91E-03	1.58E-04
163	572324.2	4149088	1.95E-02	0.016789	5.93E-05	2.37E-02	2.27E-02	5.93E-05	4.23E-03	4.13E-03	5.93E-05	1.80E-03	1.84E-03	5.93E-05
164	572308	4149095	1.55E-02	0.013391	4.73E-05	1.89E-02	1.81E-02	4.73E-05	3.37E-03	3.29E-03	4.73E-05	1.43E-03	1.47E-03	4.73E-05
165	572371.3	4149074	2.13E-02	0.018329	6.48E-05	2.59E-02	2.48E-02	6.48E-05	4.62E-03	4.51E-03	6.48E-05	1.96E-03	2.01E-03	6.48E-05
166	572388.5	4149074	2.11E-02	0.018162	6.42E-05	2.57E-02	2.46E-02	6.42E-05	4.57E-03	4.47E-03	6.42E-05	1.94E-03	1.99E-03	6.42E-05
167	572403.4	4149079	2.41E-02	0.020778	7.34E-05	2.93E-02	2.81E-02	7.34E-05	5.23E-03	5.11E-03	7.34E-05	2.22E-03	2.28E-03	7.34E-05
168	572415.9	4149091	3.24E-02	0.02794	9.88E-05	3.95E-02	3.78E-02	9.88E-05	7.04E-03	6.87E-03	9.88E-05	2.99E-03	3.07E-03	9.88E-05
169	572428.4	4149103	4.34E-02	0.037364	0.000132	5.28E-02	5.06E-02	1.32E-04	9.41E-03	9.19E-03	1.32E-04	4.00E-03	4.10E-03	1.32E-04
170	572440.9	4149115	5.26E-02	0.045287	0.00016	6.40E-02	6.13E-02	1.60E-04	1.14E-02	1.11E-02	1.60E-04	4.85E-03	4.97E-03	1.60E-04
171	572320.2	4149079	1.63E-02	0.014077	4.98E-05	1.99E-02	1.91E-02	4.98E-05	3.55E-03	3.46E-03	4.98E-05	1.51E-03	1.54E-03	4.98E-05

172	572304	4149086	1.31E-02	0.01132	4E-05	1.60E-02	1.53E-02	4.00E-05	2.85E-03	2.78E-03	4.00E-05	1.21E-03	1.24E-03	4.00E-05
173	572366.7	4149065	1.87E-02	0.016075	5.68E-05	2.27E-02	2.18E-02	5.68E-05	4.05E-03	3.95E-03	5.68E-05	1.72E-03	1.76E-03	5.68E-05
174	572383.7	4149065	1.84E-02	0.01586	5.61E-05	2.24E-02	2.15E-02	5.61E-05	3.99E-03	3.90E-03	5.61E-05	1.70E-03	1.74E-03	5.61E-05
175	572406.8	4149070	2.09E-02	0.017998	6.36E-05	2.54E-02	2.44E-02	6.36E-05	4.53E-03	4.43E-03	6.36E-05	1.93E-03	1.97E-03	6.36E-05
176	572419.2	4149082	2.75E-02	0.023728	8.39E-05	3.35E-02	3.21E-02	8.39E-05	5.98E-03	5.84E-03	8.39E-05	2.54E-03	2.60E-03	8.39E-05
177	572431.5	4149093	3.66E-02	0.031568	0.000112	4.46E-02	4.27E-02	1.12E-04	7.95E-03	7.76E-03	1.12E-04	3.38E-03	3.46E-03	1.12E-04
178	572443.9	4149105	4.51E-02	0.03888	0.000137	5.49E-02	5.26E-02	1.37E-04	9.79E-03	9.56E-03	1.37E-04	4.16E-03	4.27E-03	1.37E-04
179	572316.1	4149070	1.39E-02	0.011956	4.23E-05	1.69E-02	1.62E-02	4.23E-05	3.01E-03	2.94E-03	4.23E-05	1.28E-03	1.31E-03	4.23E-05
180	572299.9	4149077	1.12E-02	0.009693	3.43E-05	1.37E-02	1.31E-02	3.43E-05	2.44E-03	2.38E-03	3.43E-05	1.04E-03	1.06E-03	3.43E-05
181	572362.2	4149056	1.65E-02	0.014187	5.01E-05	2.00E-02	1.92E-02	5.01E-05	3.57E-03	3.49E-03	5.01E-05	1.52E-03	1.56E-03	5.01E-05
182	572379	4149055	1.63E-02	0.014045	4.96E-05	1.98E-02	1.90E-02	4.96E-05	3.54E-03	3.45E-03	4.96E-05	1.50E-03	1.54E-03	4.96E-05
183	572395.8	4149055	1.62E-02	0.01398	4.94E-05	1.97E-02	1.89E-02	4.94E-05	3.52E-03	3.44E-03	4.94E-05	1.50E-03	1.53E-03	4.94E-05
184	572410.3	4149061	1.83E-02	0.015755	5.57E-05	2.23E-02	2.13E-02	5.57E-05	3.97E-03	3.87E-03	5.57E-05	1.69E-03	1.73E-03	5.57E-05
185	572422.6	4149072	2.37E-02	0.020408	7.21E-05	2.88E-02	2.76E-02	7.21E-05	5.14E-03	5.02E-03	7.21E-05	2.19E-03	2.24E-03	7.21E-05
186	572434.8	4149084	3.12E-02	0.026919	9.51E-05	3.80E-02	3.64E-02	9.51E-05	6.78E-03	6.62E-03	9.51E-05	2.88E-03	2.95E-03	9.51E-05
187	572447	4149095	3.89E-02	0.033561	0.000119	4.74E-02	4.54E-02	1.19E-04	8.45E-03	8.25E-03	1.19E-04	3.59E-03	3.68E-03	1.19E-04
188	572312	4149061	1.19E-02	0.010269	3.63E-05	1.45E-02	1.39E-02	3.63E-05	2.59E-03	2.53E-03	3.63E-05	1.10E-03	1.13E-03	3.63E-05
189	572295.8	4149068	9.74E-03	0.008392	2.97E-05	1.19E-02	1.14E-02	2.97E-05	2.11E-03	2.06E-03	2.97E-05	8.99E-04	9.21E-04	2.97E-05
190	572357.7	4149047	1.46E-02	0.012588	4.45E-05	1.78E-02	1.70E-02	4.45E-05	3.17E-03	3.10E-03	4.45E-05	1.35E-03	1.38E-03	4.45E-05
191	572374.4	4149046	1.46E-02	0.012546	4.43E-05	1.77E-02	1.70E-02	4.43E-05	3.16E-03	3.09E-03	4.43E-05	1.34E-03	1.38E-03	4.43E-05
192	572391.1	4149046	1.44E-02	0.012392	4.38E-05	1.75E-02	1.68E-02	4.38E-05	3.12E-03	3.05E-03	4.38E-05	1.33E-03	1.36E-03	4.38E-05
193	572413.9	4149051	1.61E-02	0.013909	4.92E-05	1.96E-02	1.88E-02	4.92E-05	3.50E-03	3.42E-03	4.92E-05	1.49E-03	1.53E-03	4.92E-05
194	572426	4149063	2.06E-02	0.017739	6.27E-05	2.51E-02	2.40E-02	6.27E-05	4.47E-03	4.36E-03	6.27E-05	1.90E-03	1.95E-03	6.27E-05
195	572438.1	4149074	2.69E-02	0.023171	8.19E-05	3.27E-02	3.14E-02	8.19E-05	5.84E-03	5.70E-03	8.19E-05	2.48E-03	2.54E-03	8.19E-05
196	572450.3	4149086	3.37E-02	0.029069	0.000103	4.11E-02	3.93E-02	1.03E-04	7.32E-03	7.15E-03	1.03E-04	3.11E-03	3.19E-03	1.03E-04
197	572462.4	4149097	3.88E-02	0.033454	0.000118	4.73E-02	4.53E-02	1.18E-04	8.43E-03	8.23E-03	1.18E-04	3.58E-03	3.67E-03	1.18E-04
198	572307.9	4149052	1.03E-02	0.008908	3.15E-05	1.26E-02	1.21E-02	3.15E-05	2.24E-03	2.19E-03	3.15E-05	9.54E-04	9.77E-04	3.15E-05
199	572291.7	4149059	8.51E-03	0.007336	2.59E-05	1.04E-02	9.93E-03	2.59E-05	1.85E-03	1.80E-03	2.59E-05	7.85E-04	8.05E-04	2.59E-05
200	572353.4	4149038	1.30E-02	0.011216	3.96E-05	1.58E-02	1.52E-02	3.96E-05	2.82E-03	2.76E-03	3.96E-05	1.20E-03	1.23E-03	3.96E-05
201	572369.9	4149037	1.31E-02	0.011283	3.99E-05	1.59E-02	1.53E-02	3.99E-05	2.84E-03	2.78E-03	3.99E-05	1.21E-03	1.24E-03	3.99E-05
202	572386.5	4149037	1.29E-02	0.011121	3.93E-05	1.57E-02	1.51E-02	3.93E-05	2.80E-03	2.74E-03	3.93E-05	1.19E-03	1.22E-03	3.93E-05
203	572403.1	4149036	1.29E-02	0.011118	3.93E-05	1.57E-02	1.50E-02	3.93E-05	2.80E-03	2.73E-03	3.93E-05	1.19E-03	1.22E-03	3.93E-05
204	572417.4	4149042	1.44E-02	0.012376	4.37E-05	1.75E-02	1.68E-02	4.37E-05	3.12E-03	3.04E-03	4.37E-05	1.33E-03	1.36E-03	4.37E-05
205	572429.4	4149053	1.81E-02	0.015559	5.5E-05	2.20E-02	2.11E-02	5.50E-05	3.92E-03	3.83E-03	5.50E-05	1.67E-03	1.71E-03	5.50E-05
206	572441.5	4149065	2.33E-02	0.020117	7.11E-05	2.84E-02	2.72E-02	7.11E-05	5.07E-03	4.95E-03	7.11E-05	2.15E-03	2.21E-03	7.11E-05
207	572453.5	4149076	2.94E-02	0.025307	8.95E-05	3.57E-02	3.43E-02	8.95E-05	6.37E-03	6.22E-03	8.95E-05	2.71E-03	2.78E-03	8.95E-05
208	572465.6	4149087	3.44E-02	0.029642	0.000105	4.19E-02	4.01E-02	1.05E-04	7.46E-03	7.29E-03	1.05E-04	3.17E-03	3.25E-03	1.05E-04
209	572303.8	4149042	9.05E-03	0.007796	2.76E-05	1.10E-02	1.06E-02	2.76E-05	1.96E-03	1.92E-03	2.76E-05	8.35E-04	8.55E-04	2.76E-05
210	572287.6	4149050	7.50E-03	0.006466	2.29E-05	9.13E-03	8.75E-03	2.29E-05	1.63E-03	1.59E-03	2.29E-05	6.92E-04	7.09E-04	2.29E-05
211	572349	4149029	1.16E-02	0.010021	3.54E-05	1.42E-02	1.36E-02	3.54E-05	2.52E-03	2.46E-03	3.54E-05	1.07E-03	1.10E-03	3.54E-05
212	572365.5	4149028	1.18E-02	0.01019	3.6E-05	1.44E-02	1.38E-02	3.60E-05	2.57E-03	2.51E-03	3.60E-05	1.09E-03	1.12E-03	3.60E-05
213	572382	4149028	1.17E-02	0.010065	3.56E-05	1.42E-02	1.36E-02	3.56E-05	2.53E-03	2.48E-03	3.56E-05	1.08E-03	1.10E-03	3.56E-05
214	572398.5	4149027	1.16E-02	0.009968	3.52E-05	1.41E-02	1.35E-02	3.52E-05	2.51E-03	2.45E-03	3.52E-05	1.07E-03	1.09E-03	3.52E-05
215	572420.9	4149032	1.29E-02	0.011084	3.92E-05	1.57E-02	1.50E-02	3.92E-05	2.79E-03	2.73E-03	3.92E-05	1.19E-03	1.22E-03	3.92E-05
216	572432.9	4149044	1.60E-02	0.013764	4.86E-05	1.94E-02	1.86E-02	4.86E-05	3.47E-03	3.39E-03	4.86E-05	1.47E-03	1.51E-03	4.86E-05
217	572444.9	4149055	2.04E-02	0.017602	6.22E-05	2.49E-02	2.38E-02	6.22E-05	4.43E-03	4.33E-03	6.22E-05	1.88E-03	1.93E-03	6.22E-05
218	572456.8	4149066	2.57E-02	0.022154	7.83E-05	3.13E-02	3.00E-02	7.83E-05	5.58E-03	5.45E-03	7.83E-05	2.37E-03	2.43E-03	7.83E-05
219	572299.8	4149033	7.98E-03	0.006876	2.43E-05	9.71E-03	9.31E-03	2.43E-05	1.73E-03	1.69E-03	2.43E-05	7.36E-04	7.54E-04	2.43E-05
220	572283.6	4149041	6.66E-03	0.005743	2.03E-05	8.11E-03	7.77E-03	2.03E-05	1.45E-03	1.41E-03	2.03E-05	6.15E-04	6.30E-04	2.03E-05
221	572347.9	4149019	1.05E-02	0.009062	3.2E-05	1.28E-02	1.23E-02	3.20E-05	2.28E-03	2.23E-03	3.20E-05	9.70E-04	9.94E-04	3.20E-05
222	572365.6	4149019	1.07E-02	0.009235	3.26E-05	1.30E-02	1.25E-02	3.26E-05	2.33E-03	2.27E-03	3.26E-05	9.89E-04	1.01E-03	3.26E-05
223	572383.2	4149018	1.06E-02	0.009114	3.22E-05	1.29E-02	1.23E-02	3.22E-05	2.30E-03	2.24E-03	3.22E-05	9.76E-04	1.00E-03	3.22E-05
224	572400.9	4149018	1.05E-02	0.009017	3.19E-05	1.27E-02	1.22E-02	3.19E-05	2.27E-03	2.22E-03	3.19E-05	9.65E-04	9.89E-04	3.19E-05
225	572424.9	4149023	1.17E-02	0.010061	3.56E-05	1.42E-02	1.36E-02	3.56E-05	2.53E-03	2.47E-03	3.56E-05	1.08E-03	1.10E-03	3.56E-05
226	572437.7	4149036	1.46E-02	0.012594	4.45E-05	1.78E-02	1.70E-02	4.45E-05	3.17E-03	3.10E-03	4.45E-05	1.35E-03	1.38E-03	4.45E-05
227	572295.7	4149024	7.09E-03	0.006107	2.16E-05	8.63E-03	8.27E-03	2.16E-05	1.54E-03	1.50E-03	2.16E-05	6.54E-04	6.70E-04	2.16E-05
228	572279.5	4149031	5.96E-03	0.005133	1.81E-05	7.25E-03	6.95E-03	1.81E-05	1.29E-03	1.26E-03	1.81E-05	5.50E-04	5.63E-04	1.81E-05
229	572343.4	4149010	9.46E-03	0.008153	2.88E-05	1.15E-02	1.10E-02	2.88E-05	2.05E-03	2.01E-03	2.88E-05	8.73E-04	8.95E-04	2.88E-05
230	572360.9	4149010	9.75E-03	0.008405	2.97E-05	1.19E-02	1.14E-02	2.97E-05	2.12E-03	2.07E-03	2.97E-05	9.00E-04	9.22E-04	2.97E-05
231	572378.4	4149009	9.68E-03	0.008338	2.95E-05	1.18E-02	1.13E-02	2.95E-05	2.10E-03	2.05E-03	2.95E-05	8.93E-04	9.15E-04	2.95E-05
232	572395.8	4149009	9.53E-03	0.008213	2.9E-05	1.16E-02	1.11E-02	2.90E-05	2.07E-03	2.02E-03	2.90E-05	8.79E-04	9.01E-04	2.90E-05
233	572413.3	4149008	9.56E-03	0.008236	2.91E-05	1.16E-02	1.11E-02	2.91E-05	2.07E-03	2.03E-03	2.91E-05	8.82E-04	9.04E-04	2.91E-05
234	572428.4	4149014	1.06E-02	0.009107	3.22E-05	1.29E-02	1.23E-02	3.22E-05	2.29E-03	2.24E-03	3.22E-05	9.75E-04	9.99E-04	3.22E-05
235	572492	4149074	2.79E-02	0.024018	8.49E-05	3.39E-02	3.25E-02	8.49E-05	6.05E-03	5.91E-03	8.49E-05	2.57E-03	2.64E-03	8.49E-05
236	572339	4149001	8.54E-03	0.007355	2.6E-05	1.04E-02	9.96E-03	2.60E-05	1.85E-03	1.81E-03	2.60E-05	7.88E-04	8.07E-04	2.60E-05
237	572356.3	4149001	8.89E-03	0.007663	2.71E-05	1.08E-02	1.04E-02	2.71E-05	1.93E-03	1.88E-03	2.71E-05	8.20E-04	8.41E-04	2.71E-05
238	572373.6	4149000	8.88E-03	0.007654	2.71E-05	1.08E-02	1.04E-02	2.71E-05	1.93E-03	1.88E-03	2.71E-05	8.20E-04	8.40E-04	2.71E-05
239	572391	4149000	8.74E-03	0.007534	2.66E-05	1.06E-02	1.02E-02	2.66E-05	1.90E-03	1.85E-03	2.66E-05	8.07E-04	8.27E-04	2.66E-05
240	572408.3	4148999	8.68E-03	0.007482	2.64E-05	1.06E-02	1.01E-02	2.64E-05	1.88E-03	1.84E-03	2.64E-05	8.01E-04	8.21E-04	2.64E-05
241	572482.3	4149052	2.25E-02	0.019392	6.85E-05	2.74E-02	2.62E-02	6.85E-05	4.88E-03	4.77E-03	6.85E-05	2.08E-03	2.13E-03	6.85E-05
242	572494.9	4149064	2.53E-02	0.021791	7.7E-05	3.08E-02	2.95E-02	7.70E-05	5.49E-03	5.36E-03	7.70E-05	2.33E-03	2.39E-03	7.70E-05
243	572507.5	4149076	2.63E-02	0.022661	8.01E-05	3.20E-02	3.07E-02	8.01E-05	5.71E-03	5.57E-03	8.01E-05	2.43E-03	2.49E-03	8.01E-05
244	572300.1	4148993	6.00E-03	0.005169	1.83E-05	7.30E-03	7.00E-03	1.83E-05	1.30E-03	1.27E-03	1.83E-05	5.53E-04	5.67E-04	1.83E-05
245	572334.6	4148992	7.72E-03	0.006654	2.35E-05	9.40E-03	9.01E-03	2.35E-05	1.68E-03	1.64E-03	2.35E-05	7.12E-04	7.30E-04	2.35E-05
246	572351.8	4148991	8.12E-03	0.006999	2.47E-05	9.88E-03	9.47E-03	2.47E-05	1.76E-03	1.72E-03	2.47E-05	7.49E-04	7.68E-04	2.47E-05
247	572369	4148991	8.18E-03	0.007046	2.49E-05	9.95E-03	9.54E-03	2.49E-05	1.77E-03	1.73E-03	2.49E-05	7.54E-04	7.73E-04	2.49E-05
248	572386.2	4148991	8.06E-03	0.006947	2.46E-05	9.81E-03	9.40E-03	2.46E-05	1.75E-03	1.71E-03	2.46E-05	7.44E-04	7.62E-04	2.46E-05
249	572403.4	4148990	7.96E-03	0.006861	2.43E-05	9.69E-03	9.29E-03	2.43E-05	1.73E-03	1.69E-03	2.43E-05	7.35E-04	7.53E-04	2.43E-05
250	572420.6	4148990	8.01E-03	0.006898	2.44E-05	9.74E-03	9.34E-03	2.44E-05	1.74E-03	1.70E-03	2.44E-05	7.39E-04	7.57E-04	2.44E-05
251	572498	4149054	2.29E-02	0.019749	6.98E-05	2.79E-02	2.67E-02	6.98E-05	4.97E-03	4.86E-03	6.98E-05	2.11E-03	2.17E-03	6.98E-05
252	572510.5	4149066	2.43E-02	0.020949	7.4E-05	2.96E-02	2.84E-02	7.40E-05	5.28E-03	5.15E-03	7.40E-05	2.24E-03	2.30E-03	7.40E-05
253	572523	4149078	2.42E-02	0.020845	7.37E-05	2.94E-02	2.82E-02	7.37E-05	5.25E-03	5.13E-03	7.37E-05	2.23E-03	2.29E-03	7.37E-05
254	572283.4	4148997	5.15E-03	0.004433	1.57E-05	6.26E-03	6.00E-03	1.57E-05	1.12E-03	1.09E-03	1.57E-05	4.75E-04	4.86E-04	1.57E-05
255	572267.2	4149004	4.40E-03	0.00379	1.34E-05	5.35E-03	5.13E-03	1.34E-05	9.54E-04	9.32E-04	1.34E-05	4.06E-04	4.16E-04	1.34E-05
256	572251	4149011	3.67E-03	0.003164	1.12E-05	4.47E-03	4.28E-03	1.12E-05	7.97E-04	7.78E-04	1.12E-05	3.39E-04	3.47E-04	1.12E-05
257	572296	4148984	5.42E-03	0.004673	1.65E-05	6.60E-03	6.32E-03	1.65E-05	1.18E-03	1.15E-03	1.65E-05	5.00E-04	5.13E-04	1.65E-05
258	572313.1	4148983	6.29E-03	0.005417	1.91E-05	7.65E-03	7.33E-03	1.91E-05	1.36E-03	1.33E-03	1.91E-05	5.80E-04	5.94E-04	1.91E-05

259	572330.2	4148983	7.00E-03	0.006035	2.13E-05	8.52E-03	8.17E-03	2.13E-05	1.52E-03	1.48E-03	2.13E-05	6.46E-04	6.62E-04	2.13E-05
260	572347.3	4148982	7.43E-03	0.006404	2.26E-05	9.05E-03	8.67E-03	2.26E-05	1.61E-03	1.58E-03	2.26E-05	6.86E-04	7.03E-04	2.26E-05
261	572364.4	4148982	7.54E-03	0.0065	2.3E-05	9.18E-03	8.80E-03	2.30E-05	1.64E-03	1.60E-03	2.30E-05	6.96E-04	7.13E-04	2.30E-05
262	572381.5	4148981	7.46E-03	0.006431	2.27E-05	9.08E-03	8.70E-03	2.27E-05	1.62E-03	1.58E-03	2.27E-05	6.89E-04	7.06E-04	2.27E-05
263	572398.6	4148981	7.35E-03	0.006335	2.24E-05	8.95E-03	8.57E-03	2.24E-05	1.60E-03	1.56E-03	2.24E-05	6.78E-04	6.95E-04	2.24E-05
264	572415.7	4148980	7.32E-03	0.006305	2.23E-05	8.90E-03	8.53E-03	2.23E-05	1.59E-03	1.55E-03	2.23E-05	6.75E-04	6.92E-04	2.23E-05
265	572501.1	4149045	2.07E-02	0.017861	6.31E-05	2.52E-02	2.42E-02	6.31E-05	4.50E-03	4.39E-03	6.31E-05	1.91E-03	1.96E-03	6.31E-05
266	572513.6	4149056	2.24E-02	0.019296	6.82E-05	2.73E-02	2.61E-02	6.82E-05	4.86E-03	4.75E-03	6.82E-05	2.07E-03	2.12E-03	6.82E-05
267	572526	4149068	2.27E-02	0.019572	6.92E-05	2.76E-02	2.65E-02	6.92E-05	4.93E-03	4.81E-03	6.92E-05	2.10E-03	2.15E-03	6.92E-05
268	572279.4	4148988	4.67E-03	0.004025	1.42E-05	5.68E-03	5.45E-03	1.42E-05	1.01E-03	9.90E-04	1.42E-05	4.31E-04	4.42E-04	1.42E-05
269	572263.2	4148995	4.01E-03	0.003459	1.22E-05	4.89E-03	4.68E-03	1.22E-05	8.71E-04	8.51E-04	1.22E-05	3.70E-04	3.80E-04	1.22E-05
270	572247	4149002	3.38E-03	0.002908	1.03E-05	4.11E-03	3.94E-03	1.03E-05	7.32E-04	7.15E-04	1.03E-05	3.11E-04	3.19E-04	1.03E-05
271	572291.9	4148975	4.93E-03	0.004245	1.5E-05	6.00E-03	5.75E-03	1.50E-05	1.07E-03	1.04E-03	1.50E-05	4.55E-04	4.66E-04	1.50E-05
272	572308.9	4148974	5.70E-03	0.00491	1.74E-05	6.93E-03	6.65E-03	1.74E-05	1.24E-03	1.21E-03	1.74E-05	5.26E-04	5.39E-04	1.74E-05
273	572325.9	4148974	6.37E-03	0.00549	1.94E-05	7.75E-03	7.43E-03	1.94E-05	1.38E-03	1.35E-03	1.94E-05	5.88E-04	6.02E-04	1.94E-05
274	572342.9	4148973	6.81E-03	0.005869	2.07E-05	8.29E-03	7.94E-03	2.07E-05	1.48E-03	1.44E-03	2.07E-05	6.28E-04	6.44E-04	2.07E-05
275	572359.9	4148973	6.97E-03	0.006006	2.12E-05	8.48E-03	8.13E-03	2.12E-05	1.51E-03	1.48E-03	2.12E-05	6.43E-04	6.59E-04	2.12E-05
276	572376.9	4148972	6.93E-03	0.00597	2.11E-05	8.43E-03	8.08E-03	2.11E-05	1.50E-03	1.47E-03	2.11E-05	6.39E-04	6.55E-04	2.11E-05
277	572393.9	4148972	6.82E-03	0.005876	2.08E-05	8.30E-03	7.95E-03	2.08E-05	1.48E-03	1.45E-03	2.08E-05	6.29E-04	6.45E-04	2.08E-05
278	572410.8	4148971	6.74E-03	0.00581	2.05E-05	8.21E-03	7.86E-03	2.05E-05	1.46E-03	1.43E-03	2.05E-05	6.22E-04	6.38E-04	2.05E-05
279	572516.6	4149047	2.06E-02	0.017707	6.26E-05	2.50E-02	2.40E-02	6.26E-05	4.46E-03	4.36E-03	6.26E-05	1.90E-03	1.94E-03	6.26E-05
280	572275.3	4148979	4.26E-03	0.00367	1.3E-05	5.18E-03	4.97E-03	1.30E-05	9.24E-04	9.03E-04	1.30E-05	3.93E-04	4.03E-04	1.30E-05
281	572259.1	4148986	3.68E-03	0.003169	1.12E-05	4.48E-03	4.29E-03	1.12E-05	7.98E-04	7.79E-04	1.12E-05	3.39E-04	3.48E-04	1.12E-05
282	572242.9	4148993	3.11E-03	0.002682	9.48E-06	3.79E-03	3.63E-03	9.48E-06	6.75E-04	6.60E-04	9.48E-06	2.87E-04	2.94E-04	9.48E-06
283	572287.8	4148966	4.49E-03	0.003872	1.37E-05	5.47E-03	5.24E-03	1.37E-05	9.75E-04	9.52E-04	1.37E-05	4.15E-04	4.25E-04	1.37E-05
284	572304.7	4148965	5.18E-03	0.004467	1.58E-05	6.31E-03	6.05E-03	1.58E-05	1.12E-03	1.10E-03	1.58E-05	4.78E-04	4.90E-04	1.58E-05
285	572321.6	4148965	5.81E-03	0.005006	1.77E-05	7.07E-03	6.77E-03	1.77E-05	1.26E-03	1.23E-03	1.77E-05	5.36E-04	5.49E-04	1.77E-05
286	572338.5	4148964	6.25E-03	0.005387	1.9E-05	7.61E-03	7.29E-03	1.90E-05	1.36E-03	1.33E-03	1.90E-05	5.77E-04	5.91E-04	1.90E-05
287	572355.4	4148964	6.45E-03	0.005558	1.96E-05	7.85E-03	7.52E-03	1.96E-05	1.40E-03	1.37E-03	1.96E-05	5.95E-04	6.10E-04	1.96E-05
288	572372.3	4148963	6.44E-03	0.005552	1.96E-05	7.84E-03	7.51E-03	1.96E-05	1.40E-03	1.37E-03	1.96E-05	5.94E-04	6.09E-04	1.96E-05
289	572389.2	4148963	6.35E-03	0.005469	1.93E-05	7.72E-03	7.40E-03	1.93E-05	1.38E-03	1.34E-03	1.93E-05	5.86E-04	6.00E-04	1.93E-05
290	572406.1	4148962	6.25E-03	0.005389	1.9E-05	7.61E-03	7.29E-03	1.90E-05	1.36E-03	1.33E-03	1.90E-05	5.77E-04	5.91E-04	1.90E-05
291	572271.2	4148969	3.90E-03	0.003359	1.19E-05	4.74E-03	4.55E-03	1.19E-05	8.46E-04	8.26E-04	1.19E-05	3.60E-04	3.69E-04	1.19E-05
292	572255	4148977	3.38E-03	0.002914	1.03E-05	4.12E-03	3.94E-03	1.03E-05	7.34E-04	7.17E-04	1.03E-05	3.12E-04	3.20E-04	1.03E-05
293	572238.8	4148984	2.88E-03	0.00248	8.76E-06	3.50E-03	3.36E-03	8.76E-06	6.24E-04	6.10E-04	8.76E-06	2.65E-04	2.72E-04	8.76E-06
294	572284.1	4148956	4.13E-03	0.003558	1.26E-05	5.02E-03	4.82E-03	1.26E-05	8.96E-04	8.75E-04	1.26E-05	3.81E-04	3.90E-04	1.26E-05
295	572301.8	4148956	4.78E-03	0.004121	1.46E-05	5.82E-03	5.58E-03	1.46E-05	1.04E-03	1.01E-03	1.46E-05	4.41E-04	4.52E-04	1.46E-05
296	572319.5	4148955	5.38E-03	0.004634	1.64E-05	6.55E-03	6.27E-03	1.64E-05	1.17E-03	1.14E-03	1.64E-05	4.96E-04	5.08E-04	1.64E-05
297	572337.2	4148955	5.81E-03	0.005002	1.77E-05	7.06E-03	6.77E-03	1.77E-05	1.26E-03	1.23E-03	1.77E-05	5.36E-04	5.49E-04	1.77E-05
298	572354.9	4148954	6.00E-03	0.005166	1.83E-05	7.30E-03	6.99E-03	1.83E-05	1.30E-03	1.27E-03	1.83E-05	5.53E-04	5.67E-04	1.83E-05
299	572372.6	4148954	5.99E-03	0.005157	1.82E-05	7.28E-03	6.98E-03	1.82E-05	1.30E-03	1.27E-03	1.82E-05	5.52E-04	5.66E-04	1.82E-05
300	572390.3	4148953	5.89E-03	0.005073	1.79E-05	7.17E-03	6.87E-03	1.79E-05	1.28E-03	1.25E-03	1.79E-05	5.43E-04	5.57E-04	1.79E-05
301	572408.1	4148953	5.80E-03	0.004994	1.77E-05	7.05E-03	6.76E-03	1.77E-05	1.26E-03	1.23E-03	1.77E-05	5.35E-04	5.48E-04	1.77E-05
302	572267.1	4148960	3.58E-03	0.003086	1.09E-05	4.36E-03	4.18E-03	1.09E-05	7.77E-04	7.59E-04	1.09E-05	3.30E-04	3.39E-04	1.09E-05
303	572250.9	4148967	3.12E-03	0.002688	9.5E-06	3.80E-03	3.64E-03	9.50E-06	6.77E-04	6.61E-04	9.50E-06	2.88E-04	2.95E-04	9.50E-06
304	572234.7	4148975	2.67E-03	0.002299	8.13E-06	3.25E-03	3.11E-03	8.13E-06	5.79E-04	5.66E-04	8.13E-06	2.46E-04	2.52E-04	8.13E-06
305	572279.9	4148947	3.79E-03	0.003265	1.15E-05	4.61E-03	4.42E-03	1.15E-05	8.22E-04	8.03E-04	1.15E-05	3.50E-04	3.58E-04	1.15E-05
306	572297.5	4148947	4.38E-03	0.003772	1.33E-05	5.33E-03	5.11E-03	1.33E-05	9.50E-04	9.28E-04	1.33E-05	4.04E-04	4.14E-04	1.33E-05
307	572315.1	4148946	4.93E-03	0.004248	1.5E-05	6.00E-03	5.75E-03	1.50E-05	1.07E-03	1.04E-03	1.50E-05	4.55E-04	4.66E-04	1.50E-05
308	572332.7	4148946	5.35E-03	0.004611	1.63E-05	6.51E-03	6.24E-03	1.63E-05	1.16E-03	1.13E-03	1.63E-05	4.94E-04	5.06E-04	1.63E-05
309	572350.3	4148945	5.57E-03	0.004798	1.7E-05	6.78E-03	6.49E-03	1.70E-05	1.21E-03	1.18E-03	1.70E-05	5.14E-04	5.26E-04	1.70E-05
310	572367.9	4148945	5.59E-03	0.004819	1.7E-05	6.81E-03	6.52E-03	1.70E-05	1.21E-03	1.19E-03	1.70E-05	5.16E-04	5.29E-04	1.70E-05
311	572385.5	4148944	5.51E-03	0.004745	1.68E-05	6.70E-03	6.42E-03	1.68E-05	1.20E-03	1.17E-03	1.68E-05	5.08E-04	5.21E-04	1.68E-05
312	572263	4148951	3.30E-03	0.002843	1E-05	4.02E-03	3.85E-03	1.00E-05	7.16E-04	6.99E-04	1.00E-05	3.04E-04	3.12E-04	1.00E-05
313	572246.8	4148958	2.89E-03	0.002487	8.79E-06	3.51E-03	3.37E-03	8.79E-06	6.26E-04	6.12E-04	8.79E-06	2.66E-04	2.73E-04	8.79E-06
314	572230.6	4148966	2.48E-03	0.002138	7.56E-06	3.02E-03	2.89E-03	7.56E-06	5.38E-04	5.26E-04	7.56E-06	2.29E-04	2.35E-04	7.56E-06
315	572275.8	4148938	3.49E-03	0.003006	1.06E-05	4.24E-03	4.07E-03	1.06E-05	7.57E-04	7.39E-04	1.06E-05	3.22E-04	3.30E-04	1.06E-05
316	572293.3	4148938	4.02E-03	0.003464	1.22E-05	4.89E-03	4.69E-03	1.22E-05	8.72E-04	8.52E-04	1.22E-05	3.71E-04	3.80E-04	1.22E-05
317	572310.8	4148937	4.53E-03	0.003904	1.38E-05	5.51E-03	5.28E-03	1.38E-05	9.83E-04	9.60E-04	1.38E-05	4.18E-04	4.28E-04	1.38E-05
318	572328.2	4148937	4.94E-03	0.004257	1.5E-05	6.01E-03	5.76E-03	1.50E-05	1.07E-03	1.05E-03	1.50E-05	4.56E-04	4.67E-04	1.50E-05
319	572345.7	4148936	5.18E-03	0.004461	1.58E-05	6.30E-03	6.04E-03	1.58E-05	1.12E-03	1.10E-03	1.58E-05	4.78E-04	4.89E-04	1.58E-05
320	572363.2	4148936	5.24E-03	0.004512	1.59E-05	6.37E-03	6.11E-03	1.59E-05	1.14E-03	1.11E-03	1.59E-05	4.83E-04	4.95E-04	1.59E-05
321	572259	4148942	3.05E-03	0.002626	9.28E-06	3.71E-03	3.55E-03	9.28E-06	6.61E-04	6.46E-04	9.28E-06	2.81E-04	2.88E-04	9.28E-06
322	572242.8	4148949	2.68E-03	0.002306	8.15E-06	3.26E-03	3.12E-03	8.15E-06	5.81E-04	5.67E-04	8.15E-06	2.47E-04	2.53E-04	8.15E-06
323	572226.6	4148956	2.31E-03	0.001993	7.04E-06	2.81E-03	2.70E-03	7.04E-06	5.02E-04	4.90E-04	7.04E-06	2.13E-04	2.19E-04	7.04E-06
324	572271.7	4148929	3.22E-03	0.002776	9.81E-06	3.92E-03	3.76E-03	9.81E-06	6.99E-04	6.83E-04	9.81E-06	2.97E-04	3.05E-04	9.81E-06
325	572289.1	4148929	3.70E-03	0.00319	1.13E-05	4.50E-03	4.32E-03	1.13E-05	8.03E-04	7.84E-04	1.13E-05	3.42E-04	3.50E-04	1.13E-05
326	572306.4	4148928	4.17E-03	0.003596	1.27E-05	5.08E-03	4.87E-03	1.27E-05	9.06E-04	8.84E-04	1.27E-05	3.85E-04	3.95E-04	1.27E-05
327	572323.8	4148928	4.57E-03	0.003936	1.39E-05	5.56E-03	5.33E-03	1.39E-05	9.91E-04	9.68E-04	1.39E-05	4.21E-04	4.32E-04	1.39E-05
328	572341.2	4148927	4.82E-03	0.004152	1.47E-05	5.86E-03	5.62E-03	1.47E-05	1.05E-03	1.02E-03	1.47E-05	4.45E-04	4.56E-04	1.47E-05
329	572254.9	4148933	2.83E-03	0.002435	8.61E-06	3.44E-03	3.30E-03	8.61E-06	6.13E-04	5.99E-04	8.61E-06	2.61E-04	2.67E-04	8.61E-06
330	572238.7	4148940	2.49E-03	0.002145	7.58E-06	3.03E-03	2.90E-03	7.58E-06	5.40E-04	5.28E-04	7.58E-06	2.30E-04	2.35E-04	7.58E-06
331	572222.5	4148947	2.16E-03	0.001862	6.58E-06	2.63E-03	2.52E-03	6.58E-06	4.69E-04	4.58E-04	6.58E-06	1.99E-04	2.04E-04	6.58E-06
332	572267.5	4148920	2.99E-03	0.002573	9.09E-06	3.63E-03	3.48E-03	9.09E-06	6.48E-04	6.33E-04	9.09E-06	2.75E-04	2.82E-04	9.09E-06
333	572284.8	4148919	3.42E-03	0.002946	1.04E-05	4.16E-03	3.99E-03	1.04E-05	7.42E-04	7.25E-04	1.04E-05	3.15E-04	3.23E-04	1.04E-05
334	572302.1	4148919	3.85E-03	0.003319	1.17E-05	4.69E-03	4.49E-03	1.17E-05	8.36E-04	8.16E-04	1.17E-05	3.55E-04	3.64E-04	1.17E-05
335	572319.4	4148918	4.23E-03	0.003641	1.29E-05	5.14E-03	4.93E-03	1.29E-05	9.17E-04	8.96E-04	1.29E-05	3.90E-04	4.00E-04	1.29E-05
336	572336.7	4148918	4.48E-03	0.003863	1.37E-05	5.46E-03	5.23E-03	1.37E-05	9.73E-04	9.50E-04	1.37E-05	4.14E-04	4.24E-04	1.37E-05
337	572577.2	4149027	1.46E-02	0.012585	4.45E-05	1.78E-02	1.70E-02	4.45E-05	3.17E-03	3.10E-03	4.45E-05	1.35E-03	1.38E-03	4.45E-05
338	572589.7	4149039	1.42E-02	0.012211	4.32E-05	1.72E-02	1.65E-02	4.32E-05	3.08E-03	3.00E-03	4.32E-05	1.31E-03	1.34E-03	4.32E-05
339	572234.6	4148931	2.32E-03	0.002	7.07E-06	2.82E-03	2.71E-03	7.07E-06	5.04E-04	4.92E-04	7.07E-06	2.14E-04	2.19E-04	7.07E-06
340	572218.4	4148938	2.02E-03	0.001745	6.17E-06	2.46E-03	2.36E-03	6.17E-06	4.39E-04	4.29E-04	6.17E-06	1.87E-04	1.91E-04	6.17E-06
341	572567.6	4149006	1.36E-02	0.011756	4.16E-05	1.66E-02	1.59E-02	4.16E-05	2.96E-03	2.89E-03	4.16E-05	1.26E-03	1.29E-03	4.16E-05
342	572580.2	4149018	1.39E-02	0.011943	4.22E-05	1.69E-02	1.62E-02	4.22E-05	3.01E-03	2.94E-03	4.22E-05	1.28E-03	1.31E-03	4.22E-05
343	572592.7	4149029	1.36E-02	0.011717	4.14E-05	1.65E-02	1.59E-02	4.14E-05	2.95E-03	2.88E-03	4.14E-05	1.25E-03	1.29E-03	4.14E-05
344	572605.2	4149041	1.30E-02	0.011201	3.96E-05	1.58E-02	1.52E-02	3.96E-05	2.82E-03	2.75E-03	3.96E-05	1.20E-03	1.23E-03	3.96E-05
345	572570.7	4148996	1.28E-02	0.011017	3.89E-05	1.56E-02	1.49E-02	3.89E-05	2.77E-03	2.71E-03	3.89E-05	1.18E-03	1.21E-03	3.89E-05

346	572583.2	4149008	1.31E-02	0.011323	4E-05	1.60E-02	1.53E-02	4.00E-05	2.85E-03	2.78E-03	4.00E-05	1.21E-03	1.24E-03	4.00E-05
347	572595.6	4149020	1.30E-02	0.011219	3.97E-05	1.58E-02	1.52E-02	3.97E-05	2.83E-03	2.76E-03	3.97E-05	1.20E-03	1.23E-03	3.97E-05
348	572608.1	4149031	1.26E-02	0.010823	3.83E-05	1.53E-02	1.46E-02	3.83E-05	2.73E-03	2.66E-03	3.83E-05	1.16E-03	1.19E-03	3.83E-05
349	572573.9	4148986	1.20E-02	0.010318	3.65E-05	1.46E-02	1.40E-02	3.65E-05	2.60E-03	2.54E-03	3.65E-05	1.10E-03	1.13E-03	3.65E-05
350	572586.3	4148998	1.24E-02	0.010709	3.79E-05	1.51E-02	1.45E-02	3.79E-05	2.70E-03	2.63E-03	3.79E-05	1.15E-03	1.17E-03	3.79E-05
351	572598.7	4149010	1.25E-02	0.010731	3.79E-05	1.52E-02	1.45E-02	3.79E-05	2.70E-03	2.64E-03	3.79E-05	1.15E-03	1.18E-03	3.79E-05
352	572611.1	4149021	1.21E-02	0.010443	3.69E-05	1.47E-02	1.41E-02	3.69E-05	2.63E-03	2.57E-03	3.69E-05	1.12E-03	1.15E-03	3.69E-05
353	572623.5	4149033	1.16E-02	0.009964	3.52E-05	1.41E-02	1.35E-02	3.52E-05	2.51E-03	2.45E-03	3.52E-05	1.07E-03	1.09E-03	3.52E-05
354	572568.2	4148968	1.06E-02	0.009159	3.24E-05	1.29E-02	1.24E-02	3.24E-05	2.31E-03	2.25E-03	3.24E-05	9.81E-04	1.00E-03	3.24E-05
355	572581.1	4148980	1.14E-02	0.009841	3.48E-05	1.39E-02	1.33E-02	3.48E-05	2.48E-03	2.42E-03	3.48E-05	1.05E-03	1.08E-03	3.48E-05
356	572593.9	4148992	1.18E-02	0.010199	3.61E-05	1.44E-02	1.38E-02	3.61E-05	2.57E-03	2.51E-03	3.61E-05	1.09E-03	1.12E-03	3.61E-05
357	572606.7	4149005	1.18E-02	0.010206	3.61E-05	1.44E-02	1.38E-02	3.61E-05	2.57E-03	2.51E-03	3.61E-05	1.09E-03	1.12E-03	3.61E-05
358	572619.6	4149017	1.15E-02	0.009908	3.5E-05	1.40E-02	1.34E-02	3.50E-05	2.50E-03	2.44E-03	3.50E-05	1.06E-03	1.09E-03	3.50E-05
359	572632.4	4149029	1.09E-02	0.009434	3.33E-05	1.33E-02	1.28E-02	3.33E-05	2.38E-03	2.32E-03	3.33E-05	1.01E-03	1.04E-03	3.33E-05
360	572571.3	4148958	9.90E-03	0.008529	3.01E-05	1.20E-02	1.15E-02	3.01E-05	2.15E-03	2.10E-03	3.01E-05	9.13E-04	9.36E-04	3.01E-05
361	572584.1	4148970	1.07E-02	0.009228	3.26E-05	1.30E-02	1.25E-02	3.26E-05	2.32E-03	2.27E-03	3.26E-05	9.88E-04	1.01E-03	3.26E-05
362	572596.9	4148983	1.12E-02	0.009649	3.41E-05	1.36E-02	1.31E-02	3.41E-05	2.43E-03	2.37E-03	3.41E-05	1.03E-03	1.06E-03	3.41E-05
363	572609.6	4148995	1.13E-02	0.009762	3.45E-05	1.38E-02	1.32E-02	3.45E-05	2.46E-03	2.40E-03	3.45E-05	1.05E-03	1.07E-03	3.45E-05
364	572622.4	4149007	1.11E-02	0.009573	3.38E-05	1.35E-02	1.30E-02	3.38E-05	2.41E-03	2.35E-03	3.38E-05	1.02E-03	1.05E-03	3.38E-05
365	572635.2	4149019	1.07E-02	0.009178	3.24E-05	1.30E-02	1.24E-02	3.24E-05	2.31E-03	2.26E-03	3.24E-05	9.83E-04	1.01E-03	3.24E-05
366	572561.8	4148937	8.22E-03	0.007084	2.5E-05	1.00E-02	9.59E-03	2.50E-05	1.78E-03	1.74E-03	2.50E-05	7.58E-04	7.77E-04	2.50E-05
367	572574.5	4148949	9.23E-03	0.007951	2.81E-05	1.12E-02	1.08E-02	2.81E-05	2.00E-03	1.96E-03	2.81E-05	8.51E-04	8.72E-04	2.81E-05
368	572587.2	4148961	1.00E-02	0.008652	3.06E-05	1.22E-02	1.17E-02	3.06E-05	2.18E-03	2.13E-03	3.06E-05	9.26E-04	9.49E-04	3.06E-05
369	572599.9	4148973	1.06E-02	0.009118	3.22E-05	1.29E-02	1.23E-02	3.22E-05	2.30E-03	2.24E-03	3.22E-05	9.76E-04	1.00E-03	3.22E-05
370	572612.6	4148985	1.08E-02	0.009311	3.29E-05	1.31E-02	1.26E-02	3.29E-05	2.34E-03	2.29E-03	3.29E-05	9.97E-04	1.02E-03	3.29E-05
371	572625.3	4148997	1.07E-02	0.009227	3.26E-05	1.30E-02	1.25E-02	3.26E-05	2.32E-03	2.27E-03	3.26E-05	9.88E-04	1.01E-03	3.26E-05
372	572638	4149009	1.03E-02	0.008915	3.15E-05	1.26E-02	1.21E-02	3.15E-05	2.25E-03	2.19E-03	3.15E-05	9.55E-04	9.78E-04	3.15E-05
373	572650.7	4149021	9.83E-03	0.008472	2.99E-05	1.20E-02	1.15E-02	2.99E-05	2.13E-03	2.08E-03	2.99E-05	9.07E-04	9.30E-04	2.99E-05
374	572565	4148927	7.65E-03	0.006592	2.33E-05	9.31E-03	8.92E-03	2.33E-05	1.66E-03	1.62E-03	2.33E-05	7.06E-04	7.23E-04	2.33E-05
375	572577.6	4148939	8.61E-03	0.007418	2.62E-05	1.05E-02	1.00E-02	2.62E-05	1.87E-03	1.82E-03	2.62E-05	7.94E-04	8.14E-04	2.62E-05
376	572590.3	4148951	9.41E-03	0.008112	2.87E-05	1.15E-02	1.10E-02	2.87E-05	2.04E-03	2.00E-03	2.87E-05	8.69E-04	8.90E-04	2.87E-05
377	572602.9	4148963	9.99E-03	0.00861	3.04E-05	1.22E-02	1.17E-02	3.04E-05	2.17E-03	2.12E-03	3.04E-05	9.22E-04	9.45E-04	3.04E-05
378	572615.6	4148975	1.03E-02	0.008866	3.13E-05	1.25E-02	1.20E-02	3.13E-05	2.23E-03	2.18E-03	3.13E-05	9.49E-04	9.73E-04	3.13E-05
379	572628.2	4148987	1.03E-02	0.008871	3.14E-05	1.25E-02	1.20E-02	3.14E-05	2.23E-03	2.18E-03	3.14E-05	9.50E-04	9.73E-04	3.14E-05
380	572640.9	4148999	1.00E-02	0.008645	3.06E-05	1.22E-02	1.17E-02	3.06E-05	2.18E-03	2.13E-03	3.06E-05	9.26E-04	9.49E-04	3.06E-05
381	572653.5	4149011	9.59E-03	0.008267	2.92E-05	1.17E-02	1.12E-02	2.92E-05	2.08E-03	2.03E-03	2.92E-05	8.85E-04	9.07E-04	2.92E-05
382	572568.2	4148917	7.13E-03	0.006142	2.17E-05	8.67E-03	8.31E-03	2.17E-05	1.55E-03	1.51E-03	2.17E-05	6.58E-04	6.74E-04	2.17E-05
383	572580.8	4148929	8.04E-03	0.006928	2.45E-05	9.78E-03	9.38E-03	2.45E-05	1.74E-03	1.70E-03	2.45E-05	7.42E-04	7.60E-04	2.45E-05
384	572593.4	4148941	8.83E-03	0.007609	2.69E-05	1.07E-02	1.03E-02	2.69E-05	1.92E-03	1.87E-03	2.69E-05	8.15E-04	8.35E-04	2.69E-05
385	572606	4148953	9.43E-03	0.008124	2.87E-05	1.15E-02	1.10E-02	2.87E-05	2.05E-03	2.00E-03	2.87E-05	8.70E-04	8.91E-04	2.87E-05
386	572618.6	4148965	9.78E-03	0.008431	2.98E-05	1.19E-02	1.14E-02	2.98E-05	2.12E-03	2.07E-03	2.98E-05	9.03E-04	9.25E-04	2.98E-05
387	572631.2	4148977	9.87E-03	0.008508	3.01E-05	1.20E-02	1.15E-02	3.01E-05	2.14E-03	2.09E-03	3.01E-05	9.11E-04	9.33E-04	3.01E-05
388	572643.8	4148989	9.71E-03	0.008368	2.96E-05	1.18E-02	1.13E-02	2.96E-05	2.11E-03	2.06E-03	2.96E-05	8.96E-04	9.18E-04	2.96E-05
389	572656.4	4149001	9.35E-03	0.008059	2.85E-05	1.14E-02	1.09E-02	2.85E-05	2.03E-03	1.98E-03	2.85E-05	8.63E-04	8.84E-04	2.85E-05
390	572571.5	4148908	6.65E-03	0.005733	2.03E-05	8.10E-03	7.76E-03	2.03E-05	1.44E-03	1.41E-03	2.03E-05	6.14E-04	6.29E-04	2.03E-05
391	572584	4148920	7.52E-03	0.006476	2.29E-05	9.15E-03	8.77E-03	2.29E-05	1.63E-03	1.59E-03	2.29E-05	6.93E-04	7.11E-04	2.29E-05
392	572596.6	4148931	8.29E-03	0.007139	2.52E-05	1.01E-02	9.66E-03	2.52E-05	1.80E-03	1.76E-03	2.52E-05	7.64E-04	7.83E-04	2.52E-05
393	572609.1	4148943	8.89E-03	0.007665	2.71E-05	1.08E-02	1.04E-02	2.71E-05	1.93E-03	1.89E-03	2.71E-05	8.21E-04	8.41E-04	2.71E-05
394	572621.7	4148955	9.29E-03	0.008008	2.83E-05	1.13E-02	1.08E-02	2.83E-05	2.02E-03	1.97E-03	2.83E-05	8.57E-04	8.79E-04	2.83E-05
395	572634.2	4148967	9.45E-03	0.008146	2.88E-05	1.15E-02	1.10E-02	2.88E-05	2.05E-03	2.00E-03	2.88E-05	8.72E-04	8.94E-04	2.88E-05
396	572646.8	4148979	9.38E-03	0.008082	2.86E-05	1.14E-02	1.09E-02	2.86E-05	2.04E-03	1.99E-03	2.86E-05	8.65E-04	8.87E-04	2.86E-05
397	572659.3	4148991	9.10E-03	0.007845	2.77E-05	1.11E-02	1.06E-02	2.77E-05	1.98E-03	1.93E-03	2.77E-05	8.40E-04	8.61E-04	2.77E-05
398	572671.9	4149003	8.70E-03	0.007493	2.65E-05	1.06E-02	1.01E-02	2.65E-05	1.89E-03	1.84E-03	2.65E-05	8.02E-04	8.22E-04	2.65E-05
399	572574.7	4148898	6.22E-03	0.005359	1.89E-05	7.57E-03	7.25E-03	1.89E-05	1.35E-03	1.32E-03	1.89E-05	5.74E-04	5.88E-04	1.89E-05
400	572587.2	4148910	7.04E-03	0.006062	2.14E-05	8.56E-03	8.20E-03	2.14E-05	1.53E-03	1.49E-03	2.14E-05	6.49E-04	6.65E-04	2.14E-05
401	572599.8	4148922	7.78E-03	0.006703	2.37E-05	9.47E-03	9.07E-03	2.37E-05	1.69E-03	1.65E-03	2.37E-05	7.18E-04	7.35E-04	2.37E-05
402	572612.3	4148934	8.39E-03	0.007231	2.56E-05	1.02E-02	9.79E-03	2.56E-05	1.82E-03	1.78E-03	2.56E-05	7.74E-04	7.93E-04	2.56E-05
403	572624.8	4148945	8.82E-03	0.007601	2.69E-05	1.07E-02	1.03E-02	2.69E-05	1.91E-03	1.87E-03	2.69E-05	8.14E-04	8.34E-04	2.69E-05
404	572637.3	4148957	9.04E-03	0.007789	2.75E-05	1.10E-02	1.05E-02	2.75E-05	1.96E-03	1.92E-03	2.75E-05	8.34E-04	8.55E-04	2.75E-05
405	572649.8	4148969	9.04E-03	0.007788	2.75E-05	1.10E-02	1.05E-02	2.75E-05	1.96E-03	1.92E-03	2.75E-05	8.34E-04	8.54E-04	2.75E-05
406	572662.3	4148981	8.84E-03	0.007618	2.69E-05	1.08E-02	1.03E-02	2.69E-05	1.92E-03	1.87E-03	2.69E-05	8.16E-04	8.36E-04	2.69E-05
407	572674.8	4148993	8.50E-03	0.007321	2.59E-05	1.03E-02	9.91E-03	2.59E-05	1.84E-03	1.80E-03	2.59E-05	7.84E-04	8.03E-04	2.59E-05
408	572687.3	4149004	8.08E-03	0.006964	2.46E-05	9.84E-03	9.43E-03	2.46E-05	1.75E-03	1.71E-03	2.46E-05	7.46E-04	7.64E-04	2.46E-05
409	572580.6	4148891	5.98E-03	0.005155	1.82E-05	7.28E-03	6.98E-03	1.82E-05	1.30E-03	1.27E-03	1.82E-05	5.52E-04	5.66E-04	1.82E-05
410	572593.4	4148903	6.77E-03	0.005832	2.06E-05	8.24E-03	7.89E-03	2.06E-05	1.47E-03	1.43E-03	2.06E-05	6.24E-04	6.40E-04	2.06E-05
411	572606.3	4148915	7.48E-03	0.006449	2.28E-05	9.11E-03	8.73E-03	2.28E-05	1.62E-03	1.59E-03	2.28E-05	6.90E-04	7.08E-04	2.28E-05
412	572619.1	4148927	8.07E-03	0.006953	2.46E-05	9.82E-03	9.41E-03	2.46E-05	1.75E-03	1.71E-03	2.46E-05	7.44E-04	7.63E-04	2.46E-05
413	572632	4148939	8.48E-03	0.007304	2.58E-05	1.03E-02	9.89E-03	2.58E-05	1.84E-03	1.80E-03	2.58E-05	7.82E-04	8.01E-04	2.58E-05
414	572644.8	4148952	8.68E-03	0.007478	2.64E-05	1.06E-02	1.01E-02	2.64E-05	1.88E-03	1.84E-03	2.64E-05	8.01E-04	8.20E-04	2.64E-05
415	572657.7	4148964	8.67E-03	0.007468	2.64E-05	1.05E-02	1.01E-02	2.64E-05	1.88E-03	1.84E-03	2.64E-05	8.00E-04	8.19E-04	2.64E-05
416	572670.6	4148976	8.46E-03	0.007293	2.58E-05	1.03E-02	9.87E-03	2.58E-05	1.84E-03	1.79E-03	2.58E-05	7.81E-04	8.00E-04	2.58E-05
417	572683.4	4148988	8.13E-03	0.007002	2.47E-05	9.89E-03	9.48E-03	2.47E-05	1.76E-03	1.72E-03	2.47E-05	7.50E-04	7.68E-04	2.47E-05
418	572583.8	4148881	5.61E-03	0.004831	1.71E-05	6.82E-03	6.54E-03	1.71E-05	1.22E-03	1.19E-03	1.71E-05	5.17E-04	5.30E-04	1.71E-05
419	572596.6	4148893	6.35E-03	0.005471	1.93E-05	7.73E-03	7.40E-03	1.93E-05	1.38E-03	1.35E-03	1.93E-05	5.86E-04	6.00E-04	1.93E-05
420	572609.4	4148905	7.04E-03	0.006066	2.14E-05	8.57E-03	8.21E-03	2.14E-05	1.53E-03	1.49E-03	2.14E-05	6.49E-04	6.66E-04	2.14E-05
421	572622.2	4148917	7.62E-03	0.006567	2.32E-05	9.27E-03	8.89E-03	2.32E-05	1.65E-03	1.62E-03	2.32E-05	7.03E-04	7.21E-04	2.32E-05
422	572635	4148930	8.05E-03	0.006937	2.45E-05	9.80E-03	9.39E-03	2.45E-05	1.75E-03	1.71E-03	2.45E-05	7.43E-04	7.61E-04	2.45E-05
423	572647.8	4148942	8.30E-03	0.00715	2.53E-05	1.01E-02	9.68E-03	2.53E-05	1.80E-03	1.76E-03	2.53E-05	7.66E-04	7.84E-04	2.53E-05
424	572660.6	4148954	8.35E-03	0.007194	2.54E-05	1.02E-02	9.74E-03	2.54E-05	1.81E-03	1.77E-03	2.54E-05	7.70E-04	7.89E-04	2.54E-05
425	572673.4	4148966	8.22E-03	0.007079	2.5E-05	1.00E-02	9.58E-03	2.50E-05	1.78E-03	1.74E-03	2.50E-05	7.58E-04	7.77E-04	2.50E-05
426	572686.2	4148978	7.94E-03	0.006839	2.42E-05	9.66E-03	9.26E-03	2.42E-05	1.72E-03	1.68E-03	2.42E-05	7.32E-04	7.50E-04	2.42E-05
427	572699	4148990	7.58E-03	0.006529	2.31E-05	9.22E-03	8.84E-03	2.31E-05	1.64E-03	1.61E-03	2.31E-05	6.99E-04	7.16E-04	2.31E-05
428	572587	4148872	5.26E-03	0.004535	1.6E-05	6.41E-03	6.14E-03	1.60E-05	1.14E-03	1.12E-03	1.60E-05	4.86E-04	4.98E-04	1.60E-05
429	572599.8	4148884	5.96E-03	0.005139	1.82E-05	7.26E-03	6.95E-03	1.82E-05	1.29E-03	1.26E-03	1.82E-05	5.50E-04	5.64E-04	1.82E-05
430	572612.5	4148896	6.63E-03	0.005709	2.02E-05	8.06E-03	7.73E-03	2.02E-05	1.44E-03	1.40E-03	2.02E-05	6.11E-04	6.26E-04	2.02E-05
431	572625.3	4148908	7.20E-03	0.006204	2.19E-05	8.76E-03	8.40E-03	2.19E-05	1.56E-03	1.53E-03	2.19E-05	6.64E-04	6.81E-04	2.19E-05
432	572638.1	4148920	7.64E-03	0.006586	2.33E-05	9.30E-03	8.91E-03	2.33E-05	1.66E-03	1.62E-03	2.33E-05	7.05E-04	7.23E-04	2.33E-05

433	572650.8	4148932	7.93E-03	0.00683	2.41E-05	9.65E-03	9.24E-03	2.41E-05	1.72E-03	1.68E-03	2.41E-05	7.31E-04	7.49E-04	2.41E-05
434	572663.6	4148944	8.03E-03	0.006919	2.45E-05	9.77E-03	9.36E-03	2.45E-05	1.74E-03	1.70E-03	2.45E-05	7.41E-04	7.59E-04	2.45E-05
435	572676.3	4148956	7.96E-03	0.00686	2.42E-05	9.69E-03	9.28E-03	2.42E-05	1.73E-03	1.69E-03	2.42E-05	7.34E-04	7.53E-04	2.42E-05
436	572689.1	4148968	7.74E-03	0.006671	2.36E-05	9.42E-03	9.03E-03	2.36E-05	1.68E-03	1.64E-03	2.36E-05	7.14E-04	7.32E-04	2.36E-05
437	572701.8	4148980	7.43E-03	0.006399	2.26E-05	9.04E-03	8.66E-03	2.26E-05	1.61E-03	1.57E-03	2.26E-05	6.85E-04	7.02E-04	2.26E-05
438	572714.6	4148992	7.07E-03	0.006094	2.15E-05	8.61E-03	8.25E-03	2.15E-05	1.53E-03	1.50E-03	2.15E-05	6.52E-04	6.69E-04	2.15E-05
439	572590.3	4148862	4.95E-03	0.004263	1.51E-05	6.02E-03	5.77E-03	1.51E-05	1.07E-03	1.05E-03	1.51E-05	4.56E-04	4.68E-04	1.51E-05
440	572603	4148874	5.61E-03	0.004832	1.71E-05	6.82E-03	6.54E-03	1.71E-05	1.22E-03	1.19E-03	1.71E-05	5.17E-04	5.30E-04	1.71E-05
441	572615.7	4148886	6.24E-03	0.005378	1.9E-05	7.59E-03	7.28E-03	1.90E-05	1.35E-03	1.32E-03	1.90E-05	5.76E-04	5.90E-04	1.90E-05
442	572628.4	4148898	6.80E-03	0.005861	2.07E-05	8.28E-03	7.93E-03	2.07E-05	1.48E-03	1.44E-03	2.07E-05	6.28E-04	6.43E-04	2.07E-05
443	572641.1	4148910	7.25E-03	0.006251	2.21E-05	8.83E-03	8.46E-03	2.21E-05	1.57E-03	1.54E-03	2.21E-05	6.69E-04	6.86E-04	2.21E-05
444	572653.8	4148922	7.56E-03	0.006518	2.3E-05	9.21E-03	8.82E-03	2.30E-05	1.64E-03	1.60E-03	2.30E-05	6.98E-04	7.15E-04	2.30E-05
445	572666.5	4148934	7.71E-03	0.006646	2.35E-05	9.39E-03	9.00E-03	2.35E-05	1.67E-03	1.63E-03	2.35E-05	7.12E-04	7.29E-04	2.35E-05
446	572679.2	4148946	7.70E-03	0.006635	2.35E-05	9.37E-03	8.98E-03	2.35E-05	1.67E-03	1.63E-03	2.35E-05	7.10E-04	7.28E-04	2.35E-05
447	572692	4148958	7.54E-03	0.006498	2.3E-05	9.18E-03	8.79E-03	2.30E-05	1.64E-03	1.60E-03	2.30E-05	6.96E-04	7.13E-04	2.30E-05
448	572704.7	4148970	7.27E-03	0.006265	2.21E-05	8.85E-03	8.48E-03	2.21E-05	1.58E-03	1.54E-03	2.21E-05	6.71E-04	6.87E-04	2.21E-05
449	572717.4	4148982	6.95E-03	0.005985	2.12E-05	8.45E-03	8.10E-03	2.12E-05	1.51E-03	1.47E-03	2.12E-05	6.41E-04	6.57E-04	2.12E-05
450	572593.6	4148852	4.66E-03	0.004012	1.42E-05	5.67E-03	5.43E-03	1.42E-05	1.01E-03	9.87E-04	1.42E-05	4.30E-04	4.40E-04	1.42E-05
451	572606.2	4148864	5.28E-03	0.004549	1.61E-05	6.42E-03	6.16E-03	1.61E-05	1.15E-03	1.12E-03	1.61E-05	4.87E-04	4.99E-04	1.61E-05
452	572618.9	4148876	5.88E-03	0.00507	1.79E-05	7.16E-03	6.86E-03	1.79E-05	1.28E-03	1.25E-03	1.79E-05	5.43E-04	5.56E-04	1.79E-05
453	572631.6	4148888	6.43E-03	0.005541	1.96E-05	7.83E-03	7.50E-03	1.96E-05	1.40E-03	1.36E-03	1.96E-05	5.93E-04	6.08E-04	1.96E-05
454	572644.2	4148900	6.89E-03	0.005933	2.1E-05	8.38E-03	8.03E-03	2.10E-05	1.49E-03	1.46E-03	2.10E-05	6.35E-04	6.51E-04	2.10E-05
455	572656.9	4148912	7.22E-03	0.006218	2.2E-05	8.78E-03	8.42E-03	2.20E-05	1.57E-03	1.53E-03	2.20E-05	6.66E-04	6.82E-04	2.20E-05
456	572669.6	4148924	7.40E-03	0.006378	2.25E-05	9.01E-03	8.63E-03	2.25E-05	1.61E-03	1.57E-03	2.25E-05	6.83E-04	7.00E-04	2.25E-05
457	572682.2	4148936	7.44E-03	0.006408	2.27E-05	9.05E-03	8.67E-03	2.27E-05	1.61E-03	1.58E-03	2.27E-05	6.86E-04	7.03E-04	2.27E-05
458	572694.9	4148948	7.33E-03	0.006317	2.23E-05	8.92E-03	8.55E-03	2.23E-05	1.59E-03	1.55E-03	2.23E-05	6.76E-04	6.93E-04	2.23E-05
459	572707.5	4148960	7.11E-03	0.006127	2.17E-05	8.65E-03	8.29E-03	2.17E-05	1.54E-03	1.51E-03	2.17E-05	6.56E-04	6.72E-04	2.17E-05
460	572720.2	4148972	6.82E-03	0.005874	2.08E-05	8.30E-03	7.95E-03	2.08E-05	1.48E-03	1.44E-03	2.08E-05	6.29E-04	6.44E-04	2.08E-05
461	572732.9	4148984	6.50E-03	0.005601	1.98E-05	7.91E-03	7.58E-03	1.98E-05	1.41E-03	1.38E-03	1.98E-05	6.00E-04	6.15E-04	1.98E-05
462	572584.3	4148831	3.83E-03	0.003304	1.17E-05	4.67E-03	4.47E-03	1.17E-05	8.32E-04	8.13E-04	1.17E-05	3.54E-04	3.62E-04	1.17E-05
463	572596.9	4148843	4.39E-03	0.003782	1.34E-05	5.34E-03	5.12E-03	1.34E-05	9.52E-04	9.30E-04	1.34E-05	4.05E-04	4.15E-04	1.34E-05
464	572609.5	4148855	4.97E-03	0.004287	1.52E-05	6.05E-03	5.80E-03	1.52E-05	1.08E-03	1.05E-03	1.52E-05	4.59E-04	4.70E-04	1.52E-05
465	572622.1	4148867	5.55E-03	0.004785	1.69E-05	6.76E-03	6.48E-03	1.69E-05	1.20E-03	1.18E-03	1.69E-05	5.12E-04	5.25E-04	1.69E-05
466	572634.7	4148878	6.08E-03	0.005242	1.85E-05	7.40E-03	7.09E-03	1.85E-05	1.32E-03	1.29E-03	1.85E-05	5.61E-04	5.75E-04	1.85E-05
467	572647.4	4148890	6.54E-03	0.005631	1.99E-05	7.95E-03	7.62E-03	1.99E-05	1.42E-03	1.39E-03	1.99E-05	6.03E-04	6.18E-04	1.99E-05
468	572660	4148902	6.88E-03	0.005928	2.1E-05	8.37E-03	8.02E-03	2.10E-05	1.49E-03	1.46E-03	2.10E-05	6.35E-04	6.50E-04	2.10E-05
469	572672.6	4148914	7.10E-03	0.006115	2.16E-05	8.64E-03	8.28E-03	2.16E-05	1.54E-03	1.50E-03	2.16E-05	6.55E-04	6.71E-04	2.16E-05
470	572685.2	4148926	7.17E-03	0.006181	2.18E-05	8.73E-03	8.37E-03	2.18E-05	1.56E-03	1.52E-03	2.18E-05	6.62E-04	6.78E-04	2.18E-05
471	572697.8	4148938	7.12E-03	0.006131	2.17E-05	8.66E-03	8.30E-03	2.17E-05	1.54E-03	1.51E-03	2.17E-05	6.56E-04	6.73E-04	2.17E-05
472	572710.5	4148950	6.94E-03	0.005981	2.11E-05	8.45E-03	8.10E-03	2.11E-05	1.51E-03	1.47E-03	2.11E-05	6.40E-04	6.56E-04	2.11E-05
473	572723.1	4148962	6.69E-03	0.005761	2.04E-05	8.14E-03	7.80E-03	2.04E-05	1.45E-03	1.42E-03	2.04E-05	6.17E-04	6.32E-04	2.04E-05
474	572735.7	4148974	6.39E-03	0.005505	1.95E-05	7.77E-03	7.45E-03	1.95E-05	1.39E-03	1.35E-03	1.95E-05	5.89E-04	6.04E-04	1.95E-05
475	572587.6	4148821	3.63E-03	0.003124	1.1E-05	4.41E-03	4.23E-03	1.10E-05	7.87E-04	7.68E-04	1.10E-05	3.35E-04	3.43E-04	1.10E-05
476	572600.2	4148833	4.14E-03	0.003571	1.26E-05	5.04E-03	4.83E-03	1.26E-05	8.99E-04	8.78E-04	1.26E-05	3.82E-04	3.92E-04	1.26E-05
477	572612.8	4148845	4.70E-03	0.004046	1.43E-05	5.71E-03	5.48E-03	1.43E-05	1.02E-03	9.95E-04	1.43E-05	4.33E-04	4.44E-04	1.43E-05
478	572625.4	4148857	5.24E-03	0.004519	1.6E-05	6.38E-03	6.12E-03	1.60E-05	1.14E-03	1.11E-03	1.60E-05	4.84E-04	4.96E-04	1.60E-05
479	572637.9	4148869	5.76E-03	0.004962	1.75E-05	7.01E-03	6.72E-03	1.75E-05	1.25E-03	1.22E-03	1.75E-05	5.31E-04	5.44E-04	1.75E-05
480	572650.5	4148881	6.21E-03	0.005347	1.89E-05	7.55E-03	7.24E-03	1.89E-05	1.35E-03	1.32E-03	1.89E-05	5.72E-04	5.87E-04	1.89E-05
481	572663.1	4148893	6.56E-03	0.005651	2E-05	7.98E-03	7.65E-03	2.00E-05	1.42E-03	1.39E-03	2.00E-05	6.05E-04	6.20E-04	2.00E-05
482	572675.7	4148904	6.80E-03	0.005858	2.07E-05	8.27E-03	7.93E-03	2.07E-05	1.48E-03	1.44E-03	2.07E-05	6.27E-04	6.43E-04	2.07E-05
483	572688.3	4148916	6.91E-03	0.005955	2.1E-05	8.41E-03	8.06E-03	2.10E-05	1.50E-03	1.46E-03	2.10E-05	6.38E-04	6.53E-04	2.10E-05
484	572700.8	4148928	6.90E-03	0.005942	2.1E-05	8.39E-03	8.04E-03	2.10E-05	1.50E-03	1.46E-03	2.10E-05	6.36E-04	6.52E-04	2.10E-05
485	572713.4	4148940	6.77E-03	0.00583	2.06E-05	8.23E-03	7.89E-03	2.06E-05	1.47E-03	1.43E-03	2.06E-05	6.24E-04	6.40E-04	2.06E-05
486	572726	4148952	6.55E-03	0.005643	1.99E-05	7.97E-03	7.64E-03	1.99E-05	1.42E-03	1.39E-03	1.99E-05	6.04E-04	6.19E-04	1.99E-05
487	572738.6	4148964	6.28E-03	0.005408	1.91E-05	7.64E-03	7.32E-03	1.91E-05	1.36E-03	1.33E-03	1.91E-05	5.79E-04	5.93E-04	1.91E-05
488	572592.8	4148813	3.50E-03	0.003017	1.07E-05	4.26E-03	4.08E-03	1.07E-05	7.60E-04	7.42E-04	1.07E-05	3.23E-04	3.31E-04	1.07E-05
489	572605.7	4148826	4.00E-03	0.003451	1.22E-05	4.87E-03	4.67E-03	1.22E-05	8.69E-04	8.49E-04	1.22E-05	3.69E-04	3.79E-04	1.22E-05
490	572618.5	4148838	4.54E-03	0.003911	1.38E-05	5.52E-03	5.29E-03	1.38E-05	9.85E-04	9.62E-04	1.38E-05	4.19E-04	4.29E-04	1.38E-05
491	572631.4	4148850	5.07E-03	0.004371	1.55E-05	6.17E-03	5.92E-03	1.55E-05	1.10E-03	1.08E-03	1.55E-05	4.68E-04	4.80E-04	1.55E-05
492	572644.3	4148862	5.57E-03	0.0048	1.7E-05	6.78E-03	6.50E-03	1.70E-05	1.21E-03	1.18E-03	1.70E-05	5.14E-04	5.27E-04	1.70E-05
493	572657.2	4148874	6.00E-03	0.005171	1.83E-05	7.30E-03	7.00E-03	1.83E-05	1.30E-03	1.27E-03	1.83E-05	5.54E-04	5.67E-04	1.83E-05
494	572670	4148886	6.34E-03	0.005463	1.93E-05	7.72E-03	7.39E-03	1.93E-05	1.38E-03	1.34E-03	1.93E-05	5.85E-04	5.99E-04	1.93E-05
495	572682.9	4148899	6.57E-03	0.00566	2E-05	7.99E-03	7.66E-03	2.00E-05	1.43E-03	1.39E-03	2.00E-05	6.06E-04	6.21E-04	2.00E-05
496	572695.8	4148911	6.67E-03	0.00575	2.03E-05	8.12E-03	7.78E-03	2.03E-05	1.45E-03	1.41E-03	2.03E-05	6.16E-04	6.31E-04	2.03E-05
497	572708.7	4148923	6.65E-03	0.005733	2.03E-05	8.10E-03	7.76E-03	2.03E-05	1.44E-03	1.41E-03	2.03E-05	6.14E-04	6.29E-04	2.03E-05
498	572721.5	4148935	6.52E-03	0.00562	1.99E-05	7.94E-03	7.61E-03	1.99E-05	1.42E-03	1.38E-03	1.99E-05	6.02E-04	6.17E-04	1.99E-05
499	572734.4	4148947	6.31E-03	0.005433	1.92E-05	7.67E-03	7.35E-03	1.92E-05	1.37E-03	1.34E-03	1.92E-05	5.82E-04	5.96E-04	1.92E-05
500	572747.3	4148959	6.04E-03	0.005203	1.84E-05	7.35E-03	7.04E-03	1.84E-05	1.31E-03	1.28E-03	1.84E-05	5.57E-04	5.71E-04	1.84E-05
501	572760.2	4148972	5.76E-03	0.004968	1.76E-05	7.02E-03	6.72E-03	1.76E-05	1.25E-03	1.22E-03	1.76E-05	5.32E-04	5.45E-04	1.76E-05
502	572207.9	4148746	1.12E-03	0.000964	3.41E-06	1.36E-03	1.30E-03	3.41E-06	2.43E-04	2.37E-04	3.41E-06	1.03E-04	1.06E-04	3.41E-06
503	572596.1	4148804	3.32E-03	0.00286	1.01E-05	4.04E-03	3.87E-03	1.01E-05	7.20E-04	7.03E-04	1.01E-05	3.06E-04	3.14E-04	1.01E-05
504	572608.9	4148816	3.79E-03	0.003264	1.15E-05	4.61E-03	4.42E-03	1.15E-05	8.22E-04	8.03E-04	1.15E-05	3.50E-04	3.58E-04	1.15E-05
505	572621.8	4148828	4.29E-03	0.003698	1.31E-05	5.22E-03	5.00E-03	1.31E-05	9.31E-04	9.09E-04	1.31E-05	3.96E-04	4.06E-04	1.31E-05
506	572634.6	4148840	4.80E-03	0.004135	1.46E-05	5.84E-03	5.60E-03	1.46E-05	1.04E-03	1.02E-03	1.46E-05	4.43E-04	4.54E-04	1.46E-05
507	572647.4	4148852	5.28E-03	0.004548	1.61E-05	6.42E-03	6.16E-03	1.61E-05	1.15E-03	1.12E-03	1.61E-05	4.87E-04	4.99E-04	1.61E-05
508	572660.2	4148864	5.70E-03	0.004914	1.74E-05	6.94E-03	6.65E-03	1.74E-05	1.24E-03	1.21E-03	1.74E-05	5.26E-04	5.39E-04	1.74E-05
509	572673.1	4148877	6.05E-03	0.00521	1.84E-05	7.36E-03	7.05E-03	1.84E-05	1.31E-03	1.28E-03	1.84E-05	5.58E-04	5.72E-04	1.84E-05
510	572685.9	4148889	6.29E-03	0.005422	1.92E-05	7.66E-03	7.34E-03	1.92E-05	1.37E-03	1.33E-03	1.92E-05	5.81E-04	5.95E-04	1.92E-05
511	572698.7	4148901	6.43E-03	0.005538	1.96E-05	7.82E-03	7.50E-03	1.96E-05	1.39E-03	1.36E-03	1.96E-05	5.93E-04	6.08E-04	1.96E-05
512	572711.6	4148913	6.45E-03	0.005555	1.96E-05	7.85E-03	7.52E-03	1.96E-05	1.40E-03	1.37E-03	1.96E-05	5.95E-04	6.09E-04	1.96E-05
513	572724.4	4148925	6.36E-03	0.005477	1.94E-05	7.74E-03	7.41E-03	1.94E-05	1.38E-03	1.35E-03	1.94E-05	5.86E-04	6.01E-04	1.94E-05
514	572737.2	4148937	6.18E-03	0.005322	1.88E-05	7.52E-03	7.20E-03	1.88E-05	1.34E-03	1.31E-03	1.88E-05	5.70E-04	5.84E-04	1.88E-05
515	572750.1	4148949	5.94E-03	0.005115	1.81E-05	7.22E-03	6.92E-03	1.81E-05	1.29E-03	1.26E-03	1.81E-05	5.48E-04	5.61E-04	1.81E-05
516	572762.9	4148962	5.68E-03	0.004891	1.73E-05	6.91E-03	6.62E-03	1.73E-05	1.23E-03	1.20E-03	1.73E-05	5.24E-04	5.37E-04	1.73E-05
517	572203.7	4148737	1.07E-03	0.000922	3.26E-06	1.30E-03	1.25E-03	3.26E-06	2.32E-04	2.27E-04	3.26E-06	9.87E-05	1.01E-04	3.26E-06
518	572221.3	4148736	1.17E-03	0.001011	3.57E-06	1.43E-03	1.37E-03	3.57E-06	2.55E-04	2.49E-04	3.57E-06	1.08E-04	1.11E-04	3.57E-06
519	572599.4	4148794	3.15E-03	0.002714	9.59E-06	3.83E-03	3.67E-03	9.59E-06	6.84E-04	6.68E-04	9.59E-06	2.91E-04	2.98E-04	9.59E-06

520	572612.2	4148806	3.59E-03	0.003092	1.09E-05	4.37E-03	4.19E-03	1.09E-05	7.79E-04	7.61E-04	1.09E-05	3.31E-04	3.39E-04	1.09E-05
521	572625	4148818	4.06E-03	0.0035	1.24E-05	4.94E-03	4.74E-03	1.24E-05	8.81E-04	8.61E-04	1.24E-05	3.75E-04	3.84E-04	1.24E-05
522	572637.8	4148831	4.54E-03	0.003915	1.38E-05	5.53E-03	5.30E-03	1.38E-05	9.86E-04	9.63E-04	1.38E-05	4.19E-04	4.30E-04	1.38E-05
523	572650.6	4148843	5.00E-03	0.004313	1.52E-05	6.09E-03	5.84E-03	1.52E-05	1.09E-03	1.06E-03	1.52E-05	4.62E-04	4.73E-04	1.52E-05
524	572663.4	4148855	5.42E-03	0.004671	1.65E-05	6.60E-03	6.32E-03	1.65E-05	1.18E-03	1.15E-03	1.65E-05	5.00E-04	5.12E-04	1.65E-05
525	572676.2	4148867	5.77E-03	0.004969	1.76E-05	7.02E-03	6.73E-03	1.76E-05	1.25E-03	1.22E-03	1.76E-05	5.32E-04	5.45E-04	1.76E-05
526	572688.9	4148879	6.03E-03	0.005193	1.84E-05	7.33E-03	7.03E-03	1.84E-05	1.31E-03	1.28E-03	1.84E-05	5.56E-04	5.70E-04	1.84E-05
527	572701.7	4148891	6.19E-03	0.005331	1.88E-05	7.53E-03	7.21E-03	1.88E-05	1.34E-03	1.31E-03	1.88E-05	5.71E-04	5.85E-04	1.88E-05
528	572714.5	4148903	6.24E-03	0.005375	1.9E-05	7.59E-03	7.27E-03	1.90E-05	1.35E-03	1.32E-03	1.90E-05	5.75E-04	5.90E-04	1.90E-05
529	572727.3	4148915	6.19E-03	0.00533	1.88E-05	7.53E-03	7.21E-03	1.88E-05	1.34E-03	1.31E-03	1.88E-05	5.71E-04	5.85E-04	1.88E-05
530	572740.1	4148927	6.04E-03	0.005207	1.84E-05	7.35E-03	7.05E-03	1.84E-05	1.31E-03	1.28E-03	1.84E-05	5.57E-04	5.71E-04	1.84E-05
531	572752.9	4148939	5.83E-03	0.005025	1.78E-05	7.10E-03	6.80E-03	1.78E-05	1.27E-03	1.24E-03	1.78E-05	5.38E-04	5.51E-04	1.78E-05
532	572765.7	4148951	5.59E-03	0.004815	1.7E-05	6.80E-03	6.52E-03	1.70E-05	1.21E-03	1.18E-03	1.70E-05	5.16E-04	5.28E-04	1.70E-05
533	572199.5	4148728	1.02E-03	0.000882	3.12E-06	1.25E-03	1.19E-03	3.12E-06	2.22E-04	2.17E-04	3.12E-06	9.44E-05	9.67E-05	3.12E-06
534	572217.1	4148727	0.00112	0.000965	3.41E-06	1.36E-03	1.31E-03	3.41E-06	2.43E-04	2.37E-04	3.41E-06	1.03E-04	1.06E-04	3.41E-06
535	572234.6	4148727	0.001223	0.001054	3.73E-06	1.49E-03	1.43E-03	3.73E-06	2.65E-04	2.59E-04	3.73E-06	1.13E-04	1.16E-04	3.73E-06
536	572615.5	4148797	0.003403	0.002933	1.04E-05	4.14E-03	3.97E-03	1.04E-05	7.39E-04	7.21E-04	1.04E-05	3.14E-04	3.22E-04	1.04E-05
537	572628.3	4148809	0.003849	0.003316	1.17E-05	4.68E-03	4.49E-03	1.17E-05	8.35E-04	8.16E-04	1.17E-05	3.55E-04	3.64E-04	1.17E-05
538	572641	4148821	0.004306	0.00371	1.31E-05	5.24E-03	5.02E-03	1.31E-05	9.34E-04	9.12E-04	1.31E-05	3.97E-04	4.07E-04	1.31E-05
539	572653.8	4148833	0.004749	0.004092	1.45E-05	5.78E-03	5.54E-03	1.45E-05	1.03E-03	1.01E-03	1.45E-05	4.38E-04	4.49E-04	1.45E-05
540	572666.5	4148845	0.005155	0.004442	1.57E-05	6.27E-03	6.01E-03	1.57E-05	1.12E-03	1.09E-03	1.57E-05	4.76E-04	4.87E-04	1.57E-05
541	572679.3	4148857	0.0055	0.00474	1.68E-05	6.69E-03	6.41E-03	1.68E-05	1.19E-03	1.17E-03	1.68E-05	5.07E-04	5.20E-04	1.68E-05
542	572692	4148869	0.005769	0.004971	1.76E-05	7.02E-03	6.73E-03	1.76E-05	1.25E-03	1.22E-03	1.76E-05	5.32E-04	5.45E-04	1.76E-05
543	572704.7	4148881	0.005949	0.005126	1.81E-05	7.24E-03	6.94E-03	1.81E-05	1.29E-03	1.26E-03	1.81E-05	5.49E-04	5.62E-04	1.81E-05
544	572717.5	4148893	0.00603	0.005196	1.84E-05	7.34E-03	7.03E-03	1.84E-05	1.31E-03	1.28E-03	1.84E-05	5.56E-04	5.70E-04	1.84E-05
545	572730.2	4148905	0.006011	0.00518	1.83E-05	7.32E-03	7.01E-03	1.83E-05	1.30E-03	1.27E-03	1.83E-05	5.55E-04	5.68E-04	1.83E-05
546	572743	4148917	0.005903	0.005086	1.8E-05	7.18E-03	6.88E-03	1.80E-05	1.28E-03	1.25E-03	1.80E-05	5.45E-04	5.58E-04	1.80E-05
547	572755.7	4148929	0.005723	0.004932	1.74E-05	6.97E-03	6.67E-03	1.74E-05	1.24E-03	1.21E-03	1.74E-05	5.28E-04	5.41E-04	1.74E-05
548	572768.5	4148941	0.0055	0.004739	1.68E-05	6.69E-03	6.41E-03	1.68E-05	1.19E-03	1.17E-03	1.68E-05	5.07E-04	5.20E-04	1.68E-05
549	572781.2	4148953	0.005266	0.004538	1.6E-05	6.41E-03	6.14E-03	1.60E-05	1.14E-03	1.12E-03	1.60E-05	4.86E-04	4.98E-04	1.60E-05
550	572195.4	4148719	0.00098	0.000845	2.99E-06	1.19E-03	1.14E-03	2.99E-06	2.13E-04	2.08E-04	2.99E-06	9.04E-05	9.27E-05	2.99E-06
551	572212.8	4148718	0.001071	0.000923	3.26E-06	1.30E-03	1.25E-03	3.26E-06	2.32E-04	2.27E-04	3.26E-06	9.88E-05	1.01E-04	3.26E-06
552	572230.3	4148718	0.001168	0.001006	3.56E-06	1.42E-03	1.36E-03	3.56E-06	2.53E-04	2.48E-04	3.56E-06	1.08E-04	1.10E-04	3.56E-06
553	572247.8	4148717	0.001269	0.001093	3.86E-06	1.54E-03	1.48E-03	3.86E-06	2.75E-04	2.69E-04	3.86E-06	1.17E-04	1.20E-04	3.86E-06
554	572618.8	4148787	0.003232	0.002785	9.84E-06	3.93E-03	3.77E-03	9.84E-06	7.01E-04	6.85E-04	9.84E-06	2.98E-04	3.06E-04	9.84E-06
555	572631.5	4148799	0.00365	0.003145	1.11E-05	4.44E-03	4.26E-03	1.11E-05	7.92E-04	7.74E-04	1.11E-05	3.37E-04	3.45E-04	1.11E-05
556	572644.3	4148811	0.004084	0.003519	1.24E-05	4.97E-03	4.76E-03	1.24E-05	8.86E-04	8.66E-04	1.24E-05	3.77E-04	3.86E-04	1.24E-05
557	572657	4148823	0.004509	0.003886	1.37E-05	5.49E-03	5.26E-03	1.37E-05	9.79E-04	9.56E-04	1.37E-05	4.16E-04	4.26E-04	1.37E-05
558	572669.7	4148835	0.004904	0.004225	1.49E-05	5.97E-03	5.72E-03	1.49E-05	1.06E-03	1.04E-03	1.49E-05	4.52E-04	4.64E-04	1.49E-05
559	572682.4	4148847	0.005247	0.004521	1.6E-05	6.39E-03	6.12E-03	1.60E-05	1.14E-03	1.11E-03	1.60E-05	4.84E-04	4.96E-04	1.60E-05
560	572695.1	4148859	0.005522	0.004758	1.68E-05	6.72E-03	6.44E-03	1.68E-05	1.20E-03	1.17E-03	1.68E-05	5.09E-04	5.22E-04	1.68E-05
561	572707.8	4148871	0.005717	0.004926	1.74E-05	6.96E-03	6.67E-03	1.74E-05	1.24E-03	1.21E-03	1.74E-05	5.27E-04	5.40E-04	1.74E-05
562	572720.5	4148883	0.005823	0.005017	1.77E-05	7.09E-03	6.79E-03	1.77E-05	1.26E-03	1.23E-03	1.77E-05	5.37E-04	5.51E-04	1.77E-05
563	572733.2	4148895	0.005835	0.005028	1.78E-05	7.10E-03	6.80E-03	1.78E-05	1.27E-03	1.24E-03	1.78E-05	5.38E-04	5.52E-04	1.78E-05
564	572745.9	4148907	0.005759	0.004963	1.75E-05	7.01E-03	6.72E-03	1.75E-05	1.25E-03	1.22E-03	1.75E-05	5.31E-04	5.44E-04	1.75E-05
565	572758.6	4148919	0.00561	0.004834	1.71E-05	6.83E-03	6.54E-03	1.71E-05	1.22E-03	1.19E-03	1.71E-05	5.18E-04	5.30E-04	1.71E-05
566	572771.3	4148931	0.005409	0.004661	1.65E-05	6.58E-03	6.31E-03	1.65E-05	1.17E-03	1.15E-03	1.65E-05	4.99E-04	5.11E-04	1.65E-05
567	572784	4148943	0.005188	0.00447	1.58E-05	6.31E-03	6.05E-03	1.58E-05	1.13E-03	1.10E-03	1.58E-05	4.79E-04	4.90E-04	1.58E-05
568	572191.2	4148709	0.00094	0.00081	2.86E-06	1.14E-03	1.10E-03	2.86E-06	2.04E-04	1.99E-04	2.86E-06	8.67E-05	8.89E-05	2.86E-06
569	572208.6	4148709	0.001026	0.000884	3.12E-06	1.25E-03	1.20E-03	3.12E-06	2.23E-04	2.17E-04	3.12E-06	9.46E-05	9.70E-05	3.12E-06
570	572226.1	4148708	0.001117	0.000962	3.4E-06	1.36E-03	1.30E-03	3.40E-06	2.42E-04	2.37E-04	3.40E-06	1.03E-04	1.06E-04	3.40E-06
571	572243.5	4148708	0.001212	0.001044	3.69E-06	1.47E-03	1.41E-03	3.69E-06	2.63E-04	2.57E-04	3.69E-06	1.12E-04	1.15E-04	3.69E-06
572	572260.9	4148707	0.001308	0.001127	3.98E-06	1.59E-03	1.53E-03	3.98E-06	2.84E-04	2.77E-04	3.98E-06	1.21E-04	1.24E-04	3.98E-06
573	572622.2	4148778	0.003072	0.002647	9.36E-06	3.74E-03	3.58E-03	9.36E-06	6.67E-04	6.51E-04	9.36E-06	2.83E-04	2.90E-04	9.36E-06
574	572634.8	4148790	0.003466	0.002986	1.06E-05	4.22E-03	4.04E-03	1.06E-05	7.52E-04	7.34E-04	1.06E-05	3.20E-04	3.28E-04	1.06E-05
575	572647.5	4148802	0.003878	0.003341	1.18E-05	4.72E-03	4.52E-03	1.18E-05	8.41E-04	8.22E-04	1.18E-05	3.58E-04	3.67E-04	1.18E-05
576	572660.2	4148814	0.004285	0.003692	1.31E-05	5.21E-03	5.00E-03	1.31E-05	9.30E-04	9.08E-04	1.31E-05	3.95E-04	4.05E-04	1.31E-05
577	572672.9	4148826	0.004668	0.004022	1.42E-05	5.68E-03	5.44E-03	1.42E-05	1.01E-03	9.89E-04	1.42E-05	4.31E-04	4.41E-04	1.42E-05
578	572685.5	4148837	0.005006	0.004314	1.52E-05	6.09E-03	5.84E-03	1.52E-05	1.09E-03	1.06E-03	1.52E-05	4.62E-04	4.73E-04	1.52E-05
579	572698.2	4148849	0.005285	0.004554	1.61E-05	6.43E-03	6.16E-03	1.61E-05	1.15E-03	1.12E-03	1.61E-05	4.88E-04	5.00E-04	1.61E-05
580	572710.9	4148861	0.005492	0.004732	1.67E-05	6.68E-03	6.40E-03	1.67E-05	1.19E-03	1.16E-03	1.67E-05	5.07E-04	5.19E-04	1.67E-05
581	572723.5	4148873	0.005618	0.00484	1.71E-05	6.84E-03	6.55E-03	1.71E-05	1.22E-03	1.19E-03	1.71E-05	5.18E-04	5.31E-04	1.71E-05
582	572736.2	4148885	0.005658	0.004875	1.72E-05	6.89E-03	6.60E-03	1.72E-05	1.23E-03	1.20E-03	1.72E-05	5.22E-04	5.35E-04	1.72E-05
583	572748.9	4148897	0.005612	0.004836	1.71E-05	6.83E-03	6.55E-03	1.71E-05	1.22E-03	1.19E-03	1.71E-05	5.18E-04	5.31E-04	1.71E-05
584	572761.5	4148909	0.005493	0.004733	1.67E-05	6.68E-03	6.41E-03	1.67E-05	1.19E-03	1.16E-03	1.67E-05	5.07E-04	5.19E-04	1.67E-05
585	572774.2	4148921	0.005316	0.004581	1.62E-05	6.47E-03	6.20E-03	1.62E-05	1.15E-03	1.13E-03	1.62E-05	4.90E-04	5.03E-04	1.62E-05
586	572786.9	4148933	0.00511	0.004403	1.56E-05	6.22E-03	5.96E-03	1.56E-05	1.11E-03	1.08E-03	1.56E-05	4.71E-04	4.83E-04	1.56E-05
587	572799.6	4148945	0.0049	0.004222	1.49E-05	5.96E-03	5.71E-03	1.49E-05	1.06E-03	1.04E-03	1.49E-05	4.52E-04	4.63E-04	1.49E-05
588	572187	4148700	0.000902	0.000777	2.75E-06	1.10E-03	1.05E-03	2.75E-06	1.96E-04	1.91E-04	2.75E-06	8.32E-05	8.53E-05	2.75E-06
589	572204.4	4148700	0.000983	0.000847	2.99E-06	1.20E-03	1.15E-03	2.99E-06	2.13E-04	2.08E-04	2.99E-06	9.07E-05	9.29E-05	2.99E-06
590	572221.8	4148699	0.001069	0.000921	3.26E-06	1.30E-03	1.25E-03	3.26E-06	2.32E-04	2.27E-04	3.26E-06	9.86E-05	1.01E-04	3.26E-06
591	572239.2	4148699	0.001159	0.000998	3.53E-06	1.41E-03	1.35E-03	3.53E-06	2.51E-04	2.46E-04	3.53E-06	1.07E-04	1.10E-04	3.53E-06
592	572256.6	4148698	0.00125	0.001077	3.81E-06	1.52E-03	1.46E-03	3.81E-06	2.71E-04	2.65E-04	3.81E-06	1.15E-04	1.18E-04	3.81E-06
593	572625.5	4148768	0.002923	0.002519	8.9E-06	3.56E-03	3.41E-03	8.90E-06	6.34E-04	6.20E-04	8.90E-06	2.70E-04	2.76E-04	8.90E-06
594	572638.1	4148780	0.003294	0.002838	1E-05	4.01E-03	3.84E-03	1.00E-05	7.15E-04	6.98E-04	1.00E-05	3.04E-04	3.11E-04	1.00E-05
595	572650.8	4148792	0.003685	0.003175	1.12E-05	4.48E-03	4.30E-03	1.12E-05	8.00E-04	7.81E-04	1.12E-05	3.40E-04	3.48E-04	1.12E-05
596	572663.4	4148804	0.004075	0.003511	1.24E-05	4.96E-03	4.75E-03	1.24E-05	8.84E-04	8.64E-04	1.24E-05	3.76E-04	3.85E-04	1.24E-05
597	572676	4148816	0.004445	0.00383	1.35E-05	5.41E-03	5.18E-03	1.35E-05	9.65E-04	9.42E-04	1.35E-05	4.10E-04	4.20E-04	1.35E-05
598	572688.7	4148828	0.004778	0.004117	1.46E-05	5.81E-03	5.57E-03	1.46E-05	1.04E-03	1.01E-03	1.46E-05	4.41E-04	4.52E-04	1.46E-05
599	572701.3	4148840	0.005058	0.004359	1.54E-05	6.16E-03	5.90E-03	1.54E-05	1.10E-03	1.07E-03	1.54E-05	4.67E-04	4.78E-04	1.54E-05
600	572714	4148852	0.005274	0.004544	1.61E-05	6.42E-03	6.15E-03	1.61E-05	1.14E-03	1.12E-03	1.61E-05	4.87E-04	4.99E-04	1.61E-05
601	572726.6	4148864	0.005416	0.004667	1.65E-05	6.59E-03	6.32E-03	1.65E-05	1.18E-03	1.15E-03	1.65E-05	5.00E-04	5.12E-04	1.65E-05
602	572739.2	4148876	0.00548	0.004722	1.67E-05	6.67E-03	6.39E-03	1.67E-05	1.19E-03	1.16E-03	1.67E-05	5.06E-04	5.18E-04	1.67E-05
603	572751.9	4148888	0.005463	0.004707	1.66E-05	6.65E-03	6.37E-03	1.66E-05	1.19E-03	1.16E-03	1.66E-05	5.04E-04	5.16E-04	1.66E-05
604	572764.5	4148899	0.005372	0.004629	1.64E-05	6.54E-03	6.27E-03	1.64E-05	1.17E-03	1.14E-03	1.64E-05	4.96E-04	5.08E-04	1.64E-05
605	572777.1	4148911	0.00522	0.004498	1.59E-05	6.35E-03	6.09E-03	1.59E-05	1.13E-03	1.11E-03	1.59E-05	4.82E-04	4.94E-04	1.59E-05
606	572789.8	4148923	0.005031	0.004335	1.53E-05	6.12E-03	5.87E-03	1.53E-05	1.09E-03	1.07E-03	1.53E-05	4.64E-04	4.76E-04	1.53E-05

607	572802.4	4148935	0.004831	0.004163	1.47E-05	5.88E-03	5.63E-03	1.47E-05	1.05E-03	1.02E-03	1.47E-05	4.46E-04	4.57E-04	1.47E-05
608	572815	4148947	0.004635	0.003994	1.41E-05	5.64E-03	5.41E-03	1.41E-05	1.01E-03	9.82E-04	1.41E-05	4.28E-04	4.38E-04	1.41E-05
609	572287.6	4149264	0.016937	0.014594	5.16E-05	2.06E-02	1.98E-02	5.16E-05	3.68E-03	3.59E-03	5.16E-05	1.56E-03	1.60E-03	5.16E-05
610	572278.4	4149268	0.013934	0.012006	4.24E-05	1.70E-02	1.62E-02	4.24E-05	3.02E-03	2.95E-03	4.24E-05	1.29E-03	1.32E-03	4.24E-05
611	572246.3	4149221	0.004417	0.003806	1.35E-05	5.38E-03	5.15E-03	1.35E-05	9.59E-04	9.36E-04	1.35E-05	4.08E-04	4.18E-04	1.35E-05
612	572250.2	4149230	0.004981	0.004292	1.52E-05	6.06E-03	5.81E-03	1.52E-05	1.08E-03	1.06E-03	1.52E-05	4.60E-04	4.71E-04	1.52E-05
613	572254	4149238	0.00584	0.005032	1.78E-05	7.11E-03	6.81E-03	1.78E-05	1.27E-03	1.24E-03	1.78E-05	5.39E-04	5.52E-04	1.78E-05
614	572257.8	4149247	0.007031	0.006058	2.14E-05	8.56E-03	8.20E-03	2.14E-05	1.53E-03	1.49E-03	2.14E-05	6.49E-04	6.65E-04	2.14E-05
615	572261.7	4149255	0.008499	0.007323	2.59E-05	1.03E-02	9.91E-03	2.59E-05	1.84E-03	1.80E-03	2.59E-05	7.84E-04	8.03E-04	2.59E-05
616	572265.5	4149264	0.010085	0.00869	3.07E-05	1.23E-02	1.18E-02	3.07E-05	2.19E-03	2.14E-03	3.07E-05	9.30E-04	9.53E-04	3.07E-05
617	572269.3	4149272	0.011566	0.009966	3.52E-05	1.41E-02	1.35E-02	3.52E-05	2.51E-03	2.45E-03	3.52E-05	1.07E-03	1.09E-03	3.52E-05
618	572233.1	4149208	0.003472	0.002992	1.06E-05	4.23E-03	4.05E-03	1.06E-05	7.53E-04	7.36E-04	1.06E-05	3.20E-04	3.28E-04	1.06E-05
619	572232.6	4149191	0.003511	0.003025	1.07E-05	4.27E-03	4.09E-03	1.07E-05	7.62E-04	7.44E-04	1.07E-05	3.24E-04	3.32E-04	1.07E-05
620	572237.2	4149225	0.003793	0.003268	1.16E-05	4.62E-03	4.42E-03	1.16E-05	8.23E-04	8.04E-04	1.16E-05	3.50E-04	3.59E-04	1.16E-05
621	572241	4149234	0.004259	0.00367	1.3E-05	5.18E-03	4.97E-03	1.30E-05	9.24E-04	9.03E-04	1.30E-05	3.93E-04	4.03E-04	1.30E-05
622	572244.9	4149242	0.004953	0.004268	1.51E-05	6.03E-03	5.78E-03	1.51E-05	1.07E-03	1.05E-03	1.51E-05	4.57E-04	4.68E-04	1.51E-05
623	572248.7	4149251	0.005906	0.005089	1.8E-05	7.19E-03	6.89E-03	1.80E-05	1.28E-03	1.25E-03	1.80E-05	5.45E-04	5.58E-04	1.80E-05
624	572252.6	4149259	0.00709	0.006109	2.16E-05	8.63E-03	8.27E-03	2.16E-05	1.54E-03	1.50E-03	2.16E-05	6.54E-04	6.70E-04	2.16E-05
625	572256.4	4149268	0.0084	0.007238	2.56E-05	1.02E-02	9.80E-03	2.56E-05	1.82E-03	1.78E-03	2.56E-05	7.75E-04	7.94E-04	2.56E-05
626	572260.2	4149276	0.009683	0.008344	2.95E-05	1.18E-02	1.13E-02	2.95E-05	2.10E-03	2.05E-03	2.95E-05	8.93E-04	9.15E-04	2.95E-05
627	572224	4149212	0.00301	0.002594	9.17E-06	3.66E-03	3.51E-03	9.17E-06	6.53E-04	6.38E-04	9.17E-06	2.78E-04	2.85E-04	9.17E-06
628	572223.5	4149196	0.003036	0.002616	9.25E-06	3.69E-03	3.54E-03	9.25E-06	6.59E-04	6.43E-04	9.25E-06	2.80E-04	2.87E-04	9.25E-06
629	572228.1	4149229	0.003297	0.002841	1E-05	4.01E-03	3.85E-03	1.00E-05	7.16E-04	6.99E-04	1.00E-05	3.04E-04	3.12E-04	1.00E-05
630	572231.9	4149238	0.003689	0.003179	1.12E-05	4.49E-03	4.30E-03	1.12E-05	8.01E-04	7.82E-04	1.12E-05	3.40E-04	3.49E-04	1.12E-05
631	572235.8	4149246	0.004258	0.003669	1.3E-05	5.18E-03	4.97E-03	1.30E-05	9.24E-04	9.02E-04	1.30E-05	3.93E-04	4.03E-04	1.30E-05
632	572239.6	4149255	0.005031	0.004335	1.53E-05	6.12E-03	5.87E-03	1.53E-05	1.09E-03	1.07E-03	1.53E-05	4.64E-04	4.76E-04	1.53E-05
633	572243.4	4149263	0.005997	0.005168	1.83E-05	7.30E-03	6.99E-03	1.83E-05	1.30E-03	1.27E-03	1.83E-05	5.53E-04	5.67E-04	1.83E-05
634	572247.3	4149272	0.007085	0.006105	2.16E-05	8.62E-03	8.26E-03	2.16E-05	1.54E-03	1.50E-03	2.16E-05	6.54E-04	6.70E-04	2.16E-05
635	572251.1	4149280	0.008184	0.007052	2.49E-05	9.96E-03	9.54E-03	2.49E-05	1.78E-03	1.73E-03	2.49E-05	7.55E-04	7.74E-04	2.49E-05
636	572214.9	4149216	0.002637	0.002272	8.03E-06	3.21E-03	3.07E-03	8.03E-06	5.72E-04	5.59E-04	8.03E-06	2.43E-04	2.49E-04	8.03E-06
637	572214.6	4149207	0.002639	0.002274	8.04E-06	3.21E-03	3.08E-03	8.04E-06	5.73E-04	5.59E-04	8.04E-06	2.43E-04	2.50E-04	8.04E-06
638	572214.3	4149197	0.002656	0.002289	8.09E-06	3.23E-03	3.10E-03	8.09E-06	5.76E-04	5.63E-04	8.09E-06	2.45E-04	2.51E-04	8.09E-06
639	572215.2	4149225	0.00267	0.0023	8.13E-06	3.25E-03	3.11E-03	8.13E-06	5.79E-04	5.66E-04	8.13E-06	2.46E-04	2.52E-04	8.13E-06
640	572219	4149234	0.002898	0.002497	8.83E-06	3.53E-03	3.38E-03	8.83E-06	6.29E-04	6.14E-04	8.83E-06	2.67E-04	2.74E-04	8.83E-06
641	572222.8	4149242	0.00323	0.002784	9.84E-06	3.93E-03	3.77E-03	9.84E-06	7.01E-04	6.85E-04	9.84E-06	2.98E-04	3.05E-04	9.84E-06
642	572226.7	4149250	0.003703	0.003191	1.13E-05	4.51E-03	4.32E-03	1.13E-05	8.04E-04	7.85E-04	1.13E-05	3.42E-04	3.50E-04	1.13E-05
643	572230.5	4149259	0.00434	0.003739	1.32E-05	5.28E-03	5.06E-03	1.32E-05	9.42E-04	9.20E-04	1.32E-05	4.00E-04	4.10E-04	1.32E-05
644	572234.3	4149267	0.005135	0.004425	1.56E-05	6.25E-03	5.99E-03	1.56E-05	1.11E-03	1.09E-03	1.56E-05	4.74E-04	4.85E-04	1.56E-05
645	572238.2	4149276	0.006043	0.005207	1.84E-05	7.35E-03	7.05E-03	1.84E-05	1.31E-03	1.28E-03	1.84E-05	5.57E-04	5.71E-04	1.84E-05
646	572242	4149284	0.006983	0.006017	2.13E-05	8.50E-03	8.14E-03	2.13E-05	1.52E-03	1.48E-03	2.13E-05	6.44E-04	6.60E-04	2.13E-05
647	572205.8	4149220	0.002333	0.00201	7.11E-06	2.84E-03	2.72E-03	7.11E-06	5.06E-04	4.94E-04	7.11E-06	2.15E-04	2.21E-04	7.11E-06
648	572205.5	4149211	0.002326	0.002005	7.09E-06	2.83E-03	2.71E-03	7.09E-06	5.05E-04	4.93E-04	7.09E-06	2.15E-04	2.20E-04	7.09E-06
649	572205.2	4149202	0.002339	0.002015	7.12E-06	2.85E-03	2.73E-03	7.12E-06	5.08E-04	4.96E-04	7.12E-06	2.16E-04	2.21E-04	7.12E-06
650	572204.9	4149193	0.002359	0.002032	7.18E-06	2.87E-03	2.75E-03	7.18E-06	5.12E-04	5.00E-04	7.18E-06	2.18E-04	2.23E-04	7.18E-06
651	572206	4149229	0.00237	0.002042	7.22E-06	2.88E-03	2.76E-03	7.22E-06	5.14E-04	5.02E-04	7.22E-06	2.19E-04	2.24E-04	7.22E-06
652	572209.9	4149238	0.00257	0.002215	7.83E-06	3.13E-03	3.00E-03	7.83E-06	5.58E-04	5.45E-04	7.83E-06	2.37E-04	2.43E-04	7.83E-06
653	572213.7	4149246	0.002855	0.00246	8.7E-06	3.47E-03	3.33E-03	8.70E-06	6.20E-04	6.05E-04	8.70E-06	2.63E-04	2.70E-04	8.70E-06
654	572217.5	4149255	0.003252	0.002802	9.9E-06	3.96E-03	3.79E-03	9.90E-06	7.06E-04	6.89E-04	9.90E-06	3.00E-04	3.07E-04	9.90E-06
655	572221.4	4149263	0.003782	0.003259	1.15E-05	4.60E-03	4.41E-03	1.15E-05	8.21E-04	8.02E-04	1.15E-05	3.49E-04	3.58E-04	1.15E-05
656	572225.2	4149272	0.004445	0.00383	1.35E-05	5.41E-03	5.18E-03	1.35E-05	9.64E-04	9.42E-04	1.35E-05	4.10E-04	4.20E-04	1.35E-05
657	572229.1	4149280	0.005207	0.004487	1.59E-05	6.34E-03	6.07E-03	1.59E-05	1.13E-03	1.10E-03	1.59E-05	4.80E-04	4.92E-04	1.59E-05
658	572232.9	4149289	0.006012	0.005181	1.83E-05	7.32E-03	7.01E-03	1.83E-05	1.30E-03	1.27E-03	1.83E-05	5.55E-04	5.68E-04	1.83E-05
659	572196.7	4149224	0.002082	0.001794	6.34E-06	2.53E-03	2.43E-03	6.34E-06	4.52E-04	4.41E-04	6.34E-06	1.92E-04	1.97E-04	6.34E-06
660	572196.1	4149206	0.002075	0.001788	6.32E-06	2.53E-03	2.42E-03	6.32E-06	4.50E-04	4.40E-04	6.32E-06	1.91E-04	1.96E-04	6.32E-06
661	572195.8	4149197	0.00209	0.001801	6.36E-06	2.54E-03	2.44E-03	6.36E-06	4.53E-04	4.43E-04	6.36E-06	1.93E-04	1.98E-04	6.36E-06
662	572196.9	4149233	0.002122	0.001828	6.46E-06	2.58E-03	2.47E-03	6.46E-06	4.60E-04	4.50E-04	6.46E-06	1.96E-04	2.01E-04	6.46E-06
663	572200.8	4149242	0.002298	0.00198	7E-06	2.80E-03	2.68E-03	7.00E-06	4.99E-04	4.87E-04	7.00E-06	2.12E-04	2.17E-04	7.00E-06
664	572204.6	4149250	0.002544	0.002192	7.75E-06	3.10E-03	2.97E-03	7.75E-06	5.52E-04	5.39E-04	7.75E-06	2.35E-04	2.40E-04	7.75E-06
665	572208.4	4149259	0.002881	0.002482	8.77E-06	3.51E-03	3.36E-03	8.77E-06	6.25E-04	6.10E-04	8.77E-06	2.66E-04	2.72E-04	8.77E-06
666	572212.3	4149267	0.003326	0.002866	1.01E-05	4.05E-03	3.88E-03	1.01E-05	7.22E-04	7.05E-04	1.01E-05	3.07E-04	3.14E-04	1.01E-05
667	572216.1	4149276	0.003882	0.003345	1.18E-05	4.72E-03	4.53E-03	1.18E-05	8.42E-04	8.23E-04	1.18E-05	3.58E-04	3.67E-04	1.18E-05
668	572219.9	4149284	0.004528	0.003901	1.38E-05	5.51E-03	5.28E-03	1.38E-05	9.83E-04	9.60E-04	1.38E-05	4.18E-04	4.28E-04	1.38E-05
669	572223.8	4149293	0.00522	0.004498	1.59E-05	6.35E-03	6.09E-03	1.59E-05	1.13E-03	1.11E-03	1.59E-05	4.82E-04	4.93E-04	1.59E-05
670	572187	4149211	0.001854	0.001598	5.65E-06	2.26E-03	2.16E-03	5.65E-06	4.02E-04	3.93E-04	5.65E-06	1.71E-04	1.75E-04	5.65E-06
671	572207	4149280	0.00342	0.002947	1.04E-05	4.16E-03	3.99E-03	1.04E-05	7.42E-04	7.25E-04	1.04E-05	3.16E-04	3.23E-04	1.04E-05
672	572210.8	4149288	0.00397	0.003421	1.21E-05	4.83E-03	4.63E-03	1.21E-05	8.61E-04	8.41E-04	1.21E-05	3.66E-04	3.75E-04	1.21E-05
673	572214.7	4149297	0.004566	0.003934	1.39E-05	5.56E-03	5.32E-03	1.39E-05	9.91E-04	9.68E-04	1.39E-05	4.21E-04	4.32E-04	1.39E-05
674	572197.9	4149284	0.003036	0.002616	9.25E-06	3.69E-03	3.54E-03	9.25E-06	6.59E-04	6.43E-04	9.25E-06	2.80E-04	2.87E-04	9.25E-06
675	572201.7	4149292	0.003507	0.003022	1.07E-05	4.27E-03	4.09E-03	1.07E-05	7.61E-04	7.43E-04	1.07E-05	3.24E-04	3.32E-04	1.07E-05
676	572205.6	4149301	0.004023	0.003466	1.23E-05	4.90E-03	4.69E-03	1.23E-05	8.73E-04	8.52E-04	1.23E-05	3.71E-04	3.80E-04	1.23E-05
677	572188.8	4149288	0.002713	0.002338	8.26E-06	3.30E-03	3.16E-03	8.26E-06	5.89E-04	5.75E-04	8.26E-06	2.50E-04	2.56E-04	8.26E-06
678	572192.6	4149297	0.003119	0.002687	9.5E-06	3.80E-03	3.64E-03	9.50E-06	6.77E-04	6.61E-04	9.50E-06	2.88E-04	2.95E-04	9.50E-06
679	572196.4	4149305	0.003567	0.003074	1.09E-05	4.34E-03	4.16E-03	1.09E-05	7.74E-04	7.56E-04	1.09E-05	3.29E-04	3.37E-04	1.09E-05
680	572244.7	4149018	0.003447	0.00297	1.05E-05	4.19E-03	4.02E-03	1.05E-05	7.48E-04	7.30E-04	1.05E-05	3.18E-04	3.26E-04	1.05E-05
681	572179.7	4149292	0.002439	0.002102	7.43E-06	2.97E-03	2.84E-03	7.43E-06	5.29E-04	5.17E-04	7.43E-06	2.25E-04	2.31E-04	7.43E-06
682	572183.5	4149301	0.002791	0.002405	8.5E-06	3.40E-03	3.25E-03	8.50E-06	6.06E-04	5.91E-04	8.50E-06	2.57E-04	2.64E-04	8.50E-06
683	572187.3	4149309	0.003182	0.002742	9.69E-06	3.87E-03	3.71E-03	9.69E-06	6.91E-04	6.74E-04	9.69E-06	2.94E-04	3.01E-04	9.69E-06
684	572228.2	4149022	0.002789	0.002403	8.49E-06	3.39E-03	3.25E-03	8.49E-06	6.05E-04	5.91E-04	8.49E-06	2.57E-04	2.64E-04	8.49E-06
685	572234.4	4149015	0.002981	0.002569	9.08E-06	3.63E-03	3.48E-03	9.08E-06	6.47E-04	6.32E-04	9.08E-06	2.75E-04	2.82E-04	9.08E-06
686	572240.7	4149009	0.003179	0.002739	9.68E-06	3.87E-03	3.71E-03	9.68E-06	6.90E-04	6.74E-04	9.68E-06	2.93E-04	3.01E-04	9.68E-06
687	572170.6	4149296	0.002205	0.0019	6.72E-06	2.68E-03	2.57E-03	6.72E-06	4.78E-04	4.67E-04	6.72E-06	2.03E-04	2.08E-04	6.72E-06
688	572174.4	4149305	0.002512	0.002164	7.65E-06	3.06E-03	2.93E-03	7.65E-06	5.45E-04	5.32E-04	7.65E-06	2.32E-04	2.37E-04	7.65E-06
689	572178.2	4149313	0.002854	0.00246	8.69E-06	3.47E-03	3.33E-03	8.69E-06	6.19E-04	6.05E-04	8.69E-06	2.63E-04	2.70E-04	8.69E-06
690	572205.7	4149032	0.002127	0.001833	6.48E-06	2.59E-03	2.48E-03	6.48E-06	4.62E-04	4.51E-04	6.48E-06	1.96E-04	2.01E-04	6.48E-06
691	572211.9	4149026	0.002275	0.001961	6.93E-06	2.77E-03	2.65E-03	6.93E-06	4.94E-04	4.82E-04	6.93E-06	2.10E-04	2.15E-04	6.93E-06
692	572224.3	4149013	0.002596	0.002237	7.91E-06	3.16E-03	3.03E-03	7.91E-06	5.63E-04	5.50E-04	7.91E-06	2.40E-04	2.45E-04	7.91E-06
693	572230.5	4149006	0.002766	0.002383	8.42E-06	3.37E-03	3.23E-03	8.42E-06	6.00E-04	5.86E-04	8.42E-06	2.55E-04	2.61E-04	8.42E-06

694	572161.4	4149300	0.002003	0.001726	6.1E-06	2.44E-03	2.34E-03	6.10E-06	4.35E-04	4.25E-04	6.10E-06	1.85E-04	1.89E-04	6.10E-06
695	572165.3	4149309	0.002272	0.001958	6.92E-06	2.76E-03	2.65E-03	6.92E-06	4.93E-04	4.81E-04	6.92E-06	2.10E-04	2.15E-04	6.92E-06
696	572169.1	4149317	0.002574	0.002218	7.84E-06	3.13E-03	3.00E-03	7.84E-06	5.59E-04	5.45E-04	7.84E-06	2.37E-04	2.43E-04	7.84E-06
697	572195.8	4149029	0.00188	0.00162	5.73E-06	2.29E-03	2.19E-03	5.73E-06	4.08E-04	3.98E-04	5.73E-06	1.73E-04	1.78E-04	5.73E-06
698	572208.1	4149016	0.002138	0.001842	6.51E-06	2.60E-03	2.49E-03	6.51E-06	4.64E-04	4.53E-04	6.51E-06	1.97E-04	2.02E-04	6.51E-06
699	572220.4	4149003	0.002421	0.002086	7.37E-06	2.95E-03	2.82E-03	7.37E-06	5.25E-04	5.13E-04	7.37E-06	2.23E-04	2.29E-04	7.37E-06
700	572148.5	4149296	0.001627	0.001402	4.96E-06	1.98E-03	1.90E-03	4.96E-06	3.53E-04	3.45E-04	4.96E-06	1.50E-04	1.54E-04	4.96E-06
701	572152.3	4149305	0.001828	0.001575	5.57E-06	2.22E-03	2.13E-03	5.57E-06	3.97E-04	3.87E-04	5.57E-06	1.69E-04	1.73E-04	5.57E-06
702	572156.2	4149313	0.002065	0.001779	6.29E-06	2.51E-03	2.41E-03	6.29E-06	4.48E-04	4.38E-04	6.29E-06	1.90E-04	1.95E-04	6.29E-06
703	572160	4149321	0.002331	0.002009	7.1E-06	2.84E-03	2.72E-03	7.10E-06	5.06E-04	4.94E-04	7.10E-06	2.15E-04	2.20E-04	7.10E-06
704	572173.7	4149039	0.001471	0.001268	4.48E-06	1.79E-03	1.72E-03	4.48E-06	3.19E-04	3.12E-04	4.48E-06	1.36E-04	1.39E-04	4.48E-06
705	572185.9	4149026	0.001673	0.001442	5.1E-06	2.04E-03	1.95E-03	5.10E-06	3.63E-04	3.55E-04	5.10E-06	1.54E-04	1.58E-04	5.10E-06
706	572198.1	4149014	0.001892	0.00163	5.76E-06	2.30E-03	2.21E-03	5.76E-06	4.11E-04	4.01E-04	5.76E-06	1.75E-04	1.79E-04	5.76E-06
707	572210.3	4149001	0.002132	0.001837	6.49E-06	2.59E-03	2.49E-03	6.49E-06	4.63E-04	4.52E-04	6.49E-06	1.97E-04	2.02E-04	6.49E-06
708	572222.5	4148988	0.002395	0.002064	7.29E-06	2.91E-03	2.79E-03	7.29E-06	5.20E-04	5.08E-04	7.29E-06	2.21E-04	2.26E-04	7.29E-06
709	572147.1	4149317	0.001884	0.001624	5.74E-06	2.29E-03	2.20E-03	5.74E-06	4.09E-04	3.99E-04	5.74E-06	1.74E-04	1.78E-04	5.74E-06
710	572154.1	4149047	0.001196	0.001031	3.64E-06	1.46E-03	1.40E-03	3.64E-06	2.60E-04	2.54E-04	3.64E-06	1.10E-04	1.13E-04	3.64E-06
711	572160.5	4149040	0.001276	0.001099	3.89E-06	1.55E-03	1.49E-03	3.89E-06	2.77E-04	2.70E-04	3.89E-06	1.18E-04	1.21E-04	3.89E-06
712	572166.9	4149033	0.001362	0.001174	4.15E-06	1.66E-03	1.59E-03	4.15E-06	2.96E-04	2.89E-04	4.15E-06	1.26E-04	1.29E-04	4.15E-06
713	572173.2	4149026	0.001454	0.001253	4.43E-06	1.77E-03	1.70E-03	4.43E-06	3.16E-04	3.08E-04	4.43E-06	1.34E-04	1.37E-04	4.43E-06
714	572179.6	4149020	0.001551	0.001336	4.72E-06	1.89E-03	1.81E-03	4.72E-06	3.36E-04	3.29E-04	4.72E-06	1.43E-04	1.47E-04	4.72E-06
715	572186	4149013	0.00165	0.001422	5.03E-06	2.01E-03	1.92E-03	5.03E-06	3.58E-04	3.50E-04	5.03E-06	1.52E-04	1.56E-04	5.03E-06
716	572192.4	4149006	0.001754	0.001511	5.34E-06	2.13E-03	2.05E-03	5.34E-06	3.81E-04	3.72E-04	5.34E-06	1.62E-04	1.66E-04	5.34E-06
717	572198.8	4148999	0.001862	0.001605	5.67E-06	2.27E-03	2.17E-03	5.67E-06	4.04E-04	3.95E-04	5.67E-06	1.72E-04	1.76E-04	5.67E-06
718	572205.1	4148993	0.001977	0.001704	6.02E-06	2.41E-03	2.31E-03	6.02E-06	4.29E-04	4.19E-04	6.02E-06	1.82E-04	1.87E-04	6.02E-06
719	572211.5	4148986	0.002098	0.001807	6.39E-06	2.55E-03	2.45E-03	6.39E-06	4.55E-04	4.45E-04	6.39E-06	1.94E-04	1.98E-04	6.39E-06
720	572217.9	4148979	0.002225	0.001917	6.78E-06	2.71E-03	2.59E-03	6.78E-06	4.83E-04	4.71E-04	6.78E-06	2.05E-04	2.10E-04	6.78E-06
721	572224.3	4148972	0.002353	0.002028	7.17E-06	2.86E-03	2.74E-03	7.17E-06	5.11E-04	4.99E-04	7.17E-06	2.17E-04	2.23E-04	7.17E-06
722	572138	4149050	0.001024	0.000882	3.12E-06	1.25E-03	1.19E-03	3.12E-06	2.22E-04	2.17E-04	3.12E-06	9.44E-05	9.68E-05	3.12E-06
723	572144.4	4149044	0.001085	0.000935	3.31E-06	1.32E-03	1.27E-03	3.31E-06	2.36E-04	2.30E-04	3.31E-06	1.00E-04	1.03E-04	3.31E-06
724	572150.7	4149037	0.001154	0.000994	3.51E-06	1.40E-03	1.35E-03	3.51E-06	2.50E-04	2.45E-04	3.51E-06	1.06E-04	1.09E-04	3.51E-06
725	572157	4149030	0.001228	0.001058	3.74E-06	1.49E-03	1.43E-03	3.74E-06	2.66E-04	2.60E-04	3.74E-06	1.13E-04	1.16E-04	3.74E-06
726	572163.3	4149023	0.001307	0.001126	3.98E-06	1.59E-03	1.52E-03	3.98E-06	2.84E-04	2.77E-04	3.98E-06	1.21E-04	1.24E-04	3.98E-06
727	572169.7	4149017	0.001391	0.001198	4.23E-06	1.69E-03	1.62E-03	4.23E-06	3.02E-04	2.95E-04	4.23E-06	1.28E-04	1.31E-04	4.23E-06
728	572176	4149010	0.001477	0.001273	4.5E-06	1.80E-03	1.72E-03	4.50E-06	3.20E-04	3.13E-04	4.50E-06	1.36E-04	1.40E-04	4.50E-06
729	572182.3	4149003	0.001567	0.00135	4.77E-06	1.91E-03	1.83E-03	4.77E-06	3.40E-04	3.32E-04	4.77E-06	1.45E-04	1.48E-04	4.77E-06
730	572188.6	4148997	0.001659	0.00143	5.05E-06	2.02E-03	1.94E-03	5.05E-06	3.60E-04	3.52E-04	5.05E-06	1.53E-04	1.57E-04	5.05E-06
731	572194.9	4148990	0.001758	0.001514	5.35E-06	2.14E-03	2.05E-03	5.35E-06	3.81E-04	3.72E-04	5.35E-06	1.62E-04	1.66E-04	5.35E-06
732	572201.3	4148983	0.001862	0.001604	5.67E-06	2.27E-03	2.17E-03	5.67E-06	4.04E-04	3.95E-04	5.67E-06	1.72E-04	1.76E-04	5.67E-06
733	572207.6	4148977	0.001971	0.001699	6E-06	2.40E-03	2.30E-03	6.00E-06	4.28E-04	4.18E-04	6.00E-06	1.82E-04	1.86E-04	6.00E-06
734	572213.9	4148970	0.002084	0.001796	6.35E-06	2.54E-03	2.43E-03	6.35E-06	4.52E-04	4.42E-04	6.35E-06	1.92E-04	1.97E-04	6.35E-06
735	572220.2	4148963	0.002199	0.001895	6.7E-06	2.68E-03	2.56E-03	6.70E-06	4.77E-04	4.66E-04	6.70E-06	2.03E-04	2.08E-04	6.70E-06
736	572115.9	4149060	0.000846	0.000729	2.58E-06	1.03E-03	9.87E-04	2.58E-06	1.84E-04	1.79E-04	2.58E-06	7.81E-05	8.00E-05	2.58E-06
737	572122.1	4149054	0.000889	0.000766	2.71E-06	1.08E-03	1.04E-03	2.71E-06	1.93E-04	1.88E-04	2.71E-06	8.20E-05	8.41E-05	2.71E-06
738	572128.4	4149047	0.000937	0.000808	2.85E-06	1.14E-03	1.09E-03	2.85E-06	2.03E-04	1.99E-04	2.85E-06	8.65E-05	8.86E-05	2.85E-06
739	572134.7	4149040	0.00099	0.000853	3.02E-06	1.20E-03	1.15E-03	3.02E-06	2.15E-04	2.10E-04	3.02E-06	9.13E-05	9.36E-05	3.02E-06
740	572140.9	4149034	0.001049	0.000904	3.19E-06	1.28E-03	1.22E-03	3.19E-06	2.28E-04	2.22E-04	3.19E-06	9.68E-05	9.91E-05	3.19E-06
741	572147.2	4149027	0.001113	0.000959	3.39E-06	1.35E-03	1.30E-03	3.39E-06	2.41E-04	2.36E-04	3.39E-06	1.03E-04	1.05E-04	3.39E-06
742	572153.5	4149020	0.001181	0.001018	3.6E-06	1.44E-03	1.38E-03	3.60E-06	2.56E-04	2.50E-04	3.60E-06	1.09E-04	1.12E-04	3.60E-06
743	572159.8	4149014	0.001254	0.00108	3.82E-06	1.53E-03	1.46E-03	3.82E-06	2.72E-04	2.66E-04	3.82E-06	1.16E-04	1.19E-04	3.82E-06
744	572166	4149007	0.001329	0.001145	4.05E-06	1.62E-03	1.55E-03	4.05E-06	2.88E-04	2.82E-04	4.05E-06	1.23E-04	1.26E-04	4.05E-06
745	572172.3	4149000	0.001407	0.001212	4.28E-06	1.71E-03	1.64E-03	4.28E-06	3.05E-04	2.98E-04	4.28E-06	1.30E-04	1.33E-04	4.28E-06
746	572178.6	4148994	0.001487	0.001282	4.53E-06	1.81E-03	1.73E-03	4.53E-06	3.23E-04	3.15E-04	4.53E-06	1.37E-04	1.41E-04	4.53E-06
747	572184.8	4148987	0.001572	0.001354	4.79E-06	1.91E-03	1.83E-03	4.79E-06	3.41E-04	3.33E-04	4.79E-06	1.45E-04	1.49E-04	4.79E-06
748	572191.1	4148981	0.001662	0.001432	5.06E-06	2.02E-03	1.94E-03	5.06E-06	3.61E-04	3.52E-04	5.06E-06	1.53E-04	1.57E-04	5.06E-06
749	572197.4	4148974	0.001757	0.001514	5.35E-06	2.14E-03	2.05E-03	5.35E-06	3.81E-04	3.72E-04	5.35E-06	1.62E-04	1.66E-04	5.35E-06
750	572203.7	4148967	0.001855	0.001599	5.65E-06	2.26E-03	2.16E-03	5.65E-06	4.03E-04	3.93E-04	5.65E-06	1.71E-04	1.75E-04	5.65E-06
751	572209.9	4148961	0.001956	0.001686	5.96E-06	2.38E-03	2.28E-03	5.96E-06	4.25E-04	4.15E-04	5.96E-06	1.80E-04	1.85E-04	5.96E-06
752	572216.2	4148954	0.002059	0.001775	6.27E-06	2.51E-03	2.40E-03	6.27E-06	4.47E-04	4.36E-04	6.27E-06	1.90E-04	1.95E-04	6.27E-06
753	572106.3	4149057	0.000783	0.000675	2.39E-06	9.53E-04	9.13E-04	2.39E-06	1.70E-04	1.66E-04	2.39E-06	7.22E-05	7.40E-05	2.39E-06
754	572112.5	4149050	0.00082	0.000707	2.5E-06	9.99E-04	9.57E-04	2.50E-06	1.78E-04	1.74E-04	2.50E-06	7.57E-05	7.76E-05	2.50E-06
755	572125	4149037	0.000907	0.000782	2.76E-06	1.10E-03	1.06E-03	2.76E-06	1.97E-04	1.92E-04	2.76E-06	8.37E-05	8.58E-05	2.76E-06
756	572131.2	4149031	0.000958	0.000825	2.92E-06	1.17E-03	1.12E-03	2.92E-06	2.08E-04	2.03E-04	2.92E-06	8.84E-05	9.06E-05	2.92E-06
757	572143.7	4149017	0.001073	0.000925	3.27E-06	1.31E-03	1.25E-03	3.27E-06	2.33E-04	2.27E-04	3.27E-06	9.90E-05	1.01E-04	3.27E-06
758	572156.1	4149004	0.001202	0.001036	3.66E-06	1.46E-03	1.40E-03	3.66E-06	2.61E-04	2.55E-04	3.66E-06	1.11E-04	1.14E-04	3.66E-06
759	572162.4	4148998	0.001271	0.001095	3.87E-06	1.55E-03	1.48E-03	3.87E-06	2.76E-04	2.69E-04	3.87E-06	1.17E-04	1.20E-04	3.87E-06
760	572174.8	4148984	0.001414	0.001218	4.31E-06	1.72E-03	1.65E-03	4.31E-06	3.07E-04	3.00E-04	4.31E-06	1.30E-04	1.34E-04	4.31E-06
761	572181	4148978	0.001492	0.001285	4.54E-06	1.82E-03	1.74E-03	4.54E-06	3.24E-04	3.16E-04	4.54E-06	1.38E-04	1.41E-04	4.54E-06
762	572193.5	4148965	0.00166	0.00143	5.05E-06	2.02E-03	1.94E-03	5.05E-06	3.60E-04	3.52E-04	5.05E-06	1.53E-04	1.57E-04	5.05E-06
763	572205.9	4148951	0.001841	0.001586	5.61E-06	2.24E-03	2.15E-03	5.61E-06	3.99E-04	3.90E-04	5.61E-06	1.70E-04	1.74E-04	5.61E-06
764	572090.6	4149060	0.000696	0.0006	2.12E-06	8.47E-04	8.12E-04	2.12E-06	1.51E-04	1.48E-04	2.12E-06	6.42E-05	6.58E-05	2.12E-06
765	572103	4149047	0.000759	0.000654	2.31E-06	9.24E-04	8.85E-04	2.31E-06	1.65E-04	1.61E-04	2.31E-06	7.00E-05	7.18E-05	2.31E-06
766	572115.4	4149034	0.000835	0.000719	2.54E-06	1.02E-03	9.73E-04	2.54E-06	1.81E-04	1.77E-04	2.54E-06	7.70E-05	7.89E-05	2.54E-06
767	572121.5	4149027	0.000879	0.000757	2.68E-06	1.07E-03	1.02E-03	2.68E-06	1.91E-04	1.86E-04	2.68E-06	8.11E-05	8.31E-05	2.68E-06
768	572133.9	4149014	0.000979	0.000844	2.98E-06	1.19E-03	1.14E-03	2.98E-06	2.13E-04	2.08E-04	2.98E-06	9.04E-05	9.26E-05	2.98E-06
769	572146.3	4149001	0.001093	0.000942	3.33E-06	1.33E-03	1.28E-03	3.33E-06	2.37E-04	2.32E-04	3.33E-06	1.01E-04	1.03E-04	3.33E-06
770	572152.5	4148995	0.001153	0.000994	3.51E-06	1.40E-03	1.34E-03	3.51E-06	2.50E-04	2.44E-04	3.51E-06	1.06E-04	1.09E-04	3.51E-06
771	572164.8	4148981	0.001278	0.001102	3.89E-06	1.56E-03	1.49E-03	3.89E-06	2.77E-04	2.71E-04	3.89E-06	1.18E-04	1.21E-04	3.89E-06
772	572177.2	4148968	0.001416	0.00122	4.31E-06	1.72E-03	1.65E-03	4.31E-06	3.07E-04	3.00E-04	4.31E-06	1.31E-04	1.34E-04	4.31E-06
773	572183.4	4148962	0.001491	0.001285	4.54E-06	1.81E-03	1.74E-03	4.54E-06	3.24E-04	3.16E-04	4.54E-06	1.38E-04	1.41E-04	4.54E-06
774	572195.8	4148949	0.001652	0.001423	5.03E-06	2.01E-03	1.93E-03	5.03E-06	3.58E-04	3.50E-04	5.03E-06	1.52E-04	1.56E-04	5.03E-06
775	572068.9	4149070	0.000602	0.000519	1.83E-06	7.32E-04	7.02E-04	1.83E-06	1.31E-04	1.28E-04	1.83E-06	5.55E-05	5.69E-05	1.83E-06
776	572081.2	4149057	0.000649	0.000559	1.98E-06	7.90E-04	7.57E-04	1.98E-06	1.41E-04	1.38E-04	1.98E-06	5.99E-05	6.13E-05	1.98E-06
777	572093.4	4149044	0.000705	0.000607	2.15E-06	8.57E-04	8.22E-04	2.15E-06	1.53E-04	1.49E-04	2.15E-06	6.50E-05	6.66E-05	2.15E-06
778	572105.7	4149031	0.00077	0.000664	2.35E-06	9.37E-04	8.98E-04	2.35E-06	1.67E-04	1.63E-04	2.35E-06	7.11E-05	7.28E-05	2.35E-06
779	572111.9	4149024	0.000809	0.000697	2.46E-06	9.84E-04	9.43E-04	2.46E-06	1.75E-04	1.71E-04	2.46E-06	7.46E-05	7.65E-05	2.46E-06
780	572124.2	4149011	0.000897	0.000773	2.73E-06	1.09E-03	1.05E-03	2.73E-06	1.95E-04	1.90E-04	2.73E-06	8.28E-05	8.48E-05	2.73E-06

781	572136.5	4148998	0.000999	0.00086	3.04E-06	1.22E-03	1.16E-03	3.04E-06	2.17E-04	2.12E-04	3.04E-06	9.21E-05	9.44E-05	3.04E-06
782	572148.8	4148985	0.001105	0.000953	3.37E-06	1.35E-03	1.29E-03	3.37E-06	2.40E-04	2.34E-04	3.37E-06	1.02E-04	1.05E-04	3.37E-06
783	572161.1	4148972	0.00122	0.001051	3.71E-06	1.48E-03	1.42E-03	3.71E-06	2.65E-04	2.58E-04	3.71E-06	1.13E-04	1.15E-04	3.71E-06
784	572173.4	4148959	0.001347	0.00116	4.1E-06	1.64E-03	1.57E-03	4.10E-06	2.92E-04	2.85E-04	4.10E-06	1.24E-04	1.27E-04	4.10E-06
785	572059.7	4149066	0.000565	0.000487	1.72E-06	6.87E-04	6.59E-04	1.72E-06	1.23E-04	1.20E-04	1.72E-06	5.21E-05	5.34E-05	1.72E-06
786	572066.1	4149059	0.000586	0.000505	1.78E-06	7.13E-04	6.83E-04	1.78E-06	1.27E-04	1.24E-04	1.78E-06	5.41E-05	5.54E-05	1.78E-06
787	572072.5	4149052	0.000609	0.000525	1.85E-06	7.41E-04	7.10E-04	1.85E-06	1.32E-04	1.29E-04	1.85E-06	5.62E-05	5.76E-05	1.85E-06
788	572078.8	4149046	0.000634	0.000546	1.93E-06	7.71E-04	7.39E-04	1.93E-06	1.38E-04	1.34E-04	1.93E-06	5.85E-05	5.99E-05	1.93E-06
789	572085.2	4149039	0.000661	0.000569	2.01E-06	8.04E-04	7.71E-04	2.01E-06	1.43E-04	1.40E-04	2.01E-06	6.10E-05	6.25E-05	2.01E-06
790	572091.6	4149032	0.00069	0.000595	2.1E-06	8.40E-04	8.05E-04	2.10E-06	1.50E-04	1.46E-04	2.10E-06	6.37E-05	6.53E-05	2.10E-06
791	572097.9	4149025	0.000723	0.000623	2.2E-06	8.80E-04	8.43E-04	2.20E-06	1.57E-04	1.53E-04	2.20E-06	6.67E-05	6.83E-05	2.20E-06
792	572104.3	4149019	0.000759	0.000654	2.31E-06	9.24E-04	8.85E-04	2.31E-06	1.65E-04	1.61E-04	2.31E-06	7.00E-05	7.18E-05	2.31E-06
793	572110.7	4149012	0.000799	0.000689	2.43E-06	9.73E-04	9.32E-04	2.43E-06	1.73E-04	1.69E-04	2.43E-06	7.37E-05	7.56E-05	2.43E-06
794	572117	4149005	0.000843	0.000727	2.57E-06	1.03E-03	9.83E-04	2.57E-06	1.83E-04	1.79E-04	2.57E-06	7.78E-05	7.97E-05	2.57E-06
795	572123.4	4148998	0.00089	0.000767	2.71E-06	1.08E-03	1.04E-03	2.71E-06	1.93E-04	1.89E-04	2.71E-06	8.21E-05	8.41E-05	2.71E-06
796	572129.8	4148992	0.000938	0.000808	2.86E-06	1.14E-03	1.09E-03	2.86E-06	2.04E-04	1.99E-04	2.86E-06	8.66E-05	8.87E-05	2.86E-06
797	572136.1	4148985	0.000988	0.000851	3.01E-06	1.20E-03	1.15E-03	3.01E-06	2.14E-04	2.09E-04	3.01E-06	9.12E-05	9.34E-05	3.01E-06
798	572142.5	4148978	0.001039	0.000895	3.16E-06	1.26E-03	1.21E-03	3.16E-06	2.25E-04	2.20E-04	3.16E-06	9.58E-05	9.82E-05	3.16E-06
799	572148.9	4148972	0.001091	0.00094	3.32E-06	1.33E-03	1.27E-03	3.32E-06	2.37E-04	2.31E-04	3.32E-06	1.01E-04	1.03E-04	3.32E-06
800	572155.2	4148965	0.001146	0.000988	3.49E-06	1.40E-03	1.34E-03	3.49E-06	2.49E-04	2.43E-04	3.49E-06	1.06E-04	1.08E-04	3.49E-06
801	572161.6	4148958	0.001205	0.001038	3.67E-06	1.47E-03	1.40E-03	3.67E-06	2.61E-04	2.55E-04	3.67E-06	1.11E-04	1.14E-04	3.67E-06
802	572060.3	4149295	0.000688	0.000593	2.1E-06	8.37E-04	8.03E-04	2.10E-06	1.49E-04	1.46E-04	2.10E-06	6.35E-05	6.51E-05	2.10E-06
803	572064.1	4149304	0.00073	0.000629	2.22E-06	8.88E-04	8.51E-04	2.22E-06	1.58E-04	1.55E-04	2.22E-06	6.73E-05	6.90E-05	2.22E-06
804	572067.9	4149312	0.00078	0.000672	2.38E-06	9.49E-04	9.10E-04	2.38E-06	1.69E-04	1.65E-04	2.38E-06	7.20E-05	7.37E-05	2.38E-06
805	572071.8	4149321	0.00084	0.000724	2.56E-06	1.02E-03	9.80E-04	2.56E-06	1.82E-04	1.78E-04	2.56E-06	7.75E-05	7.95E-05	2.56E-06
806	572050.9	4149290	0.000634	0.000546	1.93E-06	7.71E-04	7.39E-04	1.93E-06	1.38E-04	1.34E-04	1.93E-06	5.85E-05	5.99E-05	1.93E-06
807	572050.6	4149281	0.00062	0.000534	1.89E-06	7.54E-04	7.22E-04	1.89E-06	1.34E-04	1.31E-04	1.89E-06	5.72E-05	5.86E-05	1.89E-06
808	572050.3	4149272	0.000608	0.000524	1.85E-06	7.40E-04	7.09E-04	1.85E-06	1.32E-04	1.29E-04	1.85E-06	5.61E-05	5.75E-05	1.85E-06
809	572050	4149262	0.000598	0.000515	1.82E-06	7.28E-04	6.98E-04	1.82E-06	1.30E-04	1.27E-04	1.82E-06	5.52E-05	5.66E-05	1.82E-06
810	572044.3	4149078	0.00052	0.000448	1.58E-06	6.32E-04	6.06E-04	1.58E-06	1.13E-04	1.10E-04	1.58E-06	4.79E-05	4.91E-05	1.58E-06
811	572050.3	4149062	0.000531	0.000457	1.62E-06	6.46E-04	6.19E-04	1.62E-06	1.15E-04	1.12E-04	1.62E-06	4.90E-05	5.02E-05	1.62E-06
812	572056.7	4149056	0.00055	0.000474	1.67E-06	6.69E-04	6.41E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.07E-05	5.20E-05	1.67E-06
813	572063	4149049	0.00057	0.000491	1.74E-06	6.94E-04	6.65E-04	1.74E-06	1.24E-04	1.21E-04	1.74E-06	5.26E-05	5.39E-05	1.74E-06
814	572069.3	4149042	0.000592	0.00051	1.8E-06	7.21E-04	6.91E-04	1.80E-06	1.29E-04	1.26E-04	1.80E-06	5.46E-05	5.60E-05	1.80E-06
815	572075.6	4149036	0.000616	0.000531	1.88E-06	7.50E-04	7.19E-04	1.88E-06	1.34E-04	1.31E-04	1.88E-06	5.68E-05	5.83E-05	1.88E-06
816	572082	4149029	0.000642	0.000553	1.96E-06	7.82E-04	7.49E-04	1.96E-06	1.39E-04	1.36E-04	1.96E-06	5.93E-05	6.07E-05	1.96E-06
817	572088.3	4149022	0.000671	0.000578	2.04E-06	8.17E-04	7.82E-04	2.04E-06	1.46E-04	1.42E-04	2.04E-06	6.19E-05	6.34E-05	2.04E-06
818	572094.6	4149016	0.000703	0.000605	2.14E-06	8.55E-04	8.19E-04	2.14E-06	1.52E-04	1.49E-04	2.14E-06	6.48E-05	6.64E-05	2.14E-06
819	572100.9	4149009	0.000738	0.000636	2.25E-06	8.98E-04	8.61E-04	2.25E-06	1.60E-04	1.56E-04	2.25E-06	6.81E-05	6.98E-05	2.25E-06
820	572107.2	4149002	0.000777	0.000669	2.37E-06	9.45E-04	9.06E-04	2.37E-06	1.69E-04	1.65E-04	2.37E-06	7.17E-05	7.34E-05	2.37E-06
821	572113.6	4148995	0.000818	0.000705	2.49E-06	9.96E-04	9.54E-04	2.49E-06	1.78E-04	1.73E-04	2.49E-06	7.55E-05	7.73E-05	2.49E-06
822	572119.9	4148989	0.000861	0.000742	2.62E-06	1.05E-03	1.00E-03	2.62E-06	1.87E-04	1.83E-04	2.62E-06	7.95E-05	8.14E-05	2.62E-06
823	572126.2	4148982	0.000906	0.00078	2.76E-06	1.10E-03	1.06E-03	2.76E-06	1.97E-04	1.92E-04	2.76E-06	8.36E-05	8.56E-05	2.76E-06
824	572132.5	4148975	0.000951	0.00082	2.9E-06	1.16E-03	1.11E-03	2.90E-06	2.06E-04	2.02E-04	2.90E-06	8.78E-05	8.99E-05	2.90E-06
825	572138.9	4148969	0.000998	0.00086	3.04E-06	1.21E-03	1.16E-03	3.04E-06	2.17E-04	2.11E-04	3.04E-06	9.21E-05	9.43E-05	3.04E-06
826	572051.2	4149299	0.000652	0.000562	1.99E-06	7.93E-04	7.60E-04	1.99E-06	1.41E-04	1.38E-04	1.99E-06	6.01E-05	6.16E-05	1.99E-06
827	572055	4149308	0.000691	0.000595	2.1E-06	8.40E-04	8.05E-04	2.10E-06	1.50E-04	1.46E-04	2.10E-06	6.37E-05	6.53E-05	2.10E-06
828	572058.8	4149316	0.000737	0.000635	2.24E-06	8.97E-04	8.59E-04	2.24E-06	1.60E-04	1.56E-04	2.24E-06	6.80E-05	6.97E-05	2.24E-06
829	572062.7	4149325	0.000792	0.000683	2.41E-06	9.64E-04	9.24E-04	2.41E-06	1.72E-04	1.68E-04	2.41E-06	7.31E-05	7.49E-05	2.41E-06
830	572041.8	4149294	0.000602	0.000518	1.83E-06	7.32E-04	7.02E-04	1.83E-06	1.31E-04	1.28E-04	1.83E-06	5.55E-05	5.69E-05	1.83E-06
831	572041.5	4149285	0.000588	0.000507	1.79E-06	7.16E-04	6.86E-04	1.79E-06	1.28E-04	1.25E-04	1.79E-06	5.43E-05	5.56E-05	1.79E-06
832	572041.2	4149276	0.000577	0.000497	1.76E-06	7.02E-04	6.73E-04	1.76E-06	1.25E-04	1.22E-04	1.76E-06	5.32E-05	5.45E-05	1.76E-06
833	572040.9	4149267	0.000568	0.000489	1.73E-06	6.91E-04	6.62E-04	1.73E-06	1.23E-04	1.20E-04	1.73E-06	5.24E-05	5.37E-05	1.73E-06
834	572040.6	4149258	0.00056	0.000483	1.71E-06	6.81E-04	6.53E-04	1.71E-06	1.22E-04	1.19E-04	1.71E-06	5.17E-05	5.29E-05	1.71E-06
835	572040.3	4149248	0.000553	0.000477	1.69E-06	6.73E-04	6.45E-04	1.69E-06	1.20E-04	1.17E-04	1.69E-06	5.11E-05	5.23E-05	1.69E-06
836	572040.1	4149239	0.000548	0.000472	1.67E-06	6.67E-04	6.39E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.05E-05	5.18E-05	1.67E-06
837	572035	4149075	0.00049	0.000422	1.49E-06	5.96E-04	5.71E-04	1.49E-06	1.06E-04	1.04E-04	1.49E-06	4.52E-05	4.63E-05	1.49E-06
838	572040.9	4149059	0.000499	0.00043	1.52E-06	6.08E-04	5.83E-04	1.52E-06	1.08E-04	1.06E-04	1.52E-06	4.61E-05	4.72E-05	1.52E-06
839	572047.2	4149052	0.000517	0.000445	1.57E-06	6.29E-04	6.02E-04	1.57E-06	1.12E-04	1.09E-04	1.57E-06	4.77E-05	4.88E-05	1.57E-06
840	572053.5	4149046	0.000535	0.000461	1.63E-06	6.51E-04	6.24E-04	1.63E-06	1.16E-04	1.13E-04	1.63E-06	4.94E-05	5.06E-05	1.63E-06
841	572059.8	4149039	0.000555	0.000478	1.69E-06	6.75E-04	6.47E-04	1.69E-06	1.20E-04	1.18E-04	1.69E-06	5.12E-05	5.25E-05	1.69E-06
842	572066.1	4149032	0.000576	0.000497	1.75E-06	7.01E-04	6.72E-04	1.75E-06	1.25E-04	1.22E-04	1.75E-06	5.32E-05	5.45E-05	1.75E-06
843	572072.4	4149026	0.000599	0.000516	1.83E-06	7.29E-04	6.99E-04	1.83E-06	1.30E-04	1.27E-04	1.83E-06	5.53E-05	5.67E-05	1.83E-06
844	572078.6	4149019	0.000625	0.000538	1.9E-06	7.60E-04	7.29E-04	1.90E-06	1.36E-04	1.32E-04	1.90E-06	5.76E-05	5.91E-05	1.90E-06
845	572084.9	4149012	0.000653	0.000562	1.99E-06	7.94E-04	7.61E-04	1.99E-06	1.42E-04	1.38E-04	1.99E-06	6.02E-05	6.17E-05	1.99E-06
846	572091.2	4149006	0.000684	0.000589	2.08E-06	8.32E-04	7.98E-04	2.08E-06	1.48E-04	1.45E-04	2.08E-06	6.31E-05	6.47E-05	2.08E-06
847	572097.5	4148999	0.000718	0.000619	2.19E-06	8.74E-04	8.37E-04	2.19E-06	1.56E-04	1.52E-04	2.19E-06	6.62E-05	6.79E-05	2.19E-06
848	572103.8	4148992	0.000755	0.00065	2.3E-06	9.18E-04	8.80E-04	2.30E-06	1.64E-04	1.60E-04	2.30E-06	6.96E-05	7.13E-05	2.30E-06
849	572110.1	4148986	0.000793	0.000684	2.42E-06	9.65E-04	9.25E-04	2.42E-06	1.72E-04	1.68E-04	2.42E-06	7.32E-05	7.50E-05	2.42E-06
850	572116.3	4148979	0.000833	0.000718	2.54E-06	1.01E-03	9.72E-04	2.54E-06	1.81E-04	1.77E-04	2.54E-06	7.69E-05	7.88E-05	2.54E-06
851	572122.6	4148972	0.000874	0.000753	2.66E-06	1.06E-03	1.02E-03	2.66E-06	1.90E-04	1.85E-04	2.66E-06	8.06E-05	8.26E-05	2.66E-06
852	572042	4149303	0.000619	0.000533	1.88E-06	7.53E-04	7.21E-04	1.88E-06	1.34E-04	1.31E-04	1.88E-06	5.71E-05	5.85E-05	1.88E-06
853	572045.9	4149312	0.000655	0.000564	1.99E-06	7.97E-04	7.63E-04	1.99E-06	1.42E-04	1.39E-04	1.99E-06	6.04E-05	6.19E-05	1.99E-06
854	572049.7	4149320	0.000698	0.000601	2.12E-06	8.49E-04	8.13E-04	2.12E-06	1.51E-04	1.48E-04	2.12E-06	6.44E-05	6.59E-05	2.12E-06
855	572032.7	4149298	0.000572	0.000493	1.74E-06	6.96E-04	6.67E-04	1.74E-06	1.24E-04	1.21E-04	1.74E-06	5.28E-05	5.41E-05	1.74E-06
856	572032.4	4149289	0.000559	0.000482	1.7E-06	6.80E-04	6.52E-04	1.70E-06	1.21E-04	1.18E-04	1.70E-06	5.16E-05	5.29E-05	1.70E-06
857	572032.1	4149280	0.000549	0.000473	1.67E-06	6.68E-04	6.40E-04	1.67E-06	1.19E-04	1.16E-04	1.67E-06	5.06E-05	5.19E-05	1.67E-06
858	572031.8	4149271	0.00054	0.000465	1.64E-06	6.57E-04	6.30E-04	1.64E-06	1.17E-04	1.14E-04	1.64E-06	4.98E-05	5.10E-05	1.64E-06
859	572031.5	4149262	0.000532	0.000459	1.62E-06	6.48E-04	6.21E-04	1.62E-06	1.16E-04	1.13E-04	1.62E-06	4.91E-05	5.03E-05	1.62E-06
860	572031.2	4149253	0.000526	0.000453	1.6E-06	6.40E-04	6.13E-04	1.60E-06	1.14E-04	1.11E-04	1.60E-06	4.85E-05	4.97E-05	1.60E-06
861	572031	4149244	0.00052	0.000448	1.58E-06	6.33E-04	6.07E-04	1.58E-06	1.13E-04	1.10E-04	1.58E-06	4.80E-05	4.92E-05	1.58E-06
862	572030.7	4149235	0.000516	0.000445	1.57E-06	6.28E-04	6.02E-04	1.57E-06	1.12E-04	1.09E-04	1.57E-06	4.76E-05	4.88E-05	1.57E-06
863	572030.4	4149226	0.000513	0.000442	1.56E-06	6.24E-04	5.98E-04	1.56E-06	1.11E-04	1.09E-04	1.56E-06	4.73E-05	4.85E-05	1.56E-06
864	572030.1	4149217	0.000512	0.000441	1.56E-06	6.24E-04	5.98E-04	1.56E-06	1.11E-04	1.09E-04	1.56E-06	4.73E-05	4.84E-05	1.56E-06
865	572029.8	4149207	0.000514	0.000443	1.57E-06	6.26E-04	6.00E-04	1.57E-06	1.12E-04	1.09E-04	1.57E-06	4.74E-05	4.86E-05	1.57E-06
866	572025.9	4149080	0.000469	0.000404	1.43E-06	5.70E-04	5.46E-04	1.43E-06	1.02E-04	9.93E-05	1.43E-06	4.32E-05	4.43E-05	1.43E-06
867	572025.6	4149071	0.000462	0.000398	1.41E-06	5.62E-04	5.39E-04	1.41E-06	1.00E-04	9.79E-05	1.41E-06	4.26E-05	4.37E-05	1.41E-06

868	572031.6	4149055	0.000471	0.000406	1.43E-06	5.73E-04	5.49E-04	1.43E-06	1.02E-04	9.98E-05	1.43E-06	4.35E-05	4.45E-05	1.43E-06
869	572037.8	4149049	0.000487	0.000419	1.48E-06	5.92E-04	5.67E-04	1.48E-06	1.06E-04	1.03E-04	1.48E-06	4.49E-05	4.60E-05	1.48E-06
870	572044.1	4149042	0.000503	0.000434	1.53E-06	6.13E-04	5.87E-04	1.53E-06	1.09E-04	1.07E-04	1.53E-06	4.64E-05	4.76E-05	1.53E-06
871	572050.3	4149036	0.000521	0.000449	1.59E-06	6.34E-04	6.08E-04	1.59E-06	1.13E-04	1.10E-04	1.59E-06	4.81E-05	4.93E-05	1.59E-06
872	572056.5	4149029	0.00054	0.000466	1.65E-06	6.58E-04	6.30E-04	1.65E-06	1.17E-04	1.15E-04	1.65E-06	4.99E-05	5.11E-05	1.65E-06
873	572062.8	4149022	0.000561	0.000483	1.71E-06	6.83E-04	6.54E-04	1.71E-06	1.22E-04	1.19E-04	1.71E-06	5.17E-05	5.30E-05	1.71E-06
874	572069	4149016	0.000583	0.000503	1.78E-06	7.10E-04	6.80E-04	1.78E-06	1.27E-04	1.24E-04	1.78E-06	5.38E-05	5.51E-05	1.78E-06
875	572075.3	4149009	0.000608	0.000524	1.85E-06	7.40E-04	7.09E-04	1.85E-06	1.32E-04	1.29E-04	1.85E-06	5.61E-05	5.75E-05	1.85E-06
876	572081.5	4149002	0.000635	0.000548	1.94E-06	7.73E-04	7.41E-04	1.94E-06	1.38E-04	1.35E-04	1.94E-06	5.86E-05	6.01E-05	1.94E-06
877	572087.8	4148996	0.000666	0.000574	2.03E-06	8.10E-04	7.76E-04	2.03E-06	1.44E-04	1.41E-04	2.03E-06	6.14E-05	6.29E-05	2.03E-06
878	572094	4148989	0.000698	0.000602	2.13E-06	8.50E-04	8.14E-04	2.13E-06	1.52E-04	1.48E-04	2.13E-06	6.44E-05	6.60E-05	2.13E-06
879	572100.3	4148983	0.000733	0.000631	2.23E-06	8.92E-04	8.55E-04	2.23E-06	1.59E-04	1.55E-04	2.23E-06	6.76E-05	6.93E-05	2.23E-06
880	572106.5	4148976	0.000769	0.000663	2.34E-06	9.36E-04	8.97E-04	2.34E-06	1.67E-04	1.63E-04	2.34E-06	7.09E-05	7.27E-05	2.34E-06
881	572032.9	4149307	0.000588	0.000507	1.79E-06	7.16E-04	6.86E-04	1.79E-06	1.28E-04	1.25E-04	1.79E-06	5.43E-05	5.56E-05	1.79E-06
882	572036.8	4149316	0.000622	0.000536	1.89E-06	7.57E-04	7.25E-04	1.89E-06	1.35E-04	1.32E-04	1.89E-06	5.73E-05	5.88E-05	1.89E-06
883	572040.6	4149324	0.000661	0.00057	2.01E-06	8.05E-04	7.71E-04	2.01E-06	1.44E-04	1.40E-04	2.01E-06	6.10E-05	6.25E-05	2.01E-06
884	572023.5	4149303	0.000545	0.00047	1.66E-06	6.63E-04	6.36E-04	1.66E-06	1.18E-04	1.16E-04	1.66E-06	5.03E-05	5.15E-05	1.66E-06
885	572023.3	4149294	0.000533	0.000459	1.62E-06	6.48E-04	6.21E-04	1.62E-06	1.16E-04	1.13E-04	1.62E-06	4.92E-05	5.04E-05	1.62E-06
886	572023	4149284	0.000523	0.00045	1.59E-06	6.36E-04	6.10E-04	1.59E-06	1.13E-04	1.11E-04	1.59E-06	4.82E-05	4.94E-05	1.59E-06
887	572022.7	4149275	0.000514	0.000443	1.57E-06	6.26E-04	6.00E-04	1.57E-06	1.12E-04	1.09E-04	1.57E-06	4.74E-05	4.86E-05	1.57E-06
888	572022.4	4149266	0.000507	0.000437	1.54E-06	6.17E-04	5.91E-04	1.54E-06	1.10E-04	1.07E-04	1.54E-06	4.68E-05	4.79E-05	1.54E-06
889	572022.1	4149257	0.000501	0.000431	1.53E-06	6.09E-04	5.84E-04	1.53E-06	1.09E-04	1.06E-04	1.53E-06	4.62E-05	4.73E-05	1.53E-06
890	572021.9	4149248	0.000495	0.000427	1.51E-06	6.03E-04	5.77E-04	1.51E-06	1.07E-04	1.05E-04	1.51E-06	4.57E-05	4.68E-05	1.51E-06
891	572021.6	4149239	0.00049	0.000423	1.49E-06	5.97E-04	5.72E-04	1.49E-06	1.06E-04	1.04E-04	1.49E-06	4.52E-05	4.64E-05	1.49E-06
892	572021.3	4149230	0.000487	0.00042	1.48E-06	5.93E-04	5.68E-04	1.48E-06	1.06E-04	1.03E-04	1.48E-06	4.49E-05	4.60E-05	1.48E-06
893	572021	4149221	0.000485	0.000418	1.48E-06	5.91E-04	5.66E-04	1.48E-06	1.05E-04	1.03E-04	1.48E-06	4.48E-05	4.59E-05	1.48E-06
894	572020.7	4149212	0.000486	0.000419	1.48E-06	5.91E-04	5.66E-04	1.48E-06	1.05E-04	1.03E-04	1.48E-06	4.48E-05	4.59E-05	1.48E-06
895	572020.5	4149203	0.000488	0.000421	1.49E-06	5.94E-04	5.70E-04	1.49E-06	1.06E-04	1.03E-04	1.49E-06	4.51E-05	4.62E-05	1.49E-06
896	572020.2	4149194	0.000493	0.000425	1.5E-06	6.00E-04	5.75E-04	1.50E-06	1.07E-04	1.04E-04	1.50E-06	4.55E-05	4.66E-05	1.50E-06
897	572019.9	4149185	0.000499	0.00043	1.52E-06	6.07E-04	5.82E-04	1.52E-06	1.08E-04	1.06E-04	1.52E-06	4.60E-05	4.72E-05	1.52E-06
898	572016.8	4149086	0.00045	0.000388	1.37E-06	5.48E-04	5.25E-04	1.37E-06	9.77E-05	9.54E-05	1.37E-06	4.15E-05	4.26E-05	1.37E-06
899	572016.5	4149077	0.000443	0.000382	1.35E-06	5.39E-04	5.16E-04	1.35E-06	9.61E-05	9.38E-05	1.35E-06	4.09E-05	4.19E-05	1.35E-06
900	572016.2	4149068	0.000437	0.000376	1.33E-06	5.31E-04	5.09E-04	1.33E-06	9.47E-05	9.25E-05	1.33E-06	4.03E-05	4.13E-05	1.33E-06
901	572022.2	4149052	0.000445	0.000383	1.36E-06	5.41E-04	5.19E-04	1.36E-06	9.66E-05	9.43E-05	1.36E-06	4.10E-05	4.21E-05	1.36E-06
902	572028.4	4149045	0.000459	0.000396	1.4E-06	5.59E-04	5.36E-04	1.40E-06	9.96E-05	9.73E-05	1.40E-06	4.24E-05	4.34E-05	1.40E-06
903	572040.8	4149032	0.000491	0.000423	1.49E-06	5.97E-04	5.72E-04	1.49E-06	1.07E-04	1.04E-04	1.49E-06	4.53E-05	4.64E-05	1.49E-06
904	572047	4149026	0.000508	0.000438	1.55E-06	6.18E-04	5.92E-04	1.55E-06	1.10E-04	1.08E-04	1.55E-06	4.69E-05	4.80E-05	1.55E-06
905	572053.2	4149019	0.000526	0.000453	1.6E-06	6.40E-04	6.14E-04	1.60E-06	1.14E-04	1.12E-04	1.60E-06	4.85E-05	4.97E-05	1.60E-06
906	572065.6	4149006	0.000568	0.000489	1.73E-06	6.91E-04	6.62E-04	1.73E-06	1.23E-04	1.20E-04	1.73E-06	5.24E-05	5.37E-05	1.73E-06
907	572071.9	4148999	0.000592	0.00051	1.8E-06	7.21E-04	6.91E-04	1.80E-06	1.29E-04	1.26E-04	1.80E-06	5.46E-05	5.60E-05	1.80E-06
908	572084.3	4148986	0.000648	0.000559	1.97E-06	7.89E-04	7.56E-04	1.97E-06	1.41E-04	1.37E-04	1.97E-06	5.98E-05	6.13E-05	1.97E-06
909	572023.8	4149312	0.00056	0.000483	1.71E-06	6.81E-04	6.53E-04	1.71E-06	1.22E-04	1.19E-04	1.71E-06	5.17E-05	5.29E-05	1.71E-06
910	572027.7	4149320	0.000591	0.000509	1.8E-06	7.20E-04	6.90E-04	1.80E-06	1.28E-04	1.25E-04	1.80E-06	5.46E-05	5.59E-05	1.80E-06
911	572014.4	4149307	0.00052	0.000448	1.58E-06	6.33E-04	6.06E-04	1.58E-06	1.13E-04	1.10E-04	1.58E-06	4.80E-05	4.91E-05	1.58E-06
912	572014.2	4149298	0.000508	0.000438	1.55E-06	6.18E-04	5.93E-04	1.55E-06	1.10E-04	1.08E-04	1.55E-06	4.69E-05	4.80E-05	1.55E-06
913	572013.9	4149289	0.000499	0.00043	1.52E-06	6.07E-04	5.82E-04	1.52E-06	1.08E-04	1.06E-04	1.52E-06	4.60E-05	4.72E-05	1.52E-06
914	572013.6	4149280	0.000491	0.000423	1.49E-06	5.97E-04	5.72E-04	1.49E-06	1.06E-04	1.04E-04	1.49E-06	4.53E-05	4.64E-05	1.49E-06
915	572013.3	4149271	0.000484	0.000417	1.47E-06	5.89E-04	5.64E-04	1.47E-06	1.05E-04	1.03E-04	1.47E-06	4.46E-05	4.57E-05	1.47E-06
916	572013	4149262	0.000478	0.000412	1.46E-06	5.81E-04	5.57E-04	1.46E-06	1.04E-04	1.01E-04	1.46E-06	4.41E-05	4.52E-05	1.46E-06
917	572012.8	4149253	0.000472	0.000407	1.44E-06	5.75E-04	5.51E-04	1.44E-06	1.02E-04	1.00E-04	1.44E-06	4.36E-05	4.46E-05	1.44E-06
918	572012.5	4149244	0.000467	0.000403	1.42E-06	5.69E-04	5.45E-04	1.42E-06	1.01E-04	9.91E-05	1.42E-06	4.31E-05	4.42E-05	1.42E-06
919	572012.2	4149235	0.000463	0.000399	1.41E-06	5.64E-04	5.41E-04	1.41E-06	1.01E-04	9.82E-05	1.41E-06	4.28E-05	4.38E-05	1.41E-06
920	572011.9	4149226	0.000461	0.000397	1.4E-06	5.61E-04	5.38E-04	1.40E-06	1.00E-04	9.77E-05	1.40E-06	4.25E-05	4.36E-05	1.40E-06
921	572011.6	4149217	0.00046	0.000397	1.4E-06	5.60E-04	5.37E-04	1.40E-06	9.99E-05	9.75E-05	1.40E-06	4.25E-05	4.35E-05	1.40E-06
922	572011.4	4149208	0.000462	0.000398	1.41E-06	5.62E-04	5.38E-04	1.41E-06	1.00E-04	9.78E-05	1.41E-06	4.26E-05	4.36E-05	1.41E-06
923	572011.1	4149199	0.000465	0.000401	1.42E-06	5.66E-04	5.42E-04	1.42E-06	1.01E-04	9.85E-05	1.42E-06	4.29E-05	4.40E-05	1.42E-06
924	572010.8	4149190	0.00047	0.000405	1.43E-06	5.72E-04	5.48E-04	1.43E-06	1.02E-04	9.97E-05	1.43E-06	4.34E-05	4.45E-05	1.43E-06
925	572010.5	4149181	0.000476	0.00041	1.45E-06	5.80E-04	5.55E-04	1.45E-06	1.03E-04	1.01E-04	1.45E-06	4.39E-05	4.50E-05	1.45E-06
926	572010.2	4149172	0.000482	0.000415	1.47E-06	5.87E-04	5.62E-04	1.47E-06	1.05E-04	1.02E-04	1.47E-06	4.45E-05	4.56E-05	1.47E-06
927	572010	4149163	0.000486	0.000419	1.48E-06	5.92E-04	5.67E-04	1.48E-06	1.06E-04	1.03E-04	1.48E-06	4.49E-05	4.60E-05	1.48E-06
928	572009.7	4149154	0.000488	0.000421	1.49E-06	5.94E-04	5.69E-04	1.49E-06	1.06E-04	1.03E-04	1.49E-06	4.50E-05	4.62E-05	1.49E-06
929	572007.5	4149082	0.000426	0.000367	1.3E-06	5.18E-04	4.97E-04	1.30E-06	9.24E-05	9.03E-05	1.30E-06	3.93E-05	4.03E-05	1.30E-06
930	572007.2	4149073	0.000419	0.000361	1.28E-06	5.10E-04	4.89E-04	1.28E-06	9.09E-05	8.88E-05	1.28E-06	3.87E-05	3.96E-05	1.28E-06
931	572006.9	4149064	0.000413	0.000356	1.26E-06	5.03E-04	4.82E-04	1.26E-06	8.97E-05	8.76E-05	1.26E-06	3.81E-05	3.91E-05	1.26E-06
932	572012.8	4149048	0.000421	0.000363	1.28E-06	5.12E-04	4.91E-04	1.28E-06	9.14E-05	8.92E-05	1.28E-06	3.88E-05	3.98E-05	1.28E-06
933	572025.2	4149035	0.000448	0.000386	1.36E-06	5.45E-04	5.23E-04	1.36E-06	9.72E-05	9.50E-05	1.36E-06	4.13E-05	4.24E-05	1.36E-06
934	572037.5	4149022	0.000478	0.000412	1.46E-06	5.82E-04	5.58E-04	1.46E-06	1.04E-04	1.01E-04	1.46E-06	4.41E-05	4.52E-05	1.46E-06
935	572049.9	4149009	0.000512	0.000442	1.56E-06	6.24E-04	5.98E-04	1.56E-06	1.11E-04	1.09E-04	1.56E-06	4.73E-05	4.85E-05	1.56E-06
936	572062.2	4148996	0.000554	0.000477	1.69E-06	6.74E-04	6.46E-04	1.69E-06	1.20E-04	1.17E-04	1.69E-06	5.11E-05	5.23E-05	1.69E-06
937	572014.7	4149316	0.000534	0.00046	1.63E-06	6.50E-04	6.22E-04	1.63E-06	1.16E-04	1.13E-04	1.63E-06	4.92E-05	5.05E-05	1.63E-06
938	572018.5	4149324	0.000563	0.000485	1.72E-06	6.85E-04	6.57E-04	1.72E-06	1.22E-04	1.19E-04	1.72E-06	5.20E-05	5.32E-05	1.72E-06
939	572005.3	4149311	0.000496	0.000427	1.51E-06	6.03E-04	5.78E-04	1.51E-06	1.08E-04	1.05E-04	1.51E-06	4.57E-05	4.69E-05	1.51E-06
940	572005	4149301	0.000485	0.000417	1.48E-06	5.90E-04	5.65E-04	1.48E-06	1.05E-04	1.03E-04	1.48E-06	4.47E-05	4.58E-05	1.48E-06
941	572004.7	4149292	0.000475	0.00041	1.45E-06	5.78E-04	5.54E-04	1.45E-06	1.03E-04	1.01E-04	1.45E-06	4.39E-05	4.49E-05	1.45E-06
942	572004.5	4149283	0.000468	0.000403	1.42E-06	5.69E-04	5.45E-04	1.42E-06	1.01E-04	9.91E-05	1.42E-06	4.32E-05	4.42E-05	1.42E-06
943	572004.2	4149274	0.000461	0.000397	1.4E-06	5.61E-04	5.38E-04	1.40E-06	1.00E-04	9.77E-05	1.40E-06	4.25E-05	4.36E-05	1.40E-06
944	572003.9	4149264	0.000455	0.000392	1.39E-06	5.54E-04	5.31E-04	1.39E-06	9.88E-05	9.65E-05	1.39E-06	4.20E-05	4.30E-05	1.39E-06
945	572003.6	4149255	0.00045	0.000388	1.37E-06	5.48E-04	5.25E-04	1.37E-06	9.76E-05	9.54E-05	1.37E-06	4.15E-05	4.25E-05	1.37E-06
946	572003.3	4149246	0.000445	0.000384	1.36E-06	5.42E-04	5.19E-04	1.36E-06	9.66E-05	9.43E-05	1.36E-06	4.11E-05	4.21E-05	1.36E-06
947	572003	4149237	0.000441	0.00038	1.34E-06	5.37E-04	5.14E-04	1.34E-06	9.57E-05	9.35E-05	1.34E-06	4.07E-05	4.17E-05	1.34E-06
948	572002.7	4149227	0.000438	0.000378	1.33E-06	5.33E-04	5.11E-04	1.33E-06	9.51E-05	9.29E-05	1.33E-06	4.04E-05	4.14E-05	1.33E-06
949	572002.4	4149218	0.000437	0.000377	1.33E-06	5.32E-04	5.10E-04	1.33E-06	9.49E-05	9.27E-05	1.33E-06	4.03E-05	4.13E-05	1.33E-06
950	572002.2	4149209	0.000438	0.000378	1.33E-06	5.33E-04	5.11E-04	1.33E-06	9.51E-05	9.29E-05	1.33E-06	4.04E-05	4.14E-05	1.33E-06
951	572001.9	4149199	0.000441	0.00038	1.34E-06	5.37E-04	5.15E-04	1.34E-06	9.57E-05	9.35E-05	1.34E-06	4.07E-05	4.17E-05	1.34E-06
952	572001.6	4149190	0.000446	0.000384	1.36E-06	5.43E-04	5.20E-04	1.36E-06	9.68E-05	9.46E-05	1.36E-06	4.12E-05	4.22E-05	1.36E-06
953	572001.3	4149181	0.000452	0.00039	1.38E-06	5.50E-04	5.27E-04	1.38E-06	9.81E-05	9.58E-05	1.38E-06	4.17E-05	4.27E-05	1.38E-06
954	572001	4149172	0.000458	0.000395	1.39E-06	5.57E-04	5.34E-04	1.39E-06	9.94E-05	9.71E-05	1.39E-06	4.23E-05	4.33E-05	1.39E-06

955	572000.7	4149162	0.000462	0.000398	1.41E-06	5.63E-04	5.39E-04	1.41E-06	1.00E-04	9.80E-05	1.41E-06	4.27E-05	4.37E-05	1.41E-06
956	572000.4	4149153	0.000465	0.0004	1.42E-06	5.65E-04	5.42E-04	1.42E-06	1.01E-04	9.85E-05	1.42E-06	4.29E-05	4.39E-05	1.42E-06
957	572000.1	4149144	0.000464	0.0004	1.41E-06	5.64E-04	5.41E-04	1.41E-06	1.01E-04	9.83E-05	1.41E-06	4.28E-05	4.38E-05	1.41E-06
958	571999.9	4149135	0.000459	0.000396	1.4E-06	5.59E-04	5.36E-04	1.40E-06	9.97E-05	9.73E-05	1.40E-06	4.24E-05	4.34E-05	1.40E-06
959	571999.6	4149125	0.000452	0.00039	1.38E-06	5.50E-04	5.28E-04	1.38E-06	9.82E-05	9.59E-05	1.38E-06	4.17E-05	4.28E-05	1.38E-06
960	571998.4	4149088	0.000413	0.000356	1.26E-06	5.02E-04	4.81E-04	1.26E-06	8.96E-05	8.75E-05	1.26E-06	3.81E-05	3.90E-05	1.26E-06
961	571998.1	4149079	0.000404	0.000348	1.23E-06	4.92E-04	4.72E-04	1.23E-06	8.78E-05	8.57E-05	1.23E-06	3.73E-05	3.82E-05	1.23E-06
962	571997.8	4149070	0.000398	0.000343	1.21E-06	4.84E-04	4.64E-04	1.21E-06	8.63E-05	8.43E-05	1.21E-06	3.67E-05	3.76E-05	1.21E-06
963	571997.6	4149061	0.000392	0.000338	1.19E-06	4.77E-04	4.57E-04	1.19E-06	8.51E-05	8.31E-05	1.19E-06	3.62E-05	3.71E-05	1.19E-06
964	572003.6	4149045	0.000399	0.000344	1.22E-06	4.86E-04	4.65E-04	1.22E-06	8.66E-05	8.46E-05	1.22E-06	3.68E-05	3.77E-05	1.22E-06
965	572010	4149038	0.000412	0.000355	1.25E-06	5.01E-04	4.80E-04	1.25E-06	8.93E-05	8.72E-05	1.25E-06	3.80E-05	3.89E-05	1.25E-06
966	572016.3	4149031	0.000425	0.000366	1.29E-06	5.17E-04	4.96E-04	1.29E-06	9.22E-05	9.01E-05	1.29E-06	3.92E-05	4.02E-05	1.29E-06
967	572022.7	4149024	0.000439	0.000378	1.34E-06	5.34E-04	5.12E-04	1.34E-06	9.53E-05	9.30E-05	1.34E-06	4.05E-05	4.15E-05	1.34E-06
968	572029.1	4149018	0.000454	0.000391	1.38E-06	5.52E-04	5.29E-04	1.38E-06	9.84E-05	9.61E-05	1.38E-06	4.18E-05	4.29E-05	1.38E-06
969	572035.4	4149011	0.000469	0.000404	1.43E-06	5.71E-04	5.47E-04	1.43E-06	1.02E-04	9.94E-05	1.43E-06	4.33E-05	4.44E-05	1.43E-06
970	572041.8	4149004	0.000486	0.000419	1.48E-06	5.92E-04	5.67E-04	1.48E-06	1.05E-04	1.03E-04	1.48E-06	4.48E-05	4.60E-05	1.48E-06
971	572048.1	4148997	0.000505	0.000435	1.54E-06	6.14E-04	5.89E-04	1.54E-06	1.10E-04	1.07E-04	1.54E-06	4.66E-05	4.77E-05	1.54E-06
972	572054.5	4148991	0.000525	0.000453	1.6E-06	6.39E-04	6.13E-04	1.60E-06	1.14E-04	1.11E-04	1.60E-06	4.85E-05	4.97E-05	1.60E-06
973	572005.6	4149320	0.000509	0.000439	1.55E-06	6.20E-04	5.94E-04	1.55E-06	1.11E-04	1.08E-04	1.55E-06	4.70E-05	4.82E-05	1.55E-06
974	571996.2	4149315	0.000474	0.000408	1.44E-06	5.76E-04	5.52E-04	1.44E-06	1.03E-04	1.00E-04	1.44E-06	4.37E-05	4.48E-05	1.44E-06
975	571995.9	4149306	0.000463	0.000399	1.41E-06	5.64E-04	5.40E-04	1.41E-06	1.00E-04	9.81E-05	1.41E-06	4.27E-05	4.38E-05	1.41E-06
976	571995.6	4149296	0.000454	0.000392	1.38E-06	5.53E-04	5.30E-04	1.38E-06	9.86E-05	9.63E-05	1.38E-06	4.19E-05	4.30E-05	1.38E-06
977	571995.3	4149287	0.000447	0.000385	1.36E-06	5.44E-04	5.21E-04	1.36E-06	9.70E-05	9.48E-05	1.36E-06	4.12E-05	4.23E-05	1.36E-06
978	571995.1	4149278	0.000441	0.00038	1.34E-06	5.37E-04	5.14E-04	1.34E-06	9.57E-05	9.34E-05	1.34E-06	4.07E-05	4.17E-05	1.34E-06
979	571994.8	4149269	0.000435	0.000375	1.33E-06	5.30E-04	5.08E-04	1.33E-06	9.45E-05	9.23E-05	1.33E-06	4.02E-05	4.12E-05	1.33E-06
980	571994.5	4149260	0.00043	0.000371	1.31E-06	5.24E-04	5.02E-04	1.31E-06	9.34E-05	9.12E-05	1.31E-06	3.97E-05	4.07E-05	1.31E-06
981	571994.2	4149250	0.000426	0.000367	1.3E-06	5.18E-04	4.96E-04	1.30E-06	9.23E-05	9.02E-05	1.30E-06	3.93E-05	4.02E-05	1.30E-06
982	571993.9	4149241	0.000421	0.000363	1.28E-06	5.13E-04	4.91E-04	1.28E-06	9.14E-05	8.93E-05	1.28E-06	3.89E-05	3.98E-05	1.28E-06
983	571993.6	4149232	0.000418	0.00036	1.27E-06	5.09E-04	4.88E-04	1.27E-06	9.07E-05	8.86E-05	1.27E-06	3.86E-05	3.95E-05	1.27E-06
984	571993.3	4149223	0.000416	0.000359	1.27E-06	5.07E-04	4.85E-04	1.27E-06	9.03E-05	8.82E-05	1.27E-06	3.84E-05	3.94E-05	1.27E-06
985	571993.1	4149214	0.000416	0.000359	1.27E-06	5.06E-04	4.85E-04	1.27E-06	9.03E-05	8.82E-05	1.27E-06	3.84E-05	3.93E-05	1.27E-06
986	571992.8	4149204	0.000418	0.00036	1.27E-06	5.09E-04	4.87E-04	1.27E-06	9.07E-05	8.86E-05	1.27E-06	3.86E-05	3.95E-05	1.27E-06
987	571992.5	4149195	0.000422	0.000363	1.28E-06	5.13E-04	4.92E-04	1.28E-06	9.15E-05	8.93E-05	1.28E-06	3.89E-05	3.99E-05	1.28E-06
988	571992.2	4149186	0.000427	0.000368	1.3E-06	5.19E-04	4.98E-04	1.30E-06	9.26E-05	9.05E-05	1.30E-06	3.94E-05	4.04E-05	1.30E-06
989	571991.9	4149177	0.000433	0.000373	1.32E-06	5.26E-04	5.04E-04	1.32E-06	9.39E-05	9.17E-05	1.32E-06	3.99E-05	4.09E-05	1.32E-06
990	571991.6	4149167	0.000438	0.000377	1.33E-06	5.33E-04	5.10E-04	1.33E-06	9.50E-05	9.28E-05	1.33E-06	4.04E-05	4.14E-05	1.33E-06
991	571991.3	4149158	0.000441	0.00038	1.34E-06	5.37E-04	5.15E-04	1.34E-06	9.58E-05	9.35E-05	1.34E-06	4.07E-05	4.17E-05	1.34E-06
992	571991.1	4149149	0.000443	0.000381	1.35E-06	5.39E-04	5.16E-04	1.35E-06	9.61E-05	9.38E-05	1.35E-06	4.08E-05	4.19E-05	1.35E-06
993	571990.8	4149140	0.000441	0.00038	1.34E-06	5.37E-04	5.14E-04	1.34E-06	9.57E-05	9.34E-05	1.34E-06	4.07E-05	4.17E-05	1.34E-06
994	571990.5	4149131	0.000436	0.000376	1.33E-06	5.31E-04	5.09E-04	1.33E-06	9.47E-05	9.24E-05	1.33E-06	4.02E-05	4.12E-05	1.33E-06
995	571990.2	4149121	0.000429	0.00037	1.31E-06	5.22E-04	5.00E-04	1.31E-06	9.31E-05	9.09E-05	1.31E-06	3.96E-05	4.06E-05	1.31E-06
996	571989.4	4149094	0.0004	0.000345	1.22E-06	4.87E-04	4.67E-04	1.22E-06	8.69E-05	8.48E-05	1.22E-06	3.69E-05	3.79E-05	1.22E-06
997	571989.1	4149085	0.000391	0.000337	1.19E-06	4.76E-04	4.56E-04	1.19E-06	8.49E-05	8.29E-05	1.19E-06	3.61E-05	3.70E-05	1.19E-06
998	571988.8	4149075	0.000384	0.000331	1.17E-06	4.67E-04	4.47E-04	1.17E-06	8.33E-05	8.13E-05	1.17E-06	3.54E-05	3.63E-05	1.17E-06
999	571988.5	4149066	0.000377	0.000325	1.15E-06	4.59E-04	4.40E-04	1.15E-06	8.19E-05	7.99E-05	1.15E-06	3.48E-05	3.57E-05	1.15E-06
1000	571988.2	4149057	0.000372	0.000321	1.13E-06	4.53E-04	4.34E-04	1.13E-06	8.08E-05	7.89E-05	1.13E-06	3.44E-05	3.52E-05	1.13E-06
1001	571994.2	4149041	0.000379	0.000327	1.16E-06	4.62E-04	4.42E-04	1.16E-06	8.23E-05	8.04E-05	1.16E-06	3.50E-05	3.59E-05	1.16E-06
1002	572000.6	4149034	0.000391	0.000337	1.19E-06	4.76E-04	4.56E-04	1.19E-06	8.48E-05	8.28E-05	1.19E-06	3.60E-05	3.69E-05	1.19E-06
1003	572006.9	4149028	0.000403	0.000347	1.23E-06	4.90E-04	4.70E-04	1.23E-06	8.74E-05	8.54E-05	1.23E-06	3.72E-05	3.81E-05	1.23E-06
1004	572013.2	4149021	0.000416	0.000358	1.27E-06	5.06E-04	4.85E-04	1.27E-06	9.02E-05	8.81E-05	1.27E-06	3.83E-05	3.93E-05	1.27E-06
1005	572019.5	4149014	0.000429	0.00037	1.31E-06	5.22E-04	5.00E-04	1.31E-06	9.31E-05	9.09E-05	1.31E-06	3.96E-05	4.06E-05	1.31E-06
1006	572025.9	4149008	0.000443	0.000382	1.35E-06	5.39E-04	5.17E-04	1.35E-06	9.62E-05	9.39E-05	1.35E-06	4.09E-05	4.19E-05	1.35E-06
1007	572032.2	4149001	0.000458	0.000395	1.4E-06	5.58E-04	5.34E-04	1.40E-06	9.95E-05	9.71E-05	1.40E-06	4.23E-05	4.33E-05	1.40E-06
1008	571996.5	4149324	0.000487	0.000419	1.48E-06	5.92E-04	5.67E-04	1.48E-06	1.06E-04	1.03E-04	1.48E-06	4.49E-05	4.60E-05	1.48E-06
1009	571987.1	4149319	0.000453	0.000391	1.38E-06	5.52E-04	5.29E-04	1.38E-06	9.84E-05	9.61E-05	1.38E-06	4.18E-05	4.28E-05	1.38E-06
1010	571986.8	4149310	0.000443	0.000382	1.35E-06	5.39E-04	5.17E-04	1.35E-06	9.61E-05	9.39E-05	1.35E-06	4.09E-05	4.19E-05	1.35E-06
1011	571986.5	4149301	0.000435	0.000375	1.32E-06	5.29E-04	5.07E-04	1.32E-06	9.43E-05	9.21E-05	1.32E-06	4.01E-05	4.11E-05	1.32E-06
1012	571986.2	4149291	0.000428	0.000369	1.3E-06	5.21E-04	4.99E-04	1.30E-06	9.29E-05	9.07E-05	1.30E-06	3.95E-05	4.05E-05	1.30E-06
1013	571986	4149282	0.000422	0.000364	1.29E-06	5.14E-04	4.92E-04	1.29E-06	9.16E-05	8.94E-05	1.29E-06	3.89E-05	3.99E-05	1.29E-06
1014	571985.7	4149273	0.000417	0.000359	1.27E-06	5.07E-04	4.86E-04	1.27E-06	9.04E-05	8.83E-05	1.27E-06	3.84E-05	3.94E-05	1.27E-06
1015	571985.4	4149264	0.000412	0.000355	1.25E-06	5.01E-04	4.80E-04	1.25E-06	8.94E-05	8.73E-05	1.25E-06	3.80E-05	3.89E-05	1.25E-06
1016	571985.1	4149255	0.000407	0.000351	1.24E-06	4.96E-04	4.75E-04	1.24E-06	8.84E-05	8.63E-05	1.24E-06	3.76E-05	3.85E-05	1.24E-06
1017	571984.8	4149246	0.000403	0.000347	1.23E-06	4.91E-04	4.70E-04	1.23E-06	8.75E-05	8.55E-05	1.23E-06	3.72E-05	3.81E-05	1.23E-06
1018	571984.5	4149237	0.0004	0.000344	1.22E-06	4.87E-04	4.66E-04	1.22E-06	8.68E-05	8.47E-05	1.22E-06	3.69E-05	3.78E-05	1.22E-06
1019	571984.3	4149227	0.000397	0.000342	1.21E-06	4.84E-04	4.63E-04	1.21E-06	8.62E-05	8.42E-05	1.21E-06	3.67E-05	3.76E-05	1.21E-06
1020	571984	4149218	0.000396	0.000342	1.21E-06	4.82E-04	4.62E-04	1.21E-06	8.60E-05	8.40E-05	1.21E-06	3.66E-05	3.75E-05	1.21E-06
1021	571983.7	4149209	0.000397	0.000342	1.21E-06	4.83E-04	4.63E-04	1.21E-06	8.62E-05	8.42E-05	1.21E-06	3.66E-05	3.76E-05	1.21E-06
1022	571983.4	4149200	0.0004	0.000344	1.22E-06	4.86E-04	4.66E-04	1.22E-06	8.67E-05	8.47E-05	1.22E-06	3.69E-05	3.78E-05	1.22E-06
1023	571983.1	4149191	0.000404	0.000348	1.23E-06	4.91E-04	4.71E-04	1.23E-06	8.76E-05	8.56E-05	1.23E-06	3.73E-05	3.82E-05	1.23E-06
1024	571982.8	4149182	0.000409	0.000353	1.25E-06	4.98E-04	4.77E-04	1.25E-06	8.88E-05	8.67E-05	1.25E-06	3.77E-05	3.87E-05	1.25E-06
1025	571982.5	4149172	0.000415	0.000357	1.26E-06	5.04E-04	4.83E-04	1.26E-06	8.99E-05	8.78E-05	1.26E-06	3.82E-05	3.92E-05	1.26E-06
1026	571982.3	4149163	0.000419	0.000361	1.28E-06	5.10E-04	4.89E-04	1.28E-06	9.09E-05	8.88E-05	1.28E-06	3.87E-05	3.96E-05	1.28E-06
1027	571982	4149154	0.000422	0.000363	1.28E-06	5.13E-04	4.92E-04	1.28E-06	9.15E-05	8.94E-05	1.28E-06	3.89E-05	3.99E-05	1.28E-06
1028	571981.7	4149145	0.000422	0.000364	1.29E-06	5.14E-04	4.92E-04	1.29E-06	9.16E-05	8.94E-05	1.29E-06	3.89E-05	3.99E-05	1.29E-06
1029	571981.4	4149136	0.00042	0.000362	1.28E-06	5.11E-04	4.89E-04	1.28E-06	9.10E-05	8.89E-05	1.28E-06	3.87E-05	3.97E-05	1.28E-06
1030	571981.1	4149127	0.000414	0.000357	1.26E-06	5.04E-04	4.83E-04	1.26E-06	8.99E-05	8.78E-05	1.26E-06	3.82E-05	3.92E-05	1.26E-06
1031	571980.8	4149118	0.000407	0.000351	1.24E-06	4.96E-04	4.75E-04	1.24E-06	8.84E-05	8.63E-05	1.24E-06	3.76E-05	3.85E-05	1.24E-06
1032	571980	4149090	0.00038	0.000327	1.16E-06	4.62E-04	4.43E-04	1.16E-06	8.24E-05	8.05E-05	1.16E-06	3.50E-05	3.59E-05	1.16E-06
1033	571979.7	4149081	0.000372	0.00032	1.13E-06	4.52E-04	4.34E-04	1.13E-06	8.07E-05	7.88E-05	1.13E-06	3.43E-05	3.51E-05	1.13E-06
1034	571979.4	4149072	0.000364	0.000314	1.11E-06	4.43E-04	4.25E-04	1.11E-06	7.91E-05	7.72E-05	1.11E-06	3.36E-05	3.44E-05	1.11E-06
1035	571979.1	4149063	0.000358	0.000309	1.09E-06	4.36E-04	4.18E-04	1.09E-06	7.78E-05	7.60E-05	1.09E-06	3.31E-05	3.39E-05	1.09E-06
1036	571978.9	4149053	0.000354	0.000305	1.08E-06	4.31E-04	4.13E-04	1.08E-06	7.68E-05	7.50E-05	1.08E-06	3.27E-05	3.35E-05	1.08E-06
1037	571984.9	4149038	0.000361	0.000311	1.1E-06	4.39E-04	4.21E-04	1.10E-06	7.82E-05	7.64E-05	1.10E-06	3.33E-05	3.41E-05	1.10E-06
1038	571991.2	4149031	0.000371	0.00032	1.13E-06	4.52E-04	4.33E-04	1.13E-06	8.06E-05	7.87E-05	1.13E-06	3.43E-05	3.51E-05	1.13E-06
1039	571997.4	4149024	0.000383	0.00033	1.17E-06	4.66E-04	4.46E-04	1.17E-06	8.30E-05	8.11E-05	1.17E-06	3.53E-05	3.62E-05	1.17E-06
1040	572003.7	4149018	0.000394	0.00034	1.2E-06	4.80E-04	4.60E-04	1.20E-06	8.56E-05	8.36E-05	1.20E-06	3.64E-05	3.73E-05	1.20E-06
1041	572010	4149011	0.000407	0.00035	1.24E-06	4.95E-04	4.74E-04	1.24E-06	8.82E-05	8.62E-05	1.24E-06	3.75E-05	3.84E-05	1.24E-06

1042	572016.3	4149004	0.000419	0.000361	1.28E-06	5.10E-04	4.89E-04	1.28E-06	9.10E-05	8.89E-05	1.28E-06	3.87E-05	3.96E-05	1.28E-06
1043	571978	4149323	0.000434	0.000374	1.32E-06	5.28E-04	5.06E-04	1.32E-06	9.42E-05	9.20E-05	1.32E-06	4.00E-05	4.10E-05	1.32E-06
1044	571977.7	4149314	0.000424	0.000366	1.29E-06	5.17E-04	4.95E-04	1.29E-06	9.21E-05	9.00E-05	1.29E-06	3.92E-05	4.01E-05	1.29E-06
1045	571977.4	4149305	0.000417	0.000359	1.27E-06	5.07E-04	4.86E-04	1.27E-06	9.04E-05	8.83E-05	1.27E-06	3.84E-05	3.94E-05	1.27E-06
1046	571977.1	4149296	0.00041	0.000353	1.25E-06	4.99E-04	4.78E-04	1.25E-06	8.89E-05	8.69E-05	1.25E-06	3.78E-05	3.88E-05	1.25E-06
1047	571976.9	4149287	0.000404	0.000348	1.23E-06	4.92E-04	4.71E-04	1.23E-06	8.77E-05	8.57E-05	1.23E-06	3.73E-05	3.82E-05	1.23E-06
1048	571976.6	4149278	0.000399	0.000344	1.22E-06	4.86E-04	4.66E-04	1.22E-06	8.66E-05	8.46E-05	1.22E-06	3.68E-05	3.77E-05	1.22E-06
1049	571976.3	4149268	0.000395	0.00034	1.2E-06	4.80E-04	4.60E-04	1.20E-06	8.57E-05	8.37E-05	1.20E-06	3.64E-05	3.73E-05	1.20E-06
1050	571976	4149259	0.00039	0.000336	1.19E-06	4.75E-04	4.55E-04	1.19E-06	8.47E-05	8.27E-05	1.19E-06	3.60E-05	3.69E-05	1.19E-06
1051	571975.7	4149250	0.000386	0.000333	1.18E-06	4.70E-04	4.51E-04	1.18E-06	8.38E-05	8.19E-05	1.18E-06	3.56E-05	3.65E-05	1.18E-06
1052	571975.4	4149241	0.000383	0.00033	1.17E-06	4.66E-04	4.46E-04	1.17E-06	8.31E-05	8.11E-05	1.17E-06	3.53E-05	3.62E-05	1.17E-06
1053	571975.2	4149232	0.00038	0.000327	1.16E-06	4.62E-04	4.43E-04	1.16E-06	8.25E-05	8.05E-05	1.16E-06	3.51E-05	3.59E-05	1.16E-06
1054	571974.9	4149223	0.000378	0.000326	1.15E-06	4.61E-04	4.41E-04	1.15E-06	8.21E-05	8.02E-05	1.15E-06	3.49E-05	3.58E-05	1.15E-06
1055	571974.6	4149214	0.000378	0.000326	1.15E-06	4.60E-04	4.41E-04	1.15E-06	8.21E-05	8.02E-05	1.15E-06	3.49E-05	3.58E-05	1.15E-06
1056	571974.3	4149205	0.00038	0.000327	1.16E-06	4.62E-04	4.43E-04	1.16E-06	8.25E-05	8.05E-05	1.16E-06	3.51E-05	3.59E-05	1.16E-06
1057	571974	4149196	0.000383	0.00033	1.17E-06	4.66E-04	4.47E-04	1.17E-06	8.31E-05	8.12E-05	1.17E-06	3.53E-05	3.62E-05	1.17E-06
1058	571973.7	4149186	0.000388	0.000334	1.18E-06	4.72E-04	4.52E-04	1.18E-06	8.41E-05	8.21E-05	1.18E-06	3.58E-05	3.66E-05	1.18E-06
1059	571973.5	4149177	0.000393	0.000338	1.2E-06	4.78E-04	4.58E-04	1.20E-06	8.52E-05	8.32E-05	1.20E-06	3.62E-05	3.71E-05	1.20E-06
1060	571973.2	4149168	0.000398	0.000343	1.21E-06	4.84E-04	4.64E-04	1.21E-06	8.63E-05	8.43E-05	1.21E-06	3.67E-05	3.76E-05	1.21E-06
1061	571972.9	4149159	0.000401	0.000346	1.22E-06	4.89E-04	4.68E-04	1.22E-06	8.71E-05	8.51E-05	1.22E-06	3.70E-05	3.80E-05	1.22E-06
1062	571972.6	4149150	0.000403	0.000348	1.23E-06	4.91E-04	4.71E-04	1.23E-06	8.76E-05	8.55E-05	1.23E-06	3.72E-05	3.81E-05	1.23E-06
1063	571972.3	4149141	0.000403	0.000347	1.23E-06	4.91E-04	4.70E-04	1.23E-06	8.75E-05	8.54E-05	1.23E-06	3.72E-05	3.81E-05	1.23E-06
1064	571972.1	4149132	0.0004	0.000345	1.22E-06	4.87E-04	4.67E-04	1.22E-06	8.68E-05	8.48E-05	1.22E-06	3.69E-05	3.78E-05	1.22E-06
1065	571971.8	4149123	0.000395	0.00034	1.2E-06	4.80E-04	4.60E-04	1.20E-06	8.57E-05	8.37E-05	1.20E-06	3.64E-05	3.73E-05	1.20E-06
1066	571970.9	4149095	0.00037	0.000319	1.13E-06	4.50E-04	4.31E-04	1.13E-06	8.03E-05	7.84E-05	1.13E-06	3.41E-05	3.50E-05	1.13E-06
1067	571970.6	4149086	0.000361	0.000311	1.1E-06	4.39E-04	4.21E-04	1.10E-06	7.84E-05	7.65E-05	1.10E-06	3.33E-05	3.41E-05	1.10E-06
1068	571970.4	4149077	0.000353	0.000304	1.08E-06	4.30E-04	4.12E-04	1.08E-06	7.67E-05	7.49E-05	1.08E-06	3.26E-05	3.34E-05	1.08E-06
1069	571970.1	4149068	0.000347	0.000299	1.06E-06	4.22E-04	4.04E-04	1.06E-06	7.52E-05	7.34E-05	1.06E-06	3.20E-05	3.28E-05	1.06E-06
1070	571969.8	4149059	0.000341	0.000294	1.04E-06	4.15E-04	3.98E-04	1.04E-06	7.40E-05	7.23E-05	1.04E-06	3.15E-05	3.23E-05	1.04E-06
1071	571969.5	4149050	0.000337	0.00029	1.03E-06	4.10E-04	3.93E-04	1.03E-06	7.31E-05	7.14E-05	1.03E-06	3.11E-05	3.19E-05	1.03E-06
1072	571975.5	4149034	0.000343	0.000296	1.05E-06	4.18E-04	4.00E-04	1.05E-06	7.45E-05	7.27E-05	1.05E-06	3.17E-05	3.24E-05	1.05E-06
1073	571981.7	4149027	0.000353	0.000304	1.08E-06	4.30E-04	4.12E-04	1.08E-06	7.66E-05	7.48E-05	1.08E-06	3.26E-05	3.34E-05	1.08E-06
1074	571988	4149021	0.000364	0.000313	1.11E-06	4.42E-04	4.24E-04	1.11E-06	7.89E-05	7.70E-05	1.11E-06	3.35E-05	3.44E-05	1.11E-06
1075	571994.3	4149014	0.000374	0.000323	1.14E-06	4.56E-04	4.37E-04	1.14E-06	8.12E-05	7.93E-05	1.14E-06	3.45E-05	3.54E-05	1.14E-06
1076	572000.5	4149008	0.000386	0.000332	1.17E-06	4.69E-04	4.50E-04	1.17E-06	8.37E-05	8.17E-05	1.17E-06	3.56E-05	3.65E-05	1.17E-06
1077	571968.6	4149318	0.000407	0.000351	1.24E-06	4.95E-04	4.75E-04	1.24E-06	8.83E-05	8.63E-05	1.24E-06	3.76E-05	3.85E-05	1.24E-06
1078	571968.3	4149309	0.000399	0.000344	1.22E-06	4.86E-04	4.66E-04	1.22E-06	8.67E-05	8.46E-05	1.22E-06	3.68E-05	3.78E-05	1.22E-06
1079	571968	4149300	0.000393	0.000339	1.2E-06	4.78E-04	4.58E-04	1.20E-06	8.53E-05	8.33E-05	1.20E-06	3.63E-05	3.72E-05	1.20E-06
1080	571967.7	4149291	0.000388	0.000334	1.18E-06	4.72E-04	4.52E-04	1.18E-06	8.41E-05	8.22E-05	1.18E-06	3.58E-05	3.67E-05	1.18E-06
1081	571967.5	4149282	0.000383	0.00033	1.17E-06	4.66E-04	4.47E-04	1.17E-06	8.31E-05	8.12E-05	1.17E-06	3.53E-05	3.62E-05	1.17E-06
1082	571967.2	4149273	0.000379	0.000326	1.15E-06	4.61E-04	4.42E-04	1.15E-06	8.22E-05	8.02E-05	1.15E-06	3.49E-05	3.58E-05	1.15E-06
1083	571966.9	4149264	0.000374	0.000323	1.14E-06	4.56E-04	4.37E-04	1.14E-06	8.13E-05	7.94E-05	1.14E-06	3.45E-05	3.54E-05	1.14E-06
1084	571966.6	4149255	0.000371	0.000319	1.13E-06	4.51E-04	4.32E-04	1.13E-06	8.04E-05	7.85E-05	1.13E-06	3.42E-05	3.50E-05	1.13E-06
1085	571966.3	4149246	0.000367	0.000316	1.12E-06	4.47E-04	4.28E-04	1.12E-06	7.96E-05	7.78E-05	1.12E-06	3.39E-05	3.47E-05	1.12E-06
1086	571966.1	4149237	0.000364	0.000314	1.11E-06	4.43E-04	4.24E-04	1.11E-06	7.90E-05	7.71E-05	1.11E-06	3.36E-05	3.44E-05	1.11E-06
1087	571965.8	4149228	0.000362	0.000312	1.1E-06	4.40E-04	4.22E-04	1.10E-06	7.85E-05	7.67E-05	1.10E-06	3.34E-05	3.42E-05	1.10E-06
1088	571965.5	4149218	0.000361	0.000311	1.1E-06	4.39E-04	4.21E-04	1.10E-06	7.84E-05	7.65E-05	1.10E-06	3.33E-05	3.41E-05	1.10E-06
1089	571965.2	4149209	0.000362	0.000312	1.1E-06	4.40E-04	4.22E-04	1.10E-06	7.85E-05	7.67E-05	1.10E-06	3.34E-05	3.42E-05	1.10E-06
1090	571964.9	4149200	0.000364	0.000314	1.11E-06	4.43E-04	4.25E-04	1.11E-06	7.90E-05	7.71E-05	1.11E-06	3.36E-05	3.44E-05	1.11E-06
1091	571964.7	4149191	0.000368	0.000317	1.12E-06	4.47E-04	4.29E-04	1.12E-06	7.98E-05	7.79E-05	1.12E-06	3.39E-05	3.48E-05	1.12E-06
1092	571964.4	4149182	0.000372	0.000321	1.13E-06	4.53E-04	4.34E-04	1.13E-06	8.08E-05	7.89E-05	1.13E-06	3.44E-05	3.52E-05	1.13E-06
1093	571964.1	4149173	0.000377	0.000325	1.15E-06	4.59E-04	4.40E-04	1.15E-06	8.19E-05	8.00E-05	1.15E-06	3.48E-05	3.57E-05	1.15E-06
1094	571963.8	4149164	0.000382	0.000329	1.16E-06	4.65E-04	4.45E-04	1.16E-06	8.29E-05	8.09E-05	1.16E-06	3.52E-05	3.61E-05	1.16E-06
1095	571963.5	4149155	0.000385	0.000332	1.17E-06	4.69E-04	4.49E-04	1.17E-06	8.36E-05	8.16E-05	1.17E-06	3.55E-05	3.64E-05	1.17E-06
1096	571963.3	4149146	0.000386	0.000333	1.18E-06	4.70E-04	4.51E-04	1.18E-06	8.38E-05	8.19E-05	1.18E-06	3.56E-05	3.65E-05	1.18E-06
1097	571963	4149137	0.000385	0.000332	1.17E-06	4.69E-04	4.49E-04	1.17E-06	8.36E-05	8.16E-05	1.17E-06	3.55E-05	3.64E-05	1.17E-06
1098	571962.7	4149128	0.000382	0.000329	1.16E-06	4.65E-04	4.45E-04	1.16E-06	8.28E-05	8.09E-05	1.16E-06	3.52E-05	3.61E-05	1.16E-06
1099	571962.4	4149119	0.000376	0.000324	1.15E-06	4.58E-04	4.38E-04	1.15E-06	8.16E-05	7.97E-05	1.15E-06	3.47E-05	3.55E-05	1.15E-06
1100	571961.8	4149101	0.00036	0.00031	1.1E-06	4.38E-04	4.20E-04	1.10E-06	7.82E-05	7.64E-05	1.10E-06	3.32E-05	3.41E-05	1.10E-06
1101	571961.6	4149092	0.000352	0.000303	1.07E-06	4.28E-04	4.10E-04	1.07E-06	7.63E-05	7.45E-05	1.07E-06	3.25E-05	3.33E-05	1.07E-06
1102	571961.3	4149082	0.000344	0.000296	1.05E-06	4.18E-04	4.01E-04	1.05E-06	7.46E-05	7.28E-05	1.05E-06	3.17E-05	3.25E-05	1.05E-06
1103	571961	4149073	0.000336	0.00029	1.02E-06	4.09E-04	3.92E-04	1.02E-06	7.30E-05	7.13E-05	1.02E-06	3.10E-05	3.18E-05	1.02E-06
1104	571960.7	4149064	0.00033	0.000284	1.01E-06	4.02E-04	3.85E-04	1.01E-06	7.16E-05	7.00E-05	1.01E-06	3.05E-05	3.12E-05	1.01E-06
1105	571960.4	4149055	0.000325	0.00028	9.9E-07	3.96E-04	3.79E-04	9.90E-07	7.06E-05	6.89E-05	9.90E-07	3.00E-05	3.07E-05	9.90E-07
1106	571960.2	4149046	0.000321	0.000277	9.79E-07	3.91E-04	3.75E-04	9.79E-07	6.97E-05	6.81E-05	9.79E-07	2.96E-05	3.04E-05	9.79E-07
1107	571966.1	4149031	0.000327	0.000282	9.96E-07	3.98E-04	3.82E-04	9.96E-07	7.10E-05	6.93E-05	9.96E-07	3.02E-05	3.09E-05	9.96E-07
1108	571978.6	4149017	0.000346	0.000298	1.05E-06	4.21E-04	4.03E-04	1.05E-06	7.51E-05	7.33E-05	1.05E-06	3.19E-05	3.27E-05	1.05E-06
1109	571959.5	4149322	0.00039	0.000336	1.19E-06	4.75E-04	4.55E-04	1.19E-06	8.47E-05	8.27E-05	1.19E-06	3.60E-05	3.69E-05	1.19E-06
1110	571959.2	4149313	0.000383	0.00033	1.17E-06	4.66E-04	4.46E-04	1.17E-06	8.31E-05	8.11E-05	1.17E-06	3.53E-05	3.62E-05	1.17E-06
1111	571958.9	4149303	0.000377	0.000325	1.15E-06	4.58E-04	4.39E-04	1.15E-06	8.18E-05	7.98E-05	1.15E-06	3.48E-05	3.56E-05	1.15E-06
1112	571958.6	4149294	0.000372	0.00032	1.13E-06	4.52E-04	4.33E-04	1.13E-06	8.06E-05	7.87E-05	1.13E-06	3.43E-05	3.51E-05	1.13E-06
1113	571958.3	4149285	0.000367	0.000316	1.12E-06	4.47E-04	4.28E-04	1.12E-06	7.96E-05	7.78E-05	1.12E-06	3.39E-05	3.47E-05	1.12E-06
1114	571958	4149275	0.000363	0.000313	1.1E-06	4.41E-04	4.23E-04	1.10E-06	7.87E-05	7.69E-05	1.10E-06	3.35E-05	3.43E-05	1.10E-06
1115	571957.7	4149266	0.000359	0.000309	1.09E-06	4.37E-04	4.18E-04	1.09E-06	7.78E-05	7.60E-05	1.09E-06	3.31E-05	3.39E-05	1.09E-06
1116	571957.4	4149257	0.000355	0.000306	1.08E-06	4.32E-04	4.14E-04	1.08E-06	7.70E-05	7.52E-05	1.08E-06	3.27E-05	3.35E-05	1.08E-06
1117	571957.2	4149247	0.000351	0.000303	1.07E-06	4.27E-04	4.10E-04	1.07E-06	7.62E-05	7.44E-05	1.07E-06	3.24E-05	3.32E-05	1.07E-06
1118	571956.9	4149238	0.000348	0.0003	1.06E-06	4.24E-04	4.06E-04	1.06E-06	7.56E-05	7.38E-05	1.06E-06	3.21E-05	3.29E-05	1.06E-06
1119	571956.6	4149229	0.000346	0.000298	1.05E-06	4.21E-04	4.04E-04	1.05E-06	7.51E-05	7.33E-05	1.05E-06	3.19E-05	3.27E-05	1.05E-06
1120	571956.3	4149220	0.000345	0.000297	1.05E-06	4.20E-04	4.02E-04	1.05E-06	7.49E-05	7.31E-05	1.05E-06	3.18E-05	3.26E-05	1.05E-06
1121	571956	4149210	0.000346	0.000298	1.05E-06	4.21E-04	4.03E-04	1.05E-06	7.50E-05	7.32E-05	1.05E-06	3.19E-05	3.27E-05	1.05E-06
1122	571955.7	4149201	0.000348	0.0003	1.06E-06	4.23E-04	4.05E-04	1.06E-06	7.54E-05	7.37E-05	1.06E-06	3.21E-05	3.29E-05	1.06E-06
1123	571955.4	4149192	0.000351	0.000303	1.07E-06	4.27E-04	4.10E-04	1.07E-06	7.62E-05	7.44E-05	1.07E-06	3.24E-05	3.32E-05	1.07E-06
1124	571955.1	4149182	0.000356	0.000307	1.08E-06	4.33E-04	4.15E-04	1.08E-06	7.72E-05	7.54E-05	1.08E-06	3.28E-05	3.36E-05	1.08E-06
1125	571954.9	4149173	0.000361	0.000311	1.1E-06	4.39E-04	4.21E-04	1.10E-06	7.83E-05	7.65E-05	1.10E-06	3.33E-05	3.41E-05	1.10E-06
1126	571954.6	4149164	0.000365	0.000315	1.11E-06	4.44E-04	4.26E-04	1.11E-06	7.92E-05	7.74E-05	1.11E-06	3.37E-05	3.45E-05	1.11E-06
1127	571954.3	4149154	0.000368	0.000317	1.12E-06	4.48E-04	4.30E-04	1.12E-06	7.99E-05	7.81E-05	1.12E-06	3.40E-05	3.48E-05	1.12E-06
1128	571954	4149145	0.00037	0.000319	1.13E-06	4.50E-04	4.31E-04	1.13E-06	8.03E-05	7.84E-05	1.13E-06	3.41E-05	3.50E-05	1.13E-06

1129	571953.7	4149136	0.000369	0.000318	1.12E-06	4.49E-04	4.30E-04	1.12E-06	8.00E-05	7.82E-05	1.12E-06	3.40E-05	3.49E-05	1.12E-06
1130	571953.4	4149127	0.000366	0.000315	1.11E-06	4.45E-04	4.26E-04	1.11E-06	7.93E-05	7.75E-05	1.11E-06	3.37E-05	3.46E-05	1.11E-06
1131	571952.5	4149099	0.000345	0.000297	1.05E-06	4.20E-04	4.02E-04	1.05E-06	7.48E-05	7.31E-05	1.05E-06	3.18E-05	3.26E-05	1.05E-06
1132	571952.3	4149089	0.000336	0.00029	1.02E-06	4.10E-04	3.92E-04	1.02E-06	7.30E-05	7.13E-05	1.02E-06	3.10E-05	3.18E-05	1.02E-06
1133	571952	4149080	0.000329	0.000283	1E-06	4.00E-04	3.83E-04	1.00E-06	7.13E-05	6.96E-05	1.00E-06	3.03E-05	3.11E-05	1.00E-06
1134	571951.7	4149071	0.000321	0.000277	9.79E-07	3.91E-04	3.75E-04	9.79E-07	6.97E-05	6.81E-05	9.79E-07	2.96E-05	3.04E-05	9.79E-07
1135	571951.4	4149062	0.000315	0.000272	9.6E-07	3.84E-04	3.68E-04	9.60E-07	6.84E-05	6.68E-05	9.60E-07	2.91E-05	2.98E-05	9.60E-07
1136	571951.1	4149052	0.00031	0.000268	9.46E-07	3.78E-04	3.62E-04	9.46E-07	6.74E-05	6.58E-05	9.46E-07	2.86E-05	2.94E-05	9.46E-07
1137	571950.8	4149043	0.000307	0.000264	9.35E-07	3.73E-04	3.58E-04	9.35E-07	6.66E-05	6.50E-05	9.35E-07	2.83E-05	2.90E-05	9.35E-07
1138	571956.9	4149027	0.000313	0.000269	9.52E-07	3.80E-04	3.64E-04	9.52E-07	6.78E-05	6.62E-05	9.52E-07	2.88E-05	2.95E-05	9.52E-07
1139	571963.3	4149020	0.000321	0.000277	9.78E-07	3.91E-04	3.75E-04	9.78E-07	6.97E-05	6.81E-05	9.78E-07	2.96E-05	3.04E-05	9.78E-07
1140	571950.4	4149326	0.000375	0.000323	1.14E-06	4.56E-04	4.37E-04	1.14E-06	8.14E-05	7.95E-05	1.14E-06	3.46E-05	3.55E-05	1.14E-06
1141	571950.1	4149317	0.000368	0.000317	1.12E-06	4.48E-04	4.29E-04	1.12E-06	7.98E-05	7.80E-05	1.12E-06	3.39E-05	3.48E-05	1.12E-06
1142	571949.8	4149308	0.000362	0.000312	1.1E-06	4.41E-04	4.22E-04	1.10E-06	7.86E-05	7.67E-05	1.10E-06	3.34E-05	3.42E-05	1.10E-06
1143	571949.5	4149298	0.000357	0.000308	1.09E-06	4.35E-04	4.16E-04	1.09E-06	7.75E-05	7.57E-05	1.09E-06	3.29E-05	3.38E-05	1.09E-06
1144	571949.2	4149289	0.000353	0.000304	1.07E-06	4.29E-04	4.11E-04	1.07E-06	7.65E-05	7.48E-05	1.07E-06	3.25E-05	3.33E-05	1.07E-06
1145	571948.9	4149280	0.000349	0.0003	1.06E-06	4.24E-04	4.07E-04	1.06E-06	7.57E-05	7.39E-05	1.06E-06	3.22E-05	3.30E-05	1.06E-06
1146	571948.6	4149271	0.000345	0.000297	1.05E-06	4.20E-04	4.02E-04	1.05E-06	7.48E-05	7.31E-05	1.05E-06	3.18E-05	3.26E-05	1.05E-06
1147	571948.4	4149261	0.000341	0.000294	1.04E-06	4.15E-04	3.98E-04	1.04E-06	7.40E-05	7.23E-05	1.04E-06	3.15E-05	3.23E-05	1.04E-06
1148	571948.1	4149252	0.000338	0.000291	1.03E-06	4.11E-04	3.94E-04	1.03E-06	7.33E-05	7.15E-05	1.03E-06	3.11E-05	3.19E-05	1.03E-06
1149	571947.8	4149243	0.000334	0.000288	1.02E-06	4.07E-04	3.90E-04	1.02E-06	7.26E-05	7.09E-05	1.02E-06	3.09E-05	3.16E-05	1.02E-06
1150	571947.5	4149234	0.000332	0.000286	1.01E-06	4.04E-04	3.87E-04	1.01E-06	7.20E-05	7.03E-05	1.01E-06	3.06E-05	3.14E-05	1.01E-06
1151	571947.2	4149224	0.00033	0.000285	1.01E-06	4.02E-04	3.85E-04	1.01E-06	7.17E-05	7.00E-05	1.01E-06	3.05E-05	3.12E-05	1.01E-06
1152	571946.9	4149215	0.00033	0.000284	1.01E-06	4.02E-04	3.85E-04	1.01E-06	7.16E-05	7.00E-05	1.01E-06	3.05E-05	3.12E-05	1.01E-06
1153	571946.6	4149206	0.000331	0.000286	1.01E-06	4.03E-04	3.86E-04	1.01E-06	7.19E-05	7.02E-05	1.01E-06	3.06E-05	3.13E-05	1.01E-06
1154	571946.3	4149197	0.000334	0.000288	1.02E-06	4.06E-04	3.89E-04	1.02E-06	7.25E-05	7.08E-05	1.02E-06	3.08E-05	3.16E-05	1.02E-06
1155	571946.1	4149187	0.000338	0.000291	1.03E-06	4.11E-04	3.94E-04	1.03E-06	7.33E-05	7.16E-05	1.03E-06	3.12E-05	3.19E-05	1.03E-06
1156	571945.8	4149178	0.000342	0.000295	1.04E-06	4.17E-04	3.99E-04	1.04E-06	7.43E-05	7.26E-05	1.04E-06	3.16E-05	3.24E-05	1.04E-06
1157	571945.5	4149169	0.000347	0.000299	1.06E-06	4.22E-04	4.05E-04	1.06E-06	7.53E-05	7.36E-05	1.06E-06	3.20E-05	3.28E-05	1.06E-06
1158	571945.2	4149160	0.000351	0.000303	1.07E-06	4.27E-04	4.09E-04	1.07E-06	7.62E-05	7.44E-05	1.07E-06	3.24E-05	3.32E-05	1.07E-06
1159	571944.9	4149150	0.000354	0.000305	1.08E-06	4.30E-04	4.12E-04	1.08E-06	7.67E-05	7.49E-05	1.08E-06	3.26E-05	3.34E-05	1.08E-06
1160	571944.6	4149141	0.000354	0.000305	1.08E-06	4.31E-04	4.13E-04	1.08E-06	7.69E-05	7.51E-05	1.08E-06	3.27E-05	3.35E-05	1.08E-06
1161	571944.3	4149132	0.000353	0.000304	1.07E-06	4.29E-04	4.12E-04	1.07E-06	7.66E-05	7.48E-05	1.07E-06	3.26E-05	3.34E-05	1.07E-06
1162	571944	4149123	0.000349	0.000301	1.06E-06	4.25E-04	4.07E-04	1.06E-06	7.58E-05	7.40E-05	1.06E-06	3.22E-05	3.30E-05	1.06E-06
1163	571943.5	4149104	0.000337	0.00029	1.03E-06	4.10E-04	3.93E-04	1.03E-06	7.30E-05	7.13E-05	1.03E-06	3.11E-05	3.18E-05	1.03E-06
1164	571943.2	4149095	0.000329	0.000283	1E-06	4.00E-04	3.83E-04	1.00E-06	7.13E-05	6.97E-05	1.00E-06	3.03E-05	3.11E-05	1.00E-06
1165	571942.9	4149086	0.000321	0.000276	9.77E-07	3.90E-04	3.74E-04	9.77E-07	6.96E-05	6.80E-05	9.77E-07	2.96E-05	3.03E-05	9.77E-07
1166	571942.6	4149076	0.000313	0.00027	9.54E-07	3.81E-04	3.65E-04	9.54E-07	6.80E-05	6.64E-05	9.54E-07	2.89E-05	2.96E-05	9.54E-07
1167	571942.3	4149067	0.000307	0.000264	9.34E-07	3.73E-04	3.58E-04	9.34E-07	6.65E-05	6.50E-05	9.34E-07	2.83E-05	2.90E-05	9.34E-07
1168	571942	4149058	0.000301	0.000259	9.17E-07	3.66E-04	3.51E-04	9.17E-07	6.53E-05	6.38E-05	9.17E-07	2.78E-05	2.85E-05	9.17E-07
1169	571941.8	4149049	0.000297	0.000256	9.03E-07	3.61E-04	3.46E-04	9.03E-07	6.44E-05	6.28E-05	9.03E-07	2.74E-05	2.80E-05	9.03E-07
1170	571941.5	4149039	0.000293	0.000253	8.93E-07	3.57E-04	3.42E-04	8.93E-07	6.37E-05	6.22E-05	8.93E-07	2.71E-05	2.77E-05	8.93E-07
1171	571947.5	4149023	0.000299	0.000257	9.09E-07	3.63E-04	3.48E-04	9.09E-07	6.48E-05	6.33E-05	9.09E-07	2.75E-05	2.82E-05	9.09E-07
1172	571953.9	4149017	0.000307	0.000264	9.34E-07	3.73E-04	3.58E-04	9.34E-07	6.66E-05	6.50E-05	9.34E-07	2.83E-05	2.90E-05	9.34E-07
1173	571941	4149321	0.000354	0.000305	1.08E-06	4.31E-04	4.13E-04	1.08E-06	7.68E-05	7.50E-05	1.08E-06	3.27E-05	3.35E-05	1.08E-06
1174	571940.7	4149312	0.000348	0.0003	1.06E-06	4.24E-04	4.06E-04	1.06E-06	7.56E-05	7.38E-05	1.06E-06	3.21E-05	3.29E-05	1.06E-06
1175	571940.4	4149303	0.000344	0.000296	1.05E-06	4.18E-04	4.01E-04	1.05E-06	7.46E-05	7.28E-05	1.05E-06	3.17E-05	3.25E-05	1.05E-06
1176	571940.1	4149293	0.000339	0.000292	1.03E-06	4.13E-04	3.96E-04	1.03E-06	7.36E-05	7.19E-05	1.03E-06	3.13E-05	3.21E-05	1.03E-06
1177	571939.8	4149284	0.000336	0.000289	1.02E-06	4.08E-04	3.91E-04	1.02E-06	7.28E-05	7.11E-05	1.02E-06	3.10E-05	3.17E-05	1.02E-06
1178	571939.5	4149275	0.000332	0.000286	1.01E-06	4.04E-04	3.87E-04	1.01E-06	7.20E-05	7.03E-05	1.01E-06	3.06E-05	3.14E-05	1.01E-06
1179	571939.3	4149266	0.000328	0.000283	1E-06	4.00E-04	3.83E-04	1.00E-06	7.13E-05	6.96E-05	1.00E-06	3.03E-05	3.10E-05	1.00E-06
1180	571939	4149257	0.000325	0.00028	9.89E-07	3.95E-04	3.79E-04	9.89E-07	7.05E-05	6.89E-05	9.89E-07	3.00E-05	3.07E-05	9.89E-07
1181	571938.7	4149247	0.000322	0.000277	9.8E-07	3.91E-04	3.75E-04	9.80E-07	6.98E-05	6.82E-05	9.80E-07	2.97E-05	3.04E-05	9.80E-07
1182	571938.4	4149238	0.000319	0.000275	9.71E-07	3.88E-04	3.72E-04	9.71E-07	6.92E-05	6.76E-05	9.71E-07	2.94E-05	3.02E-05	9.71E-07
1183	571938.1	4149229	0.000317	0.000273	9.65E-07	3.86E-04	3.70E-04	9.65E-07	6.88E-05	6.72E-05	9.65E-07	2.92E-05	3.00E-05	9.65E-07
1184	571937.8	4149220	0.000316	0.000272	9.63E-07	3.85E-04	3.69E-04	9.63E-07	6.86E-05	6.70E-05	9.63E-07	2.92E-05	2.99E-05	9.63E-07
1185	571937.5	4149211	0.000316	0.000273	9.64E-07	3.85E-04	3.69E-04	9.64E-07	6.87E-05	6.71E-05	9.64E-07	2.92E-05	2.99E-05	9.64E-07
1186	571937.3	4149201	0.000318	0.000274	9.69E-07	3.87E-04	3.71E-04	9.69E-07	6.91E-05	6.75E-05	9.69E-07	2.94E-05	3.01E-05	9.69E-07
1187	571937	4149192	0.000321	0.000277	9.79E-07	3.91E-04	3.75E-04	9.79E-07	6.97E-05	6.81E-05	9.79E-07	2.96E-05	3.04E-05	9.79E-07
1188	571936.7	4149183	0.000325	0.00028	9.91E-07	3.96E-04	3.80E-04	9.91E-07	7.06E-05	6.90E-05	9.91E-07	3.00E-05	3.08E-05	9.91E-07
1189	571936.4	4149174	0.00033	0.000284	1.01E-06	4.02E-04	3.85E-04	1.01E-06	7.16E-05	6.99E-05	1.01E-06	3.04E-05	3.12E-05	1.01E-06
1190	571936.1	4149165	0.000334	0.000288	1.02E-06	4.07E-04	3.90E-04	1.02E-06	7.25E-05	7.09E-05	1.02E-06	3.08E-05	3.16E-05	1.02E-06
1191	571935.8	4149155	0.000338	0.000291	1.03E-06	4.11E-04	3.94E-04	1.03E-06	7.33E-05	7.16E-05	1.03E-06	3.12E-05	3.19E-05	1.03E-06
1192	571935.5	4149146	0.00034	0.000293	1.03E-06	4.14E-04	3.96E-04	1.03E-06	7.37E-05	7.20E-05	1.03E-06	3.13E-05	3.21E-05	1.03E-06
1193	571935.3	4149137	0.00034	0.000293	1.04E-06	4.14E-04	3.96E-04	1.04E-06	7.38E-05	7.20E-05	1.04E-06	3.14E-05	3.21E-05	1.04E-06
1194	571935	4149128	0.000338	0.000291	1.03E-06	4.11E-04	3.94E-04	1.03E-06	7.33E-05	7.16E-05	1.03E-06	3.12E-05	3.19E-05	1.03E-06
1195	571934.1	4149100	0.000321	0.000277	9.79E-07	3.91E-04	3.75E-04	9.79E-07	6.97E-05	6.81E-05	9.79E-07	2.96E-05	3.04E-05	9.79E-07
1196	571933.8	4149091	0.000314	0.00027	9.56E-07	3.82E-04	3.66E-04	9.56E-07	6.81E-05	6.65E-05	9.56E-07	2.90E-05	2.97E-05	9.56E-07
1197	571933.5	4149082	0.000306	0.000264	9.33E-07	3.73E-04	3.57E-04	9.33E-07	6.65E-05	6.49E-05	9.33E-07	2.83E-05	2.90E-05	9.33E-07
1198	571933.3	4149073	0.000299	0.000258	9.11E-07	3.64E-04	3.49E-04	9.11E-07	6.49E-05	6.34E-05	9.11E-07	2.76E-05	2.83E-05	9.11E-07
1199	571933	4149063	0.000293	0.000252	8.92E-07	3.56E-04	3.42E-04	8.92E-07	6.36E-05	6.21E-05	8.92E-07	2.70E-05	2.77E-05	8.92E-07
1200	571932.7	4149054	0.000288	0.000248	8.76E-07	3.50E-04	3.36E-04	8.76E-07	6.24E-05	6.10E-05	8.76E-07	2.65E-05	2.72E-05	8.76E-07
1201	571932.4	4149045	0.000284	0.000244	8.64E-07	3.45E-04	3.31E-04	8.64E-07	6.15E-05	6.01E-05	8.64E-07	2.62E-05	2.68E-05	8.64E-07
1202	571932.1	4149036	0.000281	0.000242	8.55E-07	3.42E-04	3.27E-04	8.55E-07	6.09E-05	5.95E-05	8.55E-07	2.59E-05	2.65E-05	8.55E-07
1203	571938.2	4149020	0.000286	0.000246	8.7E-07	3.48E-04	3.33E-04	8.70E-07	6.20E-05	6.05E-05	8.70E-07	2.64E-05	2.70E-05	8.70E-07
1204	571931.9	4149325	0.000341	0.000294	1.04E-06	4.15E-04	3.98E-04	1.04E-06	7.40E-05	7.23E-05	1.04E-06	3.15E-05	3.22E-05	1.04E-06
1205	571931.6	4149316	0.000336	0.000289	1.02E-06	4.09E-04	3.92E-04	1.02E-06	7.28E-05	7.11E-05	1.02E-06	3.10E-05	3.17E-05	1.02E-06
1206	571931.3	4149307	0.000331	0.000285	1.01E-06	4.03E-04	3.86E-04	1.01E-06	7.18E-05	7.02E-05	1.01E-06	3.05E-05	3.13E-05	1.01E-06
1207	571931	4149298	0.000327	0.000282	9.96E-07	3.98E-04	3.81E-04	9.96E-07	7.09E-05	6.93E-05	9.96E-07	3.02E-05	3.09E-05	9.96E-07
1208	571930.7	4149289	0.000323	0.000279	9.85E-07	3.93E-04	3.77E-04	9.85E-07	7.01E-05	6.85E-05	9.85E-07	2.98E-05	3.06E-05	9.85E-07
1209	571930.4	4149280	0.00032	0.000276	9.74E-07	3.89E-04	3.73E-04	9.74E-07	6.94E-05	6.78E-05	9.74E-07	2.95E-05	3.02E-05	9.74E-07
1210	571930.2	4149270	0.000316	0.000273	9.64E-07	3.85E-04	3.69E-04	9.64E-07	6.87E-05	6.71E-05	9.64E-07	2.92E-05	2.99E-05	9.64E-07
1211	571929.9	4149261	0.000313	0.00027	9.53E-07	3.81E-04	3.65E-04	9.53E-07	6.79E-05	6.63E-05	9.53E-07	2.89E-05	2.96E-05	9.53E-07
1212	571929.6	4149252	0.00031	0.000267	9.44E-07	3.77E-04	3.61E-04	9.44E-07	6.72E-05	6.57E-05	9.44E-07	2.86E-05	2.93E-05	9.44E-07
1213	571929.3	4149243	0.000307	0.000265	9.35E-07	3.74E-04	3.58E-04	9.35E-07	6.66E-05	6.51E-05	9.35E-07	2.83E-05	2.90E-05	9.35E-07
1214	571929	4149234	0.000305	0.000263	9.28E-07	3.71E-04	3.55E-04	9.28E-07	6.61E-05	6.46E-05	9.28E-07	2.81E-05	2.88E-05	9.28E-07
1215	571928.7	4149225	0.000303	0.000261	9.24E-07	3.69E-04	3.54E-04	9.24E-07	6.58E-05	6.43E-05	9.24E-07	2.80E-05	2.87E-05	9.24E-07

1216	571928.4	4149215	0.000303	0.000261	9.23E-07	3.69E-04	3.53E-04	9.23E-07	6.58E-05	6.42E-05	9.23E-07	2.80E-05	2.86E-05	9.23E-07
1217	571928.2	4149206	0.000304	0.000262	9.26E-07	3.70E-04	3.55E-04	9.26E-07	6.60E-05	6.44E-05	9.26E-07	2.81E-05	2.87E-05	9.26E-07
1218	571927.9	4149197	0.000306	0.000264	9.33E-07	3.73E-04	3.57E-04	9.33E-07	6.65E-05	6.49E-05	9.33E-07	2.83E-05	2.90E-05	9.33E-07
1219	571927.6	4149188	0.00031	0.000267	9.43E-07	3.77E-04	3.61E-04	9.43E-07	6.72E-05	6.56E-05	9.43E-07	2.86E-05	2.93E-05	9.43E-07
1220	571927.3	4149179	0.000314	0.000271	9.56E-07	3.82E-04	3.66E-04	9.56E-07	6.81E-05	6.65E-05	9.56E-07	2.90E-05	2.97E-05	9.56E-07
1221	571927	4149170	0.000318	0.000274	9.69E-07	3.87E-04	3.71E-04	9.69E-07	6.91E-05	6.75E-05	9.69E-07	2.94E-05	3.01E-05	9.69E-07
1222	571926.7	4149160	0.000322	0.000278	9.82E-07	3.92E-04	3.76E-04	9.82E-07	6.99E-05	6.83E-05	9.82E-07	2.97E-05	3.05E-05	9.82E-07
1223	571926.5	4149151	0.000325	0.00028	9.9E-07	3.96E-04	3.79E-04	9.90E-07	7.06E-05	6.89E-05	9.90E-07	3.00E-05	3.07E-05	9.90E-07
1224	571926.2	4149142	0.000327	0.000281	9.95E-07	3.97E-04	3.81E-04	9.95E-07	7.09E-05	6.92E-05	9.95E-07	3.01E-05	3.09E-05	9.95E-07
1225	571925.9	4149133	0.000326	0.000281	9.93E-07	3.97E-04	3.80E-04	9.93E-07	7.08E-05	6.91E-05	9.93E-07	3.01E-05	3.08E-05	9.93E-07
1226	571925	4149105	0.000314	0.00027	9.56E-07	3.82E-04	3.66E-04	9.56E-07	6.81E-05	6.65E-05	9.56E-07	2.89E-05	2.97E-05	9.56E-07
1227	571924.8	4149096	0.000307	0.000265	9.35E-07	3.74E-04	3.58E-04	9.35E-07	6.66E-05	6.51E-05	9.35E-07	2.83E-05	2.90E-05	9.35E-07
1228	571924.5	4149087	0.0003	0.000258	9.13E-07	3.65E-04	3.50E-04	9.13E-07	6.51E-05	6.35E-05	9.13E-07	2.77E-05	2.83E-05	9.13E-07
1229	571924.2	4149078	0.000293	0.000252	8.92E-07	3.56E-04	3.41E-04	8.92E-07	6.35E-05	6.20E-05	8.92E-07	2.70E-05	2.77E-05	8.92E-07
1230	571923.9	4149069	0.000286	0.000246	8.71E-07	3.48E-04	3.34E-04	8.71E-07	6.21E-05	6.06E-05	8.71E-07	2.64E-05	2.70E-05	8.71E-07
1231	571923.6	4149060	0.00028	0.000241	8.53E-07	3.41E-04	3.27E-04	8.53E-07	6.08E-05	5.94E-05	8.53E-07	2.58E-05	2.65E-05	8.53E-07
1232	571923.3	4149050	0.000275	0.000237	8.38E-07	3.35E-04	3.21E-04	8.38E-07	5.97E-05	5.83E-05	8.38E-07	2.54E-05	2.60E-05	8.38E-07
1233	571923	4149041	0.000272	0.000234	8.27E-07	3.30E-04	3.17E-04	8.27E-07	5.89E-05	5.75E-05	8.27E-07	2.51E-05	2.57E-05	8.27E-07
1234	571922.8	4149032	0.000269	0.000232	8.19E-07	3.27E-04	3.14E-04	8.19E-07	5.83E-05	5.70E-05	8.19E-07	2.48E-05	2.54E-05	8.19E-07
1235	571922.5	4149320	0.000324	0.000279	9.85E-07	3.94E-04	3.77E-04	9.85E-07	7.02E-05	6.86E-05	9.85E-07	2.99E-05	3.06E-05	9.85E-07
1236	571922.2	4149311	0.000319	0.000275	9.72E-07	3.88E-04	3.72E-04	9.72E-07	6.93E-05	6.76E-05	9.72E-07	2.94E-05	3.02E-05	9.72E-07
1237	571921.9	4149302	0.000315	0.000272	9.6E-07	3.84E-04	3.68E-04	9.60E-07	6.84E-05	6.68E-05	9.60E-07	2.91E-05	2.98E-05	9.60E-07
1238	571921.6	4149293	0.000312	0.000269	9.5E-07	3.79E-04	3.64E-04	9.50E-07	6.77E-05	6.61E-05	9.50E-07	2.88E-05	2.95E-05	9.50E-07
1239	571921.3	4149284	0.000309	0.000266	9.4E-07	3.75E-04	3.60E-04	9.40E-07	6.69E-05	6.54E-05	9.40E-07	2.85E-05	2.92E-05	9.40E-07
1240	571921.1	4149275	0.000305	0.000263	9.3E-07	3.71E-04	3.56E-04	9.30E-07	6.62E-05	6.47E-05	9.30E-07	2.82E-05	2.89E-05	9.30E-07
1241	571920.8	4149266	0.000302	0.00026	9.2E-07	3.68E-04	3.52E-04	9.20E-07	6.55E-05	6.40E-05	9.20E-07	2.79E-05	2.86E-05	9.20E-07
1242	571920.5	4149257	0.000299	0.000257	9.1E-07	3.64E-04	3.48E-04	9.10E-07	6.48E-05	6.33E-05	9.10E-07	2.76E-05	2.82E-05	9.10E-07
1243	571920.2	4149247	0.000296	0.000255	9.01E-07	3.60E-04	3.45E-04	9.01E-07	6.42E-05	6.27E-05	9.01E-07	2.73E-05	2.80E-05	9.01E-07
1244	571919.9	4149238	0.000293	0.000253	8.93E-07	3.57E-04	3.42E-04	8.93E-07	6.37E-05	6.22E-05	8.93E-07	2.71E-05	2.77E-05	8.93E-07
1245	571919.6	4149229	0.000292	0.000251	8.88E-07	3.55E-04	3.40E-04	8.88E-07	6.33E-05	6.18E-05	8.88E-07	2.69E-05	2.76E-05	8.88E-07
1246	571919.4	4149220	0.000291	0.000251	8.86E-07	3.54E-04	3.39E-04	8.86E-07	6.31E-05	6.16E-05	8.86E-07	2.68E-05	2.75E-05	8.86E-07
1247	571919.1	4149211	0.000291	0.000251	8.87E-07	3.54E-04	3.39E-04	8.87E-07	6.32E-05	6.17E-05	8.87E-07	2.69E-05	2.75E-05	8.87E-07
1248	571918.8	4149202	0.000293	0.000252	8.91E-07	3.56E-04	3.41E-04	8.91E-07	6.35E-05	6.20E-05	8.91E-07	2.70E-05	2.77E-05	8.91E-07
1249	571918.5	4149193	0.000295	0.000254	8.99E-07	3.59E-04	3.44E-04	8.99E-07	6.41E-05	6.26E-05	8.99E-07	2.72E-05	2.79E-05	8.99E-07
1250	571918.2	4149184	0.000299	0.000258	9.11E-07	3.64E-04	3.49E-04	9.11E-07	6.49E-05	6.34E-05	9.11E-07	2.76E-05	2.83E-05	9.11E-07
1251	571917.9	4149174	0.000303	0.000261	9.23E-07	3.69E-04	3.54E-04	9.23E-07	6.58E-05	6.43E-05	9.23E-07	2.80E-05	2.87E-05	9.23E-07
1252	571917.7	4149165	0.000307	0.000265	9.36E-07	3.74E-04	3.58E-04	9.36E-07	6.67E-05	6.51E-05	9.36E-07	2.84E-05	2.91E-05	9.36E-07
1253	571917.4	4149156	0.000311	0.000268	9.47E-07	3.78E-04	3.63E-04	9.47E-07	6.75E-05	6.59E-05	9.47E-07	2.87E-05	2.94E-05	9.47E-07
1254	571917.1	4149147	0.000313	0.00027	9.54E-07	3.81E-04	3.65E-04	9.54E-07	6.80E-05	6.64E-05	9.54E-07	2.89E-05	2.96E-05	9.54E-07
1255	571916.8	4149138	0.000314	0.000271	9.57E-07	3.82E-04	3.66E-04	9.57E-07	6.82E-05	6.66E-05	9.57E-07	2.90E-05	2.97E-05	9.57E-07
1256	571916	4149111	0.000306	0.000264	9.32E-07	3.72E-04	3.57E-04	9.32E-07	6.64E-05	6.48E-05	9.32E-07	2.82E-05	2.89E-05	9.32E-07
1257	571915.7	4149102	0.0003	0.000259	9.14E-07	3.65E-04	3.50E-04	9.14E-07	6.52E-05	6.36E-05	9.14E-07	2.77E-05	2.84E-05	9.14E-07
1258	571915.4	4149092	0.000294	0.000253	8.94E-07	3.57E-04	3.43E-04	8.94E-07	6.37E-05	6.22E-05	8.94E-07	2.71E-05	2.78E-05	8.94E-07
1259	571915.1	4149083	0.000287	0.000247	8.73E-07	3.49E-04	3.34E-04	8.73E-07	6.22E-05	6.08E-05	8.73E-07	2.65E-05	2.71E-05	8.73E-07
1260	571914.8	4149074	0.00028	0.000241	8.53E-07	3.41E-04	3.27E-04	8.53E-07	6.08E-05	5.93E-05	8.53E-07	2.58E-05	2.65E-05	8.53E-07
1261	571914.5	4149065	0.000274	0.000236	8.33E-07	3.33E-04	3.19E-04	8.33E-07	5.94E-05	5.80E-05	8.33E-07	2.52E-05	2.59E-05	8.33E-07
1262	571914.3	4149056	0.000268	0.000231	8.17E-07	3.26E-04	3.13E-04	8.17E-07	5.82E-05	5.68E-05	8.17E-07	2.47E-05	2.54E-05	8.17E-07
1263	571914	4149047	0.000264	0.000227	8.03E-07	3.21E-04	3.07E-04	8.03E-07	5.72E-05	5.59E-05	8.03E-07	2.43E-05	2.49E-05	8.03E-07
1264	571913.7	4149038	0.00026	0.000224	7.93E-07	3.17E-04	3.04E-04	7.93E-07	5.65E-05	5.52E-05	7.93E-07	2.40E-05	2.46E-05	7.93E-07
1265	571913.4	4149029	0.000258	0.000222	7.85E-07	3.14E-04	3.01E-04	7.85E-07	5.59E-05	5.46E-05	7.85E-07	2.38E-05	2.44E-05	7.85E-07
1266	571913.4	4149325	0.000312	0.000269	9.51E-07	3.80E-04	3.64E-04	9.51E-07	6.77E-05	6.61E-05	9.51E-07	2.88E-05	2.95E-05	9.51E-07
1267	571913.1	4149316	0.000308	0.000265	9.38E-07	3.75E-04	3.59E-04	9.38E-07	6.68E-05	6.52E-05	9.38E-07	2.84E-05	2.91E-05	9.38E-07
1268	571912.8	4149307	0.000304	0.000262	9.26E-07	3.70E-04	3.55E-04	9.26E-07	6.60E-05	6.45E-05	9.26E-07	2.81E-05	2.88E-05	9.26E-07
1269	571912.5	4149297	0.000301	0.000259	9.16E-07	3.66E-04	3.51E-04	9.16E-07	6.53E-05	6.38E-05	9.16E-07	2.78E-05	2.84E-05	9.16E-07
1270	571912.2	4149288	0.000298	0.000257	9.07E-07	3.62E-04	3.47E-04	9.07E-07	6.46E-05	6.31E-05	9.07E-07	2.75E-05	2.82E-05	9.07E-07
1271	571912	4149279	0.000295	0.000254	8.98E-07	3.59E-04	3.44E-04	8.98E-07	6.40E-05	6.25E-05	8.98E-07	2.72E-05	2.79E-05	8.98E-07
1272	571911.7	4149270	0.000292	0.000251	8.88E-07	3.55E-04	3.40E-04	8.88E-07	6.33E-05	6.18E-05	8.88E-07	2.69E-05	2.76E-05	8.88E-07
1273	571911.4	4149261	0.000288	0.000249	8.79E-07	3.51E-04	3.36E-04	8.79E-07	6.26E-05	6.11E-05	8.79E-07	2.66E-05	2.73E-05	8.79E-07
1274	571911.1	4149252	0.000285	0.000246	8.69E-07	3.47E-04	3.33E-04	8.69E-07	6.20E-05	6.05E-05	8.69E-07	2.63E-05	2.70E-05	8.69E-07
1275	571910.8	4149243	0.000283	0.000244	8.61E-07	3.44E-04	3.30E-04	8.61E-07	6.14E-05	5.99E-05	8.61E-07	2.61E-05	2.67E-05	8.61E-07
1276	571910.5	4149234	0.000281	0.000242	8.55E-07	3.42E-04	3.27E-04	8.55E-07	6.09E-05	5.95E-05	8.55E-07	2.59E-05	2.65E-05	8.55E-07
1277	571910.3	4149225	0.00028	0.000241	8.51E-07	3.40E-04	3.26E-04	8.51E-07	6.07E-05	5.92E-05	8.51E-07	2.58E-05	2.64E-05	8.51E-07
1278	571910	4149216	0.000279	0.000241	8.51E-07	3.40E-04	3.26E-04	8.51E-07	6.06E-05	5.92E-05	8.51E-07	2.58E-05	2.64E-05	8.51E-07
1279	571909.7	4149207	0.00028	0.000241	8.53E-07	3.41E-04	3.27E-04	8.53E-07	6.08E-05	5.94E-05	8.53E-07	2.58E-05	2.65E-05	8.53E-07
1280	571909.4	4149198	0.000282	0.000243	8.59E-07	3.43E-04	3.29E-04	8.59E-07	6.12E-05	5.98E-05	8.59E-07	2.60E-05	2.67E-05	8.59E-07
1281	571909.1	4149188	0.000285	0.000246	8.69E-07	3.47E-04	3.33E-04	8.69E-07	6.19E-05	6.04E-05	8.69E-07	2.63E-05	2.70E-05	8.69E-07
1282	571908.9	4149179	0.000289	0.000249	8.8E-07	3.52E-04	3.37E-04	8.80E-07	6.27E-05	6.12E-05	8.80E-07	2.67E-05	2.73E-05	8.80E-07
1283	571908.6	4149170	0.000293	0.000253	8.93E-07	3.57E-04	3.42E-04	8.93E-07	6.36E-05	6.21E-05	8.93E-07	2.70E-05	2.77E-05	8.93E-07
1284	571908.3	4149161	0.000297	0.000256	9.04E-07	3.61E-04	3.46E-04	9.04E-07	6.44E-05	6.29E-05	9.04E-07	2.74E-05	2.81E-05	9.04E-07
1285	571908	4149152	0.0003	0.000258	9.14E-07	3.65E-04	3.50E-04	9.14E-07	6.51E-05	6.36E-05	9.14E-07	2.77E-05	2.84E-05	9.14E-07
1286	571907.7	4149143	0.000302	0.00026	9.19E-07	3.67E-04	3.52E-04	9.19E-07	6.55E-05	6.40E-05	9.19E-07	2.79E-05	2.85E-05	9.19E-07
1287	571907.4	4149134	0.000302	0.00026	9.2E-07	3.68E-04	3.52E-04	9.20E-07	6.56E-05	6.40E-05	9.20E-07	2.79E-05	2.86E-05	9.20E-07
1288	571906.9	4149116	0.000298	0.000257	9.07E-07	3.62E-04	3.47E-04	9.07E-07	6.46E-05	6.31E-05	9.07E-07	2.75E-05	2.82E-05	9.07E-07
1289	571906.6	4149107	0.000293	0.000253	8.93E-07	3.57E-04	3.42E-04	8.93E-07	6.36E-05	6.21E-05	8.93E-07	2.71E-05	2.77E-05	8.93E-07
1290	571906.3	4149098	0.000288	0.000248	8.76E-07	3.50E-04	3.35E-04	8.76E-07	6.24E-05	6.09E-05	8.76E-07	2.65E-05	2.72E-05	8.76E-07
1291	571906	4149089	0.000281	0.000242	8.56E-07	3.42E-04	3.28E-04	8.56E-07	6.10E-05	5.96E-05	8.56E-07	2.59E-05	2.66E-05	8.56E-07
1292	571905.8	4149079	0.000275	0.000237	8.36E-07	3.34E-04	3.20E-04	8.36E-07	5.96E-05	5.82E-05	8.36E-07	2.53E-05	2.60E-05	8.36E-07
1293	571905.5	4149070	0.000268	0.000231	8.16E-07	3.26E-04	3.13E-04	8.16E-07	5.82E-05	5.68E-05	8.16E-07	2.47E-05	2.53E-05	8.16E-07
1294	571905.2	4149061	0.000262	0.000226	7.98E-07	3.19E-04	3.06E-04	7.98E-07	5.69E-05	5.55E-05	7.98E-07	2.42E-05	2.48E-05	7.98E-07
1295	571904.9	4149052	0.000257	0.000221	7.83E-07	3.13E-04	3.00E-04	7.83E-07	5.58E-05	5.45E-05	7.83E-07	2.37E-05	2.43E-05	7.83E-07
1296	571904.6	4149043	0.000253	0.000218	7.7E-07	3.08E-04	2.95E-04	7.70E-07	5.49E-05	5.36E-05	7.70E-07	2.33E-05	2.39E-05	7.70E-07
1297	571904.3	4149034	0.00025	0.000215	7.61E-07	3.04E-04	2.91E-04	7.61E-07	5.42E-05	5.29E-05	7.61E-07	2.30E-05	2.36E-05	7.61E-07
1298	571903.9	4149319	0.000297	0.000256	9.04E-07	3.61E-04	3.46E-04	9.04E-07	6.44E-05	6.29E-05	9.04E-07	2.74E-05	2.80E-05	9.04E-07
1299	571903.7	4149309	0.000293	0.000253	8.93E-07	3.57E-04	3.42E-04	8.93E-07	6.36E-05	6.21E-05	8.93E-07	2.70E-05	2.77E-05	8.93E-07
1300	571903.4	4149300	0.00029	0.00025	8.83E-07	3.53E-04	3.38E-04	8.83E-07	6.29E-05	6.15E-05	8.83E-07	2.68E-05	2.74E-05	8.83E-07
1301	571903.1	4149291	0.000287	0.000247	8.74E-07	3.49E-04	3.35E-04	8.74E-07	6.23E-05	6.08E-05	8.74E-07	2.65E-05	2.71E-05	8.74E-07
1302	571902.8	4149282	0.000284	0.000245	8.65E-07	3.46E-04	3.31E-04	8.65E-07	6.16E-05	6.02E-05	8.65E-07	2.62E-05	2.69E-05	8.65E-07

1303	571902.5	4149272	0.000281	0.000242	8.56E-07	3.42E-04	3.28E-04	8.56E-07	6.10E-05	5.96E-05	8.56E-07	2.59E-05	2.66E-05	8.56E-07
1304	571902.2	4149263	0.000278	0.00024	8.47E-07	3.38E-04	3.24E-04	8.47E-07	6.03E-05	5.89E-05	8.47E-07	2.57E-05	2.63E-05	8.47E-07
1305	571901.9	4149254	0.000275	0.000237	8.37E-07	3.35E-04	3.21E-04	8.37E-07	5.97E-05	5.83E-05	8.37E-07	2.54E-05	2.60E-05	8.37E-07
1306	571901.6	4149244	0.000272	0.000235	8.29E-07	3.31E-04	3.18E-04	8.29E-07	5.91E-05	5.77E-05	8.29E-07	2.51E-05	2.57E-05	8.29E-07
1307	571901.3	4149235	0.00027	0.000233	8.23E-07	3.29E-04	3.15E-04	8.23E-07	5.86E-05	5.73E-05	8.23E-07	2.49E-05	2.55E-05	8.23E-07
1308	571901.1	4149226	0.000269	0.000232	8.19E-07	3.27E-04	3.13E-04	8.19E-07	5.83E-05	5.70E-05	8.19E-07	2.48E-05	2.54E-05	8.19E-07
1309	571900.8	4149217	0.000268	0.000231	8.17E-07	3.27E-04	3.13E-04	8.17E-07	5.82E-05	5.69E-05	8.17E-07	2.48E-05	2.54E-05	8.17E-07
1310	571900.5	4149207	0.000269	0.000232	8.2E-07	3.28E-04	3.14E-04	8.20E-07	5.84E-05	5.70E-05	8.20E-07	2.48E-05	2.54E-05	8.20E-07
1311	571900.2	4149198	0.000271	0.000234	8.25E-07	3.30E-04	3.16E-04	8.25E-07	5.88E-05	5.74E-05	8.25E-07	2.50E-05	2.56E-05	8.25E-07
1312	571899.9	4149189	0.000274	0.000236	8.35E-07	3.33E-04	3.20E-04	8.35E-07	5.95E-05	5.81E-05	8.35E-07	2.53E-05	2.59E-05	8.35E-07
1313	571899.6	4149179	0.000278	0.000239	8.46E-07	3.38E-04	3.24E-04	8.46E-07	6.03E-05	5.89E-05	8.46E-07	2.56E-05	2.63E-05	8.46E-07
1314	571899.3	4149170	0.000282	0.000243	8.58E-07	3.43E-04	3.29E-04	8.58E-07	6.11E-05	5.97E-05	8.58E-07	2.60E-05	2.66E-05	8.58E-07
1315	571899	4149161	0.000286	0.000246	8.7E-07	3.48E-04	3.33E-04	8.70E-07	6.20E-05	6.05E-05	8.70E-07	2.64E-05	2.70E-05	8.70E-07
1316	571898.8	4149152	0.000289	0.000249	8.79E-07	3.51E-04	3.37E-04	8.79E-07	6.27E-05	6.12E-05	8.79E-07	2.66E-05	2.73E-05	8.79E-07
1317	571898.5	4149142	0.000291	0.00025	8.85E-07	3.54E-04	3.39E-04	8.85E-07	6.31E-05	6.16E-05	8.85E-07	2.68E-05	2.75E-05	8.85E-07
1318	571897.6	4149114	0.000287	0.000247	8.74E-07	3.49E-04	3.35E-04	8.74E-07	6.23E-05	6.08E-05	8.74E-07	2.65E-05	2.71E-05	8.74E-07
1319	571897.3	4149105	0.000283	0.000243	8.6E-07	3.44E-04	3.29E-04	8.60E-07	6.13E-05	5.99E-05	8.60E-07	2.61E-05	2.67E-05	8.60E-07
1320	571897	4149096	0.000277	0.000239	8.44E-07	3.37E-04	3.23E-04	8.44E-07	6.01E-05	5.87E-05	8.44E-07	2.56E-05	2.62E-05	8.44E-07
1321	571896.7	4149087	0.000271	0.000233	8.25E-07	3.29E-04	3.16E-04	8.25E-07	5.87E-05	5.74E-05	8.25E-07	2.50E-05	2.56E-05	8.25E-07
1322	571896.4	4149077	0.000264	0.000228	8.05E-07	3.22E-04	3.08E-04	8.05E-07	5.73E-05	5.60E-05	8.05E-07	2.44E-05	2.50E-05	8.05E-07
1323	571896.2	4149068	0.000258	0.000222	7.85E-07	3.14E-04	3.01E-04	7.85E-07	5.60E-05	5.46E-05	7.85E-07	2.38E-05	2.44E-05	7.85E-07
1324	571895.9	4149059	0.000252	0.000217	7.67E-07	3.07E-04	2.94E-04	7.67E-07	5.47E-05	5.34E-05	7.67E-07	2.32E-05	2.38E-05	7.67E-07
1325	571895.6	4149049	0.000247	0.000213	7.52E-07	3.01E-04	2.88E-04	7.52E-07	5.36E-05	5.23E-05	7.52E-07	2.28E-05	2.33E-05	7.52E-07
1326	571895.3	4149040	0.000243	0.000209	7.4E-07	2.96E-04	2.83E-04	7.40E-07	5.27E-05	5.15E-05	7.40E-07	2.24E-05	2.30E-05	7.40E-07
1327	571895	4149031	0.00024	0.000207	7.31E-07	2.92E-04	2.80E-04	7.31E-07	5.21E-05	5.08E-05	7.31E-07	2.21E-05	2.27E-05	7.31E-07
1328	571894.8	4149323	0.000287	0.000247	8.73E-07	3.49E-04	3.34E-04	8.73E-07	6.22E-05	6.07E-05	8.73E-07	2.64E-05	2.71E-05	8.73E-07
1329	571894.5	4149314	0.000283	0.000244	8.63E-07	3.45E-04	3.30E-04	8.63E-07	6.15E-05	6.00E-05	8.63E-07	2.61E-05	2.68E-05	8.63E-07
1330	571894.3	4149305	0.00028	0.000241	8.53E-07	3.41E-04	3.27E-04	8.53E-07	6.08E-05	5.94E-05	8.53E-07	2.59E-05	2.65E-05	8.53E-07
1331	571894	4149295	0.000277	0.000239	8.45E-07	3.38E-04	3.24E-04	8.45E-07	6.02E-05	5.88E-05	8.45E-07	2.56E-05	2.62E-05	8.45E-07
1332	571893.7	4149286	0.000275	0.000237	8.37E-07	3.34E-04	3.20E-04	8.37E-07	5.96E-05	5.82E-05	8.37E-07	2.53E-05	2.60E-05	8.37E-07
1333	571893.4	4149277	0.000272	0.000234	8.28E-07	3.31E-04	3.17E-04	8.28E-07	5.90E-05	5.76E-05	8.28E-07	2.51E-05	2.57E-05	8.28E-07
1334	571893.1	4149268	0.000269	0.000232	8.19E-07	3.27E-04	3.14E-04	8.19E-07	5.84E-05	5.70E-05	8.19E-07	2.48E-05	2.54E-05	8.19E-07
1335	571892.8	4149258	0.000266	0.000229	8.1E-07	3.24E-04	3.10E-04	8.10E-07	5.77E-05	5.64E-05	8.10E-07	2.45E-05	2.52E-05	8.10E-07
1336	571892.5	4149249	0.000263	0.000227	8.02E-07	3.21E-04	3.07E-04	8.02E-07	5.72E-05	5.58E-05	8.02E-07	2.43E-05	2.49E-05	8.02E-07
1337	571892.3	4149240	0.000261	0.000225	7.95E-07	3.18E-04	3.04E-04	7.95E-07	5.66E-05	5.53E-05	7.95E-07	2.41E-05	2.47E-05	7.95E-07
1338	571892	4149231	0.000259	0.000223	7.89E-07	3.15E-04	3.02E-04	7.89E-07	5.62E-05	5.49E-05	7.89E-07	2.39E-05	2.45E-05	7.89E-07
1339	571891.7	4149221	0.000258	0.000223	7.87E-07	3.14E-04	3.01E-04	7.87E-07	5.61E-05	5.47E-05	7.87E-07	2.38E-05	2.44E-05	7.87E-07
1340	571891.4	4149212	0.000258	0.000223	7.87E-07	3.15E-04	3.01E-04	7.87E-07	5.61E-05	5.48E-05	7.87E-07	2.38E-05	2.44E-05	7.87E-07
1341	571891.1	4149203	0.00026	0.000224	7.91E-07	3.16E-04	3.03E-04	7.91E-07	5.63E-05	5.50E-05	7.91E-07	2.40E-05	2.45E-05	7.91E-07
1342	571890.8	4149194	0.000262	0.000226	7.98E-07	3.19E-04	3.05E-04	7.98E-07	5.68E-05	5.55E-05	7.98E-07	2.42E-05	2.48E-05	7.98E-07
1343	571890.5	4149184	0.000265	0.000228	8.08E-07	3.23E-04	3.09E-04	8.08E-07	5.75E-05	5.62E-05	8.08E-07	2.45E-05	2.51E-05	8.08E-07
1344	571890.2	4149175	0.000269	0.000232	8.19E-07	3.27E-04	3.14E-04	8.19E-07	5.84E-05	5.70E-05	8.19E-07	2.48E-05	2.54E-05	8.19E-07
1345	571890	4149166	0.000273	0.000235	8.31E-07	3.32E-04	3.18E-04	8.31E-07	5.92E-05	5.78E-05	8.31E-07	2.52E-05	2.58E-05	8.31E-07
1346	571889.7	4149157	0.000276	0.000238	8.42E-07	3.36E-04	3.22E-04	8.42E-07	6.00E-05	5.86E-05	8.42E-07	2.55E-05	2.61E-05	8.42E-07
1347	571889.4	4149147	0.000279	0.00024	8.5E-07	3.40E-04	3.25E-04	8.50E-07	6.06E-05	5.91E-05	8.50E-07	2.57E-05	2.64E-05	8.50E-07
1348	571889.1	4149138	0.000281	0.000242	8.54E-07	3.41E-04	3.27E-04	8.54E-07	6.09E-05	5.94E-05	8.54E-07	2.59E-05	2.65E-05	8.54E-07
1349	571888.5	4149120	0.000279	0.00024	8.49E-07	3.39E-04	3.25E-04	8.49E-07	6.05E-05	5.91E-05	8.49E-07	2.57E-05	2.64E-05	8.49E-07
1350	571888.2	4149110	0.000276	0.000238	8.4E-07	3.35E-04	3.21E-04	8.40E-07	5.98E-05	5.84E-05	8.40E-07	2.54E-05	2.61E-05	8.40E-07
1351	571888	4149101	0.000271	0.000234	8.26E-07	3.30E-04	3.16E-04	8.26E-07	5.88E-05	5.75E-05	8.26E-07	2.50E-05	2.56E-05	8.26E-07
1352	571887.7	4149092	0.000266	0.000229	8.09E-07	3.23E-04	3.10E-04	8.09E-07	5.77E-05	5.63E-05	8.09E-07	2.45E-05	2.51E-05	8.09E-07
1353	571887.4	4149083	0.00026	0.000224	7.91E-07	3.16E-04	3.03E-04	7.91E-07	5.63E-05	5.50E-05	7.91E-07	2.40E-05	2.45E-05	7.91E-07
1354	571887.1	4149073	0.000253	0.000218	7.72E-07	3.08E-04	2.95E-04	7.72E-07	5.50E-05	5.37E-05	7.72E-07	2.34E-05	2.40E-05	7.72E-07
1355	571886.8	4149064	0.000247	0.000213	7.53E-07	3.01E-04	2.88E-04	7.53E-07	5.37E-05	5.24E-05	7.53E-07	2.28E-05	2.34E-05	7.53E-07
1356	571886.5	4149055	0.000242	0.000208	7.36E-07	2.94E-04	2.82E-04	7.36E-07	5.25E-05	5.12E-05	7.36E-07	2.23E-05	2.29E-05	7.36E-07
1357	571886.2	4149046	0.000237	0.000204	7.22E-07	2.89E-04	2.77E-04	7.22E-07	5.15E-05	5.03E-05	7.22E-07	2.19E-05	2.24E-05	7.22E-07
1358	571885.9	4149037	0.000233	0.000201	7.11E-07	2.84E-04	2.72E-04	7.11E-07	5.07E-05	4.95E-05	7.11E-07	2.15E-05	2.21E-05	7.11E-07
1359	571885.7	4149327	0.000277	0.000239	8.44E-07	3.37E-04	3.23E-04	8.44E-07	6.01E-05	5.87E-05	8.44E-07	2.56E-05	2.62E-05	8.44E-07
1360	571885.4	4149318	0.000274	0.000236	8.34E-07	3.33E-04	3.19E-04	8.34E-07	5.94E-05	5.80E-05	8.34E-07	2.53E-05	2.59E-05	8.34E-07
1361	571885.2	4149309	0.000271	0.000233	8.25E-07	3.30E-04	3.16E-04	8.25E-07	5.88E-05	5.74E-05	8.25E-07	2.50E-05	2.56E-05	8.25E-07
1362	571884.9	4149300	0.000268	0.000231	8.17E-07	3.26E-04	3.13E-04	8.17E-07	5.82E-05	5.68E-05	8.17E-07	2.47E-05	2.54E-05	8.17E-07
1363	571884.6	4149291	0.000266	0.000229	8.09E-07	3.23E-04	3.10E-04	8.09E-07	5.76E-05	5.63E-05	8.09E-07	2.45E-05	2.51E-05	8.09E-07
1364	571884.3	4149281	0.000263	0.000227	8.01E-07	3.20E-04	3.07E-04	8.01E-07	5.71E-05	5.57E-05	8.01E-07	2.43E-05	2.49E-05	8.01E-07
1365	571884	4149272	0.00026	0.000224	7.93E-07	3.17E-04	3.04E-04	7.93E-07	5.65E-05	5.52E-05	7.93E-07	2.40E-05	2.46E-05	7.93E-07
1366	571883.7	4149263	0.000258	0.000222	7.84E-07	3.13E-04	3.00E-04	7.84E-07	5.59E-05	5.46E-05	7.84E-07	2.38E-05	2.43E-05	7.84E-07
1367	571883.4	4149254	0.000255	0.00022	7.76E-07	3.10E-04	2.97E-04	7.76E-07	5.53E-05	5.40E-05	7.76E-07	2.35E-05	2.41E-05	7.76E-07
1368	571883.2	4149245	0.000252	0.000217	7.69E-07	3.07E-04	2.94E-04	7.69E-07	5.48E-05	5.35E-05	7.69E-07	2.33E-05	2.39E-05	7.69E-07
1369	571882.9	4149235	0.00025	0.000216	7.63E-07	3.05E-04	2.92E-04	7.63E-07	5.43E-05	5.31E-05	7.63E-07	2.31E-05	2.37E-05	7.63E-07
1370	571882.6	4149226	0.000249	0.000215	7.59E-07	3.03E-04	2.91E-04	7.59E-07	5.41E-05	5.28E-05	7.59E-07	2.30E-05	2.36E-05	7.59E-07
1371	571882.3	4149217	0.000249	0.000214	7.58E-07	3.03E-04	2.90E-04	7.58E-07	5.40E-05	5.27E-05	7.58E-07	2.29E-05	2.35E-05	7.58E-07
1372	571882	4149208	0.000249	0.000215	7.59E-07	3.03E-04	2.91E-04	7.59E-07	5.41E-05	5.28E-05	7.59E-07	2.30E-05	2.36E-05	7.59E-07
1373	571881.7	4149199	0.000251	0.000216	7.64E-07	3.05E-04	2.93E-04	7.64E-07	5.45E-05	5.32E-05	7.64E-07	2.32E-05	2.37E-05	7.64E-07
1374	571881.4	4149189	0.000254	0.000218	7.72E-07	3.09E-04	2.96E-04	7.72E-07	5.50E-05	5.37E-05	7.72E-07	2.34E-05	2.40E-05	7.72E-07
1375	571881.2	4149180	0.000257	0.000221	7.82E-07	3.13E-04	3.00E-04	7.82E-07	5.58E-05	5.44E-05	7.82E-07	2.37E-05	2.43E-05	7.82E-07
1376	571880.9	4149171	0.000261	0.000225	7.94E-07	3.17E-04	3.04E-04	7.94E-07	5.66E-05	5.52E-05	7.94E-07	2.40E-05	2.46E-05	7.94E-07
1377	571880.6	4149162	0.000264	0.000228	8.05E-07	3.22E-04	3.08E-04	8.05E-07	5.74E-05	5.60E-05	8.05E-07	2.44E-05	2.50E-05	8.05E-07
1378	571880.3	4149153	0.000267	0.00023	8.15E-07	3.26E-04	3.12E-04	8.15E-07	5.80E-05	5.67E-05	8.15E-07	2.47E-05	2.53E-05	8.15E-07
1379	571880	4149143	0.00027	0.000232	8.22E-07	3.28E-04	3.15E-04	8.22E-07	5.85E-05	5.72E-05	8.22E-07	2.49E-05	2.55E-05	8.22E-07
1380	571879.2	4149116	0.000268	0.000231	8.17E-07	3.27E-04	3.13E-04	8.17E-07	5.82E-05	5.69E-05	8.17E-07	2.48E-05	2.54E-05	8.17E-07
1381	571878.9	4149106	0.000265	0.000228	8.07E-07	3.22E-04	3.09E-04	8.07E-07	5.75E-05	5.61E-05	8.07E-07	2.44E-05	2.50E-05	8.07E-07
1382	571878.6	4149097	0.00026	0.000224	7.93E-07	3.17E-04	3.04E-04	7.93E-07	5.65E-05	5.52E-05	7.93E-07	2.40E-05	2.46E-05	7.93E-07
1383	571878.3	4149088	0.000255	0.00022	7.77E-07	3.10E-04	2.97E-04	7.77E-07	5.53E-05	5.40E-05	7.77E-07	2.35E-05	2.41E-05	7.77E-07
1384	571878	4149079	0.000249	0.000215	7.59E-07	3.03E-04	2.91E-04	7.59E-07	5.41E-05	5.28E-05	7.59E-07	2.30E-05	2.36E-05	7.59E-07
1385	571877.7	4149070	0.000243	0.00021	7.41E-07	2.96E-04	2.84E-04	7.41E-07	5.28E-05	5.15E-05	7.41E-07	2.24E-05	2.30E-05	7.41E-07
1386	571877.4	4149060	0.000237	0.000205	7.23E-07	2.89E-04	2.77E-04	7.23E-07	5.15E-05	5.03E-05	7.23E-07	2.19E-05	2.24E-05	7.23E-07
1387	571877.2	4149051	0.000232	0.0002	7.07E-07	2.83E-04	2.71E-04	7.07E-07	5.04E-05	4.92E-05	7.07E-07	2.14E-05	2.20E-05	7.07E-07
1388	571876.9	4149042	0.000228	0.000196	6.94E-07	2.77E-04	2.66E-04	6.94E-07	4.95E-05	4.83E-05	6.94E-07	2.10E-05	2.16E-05	6.94E-07
1389	571876.6	4149033	0.000224	0.000193	6.84E-07	2.73E-04	2.62E-04	6.84E-07	4.87E-05	4.76E-05	6.84E-07	2.07E-05	2.12E-05	6.84E-07

1390	571876.3	4149323	0.000265	0.000228	8.06E-07	3.22E-04	3.09E-04	8.06E-07	5.75E-05	5.61E-05	8.06E-07	2.44E-05	2.50E-05	8.06E-07
1391	571876.1	4149313	0.000262	0.000226	7.98E-07	3.19E-04	3.06E-04	7.98E-07	5.69E-05	5.55E-05	7.98E-07	2.42E-05	2.48E-05	7.98E-07
1392	571875.8	4149304	0.00026	0.000224	7.9E-07	3.16E-04	3.03E-04	7.90E-07	5.63E-05	5.50E-05	7.90E-07	2.39E-05	2.45E-05	7.90E-07
1393	571875.5	4149295	0.000257	0.000222	7.83E-07	3.13E-04	3.00E-04	7.83E-07	5.58E-05	5.45E-05	7.83E-07	2.37E-05	2.43E-05	7.83E-07
1394	571875.2	4149286	0.000255	0.000219	7.75E-07	3.10E-04	2.97E-04	7.75E-07	5.53E-05	5.40E-05	7.75E-07	2.35E-05	2.41E-05	7.75E-07
1395	571874.9	4149277	0.000252	0.000217	7.68E-07	3.07E-04	2.94E-04	7.68E-07	5.47E-05	5.34E-05	7.68E-07	2.33E-05	2.38E-05	7.68E-07
1396	571874.6	4149268	0.000249	0.000215	7.6E-07	3.04E-04	2.91E-04	7.60E-07	5.41E-05	5.29E-05	7.60E-07	2.30E-05	2.36E-05	7.60E-07
1397	571874.3	4149258	0.000247	0.000213	7.52E-07	3.00E-04	2.88E-04	7.52E-07	5.36E-05	5.23E-05	7.52E-07	2.28E-05	2.33E-05	7.52E-07
1398	571874.1	4149249	0.000244	0.000211	7.44E-07	2.97E-04	2.85E-04	7.44E-07	5.30E-05	5.18E-05	7.44E-07	2.25E-05	2.31E-05	7.44E-07
1399	571873.8	4149240	0.000242	0.000209	7.38E-07	2.95E-04	2.83E-04	7.38E-07	5.26E-05	5.13E-05	7.38E-07	2.23E-05	2.29E-05	7.38E-07
1400	571873.5	4149231	0.000241	0.000207	7.33E-07	2.93E-04	2.81E-04	7.33E-07	5.22E-05	5.10E-05	7.33E-07	2.22E-05	2.28E-05	7.33E-07
1401	571873.2	4149222	0.00024	0.000207	7.31E-07	2.92E-04	2.80E-04	7.31E-07	5.21E-05	5.08E-05	7.31E-07	2.21E-05	2.27E-05	7.31E-07
1402	571872.9	4149213	0.00024	0.000207	7.31E-07	2.92E-04	2.80E-04	7.31E-07	5.21E-05	5.09E-05	7.31E-07	2.21E-05	2.27E-05	7.31E-07
1403	571872.6	4149203	0.000241	0.000208	7.34E-07	2.93E-04	2.81E-04	7.34E-07	5.23E-05	5.11E-05	7.34E-07	2.22E-05	2.28E-05	7.34E-07
1404	571872.4	4149194	0.000243	0.000209	7.4E-07	2.96E-04	2.83E-04	7.40E-07	5.27E-05	5.15E-05	7.40E-07	2.24E-05	2.30E-05	7.40E-07
1405	571872.1	4149185	0.000246	0.000212	7.49E-07	2.99E-04	2.87E-04	7.49E-07	5.34E-05	5.21E-05	7.49E-07	2.27E-05	2.32E-05	7.49E-07
1406	571871.8	4149176	0.000249	0.000215	7.59E-07	3.03E-04	2.91E-04	7.59E-07	5.41E-05	5.28E-05	7.59E-07	2.30E-05	2.36E-05	7.59E-07
1407	571871.5	4149167	0.000253	0.000218	7.7E-07	3.08E-04	2.95E-04	7.70E-07	5.49E-05	5.36E-05	7.70E-07	2.33E-05	2.39E-05	7.70E-07
1408	571871.2	4149158	0.000256	0.000221	7.81E-07	3.12E-04	2.99E-04	7.81E-07	5.56E-05	5.43E-05	7.81E-07	2.36E-05	2.42E-05	7.81E-07
1409	571870.9	4149148	0.000259	0.000223	7.89E-07	3.15E-04	3.02E-04	7.89E-07	5.62E-05	5.49E-05	7.89E-07	2.39E-05	2.45E-05	7.89E-07
1410	571870.1	4149121	0.000261	0.000225	7.94E-07	3.17E-04	3.04E-04	7.94E-07	5.65E-05	5.52E-05	7.94E-07	2.40E-05	2.46E-05	7.94E-07
1411	571869.8	4149112	0.000258	0.000223	7.87E-07	3.14E-04	3.01E-04	7.87E-07	5.61E-05	5.47E-05	7.87E-07	2.38E-05	2.44E-05	7.87E-07
1412	571869.5	4149103	0.000255	0.00022	7.76E-07	3.10E-04	2.97E-04	7.76E-07	5.53E-05	5.40E-05	7.76E-07	2.35E-05	2.41E-05	7.76E-07
1413	571869.2	4149093	0.00025	0.000216	7.62E-07	3.04E-04	2.92E-04	7.62E-07	5.43E-05	5.30E-05	7.62E-07	2.31E-05	2.37E-05	7.62E-07
1414	571868.9	4149084	0.000245	0.000211	7.46E-07	2.98E-04	2.86E-04	7.46E-07	5.32E-05	5.19E-05	7.46E-07	2.26E-05	2.32E-05	7.46E-07
1415	571868.7	4149075	0.000239	0.000206	7.29E-07	2.91E-04	2.79E-04	7.29E-07	5.19E-05	5.07E-05	7.29E-07	2.21E-05	2.26E-05	7.29E-07
1416	571868.4	4149066	0.000234	0.000201	7.11E-07	2.84E-04	2.72E-04	7.11E-07	5.07E-05	4.95E-05	7.11E-07	2.15E-05	2.21E-05	7.11E-07
1417	571868.1	4149057	0.000228	0.000197	6.95E-07	2.78E-04	2.66E-04	6.95E-07	4.95E-05	4.83E-05	6.95E-07	2.10E-05	2.16E-05	6.95E-07
1418	571867.8	4149048	0.000223	0.000192	6.8E-07	2.72E-04	2.60E-04	6.80E-07	4.84E-05	4.73E-05	6.80E-07	2.06E-05	2.11E-05	6.80E-07
1419	571867.5	4149038	0.000219	0.000189	6.68E-07	2.67E-04	2.56E-04	6.68E-07	4.76E-05	4.64E-05	6.68E-07	2.02E-05	2.07E-05	6.68E-07
1420	571867.2	4149327	0.000256	0.000221	7.8E-07	3.12E-04	2.99E-04	7.80E-07	5.56E-05	5.43E-05	7.80E-07	2.36E-05	2.42E-05	7.80E-07
1421	571867	4149318	0.000254	0.000219	7.72E-07	3.09E-04	2.96E-04	7.72E-07	5.50E-05	5.37E-05	7.72E-07	2.34E-05	2.40E-05	7.72E-07
1422	571866.7	4149309	0.000251	0.000216	7.65E-07	3.06E-04	2.93E-04	7.65E-07	5.45E-05	5.32E-05	7.65E-07	2.32E-05	2.38E-05	7.65E-07
1423	571866.4	4149299	0.000249	0.000214	7.58E-07	3.03E-04	2.90E-04	7.58E-07	5.40E-05	5.28E-05	7.58E-07	2.30E-05	2.35E-05	7.58E-07
1424	571866.1	4149290	0.000247	0.000212	7.51E-07	3.00E-04	2.88E-04	7.51E-07	5.35E-05	5.23E-05	7.51E-07	2.28E-05	2.33E-05	7.51E-07
1425	571865.8	4149281	0.000244	0.00021	7.44E-07	2.97E-04	2.85E-04	7.44E-07	5.30E-05	5.18E-05	7.44E-07	2.25E-05	2.31E-05	7.44E-07
1426	571865.5	4149272	0.000242	0.000208	7.36E-07	2.94E-04	2.82E-04	7.36E-07	5.25E-05	5.12E-05	7.36E-07	2.23E-05	2.29E-05	7.36E-07
1427	571865.3	4149263	0.000239	0.000206	7.28E-07	2.91E-04	2.79E-04	7.28E-07	5.19E-05	5.07E-05	7.28E-07	2.21E-05	2.26E-05	7.28E-07
1428	571865	4149254	0.000237	0.000204	7.21E-07	2.88E-04	2.76E-04	7.21E-07	5.14E-05	5.02E-05	7.21E-07	2.18E-05	2.24E-05	7.21E-07
1429	571864.7	4149245	0.000235	0.000202	7.14E-07	2.85E-04	2.74E-04	7.14E-07	5.09E-05	4.97E-05	7.14E-07	2.16E-05	2.22E-05	7.14E-07
1430	571864.4	4149236	0.000233	0.000201	7.09E-07	2.83E-04	2.71E-04	7.09E-07	5.05E-05	4.93E-05	7.09E-07	2.15E-05	2.20E-05	7.09E-07
1431	571864.1	4149226	0.000232	0.0002	7.06E-07	2.82E-04	2.70E-04	7.06E-07	5.03E-05	4.91E-05	7.06E-07	2.14E-05	2.19E-05	7.06E-07
1432	571863.8	4149217	0.000231	0.000199	7.04E-07	2.81E-04	2.70E-04	7.04E-07	5.02E-05	4.90E-05	7.04E-07	2.13E-05	2.19E-05	7.04E-07
1433	571863.6	4149208	0.000232	0.0002	7.06E-07	2.82E-04	2.70E-04	7.06E-07	5.03E-05	4.91E-05	7.06E-07	2.14E-05	2.19E-05	7.06E-07
1434	571863.3	4149199	0.000233	0.000201	7.11E-07	2.84E-04	2.72E-04	7.11E-07	5.06E-05	4.94E-05	7.11E-07	2.15E-05	2.21E-05	7.11E-07
1435	571863	4149190	0.000236	0.000203	7.18E-07	2.87E-04	2.75E-04	7.18E-07	5.11E-05	4.99E-05	7.18E-07	2.17E-05	2.23E-05	7.18E-07
1436	571862.7	4149181	0.000239	0.000206	7.27E-07	2.90E-04	2.78E-04	7.27E-07	5.18E-05	5.06E-05	7.27E-07	2.20E-05	2.26E-05	7.27E-07
1437	571862.4	4149172	0.000242	0.000209	7.37E-07	2.95E-04	2.82E-04	7.37E-07	5.25E-05	5.13E-05	7.37E-07	2.23E-05	2.29E-05	7.37E-07
1438	571862.1	4149163	0.000246	0.000212	7.48E-07	2.99E-04	2.86E-04	7.48E-07	5.33E-05	5.21E-05	7.48E-07	2.27E-05	2.32E-05	7.48E-07
1439	571861.9	4149153	0.000249	0.000214	7.58E-07	3.03E-04	2.90E-04	7.58E-07	5.40E-05	5.27E-05	7.58E-07	2.29E-05	2.35E-05	7.58E-07
1440	571861.6	4149144	0.000251	0.000216	7.65E-07	3.06E-04	2.93E-04	7.65E-07	5.45E-05	5.32E-05	7.65E-07	2.32E-05	2.37E-05	7.65E-07
1441	571861	4149126	0.000253	0.000218	7.7E-07	3.08E-04	2.95E-04	7.70E-07	5.48E-05	5.36E-05	7.70E-07	2.33E-05	2.39E-05	7.70E-07
1442	571860.7	4149117	0.000252	0.000217	7.66E-07	3.06E-04	2.93E-04	7.66E-07	5.46E-05	5.33E-05	7.66E-07	2.32E-05	2.38E-05	7.66E-07
1443	571860.4	4149108	0.000249	0.000215	7.59E-07	3.03E-04	2.90E-04	7.59E-07	5.40E-05	5.28E-05	7.59E-07	2.30E-05	2.35E-05	7.59E-07
1444	571860.2	4149099	0.000245	0.000211	7.48E-07	2.99E-04	2.86E-04	7.48E-07	5.33E-05	5.20E-05	7.48E-07	2.26E-05	2.32E-05	7.48E-07
1445	571859.9	4149089	0.000241	0.000208	7.33E-07	2.93E-04	2.81E-04	7.33E-07	5.23E-05	5.10E-05	7.33E-07	2.22E-05	2.28E-05	7.33E-07
1446	571859.6	4149080	0.000236	0.000203	7.17E-07	2.87E-04	2.75E-04	7.17E-07	5.11E-05	4.99E-05	7.17E-07	2.17E-05	2.23E-05	7.17E-07
1447	571859.3	4149071	0.00023	0.000198	7E-07	2.80E-04	2.68E-04	7.00E-07	4.99E-05	4.87E-05	7.00E-07	2.12E-05	2.17E-05	7.00E-07
1448	571859	4149062	0.000224	0.000193	6.84E-07	2.73E-04	2.62E-04	6.84E-07	4.87E-05	4.76E-05	6.84E-07	2.07E-05	2.12E-05	6.84E-07
1449	571858.7	4149053	0.000219	0.000189	6.68E-07	2.67E-04	2.56E-04	6.68E-07	4.76E-05	4.65E-05	6.68E-07	2.02E-05	2.07E-05	6.68E-07
1450	571858.5	4149044	0.000215	0.000185	6.54E-07	2.61E-04	2.50E-04	6.54E-07	4.66E-05	4.55E-05	6.54E-07	1.98E-05	2.03E-05	6.54E-07
1451	572365.5	4149252	0.052758	0.045461	0.000161	6.42E-02	6.15E-02	1.61E-04	1.14E-02	1.12E-02	1.61E-04	4.87E-03	4.99E-03	1.61E-04
1452	572382.6	4149247	0.050332	0.04337	0.000153	6.13E-02	5.87E-02	1.53E-04	1.09E-02	1.07E-02	1.53E-04	4.64E-03	4.76E-03	1.53E-04
1453	572352.8	4149263	0.0403	0.034725	0.000123	4.90E-02	4.70E-02	1.23E-04	8.75E-03	8.54E-03	1.23E-04	3.72E-03	3.81E-03	1.23E-04
1454	572368.3	4149261	0.041049	0.035371	0.000125	5.00E-02	4.79E-02	1.25E-04	8.91E-03	8.70E-03	1.25E-04	3.79E-03	3.88E-03	1.25E-04
1455	572385.4	4149256	0.038934	0.033548	0.000119	4.74E-02	4.54E-02	1.19E-04	8.45E-03	8.25E-03	1.19E-04	3.59E-03	3.68E-03	1.19E-04
1456	572402.5	4149251	0.034194	0.029464	0.000104	4.16E-02	3.99E-02	1.04E-04	7.42E-03	7.25E-03	1.04E-04	3.15E-03	3.23E-03	1.04E-04
1457	572355.6	4149273	0.032396	0.027915	9.87E-05	3.94E-02	3.78E-02	9.87E-05	7.03E-03	6.87E-03	9.87E-05	2.99E-03	3.06E-03	9.87E-05
1458	572341.6	4149272	0.032652	0.028136	9.94E-05	3.97E-02	3.81E-02	9.94E-05	7.09E-03	6.92E-03	9.94E-05	3.01E-03	3.09E-03	9.94E-05
1459	572329.7	4149266	0.033808	0.029132	0.000103	4.11E-02	3.94E-02	1.03E-04	7.34E-03	7.17E-03	1.03E-04	3.12E-03	3.20E-03	1.03E-04
1460	572371.1	4149271	0.032419	0.027935	9.87E-05	3.95E-02	3.78E-02	9.87E-05	7.04E-03	6.87E-03	9.87E-05	2.99E-03	3.07E-03	9.87E-05
1461	572388.2	4149266	0.030971	0.026687	9.43E-05	3.77E-02	3.61E-02	9.43E-05	6.72E-03	6.56E-03	9.43E-05	2.86E-03	2.93E-03	9.43E-05
1462	572339.2	4149281	0.027057	0.023315	8.24E-05	3.29E-02	3.16E-02	8.24E-05	5.87E-03	5.73E-03	8.24E-05	2.50E-03	2.56E-03	8.24E-05
1463	572324.3	4149274	0.02822	0.024317	8.6E-05	3.43E-02	3.29E-02	8.60E-05	6.12E-03	5.98E-03	8.60E-05	2.60E-03	2.67E-03	8.60E-05
1464	572320.3	4149283	0.023606	0.020341	7.19E-05	2.87E-02	2.75E-02	7.19E-05	5.12E-03	5.00E-03	7.19E-05	2.18E-03	2.23E-03	7.19E-05
1465	572316.3	4149293	0.020054	0.01728	6.11E-05	2.44E-02	2.34E-02	6.11E-05	4.35E-03	4.25E-03	6.11E-05	1.85E-03	1.90E-03	6.11E-05
1466	572304.8	4149281	0.020903	0.018012	6.37E-05	2.54E-02	2.44E-02	6.37E-05	4.54E-03	4.43E-03	6.37E-05	1.93E-03	1.98E-03	6.37E-05
1467	572301	4149291	0.018169	0.015656	5.53E-05	2.21E-02	2.12E-02	5.53E-05	3.94E-03	3.85E-03	5.53E-05	1.68E-03	1.72E-03	5.53E-05
1468	572289.7	4149279	0.017119	0.014751	5.21E-05	2.08E-02	2.00E-02	5.21E-05	3.71E-03	3.63E-03	5.21E-05	1.58E-03	1.62E-03	5.21E-05
1469	572297.1	4149300	0.015923	0.01372	4.85E-05	1.94E-02	1.86E-02	4.85E-05	3.46E-03	3.37E-03	4.85E-05	1.47E-03	1.51E-03	4.85E-05
1470	572286	4149289	0.015384	0.013256	4.69E-05	1.87E-02	1.79E-02	4.69E-05	3.34E-03	3.26E-03	4.69E-05	1.42E-03	1.45E-03	4.69E-05
1471	572278.7	4149295	0.013478	0.011614	4.11E-05	1.64E-02	1.57E-02	4.11E-05	2.92E-03	2.86E-03	4.11E-05	1.24E-03	1.27E-03	4.11E-05
1472	572275.2	4149305	0.012243	0.010549	3.73E-05	1.49E-02	1.43E-02	3.73E-05	2.66E-03	2.59E-03	3.73E-05	1.13E-03	1.16E-03	3.73E-05
1473	572263.2	4149292	0.010655	0.009181	3.25E-05	1.30E-02	1.24E-02	3.25E-05	2.31E-03	2.26E-03	3.25E-05	9.83E-04	1.01E-03	3.25E-05
1474	572271.6	4149314	0.011097	0.009562	3.38E-05	1.35E-02	1.29E-02	3.38E-05	2.41E-03	2.35E-03	3.38E-05	1.02E-03	1.05E-03	3.38E-05
1475	572259.8	4149302	0.010013	0.008628	3.05E-05	1.22E-02	1.17E-02	3.05E-05	2.17E-03	2.12E-03	3.05E-05	9.24E-04	9.47E-04	3.05E-05
1476	572256.2	4149312	0.009343	0.008051	2.85E-05	1.14E-02	1.09E-02	2.85E-05	2.03E-03	1.98E-03	2.85E-05	8.62E-04	8.83E-04	2.85E-05

1477	572244.5	4149300	0.007851	0.006765	2.39E-05	9.56E-03	9.16E-03	2.39E-05	1.70E-03	1.66E-03	2.39E-05	7.24E-04	7.42E-04	2.39E-05
1478	572252.6	4149322	0.008683	0.007482	2.64E-05	1.06E-02	1.01E-02	2.64E-05	1.88E-03	1.84E-03	2.64E-05	8.01E-04	8.21E-04	2.64E-05
1479	572241	4149310	0.00755	0.006506	2.3E-05	9.19E-03	8.81E-03	2.30E-05	1.64E-03	1.60E-03	2.30E-05	6.97E-04	7.14E-04	2.30E-05
1480	572233.2	4149315	0.006759	0.005824	2.06E-05	8.23E-03	7.88E-03	2.06E-05	1.47E-03	1.43E-03	2.06E-05	6.24E-04	6.39E-04	2.06E-05
1481	572217.7	4149313	0.005302	0.004568	1.61E-05	6.45E-03	6.18E-03	1.61E-05	1.15E-03	1.12E-03	1.61E-05	4.89E-04	5.01E-04	1.61E-05
1482	572199.2	4149321	0.004142	0.003569	1.26E-05	5.04E-03	4.83E-03	1.26E-05	8.99E-04	8.78E-04	1.26E-05	3.82E-04	3.92E-04	1.26E-05

			UnMitigation			T2			T2L3			T4		
			0.29	0.25	0.00	0.38	0.36	0.00	0.067	0.065	0.00	0.028	0.029	0.00
#	X	Y	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
1	572214.1	4148842	1.39E-02	1.20E-02	4.17E-05	1.81E-02	1.74E-02	7.21E-05	3.20E-03	3.13E-03	1.33E-05	1.35E-03	1.38E-03	5.69E-06
2	572197.9	4148849	1.26E-02	1.09E-02	3.78E-05	1.64E-02	1.57E-02	6.52E-05	2.90E-03	2.83E-03	1.20E-05	1.22E-03	1.25E-03	5.15E-06
3	572181.7	4148856	1.13E-02	9.76E-03	3.39E-05	1.48E-02	1.41E-02	5.86E-05	2.61E-03	2.54E-03	1.08E-05	1.10E-03	1.12E-03	4.62E-06
4	572210	4148832	1.32E-02	1.14E-02	3.96E-05	1.72E-02	1.65E-02	6.83E-05	3.04E-03	2.97E-03	1.26E-05	1.28E-03	1.31E-03	5.39E-06
5	572193.8	4148840	1.20E-02	1.03E-02	3.59E-05	1.56E-02	1.49E-02	6.20E-05	2.76E-03	2.69E-03	1.14E-05	1.16E-03	1.19E-03	4.89E-06
6	572177.6	4148847	1.08E-02	9.29E-03	3.23E-05	1.40E-02	1.35E-02	5.58E-05	2.48E-03	2.42E-03	1.03E-05	1.04E-03	1.07E-03	4.40E-06
7	572205.9	4148823	1.25E-02	1.08E-02	3.76E-05	1.64E-02	1.57E-02	6.50E-05	2.89E-03	2.82E-03	1.20E-05	1.22E-03	1.24E-03	5.13E-06
8	572189.7	4148831	1.14E-02	9.82E-03	3.41E-05	1.48E-02	1.42E-02	5.89E-05	2.62E-03	2.56E-03	1.09E-05	1.10E-03	1.13E-03	4.65E-06
9	572173.5	4148838	1.03E-02	8.85E-03	3.08E-05	1.34E-02	1.28E-02	5.31E-05	2.36E-03	2.31E-03	9.79E-06	9.94E-04	1.02E-03	4.20E-06
10	572201.8	4148814	1.19E-02	1.03E-02	3.58E-05	1.56E-02	1.49E-02	6.18E-05	2.75E-03	2.68E-03	1.14E-05	1.16E-03	1.18E-03	4.88E-06
11	572185.6	4148821	1.08E-02	9.36E-03	3.25E-05	1.42E-02	1.36E-02	5.62E-05	2.50E-03	2.44E-03	1.04E-05	1.05E-03	1.08E-03	4.44E-06
12	572169.4	4148829	9.79E-03	8.46E-03	2.94E-05	1.28E-02	1.23E-02	5.08E-05	2.26E-03	2.20E-03	9.35E-06	9.50E-04	9.71E-04	4.01E-06
13	572197.8	4148805	1.14E-02	9.80E-03	3.41E-05	1.48E-02	1.42E-02	5.88E-05	2.62E-03	2.55E-03	1.08E-05	1.10E-03	1.13E-03	4.65E-06
14	572181.6	4148812	1.03E-02	8.93E-03	3.10E-05	1.35E-02	1.29E-02	5.36E-05	2.38E-03	2.33E-03	9.87E-06	1.00E-03	1.03E-03	4.23E-06
15	572165.4	4148820	9.36E-03	8.09E-03	2.81E-05	1.22E-02	1.17E-02	4.85E-05	2.16E-03	2.11E-03	8.94E-06	9.08E-04	9.29E-04	3.83E-06
16	572193.7	4148796	1.08E-02	9.34E-03	3.24E-05	1.41E-02	1.35E-02	5.60E-05	2.49E-03	2.43E-03	1.03E-05	1.05E-03	1.07E-03	4.42E-06
17	572177.5	4148803	9.88E-03	8.53E-03	2.96E-05	1.29E-02	1.24E-02	5.12E-05	2.28E-03	2.22E-03	9.43E-06	9.58E-04	9.79E-04	4.04E-06
18	572161.3	4148810	8.96E-03	7.74E-03	2.69E-05	1.17E-02	1.12E-02	4.65E-05	2.07E-03	2.02E-03	8.56E-06	8.69E-04	8.89E-04	3.67E-06
19	572206.4	4148783	1.14E-02	9.80E-03	3.41E-05	1.48E-02	1.42E-02	5.88E-05	2.62E-03	2.55E-03	1.08E-05	1.10E-03	1.13E-03	4.65E-06
20	572189.6	4148787	1.03E-02	8.90E-03	3.09E-05	1.35E-02	1.29E-02	5.34E-05	2.38E-03	2.32E-03	9.85E-06	1.00E-03	1.02E-03	4.22E-06
21	572173.4	4148794	9.43E-03	8.14E-03	2.83E-05	1.23E-02	1.18E-02	4.89E-05	2.17E-03	2.12E-03	9.00E-06	9.15E-04	9.35E-04	3.86E-06
22	572157.2	4148801	8.58E-03	7.41E-03	2.57E-05	1.12E-02	1.07E-02	4.45E-05	1.98E-03	1.93E-03	8.19E-06	8.32E-04	8.51E-04	3.51E-06
23	572202.3	4148774	1.08E-02	9.34E-03	3.25E-05	1.41E-02	1.35E-02	5.61E-05	2.49E-03	2.44E-03	1.03E-05	1.05E-03	1.07E-03	4.43E-06
24	572185.5	4148778	9.84E-03	8.50E-03	2.95E-05	1.29E-02	1.23E-02	5.10E-05	2.27E-03	2.22E-03	9.40E-06	9.55E-04	9.76E-04	4.03E-06
25	572169.3	4148785	9.01E-03	7.78E-03	2.71E-05	1.18E-02	1.13E-02	4.67E-05	2.08E-03	2.03E-03	8.61E-06	8.74E-04	8.94E-04	3.69E-06
26	572153.1	4148792	8.22E-03	7.10E-03	2.47E-05	1.07E-02	1.03E-02	4.26E-05	1.89E-03	1.85E-03	7.85E-06	7.97E-04	8.15E-04	3.36E-06
27	572198.2	4148765	1.03E-02	8.91E-03	3.10E-05	1.35E-02	1.29E-02	5.35E-05	2.38E-03	2.32E-03	9.86E-06	1.00E-03	1.02E-03	4.22E-06
28	572181.4	4148769	9.41E-03	8.13E-03	2.82E-05	1.23E-02	1.18E-02	4.88E-05	2.17E-03	2.12E-03	8.99E-06	9.13E-04	9.33E-04	3.85E-06
29	572165.2	4148776	8.63E-03	7.45E-03	2.59E-05	1.13E-02	1.08E-02	4.47E-05	1.99E-03	1.94E-03	8.24E-06	8.37E-04	8.56E-04	3.53E-06
30	572149	4148783	7.88E-03	6.80E-03	2.36E-05	1.03E-02	9.85E-03	4.08E-05	1.82E-03	1.77E-03	7.52E-06	7.64E-04	7.81E-04	3.22E-06
31	572194.3	4148756	9.87E-03	8.53E-03	2.96E-05	1.29E-02	1.24E-02	5.12E-05	2.28E-03	2.22E-03	9.43E-06	9.58E-04	9.79E-04	4.04E-06
32	572177.4	4148759	9.01E-03	7.78E-03	2.70E-05	1.18E-02	1.13E-02	4.67E-05	2.08E-03	2.03E-03	8.60E-06	8.74E-04	8.93E-04	3.69E-06
33	572161.2	4148767	8.27E-03	7.14E-03	2.48E-05	1.08E-02	1.03E-02	4.29E-05	1.91E-03	1.86E-03	7.90E-06	8.02E-04	8.20E-04	3.38E-06
34	572145	4148774	7.56E-03	6.53E-03	2.27E-05	9.87E-03	9.46E-03	3.92E-05	1.74E-03	1.70E-03	7.22E-06	7.33E-04	7.50E-04	3.09E-06
35	572190.2	4148746	9.44E-03	8.15E-03	2.83E-05	1.23E-02	1.18E-02	4.90E-05	2.18E-03	2.13E-03	9.02E-06	9.16E-04	9.37E-04	3.86E-06
36	572173.3	4148750	8.63E-03	7.45E-03	2.59E-05	1.13E-02	1.08E-02	4.47E-05	1.99E-03	1.94E-03	8.24E-06	8.37E-04	8.56E-04	3.53E-06
37	572157.1	4148758	7.93E-03	6.85E-03	2.38E-05	1.04E-02	9.92E-03	4.11E-05	1.83E-03	1.79E-03	7.58E-06	7.69E-04	7.87E-04	3.25E-06
38	572140.9	4148765	7.27E-03	6.27E-03	2.18E-05	9.49E-03	9.09E-03	3.77E-05	1.68E-03	1.64E-03	6.94E-06	7.05E-04	7.21E-04	2.97E-06
39	572186.1	4148737	9.04E-03	7.81E-03	2.71E-05	1.18E-02	1.13E-02	4.69E-05	2.08E-03	2.04E-03	8.64E-06	8.77E-04	8.97E-04	3.70E-06
40	572169.2	4148741	8.27E-03	7.15E-03	2.48E-05	1.08E-02	1.04E-02	4.29E-05	1.91E-03	1.86E-03	7.90E-06	8.03E-04	8.21E-04	3.39E-06
41	572153	4148748	7.62E-03	6.58E-03	2.29E-05	9.95E-03	9.53E-03	3.95E-05	1.76E-03	1.71E-03	7.28E-06	7.39E-04	7.56E-04	3.12E-06
42	572136.8	4148756	6.99E-03	6.04E-03	2.10E-05	9.12E-03	8.74E-03	3.62E-05	1.61E-03	1.57E-03	6.67E-06	6.78E-04	6.93E-04	2.86E-06
43	572182	4148728	8.67E-03	7.49E-03	2.60E-05	1.13E-02	1.08E-02	4.49E-05	2.00E-03	1.95E-03	8.28E-06	8.41E-04	8.60E-04	3.55E-06
44	572165.1	4148732	7.94E-03	6.86E-03	2.38E-05	1.04E-02	9.94E-03	4.12E-05	1.83E-03	1.79E-03	7.58E-06	7.70E-04	7.88E-04	3.25E-06
45	572148.9	4148739	7.32E-03	6.32E-03	2.20E-05	9.56E-03	9.16E-03	3.80E-05	1.69E-03	1.65E-03	6.99E-06	7.10E-04	7.26E-04	3.00E-06
46	572132.7	4148746	6.73E-03	5.81E-03	2.02E-05	8.78E-03	8.42E-03	3.49E-05	1.55E-03	1.51E-03	6.43E-06	6.53E-04	6.67E-04	2.75E-06
47	572177.9	4148719	8.31E-03	7.18E-03	2.50E-05	1.09E-02	1.04E-02	4.31E-05	1.92E-03	1.87E-03	7.94E-06	8.06E-04	8.25E-04	3.40E-06
48	572161	4148723	7.63E-03	6.59E-03	2.29E-05	9.96E-03	9.54E-03	3.96E-05	1.76E-03	1.72E-03	7.29E-06	7.40E-04	7.57E-04	3.12E-06
49	572144.8	4148730	7.04E-03	6.08E-03	2.11E-05	9.20E-03	8.81E-03	3.65E-05	1.62E-03	1.59E-03	6.73E-06	6.83E-04	6.99E-04	2.88E-06
50	572128.6	4148737	6.48E-03	5.60E-03	1.95E-05	8.46E-03	8.11E-03	3.36E-05	1.49E-03	1.46E-03	6.19E-06	6.29E-04	6.43E-04	2.65E-06
51	572173.8	4148710	7.98E-03	6.89E-03	2.40E-05	1.04E-02	9.99E-03	4.14E-05	1.84E-03	1.80E-03	7.62E-06	7.74E-04	7.92E-04	3.27E-06
52	572157	4148714	7.34E-03	6.34E-03	2.20E-05	9.58E-03	9.18E-03	3.80E-05	1.69E-03	1.65E-03	7.01E-06	7.12E-04	7.28E-04	3.00E-06
53	572140.8	4148721	6.78E-03	5.86E-03	2.04E-05	8.85E-03	8.48E-03	3.52E-05	1.56E-03	1.53E-03	6.48E-06	6.58E-04	6.73E-04	2.78E-06
54	572124.6	4148728	6.25E-03	5.40E-03	1.88E-05	8.16E-03	7.82E-03	3.24E-05	1.44E-03	1.41E-03	5.97E-06	6.06E-04	6.20E-04	2.56E-06
55	572169.7	4148701	7.67E-03	6.62E-03	2.30E-05	1.00E-02	9.60E-03	3.98E-05	1.77E-03	1.73E-03	7.32E-06	7.44E-04	7.61E-04	3.14E-06
56	572152.9	4148705	7.06E-03	6.10E-03	2.12E-05	9.22E-03	8.83E-03	3.66E-05	1.63E-03	1.59E-03	6.74E-06	6.85E-04	7.00E-04	2.89E-06
57	572136.7	4148712	6.53E-03	5.64E-03	1.96E-05	8.53E-03	8.17E-03	3.39E-05	1.51E-03	1.47E-03	6.24E-06	6.34E-04	6.48E-04	2.67E-06
58	572120.5	4148719	6.03E-03	5.21E-03	1.81E-05	7.87E-03	7.54E-03	3.13E-05	1.39E-03	1.36E-03	5.76E-06	5.85E-04	5.98E-04	2.47E-06
59	572310.1	4149192	2.16E-01	1.87E-01	6.49E-04	2.82E-01	2.70E-01	1.12E-03	4.98E-02	4.86E-02	2.06E-04	2.10E-02	2.14E-02	8.84E-05
60	572313.9	4149201	2.60E-01	2.24E-01	7.80E-04	3.39E-01	3.25E-01	1.35E-03	5.99E-02	5.85E-02	2.48E-04	2.52E-02	2.58E-02	1.06E-04
61	572296.9	4149180	1.42E-01	1.23E-01	4.27E-04	1.86E-01	1.78E-01	7.38E-04	3.28E-02	3.20E-02	1.36E-04	1.38E-02	1.41E-02	5.82E-05
62	572301	4149196	1.55E-01	1.34E-01	4.64E-04	2.02E-01	1.94E-01	8.02E-04	3.57E-02	3.48E-02	1.48E-04	1.50E-02	1.53E-02	6.33E-05
63	572304.8	4149205	1.86E-01	1.60E-01	5.57E-04	2.42E-01	2.32E-01	9.62E-04	4.28E-02	4.18E-02	1.77E-04	1.80E-02	1.84E-02	7.59E-05
64	572308.7	4149213	2.36E-01	2.04E-01	7.07E-04	3.08E-01	2.95E-01	1.22E-03	5.43E-02	5.31E-02	2.25E-04	2.29E-02	2.34E-02	9.65E-05
65	572312.5	4149222	2.91E-01	2.51E-01	8.72E-04	3.79E-01	3.64E-01	1.51E-03	6.70E-02	6.54E-02	2.78E-04	2.82E-02	2.88E-02	1.19E-04
66	572287.8	4149184	1.06E-01	9.12E-02	3.17E-04	1.38E-01	1.32E-01	5.47E-04	2.43E-02	2.38E-02	1.01E-04	1.02E-02	1.05E-02	4.32E-05
67	572287.3	4149169	1.07E-01	9.20E-02	3.20E-04	1.39E-01	1.33E-01	5.52E-04	2.46E-02	2.40E-02	1.02E-04	1.03E-02	1.06E-02	4.36E-05
68	572292.4	4149156	1.26E-01	1.09E-01	3.77E-04	1.64E-01	1.57E-01	6.52E-04	2.90E-02	2.83E-02	1.20E-04	1.22E-02	1.25E-02	5.14E-05
69	572291.9	4149201	1.16E-01	1.00E-01	3.48E-04	1.52E-01	1.45E-01	6.02E-04	2.68E-02	2.61E-02	1.11E-04	1.13E-02	1.15E-02	4.75E-05
70	572295.7	4149209	1.37E-01	1.18E-01	4.11E-04	1.79E-01	1.71E-01	7.09E-04	3.15E-02	3.08E-02	1.31E-04	1.33E-02	1.36E-02	5.60E-05
71	572299.5	4149218	1.71E-01	1.47E-01	5.12E-04	2.23E-01	2.14E-01	8.85E-04	3.94E-02	3.84E-02	1.63E-04	1.66E-02	1.69E-02	6.99E-05
72	572303.4	4149226	2.13E-01	1.84E-01	6.40E-04	2.78E-01	2.67E-01	1.11E-03	4.92E-02	4.80E-02	2.04E-04	2.07E-02	2.11E-02	8.73E-05
73	572278.7	4149189	8.18E-02	7.07E-02	2.46E-04	1.07E-01	1.02E-01	4.24E-04	1.89E-02	1.84E-02	7.81E-05	7.94E-03	8.12E-03	3.35E-05
74	572278.2	4149173	8.23E-02	7.11E-02	2.47E-04	1.07E-01	1.03E-01	4.27E-04	1.90E-02	1.85E-02	7.86E-05	7.98E-03	8.16E-03	3.37E-05
75	572283	4149152	9.39E-02	8.11E-02	2.82E-04	1.23E-01	1.17E-01	4.87E-04	2.17E-02	2.11E-02	8.97E-05	9.11E-03	9.32E-03	3.84E-05
76	572282.8	4149205	9.00E-02	7.77E-02	2.70E-04	1.17E-01	1.13E-01	4.66E-04	2.07E-02	2.02E-02	8.59E-05	8.73E-03	8.92E-03	3.68E-05
77	572286.6	4149213	1.04E-01	9.02E-02	3.13E-04	1.36E-01	1.31E-01	5.41E-04	2.41E-02	2.35E-02	9.97E-05	1.01E-02	1.04E-02	4.27E-05
78	572290.4	4149222	1.28E-01	1.11E-01	3.84E-04	1.67E-01	1.60E-01	6.64E-04	2.95E-02	2.88E-02	1.22E-04	1.24E-02	1.27E-02	5.24E-05
79	572294.3	4149230	1.60E-01	1.38E-01	4.80E-04	2.09E-01	2.00E-01	8.29E-04	3.69E-02	3.60E-02	1.53E-04	1.55E-02	1.59E-02	6.55E-05
80	572269.5	4149191	6.55E-02	5.65E-02	1.96E-04	8.55E-02	8.19E-02	3.39E-04	1.51E-02	1.47E-02	6.25E-05	6.35E-03	6.49E-03	2.68E-05

81	572269.2	4149182	6.58E-02	5.68E-02	1.98E-04	8.59E-02	8.23E-02	3.41E-04	1.52E-02	1.48E-02	6.29E-05	6.38E-03	6.53E-03	2.69E-05
82	572269	4149173	6.56E-02	5.67E-02	1.97E-04	8.57E-02	8.21E-02	3.40E-04	1.51E-02	1.48E-02	6.27E-05	6.37E-03	6.51E-03	2.69E-05
83	572268.7	4149163	6.49E-02	5.60E-02	1.95E-04	8.47E-02	8.12E-02	3.36E-04	1.50E-02	1.46E-02	6.19E-05	6.29E-03	6.43E-03	2.65E-05
84	572274.7	4149148	7.48E-02	6.46E-02	2.24E-04	9.76E-02	9.36E-02	3.88E-04	1.72E-02	1.68E-02	7.14E-05	7.25E-03	7.42E-03	3.06E-05
85	572281	4149141	8.86E-02	7.65E-02	2.66E-04	1.16E-01	1.11E-01	4.59E-04	2.04E-02	1.99E-02	8.46E-05	8.60E-03	8.79E-03	3.63E-05
86	572287.4	4149134	1.06E-01	9.12E-02	3.17E-04	1.38E-01	1.32E-01	5.47E-04	2.43E-02	2.38E-02	1.01E-04	1.02E-02	1.05E-02	4.32E-05
87	572269.8	4149200	6.51E-02	5.62E-02	1.95E-04	8.50E-02	8.14E-02	3.37E-04	1.50E-02	1.47E-02	6.22E-05	6.31E-03	6.46E-03	2.66E-05
88	572273.7	4149209	7.16E-02	6.18E-02	2.15E-04	9.35E-02	8.96E-02	3.71E-04	1.65E-02	1.61E-02	6.84E-05	6.95E-03	7.10E-03	2.93E-05
89	572277.5	4149217	8.23E-02	7.10E-02	2.47E-04	1.07E-01	1.03E-01	4.26E-04	1.90E-02	1.85E-02	7.86E-05	7.98E-03	8.16E-03	3.37E-05
90	572281.3	4149226	9.95E-02	8.59E-02	2.99E-04	1.30E-01	1.24E-01	5.16E-04	2.29E-02	2.24E-02	9.50E-05	9.65E-03	9.87E-03	4.07E-05
91	572285.2	4149234	1.23E-01	1.07E-01	3.70E-04	1.61E-01	1.54E-01	6.40E-04	2.85E-02	2.78E-02	1.18E-04	1.20E-02	1.22E-02	5.05E-05
92	572260.4	4149195	5.35E-02	4.62E-02	1.61E-04	6.98E-02	6.69E-02	2.77E-04	1.23E-02	1.20E-02	5.11E-05	5.19E-03	5.30E-03	2.19E-05
93	572260.2	4149187	5.39E-02	4.65E-02	1.62E-04	7.03E-02	6.74E-02	2.79E-04	1.24E-02	1.21E-02	5.14E-05	5.22E-03	5.34E-03	2.20E-05
94	572259.9	4149178	5.39E-02	4.65E-02	1.62E-04	7.03E-02	6.74E-02	2.79E-04	1.24E-02	1.21E-02	5.14E-05	5.22E-03	5.34E-03	2.20E-05
95	572259.3	4149160	5.26E-02	4.54E-02	1.58E-04	6.86E-02	6.58E-02	2.73E-04	1.21E-02	1.18E-02	5.02E-05	5.10E-03	5.21E-03	2.15E-05
96	572265.2	4149144	5.92E-02	5.11E-02	1.78E-04	7.73E-02	7.41E-02	3.07E-04	1.36E-02	1.33E-02	5.65E-05	5.74E-03	5.87E-03	2.42E-05
97	572277.5	4149131	8.00E-02	6.91E-02	2.40E-04	1.04E-01	1.00E-01	4.15E-04	1.84E-02	1.80E-02	7.64E-05	7.76E-03	7.93E-03	3.27E-05
98	572260.7	4149204	5.34E-02	4.61E-02	1.60E-04	6.97E-02	6.68E-02	2.77E-04	1.23E-02	1.20E-02	5.10E-05	5.18E-03	5.29E-03	2.18E-05
99	572264.5	4149213	5.84E-02	5.04E-02	1.75E-04	7.62E-02	7.30E-02	3.03E-04	1.35E-02	1.31E-02	5.58E-05	5.66E-03	5.79E-03	2.39E-05
100	572268.4	4149221	6.65E-02	5.74E-02	2.00E-04	8.68E-02	8.32E-02	3.45E-04	1.53E-02	1.50E-02	6.35E-05	6.45E-03	6.60E-03	2.72E-05
101	572272.2	4149230	7.95E-02	6.87E-02	2.39E-04	1.04E-01	9.95E-02	4.12E-04	1.83E-02	1.79E-02	7.59E-05	7.71E-03	7.89E-03	3.25E-05
102	572276.1	4149238	9.77E-02	8.44E-02	2.93E-04	1.28E-01	1.22E-01	5.07E-04	2.25E-02	2.20E-02	9.33E-05	9.48E-03	9.69E-03	4.00E-05
103	572250.8	4149182	4.50E-02	3.89E-02	1.35E-04	5.87E-02	5.63E-02	2.33E-04	1.04E-02	1.01E-02	4.30E-05	4.36E-03	4.46E-03	1.84E-05
104	572250.2	4149165	4.42E-02	3.82E-02	1.33E-04	5.77E-02	5.53E-02	2.29E-04	1.02E-02	9.95E-03	4.22E-05	4.29E-03	4.38E-03	1.81E-05
105	572255.7	4149141	4.81E-02	4.15E-02	1.44E-04	6.28E-02	6.01E-02	2.49E-04	1.11E-02	1.08E-02	4.59E-05	4.66E-03	4.77E-03	1.97E-05
106	572267.8	4149128	6.26E-02	5.41E-02	1.88E-04	8.18E-02	7.84E-02	3.25E-04	1.44E-02	1.41E-02	5.98E-05	6.08E-03	6.21E-03	2.56E-05
107	572240.6	4149152	3.65E-02	3.15E-02	1.10E-04	4.77E-02	4.57E-02	1.89E-04	8.42E-03	8.22E-03	3.49E-05	3.54E-03	3.62E-03	1.50E-05
108	572246.3	4149137	3.99E-02	3.44E-02	1.20E-04	5.20E-02	4.99E-02	2.07E-04	9.19E-03	8.97E-03	3.81E-05	3.87E-03	3.95E-03	1.63E-05
109	572258.1	4149125	5.04E-02	4.35E-02	1.51E-04	6.58E-02	6.31E-02	2.61E-04	1.16E-02	1.13E-02	4.82E-05	4.89E-03	5.00E-03	2.06E-05
110	572270	4149112	6.49E-02	5.60E-02	1.95E-04	8.47E-02	8.12E-02	3.36E-04	1.50E-02	1.46E-02	6.20E-05	6.30E-03	6.44E-03	2.66E-05
111	572236.8	4149134	3.36E-02	2.90E-02	1.01E-04	4.38E-02	4.20E-02	1.74E-04	7.74E-03	7.56E-03	3.21E-05	3.26E-03	3.33E-03	1.37E-05
112	572248.6	4149121	4.15E-02	3.58E-02	1.24E-04	5.41E-02	5.19E-02	2.15E-04	9.56E-03	9.33E-03	3.96E-05	4.02E-03	4.11E-03	1.70E-05
113	572260.3	4149109	5.22E-02	4.51E-02	1.57E-04	6.82E-02	6.54E-02	2.71E-04	1.20E-02	1.18E-02	4.99E-05	5.07E-03	5.18E-03	2.14E-05
114	572227.4	4149130	2.87E-02	2.48E-02	8.61E-05	3.75E-02	3.59E-02	1.49E-04	6.61E-03	6.46E-03	2.74E-05	2.78E-03	2.85E-03	1.17E-05
115	572239	4149118	3.47E-02	3.00E-02	1.04E-04	4.53E-02	4.34E-02	1.80E-04	8.00E-03	7.81E-03	3.31E-05	3.37E-03	3.44E-03	1.42E-05
116	572213.7	4149179	2.50E-02	2.16E-02	7.49E-05	3.26E-02	3.12E-02	1.29E-04	5.75E-03	5.62E-03	2.38E-05	2.42E-03	2.48E-03	1.02E-05
117	572213.4	4149170	2.48E-02	2.14E-02	7.44E-05	3.24E-02	3.10E-02	1.28E-04	5.71E-03	5.58E-03	2.37E-05	2.40E-03	2.46E-03	1.01E-05
118	572213.2	4149161	2.44E-02	2.11E-02	7.32E-05	3.19E-02	3.05E-02	1.26E-04	5.63E-03	5.49E-03	2.33E-05	2.37E-03	2.42E-03	9.99E-06
119	572212.9	4149151	2.39E-02	2.06E-02	7.17E-05	3.12E-02	2.99E-02	1.24E-04	5.51E-03	5.38E-03	2.28E-05	2.32E-03	2.37E-03	9.78E-06
120	572243.9	4149100	3.77E-02	3.25E-02	1.13E-04	4.92E-02	4.71E-02	1.95E-04	8.69E-03	8.48E-03	3.60E-05	3.65E-03	3.74E-03	1.54E-05
121	572250.2	4149093	4.20E-02	3.63E-02	1.26E-04	5.49E-02	5.26E-02	2.18E-04	9.69E-03	9.46E-03	4.01E-05	4.08E-03	4.17E-03	1.72E-05
122	572256.6	4149086	4.68E-02	4.04E-02	1.40E-04	6.10E-02	5.85E-02	2.42E-04	1.08E-02	1.05E-02	4.46E-05	4.53E-03	4.64E-03	1.91E-05
123	572262.9	4149079	5.18E-02	4.47E-02	1.55E-04	6.76E-02	6.48E-02	2.68E-04	1.19E-02	1.17E-02	4.94E-05	5.02E-03	5.13E-03	2.12E-05
124	572269.2	4149073	5.70E-02	4.92E-02	1.71E-04	7.44E-02	7.13E-02	2.95E-04	1.31E-02	1.28E-02	5.44E-05	5.53E-03	5.65E-03	2.33E-05
125	572204.6	4149184	2.21E-02	1.91E-02	6.63E-05	2.88E-02	2.76E-02	1.14E-04	5.09E-03	4.97E-03	2.11E-05	2.14E-03	2.19E-03	9.04E-06
126	572204.4	4149175	2.21E-02	1.90E-02	6.62E-05	2.88E-02	2.76E-02	1.14E-04	5.08E-03	4.96E-03	2.11E-05	2.14E-03	2.19E-03	9.02E-06
127	572204.1	4149166	2.18E-02	1.88E-02	6.55E-05	2.85E-02	2.73E-02	1.13E-04	5.03E-03	4.91E-03	2.08E-05	2.12E-03	2.16E-03	8.93E-06
128	572203.8	4149157	2.14E-02	1.85E-02	6.43E-05	2.80E-02	2.68E-02	1.11E-04	4.94E-03	4.83E-03	2.05E-05	2.08E-03	2.13E-03	8.77E-06
129	572203.5	4149148	2.10E-02	1.81E-02	6.30E-05	2.74E-02	2.63E-02	1.09E-04	4.84E-03	4.72E-03	2.00E-05	2.04E-03	2.08E-03	8.59E-06
130	572203.2	4149139	2.06E-02	1.78E-02	6.17E-05	2.68E-02	2.57E-02	1.07E-04	4.74E-03	4.63E-03	1.96E-05	1.99E-03	2.04E-03	8.41E-06
131	572221.6	4149110	2.60E-02	2.24E-02	7.80E-05	3.39E-02	3.25E-02	1.35E-04	5.99E-03	5.85E-03	2.48E-05	2.52E-03	2.58E-03	1.06E-05
132	572227.9	4149103	2.87E-02	2.47E-02	8.60E-05	3.74E-02	3.58E-02	1.49E-04	6.61E-03	6.45E-03	2.74E-05	2.78E-03	2.84E-03	1.17E-05
133	572240.3	4149090	3.51E-02	3.03E-02	1.05E-04	4.58E-02	4.39E-02	1.82E-04	8.09E-03	7.90E-03	3.35E-05	3.40E-03	3.48E-03	1.44E-05
134	572252.8	4149077	4.28E-02	3.69E-02	1.28E-04	5.58E-02	5.35E-02	2.22E-04	9.86E-03	9.62E-03	4.08E-05	4.15E-03	4.24E-03	1.75E-05
135	572259	4149070	4.69E-02	4.05E-02	1.41E-04	6.13E-02	5.87E-02	2.43E-04	1.08E-02	1.06E-02	4.48E-05	4.55E-03	4.65E-03	1.92E-05
136	572195.5	4149189	1.96E-02	1.69E-02	5.89E-05	2.56E-02	2.45E-02	1.02E-04	4.52E-03	4.41E-03	1.87E-05	1.90E-03	1.94E-03	8.03E-06
137	572195.3	4149180	1.97E-02	1.70E-02	5.91E-05	2.57E-02	2.46E-02	1.02E-04	4.54E-03	4.43E-03	1.88E-05	1.91E-03	1.95E-03	8.05E-06
138	572194.7	4149162	1.94E-02	1.67E-02	5.81E-05	2.53E-02	2.42E-02	1.00E-04	4.46E-03	4.36E-03	1.85E-05	1.88E-03	1.92E-03	7.92E-06
139	572194.4	4149153	1.90E-02	1.64E-02	5.70E-05	2.48E-02	2.37E-02	9.84E-05	4.38E-03	4.27E-03	1.81E-05	1.84E-03	1.88E-03	7.77E-06
140	572194.2	4149144	1.86E-02	1.60E-02	5.58E-05	2.43E-02	2.32E-02	9.63E-05	4.28E-03	4.18E-03	1.77E-05	1.80E-03	1.84E-03	7.60E-06
141	572193.9	4149135	1.82E-02	1.57E-02	5.47E-05	2.38E-02	2.28E-02	9.44E-05	4.20E-03	4.10E-03	1.74E-05	1.77E-03	1.81E-03	7.45E-06
142	572218.2	4149100	2.46E-02	2.13E-02	7.39E-05	3.21E-02	3.08E-02	1.28E-04	5.68E-03	5.54E-03	2.35E-05	2.39E-03	2.44E-03	1.01E-05
143	572230.5	4149087	2.97E-02	2.57E-02	8.92E-05	3.88E-02	3.72E-02	1.54E-04	6.85E-03	6.69E-03	2.84E-05	2.88E-03	2.95E-03	1.22E-05
144	572242.8	4149074	3.58E-02	3.09E-02	1.08E-04	4.68E-02	4.48E-02	1.86E-04	8.26E-03	8.06E-03	3.42E-05	3.47E-03	3.55E-03	1.47E-05
145	572255.1	4149061	4.27E-02	3.69E-02	1.28E-04	5.57E-02	5.34E-02	2.21E-04	9.84E-03	9.61E-03	4.08E-05	4.14E-03	4.23E-03	1.75E-05
146	572187.5	4149229	1.74E-02	1.50E-02	5.23E-05	2.27E-02	2.18E-02	9.03E-05	4.02E-03	3.92E-03	1.66E-05	1.69E-03	1.73E-03	7.13E-06
147	572186.4	4149193	1.75E-02	1.51E-02	5.25E-05	2.28E-02	2.19E-02	9.07E-05	4.03E-03	3.94E-03	1.67E-05	1.70E-03	1.74E-03	7.16E-06
148	572186.2	4149184	1.76E-02	1.52E-02	5.29E-05	2.30E-02	2.21E-02	9.14E-05	4.06E-03	3.97E-03	1.68E-05	1.71E-03	1.75E-03	7.22E-06
149	572185.6	4149167	1.75E-02	1.51E-02	5.26E-05	2.29E-02	2.19E-02	9.09E-05	4.04E-03	3.95E-03	1.67E-05	1.70E-03	1.74E-03	7.17E-06
150	572185.1	4149149	1.69E-02	1.46E-02	5.08E-05	2.21E-02	2.12E-02	8.77E-05	3.90E-03	3.81E-03	1.62E-05	1.64E-03	1.68E-03	6.92E-06
151	572184.8	4149140	1.66E-02	1.43E-02	4.97E-05	2.16E-02	2.07E-02	8.58E-05	3.82E-03	3.73E-03	1.58E-05	1.61E-03	1.64E-03	6.78E-06
152	572190.3	4149116	1.70E-02	1.47E-02	5.11E-05	2.22E-02	2.13E-02	8.83E-05	3.93E-03	3.84E-03	1.63E-05	1.65E-03	1.69E-03	6.97E-06
153	572214.6	4149090	2.33E-02	2.01E-02	7.00E-05	3.05E-02	2.92E-02	1.21E-04	5.38E-03	5.25E-03	2.23E-05	2.26E-03	2.31E-03	9.55E-06
154	572226.8	4149077	2.79E-02	2.41E-02	8.36E-05	3.64E-02	3.49E-02	1.44E-04	6.42E-03	6.27E-03	2.66E-05	2.70E-03	2.76E-03	1.14E-05
155	572239	4149064	3.31E-02	2.86E-02	9.94E-05	4.32E-02	4.14E-02	1.72E-04	7.64E-03	7.46E-03	3.16E-05	3.21E-03	3.28E-03	1.36E-05
156	572251.1	4149052	3.90E-02	3.36E-02	1.17E-04	5.09E-02	4.87E-02	2.02E-04	8.98E-03	8.77E-03	3.72E-05	3.78E-03	3.86E-03	1.59E-05
157	572187.8	4149237	1.78E-02	1.54E-02	5.34E-05	2.32E-02	2.23E-02	9.22E-05	4.10E-03	4.00E-03	1.70E-05	1.73E-03	1.76E-03	7.28E-06
158	572191.7	4149246	1.93E-02	1.66E-02	5.78E-05	2.51E-02	2.41E-02	9.98E-05	4.44E-03	4.33E-03	1.84E-05	1.87E-03	1.91E-03	7.88E-06
159	572195.5	4149254	2.12E-02	1.83E-02	6.37E-05	2.77E-02	2.66E-02	1.10E-04	4.89E-03	4.78E-03	2.03E-05	2.06E-03	2.11E-03	8.69E-06
160	572178.4	4149233	1.58E-02	1.36E-02	4.73E-05	2.06E-02	1.97E-02	8.18E-05	3.64E-03	3.55E-03	1.51E-05	1.53E-03	1.56E-03	6.45E-06
161	572177.3	4149198	1.57E-02	1.35E-02	4.71E-05	2.05E-02	1.96E-02	8.13E-05	3.62E-03	3.53E-03	1.50E-05	1.52E-03	1.56E-03	6.42E-06
162	572176.8	4149180	1.59E-02	1.38E-02	4.78E-05	2.08E-02	1.99E-02	8.26E-05	3.67E-03	3.59E-03	1.52E-05	1.55E-03	1.58E-03	6.52E-06
163	572176.3	4149163	1.58E-02	1.36E-02	4.73E-05	2.06E-02	1.97E-02	8.17E-05	3.63E-03	3.55E-03	1.50E-05	1.53E-03	1.56E-03	6.45E-06

164	572176	4149154	1.55E-02	1.34E-02	4.65E-05	2.02E-02	1.94E-02	8.03E-05	3.57E-03	3.49E-03	1.48E-05	1.50E-03	1.54E-03	6.34E-06
165	572175.4	4149136	1.49E-02	1.28E-02	4.46E-05	1.94E-02	1.86E-02	7.70E-05	3.42E-03	3.34E-03	1.42E-05	1.44E-03	1.47E-03	6.08E-06
166	572180.9	4149112	1.52E-02	1.31E-02	4.57E-05	1.99E-02	1.90E-02	7.89E-05	3.51E-03	3.43E-03	1.45E-05	1.48E-03	1.51E-03	6.23E-06
167	572205	4149087	2.04E-02	1.76E-02	6.11E-05	2.66E-02	2.55E-02	1.05E-04	4.69E-03	4.58E-03	1.94E-05	1.97E-03	2.02E-03	8.33E-06
168	572217.1	4149074	2.40E-02	2.08E-02	7.22E-05	3.14E-02	3.01E-02	1.25E-04	5.54E-03	5.41E-03	2.30E-05	2.33E-03	2.38E-03	9.84E-06
169	572229.1	4149061	2.83E-02	2.45E-02	8.50E-05	3.70E-02	3.54E-02	1.47E-04	6.53E-03	6.38E-03	2.71E-05	2.75E-03	2.81E-03	1.16E-05
170	572241.1	4149049	3.31E-02	2.86E-02	9.94E-05	4.32E-02	4.14E-02	1.72E-04	7.63E-03	7.45E-03	3.16E-05	3.21E-03	3.28E-03	1.36E-05
171	572182.5	4149250	1.74E-02	1.51E-02	5.23E-05	2.28E-02	2.18E-02	9.04E-05	4.02E-03	3.92E-03	1.66E-05	1.69E-03	1.73E-03	7.13E-06
172	572186.4	4149258	1.92E-02	1.66E-02	5.75E-05	2.50E-02	2.40E-02	9.94E-05	4.42E-03	4.32E-03	1.83E-05	1.86E-03	1.90E-03	7.85E-06
173	572169.3	4149237	1.44E-02	1.24E-02	4.31E-05	1.88E-02	1.80E-02	7.45E-05	3.31E-03	3.23E-03	1.37E-05	1.39E-03	1.43E-03	5.88E-06
174	572168.2	4149202	1.42E-02	1.22E-02	4.25E-05	1.85E-02	1.77E-02	7.34E-05	3.26E-03	3.19E-03	1.35E-05	1.37E-03	1.40E-03	5.80E-06
175	572167.7	4149185	1.44E-02	1.24E-02	4.32E-05	1.88E-02	1.80E-02	7.47E-05	3.32E-03	3.24E-03	1.38E-05	1.40E-03	1.43E-03	5.90E-06
176	572167.2	4149167	1.44E-02	1.24E-02	4.32E-05	1.88E-02	1.80E-02	7.47E-05	3.32E-03	3.24E-03	1.38E-05	1.40E-03	1.43E-03	5.89E-06
177	572166.6	4149150	1.40E-02	1.21E-02	4.20E-05	1.83E-02	1.75E-02	7.25E-05	3.22E-03	3.15E-03	1.34E-05	1.36E-03	1.39E-03	5.72E-06
178	572166.1	4149133	1.34E-02	1.16E-02	4.02E-05	1.75E-02	1.68E-02	6.94E-05	3.09E-03	3.01E-03	1.28E-05	1.30E-03	1.33E-03	5.48E-06
179	572171.5	4149109	1.37E-02	1.18E-02	4.11E-05	1.79E-02	1.71E-02	7.10E-05	3.16E-03	3.08E-03	1.31E-05	1.33E-03	1.36E-03	5.60E-06
180	572183.5	4149096	1.55E-02	1.34E-02	4.66E-05	2.02E-02	1.94E-02	8.04E-05	3.58E-03	3.49E-03	1.48E-05	1.50E-03	1.54E-03	6.35E-06
181	572195.4	4149084	1.79E-02	1.55E-02	5.38E-05	2.34E-02	2.24E-02	9.28E-05	4.13E-03	4.03E-03	1.71E-05	1.74E-03	1.78E-03	7.33E-06
182	572207.4	4149071	2.09E-02	1.81E-02	6.28E-05	2.73E-02	2.62E-02	1.09E-04	4.83E-03	4.71E-03	2.00E-05	2.03E-03	2.08E-03	8.57E-06
183	572219.3	4149058	2.45E-02	2.11E-02	7.35E-05	3.20E-02	3.06E-02	1.27E-04	5.65E-03	5.51E-03	2.34E-05	2.38E-03	2.43E-03	1.00E-05
184	572231.2	4149046	2.84E-02	2.45E-02	8.53E-05	3.71E-02	3.56E-02	1.47E-04	6.55E-03	6.40E-03	2.71E-05	2.76E-03	2.82E-03	1.16E-05
185	572173.4	4149254	1.59E-02	1.37E-02	4.76E-05	2.07E-02	1.99E-02	8.23E-05	3.66E-03	3.57E-03	1.52E-05	1.54E-03	1.57E-03	6.50E-06
186	572177.3	4149263	1.74E-02	1.50E-02	5.22E-05	2.27E-02	2.18E-02	9.02E-05	4.01E-03	3.92E-03	1.66E-05	1.69E-03	1.73E-03	7.12E-06
187	572160.2	4149241	1.31E-02	1.13E-02	3.94E-05	1.72E-02	1.64E-02	6.81E-05	3.03E-03	2.96E-03	1.25E-05	1.27E-03	1.30E-03	5.38E-06
188	572159.3	4149213	1.28E-02	1.11E-02	3.84E-05	1.67E-02	1.60E-02	6.64E-05	2.95E-03	2.88E-03	1.22E-05	1.24E-03	1.27E-03	5.24E-06
189	572159.1	4149204	1.29E-02	1.11E-02	3.86E-05	1.68E-02	1.61E-02	6.67E-05	2.97E-03	2.90E-03	1.23E-05	1.25E-03	1.28E-03	5.27E-06
190	572158.8	4149195	1.30E-02	1.12E-02	3.90E-05	1.70E-02	1.63E-02	6.73E-05	2.99E-03	2.92E-03	1.24E-05	1.26E-03	1.29E-03	5.32E-06
191	572158.5	4149185	1.31E-02	1.13E-02	3.94E-05	1.71E-02	1.64E-02	6.80E-05	3.02E-03	2.95E-03	1.25E-05	1.27E-03	1.30E-03	5.37E-06
192	572158.2	4149176	1.32E-02	1.14E-02	3.96E-05	1.72E-02	1.65E-02	6.83E-05	3.04E-03	2.97E-03	1.26E-05	1.28E-03	1.31E-03	5.39E-06
193	572157.9	4149167	1.31E-02	1.13E-02	3.94E-05	1.72E-02	1.64E-02	6.81E-05	3.03E-03	2.96E-03	1.25E-05	1.27E-03	1.30E-03	5.38E-06
194	572157.6	4149158	1.30E-02	1.12E-02	3.90E-05	1.69E-02	1.62E-02	6.73E-05	2.99E-03	2.92E-03	1.24E-05	1.26E-03	1.29E-03	5.31E-06
195	572157.3	4149149	1.27E-02	1.10E-02	3.82E-05	1.66E-02	1.59E-02	6.60E-05	2.94E-03	2.87E-03	1.22E-05	1.23E-03	1.26E-03	5.21E-06
196	572157.1	4149139	1.25E-02	1.08E-02	3.74E-05	1.63E-02	1.56E-02	6.45E-05	2.87E-03	2.80E-03	1.19E-05	1.21E-03	1.23E-03	5.10E-06
197	572156.8	4149130	1.22E-02	1.05E-02	3.65E-05	1.59E-02	1.52E-02	6.31E-05	2.81E-03	2.74E-03	1.16E-05	1.18E-03	1.21E-03	4.98E-06
198	572156.5	4149121	1.19E-02	1.03E-02	3.58E-05	1.56E-02	1.49E-02	6.18E-05	2.75E-03	2.69E-03	1.14E-05	1.16E-03	1.18E-03	4.88E-06
199	572162.5	4149105	1.24E-02	1.07E-02	3.73E-05	1.62E-02	1.55E-02	6.44E-05	2.86E-03	2.80E-03	1.19E-05	1.20E-03	1.23E-03	5.08E-06
200	572168.8	4149098	1.32E-02	1.14E-02	3.96E-05	1.72E-02	1.65E-02	6.84E-05	3.04E-03	2.97E-03	1.26E-05	1.28E-03	1.31E-03	5.40E-06
201	572175.2	4149092	1.41E-02	1.22E-02	4.23E-05	1.84E-02	1.76E-02	7.30E-05	3.25E-03	3.17E-03	1.34E-05	1.37E-03	1.40E-03	5.76E-06
202	572181.5	4149085	1.51E-02	1.30E-02	4.53E-05	1.97E-02	1.89E-02	7.83E-05	3.48E-03	3.40E-03	1.44E-05	1.46E-03	1.50E-03	6.18E-06
203	572194.1	4149072	1.76E-02	1.52E-02	5.28E-05	2.30E-02	2.20E-02	9.12E-05	4.06E-03	3.96E-03	1.68E-05	1.71E-03	1.75E-03	7.20E-06
204	572200.5	4149065	1.91E-02	1.65E-02	5.72E-05	2.49E-02	2.38E-02	9.88E-05	4.39E-03	4.29E-03	1.82E-05	1.85E-03	1.89E-03	7.80E-06
205	572206.8	4149058	2.06E-02	1.78E-02	6.19E-05	2.69E-02	2.58E-02	1.07E-04	4.76E-03	4.65E-03	1.97E-05	2.00E-03	2.05E-03	8.45E-06
206	572213.1	4149051	2.23E-02	1.93E-02	6.70E-05	2.91E-02	2.79E-02	1.16E-04	5.14E-03	5.02E-03	2.13E-05	2.16E-03	2.21E-03	9.13E-06
207	572160.5	4149250	1.35E-02	1.16E-02	4.05E-05	1.76E-02	1.69E-02	6.99E-05	3.11E-03	3.04E-03	1.29E-05	1.31E-03	1.34E-03	5.52E-06
208	572164.3	4149258	1.45E-02	1.25E-02	4.36E-05	1.90E-02	1.82E-02	7.53E-05	3.35E-03	3.27E-03	1.39E-05	1.41E-03	1.44E-03	5.95E-06
209	572168.2	4149267	1.59E-02	1.37E-02	4.77E-05	2.07E-02	1.99E-02	8.23E-05	3.66E-03	3.57E-03	1.52E-05	1.54E-03	1.58E-03	6.50E-06
210	572151.1	4149245	1.21E-02	1.04E-02	3.63E-05	1.58E-02	1.51E-02	6.27E-05	2.79E-03	2.72E-03	1.15E-05	1.17E-03	1.20E-03	4.95E-06
211	572150.2	4149217	1.17E-02	1.01E-02	3.51E-05	1.53E-02	1.46E-02	6.06E-05	2.70E-03	2.63E-03	1.12E-05	1.13E-03	1.16E-03	4.78E-06
212	572150	4149208	1.17E-02	1.01E-02	3.52E-05	1.53E-02	1.47E-02	6.08E-05	2.70E-03	2.64E-03	1.12E-05	1.14E-03	1.16E-03	4.80E-06
213	572149.7	4149199	1.18E-02	1.02E-02	3.54E-05	1.54E-02	1.48E-02	6.12E-05	2.72E-03	2.66E-03	1.13E-05	1.15E-03	1.17E-03	4.83E-06
214	572149.4	4149190	1.19E-02	1.03E-02	3.58E-05	1.56E-02	1.49E-02	6.19E-05	2.75E-03	2.69E-03	1.14E-05	1.16E-03	1.18E-03	4.89E-06
215	572149.1	4149181	1.20E-02	1.04E-02	3.61E-05	1.57E-02	1.51E-02	6.24E-05	2.78E-03	2.71E-03	1.15E-05	1.17E-03	1.19E-03	4.93E-06
216	572148.8	4149172	1.21E-02	1.04E-02	3.62E-05	1.57E-02	1.51E-02	6.25E-05	2.78E-03	2.71E-03	1.15E-05	1.17E-03	1.20E-03	4.94E-06
217	572148.6	4149163	1.20E-02	1.04E-02	3.60E-05	1.57E-02	1.50E-02	6.22E-05	2.77E-03	2.70E-03	1.15E-05	1.16E-03	1.19E-03	4.91E-06
218	572148.3	4149154	1.18E-02	1.02E-02	3.55E-05	1.54E-02	1.48E-02	6.13E-05	2.73E-03	2.66E-03	1.13E-05	1.15E-03	1.17E-03	4.84E-06
219	572148	4149145	1.16E-02	1.00E-02	3.48E-05	1.51E-02	1.45E-02	6.01E-05	2.67E-03	2.61E-03	1.11E-05	1.12E-03	1.15E-03	4.74E-06
220	572147.7	4149135	1.13E-02	9.78E-03	3.40E-05	1.48E-02	1.42E-02	5.87E-05	2.61E-03	2.55E-03	1.08E-05	1.10E-03	1.12E-03	4.64E-06
221	572147.4	4149126	1.11E-02	9.57E-03	3.33E-05	1.45E-02	1.39E-02	5.74E-05	2.55E-03	2.49E-03	1.06E-05	1.07E-03	1.10E-03	4.53E-06
222	572147.1	4149117	1.09E-02	9.39E-03	3.26E-05	1.42E-02	1.36E-02	5.64E-05	2.51E-03	2.45E-03	1.04E-05	1.05E-03	1.08E-03	4.45E-06
223	572153.1	4149102	1.13E-02	9.74E-03	3.39E-05	1.47E-02	1.41E-02	5.85E-05	2.60E-03	2.54E-03	1.08E-05	1.09E-03	1.12E-03	4.62E-06
224	572159.4	4149095	1.19E-02	1.03E-02	3.58E-05	1.56E-02	1.49E-02	6.18E-05	2.75E-03	2.69E-03	1.14E-05	1.16E-03	1.18E-03	4.88E-06
225	572165.6	4149088	1.27E-02	1.10E-02	3.81E-05	1.66E-02	1.59E-02	6.57E-05	2.92E-03	2.85E-03	1.21E-05	1.23E-03	1.26E-03	5.19E-06
226	572171.9	4149082	1.35E-02	1.17E-02	4.06E-05	1.77E-02	1.69E-02	7.01E-05	3.12E-03	3.05E-03	1.29E-05	1.31E-03	1.34E-03	5.54E-06
227	572190.7	4149062	1.68E-02	1.45E-02	5.05E-05	2.19E-02	2.10E-02	8.71E-05	3.88E-03	3.78E-03	1.61E-05	1.63E-03	1.67E-03	6.88E-06
228	572196.9	4149055	1.81E-02	1.57E-02	5.44E-05	2.37E-02	2.27E-02	9.40E-05	4.18E-03	4.08E-03	1.73E-05	1.76E-03	1.80E-03	7.42E-06
229	572151.4	4149254	1.24E-02	1.07E-02	3.72E-05	1.62E-02	1.55E-02	6.43E-05	2.86E-03	2.79E-03	1.19E-05	1.20E-03	1.23E-03	5.08E-06
230	572155.2	4149262	1.34E-02	1.15E-02	4.01E-05	1.74E-02	1.67E-02	6.92E-05	3.08E-03	3.01E-03	1.27E-05	1.29E-03	1.32E-03	5.46E-06
231	572159	4149271	1.46E-02	1.26E-02	4.37E-05	1.90E-02	1.82E-02	7.54E-05	3.35E-03	3.28E-03	1.39E-05	1.41E-03	1.44E-03	5.95E-06
232	572142	4149249	1.12E-02	9.64E-03	3.35E-05	1.46E-02	1.40E-02	5.79E-05	2.57E-03	2.51E-03	1.07E-05	1.08E-03	1.11E-03	4.57E-06
233	572141.1	4149222	1.07E-02	9.27E-03	3.22E-05	1.40E-02	1.34E-02	5.57E-05	2.48E-03	2.42E-03	1.03E-05	1.04E-03	1.07E-03	4.40E-06
234	572140.9	4149213	1.07E-02	9.27E-03	3.22E-05	1.40E-02	1.34E-02	5.57E-05	2.48E-03	2.42E-03	1.03E-05	1.04E-03	1.07E-03	4.40E-06
235	572140.6	4149204	1.08E-02	9.33E-03	3.24E-05	1.41E-02	1.35E-02	5.60E-05	2.49E-03	2.43E-03	1.03E-05	1.05E-03	1.07E-03	4.42E-06
236	572140.3	4149195	1.09E-02	9.40E-03	3.27E-05	1.42E-02	1.36E-02	5.65E-05	2.51E-03	2.45E-03	1.04E-05	1.06E-03	1.08E-03	4.46E-06
237	572140	4149186	1.10E-02	9.51E-03	3.30E-05	1.44E-02	1.38E-02	5.71E-05	2.54E-03	2.48E-03	1.05E-05	1.07E-03	1.09E-03	4.51E-06
238	572139.7	4149177	1.11E-02	9.57E-03	3.33E-05	1.45E-02	1.39E-02	5.74E-05	2.55E-03	2.49E-03	1.06E-05	1.07E-03	1.10E-03	4.53E-06
239	572139.5	4149168	1.11E-02	9.57E-03	3.33E-05	1.45E-02	1.39E-02	5.74E-05	2.55E-03	2.49E-03	1.06E-05	1.07E-03	1.10E-03	4.53E-06
240	572139.2	4149159	1.10E-02	9.49E-03	3.30E-05	1.43E-02	1.37E-02	5.70E-05	2.53E-03	2.47E-03	1.05E-05	1.07E-03	1.09E-03	4.50E-06
241	572138.9	4149150	1.08E-02	9.34E-03	3.25E-05	1.41E-02	1.35E-02	5.61E-05	2.49E-03	2.44E-03	1.03E-05	1.05E-03	1.07E-03	4.43E-06
242	572138.6	4149141	1.06E-02	9.15E-03	3.18E-05	1.38E-02	1.32E-02	5.49E-05	2.44E-03	2.38E-03	1.01E-05	1.03E-03	1.05E-03	4.33E-06
243	572138.3	4149132	1.04E-02	8.94E-03	3.11E-05	1.35E-02	1.29E-02	5.37E-05	2.39E-03	2.33E-03	9.88E-06	1.00E-03	1.03E-03	4.24E-06
244	572138.1	4149123	1.01E-02	8.75E-03	3.04E-05	1.32E-02	1.27E-02	5.25E-05	2.34E-03	2.28E-03	9.67E-06	9.83E-04	1.00E-03	4.15E-06
245	572137.8	4149114	9.95E-03	8.59E-03	2.98E-05	1.30E-02	1.24E-02	5.16E-05	2.29E-03	2.24E-03	9.50E-06	9.65E-04	9.86E-04	4.07E-06
246	572143.7	4149098	1.03E-02	8.89E-03	3.09E-05	1.34E-02	1.29E-02	5.33E-05	2.37E-03	2.32E-03	9.83E-06	9.98E-04	1.02E-03	4.21E-06

247	572156.1	4149085	1.15E-02	9.91E-03	3.45E-05	1.50E-02	1.44E-02	5.95E-05	2.65E-03	2.58E-03	1.10E-05	1.11E-03	1.14E-03	4.70E-06
248	572162.3	4149078	1.22E-02	1.05E-02	3.66E-05	1.59E-02	1.52E-02	6.32E-05	2.81E-03	2.74E-03	1.16E-05	1.18E-03	1.21E-03	4.99E-06
249	572142.3	4149258	1.15E-02	9.91E-03	3.44E-05	1.50E-02	1.43E-02	5.95E-05	2.64E-03	2.58E-03	1.10E-05	1.11E-03	1.14E-03	4.69E-06
250	572146.1	4149267	1.23E-02	1.06E-02	3.69E-05	1.61E-02	1.54E-02	6.38E-05	2.84E-03	2.77E-03	1.18E-05	1.19E-03	1.22E-03	5.04E-06
251	572149.9	4149275	1.34E-02	1.16E-02	4.02E-05	1.75E-02	1.68E-02	6.94E-05	3.09E-03	3.01E-03	1.28E-05	1.30E-03	1.33E-03	5.48E-06
252	572132.9	4149253	1.04E-02	8.94E-03	3.11E-05	1.35E-02	1.29E-02	5.37E-05	2.39E-03	2.33E-03	9.88E-06	1.00E-03	1.03E-03	4.24E-06
253	572132	4149226	9.91E-03	8.56E-03	2.97E-05	1.29E-02	1.24E-02	5.14E-05	2.29E-03	2.23E-03	9.46E-06	9.61E-04	9.83E-04	4.06E-06
254	572131.5	4149208	9.91E-03	8.56E-03	2.97E-05	1.29E-02	1.24E-02	5.14E-05	2.29E-03	2.23E-03	9.47E-06	9.61E-04	9.83E-04	4.06E-06
255	572131.2	4149199	9.99E-03	8.62E-03	3.00E-05	1.30E-02	1.25E-02	5.18E-05	2.30E-03	2.25E-03	9.54E-06	9.69E-04	9.90E-04	4.09E-06
256	572130.9	4149191	1.01E-02	8.71E-03	3.03E-05	1.32E-02	1.26E-02	5.23E-05	2.33E-03	2.27E-03	9.64E-06	9.79E-04	1.00E-03	4.13E-06
257	572130.7	4149182	1.02E-02	8.79E-03	3.06E-05	1.33E-02	1.27E-02	5.28E-05	2.35E-03	2.29E-03	9.72E-06	9.87E-04	1.01E-03	4.17E-06
258	572130.1	4149164	1.02E-02	8.82E-03	3.06E-05	1.33E-02	1.28E-02	5.29E-05	2.35E-03	2.30E-03	9.75E-06	9.90E-04	1.01E-03	4.18E-06
259	572129.8	4149155	1.01E-02	8.72E-03	3.03E-05	1.32E-02	1.26E-02	5.24E-05	2.33E-03	2.27E-03	9.65E-06	9.80E-04	1.00E-03	4.13E-06
260	572129.5	4149146	9.93E-03	8.57E-03	2.98E-05	1.30E-02	1.24E-02	5.15E-05	2.29E-03	2.23E-03	9.48E-06	9.63E-04	9.84E-04	4.06E-06
261	572129.3	4149137	9.71E-03	8.39E-03	2.92E-05	1.27E-02	1.22E-02	5.04E-05	2.24E-03	2.19E-03	9.28E-06	9.42E-04	9.63E-04	3.98E-06
262	572128.7	4149119	9.30E-03	8.03E-03	2.79E-05	1.21E-02	1.16E-02	4.82E-05	2.14E-03	2.09E-03	8.88E-06	9.02E-04	9.22E-04	3.80E-06
263	572128.4	4149110	9.13E-03	7.89E-03	2.74E-05	1.19E-02	1.14E-02	4.73E-05	2.11E-03	2.06E-03	8.72E-06	8.86E-04	9.06E-04	3.74E-06
264	572134.3	4149095	9.43E-03	8.14E-03	2.83E-05	1.23E-02	1.18E-02	4.89E-05	2.17E-03	2.12E-03	9.00E-06	9.15E-04	9.35E-04	3.86E-06
265	572146.6	4149082	1.05E-02	9.02E-03	3.14E-05	1.36E-02	1.31E-02	5.42E-05	2.41E-03	2.35E-03	9.98E-06	1.01E-03	1.04E-03	4.28E-06
266	572158.9	4149068	1.17E-02	1.01E-02	3.52E-05	1.53E-02	1.47E-02	6.08E-05	2.70E-03	2.64E-03	1.12E-05	1.14E-03	1.16E-03	4.80E-06
267	572133.2	4149262	1.06E-02	9.19E-03	3.19E-05	1.39E-02	1.33E-02	5.52E-05	2.45E-03	2.40E-03	1.02E-05	1.03E-03	1.06E-03	4.35E-06
268	572137	4149271	1.14E-02	9.84E-03	3.42E-05	1.49E-02	1.43E-02	5.91E-05	2.63E-03	2.57E-03	1.09E-05	1.11E-03	1.13E-03	4.67E-06
269	572140.8	4149279	1.24E-02	1.07E-02	3.71E-05	1.62E-02	1.55E-02	6.41E-05	2.85E-03	2.78E-03	1.18E-05	1.20E-03	1.23E-03	5.06E-06
270	572123.8	4149257	9.63E-03	8.32E-03	2.89E-05	1.26E-02	1.20E-02	4.99E-05	2.22E-03	2.17E-03	9.20E-06	9.34E-04	9.55E-04	3.94E-06
271	572122.7	4149222	9.14E-03	7.89E-03	2.74E-05	1.19E-02	1.14E-02	4.74E-05	2.11E-03	2.06E-03	8.73E-06	8.86E-04	9.06E-04	3.74E-06
272	572122.1	4149204	9.19E-03	7.94E-03	2.76E-05	1.20E-02	1.15E-02	4.76E-05	2.12E-03	2.07E-03	8.78E-06	8.91E-04	9.11E-04	3.76E-06
273	572121.6	4149186	9.37E-03	8.09E-03	2.81E-05	1.22E-02	1.17E-02	4.86E-05	2.16E-03	2.11E-03	8.95E-06	9.09E-04	9.29E-04	3.84E-06
274	572121	4149169	9.47E-03	8.18E-03	2.84E-05	1.24E-02	1.19E-02	4.91E-05	2.18E-03	2.13E-03	9.05E-06	9.19E-04	9.40E-04	3.88E-06
275	572120.5	4149151	9.31E-03	8.04E-03	2.79E-05	1.22E-02	1.16E-02	4.83E-05	2.15E-03	2.10E-03	8.89E-06	9.03E-04	9.24E-04	3.81E-06
276	572119.9	4149133	8.94E-03	7.72E-03	2.68E-05	1.17E-02	1.12E-02	4.63E-05	2.06E-03	2.01E-03	8.54E-06	8.67E-04	8.87E-04	3.66E-06
277	572119.4	4149115	8.56E-03	7.39E-03	2.57E-05	1.12E-02	1.07E-02	4.44E-05	1.97E-03	1.93E-03	8.18E-06	8.30E-04	8.49E-04	3.50E-06
278	572124.9	4149091	8.67E-03	7.49E-03	2.60E-05	1.13E-02	1.08E-02	4.50E-05	2.00E-03	1.95E-03	8.28E-06	8.41E-04	8.60E-04	3.55E-06
279	572137.1	4149078	9.55E-03	8.24E-03	2.87E-05	1.25E-02	1.19E-02	4.95E-05	2.20E-03	2.15E-03	9.12E-06	9.26E-04	9.47E-04	3.91E-06
280	572127.9	4149275	1.06E-02	9.15E-03	3.18E-05	1.38E-02	1.32E-02	5.49E-05	2.44E-03	2.38E-03	1.01E-05	1.03E-03	1.05E-03	4.33E-06
281	572131.7	4149283	1.15E-02	9.91E-03	3.44E-05	1.50E-02	1.43E-02	5.95E-05	2.64E-03	2.58E-03	1.10E-05	1.11E-03	1.14E-03	4.69E-06
282	572114.6	4149261	8.98E-03	7.75E-03	2.69E-05	1.17E-02	1.12E-02	4.65E-05	2.07E-03	2.02E-03	8.57E-06	8.71E-04	8.90E-04	3.67E-06
283	572114.4	4149252	8.78E-03	7.58E-03	2.64E-05	1.15E-02	1.10E-02	4.55E-05	2.02E-03	1.98E-03	8.39E-06	8.52E-04	8.71E-04	3.59E-06
284	572113.8	4149233	8.53E-03	7.37E-03	2.56E-05	1.11E-02	1.07E-02	4.42E-05	1.97E-03	1.92E-03	8.15E-06	8.28E-04	8.46E-04	3.49E-06
285	572113.5	4149224	8.48E-03	7.32E-03	2.54E-05	1.11E-02	1.06E-02	4.40E-05	1.95E-03	1.91E-03	8.10E-06	8.22E-04	8.41E-04	3.47E-06
286	572113.2	4149215	8.47E-03	7.31E-03	2.54E-05	1.11E-02	1.06E-02	4.39E-05	1.95E-03	1.91E-03	8.09E-06	8.21E-04	8.40E-04	3.47E-06
287	572112.9	4149205	8.51E-03	7.35E-03	2.55E-05	1.11E-02	1.06E-02	4.41E-05	1.96E-03	1.92E-03	8.13E-06	8.25E-04	8.44E-04	3.48E-06
288	572112.6	4149196	8.58E-03	7.41E-03	2.58E-05	1.12E-02	1.07E-02	4.45E-05	1.98E-03	1.93E-03	8.20E-06	8.32E-04	8.51E-04	3.51E-06
289	572112.3	4149187	8.68E-03	7.50E-03	2.61E-05	1.13E-02	1.09E-02	4.50E-05	2.00E-03	1.95E-03	8.29E-06	8.42E-04	8.61E-04	3.55E-06
290	572112.1	4149178	8.76E-03	7.57E-03	2.63E-05	1.14E-02	1.10E-02	4.54E-05	2.02E-03	1.97E-03	8.37E-06	8.50E-04	8.69E-04	3.59E-06
291	572111.8	4149168	8.80E-03	7.60E-03	2.64E-05	1.15E-02	1.10E-02	4.56E-05	2.03E-03	1.98E-03	8.40E-06	8.53E-04	8.72E-04	3.60E-06
292	572111.5	4149159	8.76E-03	7.57E-03	2.63E-05	1.14E-02	1.10E-02	4.54E-05	2.02E-03	1.97E-03	8.37E-06	8.50E-04	8.69E-04	3.59E-06
293	572111.2	4149150	8.65E-03	7.47E-03	2.60E-05	1.13E-02	1.08E-02	4.49E-05	1.99E-03	1.95E-03	8.26E-06	8.39E-04	8.58E-04	3.54E-06
294	572110.9	4149140	8.49E-03	7.33E-03	2.55E-05	1.11E-02	1.06E-02	4.40E-05	1.96E-03	1.91E-03	8.10E-06	8.23E-04	8.42E-04	3.47E-06
295	572110.6	4149131	8.29E-03	7.16E-03	2.49E-05	1.08E-02	1.04E-02	4.30E-05	1.91E-03	1.87E-03	7.92E-06	8.04E-04	8.22E-04	3.39E-06
296	572110.3	4149122	8.10E-03	6.99E-03	2.43E-05	1.06E-02	1.01E-02	4.20E-05	1.87E-03	1.82E-03	7.73E-06	7.85E-04	8.03E-04	3.31E-06
297	572110	4149113	7.93E-03	6.84E-03	2.38E-05	1.03E-02	9.91E-03	4.11E-05	1.83E-03	1.78E-03	7.57E-06	7.69E-04	7.86E-04	3.24E-06
298	572109.7	4149103	7.79E-03	6.72E-03	2.34E-05	1.02E-02	9.74E-03	4.04E-05	1.79E-03	1.75E-03	7.43E-06	7.55E-04	7.72E-04	3.19E-06
299	572115.8	4149087	8.02E-03	6.93E-03	2.41E-05	1.05E-02	1.00E-02	4.16E-05	1.85E-03	1.81E-03	7.66E-06	7.78E-04	7.96E-04	3.28E-06
300	572122.2	4149080	8.40E-03	7.26E-03	2.52E-05	1.10E-02	1.05E-02	4.36E-05	1.94E-03	1.89E-03	8.03E-06	8.15E-04	8.34E-04	3.44E-06
301	572114.9	4149270	9.24E-03	7.98E-03	2.77E-05	1.21E-02	1.16E-02	4.79E-05	2.13E-03	2.08E-03	8.82E-06	8.96E-04	9.16E-04	3.78E-06
302	572118.8	4149279	9.87E-03	8.52E-03	2.96E-05	1.29E-02	1.23E-02	5.12E-05	2.28E-03	2.22E-03	9.43E-06	9.57E-04	9.79E-04	4.04E-06
303	572105.5	4149265	8.40E-03	7.25E-03	2.52E-05	1.10E-02	1.05E-02	4.36E-05	1.94E-03	1.89E-03	8.02E-06	8.15E-04	8.33E-04	3.44E-06
304	572105.2	4149256	8.21E-03	7.09E-03	2.47E-05	1.07E-02	1.03E-02	4.26E-05	1.89E-03	1.85E-03	7.84E-06	7.97E-04	8.15E-04	3.36E-06
305	572105	4149247	8.07E-03	6.97E-03	2.42E-05	1.05E-02	1.01E-02	4.19E-05	1.86E-03	1.82E-03	7.71E-06	7.83E-04	8.01E-04	3.30E-06
306	572104.4	4149228	7.90E-03	6.82E-03	2.37E-05	1.03E-02	9.89E-03	4.10E-05	1.82E-03	1.78E-03	7.55E-06	7.66E-04	7.84E-04	3.23E-06
307	572104.1	4149219	7.87E-03	6.80E-03	2.36E-05	1.03E-02	9.85E-03	4.08E-05	1.82E-03	1.77E-03	7.52E-06	7.64E-04	7.81E-04	3.22E-06
308	572103.8	4149210	7.89E-03	6.81E-03	2.37E-05	1.03E-02	9.87E-03	4.09E-05	1.82E-03	1.78E-03	7.53E-06	7.65E-04	7.82E-04	3.23E-06
309	572103.5	4149201	7.94E-03	6.86E-03	2.38E-05	1.04E-02	9.93E-03	4.12E-05	1.83E-03	1.79E-03	7.58E-06	7.70E-04	7.87E-04	3.25E-06
310	572103.3	4149192	8.02E-03	6.93E-03	2.41E-05	1.05E-02	1.00E-02	4.16E-05	1.85E-03	1.81E-03	7.66E-06	7.78E-04	7.96E-04	3.28E-06
311	572103	4149182	8.11E-03	7.01E-03	2.44E-05	1.06E-02	1.01E-02	4.21E-05	1.87E-03	1.83E-03	7.75E-06	7.87E-04	8.05E-04	3.32E-06
312	572102.7	4149173	8.18E-03	7.06E-03	2.45E-05	1.07E-02	1.02E-02	4.24E-05	1.89E-03	1.84E-03	7.81E-06	7.93E-04	8.11E-04	3.35E-06
313	572102.4	4149164	8.19E-03	7.07E-03	2.46E-05	1.07E-02	1.02E-02	4.25E-05	1.89E-03	1.84E-03	7.82E-06	7.94E-04	8.12E-04	3.35E-06
314	572102.1	4149155	8.14E-03	7.03E-03	2.44E-05	1.06E-02	1.02E-02	4.22E-05	1.88E-03	1.83E-03	7.77E-06	7.89E-04	8.07E-04	3.33E-06
315	572101.8	4149146	8.02E-03	6.93E-03	2.41E-05	1.05E-02	1.00E-02	4.16E-05	1.85E-03	1.81E-03	7.66E-06	7.78E-04	7.96E-04	3.28E-06
316	572101.5	4149136	7.86E-03	6.79E-03	2.36E-05	1.03E-02	9.83E-03	4.07E-05	1.81E-03	1.77E-03	7.50E-06	7.62E-04	7.79E-04	3.22E-06
317	572101.3	4149127	7.68E-03	6.63E-03	2.30E-05	1.00E-02	9.60E-03	3.98E-05	1.77E-03	1.73E-03	7.33E-06	7.45E-04	7.61E-04	3.14E-06
318	572101	4149118	7.50E-03	6.48E-03	2.25E-05	9.79E-03	9.38E-03	3.89E-05	1.73E-03	1.69E-03	7.16E-06	7.27E-04	7.44E-04	3.07E-06
319	572100.7	4149109	7.34E-03	6.34E-03	2.20E-05	9.59E-03	9.19E-03	3.81E-05	1.69E-03	1.65E-03	7.01E-06	7.12E-04	7.28E-04	3.01E-06
320	572100.4	4149100	7.22E-03	6.23E-03	2.17E-05	9.42E-03	9.03E-03	3.74E-05	1.66E-03	1.62E-03	6.89E-06	7.00E-04	7.16E-04	2.95E-06
321	572106.4	4149084	7.42E-03	6.41E-03	2.23E-05	9.69E-03	9.28E-03	3.85E-05	1.71E-03	1.67E-03	7.09E-06	7.20E-04	7.36E-04	3.04E-06
322	572105.8	4149275	8.64E-03	7.46E-03	2.59E-05	1.13E-02	1.08E-02	4.48E-05	1.99E-03	1.95E-03	8.25E-06	8.38E-04	8.57E-04	3.54E-06
323	572109.7	4149283	9.22E-03	7.96E-03	2.77E-05	1.20E-02	1.15E-02	4.78E-05	2.13E-03	2.08E-03	8.81E-06	8.95E-04	9.15E-04	3.77E-06
324	572096.4	4149269	7.88E-03	6.80E-03	2.37E-05	1.03E-02	9.86E-03	4.09E-05	1.82E-03	1.77E-03	7.53E-06	7.64E-04	7.82E-04	3.23E-06
325	572096.1	4149260	7.70E-03	6.65E-03	2.31E-05	1.01E-02	9.64E-03	3.99E-05	1.78E-03	1.73E-03	7.36E-06	7.47E-04	7.64E-04	3.15E-06
326	572095.9	4149251	7.57E-03	6.54E-03	2.27E-05	9.88E-03	9.47E-03	3.92E-05	1.74E-03	1.70E-03	7.23E-06	7.34E-04	7.51E-04	3.10E-06
327	572095.3	4149233	7.39E-03	6.38E-03	2.22E-05	9.65E-03	9.25E-03	3.83E-05	1.70E-03	1.66E-03	7.06E-06	7.17E-04	7.33E-04	3.02E-06
328	572095	4149224	7.35E-03	6.34E-03	2.21E-05	9.59E-03	9.19E-03	3.81E-05	1.69E-03	1.65E-03	7.02E-06	7.13E-04	7.29E-04	3.01E-06
329	572094.7	4149215	7.34E-03	6.34E-03	2.20E-05	9.58E-03	9.18E-03	3.81E-05	1.69E-03	1.65E-03	7.01E-06	7.12E-04	7.28E-04	3.00E-06

330	572094.4	4149206	7.37E-03	6.37E-03	2.21E-05	9.63E-03	9.22E-03	3.82E-05	1.70E-03	1.66E-03	7.04E-06	7.15E-04	7.31E-04	3.02E-06
331	572094.2	4149196	7.43E-03	6.42E-03	2.23E-05	9.70E-03	9.30E-03	3.85E-05	1.71E-03	1.67E-03	7.10E-06	7.21E-04	7.37E-04	3.04E-06
332	572093.9	4149187	7.52E-03	6.49E-03	2.26E-05	9.82E-03	9.41E-03	3.90E-05	1.73E-03	1.69E-03	7.18E-06	7.29E-04	7.46E-04	3.08E-06
333	572093.6	4149178	7.60E-03	6.56E-03	2.28E-05	9.92E-03	9.50E-03	3.94E-05	1.75E-03	1.71E-03	7.25E-06	7.37E-04	7.53E-04	3.11E-06
334	572093.3	4149169	7.64E-03	6.60E-03	2.29E-05	9.98E-03	9.56E-03	3.96E-05	1.76E-03	1.72E-03	7.30E-06	7.41E-04	7.58E-04	3.13E-06
335	572093	4149160	7.64E-03	6.60E-03	2.29E-05	9.97E-03	9.55E-03	3.96E-05	1.76E-03	1.72E-03	7.29E-06	7.41E-04	7.57E-04	3.13E-06
336	572092.7	4149151	7.57E-03	6.54E-03	2.27E-05	9.88E-03	9.47E-03	3.92E-05	1.75E-03	1.70E-03	7.23E-06	7.34E-04	7.51E-04	3.10E-06
337	572092.5	4149142	7.45E-03	6.43E-03	2.24E-05	9.73E-03	9.32E-03	3.86E-05	1.72E-03	1.68E-03	7.12E-06	7.23E-04	7.39E-04	3.05E-06
338	572092.2	4149133	7.30E-03	6.30E-03	2.19E-05	9.52E-03	9.13E-03	3.78E-05	1.68E-03	1.64E-03	6.97E-06	7.08E-04	7.24E-04	2.99E-06
339	572091.9	4149123	7.13E-03	6.15E-03	2.14E-05	9.30E-03	8.91E-03	3.69E-05	1.64E-03	1.60E-03	6.80E-06	6.91E-04	7.07E-04	2.92E-06
340	572091.6	4149114	6.96E-03	6.01E-03	2.09E-05	9.09E-03	8.71E-03	3.61E-05	1.61E-03	1.57E-03	6.65E-06	6.75E-04	6.91E-04	2.85E-06
341	572091.3	4149105	6.82E-03	5.89E-03	2.05E-05	8.90E-03	8.53E-03	3.54E-05	1.57E-03	1.53E-03	6.51E-06	6.61E-04	6.76E-04	2.79E-06
342	572091	4149096	6.71E-03	5.80E-03	2.01E-05	8.76E-03	8.40E-03	3.48E-05	1.55E-03	1.51E-03	6.41E-06	6.51E-04	6.66E-04	2.75E-06
343	572096.7	4149279	8.11E-03	7.00E-03	2.43E-05	1.06E-02	1.01E-02	4.20E-05	1.87E-03	1.82E-03	7.74E-06	7.86E-04	8.04E-04	3.32E-06
344	572100.5	4149287	8.64E-03	7.46E-03	2.59E-05	1.13E-02	1.08E-02	4.48E-05	1.99E-03	1.94E-03	8.25E-06	8.38E-04	8.57E-04	3.53E-06
345	572104.4	4149296	9.29E-03	8.03E-03	2.79E-05	1.21E-02	1.16E-02	4.82E-05	2.14E-03	2.09E-03	8.87E-06	9.01E-04	9.22E-04	3.80E-06
346	572108.2	4149304	1.01E-02	8.72E-03	3.03E-05	1.32E-02	1.26E-02	5.24E-05	2.33E-03	2.27E-03	9.65E-06	9.80E-04	1.00E-03	4.13E-06
347	572087.3	4149274	7.41E-03	6.40E-03	2.22E-05	9.67E-03	9.27E-03	3.84E-05	1.71E-03	1.67E-03	7.07E-06	7.19E-04	7.35E-04	3.03E-06
348	572087	4149265	7.24E-03	6.25E-03	2.17E-05	9.46E-03	9.06E-03	3.75E-05	1.67E-03	1.63E-03	6.92E-06	7.03E-04	7.18E-04	2.96E-06
349	572086.8	4149256	7.11E-03	6.14E-03	2.13E-05	9.29E-03	8.90E-03	3.69E-05	1.64E-03	1.60E-03	6.79E-06	6.90E-04	7.05E-04	2.91E-06
350	572086.2	4149237	6.93E-03	5.99E-03	2.08E-05	9.05E-03	8.67E-03	3.59E-05	1.60E-03	1.56E-03	6.62E-06	6.72E-04	6.88E-04	2.84E-06
351	572085.9	4149228	6.88E-03	5.94E-03	2.07E-05	8.98E-03	8.61E-03	3.57E-05	1.59E-03	1.55E-03	6.57E-06	6.67E-04	6.82E-04	2.82E-06
352	572085.6	4149219	6.86E-03	5.92E-03	2.06E-05	8.96E-03	8.58E-03	3.56E-05	1.58E-03	1.54E-03	6.55E-06	6.65E-04	6.80E-04	2.81E-06
353	572085.3	4149210	6.87E-03	5.93E-03	2.06E-05	8.97E-03	8.59E-03	3.56E-05	1.58E-03	1.55E-03	6.56E-06	6.66E-04	6.81E-04	2.81E-06
354	572085.1	4149201	6.92E-03	5.97E-03	2.08E-05	9.03E-03	8.65E-03	3.58E-05	1.59E-03	1.56E-03	6.60E-06	6.71E-04	6.86E-04	2.83E-06
355	572084.8	4149192	6.99E-03	6.03E-03	2.10E-05	9.12E-03	8.74E-03	3.62E-05	1.61E-03	1.57E-03	6.67E-06	6.78E-04	6.93E-04	2.86E-06
356	572084.5	4149183	7.07E-03	6.10E-03	2.12E-05	9.23E-03	8.84E-03	3.66E-05	1.63E-03	1.59E-03	6.75E-06	6.85E-04	7.01E-04	2.89E-06
357	572084.2	4149174	7.13E-03	6.16E-03	2.14E-05	9.31E-03	8.92E-03	3.70E-05	1.64E-03	1.61E-03	6.81E-06	6.92E-04	7.07E-04	2.92E-06
358	572083.9	4149165	7.16E-03	6.18E-03	2.15E-05	9.35E-03	8.96E-03	3.71E-05	1.65E-03	1.61E-03	6.84E-06	6.95E-04	7.10E-04	2.93E-06
359	572083.7	4149156	7.14E-03	6.17E-03	2.14E-05	9.32E-03	8.93E-03	3.70E-05	1.65E-03	1.61E-03	6.82E-06	6.93E-04	7.08E-04	2.92E-06
360	572083.4	4149147	7.07E-03	6.10E-03	2.12E-05	9.22E-03	8.84E-03	3.66E-05	1.63E-03	1.59E-03	6.75E-06	6.85E-04	7.01E-04	2.89E-06
361	572083.1	4149138	6.94E-03	5.99E-03	2.08E-05	9.06E-03	8.68E-03	3.60E-05	1.60E-03	1.56E-03	6.63E-06	6.73E-04	6.89E-04	2.84E-06
362	572082.8	4149129	6.79E-03	5.86E-03	2.04E-05	8.87E-03	8.50E-03	3.52E-05	1.57E-03	1.53E-03	6.49E-06	6.59E-04	6.74E-04	2.78E-06
363	572082.5	4149120	6.64E-03	5.73E-03	1.99E-05	8.66E-03	8.30E-03	3.44E-05	1.53E-03	1.49E-03	6.34E-06	6.44E-04	6.58E-04	2.72E-06
364	572082.3	4149111	6.49E-03	5.60E-03	1.95E-05	8.47E-03	8.11E-03	3.36E-05	1.50E-03	1.46E-03	6.19E-06	6.29E-04	6.43E-04	2.65E-06
365	572082	4149101	6.35E-03	5.49E-03	1.91E-05	8.29E-03	7.95E-03	3.29E-05	1.46E-03	1.43E-03	6.07E-06	6.16E-04	6.30E-04	2.60E-06
366	572081.7	4149092	6.25E-03	5.40E-03	1.88E-05	8.16E-03	7.82E-03	3.24E-05	1.44E-03	1.41E-03	5.97E-06	6.06E-04	6.20E-04	2.56E-06
367	572087.6	4149283	7.62E-03	6.58E-03	2.29E-05	9.95E-03	9.53E-03	3.95E-05	1.76E-03	1.71E-03	7.28E-06	7.39E-04	7.56E-04	3.12E-06
368	572091.4	4149291	8.11E-03	7.00E-03	2.43E-05	1.06E-02	1.01E-02	4.20E-05	1.87E-03	1.82E-03	7.74E-06	7.86E-04	8.04E-04	3.32E-06
369	572095.3	4149300	8.71E-03	7.52E-03	2.61E-05	1.14E-02	1.09E-02	4.51E-05	2.01E-03	1.96E-03	8.31E-06	8.44E-04	8.63E-04	3.56E-06
370	572099.1	4149308	9.44E-03	8.15E-03	2.83E-05	1.23E-02	1.18E-02	4.89E-05	2.18E-03	2.12E-03	9.02E-06	9.16E-04	9.36E-04	3.86E-06
371	572078.2	4149278	6.98E-03	6.03E-03	2.09E-05	9.11E-03	8.73E-03	3.62E-05	1.61E-03	1.57E-03	6.66E-06	6.77E-04	6.92E-04	2.86E-06
372	572077.9	4149269	6.82E-03	5.89E-03	2.05E-05	8.91E-03	8.54E-03	3.54E-05	1.57E-03	1.54E-03	6.52E-06	6.62E-04	6.77E-04	2.79E-06
373	572077.6	4149260	6.70E-03	5.79E-03	2.01E-05	8.75E-03	8.38E-03	3.47E-05	1.54E-03	1.51E-03	6.40E-06	6.50E-04	6.64E-04	2.74E-06
374	572077.1	4149242	6.52E-03	5.63E-03	1.96E-05	8.51E-03	8.16E-03	3.38E-05	1.50E-03	1.47E-03	6.23E-06	6.33E-04	6.47E-04	2.67E-06
375	572076.8	4149233	6.46E-03	5.58E-03	1.94E-05	8.44E-03	8.09E-03	3.35E-05	1.49E-03	1.45E-03	6.17E-06	6.27E-04	6.41E-04	2.65E-06
376	572076.5	4149224	6.43E-03	5.55E-03	1.93E-05	8.40E-03	8.05E-03	3.33E-05	1.48E-03	1.45E-03	6.14E-06	6.24E-04	6.38E-04	2.63E-06
377	572076.3	4149215	6.43E-03	5.55E-03	1.93E-05	8.39E-03	8.04E-03	3.33E-05	1.48E-03	1.45E-03	6.14E-06	6.23E-04	6.37E-04	2.63E-06
378	572076	4149206	6.46E-03	5.57E-03	1.94E-05	8.43E-03	8.08E-03	3.35E-05	1.49E-03	1.45E-03	6.16E-06	6.26E-04	6.40E-04	2.64E-06
379	572075.7	4149197	6.51E-03	5.62E-03	1.95E-05	8.50E-03	8.14E-03	3.37E-05	1.50E-03	1.46E-03	6.21E-06	6.31E-04	6.45E-04	2.66E-06
380	572075.4	4149188	6.59E-03	5.69E-03	1.98E-05	8.60E-03	8.24E-03	3.41E-05	1.52E-03	1.48E-03	6.29E-06	6.39E-04	6.53E-04	2.70E-06
381	572075.1	4149179	6.66E-03	5.75E-03	2.00E-05	8.69E-03	8.33E-03	3.45E-05	1.54E-03	1.50E-03	6.36E-06	6.46E-04	6.60E-04	2.73E-06
382	572074.9	4149170	6.71E-03	5.80E-03	2.01E-05	8.76E-03	8.40E-03	3.48E-05	1.55E-03	1.51E-03	6.41E-06	6.51E-04	6.66E-04	2.75E-06
383	572074.6	4149161	6.73E-03	5.81E-03	2.02E-05	8.78E-03	8.41E-03	3.49E-05	1.55E-03	1.51E-03	6.42E-06	6.52E-04	6.67E-04	2.75E-06
384	572074.3	4149152	6.69E-03	5.78E-03	2.01E-05	8.74E-03	8.37E-03	3.47E-05	1.54E-03	1.51E-03	6.39E-06	6.49E-04	6.64E-04	2.74E-06
385	572074	4149143	6.61E-03	5.71E-03	1.98E-05	8.63E-03	8.27E-03	3.43E-05	1.52E-03	1.49E-03	6.31E-06	6.41E-04	6.55E-04	2.70E-06
386	572073.7	4149134	6.48E-03	5.60E-03	1.95E-05	8.47E-03	8.11E-03	3.36E-05	1.49E-03	1.46E-03	6.19E-06	6.29E-04	6.43E-04	2.65E-06
387	572073.5	4149125	6.34E-03	5.47E-03	1.90E-05	8.27E-03	7.93E-03	3.29E-05	1.46E-03	1.43E-03	6.05E-06	6.15E-04	6.29E-04	2.59E-06
388	572073.2	4149116	6.19E-03	5.34E-03	1.86E-05	8.08E-03	7.74E-03	3.21E-05	1.43E-03	1.39E-03	5.91E-06	6.00E-04	6.14E-04	2.53E-06
389	572072.9	4149107	6.05E-03	5.22E-03	1.82E-05	7.90E-03	7.57E-03	3.14E-05	1.39E-03	1.36E-03	5.78E-06	5.87E-04	6.00E-04	2.48E-06
390	572072.6	4149098	5.93E-03	5.12E-03	1.78E-05	7.75E-03	7.42E-03	3.08E-05	1.37E-03	1.34E-03	5.67E-06	5.75E-04	5.88E-04	2.43E-06
391	572078.5	4149287	7.17E-03	6.20E-03	2.15E-05	9.37E-03	8.97E-03	3.72E-05	1.65E-03	1.61E-03	6.85E-06	6.96E-04	7.12E-04	2.94E-06
392	572082.3	4149295	7.63E-03	6.59E-03	2.29E-05	9.96E-03	9.54E-03	3.95E-05	1.76E-03	1.72E-03	7.28E-06	7.40E-04	7.56E-04	3.12E-06
393	572086.2	4149304	8.18E-03	7.06E-03	2.45E-05	1.07E-02	1.02E-02	4.24E-05	1.89E-03	1.84E-03	7.81E-06	7.93E-04	8.11E-04	3.35E-06
394	572090	4149312	8.85E-03	7.64E-03	2.66E-05	1.15E-02	1.11E-02	4.59E-05	2.04E-03	1.99E-03	8.45E-06	8.58E-04	8.77E-04	3.62E-06
395	572068	4149246	6.15E-03	5.31E-03	1.85E-05	8.03E-03	7.69E-03	3.19E-05	1.42E-03	1.38E-03	5.87E-06	5.96E-04	6.10E-04	2.52E-06
396	572067.7	4149237	6.09E-03	5.26E-03	1.83E-05	7.95E-03	7.61E-03	3.16E-05	1.40E-03	1.37E-03	5.81E-06	5.90E-04	6.04E-04	2.49E-06
397	572067.4	4149228	6.05E-03	5.22E-03	1.81E-05	7.89E-03	7.56E-03	3.13E-05	1.39E-03	1.36E-03	5.77E-06	5.86E-04	6.00E-04	2.47E-06
398	572066.9	4149210	6.04E-03	5.22E-03	1.81E-05	7.89E-03	7.56E-03	3.13E-05	1.39E-03	1.36E-03	5.77E-06	5.86E-04	5.99E-04	2.47E-06
399	572066.6	4149202	6.08E-03	5.25E-03	1.82E-05	7.94E-03	7.61E-03	3.15E-05	1.40E-03	1.37E-03	5.81E-06	5.90E-04	6.03E-04	2.49E-06
400	572066.3	4149193	6.14E-03	5.30E-03	1.84E-05	8.02E-03	7.68E-03	3.18E-05	1.42E-03	1.38E-03	5.86E-06	5.96E-04	6.09E-04	2.51E-06
401	572066	4149184	6.22E-03	5.37E-03	1.87E-05	8.11E-03	7.78E-03	3.22E-05	1.43E-03	1.40E-03	5.94E-06	6.03E-04	6.16E-04	2.54E-06
402	572065.5	4149166	6.32E-03	5.46E-03	1.90E-05	8.25E-03	7.91E-03	3.28E-05	1.46E-03	1.42E-03	6.04E-06	6.13E-04	6.27E-04	2.59E-06
403	572065.2	4149157	6.32E-03	5.46E-03	1.90E-05	8.25E-03	7.91E-03	3.28E-05	1.46E-03	1.42E-03	6.03E-06	6.13E-04	6.27E-04	2.59E-06
404	572064.9	4149148	6.27E-03	5.42E-03	1.88E-05	8.19E-03	7.85E-03	3.25E-05	1.45E-03	1.41E-03	5.99E-06	6.08E-04	6.22E-04	2.57E-06
405	572064.7	4149139	6.18E-03	5.34E-03	1.86E-05	8.07E-03	7.74E-03	3.21E-05	1.43E-03	1.39E-03	5.90E-06	6.00E-04	6.13E-04	2.53E-06
406	572064.1	4149121	5.92E-03	5.12E-03	1.78E-05	7.73E-03	7.41E-03	3.07E-05	1.37E-03	1.33E-03	5.66E-06	5.75E-04	5.88E-04	2.42E-06
407	572063.8	4149112	5.79E-03	5.00E-03	1.74E-05	7.55E-03	7.24E-03	3.00E-05	1.33E-03	1.30E-03	5.52E-06	5.61E-04	5.74E-04	2.37E-06
408	572063.5	4149103	5.66E-03	4.89E-03	1.70E-05	7.39E-03	7.08E-03	2.93E-05	1.30E-03	1.27E-03	5.40E-06	5.49E-04	5.61E-04	2.32E-06
409	572058.5	4149240	5.74E-03	4.95E-03	1.72E-05	7.49E-03	7.17E-03	2.97E-05	1.32E-03	1.29E-03	5.48E-06	5.56E-04	5.69E-04	2.35E-06
410	572058.3	4149230	5.69E-03	4.91E-03	1.71E-05	7.43E-03	7.12E-03	2.95E-05	1.31E-03	1.28E-03	5.43E-06	5.52E-04	5.64E-04	2.33E-06
411	572058	4149221	5.67E-03	4.90E-03	1.70E-05	7.40E-03	7.09E-03	2.94E-05	1.31E-03	1.28E-03	5.41E-06	5.50E-04	5.62E-04	2.32E-06
412	572057.7	4149212	5.68E-03	4.90E-03	1.70E-05	7.41E-03	7.10E-03	2.94E-05	1.31E-03	1.28E-03	5.42E-06	5.51E-04	5.63E-04	2.32E-06

413	572057.4	4149202	5.71E-03	4.93E-03	1.71E-05	7.46E-03	7.14E-03	2.96E-05	1.32E-03	1.29E-03	5.45E-06	5.54E-04	5.66E-04	2.34E-06
414	572057.1	4149193	5.77E-03	4.98E-03	1.73E-05	7.53E-03	7.22E-03	2.99E-05	1.33E-03	1.30E-03	5.51E-06	5.60E-04	5.72E-04	2.36E-06
415	572056.8	4149184	5.84E-03	5.05E-03	1.75E-05	7.63E-03	7.31E-03	3.03E-05	1.35E-03	1.32E-03	5.58E-06	5.67E-04	5.79E-04	2.39E-06
416	572056.5	4149175	5.91E-03	5.10E-03	1.77E-05	7.71E-03	7.39E-03	3.06E-05	1.36E-03	1.33E-03	5.64E-06	5.73E-04	5.86E-04	2.42E-06
417	572056.2	4149165	5.95E-03	5.14E-03	1.79E-05	7.77E-03	7.44E-03	3.08E-05	1.37E-03	1.34E-03	5.68E-06	5.77E-04	5.90E-04	2.44E-06
418	572056	4149156	5.95E-03	5.14E-03	1.79E-05	7.77E-03	7.45E-03	3.09E-05	1.37E-03	1.34E-03	5.69E-06	5.78E-04	5.91E-04	2.44E-06
419	572055.7	4149147	5.91E-03	5.11E-03	1.77E-05	7.72E-03	7.40E-03	3.06E-05	1.36E-03	1.33E-03	5.65E-06	5.73E-04	5.86E-04	2.42E-06
420	572055.4	4149138	5.83E-03	5.03E-03	1.75E-05	7.61E-03	7.29E-03	3.02E-05	1.34E-03	1.31E-03	5.56E-06	5.65E-04	5.78E-04	2.38E-06
421	572055.1	4149128	5.71E-03	4.93E-03	1.71E-05	7.45E-03	7.14E-03	2.96E-05	1.32E-03	1.29E-03	5.45E-06	5.54E-04	5.66E-04	2.34E-06
422	572054.8	4149119	5.58E-03	4.82E-03	1.67E-05	7.28E-03	6.98E-03	2.89E-05	1.29E-03	1.26E-03	5.33E-06	5.41E-04	5.53E-04	2.28E-06
423	572054.5	4149110	5.44E-03	4.70E-03	1.63E-05	7.10E-03	6.81E-03	2.82E-05	1.25E-03	1.22E-03	5.20E-06	5.28E-04	5.40E-04	2.23E-06
424	572054.2	4149100	5.32E-03	4.59E-03	1.60E-05	6.94E-03	6.65E-03	2.76E-05	1.23E-03	1.20E-03	5.08E-06	5.16E-04	5.27E-04	2.18E-06
425	572048.6	4149216	5.34E-03	4.61E-03	1.60E-05	6.97E-03	6.68E-03	2.77E-05	1.23E-03	1.20E-03	5.10E-06	5.18E-04	5.30E-04	2.19E-06
426	572048.3	4149207	5.36E-03	4.63E-03	1.61E-05	7.00E-03	6.71E-03	2.78E-05	1.24E-03	1.21E-03	5.12E-06	5.20E-04	5.32E-04	2.19E-06
427	572048	4149198	5.40E-03	4.67E-03	1.62E-05	7.05E-03	6.76E-03	2.80E-05	1.25E-03	1.22E-03	5.16E-06	5.24E-04	5.36E-04	2.21E-06
428	572047.7	4149189	5.47E-03	4.72E-03	1.64E-05	7.14E-03	6.84E-03	2.83E-05	1.26E-03	1.23E-03	5.22E-06	5.30E-04	5.42E-04	2.24E-06
429	572047.4	4149180	5.53E-03	4.78E-03	1.66E-05	7.23E-03	6.92E-03	2.87E-05	1.28E-03	1.25E-03	5.28E-06	5.37E-04	5.49E-04	2.26E-06
430	572047.2	4149170	5.59E-03	4.83E-03	1.68E-05	7.30E-03	6.99E-03	2.90E-05	1.29E-03	1.26E-03	5.34E-06	5.42E-04	5.55E-04	2.29E-06
431	572046.9	4149161	5.62E-03	4.85E-03	1.69E-05	7.34E-03	7.03E-03	2.91E-05	1.30E-03	1.27E-03	5.37E-06	5.45E-04	5.57E-04	2.30E-06
432	572046.6	4149152	5.61E-03	4.85E-03	1.68E-05	7.33E-03	7.02E-03	2.91E-05	1.29E-03	1.26E-03	5.36E-06	5.44E-04	5.57E-04	2.30E-06
433	572046.3	4149143	5.56E-03	4.80E-03	1.67E-05	7.26E-03	6.96E-03	2.88E-05	1.28E-03	1.25E-03	5.31E-06	5.40E-04	5.52E-04	2.28E-06
434	572046	4149134	5.47E-03	4.73E-03	1.64E-05	7.15E-03	6.85E-03	2.84E-05	1.26E-03	1.23E-03	5.23E-06	5.31E-04	5.43E-04	2.24E-06
435	572045.7	4149124	5.36E-03	4.63E-03	1.61E-05	7.00E-03	6.71E-03	2.78E-05	1.24E-03	1.21E-03	5.12E-06	5.20E-04	5.32E-04	2.19E-06
436	572045.4	4149115	5.23E-03	4.52E-03	1.57E-05	6.83E-03	6.55E-03	2.71E-05	1.21E-03	1.18E-03	5.00E-06	5.07E-04	5.19E-04	2.14E-06
437	572045.2	4149106	5.11E-03	4.41E-03	1.53E-05	6.67E-03	6.39E-03	2.65E-05	1.18E-03	1.15E-03	4.88E-06	4.95E-04	5.07E-04	2.09E-06
438	572038.4	4149184	5.19E-03	4.48E-03	1.56E-05	6.77E-03	6.49E-03	2.69E-05	1.20E-03	1.17E-03	4.96E-06	5.03E-04	5.15E-04	2.12E-06
439	572038.1	4149175	5.25E-03	4.54E-03	1.58E-05	6.86E-03	6.57E-03	2.72E-05	1.21E-03	1.18E-03	5.02E-06	5.09E-04	5.21E-04	2.15E-06
440	572037.8	4149166	5.30E-03	4.58E-03	1.59E-05	6.92E-03	6.63E-03	2.75E-05	1.22E-03	1.19E-03	5.06E-06	5.14E-04	5.26E-04	2.17E-06
441	572037.5	4149157	5.32E-03	4.59E-03	1.60E-05	6.94E-03	6.65E-03	2.76E-05	1.23E-03	1.20E-03	5.08E-06	5.16E-04	5.27E-04	2.18E-06
442	572037.2	4149148	5.30E-03	4.58E-03	1.59E-05	6.92E-03	6.63E-03	2.75E-05	1.22E-03	1.19E-03	5.06E-06	5.14E-04	5.25E-04	2.17E-06
443	572036.9	4149139	5.24E-03	4.53E-03	1.57E-05	6.84E-03	6.56E-03	2.72E-05	1.21E-03	1.18E-03	5.00E-06	5.08E-04	5.20E-04	2.14E-06
444	572036.7	4149130	5.15E-03	4.45E-03	1.55E-05	6.72E-03	6.44E-03	2.67E-05	1.19E-03	1.16E-03	4.92E-06	5.00E-04	5.11E-04	2.11E-06
445	572036.4	4149120	5.04E-03	4.35E-03	1.51E-05	6.58E-03	6.30E-03	2.61E-05	1.16E-03	1.13E-03	4.81E-06	4.89E-04	5.00E-04	2.06E-06
446	572036.1	4149111	4.92E-03	4.25E-03	1.48E-05	6.42E-03	6.15E-03	2.55E-05	1.13E-03	1.11E-03	4.70E-06	4.77E-04	4.88E-04	2.01E-06
447	572028.1	4149153	5.04E-03	4.35E-03	1.51E-05	6.57E-03	6.30E-03	2.61E-05	1.16E-03	1.13E-03	4.81E-06	4.88E-04	4.99E-04	2.06E-06
448	572027.9	4149144	5.01E-03	4.32E-03	1.50E-05	6.54E-03	6.27E-03	2.60E-05	1.15E-03	1.13E-03	4.78E-06	4.86E-04	4.97E-04	2.05E-06
449	572027.6	4149135	4.94E-03	4.27E-03	1.48E-05	6.45E-03	6.18E-03	2.56E-05	1.14E-03	1.11E-03	4.72E-06	4.79E-04	4.90E-04	2.02E-06
450	572027.3	4149126	4.85E-03	4.19E-03	1.46E-05	6.34E-03	6.07E-03	2.52E-05	1.12E-03	1.09E-03	4.63E-06	4.71E-04	4.81E-04	1.99E-06
451	572027	4149117	4.75E-03	4.10E-03	1.42E-05	6.20E-03	5.94E-03	2.46E-05	1.09E-03	1.07E-03	4.53E-06	4.60E-04	4.71E-04	1.94E-06
452	572026.7	4149107	4.63E-03	4.00E-03	1.39E-05	6.05E-03	5.80E-03	2.40E-05	1.07E-03	1.04E-03	4.43E-06	4.49E-04	4.60E-04	1.90E-06
453	572018.2	4149131	4.67E-03	4.03E-03	1.40E-05	6.10E-03	5.84E-03	2.42E-05	1.08E-03	1.05E-03	4.46E-06	4.53E-04	4.63E-04	1.91E-06
454	572017.9	4149122	4.58E-03	3.96E-03	1.37E-05	5.98E-03	5.73E-03	2.37E-05	1.06E-03	1.03E-03	4.37E-06	4.44E-04	4.54E-04	1.87E-06
455	572017.7	4149113	4.48E-03	3.87E-03	1.34E-05	5.85E-03	5.60E-03	2.32E-05	1.03E-03	1.01E-03	4.28E-06	4.34E-04	4.44E-04	1.83E-06
456	572169	4148870	1.05E-02	9.06E-03	3.15E-05	1.37E-02	1.31E-02	5.44E-05	2.42E-03	2.36E-03	1.00E-05	1.02E-03	1.04E-03	4.29E-06
457	572175.3	4148863	1.09E-02	9.40E-03	3.27E-05	1.42E-02	1.36E-02	5.65E-05	2.51E-03	2.45E-03	1.04E-05	1.06E-03	1.08E-03	4.46E-06
458	572139.7	4148887	8.53E-03	7.36E-03	2.56E-05	1.11E-02	1.07E-02	4.42E-05	1.97E-03	1.92E-03	8.14E-06	8.27E-04	8.46E-04	3.49E-06
459	572146	4148880	8.89E-03	7.68E-03	2.67E-05	1.16E-02	1.11E-02	4.61E-05	2.05E-03	2.00E-03	8.49E-06	8.62E-04	8.82E-04	3.64E-06
460	572152.3	4148874	9.26E-03	8.00E-03	2.78E-05	1.21E-02	1.16E-02	4.80E-05	2.14E-03	2.09E-03	8.85E-06	8.98E-04	9.19E-04	3.79E-06
461	572158.6	4148867	9.64E-03	8.32E-03	2.89E-05	1.26E-02	1.21E-02	5.00E-05	2.22E-03	2.17E-03	9.20E-06	9.35E-04	9.56E-04	3.94E-06
462	572165	4148860	1.00E-02	8.64E-03	3.00E-05	1.31E-02	1.25E-02	5.19E-05	2.31E-03	2.25E-03	9.56E-06	9.71E-04	9.93E-04	4.10E-06
463	572171.3	4148854	1.04E-02	8.97E-03	3.12E-05	1.36E-02	1.30E-02	5.39E-05	2.40E-03	2.34E-03	9.92E-06	1.01E-03	1.03E-03	4.25E-06
464	572116.9	4148898	7.25E-03	6.26E-03	2.18E-05	9.47E-03	9.07E-03	3.76E-05	1.67E-03	1.63E-03	6.92E-06	7.03E-04	7.19E-04	2.97E-06
465	572123.2	4148891	7.55E-03	6.52E-03	2.26E-05	9.85E-03	9.44E-03	3.91E-05	1.74E-03	1.70E-03	7.21E-06	7.32E-04	7.48E-04	3.09E-06
466	572129.5	4148884	7.86E-03	6.79E-03	2.36E-05	1.03E-02	9.83E-03	4.07E-05	1.81E-03	1.77E-03	7.50E-06	7.62E-04	7.79E-04	3.22E-06
467	572135.8	4148878	8.19E-03	7.07E-03	2.46E-05	1.07E-02	1.02E-02	4.24E-05	1.89E-03	1.84E-03	7.82E-06	7.94E-04	8.12E-04	3.35E-06
468	572142.1	4148871	8.52E-03	7.36E-03	2.56E-05	1.11E-02	1.07E-02	4.42E-05	1.97E-03	1.92E-03	8.14E-06	8.27E-04	8.45E-04	3.49E-06
469	572148.4	4148864	8.87E-03	7.66E-03	2.66E-05	1.16E-02	1.11E-02	4.60E-05	2.05E-03	2.00E-03	8.47E-06	8.60E-04	8.80E-04	3.63E-06
470	572154.7	4148858	9.22E-03	7.96E-03	2.77E-05	1.20E-02	1.15E-02	4.78E-05	2.12E-03	2.07E-03	8.80E-06	8.94E-04	9.14E-04	3.77E-06
471	572160.9	4148851	9.56E-03	8.26E-03	2.87E-05	1.25E-02	1.20E-02	4.96E-05	2.20E-03	2.15E-03	9.13E-06	9.28E-04	9.48E-04	3.91E-06
472	572167.2	4148844	9.91E-03	8.56E-03	2.97E-05	1.29E-02	1.24E-02	5.14E-05	2.28E-03	2.23E-03	9.46E-06	9.61E-04	9.83E-04	4.06E-06
473	572100.6	4148902	6.48E-03	5.60E-03	1.94E-05	8.46E-03	8.11E-03	3.36E-05	1.49E-03	1.46E-03	6.19E-06	6.29E-04	6.43E-04	2.65E-06
474	572106.9	4148895	6.73E-03	5.81E-03	2.02E-05	8.78E-03	8.41E-03	3.49E-05	1.55E-03	1.51E-03	6.42E-06	6.52E-04	6.67E-04	2.75E-06
475	572113.1	4148888	6.99E-03	6.03E-03	2.10E-05	9.12E-03	8.74E-03	3.62E-05	1.61E-03	1.57E-03	6.67E-06	6.78E-04	6.93E-04	2.86E-06
476	572119.4	4148882	7.27E-03	6.27E-03	2.18E-05	9.49E-03	9.09E-03	3.77E-05	1.68E-03	1.64E-03	6.94E-06	7.05E-04	7.21E-04	2.97E-06
477	572125.6	4148875	7.56E-03	6.53E-03	2.27E-05	9.87E-03	9.46E-03	3.92E-05	1.74E-03	1.70E-03	7.22E-06	7.33E-04	7.50E-04	3.09E-06
478	572131.9	4148868	7.87E-03	6.79E-03	2.36E-05	1.03E-02	9.84E-03	4.08E-05	1.81E-03	1.77E-03	7.51E-06	7.63E-04	7.80E-04	3.22E-06
479	572138.2	4148862	8.18E-03	7.06E-03	2.46E-05	1.07E-02	1.02E-02	4.24E-05	1.89E-03	1.84E-03	7.81E-06	7.93E-04	8.11E-04	3.35E-06
480	572144.4	4148855	8.50E-03	7.34E-03	2.55E-05	1.11E-02	1.06E-02	4.41E-05	1.96E-03	1.91E-03	8.12E-06	8.24E-04	8.43E-04	3.48E-06
481	572150.7	4148849	8.82E-03	7.62E-03	2.65E-05	1.15E-02	1.10E-02	4.57E-05	2.03E-03	1.99E-03	8.42E-06	8.55E-04	8.75E-04	3.61E-06
482	572156.9	4148842	9.14E-03	7.89E-03	2.74E-05	1.19E-02	1.14E-02	4.74E-05	2.11E-03	2.06E-03	8.73E-06	8.86E-04	9.06E-04	3.74E-06
483	572163.2	4148835	9.47E-03	8.17E-03	2.84E-05	1.24E-02	1.18E-02	4.91E-05	2.18E-03	2.13E-03	9.04E-06	9.18E-04	9.39E-04	3.87E-06
484	572090.6	4148899	6.04E-03	5.22E-03	1.81E-05	7.89E-03	7.56E-03	3.13E-05	1.39E-03	1.36E-03	5.77E-06	5.86E-04	5.99E-04	2.47E-06
485	572096.9	4148892	6.26E-03	5.41E-03	1.88E-05	8.17E-03	7.83E-03	3.24E-05	1.44E-03	1.41E-03	5.98E-06	6.07E-04	6.21E-04	2.56E-06
486	572109.3	4148879	6.74E-03	5.82E-03	2.02E-05	8.80E-03	8.43E-03	3.49E-05	1.55E-03	1.52E-03	6.43E-06	6.54E-04	6.68E-04	2.76E-06
487	572115.5	4148872	7.00E-03	6.05E-03	2.10E-05	9.14E-03	8.76E-03	3.63E-05	1.61E-03	1.58E-03	6.69E-06	6.79E-04	6.94E-04	2.87E-06
488	572128	4148859	7.56E-03	6.53E-03	2.27E-05	9.87E-03	9.46E-03	3.92E-05	1.74E-03	1.70E-03	7.22E-06	7.34E-04	7.50E-04	3.10E-06
489	572140.5	4148846	8.15E-03	7.04E-03	2.45E-05	1.06E-02	1.02E-02	4.23E-05	1.88E-03	1.84E-03	7.78E-06	7.91E-04	8.09E-04	3.34E-06
490	572146.7	4148839	8.45E-03	7.30E-03	2.54E-05	1.10E-02	1.06E-02	4.38E-05	1.95E-03	1.90E-03	8.07E-06	8.19E-04	8.38E-04	3.46E-06
491	572159.1	4148826	9.06E-03	7.82E-03	2.72E-05	1.18E-02	1.13E-02	4.70E-05	2.09E-03	2.04E-03	8.65E-06	8.79E-04	8.98E-04	3.71E-06
492	572065.5	4148912	5.19E-03	4.48E-03	1.56E-05	6.77E-03	6.49E-03	2.69E-05	1.20E-03	1.17E-03	4.95E-06	5.03E-04	5.15E-04	2.12E-06
493	572071.9	4148905	5.38E-03	4.64E-03	1.61E-05	7.02E-03	6.73E-03	2.79E-05	1.24E-03	1.21E-03	5.14E-06	5.22E-04	5.33E-04	2.20E-06
494	572078.3	4148898	5.57E-03	4.81E-03	1.67E-05	7.27E-03	6.97E-03	2.89E-05	1.28E-03	1.25E-03	5.32E-06	5.40E-04	5.52E-04	2.28E-06
495	572084.6	4148892	5.77E-03	4.98E-03	1.73E-05	7.53E-03	7.22E-03	2.99E-05	1.33E-03	1.30E-03	5.51E-06	5.60E-04	5.72E-04	2.36E-06

496	572091	4148885	5.98E-03	5.16E-03	1.79E-05	7.80E-03	7.48E-03	3.10E-05	1.38E-03	1.35E-03	5.71E-06	5.80E-04	5.93E-04	2.45E-06
497	572097.4	4148878	6.20E-03	5.35E-03	1.86E-05	8.09E-03	7.76E-03	3.21E-05	1.43E-03	1.40E-03	5.92E-06	6.01E-04	6.15E-04	2.54E-06
498	572103.8	4148871	6.44E-03	5.56E-03	1.93E-05	8.40E-03	8.05E-03	3.34E-05	1.48E-03	1.45E-03	6.15E-06	6.24E-04	6.38E-04	2.63E-06
499	572110.2	4148865	6.69E-03	5.78E-03	2.01E-05	8.73E-03	8.37E-03	3.47E-05	1.54E-03	1.51E-03	6.39E-06	6.49E-04	6.63E-04	2.74E-06
500	572116.6	4148858	6.96E-03	6.01E-03	2.09E-05	9.08E-03	8.70E-03	3.61E-05	1.60E-03	1.57E-03	6.64E-06	6.75E-04	6.90E-04	2.85E-06
501	572123	4148851	7.23E-03	6.24E-03	2.17E-05	9.44E-03	9.04E-03	3.75E-05	1.67E-03	1.63E-03	6.90E-06	7.01E-04	7.17E-04	2.96E-06
502	572129.3	4148844	7.51E-03	6.49E-03	2.25E-05	9.81E-03	9.40E-03	3.89E-05	1.73E-03	1.69E-03	7.17E-06	7.28E-04	7.45E-04	3.07E-06
503	572135.7	4148837	7.79E-03	6.73E-03	2.34E-05	1.02E-02	9.75E-03	4.04E-05	1.80E-03	1.75E-03	7.44E-06	7.56E-04	7.73E-04	3.19E-06
504	572142.1	4148831	8.08E-03	6.98E-03	2.43E-05	1.05E-02	1.01E-02	4.19E-05	1.86E-03	1.82E-03	7.72E-06	7.84E-04	8.01E-04	3.31E-06
505	572148.5	4148824	8.37E-03	7.23E-03	2.51E-05	1.09E-02	1.05E-02	4.34E-05	1.93E-03	1.89E-03	8.00E-06	8.12E-04	8.31E-04	3.43E-06
506	572154.9	4148817	8.67E-03	7.49E-03	2.60E-05	1.13E-02	1.08E-02	4.49E-05	2.00E-03	1.95E-03	8.28E-06	8.41E-04	8.60E-04	3.55E-06
507	572049.2	4148916	4.69E-03	4.05E-03	1.41E-05	6.13E-03	5.87E-03	2.43E-05	1.08E-03	1.06E-03	4.48E-06	4.55E-04	4.65E-04	1.92E-06
508	572055.5	4148909	4.87E-03	4.20E-03	1.46E-05	6.36E-03	6.09E-03	2.52E-05	1.12E-03	1.10E-03	4.65E-06	4.72E-04	4.83E-04	1.99E-06
509	572061.9	4148902	5.04E-03	4.35E-03	1.51E-05	6.58E-03	6.31E-03	2.61E-05	1.16E-03	1.13E-03	4.82E-06	4.89E-04	5.00E-04	2.06E-06
510	572068.2	4148895	5.22E-03	4.51E-03	1.57E-05	6.81E-03	6.53E-03	2.71E-05	1.20E-03	1.17E-03	4.98E-06	5.06E-04	5.18E-04	2.14E-06
511	572074.6	4148889	5.40E-03	4.66E-03	1.62E-05	7.05E-03	6.76E-03	2.80E-05	1.25E-03	1.22E-03	5.16E-06	5.24E-04	5.36E-04	2.21E-06
512	572081	4148882	5.59E-03	4.83E-03	1.68E-05	7.30E-03	6.99E-03	2.90E-05	1.29E-03	1.26E-03	5.34E-06	5.42E-04	5.54E-04	2.29E-06
513	572087.3	4148875	5.79E-03	5.00E-03	1.74E-05	7.55E-03	7.24E-03	3.00E-05	1.33E-03	1.30E-03	5.53E-06	5.61E-04	5.74E-04	2.37E-06
514	572093.7	4148869	5.99E-03	5.18E-03	1.80E-05	7.83E-03	7.50E-03	3.11E-05	1.38E-03	1.35E-03	5.72E-06	5.81E-04	5.94E-04	2.45E-06
515	572100	4148862	6.22E-03	5.37E-03	1.87E-05	8.12E-03	7.78E-03	3.22E-05	1.43E-03	1.40E-03	5.94E-06	6.03E-04	6.17E-04	2.55E-06
516	572106.4	4148855	6.46E-03	5.58E-03	1.94E-05	8.43E-03	8.08E-03	3.35E-05	1.49E-03	1.45E-03	6.17E-06	6.26E-04	6.40E-04	2.64E-06
517	572112.7	4148848	6.71E-03	5.79E-03	2.01E-05	8.76E-03	8.39E-03	3.48E-05	1.55E-03	1.51E-03	6.41E-06	6.51E-04	6.65E-04	2.75E-06
518	572119.1	4148842	6.97E-03	6.01E-03	2.09E-05	9.09E-03	8.71E-03	3.61E-05	1.61E-03	1.57E-03	6.65E-06	6.76E-04	6.91E-04	2.85E-06
519	572125.4	4148835	7.23E-03	6.24E-03	2.17E-05	9.44E-03	9.04E-03	3.75E-05	1.67E-03	1.63E-03	6.90E-06	7.01E-04	7.17E-04	2.96E-06
520	572131.8	4148828	7.49E-03	6.47E-03	2.25E-05	9.78E-03	9.38E-03	3.89E-05	1.73E-03	1.69E-03	7.16E-06	7.27E-04	7.43E-04	3.07E-06
521	572138.1	4148821	7.76E-03	6.70E-03	2.33E-05	1.01E-02	9.71E-03	4.02E-05	1.79E-03	1.75E-03	7.41E-06	7.53E-04	7.70E-04	3.18E-06
522	572144.5	4148815	8.04E-03	6.94E-03	2.41E-05	1.05E-02	1.01E-02	4.17E-05	1.85E-03	1.81E-03	7.68E-06	7.80E-04	7.97E-04	3.29E-06
523	572150.8	4148808	8.31E-03	7.18E-03	2.49E-05	1.09E-02	1.04E-02	4.31E-05	1.92E-03	1.87E-03	7.94E-06	8.06E-04	8.24E-04	3.40E-06
524	572033	4148919	4.25E-03	3.67E-03	1.27E-05	5.55E-03	5.31E-03	2.20E-05	9.79E-04	9.56E-04	4.06E-06	4.12E-04	4.21E-04	1.74E-06
525	572039.3	4148913	4.41E-03	3.81E-03	1.32E-05	5.76E-03	5.52E-03	2.29E-05	1.02E-03	9.93E-04	4.21E-06	4.28E-04	4.38E-04	1.81E-06
526	572045.6	4148906	4.58E-03	3.95E-03	1.37E-05	5.98E-03	5.73E-03	2.37E-05	1.06E-03	1.03E-03	4.37E-06	4.44E-04	4.54E-04	1.87E-06
527	572052	4148899	4.74E-03	4.09E-03	1.42E-05	6.19E-03	5.93E-03	2.46E-05	1.09E-03	1.07E-03	4.53E-06	4.60E-04	4.70E-04	1.94E-06
528	572058.3	4148893	4.90E-03	4.23E-03	1.47E-05	6.40E-03	6.13E-03	2.54E-05	1.13E-03	1.10E-03	4.68E-06	4.76E-04	4.86E-04	2.01E-06
529	572064.6	4148886	5.07E-03	4.38E-03	1.52E-05	6.62E-03	6.34E-03	2.63E-05	1.17E-03	1.14E-03	4.84E-06	4.92E-04	5.03E-04	2.07E-06
530	572070.9	4148879	5.24E-03	4.53E-03	1.57E-05	6.84E-03	6.56E-03	2.72E-05	1.21E-03	1.18E-03	5.00E-06	5.08E-04	5.20E-04	2.14E-06
531	572077.2	4148872	5.42E-03	4.68E-03	1.63E-05	7.07E-03	6.78E-03	2.81E-05	1.25E-03	1.22E-03	5.17E-06	5.25E-04	5.37E-04	2.22E-06
532	572083.6	4148866	5.60E-03	4.84E-03	1.68E-05	7.32E-03	7.01E-03	2.91E-05	1.29E-03	1.26E-03	5.35E-06	5.44E-04	5.56E-04	2.29E-06
533	572089.9	4148859	5.80E-03	5.01E-03	1.74E-05	7.57E-03	7.26E-03	3.01E-05	1.34E-03	1.31E-03	5.54E-06	5.63E-04	5.75E-04	2.37E-06
534	572096.2	4148852	6.01E-03	5.19E-03	1.80E-05	7.85E-03	7.52E-03	3.12E-05	1.39E-03	1.35E-03	5.74E-06	5.83E-04	5.96E-04	2.46E-06
535	572102.5	4148846	6.24E-03	5.39E-03	1.87E-05	8.14E-03	7.80E-03	3.23E-05	1.44E-03	1.40E-03	5.96E-06	6.05E-04	6.19E-04	2.55E-06
536	572108.9	4148839	6.47E-03	5.59E-03	1.94E-05	8.45E-03	8.10E-03	3.36E-05	1.49E-03	1.46E-03	6.18E-06	6.28E-04	6.42E-04	2.65E-06
537	572115.2	4148832	6.71E-03	5.80E-03	2.02E-05	8.77E-03	8.40E-03	3.48E-05	1.55E-03	1.51E-03	6.41E-06	6.51E-04	6.66E-04	2.75E-06
538	572121.5	4148826	6.96E-03	6.01E-03	2.09E-05	9.09E-03	8.71E-03	3.61E-05	1.61E-03	1.57E-03	6.65E-06	6.75E-04	6.91E-04	2.85E-06
539	572127.8	4148819	7.21E-03	6.23E-03	2.16E-05	9.42E-03	9.02E-03	3.74E-05	1.66E-03	1.62E-03	6.89E-06	7.00E-04	7.15E-04	2.95E-06
540	572134.1	4148812	7.47E-03	6.45E-03	2.24E-05	9.75E-03	9.34E-03	3.87E-05	1.72E-03	1.68E-03	7.13E-06	7.24E-04	7.40E-04	3.06E-06
541	572140.5	4148806	7.72E-03	6.67E-03	2.32E-05	1.01E-02	9.66E-03	4.00E-05	1.78E-03	1.74E-03	7.37E-06	7.49E-04	7.66E-04	3.16E-06
542	572146.8	4148799	7.97E-03	6.88E-03	2.39E-05	1.04E-02	9.97E-03	4.13E-05	1.84E-03	1.79E-03	7.61E-06	7.73E-04	7.90E-04	3.26E-06
543	572016.9	4148923	3.86E-03	3.33E-03	1.16E-05	5.03E-03	4.82E-03	2.00E-05	8.89E-04	8.68E-04	3.68E-06	3.74E-04	3.82E-04	1.58E-06
544	572023.2	4148916	4.01E-03	3.46E-03	1.20E-05	5.23E-03	5.01E-03	2.08E-05	9.23E-04	9.02E-04	3.82E-06	3.88E-04	3.97E-04	1.64E-06
545	572029.5	4148910	4.16E-03	3.59E-03	1.25E-05	5.43E-03	5.20E-03	2.16E-05	9.59E-04	9.36E-04	3.97E-06	4.03E-04	4.12E-04	1.70E-06
546	572035.8	4148903	4.31E-03	3.72E-03	1.29E-05	5.63E-03	5.40E-03	2.24E-05	9.94E-04	9.71E-04	4.12E-06	4.18E-04	4.28E-04	1.77E-06
547	572042.1	4148896	4.47E-03	3.86E-03	1.34E-05	5.83E-03	5.59E-03	2.31E-05	1.03E-03	1.01E-03	4.26E-06	4.33E-04	4.43E-04	1.83E-06
548	572048.3	4148890	4.62E-03	3.99E-03	1.39E-05	6.03E-03	5.77E-03	2.39E-05	1.06E-03	1.04E-03	4.41E-06	4.48E-04	4.58E-04	1.89E-06
549	572054.6	4148883	4.77E-03	4.12E-03	1.43E-05	6.23E-03	5.97E-03	2.47E-05	1.10E-03	1.07E-03	4.55E-06	4.63E-04	4.73E-04	1.95E-06
550	572060.9	4148876	4.93E-03	4.25E-03	1.48E-05	6.43E-03	6.16E-03	2.55E-05	1.14E-03	1.11E-03	4.70E-06	4.78E-04	4.88E-04	2.02E-06
551	572067.2	4148870	5.09E-03	4.39E-03	1.53E-05	6.64E-03	6.36E-03	2.64E-05	1.17E-03	1.15E-03	4.86E-06	4.93E-04	5.05E-04	2.08E-06
552	572073.5	4148863	5.25E-03	4.54E-03	1.58E-05	6.86E-03	6.57E-03	2.72E-05	1.21E-03	1.18E-03	5.02E-06	5.10E-04	5.21E-04	2.15E-06
553	572079.8	4148856	5.43E-03	4.69E-03	1.63E-05	7.09E-03	6.79E-03	2.81E-05	1.25E-03	1.22E-03	5.18E-06	5.27E-04	5.38E-04	2.22E-06
554	572086.1	4148850	5.62E-03	4.85E-03	1.69E-05	7.33E-03	7.03E-03	2.91E-05	1.29E-03	1.26E-03	5.36E-06	5.45E-04	5.57E-04	2.30E-06
555	572092.4	4148843	5.82E-03	5.02E-03	1.75E-05	7.59E-03	7.27E-03	3.01E-05	1.34E-03	1.31E-03	5.55E-06	5.64E-04	5.77E-04	2.38E-06
556	572098.7	4148836	6.03E-03	5.20E-03	1.81E-05	7.87E-03	7.54E-03	3.12E-05	1.39E-03	1.36E-03	5.76E-06	5.85E-04	5.98E-04	2.47E-06
557	572105	4148830	6.25E-03	5.40E-03	1.88E-05	8.16E-03	7.82E-03	3.24E-05	1.44E-03	1.41E-03	5.97E-06	6.06E-04	6.20E-04	2.56E-06
558	572111.3	4148823	6.48E-03	5.59E-03	1.94E-05	8.46E-03	8.10E-03	3.36E-05	1.49E-03	1.46E-03	6.18E-06	6.28E-04	6.42E-04	2.65E-06
559	572117.6	4148816	6.71E-03	5.79E-03	2.01E-05	8.76E-03	8.39E-03	3.48E-05	1.55E-03	1.51E-03	6.41E-06	6.51E-04	6.65E-04	2.75E-06
560	572123.9	4148810	6.94E-03	6.00E-03	2.08E-05	9.07E-03	8.69E-03	3.60E-05	1.60E-03	1.56E-03	6.63E-06	6.74E-04	6.89E-04	2.84E-06
561	572130.2	4148803	7.18E-03	6.20E-03	2.15E-05	9.37E-03	8.98E-03	3.72E-05	1.65E-03	1.62E-03	6.85E-06	6.96E-04	7.12E-04	2.94E-06
562	572136.4	4148796	7.41E-03	6.40E-03	2.22E-05	9.68E-03	9.27E-03	3.84E-05	1.71E-03	1.67E-03	7.08E-06	7.19E-04	7.35E-04	3.03E-06
563	572142.7	4148790	7.65E-03	6.60E-03	2.29E-05	9.98E-03	9.56E-03	3.96E-05	1.76E-03	1.72E-03	7.30E-06	7.42E-04	7.58E-04	3.13E-06
564	572000.8	4148927	3.51E-03	3.03E-03	1.05E-05	4.59E-03	4.40E-03	1.82E-05	8.10E-04	7.91E-04	3.36E-06	3.41E-04	3.49E-04	1.44E-06
565	572007.1	4148920	3.65E-03	3.15E-03	1.09E-05	4.76E-03	4.56E-03	1.89E-05	8.40E-04	8.20E-04	3.48E-06	3.54E-04	3.62E-04	1.49E-06
566	572013.4	4148913	3.78E-03	3.27E-03	1.13E-05	4.94E-03	4.73E-03	1.96E-05	8.72E-04	8.51E-04	3.61E-06	3.67E-04	3.75E-04	1.55E-06
567	572019.6	4148907	3.92E-03	3.39E-03	1.18E-05	5.12E-03	4.91E-03	2.03E-05	9.05E-04	8.83E-04	3.75E-06	3.81E-04	3.89E-04	1.61E-06
568	572025.9	4148900	4.07E-03	3.51E-03	1.22E-05	5.31E-03	5.09E-03	2.11E-05	9.38E-04	9.16E-04	3.88E-06	3.95E-04	4.03E-04	1.66E-06
569	572032.2	4148893	4.21E-03	3.64E-03	1.26E-05	5.50E-03	5.27E-03	2.18E-05	9.71E-04	9.48E-04	4.02E-06	4.09E-04	4.18E-04	1.72E-06
570	572038.4	4148887	4.35E-03	3.76E-03	1.31E-05	5.68E-03	5.45E-03	2.26E-05	1.00E-03	9.80E-04	4.16E-06	4.22E-04	4.32E-04	1.78E-06
571	572044.7	4148880	4.50E-03	3.88E-03	1.35E-05	5.87E-03	5.62E-03	2.33E-05	1.04E-03	1.01E-03	4.29E-06	4.36E-04	4.46E-04	1.84E-06
572	572051	4148873	4.64E-03	4.01E-03	1.39E-05	6.06E-03	5.80E-03	2.40E-05	1.07E-03	1.04E-03	4.43E-06	4.50E-04	4.60E-04	1.90E-06
573	572057.2	4148867	4.79E-03	4.13E-03	1.44E-05	6.25E-03	5.99E-03	2.48E-05	1.10E-03	1.08E-03	4.57E-06	4.64E-04	4.75E-04	1.96E-06
574	572063.5	4148860	4.94E-03	4.26E-03	1.48E-05	6.45E-03	6.18E-03	2.56E-05	1.14E-03	1.11E-03	4.71E-06	4.79E-04	4.90E-04	2.02E-06
575	572069.8	4148854	5.09E-03	4.40E-03	1.53E-05	6.65E-03	6.37E-03	2.64E-05	1.17E-03	1.15E-03	4.86E-06	4.94E-04	5.05E-04	2.08E-06
576	572076	4148847	5.26E-03	4.54E-03	1.58E-05	6.87E-03	6.58E-03	2.73E-05	1.21E-03	1.18E-03	5.03E-06	5.10E-04	5.22E-04	2.15E-06
577	572082.3	4148840	5.44E-03	4.70E-03	1.63E-05	7.10E-03	6.81E-03	2.82E-05	1.25E-03	1.22E-03	5.20E-06	5.28E-04	5.40E-04	2.23E-06
578	572088.6	4148834	5.63E-03	4.86E-03	1.69E-05	7.35E-03	7.04E-03	2.92E-05	1.30E-03	1.27E-03	5.37E-06	5.46E-04	5.58E-04	2.30E-06

579	572094.8	4148827	5.83E-03	5.03E-03	1.75E-05	7.61E-03	7.29E-03	3.02E-05	1.34E-03	1.31E-03	5.57E-06	5.65E-04	5.78E-04	2.39E-06
580	572101.1	4148820	6.04E-03	5.21E-03	1.81E-05	7.88E-03	7.55E-03	3.13E-05	1.39E-03	1.36E-03	5.76E-06	5.85E-04	5.99E-04	2.47E-06
581	572107.4	4148814	6.25E-03	5.40E-03	1.88E-05	8.16E-03	7.82E-03	3.24E-05	1.44E-03	1.41E-03	5.97E-06	6.06E-04	6.20E-04	2.56E-06
582	572113.6	4148807	6.47E-03	5.59E-03	1.94E-05	8.44E-03	8.09E-03	3.35E-05	1.49E-03	1.46E-03	6.18E-06	6.27E-04	6.42E-04	2.65E-06
583	572119.9	4148800	6.69E-03	5.77E-03	2.01E-05	8.73E-03	8.36E-03	3.47E-05	1.54E-03	1.50E-03	6.38E-06	6.48E-04	6.63E-04	2.74E-06
584	572126.2	4148794	6.90E-03	5.96E-03	2.07E-05	9.01E-03	8.64E-03	3.58E-05	1.59E-03	1.55E-03	6.59E-06	6.70E-04	6.85E-04	2.83E-06
585	572132.4	4148787	7.12E-03	6.15E-03	2.14E-05	9.30E-03	8.91E-03	3.69E-05	1.64E-03	1.60E-03	6.80E-06	6.91E-04	7.06E-04	2.91E-06
586	572138.7	4148781	7.34E-03	6.34E-03	2.20E-05	9.58E-03	9.18E-03	3.81E-05	1.69E-03	1.65E-03	7.01E-06	7.12E-04	7.28E-04	3.00E-06
587	571984.9	4148930	3.22E-03	2.78E-03	9.65E-06	4.20E-03	4.02E-03	1.67E-05	7.41E-04	7.24E-04	3.07E-06	3.12E-04	3.19E-04	1.32E-06
588	571991.1	4148923	3.33E-03	2.87E-03	9.99E-06	4.35E-03	4.16E-03	1.73E-05	7.67E-04	7.49E-04	3.18E-06	3.23E-04	3.30E-04	1.36E-06
589	571997.4	4148917	3.45E-03	2.98E-03	1.04E-05	4.50E-03	4.31E-03	1.79E-05	7.95E-04	7.76E-04	3.29E-06	3.35E-04	3.42E-04	1.41E-06
590	572003.6	4148910	3.58E-03	3.09E-03	1.07E-05	4.67E-03	4.47E-03	1.85E-05	8.25E-04	8.05E-04	3.42E-06	3.47E-04	3.55E-04	1.46E-06
591	572009.9	4148904	3.71E-03	3.20E-03	1.11E-05	4.84E-03	4.64E-03	1.92E-05	8.55E-04	8.35E-04	3.54E-06	3.60E-04	3.68E-04	1.52E-06
592	572022.3	4148890	3.98E-03	3.44E-03	1.19E-05	5.19E-03	4.98E-03	2.06E-05	9.17E-04	8.95E-04	3.80E-06	3.86E-04	3.95E-04	1.63E-06
593	572028.6	4148884	4.11E-03	3.55E-03	1.23E-05	5.37E-03	5.14E-03	2.13E-05	9.48E-04	9.26E-04	3.93E-06	3.99E-04	4.08E-04	1.68E-06
594	572034.8	4148877	4.25E-03	3.67E-03	1.27E-05	5.54E-03	5.31E-03	2.20E-05	9.79E-04	9.56E-04	4.05E-06	4.12E-04	4.21E-04	1.74E-06
595	572041	4148870	4.38E-03	3.78E-03	1.31E-05	5.71E-03	5.47E-03	2.27E-05	1.01E-03	9.85E-04	4.18E-06	4.24E-04	4.34E-04	1.79E-06
596	572047.3	4148864	4.51E-03	3.89E-03	1.35E-05	5.89E-03	5.64E-03	2.34E-05	1.04E-03	1.02E-03	4.31E-06	4.37E-04	4.47E-04	1.85E-06
597	572059.8	4148851	4.79E-03	4.14E-03	1.44E-05	6.26E-03	5.99E-03	2.48E-05	1.10E-03	1.08E-03	4.58E-06	4.65E-04	4.75E-04	1.96E-06
598	572066	4148844	4.94E-03	4.27E-03	1.48E-05	6.45E-03	6.18E-03	2.56E-05	1.14E-03	1.11E-03	4.72E-06	4.79E-04	4.90E-04	2.02E-06
599	572072.2	4148837	5.10E-03	4.41E-03	1.53E-05	6.66E-03	6.38E-03	2.64E-05	1.18E-03	1.15E-03	4.87E-06	4.95E-04	5.06E-04	2.09E-06
600	572078.5	4148831	5.27E-03	4.55E-03	1.58E-05	6.88E-03	6.59E-03	2.73E-05	1.22E-03	1.19E-03	5.03E-06	5.11E-04	5.23E-04	2.16E-06
601	572091	4148818	5.64E-03	4.87E-03	1.69E-05	7.36E-03	7.05E-03	2.92E-05	1.30E-03	1.27E-03	5.38E-06	5.47E-04	5.59E-04	2.31E-06
602	572097.2	4148811	5.83E-03	5.04E-03	1.75E-05	7.62E-03	7.30E-03	3.02E-05	1.35E-03	1.31E-03	5.57E-06	5.66E-04	5.79E-04	2.39E-06
603	572103.4	4148804	6.04E-03	5.21E-03	1.81E-05	7.88E-03	7.55E-03	3.13E-05	1.39E-03	1.36E-03	5.76E-06	5.85E-04	5.99E-04	2.47E-06
604	572109.7	4148798	6.24E-03	5.39E-03	1.87E-05	8.14E-03	7.80E-03	3.23E-05	1.44E-03	1.40E-03	5.96E-06	6.05E-04	6.18E-04	2.55E-06
605	572115.9	4148791	6.44E-03	5.56E-03	1.93E-05	8.41E-03	8.06E-03	3.34E-05	1.48E-03	1.45E-03	6.15E-06	6.25E-04	6.39E-04	2.64E-06
606	572122.2	4148785	6.64E-03	5.74E-03	1.99E-05	8.67E-03	8.31E-03	3.44E-05	1.53E-03	1.50E-03	6.34E-06	6.44E-04	6.59E-04	2.72E-06
607	572128.4	4148778	6.85E-03	5.92E-03	2.06E-05	8.94E-03	8.57E-03	3.55E-05	1.58E-03	1.54E-03	6.54E-06	6.64E-04	6.79E-04	2.80E-06
608	572134.6	4148771	7.06E-03	6.10E-03	2.12E-05	9.21E-03	8.83E-03	3.66E-05	1.63E-03	1.59E-03	6.74E-06	6.85E-04	7.00E-04	2.89E-06
609	571964.6	4148938	2.90E-03	2.50E-03	8.70E-06	3.78E-03	3.63E-03	1.50E-05	6.68E-04	6.53E-04	2.77E-06	2.81E-04	2.88E-04	1.19E-06
610	571971	4148931	2.99E-03	2.58E-03	8.97E-06	3.90E-03	3.74E-03	1.55E-05	6.89E-04	6.73E-04	2.86E-06	2.90E-04	2.97E-04	1.22E-06
611	571977.3	4148925	3.09E-03	2.67E-03	9.27E-06	4.03E-03	3.87E-03	1.60E-05	7.12E-04	6.96E-04	2.95E-06	3.00E-04	3.06E-04	1.26E-06
612	571983.7	4148918	3.20E-03	2.76E-03	9.60E-06	4.18E-03	4.00E-03	1.66E-05	7.37E-04	7.20E-04	3.05E-06	3.10E-04	3.17E-04	1.31E-06
613	571990.1	4148911	3.32E-03	2.86E-03	9.95E-06	4.33E-03	4.15E-03	1.72E-05	7.64E-04	7.46E-04	3.17E-06	3.22E-04	3.29E-04	1.36E-06
614	571996.5	4148904	3.44E-03	2.97E-03	1.03E-05	4.49E-03	4.30E-03	1.78E-05	7.93E-04	7.74E-04	3.28E-06	3.33E-04	3.41E-04	1.41E-06
615	572002.9	4148897	3.57E-03	3.08E-03	1.07E-05	4.65E-03	4.46E-03	1.85E-05	8.22E-04	8.02E-04	3.40E-06	3.46E-04	3.54E-04	1.46E-06
616	572009.2	4148891	3.69E-03	3.19E-03	1.11E-05	4.82E-03	4.62E-03	1.92E-05	8.52E-04	8.32E-04	3.53E-06	3.58E-04	3.66E-04	1.51E-06
617	572015.6	4148884	3.82E-03	3.30E-03	1.15E-05	4.99E-03	4.78E-03	1.98E-05	8.82E-04	8.61E-04	3.65E-06	3.71E-04	3.79E-04	1.57E-06
618	572022	4148877	3.95E-03	3.41E-03	1.19E-05	5.16E-03	4.95E-03	2.05E-05	9.11E-04	8.90E-04	3.78E-06	3.83E-04	3.92E-04	1.62E-06
619	572028.4	4148870	4.08E-03	3.52E-03	1.22E-05	5.33E-03	5.10E-03	2.12E-05	9.41E-04	9.18E-04	3.90E-06	3.96E-04	4.05E-04	1.67E-06
620	572034.7	4148864	4.21E-03	3.63E-03	1.26E-05	5.49E-03	5.26E-03	2.18E-05	9.70E-04	9.47E-04	4.02E-06	4.08E-04	4.17E-04	1.72E-06
621	572041.1	4148857	4.33E-03	3.74E-03	1.30E-05	5.66E-03	5.42E-03	2.25E-05	9.99E-04	9.76E-04	4.14E-06	4.20E-04	4.30E-04	1.77E-06
622	572047.5	4148850	4.47E-03	3.86E-03	1.34E-05	5.83E-03	5.59E-03	2.31E-05	1.03E-03	1.01E-03	4.26E-06	4.33E-04	4.43E-04	1.83E-06
623	572053.9	4148843	4.60E-03	3.98E-03	1.38E-05	6.01E-03	5.76E-03	2.39E-05	1.06E-03	1.04E-03	4.40E-06	4.46E-04	4.57E-04	1.88E-06
624	572060.3	4148837	4.75E-03	4.10E-03	1.43E-05	6.20E-03	5.94E-03	2.46E-05	1.09E-03	1.07E-03	4.54E-06	4.61E-04	4.71E-04	1.94E-06
625	572066.6	4148830	4.90E-03	4.23E-03	1.47E-05	6.40E-03	6.13E-03	2.54E-05	1.13E-03	1.10E-03	4.68E-06	4.76E-04	4.86E-04	2.01E-06
626	572073	4148823	5.07E-03	4.37E-03	1.52E-05	6.61E-03	6.34E-03	2.63E-05	1.17E-03	1.14E-03	4.84E-06	4.91E-04	5.02E-04	2.07E-06
627	572079.4	4148816	5.24E-03	4.53E-03	1.57E-05	6.84E-03	6.56E-03	2.72E-05	1.21E-03	1.18E-03	5.00E-06	5.08E-04	5.20E-04	2.14E-06
628	572085.8	4148810	5.42E-03	4.68E-03	1.63E-05	7.08E-03	6.78E-03	2.81E-05	1.25E-03	1.22E-03	5.18E-06	5.26E-04	5.38E-04	2.22E-06
629	572092.2	4148803	5.61E-03	4.84E-03	1.68E-05	7.32E-03	7.01E-03	2.91E-05	1.29E-03	1.26E-03	5.35E-06	5.44E-04	5.56E-04	2.29E-06
630	572098.5	4148796	5.80E-03	5.01E-03	1.74E-05	7.57E-03	7.25E-03	3.01E-05	1.34E-03	1.30E-03	5.54E-06	5.62E-04	5.75E-04	2.37E-06
631	572104.9	4148789	5.99E-03	5.17E-03	1.80E-05	7.82E-03	7.49E-03	3.11E-05	1.38E-03	1.35E-03	5.72E-06	5.81E-04	5.94E-04	2.45E-06
632	572111.3	4148783	6.19E-03	5.34E-03	1.86E-05	8.08E-03	7.74E-03	3.21E-05	1.43E-03	1.39E-03	5.91E-06	6.00E-04	6.14E-04	2.53E-06
633	572117.7	4148776	6.39E-03	5.51E-03	1.92E-05	8.34E-03	7.99E-03	3.31E-05	1.47E-03	1.44E-03	6.10E-06	6.19E-04	6.33E-04	2.61E-06
634	572124	4148769	6.59E-03	5.69E-03	1.98E-05	8.60E-03	8.24E-03	3.41E-05	1.52E-03	1.48E-03	6.29E-06	6.39E-04	6.53E-04	2.70E-06
635	572130.4	4148762	6.79E-03	5.86E-03	2.04E-05	8.86E-03	8.49E-03	3.52E-05	1.57E-03	1.53E-03	6.48E-06	6.58E-04	6.73E-04	2.78E-06
636	571948.6	4148942	2.69E-03	2.32E-03	8.07E-06	3.51E-03	3.37E-03	1.39E-05	6.20E-04	6.06E-04	2.57E-06	2.61E-04	2.67E-04	1.10E-06
637	571954.9	4148935	2.77E-03	2.39E-03	8.30E-06	3.61E-03	3.46E-03	1.43E-05	6.37E-04	6.22E-04	2.64E-06	2.68E-04	2.74E-04	1.13E-06
638	571961.3	4148928	2.85E-03	2.46E-03	8.55E-06	3.72E-03	3.56E-03	1.48E-05	6.57E-04	6.41E-04	2.72E-06	2.76E-04	2.82E-04	1.17E-06
639	571967.6	4148921	2.94E-03	2.54E-03	8.82E-06	3.84E-03	3.68E-03	1.52E-05	6.77E-04	6.61E-04	2.81E-06	2.85E-04	2.91E-04	1.20E-06
640	571974	4148915	3.04E-03	2.62E-03	9.12E-06	3.97E-03	3.80E-03	1.57E-05	7.00E-04	6.84E-04	2.90E-06	2.95E-04	3.01E-04	1.24E-06
641	571980.3	4148908	3.14E-03	2.72E-03	9.44E-06	4.10E-03	3.93E-03	1.63E-05	7.25E-04	7.08E-04	3.00E-06	3.05E-04	3.12E-04	1.29E-06
642	571986.7	4148901	3.26E-03	2.81E-03	9.78E-06	4.25E-03	4.08E-03	1.69E-05	7.51E-04	7.33E-04	3.11E-06	3.16E-04	3.23E-04	1.33E-06
643	571993	4148894	3.38E-03	2.92E-03	1.01E-05	4.41E-03	4.22E-03	1.75E-05	7.78E-04	7.60E-04	3.22E-06	3.27E-04	3.35E-04	1.38E-06
644	571999.4	4148888	3.50E-03	3.02E-03	1.05E-05	4.57E-03	4.37E-03	1.81E-05	8.06E-04	7.87E-04	3.34E-06	3.39E-04	3.47E-04	1.43E-06
645	572005.7	4148881	3.62E-03	3.13E-03	1.09E-05	4.72E-03	4.53E-03	1.88E-05	8.34E-04	8.15E-04	3.46E-06	3.51E-04	3.59E-04	1.48E-06
646	572012.1	4148874	3.74E-03	3.23E-03	1.12E-05	4.88E-03	4.68E-03	1.94E-05	8.62E-04	8.42E-04	3.57E-06	3.63E-04	3.71E-04	1.53E-06
647	572018.4	4148868	3.86E-03	3.33E-03	1.16E-05	5.04E-03	4.83E-03	2.00E-05	8.90E-04	8.69E-04	3.69E-06	3.74E-04	3.83E-04	1.58E-06
648	572024.8	4148861	3.98E-03	3.43E-03	1.19E-05	5.19E-03	4.98E-03	2.06E-05	9.17E-04	8.95E-04	3.80E-06	3.86E-04	3.94E-04	1.63E-06
649	572031.1	4148854	4.10E-03	3.54E-03	1.23E-05	5.35E-03	5.12E-03	2.12E-05	9.44E-04	9.22E-04	3.91E-06	3.97E-04	4.06E-04	1.68E-06
650	572037.5	4148847	4.22E-03	3.64E-03	1.27E-05	5.50E-03	5.27E-03	2.19E-05	9.72E-04	9.49E-04	4.03E-06	4.09E-04	4.18E-04	1.73E-06
651	572043.8	4148841	4.34E-03	3.75E-03	1.30E-05	5.67E-03	5.43E-03	2.25E-05	1.00E-03	9.77E-04	4.14E-06	4.21E-04	4.30E-04	1.78E-06
652	572050.2	4148834	4.47E-03	3.86E-03	1.34E-05	5.84E-03	5.59E-03	2.32E-05	1.03E-03	1.01E-03	4.27E-06	4.34E-04	4.43E-04	1.83E-06
653	572056.5	4148827	4.61E-03	3.98E-03	1.38E-05	6.02E-03	5.77E-03	2.39E-05	1.06E-03	1.04E-03	4.40E-06	4.47E-04	4.57E-04	1.89E-06
654	572062.9	4148820	4.76E-03	4.11E-03	1.43E-05	6.21E-03	5.95E-03	2.47E-05	1.10E-03	1.07E-03	4.55E-06	4.62E-04	4.72E-04	1.95E-06
655	572069.2	4148814	4.92E-03	4.25E-03	1.48E-05	6.42E-03	6.15E-03	2.55E-05	1.13E-03	1.11E-03	4.69E-06	4.77E-04	4.88E-04	2.01E-06
656	572075.6	4148807	5.08E-03	4.39E-03	1.52E-05	6.63E-03	6.36E-03	2.63E-05	1.17E-03	1.14E-03	4.85E-06	4.93E-04	5.04E-04	2.08E-06
657	572081.9	4148800	5.25E-03	4.53E-03	1.58E-05	6.85E-03	6.57E-03	2.72E-05	1.21E-03	1.18E-03	5.01E-06	5.09E-04	5.21E-04	2.15E-06
658	572088.3	4148794	5.42E-03	4.68E-03	1.63E-05	7.08E-03	6.79E-03	2.81E-05	1.25E-03	1.22E-03	5.18E-06	5.26E-04	5.38E-04	2.22E-06
659	572094.6	4148787	5.60E-03	4.84E-03	1.68E-05	7.32E-03	7.01E-03	2.90E-05	1.29E-03	1.26E-03	5.35E-06	5.43E-04	5.56E-04	2.29E-06
660	572101	4148780	5.79E-03	5.00E-03	1.74E-05	7.55E-03	7.24E-03	3.00E-05	1.33E-03	1.30E-03	5.53E-06	5.61E-04	5.74E-04	2.37E-06
661	572107.3	4148773	5.97E-03	5.16E-03	1.79E-05	7.80E-03	7.47E-03	3.10E-05	1.38E-03	1.34E-03	5.70E-06	5.79E-04	5.92E-04	2.44E-06

662	572113.7	4148767	6.16E-03	5.32E-03	1.85E-05	8.04E-03	7.71E-03	3.19E-05	1.42E-03	1.39E-03	5.88E-06	5.98E-04	6.11E-04	2.52E-06
663	572120	4148760	6.35E-03	5.48E-03	1.91E-05	8.29E-03	7.94E-03	3.29E-05	1.46E-03	1.43E-03	6.06E-06	6.16E-04	6.30E-04	2.60E-06
664	572126.4	4148753	6.54E-03	5.65E-03	1.96E-05	8.54E-03	8.18E-03	3.39E-05	1.51E-03	1.47E-03	6.24E-06	6.34E-04	6.49E-04	2.68E-06
665	571932.6	4148945	2.51E-03	2.17E-03	7.53E-06	3.28E-03	3.14E-03	1.30E-05	5.78E-04	5.65E-04	2.40E-06	2.43E-04	2.49E-04	1.03E-06
666	571939	4148938	2.57E-03	2.22E-03	7.72E-06	3.36E-03	3.22E-03	1.33E-05	5.93E-04	5.79E-04	2.46E-06	2.50E-04	2.55E-04	1.05E-06
667	571945.3	4148932	2.64E-03	2.28E-03	7.93E-06	3.45E-03	3.30E-03	1.37E-05	6.09E-04	5.94E-04	2.52E-06	2.56E-04	2.62E-04	1.08E-06
668	571951.6	4148925	2.72E-03	2.35E-03	8.15E-06	3.55E-03	3.40E-03	1.41E-05	6.26E-04	6.12E-04	2.59E-06	2.64E-04	2.69E-04	1.11E-06
669	571957.9	4148918	2.80E-03	2.42E-03	8.40E-06	3.66E-03	3.50E-03	1.45E-05	6.46E-04	6.30E-04	2.67E-06	2.72E-04	2.78E-04	1.15E-06
670	571964.3	4148911	2.89E-03	2.50E-03	8.67E-06	3.77E-03	3.62E-03	1.50E-05	6.66E-04	6.51E-04	2.76E-06	2.80E-04	2.87E-04	1.18E-06
671	571970.6	4148905	2.99E-03	2.58E-03	8.97E-06	3.90E-03	3.74E-03	1.55E-05	6.89E-04	6.73E-04	2.85E-06	2.90E-04	2.96E-04	1.22E-06
672	571976.9	4148898	3.09E-03	2.67E-03	9.28E-06	4.04E-03	3.87E-03	1.60E-05	7.13E-04	6.96E-04	2.95E-06	3.00E-04	3.07E-04	1.27E-06
673	571983.2	4148891	3.20E-03	2.77E-03	9.61E-06	4.18E-03	4.01E-03	1.66E-05	7.38E-04	7.21E-04	3.06E-06	3.11E-04	3.18E-04	1.31E-06
674	571989.5	4148885	3.32E-03	2.86E-03	9.95E-06	4.33E-03	4.15E-03	1.72E-05	7.64E-04	7.46E-04	3.17E-06	3.22E-04	3.29E-04	1.36E-06
675	571995.9	4148878	3.43E-03	2.96E-03	1.03E-05	4.48E-03	4.29E-03	1.78E-05	7.91E-04	7.72E-04	3.27E-06	3.33E-04	3.40E-04	1.40E-06
676	572002.2	4148871	3.54E-03	3.06E-03	1.06E-05	4.63E-03	4.43E-03	1.84E-05	8.17E-04	7.98E-04	3.38E-06	3.44E-04	3.51E-04	1.45E-06
677	572008.5	4148865	3.66E-03	3.16E-03	1.10E-05	4.77E-03	4.57E-03	1.89E-05	8.43E-04	8.23E-04	3.49E-06	3.55E-04	3.63E-04	1.50E-06
678	572014.8	4148858	3.77E-03	3.25E-03	1.13E-05	4.92E-03	4.71E-03	1.95E-05	8.69E-04	8.48E-04	3.60E-06	3.65E-04	3.74E-04	1.54E-06
679	572021.2	4148851	3.88E-03	3.35E-03	1.16E-05	5.06E-03	4.85E-03	2.01E-05	8.94E-04	8.73E-04	3.70E-06	3.76E-04	3.85E-04	1.59E-06
680	572027.5	4148845	3.99E-03	3.44E-03	1.20E-05	5.21E-03	4.99E-03	2.07E-05	9.19E-04	8.97E-04	3.81E-06	3.87E-04	3.95E-04	1.63E-06
681	572033.8	4148838	4.10E-03	3.54E-03	1.23E-05	5.35E-03	5.13E-03	2.13E-05	9.46E-04	9.23E-04	3.92E-06	3.98E-04	4.07E-04	1.68E-06
682	572040.1	4148831	4.22E-03	3.64E-03	1.27E-05	5.51E-03	5.28E-03	2.19E-05	9.73E-04	9.50E-04	4.03E-06	4.09E-04	4.18E-04	1.73E-06
683	572046.4	4148824	4.34E-03	3.75E-03	1.30E-05	5.67E-03	5.43E-03	2.25E-05	1.00E-03	9.78E-04	4.15E-06	4.21E-04	4.31E-04	1.78E-06
684	572052.8	4148818	4.48E-03	3.87E-03	1.34E-05	5.85E-03	5.60E-03	2.32E-05	1.03E-03	1.01E-03	4.28E-06	4.34E-04	4.44E-04	1.83E-06
685	572059.1	4148811	4.62E-03	3.99E-03	1.39E-05	6.03E-03	5.78E-03	2.40E-05	1.07E-03	1.04E-03	4.41E-06	4.48E-04	4.58E-04	1.89E-06
686	572065.4	4148804	4.77E-03	4.12E-03	1.43E-05	6.23E-03	5.97E-03	2.47E-05	1.10E-03	1.07E-03	4.56E-06	4.63E-04	4.73E-04	1.95E-06
687	572071.7	4148798	4.93E-03	4.25E-03	1.48E-05	6.43E-03	6.16E-03	2.55E-05	1.14E-03	1.11E-03	4.70E-06	4.78E-04	4.88E-04	2.02E-06
688	572078.1	4148791	5.09E-03	4.39E-03	1.53E-05	6.64E-03	6.36E-03	2.64E-05	1.17E-03	1.14E-03	4.86E-06	4.93E-04	5.04E-04	2.08E-06
689	572084.4	4148784	5.25E-03	4.53E-03	1.58E-05	6.86E-03	6.57E-03	2.72E-05	1.21E-03	1.18E-03	5.01E-06	5.09E-04	5.21E-04	2.15E-06
690	572090.7	4148778	5.42E-03	4.68E-03	1.63E-05	7.08E-03	6.78E-03	2.81E-05	1.25E-03	1.22E-03	5.18E-06	5.26E-04	5.37E-04	2.22E-06
691	572097	4148771	5.59E-03	4.83E-03	1.68E-05	7.30E-03	7.00E-03	2.90E-05	1.29E-03	1.26E-03	5.34E-06	5.43E-04	5.55E-04	2.29E-06
692	572103.3	4148764	5.77E-03	4.98E-03	1.73E-05	7.53E-03	7.22E-03	2.99E-05	1.33E-03	1.30E-03	5.51E-06	5.60E-04	5.72E-04	2.36E-06
693	572109.7	4148757	5.95E-03	5.14E-03	1.79E-05	7.77E-03	7.44E-03	3.08E-05	1.37E-03	1.34E-03	5.68E-06	5.77E-04	5.90E-04	2.43E-06
694	572116	4148751	6.13E-03	5.29E-03	1.84E-05	8.00E-03	7.66E-03	3.18E-05	1.41E-03	1.38E-03	5.85E-06	5.94E-04	6.08E-04	2.51E-06
695	572122.3	4148744	6.31E-03	5.44E-03	1.89E-05	8.23E-03	7.89E-03	3.27E-05	1.45E-03	1.42E-03	6.02E-06	6.12E-04	6.25E-04	2.58E-06
696	571916.8	4148948	2.35E-03	2.03E-03	7.06E-06	3.07E-03	2.94E-03	1.22E-05	5.42E-04	5.29E-04	2.25E-06	2.28E-04	2.33E-04	9.62E-07
697	571923.1	4148942	2.41E-03	2.08E-03	7.22E-06	3.14E-03	3.01E-03	1.25E-05	5.54E-04	5.41E-04	2.30E-06	2.33E-04	2.39E-04	9.84E-07
698	571929.4	4148935	2.46E-03	2.13E-03	7.39E-06	3.22E-03	3.08E-03	1.28E-05	5.68E-04	5.54E-04	2.35E-06	2.39E-04	2.44E-04	1.01E-06
699	571935.7	4148928	2.53E-03	2.18E-03	7.58E-06	3.30E-03	3.16E-03	1.31E-05	5.82E-04	5.69E-04	2.41E-06	2.45E-04	2.51E-04	1.03E-06
700	571941.9	4148922	2.60E-03	2.24E-03	7.79E-06	3.39E-03	3.25E-03	1.35E-05	5.98E-04	5.84E-04	2.48E-06	2.52E-04	2.57E-04	1.06E-06
701	571948.2	4148915	2.67E-03	2.31E-03	8.01E-06	3.49E-03	3.34E-03	1.38E-05	6.16E-04	6.01E-04	2.55E-06	2.59E-04	2.65E-04	1.09E-06
702	571954.5	4148908	2.75E-03	2.38E-03	8.26E-06	3.59E-03	3.44E-03	1.43E-05	6.35E-04	6.20E-04	2.63E-06	2.67E-04	2.73E-04	1.13E-06
703	571960.8	4148902	2.84E-03	2.46E-03	8.53E-06	3.71E-03	3.56E-03	1.47E-05	6.55E-04	6.40E-04	2.72E-06	2.76E-04	2.82E-04	1.16E-06
704	571967.1	4148895	2.94E-03	2.54E-03	8.82E-06	3.84E-03	3.68E-03	1.52E-05	6.78E-04	6.62E-04	2.81E-06	2.85E-04	2.91E-04	1.20E-06
705	571973.4	4148888	3.04E-03	2.63E-03	9.12E-06	3.97E-03	3.80E-03	1.58E-05	7.01E-04	6.84E-04	2.90E-06	2.95E-04	3.02E-04	1.24E-06
706	571979.7	4148882	3.15E-03	2.72E-03	9.44E-06	4.11E-03	3.93E-03	1.63E-05	7.25E-04	7.08E-04	3.00E-06	3.05E-04	3.12E-04	1.29E-06
707	571986	4148875	3.25E-03	2.81E-03	9.76E-06	4.25E-03	4.07E-03	1.69E-05	7.50E-04	7.32E-04	3.11E-06	3.15E-04	3.23E-04	1.33E-06
708	571992.3	4148868	3.36E-03	2.90E-03	1.01E-05	4.39E-03	4.20E-03	1.74E-05	7.75E-04	7.56E-04	3.21E-06	3.26E-04	3.33E-04	1.38E-06
709	571998.6	4148862	3.47E-03	2.99E-03	1.04E-05	4.53E-03	4.34E-03	1.80E-05	7.99E-04	7.80E-04	3.31E-06	3.36E-04	3.44E-04	1.42E-06
710	572004.9	4148855	3.57E-03	3.08E-03	1.07E-05	4.66E-03	4.47E-03	1.85E-05	8.23E-04	8.04E-04	3.41E-06	3.46E-04	3.54E-04	1.46E-06
711	572011.2	4148848	3.68E-03	3.17E-03	1.10E-05	4.80E-03	4.60E-03	1.91E-05	8.47E-04	8.27E-04	3.51E-06	3.56E-04	3.64E-04	1.50E-06
712	572017.5	4148842	3.78E-03	3.26E-03	1.13E-05	4.93E-03	4.73E-03	1.96E-05	8.71E-04	8.50E-04	3.61E-06	3.66E-04	3.75E-04	1.55E-06
713	572023.8	4148835	3.88E-03	3.35E-03	1.17E-05	5.07E-03	4.86E-03	2.01E-05	8.95E-04	8.74E-04	3.71E-06	3.77E-04	3.85E-04	1.59E-06
714	572030.1	4148828	3.99E-03	3.45E-03	1.20E-05	5.21E-03	4.99E-03	2.07E-05	9.20E-04	8.98E-04	3.81E-06	3.87E-04	3.96E-04	1.63E-06
715	572036.4	4148822	4.10E-03	3.54E-03	1.23E-05	5.36E-03	5.13E-03	2.13E-05	9.46E-04	9.24E-04	3.92E-06	3.98E-04	4.07E-04	1.68E-06
716	572042.7	4148815	4.22E-03	3.65E-03	1.27E-05	5.51E-03	5.28E-03	2.19E-05	9.74E-04	9.51E-04	4.03E-06	4.10E-04	4.19E-04	1.73E-06
717	572049	4148808	4.35E-03	3.76E-03	1.31E-05	5.68E-03	5.44E-03	2.26E-05	1.00E-03	9.79E-04	4.16E-06	4.22E-04	4.32E-04	1.78E-06
718	572055.3	4148802	4.49E-03	3.87E-03	1.35E-05	5.86E-03	5.61E-03	2.33E-05	1.03E-03	1.01E-03	4.28E-06	4.35E-04	4.45E-04	1.84E-06
719	572061.6	4148795	4.63E-03	4.00E-03	1.39E-05	6.04E-03	5.79E-03	2.40E-05	1.07E-03	1.04E-03	4.42E-06	4.49E-04	4.59E-04	1.89E-06
720	572067.9	4148788	4.78E-03	4.13E-03	1.43E-05	6.24E-03	5.98E-03	2.48E-05	1.10E-03	1.08E-03	4.56E-06	4.63E-04	4.74E-04	1.96E-06
721	572074.2	4148782	4.93E-03	4.26E-03	1.48E-05	6.44E-03	6.17E-03	2.56E-05	1.14E-03	1.11E-03	4.71E-06	4.78E-04	4.89E-04	2.02E-06
722	572080.5	4148775	5.09E-03	4.39E-03	1.53E-05	6.64E-03	6.36E-03	2.64E-05	1.17E-03	1.15E-03	4.86E-06	4.93E-04	5.05E-04	2.08E-06
723	572086.8	4148768	5.25E-03	4.53E-03	1.58E-05	6.85E-03	6.57E-03	2.72E-05	1.21E-03	1.18E-03	5.01E-06	5.09E-04	5.21E-04	2.15E-06
724	572093.1	4148762	5.41E-03	4.67E-03	1.62E-05	7.07E-03	6.77E-03	2.81E-05	1.25E-03	1.22E-03	5.17E-06	5.25E-04	5.37E-04	2.22E-06
725	572099.4	4148755	5.58E-03	4.82E-03	1.67E-05	7.28E-03	6.98E-03	2.89E-05	1.29E-03	1.26E-03	5.33E-06	5.41E-04	5.53E-04	2.28E-06
726	572105.7	4148748	5.75E-03	4.96E-03	1.72E-05	7.50E-03	7.19E-03	2.98E-05	1.32E-03	1.29E-03	5.49E-06	5.57E-04	5.70E-04	2.35E-06
727	572112	4148742	5.91E-03	5.11E-03	1.78E-05	7.72E-03	7.40E-03	3.07E-05	1.36E-03	1.33E-03	5.65E-06	5.74E-04	5.87E-04	2.42E-06
728	572118.3	4148735	6.08E-03	5.25E-03	1.83E-05	7.94E-03	7.61E-03	3.15E-05	1.40E-03	1.37E-03	5.81E-06	5.90E-04	6.03E-04	2.49E-06
729	571900.9	4148952	2.21E-03	1.91E-03	6.63E-06	2.88E-03	2.76E-03	1.14E-05	5.09E-04	4.97E-04	2.11E-06	2.14E-04	2.19E-04	9.04E-07
730	571907.2	4148945	2.26E-03	1.95E-03	6.77E-06	2.95E-03	2.82E-03	1.17E-05	5.20E-04	5.08E-04	2.15E-06	2.19E-04	2.24E-04	9.23E-07
731	571913.5	4148938	2.31E-03	1.99E-03	6.92E-06	3.01E-03	2.89E-03	1.20E-05	5.32E-04	5.19E-04	2.20E-06	2.24E-04	2.29E-04	9.44E-07
732	571919.8	4148932	2.36E-03	2.04E-03	7.09E-06	3.08E-03	2.95E-03	1.22E-05	5.44E-04	5.31E-04	2.25E-06	2.29E-04	2.34E-04	9.66E-07
733	571926	4148925	2.42E-03	2.09E-03	7.26E-06	3.16E-03	3.02E-03	1.25E-05	5.57E-04	5.44E-04	2.31E-06	2.35E-04	2.40E-04	9.90E-07
734	571932.3	4148918	2.48E-03	2.14E-03	7.45E-06	3.24E-03	3.10E-03	1.29E-05	5.72E-04	5.58E-04	2.37E-06	2.41E-04	2.46E-04	1.02E-06
735	571938.6	4148912	2.55E-03	2.20E-03	7.65E-06	3.33E-03	3.19E-03	1.32E-05	5.88E-04	5.74E-04	2.44E-06	2.47E-04	2.53E-04	1.04E-06
736	571944.8	4148905	2.63E-03	2.27E-03	7.88E-06	3.43E-03	3.29E-03	1.36E-05	6.05E-04	5.91E-04	2.51E-06	2.55E-04	2.60E-04	1.07E-06
737	571951.1	4148898	2.71E-03	2.34E-03	8.13E-06	3.54E-03	3.39E-03	1.40E-05	6.24E-04	6.10E-04	2.59E-06	2.63E-04	2.69E-04	1.11E-06
738	571957.4	4148892	2.80E-03	2.42E-03	8.39E-06	3.65E-03	3.50E-03	1.45E-05	6.45E-04	6.30E-04	2.67E-06	2.71E-04	2.77E-04	1.14E-06
739	571963.7	4148885	2.89E-03	2.50E-03	8.67E-06	3.77E-03	3.62E-03	1.50E-05	6.66E-04	6.51E-04	2.76E-06	2.80E-04	2.87E-04	1.18E-06
740	571969.9	4148879	2.99E-03	2.58E-03	8.97E-06	3.90E-03	3.74E-03	1.55E-05	6.89E-04	6.73E-04	2.85E-06	2.90E-04	2.96E-04	1.22E-06
741	571976.2	4148872	3.09E-03	2.67E-03	9.27E-06	4.03E-03	3.86E-03	1.60E-05	7.12E-04	6.95E-04	2.95E-06	3.00E-04	3.06E-04	1.26E-06
742	571982.5	4148865	3.19E-03	2.76E-03	9.58E-06	4.17E-03	3.99E-03	1.65E-05	7.36E-04	7.18E-04	3.05E-06	3.10E-04	3.16E-04	1.31E-06
743	571988.8	4148859	3.29E-03	2.84E-03	9.88E-06	4.30E-03	4.12E-03	1.71E-05	7.59E-04	7.41E-04	3.14E-06	3.19E-04	3.27E-04	1.35E-06
744	571995	4148852	3.39E-03	2.93E-03	1.02E-05	4.43E-03	4.24E-03	1.76E-05	7.82E-04	7.64E-04	3.24E-06	3.29E-04	3.36E-04	1.39E-06

745	572001.3	4148845	3.49E-03	3.01E-03	1.05E-05	4.56E-03	4.36E-03	1.81E-05	8.04E-04	7.85E-04	3.33E-06	3.38E-04	3.46E-04	1.43E-06
746	572007.6	4148839	3.59E-03	3.10E-03	1.08E-05	4.68E-03	4.48E-03	1.86E-05	8.27E-04	8.07E-04	3.42E-06	3.48E-04	3.56E-04	1.47E-06
747	572013.8	4148832	3.68E-03	3.18E-03	1.11E-05	4.81E-03	4.61E-03	1.91E-05	8.49E-04	8.29E-04	3.52E-06	3.57E-04	3.65E-04	1.51E-06
748	572020.1	4148825	3.78E-03	3.26E-03	1.13E-05	4.94E-03	4.73E-03	1.96E-05	8.72E-04	8.51E-04	3.61E-06	3.67E-04	3.75E-04	1.55E-06
749	572026.4	4148819	3.88E-03	3.35E-03	1.17E-05	5.07E-03	4.86E-03	2.01E-05	8.95E-04	8.74E-04	3.71E-06	3.77E-04	3.85E-04	1.59E-06
750	572032.7	4148812	3.99E-03	3.45E-03	1.20E-05	5.21E-03	4.99E-03	2.07E-05	9.20E-04	8.98E-04	3.81E-06	3.87E-04	3.96E-04	1.63E-06
751	572038.9	4148805	4.11E-03	3.55E-03	1.23E-05	5.36E-03	5.14E-03	2.13E-05	9.47E-04	9.24E-04	3.92E-06	3.98E-04	4.07E-04	1.68E-06
752	572045.2	4148799	4.23E-03	3.65E-03	1.27E-05	5.52E-03	5.29E-03	2.19E-05	9.75E-04	9.52E-04	4.04E-06	4.10E-04	4.19E-04	1.73E-06
753	572051.5	4148792	4.36E-03	3.76E-03	1.31E-05	5.69E-03	5.45E-03	2.26E-05	1.00E-03	9.81E-04	4.16E-06	4.23E-04	4.32E-04	1.78E-06
754	572057.8	4148786	4.49E-03	3.88E-03	1.35E-05	5.87E-03	5.62E-03	2.33E-05	1.04E-03	1.01E-03	4.29E-06	4.36E-04	4.46E-04	1.84E-06
755	572064	4148779	4.64E-03	4.00E-03	1.39E-05	6.05E-03	5.80E-03	2.40E-05	1.07E-03	1.04E-03	4.43E-06	4.50E-04	4.60E-04	1.90E-06
756	572070.3	4148772	4.78E-03	4.13E-03	1.44E-05	6.24E-03	5.98E-03	2.48E-05	1.10E-03	1.08E-03	4.57E-06	4.64E-04	4.74E-04	1.96E-06
757	572076.6	4148766	4.93E-03	4.26E-03	1.48E-05	6.44E-03	6.17E-03	2.56E-05	1.14E-03	1.11E-03	4.71E-06	4.78E-04	4.89E-04	2.02E-06
758	572082.8	4148759	5.09E-03	4.39E-03	1.53E-05	6.64E-03	6.36E-03	2.64E-05	1.17E-03	1.15E-03	4.86E-06	4.93E-04	5.05E-04	2.08E-06
759	572089.1	4148752	5.24E-03	4.53E-03	1.57E-05	6.84E-03	6.56E-03	2.72E-05	1.21E-03	1.18E-03	5.01E-06	5.08E-04	5.20E-04	2.15E-06
760	572095.4	4148746	5.40E-03	4.66E-03	1.62E-05	7.04E-03	6.75E-03	2.80E-05	1.24E-03	1.21E-03	5.15E-06	5.23E-04	5.35E-04	2.21E-06
761	572101.7	4148739	5.55E-03	4.80E-03	1.67E-05	7.25E-03	6.95E-03	2.88E-05	1.28E-03	1.25E-03	5.30E-06	5.39E-04	5.51E-04	2.27E-06
762	572107.9	4148732	5.71E-03	4.93E-03	1.71E-05	7.46E-03	7.15E-03	2.96E-05	1.32E-03	1.29E-03	5.46E-06	5.54E-04	5.67E-04	2.34E-06
763	572114.2	4148726	5.87E-03	5.07E-03	1.76E-05	7.67E-03	7.34E-03	3.04E-05	1.35E-03	1.32E-03	5.61E-06	5.69E-04	5.82E-04	2.40E-06

			UnMitigation			T2			T2L3			T4		
			0.620	0.536	0.002	0.810	0.776	0.003	0.143	0.140	0.001	0.060	0.062	0.000
#	X	Y	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3	Year 1	Year 2	Year 3
1	572406	4149236	4.94E-01	4.27E-01	1.48E-03	6.45E-01	6.18E-01	2.56E-03	1.14E-01	1.11E-01	4.72E-04	4.79E-02	4.90E-02	2.02E-04
2	572415	4149240	3.93E-01	3.39E-01	1.18E-03	5.13E-01	4.92E-01	2.04E-03	9.06E-02	8.85E-02	3.75E-04	3.81E-02	3.90E-02	1.61E-04
3	572430.4	4149231	4.74E-01	4.09E-01	1.42E-03	6.19E-01	5.93E-01	2.46E-03	1.09E-01	1.07E-01	4.53E-04	4.60E-02	4.70E-02	1.94E-04
4	572424.1	4149245	3.19E-01	2.76E-01	9.58E-04	4.17E-01	3.99E-01	1.66E-03	7.36E-02	7.19E-02	3.05E-04	3.10E-02	3.17E-02	1.31E-04
5	572411.5	4149255	2.59E-01	2.24E-01	7.78E-04	3.38E-01	3.24E-01	1.34E-03	5.97E-02	5.83E-02	2.47E-04	2.51E-02	2.57E-02	1.06E-04
6	572439.6	4149227	4.75E-01	4.11E-01	1.43E-03	6.21E-01	5.95E-01	2.46E-03	1.10E-01	1.07E-01	4.54E-04	4.61E-02	4.72E-02	1.95E-04
7	572433.2	4149249	2.62E-01	2.26E-01	7.86E-04	3.42E-01	3.28E-01	1.36E-03	6.04E-02	5.90E-02	2.50E-04	2.54E-02	2.60E-02	1.07E-04
8	572448.7	4149223	4.61E-01	3.98E-01	1.38E-03	6.02E-01	5.77E-01	2.39E-03	1.06E-01	1.04E-01	4.40E-04	4.47E-02	4.57E-02	1.89E-04
9	572448.6	4149239	3.08E-01	2.66E-01	9.23E-04	4.02E-01	3.85E-01	1.59E-03	7.09E-02	6.92E-02	2.94E-04	2.98E-02	3.05E-02	1.26E-04
10	572457.8	4149219	4.39E-01	3.79E-01	1.32E-03	5.73E-01	5.49E-01	2.27E-03	1.01E-01	9.88E-02	4.19E-04	4.26E-02	4.35E-02	1.80E-04
11	572457.7	4149235	3.14E-01	2.71E-01	9.43E-04	4.10E-01	3.93E-01	1.63E-03	7.24E-02	7.07E-02	3.00E-04	3.05E-02	3.12E-02	1.29E-04
12	572466.9	4149215	4.12E-01	3.56E-01	1.24E-03	5.38E-01	5.16E-01	2.14E-03	9.50E-02	9.28E-02	3.94E-04	4.00E-02	4.09E-02	1.69E-04
13	572466.8	4149231	3.14E-01	2.71E-01	9.43E-04	4.10E-01	3.93E-01	1.63E-03	7.25E-02	7.07E-02	3.00E-04	3.05E-02	3.12E-02	1.29E-04
14	572438	4149125	5.70E-01	4.92E-01	1.71E-03	7.44E-01	7.13E-01	2.96E-03	1.31E-01	1.28E-01	5.44E-04	5.53E-02	5.65E-02	2.33E-04
15	572476.1	4149211	3.83E-01	3.31E-01	1.15E-03	5.00E-01	4.80E-01	1.99E-03	8.84E-02	8.63E-02	3.66E-04	3.72E-02	3.80E-02	1.57E-04
16	572476	4149227	3.08E-01	2.66E-01	9.24E-04	4.02E-01	3.85E-01	1.60E-03	7.10E-02	6.93E-02	2.94E-04	2.99E-02	3.05E-02	1.26E-04
17	572450.8	4149129	5.40E-01	4.66E-01	1.62E-03	7.05E-01	6.75E-01	2.80E-03	1.24E-01	1.22E-01	5.16E-04	5.24E-02	5.35E-02	2.21E-04
18	572485.2	4149206	3.54E-01	3.06E-01	1.06E-03	4.63E-01	4.43E-01	1.84E-03	8.17E-02	7.98E-02	3.38E-04	3.44E-02	3.51E-02	1.45E-04
19	572485.1	4149223	2.96E-01	2.56E-01	8.88E-04	3.86E-01	3.70E-01	1.53E-03	6.82E-02	6.66E-02	2.83E-04	2.87E-02	2.94E-02	1.21E-04
20	572456.3	4149117	4.59E-01	3.97E-01	1.38E-03	6.00E-01	5.75E-01	2.38E-03	1.06E-01	1.03E-01	4.39E-04	4.46E-02	4.56E-02	1.88E-04
21	572494.3	4149202	3.26E-01	2.82E-01	9.80E-04	4.26E-01	4.08E-01	1.69E-03	7.53E-02	7.35E-02	3.12E-04	3.17E-02	3.24E-02	1.34E-04
22	572494.2	4149219	2.81E-01	2.42E-01	8.42E-04	3.66E-01	3.51E-01	1.45E-03	6.47E-02	6.32E-02	2.68E-04	2.72E-02	2.78E-02	1.15E-04
23	572465.4	4149113	4.15E-01	3.58E-01	1.25E-03	5.42E-01	5.19E-01	2.15E-03	9.57E-02	9.34E-02	3.96E-04	4.02E-02	4.12E-02	1.70E-04
24	572503.5	4149198	3.01E-01	2.60E-01	9.03E-04	3.93E-01	3.76E-01	1.56E-03	6.94E-02	6.77E-02	2.87E-04	2.92E-02	2.98E-02	1.23E-04
25	572503.3	4149215	2.65E-01	2.29E-01	7.94E-04	3.46E-01	3.31E-01	1.37E-03	6.10E-02	5.96E-02	2.53E-04	2.57E-02	2.63E-02	1.08E-04
26	572478.1	4149117	3.84E-01	3.32E-01	1.15E-03	5.02E-01	4.81E-01	1.99E-03	8.86E-02	8.65E-02	3.67E-04	3.73E-02	3.81E-02	1.57E-04
27	572512.6	4149194	2.77E-01	2.39E-01	8.32E-04	3.62E-01	3.47E-01	1.44E-03	6.39E-02	6.24E-02	2.65E-04	2.69E-02	2.75E-02	1.13E-04
28	572512.5	4149211	2.49E-01	2.15E-01	7.47E-04	3.25E-01	3.11E-01	1.29E-03	5.74E-02	5.60E-02	2.38E-04	2.41E-02	2.47E-02	1.02E-04
29	572521.7	4149190	2.56E-01	2.21E-01	7.68E-04	3.34E-01	3.20E-01	1.33E-03	5.90E-02	5.76E-02	2.44E-04	2.48E-02	2.54E-02	1.05E-04
30	572521.6	4149207	2.34E-01	2.02E-01	7.03E-04	3.06E-01	2.93E-01	1.21E-03	5.40E-02	5.27E-02	2.24E-04	2.27E-02	2.32E-02	9.58E-05
31	572530.8	4149197	2.27E-01	1.96E-01	6.82E-04	2.97E-01	2.84E-01	1.18E-03	5.24E-02	5.11E-02	2.17E-04	2.20E-02	2.25E-02	9.29E-05
32	572505.5	4149104	2.85E-01	2.46E-01	8.55E-04	3.72E-01	3.56E-01	1.48E-03	6.57E-02	6.41E-02	2.72E-04	2.76E-02	2.83E-02	1.17E-04
33	572540	4149184	2.18E-01	1.89E-01	6.55E-04	2.85E-01	2.73E-01	1.13E-03	5.03E-02	4.91E-02	2.08E-04	2.12E-02	2.17E-02	8.93E-05
34	572539.9	4149192	2.12E-01	1.83E-01	6.36E-04	2.77E-01	2.65E-01	1.10E-03	4.89E-02	4.77E-02	2.02E-04	2.06E-02	2.10E-02	8.67E-05
35	572518.3	4149108	2.58E-01	2.23E-01	7.74E-04	3.37E-01	3.23E-01	1.34E-03	5.95E-02	5.81E-02	2.46E-04	2.50E-02	2.56E-02	1.06E-04
36	572511	4149092	2.60E-01	2.24E-01	7.80E-04	3.39E-01	3.25E-01	1.35E-03	5.99E-02	5.85E-02	2.48E-04	2.52E-02	2.58E-02	1.06E-04
37	572549.1	4149179	2.03E-01	1.75E-01	6.08E-04	2.65E-01	2.53E-01	1.05E-03	4.67E-02	4.56E-02	1.93E-04	1.97E-02	2.01E-02	8.29E-05
38	572549	4149197	1.91E-01	1.65E-01	5.72E-04	2.49E-01	2.39E-01	9.89E-04	4.40E-02	4.29E-02	1.82E-04	1.85E-02	1.89E-02	7.80E-05
39	572527.4	4149104	2.36E-01	2.04E-01	7.09E-04	3.08E-01	2.95E-01	1.22E-03	5.45E-02	5.32E-02	2.26E-04	2.29E-02	2.34E-02	9.67E-05
40	572520.2	4149088	2.39E-01	2.06E-01	7.17E-04	3.12E-01	2.99E-01	1.24E-03	5.51E-02	5.38E-02	2.28E-04	2.32E-02	2.37E-02	9.78E-05
41	572558.2	4149175	1.88E-01	1.63E-01	5.65E-04	2.46E-01	2.36E-01	9.77E-04	4.34E-02	4.24E-02	1.80E-04	1.83E-02	1.87E-02	7.71E-05
42	572558.1	4149193	1.79E-01	1.54E-01	5.36E-04	2.33E-01	2.23E-01	9.26E-04	4.12E-02	4.02E-02	1.71E-04	1.73E-02	1.77E-02	7.31E-05
43	572532.9	4149092	2.20E-01	1.90E-01	6.59E-04	2.87E-01	2.75E-01	1.14E-03	5.06E-02	4.94E-02	2.10E-04	2.13E-02	2.18E-02	8.98E-05
44	572567.3	4149171	1.76E-01	1.52E-01	5.27E-04	2.29E-01	2.20E-01	9.11E-04	4.05E-02	3.96E-02	1.68E-04	1.70E-02	1.74E-02	7.19E-05
45	572567.2	4149189	1.68E-01	1.45E-01	5.03E-04	2.19E-01	2.10E-01	8.68E-04	3.86E-02	3.77E-02	1.60E-04	1.62E-02	1.66E-02	6.86E-05
46	572576.5	4149167	1.64E-01	1.42E-01	4.93E-04	2.15E-01	2.06E-01	8.52E-04	3.79E-02	3.70E-02	1.57E-04	1.59E-02	1.63E-02	6.73E-05
47	572576.4	4149184	1.58E-01	1.36E-01	4.73E-04	2.06E-01	1.97E-01	8.17E-04	3.63E-02	3.55E-02	1.51E-04	1.53E-02	1.56E-02	6.45E-05
48	572585.5	4149180	1.49E-01	1.28E-01	4.46E-04	1.94E-01	1.86E-01	7.70E-04	3.43E-02	3.35E-02	1.42E-04	1.44E-02	1.47E-02	6.08E-05
49	572607.7	4149088	1.26E-01	1.09E-01	3.79E-04	1.65E-01	1.58E-01	6.54E-04	2.91E-02	2.84E-02	1.21E-04	1.22E-02	1.25E-02	5.17E-05
50	572600.4	4149072	1.30E-01	1.12E-01	3.90E-04	1.70E-01	1.63E-01	6.73E-04	2.99E-02	2.92E-02	1.24E-04	1.26E-02	1.29E-02	5.32E-05
51	572593.2	4149055	1.33E-01	1.15E-01	4.00E-04	1.74E-01	1.67E-01	6.91E-04	3.07E-02	3.00E-02	1.27E-04	1.29E-02	1.32E-02	5.45E-05
52	572616.8	4149084	1.19E-01	1.02E-01	3.56E-04	1.55E-01	1.48E-01	6.14E-04	2.73E-02	2.67E-02	1.13E-04	1.15E-02	1.18E-02	4.85E-05
53	572609.6	4149068	1.22E-01	1.05E-01	3.66E-04	1.59E-01	1.52E-01	6.31E-04	2.81E-02	2.74E-02	1.16E-04	1.18E-02	1.21E-02	4.98E-05
54	572602.3	4149051	1.25E-01	1.08E-01	3.75E-04	1.63E-01	1.56E-01	6.48E-04	2.88E-02	2.81E-02	1.19E-04	1.21E-02	1.24E-02	5.12E-05
55	572622.3	4149072	1.13E-01	9.76E-02	3.39E-04	1.48E-01	1.41E-01	5.86E-04	2.61E-02	2.54E-02	1.08E-04	1.10E-02	1.12E-02	4.62E-05
56	572615.1	4149055	1.16E-01	1.00E-01	3.48E-04	1.52E-01	1.45E-01	6.02E-04	2.68E-02	2.61E-02	1.11E-04	1.13E-02	1.15E-02	4.75E-05
57	572635.1	4149076	1.05E-01	9.08E-02	3.15E-04	1.37E-01	1.31E-01	5.45E-04	2.42E-02	2.37E-02	1.00E-04	1.02E-02	1.04E-02	4.30E-05
58	572627.8	4149059	1.08E-01	9.32E-02	3.24E-04	1.41E-01	1.35E-01	5.59E-04	2.49E-02	2.43E-02	1.03E-04	1.05E-02	1.07E-02	4.42E-05
59	572620.6	4149043	1.11E-01	9.56E-02	3.32E-04	1.45E-01	1.38E-01	5.74E-04	2.55E-02	2.49E-02	1.06E-04	1.07E-02	1.10E-02	4.53E-05
60	572647.9	4149080	9.81E-02	8.47E-02	2.94E-04	1.28E-01	1.23E-01	5.08E-04	2.26E-02	2.21E-02	9.36E-05	9.51E-03	9.72E-03	4.01E-05
61	572640.6	4149063	1.01E-01	8.68E-02	3.02E-04	1.31E-01	1.26E-01	5.21E-04	2.32E-02	2.26E-02	9.60E-05	9.75E-03	9.97E-03	4.11E-05
62	572633.3	4149047	1.03E-01	8.91E-02	3.10E-04	1.35E-01	1.29E-01	5.35E-04	2.38E-02	2.32E-02	9.86E-05	1.00E-02	1.02E-02	4.22E-05
63	572657	4149076	9.28E-02	8.01E-02	2.79E-04	1.21E-01	1.16E-01	4.81E-04	2.14E-02	2.09E-02	8.86E-05	9.00E-03	9.21E-03	3.80E-05
64	572649.7	4149059	9.51E-02	8.21E-02	2.85E-04	1.24E-01	1.19E-01	4.93E-04	2.19E-02	2.14E-02	9.08E-05	9.22E-03	9.43E-03	3.89E-05
65	572642.4	4149043	9.76E-02	8.43E-02	2.93E-04	1.27E-01	1.22E-01	5.06E-04	2.25E-02	2.20E-02	9.32E-05	9.47E-03	9.68E-03	3.99E-05
66	572662.5	4149063	8.90E-02	7.68E-02	2.67E-04	1.16E-01	1.11E-01	4.61E-04	2.05E-02	2.00E-02	8.50E-05	8.63E-03	8.83E-03	3.64E-05
67	572655.2	4149047	9.12E-02	7.87E-02	2.74E-04	1.19E-01	1.14E-01	4.73E-04	2.10E-02	2.05E-02	8.71E-05	8.84E-03	9.04E-03	3.73E-05
68	572647.9	4149031	9.37E-02	8.09E-02	2.81E-04	1.22E-01	1.17E-01	4.86E-04	2.16E-02	2.11E-02	8.95E-05	9.09E-03	9.29E-03	3.83E-05
69	572675.2	4149067	8.37E-02	7.23E-02	2.51E-04	1.09E-01	1.05E-01	4.34E-04	1.93E-02	1.88E-02	7.99E-05	8.12E-03	8.30E-03	3.42E-05
70	572668	4149051	8.55E-02	7.38E-02	2.57E-04	1.12E-01	1.07E-01	4.43E-04	1.97E-02	1.92E-02	8.16E-05	8.29E-03	8.48E-03	3.50E-05
71	572660.7	4149035	8.77E-02	7.57E-02	2.63E-04	1.15E-01	1.10E-01	4.55E-04	2.02E-02	1.97E-02	8.38E-05	8.51E-03	8.70E-03	3.59E-05
72	572684.4	4149063	7.97E-02	6.88E-02	2.39E-04	1.04E-01	9.96E-02	4.13E-04	1.84E-02	1.79E-02	7.61E-05	7.73E-03	7.90E-03	3.26E-05
73	572677.1	4149047	8.13E-02	7.02E-02	2.44E-04	1.06E-01	1.02E-01	4.22E-04	1.88E-02	1.83E-02	7.77E-05	7.89E-03	8.07E-03	3.33E-05
74	572669.8	4149031	8.34E-02	7.20E-02	2.50E-04	1.09E-01	1.04E-01	4.32E-04	1.92E-02	1.88E-02	7.96E-05	8.09E-03	8.27E-03	3.41E-05
75	572697.1	4149067	7.52E-02	6.49E-02	2.26E-04	9.82E-02	9.41E-02	3.90E-04	1.73E-02	1.69E-02	7.18E-05	7.29E-03	7.46E-03	3.08E-05
76	572689.9	4149051	7.67E-02	6.62E-02	2.30E-04	1.00E-01	9.59E-02	3.97E-04	1.77E-02	1.73E-02	7.32E-05	7.44E-03	7.60E-03	3.14E-05
77	572682.6	4149035	7.85E-02	6.77E-02	2.35E-04	1.02E-01	9.81E-02	4.07E-04	1.81E-02	1.77E-02	7.49E-05	7.61E-03	7.78E-03	3.21E-05
78	572675.3	4149019	8.05E-02	6.95E-02	2.41E-04	1.05E-01	1.01E-01	4.17E-04	1.85E-02	1.81E-02	7.68E-05	7.80E-03	7.98E-03	3.29E-05
79	572702.6	4149055	7.24E-02	6.26E-02	2.17E-04	9.46E-02	9.06E-02	3.76E-04	1.67E-02	1.63E-02	6.92E-05	7.03E-03	7.18E-03	2.96E-05
80	572695.4	4149039	7.40E-02	6.39E-02	2.22E-04	9.66E-02	9.25E-02	3.83E-04	1.71E-02	1.66E-02	7.06E-05	7.17E-03	7.34E-03	3.03E-05

81	572688.1	4149023	7.58E-02	6.54E-02	2.27E-04	9.89E-02	9.48E-02	3.93E-04	1.75E-02	1.71E-02	7.23E-05	7.35E-03	7.51E-03	3.10E-05
82	572711.8	4149051	6.92E-02	5.98E-02	2.08E-04	9.04E-02	8.66E-02	3.59E-04	1.60E-02	1.56E-02	6.61E-05	6.71E-03	6.87E-03	2.83E-05
83	572704.5	4149035	7.07E-02	6.10E-02	2.12E-04	9.23E-02	8.84E-02	3.66E-04	1.63E-02	1.59E-02	6.75E-05	6.85E-03	7.01E-03	2.89E-05
84	572697.2	4149019	7.23E-02	6.25E-02	2.17E-04	9.44E-02	9.05E-02	3.75E-04	1.67E-02	1.63E-02	6.91E-05	7.02E-03	7.17E-03	2.96E-05
85	572724.5	4149055	6.56E-02	5.67E-02	1.97E-04	8.57E-02	8.21E-02	3.40E-04	1.51E-02	1.48E-02	6.27E-05	6.37E-03	6.51E-03	2.69E-05
86	572717.2	4149039	6.69E-02	5.78E-02	2.01E-04	8.73E-02	8.37E-02	3.47E-04	1.54E-02	1.51E-02	6.39E-05	6.49E-03	6.63E-03	2.74E-05
87	572710	4149023	6.83E-02	5.90E-02	2.05E-04	8.92E-02	8.55E-02	3.54E-04	1.58E-02	1.54E-02	6.53E-05	6.63E-03	6.78E-03	2.80E-05
88	572702.7	4149006	7.00E-02	6.05E-02	2.10E-04	9.14E-02	8.76E-02	3.63E-04	1.61E-02	1.58E-02	6.68E-05	6.79E-03	6.94E-03	2.86E-05
89	572730	4149043	6.35E-02	5.48E-02	1.90E-04	8.29E-02	7.94E-02	3.29E-04	1.46E-02	1.43E-02	6.06E-05	6.16E-03	6.29E-03	2.60E-05
90	572722.7	4149027	6.47E-02	5.59E-02	1.94E-04	8.45E-02	8.10E-02	3.35E-04	1.49E-02	1.46E-02	6.18E-05	6.28E-03	6.42E-03	2.65E-05
91	572715.5	4149010	6.62E-02	5.72E-02	1.99E-04	8.64E-02	8.28E-02	3.43E-04	1.53E-02	1.49E-02	6.32E-05	6.42E-03	6.56E-03	2.71E-05
92	572746.4	4149055	5.98E-02	5.17E-02	1.80E-04	7.81E-02	7.48E-02	3.10E-04	1.38E-02	1.35E-02	5.71E-05	5.80E-03	5.93E-03	2.45E-05
93	572739.1	4149039	6.09E-02	5.26E-02	1.83E-04	7.95E-02	7.61E-02	3.16E-04	1.40E-02	1.37E-02	5.81E-05	5.90E-03	6.04E-03	2.49E-05
94	572731.9	4149023	6.20E-02	5.36E-02	1.86E-04	8.10E-02	7.76E-02	3.22E-04	1.43E-02	1.40E-02	5.92E-05	6.02E-03	6.15E-03	2.54E-05
95	572724.6	4149006	6.34E-02	5.48E-02	1.90E-04	8.28E-02	7.93E-02	3.29E-04	1.46E-02	1.43E-02	6.05E-05	6.15E-03	6.29E-03	2.59E-05
96	572755.5	4149051	5.75E-02	4.96E-02	1.72E-04	7.50E-02	7.19E-02	2.98E-04	1.33E-02	1.29E-02	5.49E-05	5.57E-03	5.70E-03	2.35E-05
97	572751.9	4149043	5.79E-02	5.00E-02	1.74E-04	7.56E-02	7.25E-02	3.00E-04	1.34E-02	1.30E-02	5.53E-05	5.62E-03	5.75E-03	2.37E-05
98	572744.6	4149027	5.89E-02	5.09E-02	1.77E-04	7.70E-02	7.37E-02	3.06E-04	1.36E-02	1.33E-02	5.63E-05	5.72E-03	5.85E-03	2.41E-05
99	572737.4	4149010	6.01E-02	5.19E-02	1.80E-04	7.85E-02	7.52E-02	3.12E-04	1.39E-02	1.35E-02	5.74E-05	5.83E-03	5.96E-03	2.46E-05
100	572730.1	4148994	6.15E-02	5.31E-02	1.85E-04	8.03E-02	7.70E-02	3.19E-04	1.42E-02	1.38E-02	5.87E-05	5.97E-03	6.10E-03	2.52E-05
101	572764.7	4149047	5.53E-02	4.77E-02	1.66E-04	7.22E-02	6.92E-02	2.87E-04	1.27E-02	1.24E-02	5.28E-05	5.36E-03	5.48E-03	2.26E-05
102	572757.4	4149031	5.62E-02	4.85E-02	1.69E-04	7.33E-02	7.02E-02	2.91E-04	1.29E-02	1.26E-02	5.36E-05	5.45E-03	5.57E-03	2.30E-05
103	572750.1	4149014	5.72E-02	4.94E-02	1.72E-04	7.46E-02	7.15E-02	2.96E-04	1.32E-02	1.29E-02	5.46E-05	5.54E-03	5.67E-03	2.34E-05
104	572742.8	4148998	5.84E-02	5.04E-02	1.75E-04	7.62E-02	7.30E-02	3.03E-04	1.35E-02	1.31E-02	5.57E-05	5.66E-03	5.79E-03	2.39E-05
105	572773.8	4149043	5.32E-02	4.60E-02	1.60E-04	6.95E-02	6.66E-02	2.76E-04	1.23E-02	1.20E-02	5.08E-05	5.16E-03	5.28E-03	2.18E-05
106	572766.5	4149027	5.40E-02	4.66E-02	1.62E-04	7.05E-02	6.76E-02	2.80E-04	1.25E-02	1.22E-02	5.16E-05	5.24E-03	5.36E-03	2.21E-05
107	572759.2	4149010	5.49E-02	4.74E-02	1.65E-04	7.17E-02	6.87E-02	2.85E-04	1.27E-02	1.24E-02	5.25E-05	5.33E-03	5.45E-03	2.25E-05
108	572752	4148994	5.61E-02	4.84E-02	1.68E-04	7.32E-02	7.01E-02	2.91E-04	1.29E-02	1.26E-02	5.35E-05	5.44E-03	5.56E-03	2.29E-05
109	572782.9	4149039	5.13E-02	4.43E-02	1.54E-04	6.70E-02	6.42E-02	2.66E-04	1.18E-02	1.15E-02	4.90E-05	4.97E-03	5.09E-03	2.10E-05
110	572779.3	4149031	5.16E-02	4.46E-02	1.55E-04	6.74E-02	6.46E-02	2.68E-04	1.19E-02	1.16E-02	4.93E-05	5.01E-03	5.12E-03	2.11E-05
111	572772	4149014	5.24E-02	4.52E-02	1.57E-04	6.84E-02	6.55E-02	2.72E-04	1.21E-02	1.18E-02	5.00E-05	5.08E-03	5.20E-03	2.14E-05
112	572764.7	4148998	5.33E-02	4.61E-02	1.60E-04	6.96E-02	6.67E-02	2.77E-04	1.23E-02	1.20E-02	5.09E-05	5.17E-03	5.29E-03	2.18E-05
113	572757.5	4148982	5.45E-02	4.70E-02	1.64E-04	7.11E-02	6.82E-02	2.82E-04	1.26E-02	1.23E-02	5.20E-05	5.28E-03	5.40E-03	2.23E-05
114	572792	4149035	4.94E-02	4.27E-02	1.48E-04	6.45E-02	6.18E-02	2.56E-04	1.14E-02	1.11E-02	4.72E-05	4.79E-03	4.90E-03	2.02E-05
115	572784.8	4149018	5.01E-02	4.32E-02	1.50E-04	6.54E-02	6.27E-02	2.60E-04	1.15E-02	1.13E-02	4.78E-05	4.86E-03	4.97E-03	2.05E-05
116	572777.5	4149002	5.09E-02	4.39E-02	1.53E-04	6.64E-02	6.36E-02	2.64E-04	1.17E-02	1.14E-02	4.86E-05	4.93E-03	5.04E-03	2.08E-05
117	572770.2	4148986	5.18E-02	4.48E-02	1.56E-04	6.77E-02	6.49E-02	2.69E-04	1.20E-02	1.17E-02	4.95E-05	5.03E-03	5.14E-03	2.12E-05
118	572804.8	4149039	4.73E-02	4.09E-02	1.42E-04	6.18E-02	5.92E-02	2.45E-04	1.09E-02	1.07E-02	4.52E-05	4.59E-03	4.69E-03	1.94E-05
119	572797.5	4149022	4.80E-02	4.14E-02	1.44E-04	6.26E-02	6.00E-02	2.49E-04	1.11E-02	1.08E-02	4.58E-05	4.65E-03	4.76E-03	1.96E-05
120	572793.9	4149014	4.83E-02	4.17E-02	1.45E-04	6.30E-02	6.04E-02	2.50E-04	1.11E-02	1.09E-02	4.61E-05	4.68E-03	4.79E-03	1.98E-05
121	572786.6	4148998	4.90E-02	4.23E-02	1.47E-04	6.40E-02	6.13E-02	2.54E-04	1.13E-02	1.10E-02	4.68E-05	4.75E-03	4.86E-03	2.01E-05
122	572779.4	4148982	4.99E-02	4.31E-02	1.50E-04	6.52E-02	6.24E-02	2.59E-04	1.15E-02	1.12E-02	4.77E-05	4.84E-03	4.95E-03	2.04E-05
123	572813.9	4149035	4.57E-02	3.94E-02	1.37E-04	5.96E-02	5.71E-02	2.37E-04	1.05E-02	1.03E-02	4.36E-05	4.43E-03	4.53E-03	1.87E-05
124	572806.7	4149018	4.63E-02	3.99E-02	1.39E-04	6.04E-02	5.79E-02	2.40E-04	1.07E-02	1.04E-02	4.42E-05	4.49E-03	4.59E-03	1.89E-05
125	572799.4	4149002	4.69E-02	4.05E-02	1.41E-04	6.12E-02	5.86E-02	2.43E-04	1.08E-02	1.06E-02	4.48E-05	4.55E-03	4.65E-03	1.92E-05
126	572792.1	4148986	4.76E-02	4.11E-02	1.43E-04	6.22E-02	5.96E-02	2.47E-04	1.10E-02	1.07E-02	4.55E-05	4.62E-03	4.73E-03	1.95E-05
127	572784.8	4148970	4.86E-02	4.20E-02	1.46E-04	6.35E-02	6.08E-02	2.52E-04	1.12E-02	1.09E-02	4.64E-05	4.72E-03	4.82E-03	1.99E-05
128	572819.4	4149022	4.44E-02	3.83E-02	1.33E-04	5.79E-02	5.55E-02	2.30E-04	1.02E-02	9.99E-03	4.24E-05	4.30E-03	4.40E-03	1.82E-05
129	572812.2	4149006	4.49E-02	3.88E-02	1.35E-04	5.87E-02	5.62E-02	2.33E-04	1.04E-02	1.01E-02	4.29E-05	4.36E-03	4.46E-03	1.84E-05
130	572804.9	4148990	4.56E-02	3.94E-02	1.37E-04	5.95E-02	5.70E-02	2.36E-04	1.05E-02	1.03E-02	4.35E-05	4.42E-03	4.52E-03	1.87E-05
131	572797.6	4148974	4.64E-02	4.01E-02	1.39E-04	6.06E-02	5.81E-02	2.41E-04	1.07E-02	1.04E-02	4.43E-05	4.50E-03	4.60E-03	1.90E-05
132	572832.2	4149026	4.26E-02	3.68E-02	1.28E-04	5.56E-02	5.33E-02	2.21E-04	9.83E-03	9.59E-03	4.07E-05	4.13E-03	4.23E-03	1.74E-05
133	572824.9	4149010	4.31E-02	3.73E-02	1.29E-04	5.63E-02	5.40E-02	2.24E-04	9.95E-03	9.71E-03	4.12E-05	4.18E-03	4.28E-03	1.77E-05
134	572817.6	4148994	4.37E-02	3.77E-02	1.31E-04	5.71E-02	5.47E-02	2.27E-04	1.01E-02	9.84E-03	4.17E-05	4.24E-03	4.33E-03	1.79E-05
135	572810.4	4148978	4.44E-02	3.83E-02	1.33E-04	5.80E-02	5.55E-02	2.30E-04	1.02E-02	9.99E-03	4.24E-05	4.31E-03	4.40E-03	1.82E-05
136	572803.1	4148961	4.53E-02	3.91E-02	1.36E-04	5.91E-02	5.66E-02	2.35E-04	1.04E-02	1.02E-02	4.32E-05	4.39E-03	4.49E-03	1.85E-05
137	572837.7	4149014	4.15E-02	3.58E-02	1.24E-04	5.41E-02	5.19E-02	2.15E-04	9.56E-03	9.33E-03	3.96E-05	4.02E-03	4.11E-03	1.70E-05
138	572834	4149006	4.17E-02	3.60E-02	1.25E-04	5.44E-02	5.22E-02	2.16E-04	9.61E-03	9.39E-03	3.98E-05	4.04E-03	4.14E-03	1.71E-05
139	572826.8	4148990	4.22E-02	3.65E-02	1.27E-04	5.51E-02	5.28E-02	2.19E-04	9.74E-03	9.51E-03	4.03E-05	4.10E-03	4.19E-03	1.73E-05
140	572819.5	4148974	4.29E-02	3.70E-02	1.29E-04	5.60E-02	5.37E-02	2.22E-04	9.89E-03	9.66E-03	4.10E-05	4.16E-03	4.25E-03	1.76E-05
141	572812.2	4148957	4.37E-02	3.78E-02	1.31E-04	5.71E-02	5.47E-02	2.27E-04	1.01E-02	9.84E-03	4.18E-05	4.24E-03	4.34E-03	1.79E-05
142	572850.4	4149027	4.01E-02	3.47E-02	1.20E-04	5.24E-02	5.02E-02	2.08E-04	9.25E-03	9.04E-03	3.83E-05	3.89E-03	3.98E-03	1.64E-05
143	572846.8	4149010	4.01E-02	3.46E-02	1.20E-04	5.24E-02	5.02E-02	2.08E-04	9.25E-03	9.03E-03	3.83E-05	3.89E-03	3.98E-03	1.64E-05
144	572839.5	4148994	4.06E-02	3.50E-02	1.22E-04	5.30E-02	5.08E-02	2.10E-04	9.36E-03	9.13E-03	3.88E-05	3.94E-03	4.02E-03	1.66E-05
145	572832.3	4148978	4.11E-02	3.55E-02	1.23E-04	5.37E-02	5.15E-02	2.13E-04	9.48E-03	9.26E-03	3.93E-05	3.99E-03	4.08E-03	1.68E-05
146	572825	4148961	4.18E-02	3.61E-02	1.26E-04	5.46E-02	5.23E-02	2.17E-04	9.64E-03	9.42E-03	3.99E-05	4.06E-03	4.15E-03	1.71E-05
147	572388.4	4149116	4.49E-01	3.88E-01	1.35E-03	5.86E-01	5.62E-01	2.33E-03	1.04E-01	1.01E-01	4.29E-04	4.36E-02	4.45E-02	1.84E-04
148	572399.5	4149127	6.20E-01	5.36E-01	1.86E-03	8.10E-01	7.76E-01	3.22E-03	1.43E-01	1.40E-01	5.92E-04	6.02E-02	6.15E-02	2.54E-04
149	572392	4149107	3.67E-01	3.17E-01	1.10E-03	4.79E-01	4.59E-01	1.90E-03	8.45E-02	8.25E-02	3.50E-04	3.56E-02	3.64E-02	1.50E-04
150	572403.1	4149117	4.98E-01	4.30E-01	1.50E-03	6.50E-01	6.23E-01	2.58E-03	1.15E-01	1.12E-01	4.76E-04	4.83E-02	4.94E-02	2.04E-04
151	572332.4	4149106	2.70E-01	2.33E-01	8.10E-04	3.52E-01	3.38E-01	1.40E-03	6.22E-02	6.08E-02	2.58E-04	2.62E-02	2.68E-02	1.10E-04
152	572316.2	4149114	2.12E-01	1.83E-01	6.37E-04	2.77E-01	2.66E-01	1.10E-03	4.90E-02	4.78E-02	2.03E-04	2.06E-02	2.11E-02	8.69E-05
153	572374.7	4149093	2.67E-01	2.31E-01	8.02E-04	3.49E-01	3.34E-01	1.39E-03	6.16E-02	6.01E-02	2.55E-04	2.59E-02	2.65E-02	1.09E-04
154	572395.5	4149097	3.05E-01	2.63E-01	9.15E-04	3.98E-01	3.81E-01	1.58E-03	7.03E-02	6.86E-02	2.91E-04	2.96E-02	3.02E-02	1.25E-04
155	572406.6	4149108	4.07E-01	3.52E-01	1.22E-03	5.32E-01	5.10E-01	2.11E-03	9.39E-02	9.17E-02	3.89E-04	3.95E-02	4.04E-02	1.67E-04
156	572417.8	4149118	5.36E-01	4.63E-01	1.61E-03	7.00E-01	6.71E-01	2.78E-03	1.24E-01	1.21E-01	5.12E-04	5.20E-02	5.32E-02	2.19E-04
157	572328.3	4149097	2.19E-01	1.89E-01	6.58E-04	2.86E-01	2.74E-01	1.14E-03	5.06E-02	4.94E-02	2.10E-04	2.13E-02	2.18E-02	8.98E-05
158	572312.1	4149104	1.74E-01	1.50E-01	5.21E-04	2.27E-01	2.17E-01	9.00E-04	4.00E-02	3.91E-02	1.66E-04	1.68E-02	1.72E-02	7.11E-05
159	572376	4149083	2.28E-01	1.97E-01	6.84E-04	2.98E-01	2.85E-01	1.18E-03	5.25E-02	5.13E-02	2.18E-04	2.21E-02	2.26E-02	9.33E-05
160	572399.9	4149089	2.63E-01	2.27E-01	7.88E-04	3.43E-01	3.28E-01	1.36E-03	6.05E-02	5.91E-02	2.51E-04	2.55E-02	2.60E-02	1.07E-04
161	572412.6	4149101	3.61E-01	3.11E-01	1.08E-03	4.71E-01	4.51E-01	1.87E-03	8.31E-02	8.12E-02	3.44E-04	3.50E-02	3.58E-02	1.48E-04
162	572425.3	4149113	4.83E-01	4.17E-01	1.45E-03	6.31E-01	6.04E-01	2.50E-03	1.11E-01	1.09E-01	4.61E-04	4.69E-02	4.79E-02	1.98E-04
163	572324.2	4149088	1.81E-01	1.56E-01	5.44E-04	2.37E-01	2.27E-01	9.39E-04	4.18E-02	4.08E-02	1.73E-04	1.76E-02	1.80E-02	7.42E-05

164	572308	4149095	1.45E-01	1.25E-01	4.34E-04	1.89E-01	1.81E-01	7.50E-04	3.33E-02	3.25E-02	1.38E-04	1.40E-02	1.43E-02	5.92E-05
165	572371.3	4149074	1.98E-01	1.71E-01	5.94E-04	2.58E-01	2.48E-01	1.03E-03	4.56E-02	4.45E-02	1.89E-04	1.92E-02	1.96E-02	8.10E-05
166	572388.5	4149074	1.96E-01	1.69E-01	5.89E-04	2.56E-01	2.45E-01	1.02E-03	4.52E-02	4.41E-02	1.87E-04	1.90E-02	1.94E-02	8.03E-05
167	572403.4	4149079	2.24E-01	1.94E-01	6.73E-04	2.93E-01	2.81E-01	1.16E-03	5.17E-02	5.05E-02	2.14E-04	2.18E-02	2.22E-02	9.18E-05
168	572415.9	4149091	3.02E-01	2.60E-01	9.05E-04	3.94E-01	3.77E-01	1.56E-03	6.95E-02	6.79E-02	2.88E-04	2.93E-02	2.99E-02	1.23E-04
169	572428.4	4149103	4.03E-01	3.48E-01	1.21E-03	5.27E-01	5.05E-01	2.09E-03	9.30E-02	9.08E-02	3.85E-04	3.91E-02	4.00E-02	1.65E-04
170	572440.9	4149115	4.89E-01	4.22E-01	1.47E-03	6.38E-01	6.12E-01	2.53E-03	1.13E-01	1.10E-01	4.67E-04	4.74E-02	4.85E-02	2.00E-04
171	572320.2	4149079	1.52E-01	1.31E-01	4.56E-04	1.98E-01	1.90E-01	7.88E-04	3.50E-02	3.42E-02	1.45E-04	1.47E-02	1.51E-02	6.22E-05
172	572304	4149086	1.22E-01	1.06E-01	3.67E-04	1.60E-01	1.53E-01	6.34E-04	2.82E-02	2.75E-02	1.17E-04	1.19E-02	1.21E-02	5.00E-05
173	572366.7	4149065	1.74E-01	1.50E-01	5.21E-04	2.27E-01	2.17E-01	8.99E-04	4.00E-02	3.91E-02	1.66E-04	1.68E-02	1.72E-02	7.10E-05
174	572383.7	4149065	1.71E-01	1.48E-01	5.14E-04	2.24E-01	2.14E-01	8.88E-04	3.95E-02	3.85E-02	1.63E-04	1.66E-02	1.70E-02	7.01E-05
175	572406.8	4149070	1.94E-01	1.68E-01	5.83E-04	2.54E-01	2.43E-01	1.01E-03	4.48E-02	4.37E-02	1.86E-04	1.88E-02	1.93E-02	7.95E-05
176	572419.2	4149082	2.56E-01	2.21E-01	7.69E-04	3.34E-01	3.21E-01	1.33E-03	5.91E-02	5.77E-02	2.45E-04	2.49E-02	2.54E-02	1.05E-04
177	572431.5	4149093	3.41E-01	2.94E-01	1.02E-03	4.45E-01	4.26E-01	1.77E-03	7.86E-02	7.67E-02	3.25E-04	3.31E-02	3.38E-02	1.39E-04
178	572443.9	4149105	4.20E-01	3.62E-01	1.26E-03	5.48E-01	5.25E-01	2.18E-03	9.68E-02	9.45E-02	4.01E-04	4.07E-02	4.16E-02	1.72E-04
179	572316.1	4149070	1.29E-01	1.11E-01	3.87E-04	1.69E-01	1.62E-01	6.69E-04	2.98E-02	2.91E-02	1.23E-04	1.25E-02	1.28E-02	5.28E-05
180	572299.9	4149077	1.05E-01	9.03E-02	3.14E-04	1.37E-01	1.31E-01	5.42E-04	2.41E-02	2.35E-02	9.99E-05	1.01E-02	1.04E-02	4.28E-05
181	572362.2	4149056	1.53E-01	1.32E-01	4.60E-04	2.00E-01	1.92E-01	7.94E-04	3.53E-02	3.45E-02	1.46E-04	1.49E-02	1.52E-02	6.27E-05
182	572379	4149055	1.52E-01	1.31E-01	4.55E-04	1.98E-01	1.90E-01	7.86E-04	3.50E-02	3.41E-02	1.45E-04	1.47E-02	1.50E-02	6.20E-05
183	572395.8	4149055	1.51E-01	1.30E-01	4.53E-04	1.97E-01	1.89E-01	7.82E-04	3.48E-02	3.40E-02	1.44E-04	1.46E-02	1.50E-02	6.18E-05
184	572410.3	4149061	1.70E-01	1.47E-01	5.11E-04	2.22E-01	2.13E-01	8.82E-04	3.92E-02	3.83E-02	1.62E-04	1.65E-02	1.69E-02	6.96E-05
185	572422.6	4149072	2.20E-01	1.90E-01	6.61E-04	2.88E-01	2.76E-01	1.14E-03	5.08E-02	4.96E-02	2.10E-04	2.14E-02	2.18E-02	9.02E-05
186	572434.8	4149084	2.91E-01	2.51E-01	8.72E-04	3.79E-01	3.64E-01	1.51E-03	6.70E-02	6.54E-02	2.78E-04	2.82E-02	2.88E-02	1.19E-04
187	572447	4149095	3.62E-01	3.13E-01	1.09E-03	4.73E-01	4.53E-01	1.88E-03	8.35E-02	8.16E-02	3.46E-04	3.51E-02	3.59E-02	1.48E-04
188	572312	4149061	1.11E-01	9.58E-02	3.33E-04	1.45E-01	1.39E-01	5.75E-04	2.56E-02	2.50E-02	1.06E-04	1.08E-02	1.10E-02	4.54E-05
189	572295.8	4149068	9.06E-02	7.82E-02	2.72E-04	1.18E-01	1.13E-01	4.70E-04	2.09E-02	2.04E-02	8.65E-05	8.79E-03	8.99E-03	3.71E-05
190	572357.7	4149047	1.36E-01	1.17E-01	4.08E-04	1.77E-01	1.70E-01	7.05E-04	3.13E-02	3.06E-02	1.30E-04	1.32E-02	1.35E-02	5.56E-05
191	572374.4	4149046	1.35E-01	1.17E-01	4.06E-04	1.77E-01	1.69E-01	7.02E-04	3.12E-02	3.05E-02	1.29E-04	1.31E-02	1.34E-02	5.54E-05
192	572391.1	4149046	1.34E-01	1.16E-01	4.02E-04	1.75E-01	1.67E-01	6.94E-04	3.08E-02	3.01E-02	1.28E-04	1.30E-02	1.33E-02	5.48E-05
193	572413.9	4149051	1.50E-01	1.30E-01	4.51E-04	1.96E-01	1.88E-01	7.79E-04	3.46E-02	3.38E-02	1.43E-04	1.46E-02	1.49E-02	6.15E-05
194	572426	4149063	1.92E-01	1.65E-01	5.75E-04	2.50E-01	2.40E-01	9.93E-04	4.42E-02	4.31E-02	1.83E-04	1.86E-02	1.90E-02	7.84E-05
195	572438.1	4149074	2.50E-01	2.16E-01	7.51E-04	3.27E-01	3.13E-01	1.30E-03	5.77E-02	5.63E-02	2.39E-04	2.43E-02	2.48E-02	1.02E-04
196	572450.3	4149086	3.14E-01	2.71E-01	9.42E-04	4.10E-01	3.93E-01	1.63E-03	7.23E-02	7.06E-02	3.00E-04	3.04E-02	3.11E-02	1.28E-04
197	572462.4	4149097	3.61E-01	3.12E-01	1.08E-03	4.72E-01	4.52E-01	1.87E-03	8.33E-02	8.13E-02	3.45E-04	3.50E-02	3.58E-02	1.48E-04
198	572307.9	4149052	9.62E-02	8.30E-02	2.89E-04	1.26E-01	1.20E-01	4.99E-04	2.22E-02	2.16E-02	9.18E-05	9.33E-03	9.54E-03	3.94E-05
199	572291.7	4149059	7.92E-02	6.84E-02	2.38E-04	1.03E-01	9.91E-02	4.11E-04	1.83E-02	1.78E-02	7.56E-05	7.68E-03	7.85E-03	3.24E-05
200	572353.4	4149038	1.21E-01	1.05E-01	3.63E-04	1.58E-01	1.51E-01	6.28E-04	2.79E-02	2.73E-02	1.16E-04	1.17E-02	1.20E-02	4.96E-05
201	572369.9	4149037	1.22E-01	1.05E-01	3.66E-04	1.59E-01	1.52E-01	6.31E-04	2.81E-02	2.74E-02	1.16E-04	1.18E-02	1.21E-02	4.98E-05
202	572386.5	4149037	1.20E-01	1.04E-01	3.60E-04	1.57E-01	1.50E-01	6.23E-04	2.77E-02	2.70E-02	1.15E-04	1.16E-02	1.19E-02	4.92E-05
203	572403.1	4149036	1.20E-01	1.04E-01	3.60E-04	1.57E-01	1.50E-01	6.22E-04	2.77E-02	2.70E-02	1.15E-04	1.16E-02	1.19E-02	4.91E-05
204	572417.4	4149042	1.34E-01	1.15E-01	4.01E-04	1.74E-01	1.67E-01	6.93E-04	3.08E-02	3.01E-02	1.28E-04	1.30E-02	1.33E-02	5.47E-05
205	572429.4	4149053	1.68E-01	1.45E-01	5.04E-04	2.19E-01	2.10E-01	8.71E-04	3.87E-02	3.78E-02	1.60E-04	1.63E-02	1.67E-02	6.88E-05
206	572441.5	4149065	2.17E-01	1.88E-01	6.52E-04	2.84E-01	2.72E-01	1.13E-03	5.01E-02	4.89E-02	2.07E-04	2.11E-02	2.15E-02	8.89E-05
207	572453.5	4149076	2.73E-01	2.36E-01	8.20E-04	3.57E-01	3.42E-01	1.42E-03	6.30E-02	6.15E-02	2.61E-04	2.65E-02	2.71E-02	1.12E-04
208	572465.6	4149087	3.20E-01	2.76E-01	9.60E-04	4.18E-01	4.00E-01	1.66E-03	7.38E-02	7.20E-02	3.06E-04	3.10E-02	3.17E-02	1.31E-04
209	572303.8	4149042	8.42E-02	7.27E-02	2.53E-04	1.10E-01	1.05E-01	4.36E-04	1.94E-02	1.89E-02	8.04E-05	8.16E-03	8.35E-03	3.44E-05
210	572287.6	4149050	6.98E-02	6.03E-02	2.10E-04	9.11E-02	8.73E-02	3.62E-04	1.61E-02	1.57E-02	6.67E-05	6.77E-03	6.92E-03	2.86E-05
211	572349	4149029	1.08E-01	9.34E-02	3.25E-04	1.41E-01	1.35E-01	5.61E-04	2.49E-02	2.44E-02	1.03E-04	1.05E-02	1.07E-02	4.43E-05
212	572365.5	4149028	1.10E-01	9.50E-02	3.30E-04	1.44E-01	1.38E-01	5.70E-04	2.54E-02	2.48E-02	1.05E-04	1.07E-02	1.09E-02	4.50E-05
213	572382	4149028	1.09E-01	9.39E-02	3.26E-04	1.42E-01	1.36E-01	5.64E-04	2.51E-02	2.45E-02	1.04E-04	1.05E-02	1.08E-02	4.45E-05
214	572398.5	4149027	1.08E-01	9.29E-02	3.23E-04	1.40E-01	1.35E-01	5.58E-04	2.48E-02	2.42E-02	1.03E-04	1.04E-02	1.07E-02	4.40E-05
215	572420.9	4149032	1.20E-01	1.03E-01	3.59E-04	1.56E-01	1.50E-01	6.21E-04	2.76E-02	2.69E-02	1.14E-04	1.16E-02	1.19E-02	4.90E-05
216	572432.9	4149044	1.49E-01	1.28E-01	4.46E-04	1.94E-01	1.86E-01	7.70E-04	3.43E-02	3.35E-02	1.42E-04	1.44E-02	1.47E-02	6.08E-05
217	572444.9	4149055	1.90E-01	1.64E-01	5.70E-04	2.48E-01	2.38E-01	9.85E-04	4.38E-02	4.28E-02	1.81E-04	1.84E-02	1.88E-02	7.78E-05
218	572456.8	4149066	2.39E-01	2.07E-01	7.18E-04	3.12E-01	2.99E-01	1.24E-03	5.51E-02	5.38E-02	2.28E-04	2.32E-02	2.37E-02	9.79E-05
219	572299.8	4149033	7.42E-02	6.41E-02	2.23E-04	9.69E-02	9.29E-02	3.85E-04	1.71E-02	1.67E-02	7.09E-05	7.20E-03	7.36E-03	3.04E-05
220	572283.6	4149041	6.20E-02	5.35E-02	1.86E-04	8.09E-02	7.76E-02	3.21E-04	1.43E-02	1.40E-02	5.92E-05	6.01E-03	6.15E-03	2.54E-05
221	572347.9	4149019	9.78E-02	8.45E-02	2.94E-04	1.28E-01	1.22E-01	5.07E-04	2.26E-02	2.20E-02	9.34E-05	9.49E-03	9.70E-03	4.00E-05
222	572365.6	4149019	9.97E-02	8.61E-02	2.99E-04	1.30E-01	1.25E-01	5.17E-04	2.30E-02	2.24E-02	9.52E-05	9.67E-03	9.89E-03	4.08E-05
223	572383.2	4149018	9.84E-02	8.50E-02	2.95E-04	1.28E-01	1.23E-01	5.10E-04	2.27E-02	2.21E-02	9.40E-05	9.54E-03	9.76E-03	4.03E-05
224	572400.9	4149018	9.73E-02	8.41E-02	2.92E-04	1.27E-01	1.22E-01	5.05E-04	2.24E-02	2.19E-02	9.30E-05	9.44E-03	9.65E-03	3.98E-05
225	572424.9	4149023	1.09E-01	9.38E-02	3.26E-04	1.42E-01	1.36E-01	5.63E-04	2.50E-02	2.44E-02	1.04E-04	1.05E-02	1.08E-02	4.44E-05
226	572437.7	4149036	1.36E-01	1.17E-01	4.08E-04	1.78E-01	1.70E-01	7.05E-04	3.14E-02	3.06E-02	1.30E-04	1.32E-02	1.35E-02	5.57E-05
227	572295.7	4149024	6.59E-02	5.69E-02	1.98E-04	8.61E-02	8.25E-02	3.42E-04	1.52E-02	1.48E-02	6.30E-05	6.40E-03	6.54E-03	2.70E-05
228	572279.5	4149031	5.54E-02	4.79E-02	1.66E-04	7.23E-02	6.93E-02	2.87E-04	1.28E-02	1.25E-02	5.29E-05	5.37E-03	5.50E-03	2.27E-05
229	572343.4	4149010	8.80E-02	7.60E-02	2.64E-04	1.15E-01	1.10E-01	4.56E-04	2.03E-02	1.98E-02	8.41E-05	8.54E-03	8.73E-03	3.60E-05
230	572360.9	4149010	9.07E-02	7.84E-02	2.72E-04	1.18E-01	1.14E-01	4.70E-04	2.09E-02	2.04E-02	8.67E-05	8.80E-03	9.00E-03	3.71E-05
231	572378.4	4149009	9.00E-02	7.77E-02	2.70E-04	1.18E-01	1.13E-01	4.67E-04	2.08E-02	2.03E-02	8.60E-05	8.73E-03	8.93E-03	3.68E-05
232	572395.8	4149009	8.87E-02	7.66E-02	2.66E-04	1.16E-01	1.11E-01	4.60E-04	2.04E-02	2.00E-02	8.47E-05	8.60E-03	8.79E-03	3.63E-05
233	572413.3	4149008	8.89E-02	7.68E-02	2.67E-04	1.16E-01	1.11E-01	4.61E-04	2.05E-02	2.00E-02	8.49E-05	8.62E-03	8.82E-03	3.64E-05
234	572428.4	4149014	9.83E-02	8.49E-02	2.95E-04	1.28E-01	1.23E-01	5.10E-04	2.27E-02	2.21E-02	9.39E-05	9.54E-03	9.75E-03	4.02E-05
235	572492	4149074	2.59E-01	2.24E-01	7.78E-04	3.39E-01	3.24E-01	1.34E-03	5.98E-02	5.84E-02	2.48E-04	2.52E-02	2.57E-02	1.06E-04
236	572339	4149001	7.94E-02	6.86E-02	2.38E-04	1.04E-01	9.93E-02	4.12E-04	1.83E-02	1.79E-02	7.58E-05	7.70E-03	7.88E-03	3.25E-05
237	572356.3	4149001	8.27E-02	7.14E-02	2.48E-04	1.08E-01	1.03E-01	4.29E-04	1.91E-02	1.86E-02	7.90E-05	8.02E-03	8.20E-03	3.39E-05
238	572373.6	4149000	8.26E-02	7.14E-02	2.48E-04	1.08E-01	1.03E-01	4.28E-04	1.91E-02	1.86E-02	7.89E-05	8.01E-03	8.20E-03	3.38E-05
239	572391	4149000	8.13E-02	7.02E-02	2.44E-04	1.06E-01	1.02E-01	4.22E-04	1.88E-02	1.83E-02	7.77E-05	7.89E-03	8.07E-03	3.33E-05
240	572408.3	4148999	8.08E-02	6.98E-02	2.42E-04	1.05E-01	1.01E-01	4.19E-04	1.86E-02	1.82E-02	7.71E-05	7.83E-03	8.01E-03	3.31E-05
241	572482.3	4149052	2.09E-01	1.81E-01	6.28E-04	2.73E-01	2.62E-01	1.09E-03	4.83E-02	4.71E-02	2.00E-04	2.03E-02	2.08E-02	8.57E-05
242	572494.9	4149064	2.35E-01	2.03E-01	7.06E-04	3.07E-01	2.94E-01	1.22E-03	5.42E-02	5.29E-02	2.25E-04	2.28E-02	2.33E-02	9.63E-05
243	572507.5	4149076	2.45E-01	2.11E-01	7.34E-04	3.19E-01	3.06E-01	1.27E-03	5.64E-02	5.51E-02	2.34E-04	2.37E-02	2.43E-02	1.00E-04
244	572300.1	4148993	5.58E-02	4.82E-02	1.67E-04	7.29E-02	6.98E-02	2.89E-04	1.29E-02	1.26E-02	5.33E-05	5.41E-03	5.53E-03	2.28E-05
245	572334.6	4148992	7.18E-02	6.20E-02	2.16E-04	9.38E-02	8.99E-02	3.72E-04	1.66E-02	1.62E-02	6.86E-05	6.97E-03	7.12E-03	2.94E-05
246	572351.8	4148991	7.56E-02	6.52E-02	2.27E-04	9.86E-02	9.45E-02	3.92E-04	1.74E-02	1.70E-02	7.21E-05	7.33E-03	7.49E-03	3.09E-05

247	572369	4148991	7.61E-02	6.57E-02	2.28E-04	9.93E-02	9.52E-02	3.94E-04	1.75E-02	1.71E-02	7.26E-05	7.38E-03	7.54E-03	3.11E-05
248	572386.2	4148991	7.50E-02	6.48E-02	2.25E-04	9.79E-02	9.38E-02	3.89E-04	1.73E-02	1.69E-02	7.16E-05	7.27E-03	7.44E-03	3.07E-05
249	572403.4	4148990	7.41E-02	6.40E-02	2.22E-04	9.67E-02	9.27E-02	3.84E-04	1.71E-02	1.67E-02	7.07E-05	7.18E-03	7.35E-03	3.03E-05
250	572420.6	4148990	7.45E-02	6.43E-02	2.24E-04	9.72E-02	9.32E-02	3.86E-04	1.72E-02	1.68E-02	7.11E-05	7.22E-03	7.39E-03	3.05E-05
251	572498	4149054	2.13E-01	1.84E-01	6.40E-04	2.78E-01	2.67E-01	1.11E-03	4.92E-02	4.80E-02	2.04E-04	2.07E-02	2.11E-02	8.73E-05
252	572510.5	4149066	2.26E-01	1.95E-01	6.79E-04	2.95E-01	2.83E-01	1.17E-03	5.22E-02	5.09E-02	2.16E-04	2.19E-02	2.24E-02	9.26E-05
253	572523	4149078	2.25E-01	1.94E-01	6.75E-04	2.94E-01	2.81E-01	1.17E-03	5.19E-02	5.06E-02	2.15E-04	2.18E-02	2.23E-02	9.21E-05
254	572283.4	4148997	4.79E-02	4.13E-02	1.44E-04	6.25E-02	5.99E-02	2.48E-04	1.10E-02	1.08E-02	4.57E-05	4.64E-03	4.75E-03	1.96E-05
255	572267.2	4149004	4.09E-02	3.53E-02	1.23E-04	5.34E-02	5.12E-02	2.12E-04	9.43E-03	9.21E-03	3.91E-05	3.97E-03	4.06E-03	1.67E-05
256	572251	4149011	3.42E-02	2.95E-02	1.03E-04	4.46E-02	4.27E-02	1.77E-04	7.88E-03	7.69E-03	3.26E-05	3.31E-03	3.39E-03	1.40E-05
257	572296	4148984	5.05E-02	4.36E-02	1.51E-04	6.59E-02	6.31E-02	2.62E-04	1.16E-02	1.14E-02	4.82E-05	4.89E-03	5.00E-03	2.06E-05
258	572313.1	4148983	5.85E-02	5.05E-02	1.75E-04	7.63E-02	7.31E-02	3.03E-04	1.35E-02	1.32E-02	5.58E-05	5.67E-03	5.80E-03	2.39E-05
259	572330.2	4148983	6.52E-02	5.63E-02	1.96E-04	8.51E-02	8.15E-02	3.38E-04	1.50E-02	1.47E-02	6.22E-05	6.32E-03	6.46E-03	2.67E-05
260	572347.3	4148982	6.91E-02	5.97E-02	2.08E-04	9.03E-02	8.65E-02	3.58E-04	1.59E-02	1.56E-02	6.60E-05	6.71E-03	6.86E-03	2.83E-05
261	572364.4	4148982	7.02E-02	6.06E-02	2.11E-04	9.16E-02	8.78E-02	3.64E-04	1.62E-02	1.58E-02	6.70E-05	6.81E-03	6.96E-03	2.87E-05
262	572381.5	4148981	6.94E-02	5.99E-02	2.08E-04	9.06E-02	8.68E-02	3.60E-04	1.60E-02	1.56E-02	6.63E-05	6.73E-03	6.89E-03	2.84E-05
263	572398.6	4148981	6.84E-02	5.91E-02	2.05E-04	8.93E-02	8.56E-02	3.55E-04	1.58E-02	1.54E-02	6.53E-05	6.63E-03	6.78E-03	2.80E-05
264	572415.7	4148980	6.81E-02	5.88E-02	2.04E-04	8.89E-02	8.51E-02	3.53E-04	1.57E-02	1.53E-02	6.50E-05	6.60E-03	6.75E-03	2.79E-05
265	572501.1	4149045	1.93E-01	1.66E-01	5.79E-04	2.52E-01	2.41E-01	1.00E-03	4.45E-02	4.34E-02	1.84E-04	1.87E-02	1.91E-02	7.89E-05
266	572513.6	4149056	2.08E-01	1.80E-01	6.25E-04	2.72E-01	2.61E-01	1.08E-03	4.80E-02	4.69E-02	1.99E-04	2.02E-02	2.07E-02	8.53E-05
267	572526	4149068	2.11E-01	1.82E-01	6.34E-04	2.76E-01	2.64E-01	1.10E-03	4.87E-02	4.76E-02	2.02E-04	2.05E-02	2.10E-02	8.65E-05
268	572279.4	4148988	4.35E-02	3.75E-02	1.30E-04	5.67E-02	5.44E-02	2.25E-04	1.00E-02	9.78E-03	4.15E-05	4.21E-03	4.31E-03	1.78E-05
269	572263.2	4148995	3.73E-02	3.22E-02	1.12E-04	4.88E-02	4.67E-02	1.94E-04	8.61E-03	8.41E-03	3.57E-05	3.62E-03	3.70E-03	1.53E-05
270	572247	4149002	3.14E-02	2.71E-02	9.42E-05	4.10E-02	3.93E-02	1.63E-04	7.24E-03	7.07E-03	3.00E-05	3.05E-03	3.11E-03	1.29E-05
271	572291.9	4148975	4.58E-02	3.96E-02	1.38E-04	5.98E-02	5.73E-02	2.38E-04	1.06E-02	1.03E-02	4.38E-05	4.45E-03	4.55E-03	1.88E-05
272	572308.9	4148974	5.30E-02	4.58E-02	1.59E-04	6.92E-02	6.63E-02	2.75E-04	1.22E-02	1.19E-02	5.06E-05	5.14E-03	5.26E-03	2.17E-05
273	572325.9	4148974	5.93E-02	5.12E-02	1.78E-04	7.74E-02	7.41E-02	3.07E-04	1.37E-02	1.33E-02	5.66E-05	5.75E-03	5.88E-03	2.43E-05
274	572342.9	4148973	6.34E-02	5.47E-02	1.90E-04	8.27E-02	7.93E-02	3.28E-04	1.46E-02	1.43E-02	6.05E-05	6.15E-03	6.28E-03	2.59E-05
275	572359.9	4148973	6.48E-02	5.60E-02	1.95E-04	8.47E-02	8.11E-02	3.36E-04	1.49E-02	1.46E-02	6.19E-05	6.29E-03	6.43E-03	2.65E-05
276	572376.9	4148972	6.45E-02	5.57E-02	1.93E-04	8.41E-02	8.06E-02	3.34E-04	1.49E-02	1.45E-02	6.15E-05	6.25E-03	6.39E-03	2.64E-05
277	572393.9	4148972	6.34E-02	5.48E-02	1.90E-04	8.28E-02	7.94E-02	3.29E-04	1.46E-02	1.43E-02	6.06E-05	6.15E-03	6.29E-03	2.60E-05
278	572410.8	4148971	6.27E-02	5.42E-02	1.88E-04	8.19E-02	7.85E-02	3.25E-04	1.45E-02	1.41E-02	5.99E-05	6.08E-03	6.22E-03	2.57E-05
279	572516.6	4149047	1.91E-01	1.65E-01	5.74E-04	2.50E-01	2.39E-01	9.91E-04	4.41E-02	4.30E-02	1.83E-04	1.85E-02	1.90E-02	7.83E-05
280	572275.3	4148979	3.96E-02	3.42E-02	1.19E-04	5.17E-02	4.96E-02	2.05E-04	9.13E-03	8.92E-03	3.78E-05	3.84E-03	3.93E-03	1.62E-05
281	572259.1	4148986	3.42E-02	2.95E-02	1.03E-04	4.47E-02	4.28E-02	1.77E-04	7.89E-03	7.70E-03	3.27E-05	3.32E-03	3.39E-03	1.40E-05
282	572242.9	4148993	2.90E-02	2.50E-02	8.69E-05	3.78E-02	3.62E-02	1.50E-04	6.67E-03	6.52E-03	2.76E-05	2.81E-03	2.87E-03	1.18E-05
283	572287.8	4148966	4.18E-02	3.61E-02	1.25E-04	5.46E-02	5.23E-02	2.17E-04	9.64E-03	9.41E-03	3.99E-05	4.05E-03	4.15E-03	1.71E-05
284	572304.7	4148965	4.82E-02	4.16E-02	1.45E-04	6.30E-02	6.03E-02	2.50E-04	1.11E-02	1.09E-02	4.60E-05	4.68E-03	4.78E-03	1.97E-05
285	572321.6	4148965	5.40E-02	4.67E-02	1.62E-04	7.06E-02	6.76E-02	2.80E-04	1.25E-02	1.22E-02	5.16E-05	5.24E-03	5.36E-03	2.21E-05
286	572338.5	4148964	5.82E-02	5.02E-02	1.75E-04	7.59E-02	7.28E-02	3.02E-04	1.34E-02	1.31E-02	5.55E-05	5.64E-03	5.77E-03	2.38E-05
287	572355.4	4148964	6.00E-02	5.18E-02	1.80E-04	7.83E-02	7.51E-02	3.11E-04	1.38E-02	1.35E-02	5.73E-05	5.82E-03	5.95E-03	2.46E-05
288	572372.3	4148963	5.99E-02	5.18E-02	1.80E-04	7.82E-02	7.50E-02	3.11E-04	1.38E-02	1.35E-02	5.72E-05	5.81E-03	5.94E-03	2.45E-05
289	572389.2	4148963	5.90E-02	5.10E-02	1.77E-04	7.71E-02	7.39E-02	3.06E-04	1.36E-02	1.33E-02	5.64E-05	5.73E-03	5.86E-03	2.42E-05
290	572406.1	4148962	5.82E-02	5.02E-02	1.75E-04	7.60E-02	7.28E-02	3.02E-04	1.34E-02	1.31E-02	5.56E-05	5.64E-03	5.77E-03	2.38E-05
291	572271.2	4148969	3.63E-02	3.13E-02	1.09E-04	4.74E-02	4.54E-02	1.88E-04	8.36E-03	8.16E-03	3.46E-05	3.52E-03	3.60E-03	1.48E-05
292	572255	4148977	3.15E-02	2.72E-02	9.44E-05	4.11E-02	3.93E-02	1.63E-04	7.25E-03	7.08E-03	3.00E-05	3.05E-03	3.12E-03	1.29E-05
293	572238.8	4148984	2.68E-02	2.31E-02	8.03E-05	3.50E-02	3.35E-02	1.39E-04	6.17E-03	6.03E-03	2.56E-05	2.60E-03	2.66E-03	1.10E-05
294	572284.1	4148956	3.84E-02	3.32E-02	1.15E-04	5.01E-02	4.81E-02	1.99E-04	8.86E-03	8.65E-03	3.67E-05	3.73E-03	3.81E-03	1.57E-05
295	572301.8	4148956	4.45E-02	3.84E-02	1.34E-04	5.81E-02	5.56E-02	2.31E-04	1.03E-02	1.00E-02	4.25E-05	4.31E-03	4.41E-03	1.82E-05
296	572319.5	4148955	5.00E-02	4.32E-02	1.50E-04	6.53E-02	6.26E-02	2.59E-04	1.15E-02	1.13E-02	4.78E-05	4.85E-03	4.96E-03	2.05E-05
297	572337.2	4148955	5.40E-02	4.66E-02	1.62E-04	7.05E-02	6.76E-02	2.80E-04	1.25E-02	1.22E-02	5.16E-05	5.24E-03	5.36E-03	2.21E-05
298	572354.9	4148954	5.58E-02	4.82E-02	1.67E-04	7.28E-02	6.98E-02	2.89E-04	1.29E-02	1.26E-02	5.33E-05	5.41E-03	5.53E-03	2.28E-05
299	572372.6	4148954	5.57E-02	4.81E-02	1.67E-04	7.27E-02	6.97E-02	2.89E-04	1.28E-02	1.25E-02	5.32E-05	5.40E-03	5.52E-03	2.28E-05
300	572390.3	4148953	5.48E-02	4.73E-02	1.64E-04	7.15E-02	6.85E-02	2.84E-04	1.26E-02	1.23E-02	5.23E-05	5.31E-03	5.43E-03	2.24E-05
301	572408.1	4148953	5.39E-02	4.66E-02	1.62E-04	7.04E-02	6.75E-02	2.80E-04	1.24E-02	1.21E-02	5.15E-05	5.23E-03	5.35E-03	2.21E-05
302	572267.1	4148960	3.33E-02	2.88E-02	1.00E-04	4.35E-02	4.17E-02	1.73E-04	7.68E-03	7.50E-03	3.18E-05	3.23E-03	3.30E-03	1.36E-05
303	572250.9	4148967	2.90E-02	2.51E-02	8.71E-05	3.79E-02	3.63E-02	1.50E-04	6.69E-03	6.53E-03	2.77E-05	2.81E-03	2.88E-03	1.19E-05
304	572234.7	4148975	2.48E-02	2.14E-02	7.45E-05	3.24E-02	3.11E-02	1.29E-04	5.72E-03	5.59E-03	2.37E-05	2.41E-03	2.46E-03	1.02E-05
305	572279.9	4148947	3.53E-02	3.04E-02	1.06E-04	4.60E-02	4.41E-02	1.83E-04	8.13E-03	7.93E-03	3.37E-05	3.42E-03	3.50E-03	1.44E-05
306	572297.5	4148947	4.07E-02	3.52E-02	1.22E-04	5.32E-02	5.10E-02	2.11E-04	9.39E-03	9.17E-03	3.89E-05	3.95E-03	4.04E-03	1.67E-05
307	572315.1	4148946	4.59E-02	3.96E-02	1.38E-04	5.99E-02	5.74E-02	2.38E-04	1.06E-02	1.03E-02	4.38E-05	4.45E-03	4.55E-03	1.88E-05
308	572332.7	4148946	4.98E-02	4.30E-02	1.49E-04	6.50E-02	6.23E-02	2.58E-04	1.15E-02	1.12E-02	4.75E-05	4.83E-03	4.94E-03	2.04E-05
309	572350.3	4148945	5.18E-02	4.47E-02	1.55E-04	6.76E-02	6.48E-02	2.69E-04	1.19E-02	1.17E-02	4.95E-05	5.02E-03	5.14E-03	2.12E-05
310	572367.9	4148945	5.20E-02	4.49E-02	1.56E-04	6.79E-02	6.51E-02	2.70E-04	1.20E-02	1.17E-02	4.97E-05	5.05E-03	5.16E-03	2.13E-05
311	572385.5	4148944	5.12E-02	4.42E-02	1.54E-04	6.69E-02	6.41E-02	2.66E-04	1.18E-02	1.15E-02	4.89E-05	4.97E-03	5.08E-03	2.10E-05
312	572263	4148951	3.07E-02	2.65E-02	9.21E-05	4.01E-02	3.84E-02	1.59E-04	7.08E-03	6.91E-03	2.93E-05	2.98E-03	3.04E-03	1.26E-05
313	572246.8	4148958	2.69E-02	2.32E-02	8.06E-05	3.51E-02	3.36E-02	1.39E-04	6.19E-03	6.04E-03	2.56E-05	2.60E-03	2.66E-03	1.10E-05
314	572230.6	4148966	2.31E-02	1.99E-02	6.93E-05	3.01E-02	2.89E-02	1.20E-04	5.32E-03	5.20E-03	2.20E-05	2.24E-03	2.29E-03	9.45E-06
315	572275.8	4148938	3.25E-02	2.80E-02	9.74E-05	4.24E-02	4.06E-02	1.68E-04	7.48E-03	7.30E-03	3.10E-05	3.15E-03	3.22E-03	1.33E-05
316	572293.3	4148938	3.74E-02	3.23E-02	1.12E-04	4.88E-02	4.68E-02	1.94E-04	8.62E-03	8.42E-03	3.57E-05	3.63E-03	3.71E-03	1.53E-05
317	572310.8	4148937	4.21E-02	3.64E-02	1.26E-04	5.50E-02	5.27E-02	2.18E-04	9.72E-03	9.49E-03	4.02E-05	4.09E-03	4.18E-03	1.72E-05
318	572328.2	4148937	4.60E-02	3.97E-02	1.38E-04	6.00E-02	5.75E-02	2.38E-04	1.06E-02	1.03E-02	4.39E-05	4.46E-03	4.56E-03	1.88E-05
319	572345.7	4148936	4.82E-02	4.16E-02	1.45E-04	6.29E-02	6.02E-02	2.50E-04	1.11E-02	1.08E-02	4.60E-05	4.67E-03	4.78E-03	1.97E-05
320	572363.2	4148936	4.87E-02	4.21E-02	1.46E-04	6.36E-02	6.09E-02	2.53E-04	1.12E-02	1.10E-02	4.65E-05	4.72E-03	4.83E-03	1.99E-05
321	572259	4148942	2.84E-02	2.45E-02	8.51E-05	3.70E-02	3.55E-02	1.47E-04	6.54E-03	6.38E-03	2.71E-05	2.75E-03	2.81E-03	1.16E-05
322	572242.8	4148949	2.49E-02	2.15E-02	7.47E-05	3.25E-02	3.12E-02	1.29E-04	5.74E-03	5.61E-03	2.38E-05	2.42E-03	2.47E-03	1.02E-05
323	572226.6	4148956	2.15E-02	1.86E-02	6.46E-05	2.81E-02	2.69E-02	1.12E-04	4.96E-03	4.84E-03	2.06E-05	2.09E-03	2.13E-03	8.81E-06
324	572271.7	4148929	3.00E-02	2.59E-02	9.00E-05	3.91E-02	3.75E-02	1.55E-04	6.91E-03	6.75E-03	2.86E-05	2.91E-03	2.97E-03	1.23E-05
325	572289.1	4148929	3.44E-02	2.97E-02	1.03E-04	4.50E-02	4.31E-02	1.78E-04	7.94E-03	7.75E-03	3.29E-05	3.34E-03	3.41E-03	1.41E-05
326	572306.4	4148928	3.88E-02	3.35E-02	1.17E-04	5.07E-02	4.86E-02	2.01E-04	8.95E-03	8.74E-03	3.71E-05	3.77E-03	3.85E-03	1.59E-05
327	572323.8	4148928	4.25E-02	3.67E-02	1.28E-04	5.55E-02	5.32E-02	2.20E-04	9.80E-03	9.56E-03	4.06E-05	4.12E-03	4.21E-03	1.74E-05
328	572341.2	4148927	4.48E-02	3.87E-02	1.35E-04	5.85E-02	5.61E-02	2.32E-04	1.03E-02	1.01E-02	4.28E-05	4.35E-03	4.45E-03	1.83E-05
329	572254.9	4148933	2.63E-02	2.27E-02	7.89E-05	3.43E-02	3.29E-02	1.36E-04	6.06E-03	5.92E-03	2.51E-05	2.55E-03	2.61E-03	1.08E-05

330	572238.7	4148940	2.32E-02	2.00E-02	6.95E-05	3.02E-02	2.90E-02	1.20E-04	5.34E-03	5.21E-03	2.21E-05	2.25E-03	2.30E-03	9.48E-06
331	572222.5	4148947	2.01E-02	1.74E-02	6.03E-05	2.62E-02	2.51E-02	1.04E-04	4.63E-03	4.52E-03	1.92E-05	1.95E-03	1.99E-03	8.23E-06
332	572267.5	4148920	2.78E-02	2.40E-02	8.34E-05	3.63E-02	3.48E-02	1.44E-04	6.40E-03	6.25E-03	2.65E-05	2.69E-03	2.76E-03	1.14E-05
333	572284.8	4148919	3.18E-02	2.75E-02	9.54E-05	4.15E-02	3.98E-02	1.65E-04	7.33E-03	7.16E-03	3.04E-05	3.08E-03	3.15E-03	1.30E-05
334	572302.1	4148919	3.58E-02	3.09E-02	1.08E-04	4.68E-02	4.48E-02	1.86E-04	8.26E-03	8.07E-03	3.42E-05	3.48E-03	3.55E-03	1.47E-05
335	572319.4	4148918	3.93E-02	3.39E-02	1.18E-04	5.13E-02	4.92E-02	2.04E-04	9.06E-03	8.85E-03	3.75E-05	3.81E-03	3.90E-03	1.61E-05
336	572336.7	4148918	4.17E-02	3.60E-02	1.25E-04	5.44E-02	5.22E-02	2.16E-04	9.61E-03	9.39E-03	3.98E-05	4.04E-03	4.14E-03	1.71E-05
337	572577.2	4149027	1.36E-01	1.17E-01	4.08E-04	1.77E-01	1.70E-01	7.05E-04	3.13E-02	3.06E-02	1.30E-04	1.32E-02	1.35E-02	5.56E-05
338	572589.7	4149039	1.32E-01	1.14E-01	3.96E-04	1.72E-01	1.65E-01	6.83E-04	3.04E-02	2.97E-02	1.26E-04	1.28E-02	1.31E-02	5.39E-05
339	572234.6	4148931	2.16E-02	1.86E-02	6.48E-05	2.82E-02	2.70E-02	1.12E-04	4.98E-03	4.86E-03	2.06E-05	2.09E-03	2.14E-03	8.84E-06
340	572218.4	4148938	1.88E-02	1.63E-02	5.65E-05	2.46E-02	2.36E-02	9.76E-05	4.34E-03	4.24E-03	1.80E-05	1.83E-03	1.87E-03	7.71E-06
341	572567.6	4149006	1.27E-01	1.10E-01	3.81E-04	1.66E-01	1.59E-01	6.58E-04	2.93E-02	2.86E-02	1.21E-04	1.23E-02	1.26E-02	5.19E-05
342	572580.2	4149018	1.29E-01	1.11E-01	3.87E-04	1.68E-01	1.61E-01	6.68E-04	2.97E-02	2.90E-02	1.23E-04	1.25E-02	1.28E-02	5.28E-05
343	572592.7	4149029	1.27E-01	1.09E-01	3.80E-04	1.65E-01	1.58E-01	6.56E-04	2.92E-02	2.85E-02	1.21E-04	1.23E-02	1.25E-02	5.18E-05
344	572605.2	4149041	1.21E-01	1.04E-01	3.63E-04	1.58E-01	1.51E-01	6.27E-04	2.79E-02	2.72E-02	1.15E-04	1.17E-02	1.20E-02	4.95E-05
345	572570.7	4148996	1.19E-01	1.03E-01	3.57E-04	1.55E-01	1.49E-01	6.16E-04	2.74E-02	2.68E-02	1.14E-04	1.15E-02	1.18E-02	4.87E-05
346	572583.2	4149008	1.22E-01	1.06E-01	3.67E-04	1.60E-01	1.53E-01	6.34E-04	2.82E-02	2.75E-02	1.17E-04	1.19E-02	1.21E-02	5.00E-05
347	572595.6	4149020	1.21E-01	1.05E-01	3.63E-04	1.58E-01	1.51E-01	6.28E-04	2.79E-02	2.73E-02	1.16E-04	1.17E-02	1.20E-02	4.96E-05
348	572608.1	4149031	1.17E-01	1.01E-01	3.51E-04	1.52E-01	1.46E-01	6.06E-04	2.69E-02	2.63E-02	1.12E-04	1.13E-02	1.16E-02	4.78E-05
349	572573.9	4148986	1.11E-01	9.62E-02	3.34E-04	1.45E-01	1.39E-01	5.78E-04	2.57E-02	2.51E-02	1.06E-04	1.08E-02	1.10E-02	4.56E-05
350	572586.3	4148998	1.16E-01	9.98E-02	3.47E-04	1.51E-01	1.45E-01	5.99E-04	2.67E-02	2.60E-02	1.10E-04	1.12E-02	1.15E-02	4.73E-05
351	572598.7	4149010	1.16E-01	1.00E-01	3.48E-04	1.51E-01	1.45E-01	6.01E-04	2.67E-02	2.61E-02	1.11E-04	1.12E-02	1.15E-02	4.74E-05
352	572611.1	4149021	1.13E-01	9.73E-02	3.38E-04	1.47E-01	1.41E-01	5.84E-04	2.60E-02	2.54E-02	1.08E-04	1.09E-02	1.12E-02	4.61E-05
353	572623.5	4149033	1.08E-01	9.29E-02	3.23E-04	1.40E-01	1.35E-01	5.58E-04	2.48E-02	2.42E-02	1.03E-04	1.04E-02	1.07E-02	4.40E-05
354	572568.2	4148968	9.89E-02	8.54E-02	2.97E-04	1.29E-01	1.24E-01	5.13E-04	2.28E-02	2.23E-02	9.44E-05	9.59E-03	9.81E-03	4.05E-05
355	572581.1	4148980	1.06E-01	9.17E-02	3.19E-04	1.39E-01	1.33E-01	5.51E-04	2.45E-02	2.39E-02	1.01E-04	1.03E-02	1.05E-02	4.35E-05
356	572593.9	4148992	1.10E-01	9.51E-02	3.30E-04	1.44E-01	1.38E-01	5.71E-04	2.54E-02	2.48E-02	1.05E-04	1.07E-02	1.09E-02	4.51E-05
357	572606.7	4149005	1.10E-01	9.52E-02	3.31E-04	1.44E-01	1.38E-01	5.71E-04	2.54E-02	2.48E-02	1.05E-04	1.07E-02	1.09E-02	4.51E-05
358	572619.6	4149017	1.07E-01	9.24E-02	3.21E-04	1.40E-01	1.34E-01	5.55E-04	2.47E-02	2.41E-02	1.02E-04	1.04E-02	1.06E-02	4.38E-05
359	572632.4	4149029	1.02E-01	8.79E-02	3.06E-04	1.33E-01	1.27E-01	5.28E-04	2.35E-02	2.29E-02	9.72E-05	9.87E-03	1.01E-02	4.17E-05
360	572571.3	4148958	9.21E-02	7.95E-02	2.76E-04	1.20E-01	1.15E-01	4.77E-04	2.12E-02	2.07E-02	8.79E-05	8.93E-03	9.13E-03	3.77E-05
361	572584.1	4148970	9.96E-02	8.60E-02	2.99E-04	1.30E-01	1.25E-01	5.16E-04	2.30E-02	2.24E-02	9.51E-05	9.66E-03	9.88E-03	4.08E-05
362	572596.9	4148983	1.04E-01	9.00E-02	3.13E-04	1.36E-01	1.30E-01	5.40E-04	2.40E-02	2.35E-02	9.95E-05	1.01E-02	1.03E-02	4.26E-05
363	572609.6	4148995	1.05E-01	9.10E-02	3.16E-04	1.38E-01	1.32E-01	5.46E-04	2.43E-02	2.37E-02	1.01E-04	1.02E-02	1.05E-02	4.31E-05
364	572622.4	4149007	1.03E-01	8.92E-02	3.10E-04	1.35E-01	1.29E-01	5.36E-04	2.38E-02	2.33E-02	9.86E-05	1.00E-02	1.02E-02	4.23E-05
365	572635.2	4149019	9.91E-02	8.56E-02	2.97E-04	1.29E-01	1.24E-01	5.14E-04	2.28E-02	2.23E-02	9.46E-05	9.61E-03	9.83E-03	4.06E-05
366	572561.8	4148937	7.65E-02	6.60E-02	2.30E-04	9.99E-02	9.57E-02	3.96E-04	1.76E-02	1.72E-02	7.30E-05	7.42E-03	7.59E-03	3.13E-05
367	572574.5	4148949	8.58E-02	7.41E-02	2.58E-04	1.12E-01	1.07E-01	4.45E-04	1.98E-02	1.93E-02	8.20E-05	8.33E-03	8.51E-03	3.51E-05
368	572587.2	4148961	9.34E-02	8.07E-02	2.80E-04	1.22E-01	1.17E-01	4.84E-04	2.15E-02	2.10E-02	8.92E-05	9.06E-03	9.26E-03	3.82E-05
369	572599.9	4148973	9.84E-02	8.50E-02	2.95E-04	1.29E-01	1.23E-01	5.10E-04	2.27E-02	2.22E-02	9.40E-05	9.55E-03	9.76E-03	4.03E-05
370	572612.6	4148985	1.01E-01	8.68E-02	3.02E-04	1.31E-01	1.26E-01	5.21E-04	2.32E-02	2.26E-02	9.60E-05	9.75E-03	9.97E-03	4.11E-05
371	572625.3	4148997	9.96E-02	8.60E-02	2.99E-04	1.30E-01	1.25E-01	5.16E-04	2.30E-02	2.24E-02	9.51E-05	9.66E-03	9.88E-03	4.08E-05
372	572638	4149009	9.62E-02	8.31E-02	2.89E-04	1.26E-01	1.20E-01	4.99E-04	2.22E-02	2.17E-02	9.19E-05	9.34E-03	9.55E-03	3.94E-05
373	572650.7	4149021	9.15E-02	7.90E-02	2.75E-04	1.19E-01	1.14E-01	4.74E-04	2.11E-02	2.06E-02	8.73E-05	8.87E-03	9.07E-03	3.74E-05
374	572565	4148927	7.12E-02	6.15E-02	2.14E-04	9.29E-02	8.90E-02	3.69E-04	1.64E-02	1.60E-02	6.80E-05	6.90E-03	7.06E-03	2.91E-05
375	572577.6	4148939	8.01E-02	6.92E-02	2.40E-04	1.05E-01	1.00E-01	4.15E-04	1.85E-02	1.80E-02	7.65E-05	7.77E-03	7.94E-03	3.28E-05
376	572590.3	4148951	8.76E-02	7.56E-02	2.63E-04	1.14E-01	1.10E-01	4.54E-04	2.02E-02	1.97E-02	8.36E-05	8.49E-03	8.69E-03	3.58E-05
377	572602.9	4148963	9.30E-02	8.03E-02	2.79E-04	1.21E-01	1.16E-01	4.82E-04	2.14E-02	2.09E-02	8.88E-05	9.02E-03	9.22E-03	3.80E-05
378	572615.6	4148975	9.57E-02	8.27E-02	2.87E-04	1.25E-01	1.20E-01	4.96E-04	2.21E-02	2.15E-02	9.14E-05	9.28E-03	9.49E-03	3.92E-05
379	572628.2	4148987	9.58E-02	8.27E-02	2.87E-04	1.25E-01	1.20E-01	4.96E-04	2.21E-02	2.16E-02	9.15E-05	9.29E-03	9.50E-03	3.92E-05
380	572640.9	4148999	9.33E-02	8.06E-02	2.80E-04	1.22E-01	1.17E-01	4.84E-04	2.15E-02	2.10E-02	8.91E-05	9.05E-03	9.26E-03	3.82E-05
381	572653.5	4149011	8.92E-02	7.71E-02	2.68E-04	1.17E-01	1.12E-01	4.63E-04	2.06E-02	2.01E-02	8.52E-05	8.66E-03	8.85E-03	3.65E-05
382	572568.2	4148917	6.63E-02	5.73E-02	1.99E-04	8.66E-02	8.30E-02	3.44E-04	1.53E-02	1.49E-02	6.33E-05	6.43E-03	6.58E-03	2.71E-05
383	572580.8	4148929	7.48E-02	6.46E-02	2.24E-04	9.76E-02	9.36E-02	3.88E-04	1.72E-02	1.68E-02	7.14E-05	7.25E-03	7.42E-03	3.06E-05
384	572593.4	4148941	8.21E-02	7.09E-02	2.47E-04	1.07E-01	1.03E-01	4.26E-04	1.89E-02	1.85E-02	7.84E-05	7.97E-03	8.15E-03	3.36E-05
385	572606	4148953	8.77E-02	7.57E-02	2.63E-04	1.15E-01	1.10E-01	4.55E-04	2.02E-02	1.97E-02	8.38E-05	8.51E-03	8.70E-03	3.59E-05
386	572618.6	4148965	9.10E-02	7.86E-02	2.73E-04	1.19E-01	1.14E-01	4.72E-04	2.10E-02	2.05E-02	8.69E-05	8.83E-03	9.03E-03	3.72E-05
387	572631.2	4148977	9.19E-02	7.93E-02	2.76E-04	1.20E-01	1.15E-01	4.76E-04	2.12E-02	2.07E-02	8.77E-05	8.91E-03	9.11E-03	3.76E-05
388	572643.8	4148989	9.03E-02	7.80E-02	2.71E-04	1.18E-01	1.13E-01	4.68E-04	2.08E-02	2.03E-02	8.63E-05	8.76E-03	8.96E-03	3.70E-05
389	572656.4	4149001	8.70E-02	7.51E-02	2.61E-04	1.14E-01	1.09E-01	4.51E-04	2.01E-02	1.96E-02	8.31E-05	8.44E-03	8.63E-03	3.56E-05
390	572571.5	4148908	6.19E-02	5.34E-02	1.86E-04	8.08E-02	7.74E-02	3.21E-04	1.43E-02	1.39E-02	5.91E-05	6.00E-03	6.14E-03	2.53E-05
391	572584	4148920	6.99E-02	6.04E-02	2.10E-04	9.13E-02	8.75E-02	3.62E-04	1.61E-02	1.57E-02	6.68E-05	6.78E-03	6.93E-03	2.86E-05
392	572596.6	4148931	7.71E-02	6.66E-02	2.31E-04	1.01E-01	9.64E-02	4.00E-04	1.78E-02	1.73E-02	7.36E-05	7.48E-03	7.64E-03	3.15E-05
393	572609.1	4148943	8.27E-02	7.15E-02	2.48E-04	1.08E-01	1.04E-01	4.29E-04	1.91E-02	1.86E-02	7.90E-05	8.03E-03	8.21E-03	3.39E-05
394	572621.7	4148955	8.65E-02	7.47E-02	2.59E-04	1.13E-01	1.08E-01	4.48E-04	1.99E-02	1.95E-02	8.26E-05	8.39E-03	8.57E-03	3.54E-05
395	572634.2	4148967	8.79E-02	7.59E-02	2.64E-04	1.15E-01	1.10E-01	4.56E-04	2.03E-02	1.98E-02	8.40E-05	8.53E-03	8.72E-03	3.60E-05
396	572646.8	4148979	8.73E-02	7.53E-02	2.62E-04	1.14E-01	1.09E-01	4.52E-04	2.01E-02	1.96E-02	8.33E-05	8.46E-03	8.65E-03	3.57E-05
397	572659.3	4148991	8.47E-02	7.31E-02	2.54E-04	1.11E-01	1.06E-01	4.39E-04	1.95E-02	1.91E-02	8.09E-05	8.21E-03	8.40E-03	3.47E-05
398	572671.9	4149003	8.09E-02	6.99E-02	2.43E-04	1.06E-01	1.01E-01	4.19E-04	1.86E-02	1.82E-02	7.72E-05	7.85E-03	8.02E-03	3.31E-05
399	572574.7	4148898	5.79E-02	5.00E-02	1.74E-04	7.55E-02	7.24E-02	3.00E-04	1.33E-02	1.30E-02	5.53E-05	5.61E-03	5.74E-03	2.37E-05
400	572587.2	4148910	6.54E-02	5.65E-02	1.96E-04	8.54E-02	8.19E-02	3.39E-04	1.51E-02	1.47E-02	6.25E-05	6.35E-03	6.49E-03	2.68E-05
401	572599.8	4148922	7.24E-02	6.25E-02	2.17E-04	9.45E-02	9.05E-02	3.75E-04	1.67E-02	1.63E-02	6.91E-05	7.02E-03	7.18E-03	2.96E-05
402	572612.3	4148934	7.81E-02	6.74E-02	2.34E-04	1.02E-01	9.77E-02	4.05E-04	1.80E-02	1.76E-02	7.45E-05	7.57E-03	7.74E-03	3.19E-05
403	572624.8	4148945	8.21E-02	7.09E-02	2.46E-04	1.07E-01	1.03E-01	4.25E-04	1.89E-02	1.85E-02	7.84E-05	7.96E-03	8.14E-03	3.36E-05
404	572637.3	4148957	8.41E-02	7.26E-02	2.52E-04	1.10E-01	1.05E-01	4.36E-04	1.94E-02	1.89E-02	8.03E-05	8.16E-03	8.34E-03	3.44E-05
405	572649.8	4148969	8.41E-02	7.26E-02	2.52E-04	1.10E-01	1.05E-01	4.36E-04	1.94E-02	1.89E-02	8.03E-05	8.15E-03	8.34E-03	3.44E-05
406	572662.3	4148981	8.22E-02	7.10E-02	2.47E-04	1.07E-01	1.03E-01	4.26E-04	1.90E-02	1.85E-02	7.85E-05	7.98E-03	8.16E-03	3.37E-05
407	572674.8	4148993	7.90E-02	6.82E-02	2.37E-04	1.03E-01	9.89E-02	4.10E-04	1.82E-02	1.78E-02	7.55E-05	7.67E-03	7.84E-03	3.23E-05
408	572687.3	4149004	7.52E-02	6.49E-02	2.26E-04	9.82E-02	9.41E-02	3.90E-04	1.73E-02	1.69E-02	7.18E-05	7.29E-03	7.46E-03	3.08E-05
409	572580.6	4148891	5.57E-02	4.81E-02	1.67E-04	7.27E-02	6.96E-02	2.88E-04	1.28E-02	1.25E-02	5.31E-05	5.40E-03	5.52E-03	2.28E-05
410	572593.4	4148903	6.30E-02	5.44E-02	1.89E-04	8.22E-02	7.88E-02	3.26E-04	1.45E-02	1.42E-02	6.01E-05	6.11E-03	6.24E-03	2.58E-05
411	572606.3	4148915	6.96E-02	6.01E-02	2.09E-04	9.09E-02	8.71E-02	3.61E-04	1.61E-02	1.57E-02	6.65E-05	6.75E-03	6.91E-03	2.85E-05
412	572619.1	4148927	7.51E-02	6.48E-02	2.25E-04	9.80E-02	9.39E-02	3.89E-04	1.73E-02	1.69E-02	7.17E-05	7.28E-03	7.44E-03	3.07E-05

413	572632	4148939	7.89E-02	6.81E-02	2.37E-04	1.03E-01	9.86E-02	4.09E-04	1.82E-02	1.77E-02	7.53E-05	7.65E-03	7.82E-03	3.23E-05
414	572644.8	4148952	8.07E-02	6.97E-02	2.42E-04	1.05E-01	1.01E-01	4.18E-04	1.86E-02	1.82E-02	7.71E-05	7.83E-03	8.01E-03	3.30E-05
415	572657.7	4148964	8.06E-02	6.96E-02	2.42E-04	1.05E-01	1.01E-01	4.18E-04	1.86E-02	1.81E-02	7.70E-05	7.82E-03	8.00E-03	3.30E-05
416	572670.6	4148976	7.87E-02	6.80E-02	2.36E-04	1.03E-01	9.85E-02	4.08E-04	1.82E-02	1.77E-02	7.52E-05	7.64E-03	7.81E-03	3.22E-05
417	572683.4	4148988	7.56E-02	6.53E-02	2.27E-04	9.87E-02	9.46E-02	3.92E-04	1.74E-02	1.70E-02	7.22E-05	7.33E-03	7.50E-03	3.09E-05
418	572583.8	4148881	5.22E-02	4.50E-02	1.57E-04	6.81E-02	6.53E-02	2.70E-04	1.20E-02	1.17E-02	4.98E-05	5.06E-03	5.17E-03	2.13E-05
419	572596.6	4148893	5.91E-02	5.10E-02	1.77E-04	7.71E-02	7.39E-02	3.06E-04	1.36E-02	1.33E-02	5.64E-05	5.73E-03	5.86E-03	2.42E-05
420	572609.4	4148905	6.55E-02	5.65E-02	1.97E-04	8.55E-02	8.19E-02	3.39E-04	1.51E-02	1.47E-02	6.25E-05	6.35E-03	6.49E-03	2.68E-05
421	572622.2	4148917	7.09E-02	6.12E-02	2.13E-04	9.26E-02	8.87E-02	3.68E-04	1.63E-02	1.60E-02	6.77E-05	6.88E-03	7.03E-03	2.90E-05
422	572635	4148930	7.49E-02	6.47E-02	2.25E-04	9.78E-02	9.37E-02	3.88E-04	1.73E-02	1.69E-02	7.15E-05	7.26E-03	7.43E-03	3.07E-05
423	572647.8	4148942	7.72E-02	6.67E-02	2.32E-04	1.01E-01	9.66E-02	4.00E-04	1.78E-02	1.74E-02	7.37E-05	7.49E-03	7.66E-03	3.16E-05
424	572660.6	4148954	7.77E-02	6.71E-02	2.33E-04	1.01E-01	9.72E-02	4.03E-04	1.79E-02	1.75E-02	7.42E-05	7.53E-03	7.70E-03	3.18E-05
425	572673.4	4148966	7.64E-02	6.60E-02	2.29E-04	9.98E-02	9.56E-02	3.96E-04	1.76E-02	1.72E-02	7.30E-05	7.41E-03	7.58E-03	3.13E-05
426	572686.2	4148978	7.38E-02	6.38E-02	2.22E-04	9.64E-02	9.24E-02	3.83E-04	1.70E-02	1.66E-02	7.05E-05	7.16E-03	7.32E-03	3.02E-05
427	572699	4148990	7.05E-02	6.09E-02	2.12E-04	9.20E-02	8.82E-02	3.65E-04	1.62E-02	1.59E-02	6.73E-05	6.84E-03	6.99E-03	2.88E-05
428	572587	4148872	4.90E-02	4.23E-02	1.47E-04	6.39E-02	6.13E-02	2.54E-04	1.13E-02	1.10E-02	4.68E-05	4.75E-03	4.86E-03	2.00E-05
429	572599.8	4148884	5.55E-02	4.79E-02	1.66E-04	7.24E-02	6.94E-02	2.88E-04	1.28E-02	1.25E-02	5.30E-05	5.38E-03	5.50E-03	2.27E-05
430	572612.5	4148896	6.16E-02	5.32E-02	1.85E-04	8.05E-02	7.71E-02	3.20E-04	1.42E-02	1.39E-02	5.89E-05	5.98E-03	6.11E-03	2.52E-05
431	572625.3	4148908	6.70E-02	5.78E-02	2.01E-04	8.74E-02	8.38E-02	3.47E-04	1.54E-02	1.51E-02	6.40E-05	6.50E-03	6.64E-03	2.74E-05
432	572638.1	4148920	7.11E-02	6.14E-02	2.13E-04	9.28E-02	8.89E-02	3.69E-04	1.64E-02	1.60E-02	6.79E-05	6.90E-03	7.05E-03	2.91E-05
433	572650.8	4148932	7.37E-02	6.37E-02	2.21E-04	9.63E-02	9.22E-02	3.82E-04	1.70E-02	1.66E-02	7.04E-05	7.15E-03	7.31E-03	3.02E-05
434	572663.6	4148944	7.47E-02	6.45E-02	2.24E-04	9.75E-02	9.34E-02	3.87E-04	1.72E-02	1.68E-02	7.13E-05	7.24E-03	7.41E-03	3.06E-05
435	572676.3	4148956	7.41E-02	6.39E-02	2.22E-04	9.67E-02	9.26E-02	3.84E-04	1.71E-02	1.67E-02	7.07E-05	7.18E-03	7.34E-03	3.03E-05
436	572689.1	4148968	7.20E-02	6.22E-02	2.16E-04	9.40E-02	9.01E-02	3.73E-04	1.66E-02	1.62E-02	6.88E-05	6.99E-03	7.14E-03	2.95E-05
437	572701.8	4148980	6.91E-02	5.97E-02	2.07E-04	9.02E-02	8.64E-02	3.58E-04	1.59E-02	1.56E-02	6.60E-05	6.70E-03	6.85E-03	2.83E-05
438	572714.6	4148992	6.58E-02	5.68E-02	1.97E-04	8.59E-02	8.23E-02	3.41E-04	1.52E-02	1.48E-02	6.28E-05	6.38E-03	6.53E-03	2.69E-05
439	572590.3	4148862	4.60E-02	3.97E-02	1.38E-04	6.01E-02	5.76E-02	2.39E-04	1.06E-02	1.04E-02	4.39E-05	4.46E-03	4.56E-03	1.88E-05
440	572603	4148874	5.22E-02	4.50E-02	1.57E-04	6.81E-02	6.53E-02	2.70E-04	1.20E-02	1.17E-02	4.98E-05	5.06E-03	5.17E-03	2.13E-05
441	572615.7	4148886	5.81E-02	5.01E-02	1.74E-04	7.58E-02	7.26E-02	3.01E-04	1.34E-02	1.31E-02	5.54E-05	5.63E-03	5.76E-03	2.38E-05
442	572628.4	4148898	6.33E-02	5.46E-02	1.90E-04	8.26E-02	7.92E-02	3.28E-04	1.46E-02	1.42E-02	6.04E-05	6.14E-03	6.28E-03	2.59E-05
443	572641.1	4148910	6.75E-02	5.83E-02	2.03E-04	8.81E-02	8.44E-02	3.50E-04	1.56E-02	1.52E-02	6.44E-05	6.55E-03	6.69E-03	2.76E-05
444	572653.8	4148922	7.04E-02	6.08E-02	2.11E-04	9.19E-02	8.80E-02	3.65E-04	1.62E-02	1.58E-02	6.72E-05	6.83E-03	6.98E-03	2.88E-05
445	572666.5	4148934	7.18E-02	6.20E-02	2.15E-04	9.37E-02	8.98E-02	3.72E-04	1.65E-02	1.62E-02	6.85E-05	6.96E-03	7.12E-03	2.94E-05
446	572679.2	4148946	7.16E-02	6.19E-02	2.15E-04	9.35E-02	8.96E-02	3.71E-04	1.65E-02	1.61E-02	6.84E-05	6.95E-03	7.10E-03	2.93E-05
447	572692	4148958	7.02E-02	6.06E-02	2.11E-04	9.16E-02	8.78E-02	3.64E-04	1.62E-02	1.58E-02	6.70E-05	6.80E-03	6.96E-03	2.87E-05
448	572704.7	4148970	6.76E-02	5.84E-02	2.03E-04	8.83E-02	8.46E-02	3.51E-04	1.56E-02	1.52E-02	6.46E-05	6.56E-03	6.71E-03	2.77E-05
449	572717.4	4148982	6.46E-02	5.58E-02	1.94E-04	8.44E-02	8.08E-02	3.35E-04	1.49E-02	1.45E-02	6.17E-05	6.27E-03	6.41E-03	2.64E-05
450	572593.6	4148852	4.33E-02	3.74E-02	1.30E-04	5.66E-02	5.42E-02	2.25E-04	9.99E-03	9.75E-03	4.14E-05	4.20E-03	4.30E-03	1.77E-05
451	572606.2	4148864	4.91E-02	4.24E-02	1.47E-04	6.41E-02	6.14E-02	2.55E-04	1.13E-02	1.11E-02	4.69E-05	4.76E-03	4.87E-03	2.01E-05
452	572618.9	4148876	5.47E-02	4.73E-02	1.64E-04	7.15E-02	6.85E-02	2.84E-04	1.26E-02	1.23E-02	5.23E-05	5.31E-03	5.43E-03	2.24E-05
453	572631.6	4148888	5.98E-02	5.17E-02	1.80E-04	7.81E-02	7.48E-02	3.10E-04	1.38E-02	1.35E-02	5.71E-05	5.80E-03	5.93E-03	2.45E-05
454	572644.2	4148900	6.41E-02	5.53E-02	1.92E-04	8.36E-02	8.01E-02	3.32E-04	1.48E-02	1.44E-02	6.12E-05	6.21E-03	6.35E-03	2.62E-05
455	572656.9	4148912	6.71E-02	5.80E-02	2.01E-04	8.76E-02	8.40E-02	3.48E-04	1.55E-02	1.51E-02	6.41E-05	6.51E-03	6.66E-03	2.75E-05
456	572669.6	4148924	6.89E-02	5.95E-02	2.07E-04	8.99E-02	8.61E-02	3.57E-04	1.59E-02	1.55E-02	6.58E-05	6.68E-03	6.83E-03	2.82E-05
457	572682.2	4148936	6.92E-02	5.97E-02	2.08E-04	9.03E-02	8.65E-02	3.59E-04	1.60E-02	1.56E-02	6.61E-05	6.71E-03	6.86E-03	2.83E-05
458	572694.9	4148948	6.82E-02	5.89E-02	2.05E-04	8.90E-02	8.53E-02	3.54E-04	1.57E-02	1.53E-02	6.51E-05	6.61E-03	6.76E-03	2.79E-05
459	572707.5	4148960	6.61E-02	5.71E-02	1.99E-04	8.64E-02	8.27E-02	3.43E-04	1.52E-02	1.49E-02	6.32E-05	6.42E-03	6.56E-03	2.71E-05
460	572720.2	4148972	6.34E-02	5.48E-02	1.90E-04	8.28E-02	7.93E-02	3.29E-04	1.46E-02	1.43E-02	6.06E-05	6.15E-03	6.29E-03	2.60E-05
461	572732.9	4148984	6.05E-02	5.22E-02	1.81E-04	7.89E-02	7.56E-02	3.13E-04	1.39E-02	1.36E-02	5.77E-05	5.87E-03	6.00E-03	2.47E-05
462	572584.3	4148831	3.57E-02	3.08E-02	1.07E-04	4.66E-02	4.46E-02	1.85E-04	8.22E-03	8.03E-03	3.41E-05	3.46E-03	3.54E-03	1.46E-05
463	572596.9	4148843	4.08E-02	3.53E-02	1.23E-04	5.33E-02	5.11E-02	2.12E-04	9.41E-03	9.19E-03	3.90E-05	3.96E-03	4.05E-03	1.67E-05
464	572609.5	4148855	4.63E-02	4.00E-02	1.39E-04	6.04E-02	5.79E-02	2.40E-04	1.07E-02	1.04E-02	4.42E-05	4.49E-03	4.59E-03	1.89E-05
465	572622.1	4148867	5.17E-02	4.46E-02	1.55E-04	6.74E-02	6.46E-02	2.68E-04	1.19E-02	1.16E-02	4.93E-05	5.01E-03	5.12E-03	2.11E-05
466	572634.7	4148878	5.66E-02	4.89E-02	1.70E-04	7.39E-02	7.08E-02	2.93E-04	1.30E-02	1.27E-02	5.40E-05	5.49E-03	5.61E-03	2.32E-05
467	572647.4	4148890	6.08E-02	5.25E-02	1.82E-04	7.94E-02	7.60E-02	3.15E-04	1.40E-02	1.37E-02	5.81E-05	5.90E-03	6.03E-03	2.49E-05
468	572660	4148902	6.40E-02	5.53E-02	1.92E-04	8.36E-02	8.01E-02	3.32E-04	1.48E-02	1.44E-02	6.11E-05	6.21E-03	6.35E-03	2.62E-05
469	572672.6	4148914	6.60E-02	5.70E-02	1.98E-04	8.62E-02	8.26E-02	3.42E-04	1.52E-02	1.49E-02	6.30E-05	6.40E-03	6.55E-03	2.70E-05
470	572685.2	4148926	6.67E-02	5.76E-02	2.00E-04	8.71E-02	8.35E-02	3.46E-04	1.54E-02	1.50E-02	6.37E-05	6.47E-03	6.62E-03	2.73E-05
471	572697.8	4148938	6.62E-02	5.72E-02	1.99E-04	8.64E-02	8.28E-02	3.43E-04	1.53E-02	1.49E-02	6.32E-05	6.42E-03	6.56E-03	2.71E-05
472	572710.5	4148950	6.46E-02	5.58E-02	1.94E-04	8.43E-02	8.08E-02	3.35E-04	1.49E-02	1.45E-02	6.17E-05	6.26E-03	6.40E-03	2.64E-05
473	572723.1	4148962	6.22E-02	5.37E-02	1.87E-04	8.12E-02	7.78E-02	3.22E-04	1.43E-02	1.40E-02	5.94E-05	6.03E-03	6.17E-03	2.55E-05
474	572735.7	4148974	5.94E-02	5.13E-02	1.78E-04	7.76E-02	7.43E-02	3.08E-04	1.37E-02	1.34E-02	5.67E-05	5.76E-03	5.89E-03	2.43E-05
475	572587.6	4148821	3.37E-02	2.91E-02	1.01E-04	4.40E-02	4.22E-02	1.75E-04	7.78E-03	7.59E-03	3.22E-05	3.27E-03	3.35E-03	1.38E-05
476	572600.2	4148833	3.86E-02	3.33E-02	1.16E-04	5.03E-02	4.82E-02	2.00E-04	8.89E-03	8.68E-03	3.68E-05	3.74E-03	3.82E-03	1.58E-05
477	572612.8	4148845	4.37E-02	3.77E-02	1.31E-04	5.70E-02	5.46E-02	2.26E-04	1.01E-02	9.83E-03	4.17E-05	4.24E-03	4.33E-03	1.79E-05
478	572625.4	4148857	4.88E-02	4.21E-02	1.46E-04	6.37E-02	6.10E-02	2.53E-04	1.12E-02	1.10E-02	4.66E-05	4.73E-03	4.84E-03	2.00E-05
479	572637.9	4148869	5.36E-02	4.63E-02	1.61E-04	6.99E-02	6.70E-02	2.78E-04	1.24E-02	1.21E-02	5.12E-05	5.20E-03	5.31E-03	2.19E-05
480	572650.5	4148881	5.77E-02	4.98E-02	1.73E-04	7.54E-02	7.22E-02	2.99E-04	1.33E-02	1.30E-02	5.51E-05	5.60E-03	5.72E-03	2.36E-05
481	572663.1	4148893	6.10E-02	5.27E-02	1.83E-04	7.96E-02	7.63E-02	3.16E-04	1.41E-02	1.37E-02	5.83E-05	5.92E-03	6.05E-03	2.50E-05
482	572675.7	4148904	6.32E-02	5.46E-02	1.90E-04	8.26E-02	7.91E-02	3.28E-04	1.46E-02	1.42E-02	6.04E-05	6.13E-03	6.27E-03	2.59E-05
483	572688.3	4148916	6.43E-02	5.55E-02	1.93E-04	8.39E-02	8.04E-02	3.33E-04	1.48E-02	1.45E-02	6.14E-05	6.24E-03	6.38E-03	2.63E-05
484	572700.8	4148928	6.42E-02	5.54E-02	1.93E-04	8.38E-02	8.03E-02	3.33E-04	1.48E-02	1.44E-02	6.13E-05	6.22E-03	6.36E-03	2.63E-05
485	572713.4	4148940	6.29E-02	5.44E-02	1.89E-04	8.22E-02	7.87E-02	3.26E-04	1.45E-02	1.42E-02	6.01E-05	6.11E-03	6.24E-03	2.58E-05
486	572726	4148952	6.09E-02	5.26E-02	1.83E-04	7.95E-02	7.62E-02	3.16E-04	1.40E-02	1.37E-02	5.82E-05	5.91E-03	6.04E-03	2.49E-05
487	572738.6	4148964	5.84E-02	5.04E-02	1.75E-04	7.62E-02	7.30E-02	3.03E-04	1.35E-02	1.31E-02	5.58E-05	5.66E-03	5.79E-03	2.39E-05
488	572592.8	4148813	3.26E-02	2.81E-02	9.78E-05	4.25E-02	4.07E-02	1.69E-04	7.51E-03	7.33E-03	3.11E-05	3.16E-03	3.23E-03	1.33E-05
489	572605.7	4148826	3.73E-02	3.22E-02	1.12E-04	4.86E-02	4.66E-02	1.93E-04	8.59E-03	8.39E-03	3.56E-05	3.61E-03	3.69E-03	1.52E-05
490	572618.5	4148838	4.22E-02	3.65E-02	1.27E-04	5.51E-02	5.28E-02	2.19E-04	9.73E-03	9.50E-03	4.03E-05	4.10E-03	4.19E-03	1.73E-05
491	572631.4	4148850	4.72E-02	4.08E-02	1.42E-04	6.16E-02	5.90E-02	2.45E-04	1.09E-02	1.06E-02	4.51E-05	4.58E-03	4.68E-03	1.93E-05
492	572644.3	4148862	5.18E-02	4.47E-02	1.56E-04	6.76E-02	6.48E-02	2.69E-04	1.19E-02	1.17E-02	4.95E-05	5.03E-03	5.14E-03	2.12E-05
493	572657.2	4148874	5.58E-02	4.82E-02	1.68E-04	7.29E-02	6.98E-02	2.89E-04	1.29E-02	1.26E-02	5.33E-05	5.41E-03	5.54E-03	2.28E-05
494	572670	4148886	5.90E-02	5.09E-02	1.77E-04	7.70E-02	7.38E-02	3.06E-04	1.36E-02	1.33E-02	5.63E-05	5.72E-03	5.85E-03	2.41E-05
495	572682.9	4148899	6.11E-02	5.28E-02	1.83E-04	7.98E-02	7.64E-02	3.17E-04	1.41E-02	1.38E-02	5.83E-05	5.93E-03	6.06E-03	2.50E-05

496	572695.8	4148911	6.21E-02	5.36E-02	1.86E-04	8.10E-02	7.77E-02	3.22E-04	1.43E-02	1.40E-02	5.93E-05	6.02E-03	6.16E-03	2.54E-05
497	572708.7	4148923	6.19E-02	5.34E-02	1.86E-04	8.08E-02	7.74E-02	3.21E-04	1.43E-02	1.39E-02	5.91E-05	6.00E-03	6.14E-03	2.53E-05
498	572721.5	4148935	6.07E-02	5.24E-02	1.82E-04	7.92E-02	7.59E-02	3.15E-04	1.40E-02	1.37E-02	5.79E-05	5.88E-03	6.02E-03	2.48E-05
499	572734.4	4148947	5.87E-02	5.07E-02	1.76E-04	7.66E-02	7.34E-02	3.04E-04	1.35E-02	1.32E-02	5.60E-05	5.69E-03	5.82E-03	2.40E-05
500	572747.3	4148959	5.62E-02	4.85E-02	1.69E-04	7.33E-02	7.03E-02	2.91E-04	1.30E-02	1.26E-02	5.36E-05	5.45E-03	5.57E-03	2.30E-05
501	572760.2	4148972	5.36E-02	4.63E-02	1.61E-04	7.00E-02	6.71E-02	2.78E-04	1.24E-02	1.21E-02	5.12E-05	5.20E-03	5.32E-03	2.19E-05
502	572207.9	4148746	1.04E-02	8.99E-03	3.12E-05	1.36E-02	1.30E-02	5.40E-05	2.40E-03	2.34E-03	9.94E-06	1.01E-03	1.03E-03	4.26E-06
503	572596.1	4148804	3.09E-02	2.67E-02	9.27E-05	4.03E-02	3.86E-02	1.60E-04	7.12E-03	6.95E-03	2.95E-05	2.99E-03	3.06E-03	1.26E-05
504	572608.9	4148816	3.52E-02	3.04E-02	1.06E-04	4.60E-02	4.41E-02	1.83E-04	8.12E-03	7.93E-03	3.37E-05	3.42E-03	3.50E-03	1.44E-05
505	572621.8	4148828	3.99E-02	3.45E-02	1.20E-04	5.21E-02	4.99E-02	2.07E-04	9.20E-03	8.99E-03	3.81E-05	3.87E-03	3.96E-03	1.63E-05
506	572634.6	4148840	4.46E-02	3.85E-02	1.34E-04	5.83E-02	5.58E-02	2.31E-04	1.03E-02	1.00E-02	4.26E-05	4.33E-03	4.43E-03	1.83E-05
507	572647.4	4148852	4.91E-02	4.24E-02	1.47E-04	6.41E-02	6.14E-02	2.55E-04	1.13E-02	1.11E-02	4.69E-05	4.76E-03	4.87E-03	2.01E-05
508	572660.2	4148864	5.31E-02	4.58E-02	1.59E-04	6.93E-02	6.64E-02	2.75E-04	1.22E-02	1.19E-02	5.07E-05	5.15E-03	5.26E-03	2.17E-05
509	572673.1	4148877	5.63E-02	4.86E-02	1.69E-04	7.34E-02	7.04E-02	2.92E-04	1.30E-02	1.27E-02	5.37E-05	5.46E-03	5.58E-03	2.30E-05
510	572685.9	4148889	5.85E-02	5.06E-02	1.76E-04	7.64E-02	7.32E-02	3.03E-04	1.35E-02	1.32E-02	5.59E-05	5.68E-03	5.81E-03	2.40E-05
511	572698.7	4148901	5.98E-02	5.16E-02	1.79E-04	7.81E-02	7.48E-02	3.10E-04	1.38E-02	1.35E-02	5.71E-05	5.80E-03	5.93E-03	2.45E-05
512	572711.6	4148913	6.00E-02	5.18E-02	1.80E-04	7.83E-02	7.50E-02	3.11E-04	1.38E-02	1.35E-02	5.73E-05	5.82E-03	5.95E-03	2.45E-05
513	572724.4	4148925	5.91E-02	5.11E-02	1.77E-04	7.72E-02	7.40E-02	3.07E-04	1.36E-02	1.33E-02	5.65E-05	5.74E-03	5.86E-03	2.42E-05
514	572737.2	4148937	5.75E-02	4.96E-02	1.72E-04	7.50E-02	7.19E-02	2.98E-04	1.32E-02	1.29E-02	5.49E-05	5.57E-03	5.70E-03	2.35E-05
515	572750.1	4148949	5.52E-02	4.77E-02	1.66E-04	7.21E-02	6.91E-02	2.86E-04	1.27E-02	1.24E-02	5.27E-05	5.36E-03	5.48E-03	2.26E-05
516	572762.9	4148962	5.28E-02	4.56E-02	1.58E-04	6.89E-02	6.61E-02	2.74E-04	1.22E-02	1.19E-02	5.04E-05	5.12E-03	5.24E-03	2.16E-05
517	572203.7	4148737	9.95E-03	8.59E-03	2.99E-05	1.30E-02	1.24E-02	5.16E-05	2.29E-03	2.24E-03	9.50E-06	9.65E-04	9.87E-04	4.07E-06
518	572221.3	4148736	1.09E-02	9.42E-03	3.27E-05	1.42E-02	1.36E-02	5.66E-05	2.52E-03	2.46E-03	1.04E-05	1.06E-03	1.08E-03	4.47E-06
519	572599.4	4148794	2.93E-02	2.53E-02	8.79E-05	3.83E-02	3.67E-02	1.52E-04	6.76E-03	6.60E-03	2.80E-05	2.84E-03	2.91E-03	1.20E-05
520	572612.2	4148806	3.34E-02	2.88E-02	1.00E-04	4.36E-02	4.18E-02	1.73E-04	7.70E-03	7.51E-03	3.19E-05	3.24E-03	3.31E-03	1.37E-05
521	572625	4148818	3.78E-02	3.26E-02	1.13E-04	4.93E-02	4.73E-02	1.96E-04	8.71E-03	8.50E-03	3.61E-05	3.66E-03	3.75E-03	1.55E-05
522	572637.8	4148831	4.23E-02	3.65E-02	1.27E-04	5.52E-02	5.29E-02	2.19E-04	9.74E-03	9.51E-03	4.04E-05	4.10E-03	4.19E-03	1.73E-05
523	572650.6	4148843	4.66E-02	4.02E-02	1.40E-04	6.08E-02	5.82E-02	2.41E-04	1.07E-02	1.05E-02	4.45E-05	4.52E-03	4.62E-03	1.91E-05
524	572663.4	4148855	5.04E-02	4.35E-02	1.51E-04	6.58E-02	6.31E-02	2.61E-04	1.16E-02	1.13E-02	4.82E-05	4.89E-03	5.00E-03	2.06E-05
525	572676.2	4148867	5.37E-02	4.63E-02	1.61E-04	7.00E-02	6.71E-02	2.78E-04	1.24E-02	1.21E-02	5.12E-05	5.20E-03	5.32E-03	2.20E-05
526	572688.9	4148879	5.61E-02	4.84E-02	1.68E-04	7.32E-02	7.01E-02	2.91E-04	1.29E-02	1.26E-02	5.35E-05	5.44E-03	5.56E-03	2.29E-05
527	572701.7	4148891	5.76E-02	4.97E-02	1.73E-04	7.51E-02	7.20E-02	2.98E-04	1.33E-02	1.30E-02	5.50E-05	5.58E-03	5.71E-03	2.36E-05
528	572714.5	4148903	5.80E-02	5.01E-02	1.74E-04	7.58E-02	7.26E-02	3.01E-04	1.34E-02	1.31E-02	5.54E-05	5.63E-03	5.76E-03	2.38E-05
529	572727.3	4148915	5.75E-02	4.97E-02	1.73E-04	7.51E-02	7.20E-02	2.98E-04	1.33E-02	1.30E-02	5.49E-05	5.58E-03	5.71E-03	2.35E-05
530	572740.1	4148927	5.62E-02	4.85E-02	1.69E-04	7.34E-02	7.03E-02	2.91E-04	1.30E-02	1.27E-02	5.37E-05	5.45E-03	5.57E-03	2.30E-05
531	572752.9	4148939	5.43E-02	4.68E-02	1.63E-04	7.08E-02	6.79E-02	2.81E-04	1.25E-02	1.22E-02	5.18E-05	5.26E-03	5.38E-03	2.22E-05
532	572765.7	4148951	5.20E-02	4.49E-02	1.56E-04	6.79E-02	6.50E-02	2.69E-04	1.20E-02	1.17E-02	4.96E-05	5.04E-03	5.16E-03	2.13E-05
533	572199.5	4148728	9.52E-03	8.22E-03	2.86E-05	1.24E-02	1.19E-02	4.93E-05	2.19E-03	2.14E-03	9.09E-06	9.23E-04	9.44E-04	3.90E-06
534	572217.1	4148727	0.01042	9.00E-03	3.13E-05	1.36E-02	1.30E-02	5.40E-05	2.40E-03	2.35E-03	9.95E-06	1.01E-03	1.03E-03	4.26E-06
535	572234.6	4148727	0.01138	9.83E-03	3.42E-05	1.49E-02	1.42E-02	5.90E-05	2.62E-03	2.56E-03	1.09E-05	1.10E-03	1.13E-03	4.66E-06
536	572615.5	4148797	0.03166	2.73E-02	9.50E-05	4.13E-02	3.96E-02	1.64E-04	7.30E-03	7.13E-03	3.02E-05	3.07E-03	3.14E-03	1.30E-05
537	572628.3	4148809	0.0358	3.09E-02	1.07E-04	4.67E-02	4.48E-02	1.86E-04	8.25E-03	8.06E-03	3.42E-05	3.47E-03	3.55E-03	1.47E-05
538	572641	4148821	0.04005	3.46E-02	1.20E-04	5.23E-02	5.01E-02	2.08E-04	9.23E-03	9.02E-03	3.82E-05	3.88E-03	3.97E-03	1.64E-05
539	572653.8	4148833	0.04417	3.81E-02	1.33E-04	5.77E-02	5.53E-02	2.29E-04	1.02E-02	9.94E-03	4.22E-05	4.28E-03	4.38E-03	1.81E-05
540	572666.5	4148845	0.04795	4.14E-02	1.44E-04	6.26E-02	6.00E-02	2.49E-04	1.11E-02	1.08E-02	4.58E-05	4.65E-03	4.76E-03	1.96E-05
541	572679.3	4148857	0.05117	4.42E-02	1.54E-04	6.68E-02	6.40E-02	2.65E-04	1.18E-02	1.15E-02	4.89E-05	4.96E-03	5.08E-03	2.09E-05
542	572692	4148869	0.05366	4.63E-02	1.61E-04	7.01E-02	6.71E-02	2.78E-04	1.24E-02	1.21E-02	5.12E-05	5.20E-03	5.32E-03	2.20E-05
543	572704.7	4148881	0.05533	4.78E-02	1.66E-04	7.22E-02	6.92E-02	2.87E-04	1.28E-02	1.25E-02	5.28E-05	5.37E-03	5.49E-03	2.26E-05
544	572717.5	4148893	0.0561	4.84E-02	1.68E-04	7.32E-02	7.02E-02	2.91E-04	1.29E-02	1.26E-02	5.36E-05	5.44E-03	5.56E-03	2.30E-05
545	572730.2	4148905	0.05592	4.83E-02	1.68E-04	7.30E-02	7.00E-02	2.90E-04	1.29E-02	1.26E-02	5.34E-05	5.42E-03	5.55E-03	2.29E-05
546	572743	4148917	0.05491	4.74E-02	1.65E-04	7.17E-02	6.87E-02	2.85E-04	1.27E-02	1.24E-02	5.24E-05	5.33E-03	5.45E-03	2.25E-05
547	572755.7	4148929	0.05324	4.60E-02	1.60E-04	6.95E-02	6.66E-02	2.76E-04	1.23E-02	1.20E-02	5.08E-05	5.16E-03	5.28E-03	2.18E-05
548	572768.5	4148941	0.05116	4.42E-02	1.54E-04	6.68E-02	6.40E-02	2.65E-04	1.18E-02	1.15E-02	4.89E-05	4.96E-03	5.07E-03	2.09E-05
549	572781.2	4148953	0.04898	4.23E-02	1.47E-04	6.39E-02	6.13E-02	2.54E-04	1.13E-02	1.10E-02	4.68E-05	4.75E-03	4.86E-03	2.00E-05
550	572195.4	4148719	0.009118	7.87E-03	2.74E-05	1.19E-02	1.14E-02	4.73E-05	2.10E-03	2.05E-03	8.71E-06	8.84E-04	9.04E-04	3.73E-06
551	572212.8	4148718	0.009964	8.60E-03	2.99E-05	1.30E-02	1.25E-02	5.17E-05	2.30E-03	2.24E-03	9.52E-06	9.66E-04	9.88E-04	4.08E-06
552	572230.3	4148718	0.01086	9.38E-03	3.26E-05	1.42E-02	1.36E-02	5.63E-05	2.50E-03	2.44E-03	1.04E-05	1.05E-03	1.08E-03	4.44E-06
553	572247.8	4148717	0.0118	1.02E-02	3.54E-05	1.54E-02	1.48E-02	6.12E-05	2.72E-03	2.66E-03	1.13E-05	1.14E-03	1.17E-03	4.83E-06
554	572618.8	4148787	0.03006	2.60E-02	9.02E-05	3.92E-02	3.76E-02	1.56E-04	6.93E-03	6.77E-03	2.87E-05	2.92E-03	2.98E-03	1.23E-05
555	572631.5	4148799	0.03396	2.93E-02	1.02E-04	4.43E-02	4.25E-02	1.76E-04	7.83E-03	7.64E-03	3.24E-05	3.29E-03	3.37E-03	1.39E-05
556	572644.3	4148811	0.03799	3.28E-02	1.14E-04	4.96E-02	4.75E-02	1.97E-04	8.76E-03	8.55E-03	3.63E-05	3.68E-03	3.77E-03	1.55E-05
557	572657	4148823	0.04195	3.62E-02	1.26E-04	5.48E-02	5.25E-02	2.17E-04	9.67E-03	9.44E-03	4.01E-05	4.07E-03	4.16E-03	1.72E-05
558	572669.7	4148835	0.04561	3.94E-02	1.37E-04	5.95E-02	5.71E-02	2.36E-04	1.05E-02	1.03E-02	4.36E-05	4.42E-03	4.52E-03	1.87E-05
559	572682.4	4148847	0.04881	4.22E-02	1.46E-04	6.37E-02	6.11E-02	2.53E-04	1.13E-02	1.10E-02	4.66E-05	4.73E-03	4.84E-03	2.00E-05
560	572695.1	4148859	0.05137	4.44E-02	1.54E-04	6.71E-02	6.43E-02	2.66E-04	1.18E-02	1.16E-02	4.91E-05	4.98E-03	5.09E-03	2.10E-05
561	572707.8	4148871	0.05318	4.59E-02	1.60E-04	6.94E-02	6.65E-02	2.76E-04	1.23E-02	1.20E-02	5.08E-05	5.16E-03	5.27E-03	2.18E-05
562	572720.5	4148883	0.05417	4.68E-02	1.63E-04	7.07E-02	6.78E-02	2.81E-04	1.25E-02	1.22E-02	5.17E-05	5.25E-03	5.37E-03	2.22E-05
563	572733.2	4148895	0.05428	4.69E-02	1.63E-04	7.09E-02	6.79E-02	2.81E-04	1.25E-02	1.22E-02	5.18E-05	5.27E-03	5.38E-03	2.22E-05
564	572745.9	4148907	0.05357	4.63E-02	1.61E-04	6.99E-02	6.70E-02	2.78E-04	1.24E-02	1.21E-02	5.12E-05	5.20E-03	5.31E-03	2.19E-05
565	572758.6	4148919	0.05219	4.51E-02	1.57E-04	6.81E-02	6.53E-02	2.71E-04	1.20E-02	1.17E-02	4.98E-05	5.06E-03	5.18E-03	2.14E-05
566	572771.3	4148931	0.05031	4.34E-02	1.51E-04	6.57E-02	6.29E-02	2.61E-04	1.16E-02	1.13E-02	4.80E-05	4.88E-03	4.99E-03	2.06E-05
567	572784	4148943	0.04826	4.17E-02	1.45E-04	6.30E-02	6.04E-02	2.50E-04	1.11E-02	1.09E-02	4.61E-05	4.68E-03	4.79E-03	1.98E-05
568	572191.2	4148709	0.008742	7.55E-03	2.62E-05	1.14E-02	1.09E-02	4.53E-05	2.02E-03	1.97E-03	8.35E-06	8.48E-04	8.67E-04	3.58E-06
569	572208.6	4148709	0.009542	8.24E-03	2.86E-05	1.25E-02	1.19E-02	4.95E-05	2.20E-03	2.15E-03	9.11E-06	9.26E-04	9.46E-04	3.91E-06
570	572226.1	4148708	0.01039	8.97E-03	3.12E-05	1.36E-02	1.30E-02	5.39E-05	2.40E-03	2.34E-03	9.92E-06	1.01E-03	1.03E-03	4.25E-06
571	572243.5	4148708	0.01127	9.73E-03	3.38E-05	1.47E-02	1.41E-02	5.84E-05	2.60E-03	2.54E-03	1.08E-05	1.09E-03	1.12E-03	4.61E-06
572	572260.9	4148707	0.01217	1.05E-02	3.65E-05	1.59E-02	1.52E-02	6.31E-05	2.81E-03	2.74E-03	1.16E-05	1.18E-03	1.21E-03	4.98E-06
573	572622.2	4148778	0.02857	2.47E-02	8.57E-05	3.73E-02	3.57E-02	1.48E-04	6.59E-03	6.43E-03	2.73E-05	2.77E-03	2.83E-03	1.17E-05
574	572634.8	4148790	0.03224	2.78E-02	9.68E-05	4.21E-02	4.03E-02	1.67E-04	7.43E-03	7.26E-03	3.08E-05	3.13E-03	3.20E-03	1.32E-05
575	572647.5	4148802	0.03607	3.11E-02	1.08E-04	4.71E-02	4.51E-02	1.87E-04	8.32E-03	8.12E-03	3.44E-05	3.50E-03	3.58E-03	1.48E-05
576	572660.2	4148814	0.03986	3.44E-02	1.20E-04	5.20E-02	4.99E-02	2.07E-04	9.19E-03	8.97E-03	3.81E-05	3.87E-03	3.95E-03	1.63E-05
577	572672.9	4148826	0.04342	3.75E-02	1.30E-04	5.67E-02	5.43E-02	2.25E-04	1.00E-02	9.77E-03	4.15E-05	4.21E-03	4.31E-03	1.78E-05
578	572685.5	4148837	0.04657	4.02E-02	1.40E-04	6.08E-02	5.83E-02	2.41E-04	1.07E-02	1.05E-02	4.45E-05	4.52E-03	4.62E-03	1.91E-05

579	572698.2	4148849	0.04916	4.25E-02	1.48E-04	6.42E-02	6.15E-02	2.55E-04	1.13E-02	1.11E-02	4.69E-05	4.77E-03	4.88E-03	2.01E-05
580	572710.9	4148861	0.05109	4.41E-02	1.53E-04	6.67E-02	6.39E-02	2.65E-04	1.18E-02	1.15E-02	4.88E-05	4.96E-03	5.07E-03	2.09E-05
581	572723.5	4148873	0.05226	4.51E-02	1.57E-04	6.82E-02	6.54E-02	2.71E-04	1.20E-02	1.18E-02	4.99E-05	5.07E-03	5.18E-03	2.14E-05
582	572736.2	4148885	0.05263	4.54E-02	1.58E-04	6.87E-02	6.58E-02	2.73E-04	1.21E-02	1.18E-02	5.03E-05	5.11E-03	5.22E-03	2.15E-05
583	572748.9	4148897	0.0522	4.51E-02	1.57E-04	6.82E-02	6.53E-02	2.71E-04	1.20E-02	1.18E-02	4.98E-05	5.06E-03	5.18E-03	2.14E-05
584	572761.5	4148909	0.05109	4.41E-02	1.53E-04	6.67E-02	6.39E-02	2.65E-04	1.18E-02	1.15E-02	4.88E-05	4.96E-03	5.07E-03	2.09E-05
585	572774.2	4148921	0.04945	4.27E-02	1.48E-04	6.46E-02	6.19E-02	2.56E-04	1.14E-02	1.11E-02	4.72E-05	4.80E-03	4.90E-03	2.02E-05
586	572786.9	4148933	0.04753	4.10E-02	1.43E-04	6.21E-02	5.95E-02	2.46E-04	1.10E-02	1.07E-02	4.54E-05	4.61E-03	4.71E-03	1.95E-05
587	572799.6	4148945	0.04558	3.94E-02	1.37E-04	5.95E-02	5.70E-02	2.36E-04	1.05E-02	1.03E-02	4.35E-05	4.42E-03	4.52E-03	1.87E-05
588	572187	4148700	0.008388	7.24E-03	2.52E-05	1.10E-02	1.05E-02	4.35E-05	1.93E-03	1.89E-03	8.01E-06	8.14E-04	8.32E-04	3.43E-06
589	572204.4	4148700	0.009145	7.90E-03	2.74E-05	1.19E-02	1.14E-02	4.74E-05	2.11E-03	2.06E-03	8.73E-06	8.87E-04	9.07E-04	3.74E-06
590	572221.8	4148699	0.009943	8.59E-03	2.98E-05	1.30E-02	1.24E-02	5.15E-05	2.29E-03	2.24E-03	9.50E-06	9.64E-04	9.86E-04	4.07E-06
591	572239.2	4148699	0.01078	9.31E-03	3.24E-05	1.41E-02	1.35E-02	5.59E-05	2.49E-03	2.43E-03	1.03E-05	1.05E-03	1.07E-03	4.41E-06
592	572256.6	4148698	0.01163	1.00E-02	3.49E-05	1.52E-02	1.45E-02	6.03E-05	2.68E-03	2.62E-03	1.11E-05	1.13E-03	1.15E-03	4.76E-06
593	572625.5	4148768	0.02719	2.35E-02	8.16E-05	3.55E-02	3.40E-02	1.41E-04	6.27E-03	6.12E-03	2.60E-05	2.64E-03	2.70E-03	1.11E-05
594	572638.1	4148780	0.03064	2.65E-02	9.20E-05	4.00E-02	3.83E-02	1.59E-04	7.06E-03	6.90E-03	2.93E-05	2.97E-03	3.04E-03	1.25E-05
595	572650.8	4148792	0.03428	2.96E-02	1.03E-04	4.48E-02	4.29E-02	1.78E-04	7.90E-03	7.72E-03	3.27E-05	3.33E-03	3.40E-03	1.40E-05
596	572663.4	4148804	0.03791	3.27E-02	1.14E-04	4.95E-02	4.74E-02	1.97E-04	8.74E-03	8.53E-03	3.62E-05	3.68E-03	3.76E-03	1.55E-05
597	572676	4148816	0.04135	3.57E-02	1.24E-04	5.40E-02	5.17E-02	2.14E-04	9.53E-03	9.31E-03	3.95E-05	4.01E-03	4.10E-03	1.69E-05
598	572688.7	4148828	0.04445	3.84E-02	1.33E-04	5.80E-02	5.56E-02	2.30E-04	1.02E-02	1.00E-02	4.24E-05	4.31E-03	4.41E-03	1.82E-05
599	572701.3	4148840	0.04705	4.06E-02	1.41E-04	6.14E-02	5.89E-02	2.44E-04	1.08E-02	1.06E-02	4.49E-05	4.56E-03	4.67E-03	1.93E-05
600	572714	4148852	0.04906	4.24E-02	1.47E-04	6.41E-02	6.14E-02	2.54E-04	1.13E-02	1.10E-02	4.69E-05	4.76E-03	4.87E-03	2.01E-05
601	572726.6	4148864	0.05038	4.35E-02	1.51E-04	6.58E-02	6.30E-02	2.61E-04	1.16E-02	1.13E-02	4.81E-05	4.89E-03	5.00E-03	2.06E-05
602	572739.2	4148876	0.05097	4.40E-02	1.53E-04	6.65E-02	6.38E-02	2.64E-04	1.18E-02	1.15E-02	4.87E-05	4.94E-03	5.06E-03	2.09E-05
603	572751.9	4148888	0.05081	4.39E-02	1.52E-04	6.63E-02	6.36E-02	2.63E-04	1.17E-02	1.14E-02	4.85E-05	4.93E-03	5.04E-03	2.08E-05
604	572764.5	4148899	0.04997	4.32E-02	1.50E-04	6.52E-02	6.25E-02	2.59E-04	1.15E-02	1.12E-02	4.77E-05	4.85E-03	4.96E-03	2.05E-05
605	572777.1	4148911	0.04856	4.19E-02	1.46E-04	6.34E-02	6.07E-02	2.52E-04	1.12E-02	1.09E-02	4.64E-05	4.71E-03	4.82E-03	1.99E-05
606	572789.8	4148923	0.0468	4.04E-02	1.40E-04	6.11E-02	5.85E-02	2.43E-04	1.08E-02	1.05E-02	4.47E-05	4.54E-03	4.64E-03	1.92E-05
607	572802.4	4148935	0.04494	3.88E-02	1.35E-04	5.87E-02	5.62E-02	2.33E-04	1.04E-02	1.01E-02	4.29E-05	4.36E-03	4.46E-03	1.84E-05
608	572815	4148947	0.04311	3.72E-02	1.29E-04	5.63E-02	5.39E-02	2.23E-04	9.94E-03	9.70E-03	4.12E-05	4.18E-03	4.28E-03	1.76E-05
609	572287.6	4149264	0.1576	1.36E-01	4.73E-04	2.06E-01	1.97E-01	8.17E-04	3.63E-02	3.55E-02	1.51E-04	1.53E-02	1.56E-02	6.45E-05
610	572278.4	4149268	0.1296	1.12E-01	3.89E-04	1.69E-01	1.62E-01	6.72E-04	2.99E-02	2.92E-02	1.24E-04	1.26E-02	1.29E-02	5.30E-05
611	572246.3	4149221	0.04109	3.55E-02	1.23E-04	5.36E-02	5.14E-02	2.13E-04	9.47E-03	9.25E-03	3.92E-05	3.99E-03	4.08E-03	1.68E-05
612	572250.2	4149230	0.04633	4.00E-02	1.39E-04	6.05E-02	5.80E-02	2.40E-04	1.07E-02	1.04E-02	4.42E-05	4.49E-03	4.60E-03	1.90E-05
613	572254	4149238	0.05432	4.69E-02	1.63E-04	7.09E-02	6.80E-02	2.82E-04	1.25E-02	1.22E-02	5.19E-05	5.27E-03	5.39E-03	2.22E-05
614	572257.8	4149247	0.0654	5.65E-02	1.96E-04	8.54E-02	8.18E-02	3.39E-04	1.51E-02	1.47E-02	6.25E-05	6.34E-03	6.49E-03	2.68E-05
615	572261.7	4149255	0.07906	6.83E-02	2.37E-04	1.03E-01	9.89E-02	4.10E-04	1.82E-02	1.78E-02	7.55E-05	7.67E-03	7.84E-03	3.24E-05
616	572265.5	4149264	0.09381	8.10E-02	2.82E-04	1.22E-01	1.17E-01	4.86E-04	2.16E-02	2.11E-02	8.96E-05	9.10E-03	9.30E-03	3.84E-05
617	572269.3	4149272	0.1076	9.29E-02	3.23E-04	1.40E-01	1.35E-01	5.58E-04	2.48E-02	2.42E-02	1.03E-04	1.04E-02	1.07E-02	4.40E-05
618	572233.1	4149208	0.0323	2.79E-02	9.69E-05	4.22E-02	4.04E-02	1.67E-04	7.45E-03	7.27E-03	3.08E-05	3.13E-03	3.20E-03	1.32E-05
619	572232.6	4149191	0.03266	2.82E-02	9.80E-05	4.26E-02	4.09E-02	1.69E-04	7.53E-03	7.35E-03	3.12E-05	3.17E-03	3.24E-03	1.34E-05
620	572237.2	4149225	0.03528	3.05E-02	1.06E-04	4.61E-02	4.41E-02	1.83E-04	8.13E-03	7.94E-03	3.37E-05	3.42E-03	3.50E-03	1.44E-05
621	572241	4149234	0.03962	3.42E-02	1.19E-04	5.17E-02	4.96E-02	2.05E-04	9.13E-03	8.92E-03	3.78E-05	3.84E-03	3.93E-03	1.62E-05
622	572244.9	4149242	0.04607	3.98E-02	1.38E-04	6.01E-02	5.76E-02	2.39E-04	1.06E-02	1.04E-02	4.40E-05	4.47E-03	4.57E-03	1.89E-05
623	572248.7	4149251	0.05494	4.74E-02	1.65E-04	7.17E-02	6.87E-02	2.85E-04	1.27E-02	1.24E-02	5.25E-05	5.33E-03	5.45E-03	2.25E-05
624	572252.6	4149259	0.06595	5.70E-02	1.98E-04	8.61E-02	8.25E-02	3.42E-04	1.52E-02	1.48E-02	6.30E-05	6.40E-03	6.54E-03	2.70E-05
625	572256.4	4149268	0.07814	6.75E-02	2.35E-04	1.02E-01	9.78E-02	4.05E-04	1.80E-02	1.76E-02	7.46E-05	7.58E-03	7.75E-03	3.20E-05
626	572260.2	4149276	0.09007	7.78E-02	2.70E-04	1.18E-01	1.13E-01	4.67E-04	2.08E-02	2.03E-02	8.60E-05	8.74E-03	8.93E-03	3.69E-05
627	572224	4149212	0.028	2.42E-02	8.40E-05	3.66E-02	3.50E-02	1.45E-04	6.46E-03	6.30E-03	2.67E-05	2.72E-03	2.78E-03	1.15E-05
628	572223.5	4149196	0.02824	2.44E-02	8.48E-05	3.69E-02	3.53E-02	1.46E-04	6.51E-03	6.36E-03	2.70E-05	2.74E-03	2.80E-03	1.16E-05
629	572228.1	4149229	0.03067	2.65E-02	9.21E-05	4.00E-02	3.84E-02	1.59E-04	7.07E-03	6.90E-03	2.93E-05	2.97E-03	3.04E-03	1.26E-05
630	572231.9	4149238	0.03432	2.96E-02	1.03E-04	4.48E-02	4.29E-02	1.78E-04	7.91E-03	7.73E-03	3.28E-05	3.33E-03	3.40E-03	1.40E-05
631	572235.8	4149246	0.03961	3.42E-02	1.19E-04	5.17E-02	4.96E-02	2.05E-04	9.13E-03	8.92E-03	3.78E-05	3.84E-03	3.93E-03	1.62E-05
632	572239.6	4149255	0.0468	4.04E-02	1.40E-04	6.11E-02	5.85E-02	2.43E-04	1.08E-02	1.05E-02	4.47E-05	4.54E-03	4.64E-03	1.92E-05
633	572243.4	4149263	0.05579	4.82E-02	1.67E-04	7.28E-02	6.98E-02	2.89E-04	1.29E-02	1.26E-02	5.33E-05	5.41E-03	5.53E-03	2.28E-05
634	572247.3	4149272	0.0659	5.69E-02	1.98E-04	8.60E-02	8.24E-02	3.42E-04	1.52E-02	1.48E-02	6.29E-05	6.39E-03	6.54E-03	2.70E-05
635	572251.1	4149280	0.07613	6.57E-02	2.28E-04	9.94E-02	9.52E-02	3.95E-04	1.76E-02	1.71E-02	7.27E-05	7.38E-03	7.55E-03	3.12E-05
636	572214.9	4149216	0.02453	2.12E-02	7.36E-05	3.20E-02	3.07E-02	1.27E-04	5.66E-03	5.52E-03	2.34E-05	2.38E-03	2.43E-03	1.00E-05
637	572214.6	4149207	0.02455	2.12E-02	7.37E-05	3.21E-02	3.07E-02	1.27E-04	5.66E-03	5.53E-03	2.34E-05	2.38E-03	2.43E-03	1.00E-05
638	572214.3	4149197	0.02471	2.13E-02	7.42E-05	3.23E-02	3.09E-02	1.28E-04	5.70E-03	5.56E-03	2.36E-05	2.40E-03	2.45E-03	1.01E-05
639	572215.2	4149225	0.02483	2.14E-02	7.45E-05	3.24E-02	3.11E-02	1.29E-04	5.72E-03	5.59E-03	2.37E-05	2.41E-03	2.46E-03	1.02E-05
640	572219	4149234	0.02696	2.33E-02	8.09E-05	3.52E-02	3.37E-02	1.40E-04	6.22E-03	6.07E-03	2.57E-05	2.62E-03	2.67E-03	1.10E-05
641	572222.8	4149242	0.03005	2.60E-02	9.02E-05	3.92E-02	3.76E-02	1.56E-04	6.93E-03	6.76E-03	2.87E-05	2.91E-03	2.98E-03	1.23E-05
642	572226.7	4149250	0.03445	2.98E-02	1.03E-04	4.50E-02	4.31E-02	1.79E-04	7.94E-03	7.75E-03	3.29E-05	3.34E-03	3.42E-03	1.41E-05
643	572230.5	4149259	0.04037	3.49E-02	1.21E-04	5.27E-02	5.05E-02	2.09E-04	9.31E-03	9.09E-03	3.86E-05	3.92E-03	4.00E-03	1.65E-05
644	572234.3	4149267	0.04777	4.13E-02	1.43E-04	6.24E-02	5.98E-02	2.48E-04	1.10E-02	1.08E-02	4.56E-05	4.63E-03	4.74E-03	1.96E-05
645	572238.2	4149276	0.05621	4.85E-02	1.69E-04	7.34E-02	7.03E-02	2.91E-04	1.30E-02	1.27E-02	5.37E-05	5.45E-03	5.57E-03	2.30E-05
646	572242	4149284	0.06496	5.61E-02	1.95E-04	8.48E-02	8.13E-02	3.37E-04	1.50E-02	1.46E-02	6.20E-05	6.30E-03	6.44E-03	2.66E-05
647	572205.8	4149220	0.0217	1.87E-02	6.51E-05	2.83E-02	2.71E-02	1.12E-04	5.00E-03	4.88E-03	2.07E-05	2.10E-03	2.15E-03	8.88E-06
648	572205.5	4149211	0.02164	1.87E-02	6.49E-05	2.83E-02	2.71E-02	1.12E-04	4.99E-03	4.87E-03	2.07E-05	2.10E-03	2.15E-03	8.86E-06
649	572205.2	4149202	0.02176	1.88E-02	6.53E-05	2.84E-02	2.72E-02	1.13E-04	5.02E-03	4.90E-03	2.08E-05	2.11E-03	2.16E-03	8.91E-06
650	572204.9	4149193	0.02194	1.89E-02	6.58E-05	2.86E-02	2.74E-02	1.14E-04	5.06E-03	4.94E-03	2.10E-05	2.13E-03	2.18E-03	8.98E-06
651	572206	4149229	0.02205	1.90E-02	6.62E-05	2.88E-02	2.76E-02	1.14E-04	5.08E-03	4.96E-03	2.11E-05	2.14E-03	2.19E-03	9.02E-06
652	572209.9	4149238	0.02391	2.06E-02	7.18E-05	3.12E-02	2.99E-02	1.24E-04	5.51E-03	5.38E-03	2.28E-05	2.32E-03	2.37E-03	9.79E-06
653	572213.7	4149246	0.02656	2.29E-02	7.97E-05	3.47E-02	3.32E-02	1.38E-04	6.12E-03	5.98E-03	2.54E-05	2.58E-03	2.63E-03	1.09E-05
654	572217.5	4149255	0.03025	2.61E-02	9.08E-05	3.95E-02	3.78E-02	1.57E-04	6.97E-03	6.81E-03	2.89E-05	2.93E-03	3.00E-03	1.24E-05
655	572221.4	4149263	0.03518	3.04E-02	1.06E-04	4.59E-02	4.40E-02	1.82E-04	8.11E-03	7.92E-03	3.36E-05	3.41E-03	3.49E-03	1.44E-05
656	572225.2	4149272	0.04134	3.57E-02	1.24E-04	5.40E-02	5.17E-02	2.14E-04	9.53E-03	9.31E-03	3.95E-05	4.01E-03	4.10E-03	1.69E-05
657	572229.1	4149280	0.04844	4.18E-02	1.45E-04	6.32E-02	6.06E-02	2.51E-04	1.12E-02	1.09E-02	4.63E-05	4.70E-03	4.80E-03	1.98E-05
658	572232.9	4149289	0.05593	4.83E-02	1.68E-04	7.30E-02	7.00E-02	2.90E-04	1.29E-02	1.26E-02	5.34E-05	5.43E-03	5.55E-03	2.29E-05
659	572196.7	4149224	0.01937	1.67E-02	5.81E-05	2.53E-02	2.42E-02	1.00E-04	4.47E-03	4.36E-03	1.85E-05	1.88E-03	1.92E-03	7.93E-06
660	572196.1	4149206	0.0193	1.67E-02	5.79E-05	2.52E-02	2.41E-02	1.00E-04	4.45E-03	4.34E-03	1.84E-05	1.87E-03	1.91E-03	7.90E-06
661	572195.8	4149197	0.01944	1.68E-02	5.83E-05	2.54E-02	2.43E-02	1.01E-04	4.48E-03	4.38E-03	1.86E-05	1.89E-03	1.93E-03	7.96E-06

662	572196.9	4149233	0.01974	1.70E-02	5.92E-05	2.58E-02	2.47E-02	1.02E-04	4.55E-03	4.44E-03	1.89E-05	1.91E-03	1.96E-03	8.08E-06
663	572200.8	4149242	0.02138	1.85E-02	6.42E-05	2.79E-02	2.67E-02	1.11E-04	4.93E-03	4.81E-03	2.04E-05	2.07E-03	2.12E-03	8.75E-06
664	572204.6	4149250	0.02366	2.04E-02	7.10E-05	3.09E-02	2.96E-02	1.23E-04	5.46E-03	5.33E-03	2.26E-05	2.29E-03	2.35E-03	9.68E-06
665	572208.4	4149259	0.0268	2.31E-02	8.04E-05	3.50E-02	3.35E-02	1.39E-04	6.18E-03	6.03E-03	2.56E-05	2.60E-03	2.66E-03	1.10E-05
666	572212.3	4149267	0.03094	2.67E-02	9.29E-05	4.04E-02	3.87E-02	1.60E-04	7.13E-03	6.96E-03	2.95E-05	3.00E-03	3.07E-03	1.27E-05
667	572216.1	4149276	0.03611	3.12E-02	1.08E-04	4.71E-02	4.52E-02	1.87E-04	8.33E-03	8.13E-03	3.45E-05	3.50E-03	3.58E-03	1.48E-05
668	572219.9	4149284	0.04212	3.64E-02	1.26E-04	5.50E-02	5.27E-02	2.18E-04	9.71E-03	9.48E-03	4.02E-05	4.09E-03	4.18E-03	1.72E-05
669	572223.8	4149293	0.04856	4.19E-02	1.46E-04	6.34E-02	6.07E-02	2.52E-04	1.12E-02	1.09E-02	4.64E-05	4.71E-03	4.82E-03	1.99E-05
670	572187	4149211	0.01725	1.49E-02	5.18E-05	2.25E-02	2.16E-02	8.94E-05	3.98E-03	3.88E-03	1.65E-05	1.67E-03	1.71E-03	7.06E-06
671	572207	4149280	0.03181	2.75E-02	9.55E-05	4.15E-02	3.98E-02	1.65E-04	7.33E-03	7.16E-03	3.04E-05	3.09E-03	3.15E-03	1.30E-05
672	572210.8	4149288	0.03693	3.19E-02	1.11E-04	4.82E-02	4.62E-02	1.91E-04	8.51E-03	8.31E-03	3.53E-05	3.58E-03	3.66E-03	1.51E-05
673	572214.7	4149297	0.04247	3.67E-02	1.27E-04	5.54E-02	5.31E-02	2.20E-04	9.79E-03	9.56E-03	4.06E-05	4.12E-03	4.21E-03	1.74E-05
674	572197.9	4149284	0.02824	2.44E-02	8.48E-05	3.69E-02	3.53E-02	1.46E-04	6.51E-03	6.36E-03	2.70E-05	2.74E-03	2.80E-03	1.16E-05
675	572201.7	4149292	0.03262	2.82E-02	9.79E-05	4.26E-02	4.08E-02	1.69E-04	7.52E-03	7.34E-03	3.12E-05	3.16E-03	3.24E-03	1.34E-05
676	572205.6	4149301	0.03742	3.23E-02	1.12E-04	4.89E-02	4.68E-02	1.94E-04	8.63E-03	8.42E-03	3.57E-05	3.63E-03	3.71E-03	1.53E-05
677	572188.8	4149288	0.02524	2.18E-02	7.58E-05	3.30E-02	3.16E-02	1.31E-04	5.82E-03	5.68E-03	2.41E-05	2.45E-03	2.50E-03	1.03E-05
678	572192.6	4149297	0.02901	2.51E-02	8.71E-05	3.79E-02	3.63E-02	1.50E-04	6.69E-03	6.53E-03	2.77E-05	2.81E-03	2.88E-03	1.19E-05
679	572196.4	4149305	0.03318	2.87E-02	9.96E-05	4.33E-02	4.15E-02	1.72E-04	7.65E-03	7.47E-03	3.17E-05	3.22E-03	3.29E-03	1.36E-05
680	572244.7	4149018	0.03206	2.77E-02	9.62E-05	4.19E-02	4.01E-02	1.66E-04	7.39E-03	7.22E-03	3.06E-05	3.11E-03	3.18E-03	1.31E-05
681	572179.7	4149292	0.02269	1.96E-02	6.81E-05	2.96E-02	2.84E-02	1.18E-04	5.23E-03	5.11E-03	2.17E-05	2.20E-03	2.25E-03	9.29E-06
682	572183.5	4149301	0.02596	2.24E-02	7.79E-05	3.39E-02	3.25E-02	1.35E-04	5.99E-03	5.84E-03	2.48E-05	2.52E-03	2.57E-03	1.06E-05
683	572187.3	4149309	0.0296	2.56E-02	8.88E-05	3.86E-02	3.70E-02	1.53E-04	6.82E-03	6.66E-03	2.83E-05	2.87E-03	2.94E-03	1.21E-05
684	572228.2	4149022	0.02594	2.24E-02	7.79E-05	3.39E-02	3.25E-02	1.34E-04	5.98E-03	5.84E-03	2.48E-05	2.52E-03	2.57E-03	1.06E-05
685	572234.4	4149015	0.02773	2.39E-02	8.32E-05	3.62E-02	3.47E-02	1.44E-04	6.39E-03	6.24E-03	2.65E-05	2.69E-03	2.75E-03	1.13E-05
686	572240.7	4149009	0.02957	2.55E-02	8.88E-05	3.86E-02	3.70E-02	1.53E-04	6.82E-03	6.66E-03	2.82E-05	2.87E-03	2.93E-03	1.21E-05
687	572170.6	4149296	0.02051	1.77E-02	6.16E-05	2.68E-02	2.57E-02	1.06E-04	4.73E-03	4.62E-03	1.96E-05	1.99E-03	2.03E-03	8.39E-06
688	572174.4	4149305	0.02337	2.02E-02	7.01E-05	3.05E-02	2.92E-02	1.21E-04	5.39E-03	5.26E-03	2.23E-05	2.27E-03	2.32E-03	9.56E-06
689	572178.2	4149313	0.02655	2.29E-02	7.97E-05	3.47E-02	3.32E-02	1.38E-04	6.12E-03	5.98E-03	2.54E-05	2.58E-03	2.63E-03	1.09E-05
690	572205.7	4149032	0.01979	1.71E-02	5.94E-05	2.58E-02	2.48E-02	1.03E-04	4.56E-03	4.45E-03	1.89E-05	1.92E-03	1.96E-03	8.10E-06
691	572211.9	4149026	0.02117	1.83E-02	6.35E-05	2.76E-02	2.65E-02	1.10E-04	4.88E-03	4.77E-03	2.02E-05	2.05E-03	2.10E-03	8.66E-06
692	572224.3	4149013	0.02415	2.09E-02	7.25E-05	3.15E-02	3.02E-02	1.25E-04	5.57E-03	5.44E-03	2.31E-05	2.34E-03	2.40E-03	9.88E-06
693	572230.5	4149006	0.02573	2.22E-02	7.72E-05	3.36E-02	3.22E-02	1.33E-04	5.93E-03	5.79E-03	2.46E-05	2.50E-03	2.55E-03	1.05E-05
694	572161.4	4149300	0.01863	1.61E-02	5.59E-05	2.43E-02	2.33E-02	9.66E-05	4.30E-03	4.19E-03	1.78E-05	1.81E-03	1.85E-03	7.62E-06
695	572165.3	4149309	0.02113	1.82E-02	6.34E-05	2.76E-02	2.64E-02	1.10E-04	4.87E-03	4.76E-03	2.02E-05	2.05E-03	2.10E-03	8.65E-06
696	572169.1	4149317	0.02394	2.07E-02	7.19E-05	3.13E-02	2.99E-02	1.24E-04	5.52E-03	5.39E-03	2.29E-05	2.32E-03	2.37E-03	9.80E-06
697	572195.8	4149029	0.01749	1.51E-02	5.25E-05	2.28E-02	2.19E-02	9.07E-05	4.03E-03	3.94E-03	1.67E-05	1.70E-03	1.73E-03	7.16E-06
698	572208.1	4149016	0.01989	1.72E-02	5.97E-05	2.60E-02	2.49E-02	1.03E-04	4.59E-03	4.48E-03	1.90E-05	1.93E-03	1.97E-03	8.14E-06
699	572220.4	4149003	0.02252	1.94E-02	6.76E-05	2.94E-02	2.82E-02	1.17E-04	5.19E-03	5.07E-03	2.15E-05	2.18E-03	2.23E-03	9.22E-06
700	572148.5	4149296	0.01513	1.31E-02	4.54E-05	1.98E-02	1.89E-02	7.84E-05	3.49E-03	3.41E-03	1.44E-05	1.47E-03	1.50E-03	6.19E-06
701	572152.3	4149305	0.01701	1.47E-02	5.11E-05	2.22E-02	2.13E-02	8.82E-05	3.92E-03	3.83E-03	1.62E-05	1.65E-03	1.69E-03	6.96E-06
702	572156.2	4149313	0.0192	1.66E-02	5.76E-05	2.51E-02	2.40E-02	9.95E-05	4.43E-03	4.32E-03	1.83E-05	1.86E-03	1.90E-03	7.86E-06
703	572160	4149321	0.02169	1.87E-02	6.51E-05	2.83E-02	2.71E-02	1.12E-04	5.00E-03	4.88E-03	2.07E-05	2.10E-03	2.15E-03	8.88E-06
704	572173.7	4149039	0.01369	1.18E-02	4.11E-05	1.79E-02	1.71E-02	7.10E-05	3.16E-03	3.08E-03	1.31E-05	1.33E-03	1.36E-03	5.60E-06
705	572185.9	4149026	0.01556	1.34E-02	4.67E-05	2.03E-02	1.95E-02	8.07E-05	3.59E-03	3.50E-03	1.49E-05	1.51E-03	1.54E-03	6.37E-06
706	572198.1	4149014	0.0176	1.52E-02	5.28E-05	2.30E-02	2.20E-02	9.12E-05	4.06E-03	3.96E-03	1.68E-05	1.71E-03	1.75E-03	7.20E-06
707	572210.3	4149001	0.01983	1.71E-02	5.95E-05	2.59E-02	2.48E-02	1.03E-04	4.57E-03	4.46E-03	1.89E-05	1.92E-03	1.97E-03	8.12E-06
708	572222.5	4148988	0.02228	1.92E-02	6.69E-05	2.91E-02	2.79E-02	1.16E-04	5.14E-03	5.02E-03	2.13E-05	2.16E-03	2.21E-03	9.12E-06
709	572147.1	4149317	0.01753	1.51E-02	5.26E-05	2.29E-02	2.19E-02	9.09E-05	4.04E-03	3.95E-03	1.67E-05	1.70E-03	1.74E-03	7.17E-06
710	572154.1	4149047	0.01113	9.61E-03	3.34E-05	1.45E-02	1.39E-02	5.77E-05	2.57E-03	2.51E-03	1.06E-05	1.08E-03	1.10E-03	4.56E-06
711	572160.5	4149040	0.01187	1.03E-02	3.56E-05	1.55E-02	1.48E-02	6.15E-05	2.74E-03	2.67E-03	1.13E-05	1.15E-03	1.18E-03	4.86E-06
712	572166.9	4149033	0.01267	1.09E-02	3.80E-05	1.65E-02	1.59E-02	6.57E-05	2.92E-03	2.85E-03	1.21E-05	1.23E-03	1.26E-03	5.19E-06
713	572173.2	4149026	0.01353	1.17E-02	4.06E-05	1.77E-02	1.69E-02	7.01E-05	3.12E-03	3.05E-03	1.29E-05	1.31E-03	1.34E-03	5.54E-06
714	572179.6	4149020	0.01442	1.25E-02	4.33E-05	1.88E-02	1.80E-02	7.48E-05	3.32E-03	3.25E-03	1.38E-05	1.40E-03	1.43E-03	5.90E-06
715	572186	4149013	0.01535	1.33E-02	4.61E-05	2.00E-02	1.92E-02	7.96E-05	3.54E-03	3.46E-03	1.47E-05	1.49E-03	1.52E-03	6.28E-06
716	572192.4	4149006	0.01631	1.41E-02	4.90E-05	2.13E-02	2.04E-02	8.46E-05	3.76E-03	3.67E-03	1.56E-05	1.58E-03	1.62E-03	6.68E-06
717	572198.8	4148999	0.01732	1.50E-02	5.20E-05	2.26E-02	2.17E-02	8.98E-05	3.99E-03	3.90E-03	1.65E-05	1.68E-03	1.72E-03	7.09E-06
718	572205.1	4148993	0.01839	1.59E-02	5.52E-05	2.40E-02	2.30E-02	9.53E-05	4.24E-03	4.14E-03	1.76E-05	1.78E-03	1.82E-03	7.53E-06
719	572211.5	4148986	0.01951	1.68E-02	5.86E-05	2.55E-02	2.44E-02	1.01E-04	4.50E-03	4.39E-03	1.86E-05	1.89E-03	1.94E-03	7.98E-06
720	572217.9	4148979	0.02069	1.79E-02	6.21E-05	2.70E-02	2.59E-02	1.07E-04	4.77E-03	4.66E-03	1.98E-05	2.01E-03	2.05E-03	8.47E-06
721	572224.3	4148972	0.02189	1.89E-02	6.57E-05	2.86E-02	2.74E-02	1.13E-04	5.05E-03	4.93E-03	2.09E-05	2.12E-03	2.17E-03	8.96E-06
722	572138	4149050	0.00952	8.22E-03	2.86E-05	1.24E-02	1.19E-02	4.94E-05	2.19E-03	2.14E-03	9.09E-06	9.23E-04	9.44E-04	3.90E-06
723	572144.4	4149044	0.0101	8.72E-03	3.03E-05	1.32E-02	1.26E-02	5.24E-05	2.33E-03	2.27E-03	9.65E-06	9.80E-04	1.00E-03	4.13E-06
724	572150.7	4149037	0.01073	9.27E-03	3.22E-05	1.40E-02	1.34E-02	5.56E-05	2.47E-03	2.42E-03	1.02E-05	1.04E-03	1.06E-03	4.39E-06
725	572157	4149030	0.01142	9.86E-03	3.43E-05	1.49E-02	1.43E-02	5.92E-05	2.63E-03	2.57E-03	1.09E-05	1.11E-03	1.13E-03	4.67E-06
726	572163.3	4149023	0.01216	1.05E-02	3.65E-05	1.59E-02	1.52E-02	6.30E-05	2.80E-03	2.74E-03	1.16E-05	1.18E-03	1.21E-03	4.98E-06
727	572169.7	4149017	0.01293	1.12E-02	3.88E-05	1.69E-02	1.62E-02	6.70E-05	2.98E-03	2.91E-03	1.23E-05	1.25E-03	1.28E-03	5.29E-06
728	572176	4149010	0.01374	1.19E-02	4.12E-05	1.79E-02	1.72E-02	7.12E-05	3.17E-03	3.09E-03	1.31E-05	1.33E-03	1.36E-03	5.62E-06
729	572182.3	4149003	0.01457	1.26E-02	4.37E-05	1.90E-02	1.82E-02	7.55E-05	3.36E-03	3.28E-03	1.39E-05	1.41E-03	1.45E-03	5.96E-06
730	572188.6	4148997	0.01544	1.33E-02	4.63E-05	2.02E-02	1.93E-02	8.00E-05	3.56E-03	3.48E-03	1.47E-05	1.50E-03	1.53E-03	6.32E-06
731	572194.9	4148990	0.01635	1.41E-02	4.91E-05	2.13E-02	2.05E-02	8.48E-05	3.77E-03	3.68E-03	1.56E-05	1.59E-03	1.62E-03	6.69E-06
732	572201.3	4148983	0.01732	1.50E-02	5.20E-05	2.26E-02	2.17E-02	8.98E-05	3.99E-03	3.90E-03	1.65E-05	1.68E-03	1.72E-03	7.09E-06
733	572207.6	4148977	0.01834	1.58E-02	5.50E-05	2.39E-02	2.29E-02	9.51E-05	4.23E-03	4.13E-03	1.75E-05	1.78E-03	1.82E-03	7.51E-06
734	572213.9	4148970	0.01938	1.67E-02	5.82E-05	2.53E-02	2.42E-02	1.00E-04	4.47E-03	4.36E-03	1.85E-05	1.88E-03	1.92E-03	7.93E-06
735	572220.2	4148963	0.02045	1.77E-02	6.14E-05	2.67E-02	2.56E-02	1.06E-04	4.71E-03	4.60E-03	1.95E-05	1.98E-03	2.03E-03	8.37E-06
736	572115.9	4149060	0.007872	6.80E-03	2.36E-05	1.03E-02	9.85E-03	4.08E-05	1.81E-03	1.77E-03	7.52E-06	7.64E-04	7.81E-04	3.22E-06
737	572122.1	4149054	0.008271	7.14E-03	2.48E-05	1.08E-02	1.03E-02	4.29E-05	1.91E-03	1.86E-03	7.90E-06	8.02E-04	8.20E-04	3.39E-06
738	572128.4	4149047	0.008717	7.53E-03	2.62E-05	1.14E-02	1.09E-02	4.52E-05	2.01E-03	1.96E-03	8.32E-06	8.46E-04	8.65E-04	3.57E-06
739	572134.7	4149040	0.00921	7.95E-03	2.76E-05	1.20E-02	1.15E-02	4.77E-05	2.12E-03	2.07E-03	8.80E-06	8.93E-04	9.13E-04	3.77E-06
740	572140.9	4149034	0.009755	8.42E-03	2.93E-05	1.27E-02	1.22E-02	5.06E-05	2.25E-03	2.20E-03	9.32E-06	9.46E-04	9.68E-04	3.99E-06
741	572147.2	4149027	0.01035	8.94E-03	3.11E-05	1.35E-02	1.29E-02	5.37E-05	2.39E-03	2.33E-03	9.88E-06	1.00E-03	1.03E-03	4.24E-06
742	572153.5	4149020	0.01098	9.48E-03	3.30E-05	1.43E-02	1.37E-02	5.69E-05	2.53E-03	2.47E-03	1.05E-05	1.07E-03	1.09E-03	4.49E-06
743	572159.8	4149014	0.01166	1.01E-02	3.50E-05	1.52E-02	1.46E-02	6.04E-05	2.69E-03	2.62E-03	1.11E-05	1.13E-03	1.16E-03	4.77E-06
744	572166	4149007	0.01236	1.07E-02	3.71E-05	1.61E-02	1.55E-02	6.41E-05	2.85E-03	2.78E-03	1.18E-05	1.20E-03	1.23E-03	5.06E-06

745	572172.3	4149000	0.01309	1.13E-02	3.93E-05		1.71E-02	1.64E-02	6.79E-05		3.02E-03	2.95E-03	1.25E-05		1.27E-03	1.30E-03	5.36E-06
746	572178.6	4148994	0.01384	1.20E-02	4.15E-05		1.81E-02	1.73E-02	7.17E-05		3.19E-03	3.12E-03	1.32E-05		1.34E-03	1.37E-03	5.66E-06
747	572184.8	4148987	0.01462	1.26E-02	4.39E-05		1.91E-02	1.83E-02	7.58E-05		3.37E-03	3.29E-03	1.40E-05		1.42E-03	1.45E-03	5.98E-06
748	572191.1	4148981	0.01546	1.34E-02	4.64E-05		2.02E-02	1.93E-02	8.01E-05		3.56E-03	3.48E-03	1.48E-05		1.50E-03	1.53E-03	6.33E-06
749	572197.4	4148974	0.01634	1.41E-02	4.90E-05		2.13E-02	2.04E-02	8.47E-05		3.77E-03	3.68E-03	1.56E-05		1.58E-03	1.62E-03	6.69E-06
750	572203.7	4148967	0.01726	1.49E-02	5.18E-05		2.25E-02	2.16E-02	8.95E-05		3.98E-03	3.89E-03	1.65E-05		1.67E-03	1.71E-03	7.06E-06
751	572209.9	4148961	0.0182	1.57E-02	5.46E-05		2.38E-02	2.28E-02	9.44E-05		4.20E-03	4.10E-03	1.74E-05		1.77E-03	1.81E-03	7.45E-06
752	572216.2	4148954	0.01916	1.65E-02	5.75E-05		2.50E-02	2.40E-02	9.93E-05		4.42E-03	4.31E-03	1.83E-05		1.86E-03	1.90E-03	7.84E-06
753	572106.3	4149057	0.007284	6.29E-03	2.19E-05		9.51E-03	9.11E-03	3.78E-05		1.68E-03	1.64E-03	6.96E-06		7.07E-04	7.22E-04	2.98E-06
754	572112.5	4149050	0.007632	6.59E-03	2.29E-05		9.96E-03	9.55E-03	3.96E-05		1.76E-03	1.72E-03	7.29E-06		7.40E-04	7.57E-04	3.12E-06
755	572125	4149037	0.00844	7.29E-03	2.53E-05		1.10E-02	1.06E-02	4.38E-05		1.95E-03	1.90E-03	8.06E-06		8.19E-04	8.37E-04	3.45E-06
756	572131.2	4149031	0.008912	7.70E-03	2.67E-05		1.16E-02	1.11E-02	4.62E-05		2.05E-03	2.01E-03	8.51E-06		8.64E-04	8.84E-04	3.65E-06
757	572143.7	4149017	0.009981	8.62E-03	3.00E-05		1.30E-02	1.25E-02	5.17E-05		2.30E-03	2.25E-03	9.53E-06		9.68E-04	9.90E-04	4.08E-06
758	572156.1	4149004	0.01119	9.66E-03	3.36E-05		1.46E-02	1.40E-02	5.80E-05		2.58E-03	2.52E-03	1.07E-05		1.09E-03	1.11E-03	4.58E-06
759	572162.4	4148998	0.01182	1.02E-02	3.55E-05		1.54E-02	1.48E-02	6.13E-05		2.73E-03	2.66E-03	1.13E-05		1.15E-03	1.17E-03	4.84E-06
760	572174.8	4148984	0.01315	1.14E-02	3.95E-05		1.72E-02	1.65E-02	6.82E-05		3.03E-03	2.96E-03	1.26E-05		1.28E-03	1.30E-03	5.38E-06
761	572181	4148978	0.01388	1.20E-02	4.17E-05		1.81E-02	1.74E-02	7.20E-05		3.20E-03	3.12E-03	1.33E-05		1.35E-03	1.38E-03	5.68E-06
762	572193.5	4148965	0.01544	1.33E-02	4.63E-05		2.02E-02	1.93E-02	8.00E-05		3.56E-03	3.48E-03	1.47E-05		1.50E-03	1.53E-03	6.32E-06
763	572205.9	4148951	0.01712	1.48E-02	5.14E-05		2.24E-02	2.14E-02	8.88E-05		3.95E-03	3.85E-03	1.63E-05		1.66E-03	1.70E-03	7.01E-06
764	572090.6	4149060	0.006477	5.59E-03	1.94E-05		8.46E-03	8.10E-03	3.36E-05		1.49E-03	1.46E-03	6.19E-06		6.28E-04	6.42E-04	2.65E-06
765	572103	4149047	0.007062	6.10E-03	2.12E-05		9.22E-03	8.83E-03	3.66E-05		1.63E-03	1.59E-03	6.74E-06		6.85E-04	7.00E-04	2.89E-06
766	572115.4	4149034	0.007763	6.70E-03	2.33E-05		1.01E-02	9.71E-03	4.02E-05		1.79E-03	1.75E-03	7.41E-06		7.53E-04	7.70E-04	3.18E-06
767	572121.5	4149027	0.008172	7.06E-03	2.45E-05		1.07E-02	1.02E-02	4.24E-05		1.88E-03	1.84E-03	7.80E-06		7.93E-04	8.11E-04	3.34E-06
768	572133.9	4149014	0.00911	7.87E-03	2.73E-05		1.19E-02	1.14E-02	4.72E-05		2.10E-03	2.05E-03	8.70E-06		8.84E-04	9.04E-04	3.73E-06
769	572146.3	4149001	0.01017	8.78E-03	3.05E-05		1.33E-02	1.27E-02	5.27E-05		2.34E-03	2.29E-03	9.71E-06		9.86E-04	1.01E-03	4.16E-06
770	572152.5	4148995	0.01073	9.27E-03	3.22E-05		1.40E-02	1.34E-02	5.56E-05		2.47E-03	2.42E-03	1.02E-05		1.04E-03	1.06E-03	4.39E-06
771	572164.8	4148981	0.01189	1.03E-02	3.57E-05		1.55E-02	1.49E-02	6.16E-05		2.74E-03	2.68E-03	1.14E-05		1.15E-03	1.18E-03	4.87E-06
772	572177.2	4148968	0.01317	1.14E-02	3.95E-05		1.72E-02	1.65E-02	6.83E-05		3.04E-03	2.96E-03	1.26E-05		1.28E-03	1.31E-03	5.39E-06
773	572183.4	4148962	0.01387	1.20E-02	4.16E-05		1.81E-02	1.74E-02	7.19E-05		3.20E-03	3.12E-03	1.32E-05		1.35E-03	1.38E-03	5.68E-06
774	572195.8	4148949	0.01536	1.33E-02	4.61E-05		2.01E-02	1.92E-02	7.96E-05		3.54E-03	3.46E-03	1.47E-05		1.49E-03	1.52E-03	6.29E-06
775	572068.9	4149070	0.005598	4.83E-03	1.68E-05		7.31E-03	7.00E-03	2.90E-05		1.29E-03	1.26E-03	5.35E-06		5.43E-04	5.55E-04	2.29E-06
776	572081.2	4149057	0.006036	5.21E-03	1.81E-05		7.88E-03	7.55E-03	3.13E-05		1.39E-03	1.36E-03	5.76E-06		5.85E-04	5.99E-04	2.47E-06
777	572093.4	4149044	0.006554	5.66E-03	1.97E-05		8.56E-03	8.20E-03	3.40E-05		1.51E-03	1.48E-03	6.26E-06		6.36E-04	6.50E-04	2.68E-06
778	572105.7	4149031	0.007164	6.19E-03	2.15E-05		9.35E-03	8.96E-03	3.71E-05		1.65E-03	1.61E-03	6.84E-06		6.95E-04	7.11E-04	2.93E-06
779	572111.9	4149024	0.007522	6.50E-03	2.26E-05		9.82E-03	9.41E-03	3.90E-05		1.73E-03	1.69E-03	7.18E-06		7.30E-04	7.46E-04	3.08E-06
780	572124.2	4149011	0.008348	7.21E-03	2.51E-05		1.09E-02	1.04E-02	4.33E-05		1.92E-03	1.88E-03	7.97E-06		8.10E-04	8.28E-04	3.42E-06
781	572136.5	4148998	0.009288	8.02E-03	2.79E-05		1.21E-02	1.16E-02	4.82E-05		2.14E-03	2.09E-03	8.87E-06		9.01E-04	9.21E-04	3.80E-06
782	572148.8	4148985	0.01028	8.88E-03	3.09E-05		1.34E-02	1.29E-02	5.33E-05		2.37E-03	2.31E-03	9.82E-06		9.97E-04	1.02E-03	4.21E-06
783	572161.1	4148972	0.01135	9.80E-03	3.41E-05		1.48E-02	1.42E-02	5.88E-05		2.62E-03	2.55E-03	1.08E-05		1.10E-03	1.13E-03	4.65E-06
784	572173.4	4148959	0.01253	1.08E-02	3.76E-05		1.64E-02	1.57E-02	6.50E-05		2.89E-03	2.82E-03	1.20E-05		1.22E-03	1.24E-03	5.13E-06
785	572059.7	4149066	0.005255	4.54E-03	1.58E-05		6.86E-03	6.57E-03	2.72E-05		1.21E-03	1.18E-03	5.02E-06		5.10E-04	5.21E-04	2.15E-06
786	572066.1	4149059	0.00545	4.71E-03	1.64E-05		7.12E-03	6.82E-03	2.83E-05		1.26E-03	1.23E-03	5.20E-06		5.29E-04	5.41E-04	2.23E-06
787	572072.5	4149052	0.005665	4.89E-03	1.70E-05		7.40E-03	7.09E-03	2.94E-05		1.31E-03	1.28E-03	5.41E-06		5.49E-04	5.62E-04	2.32E-06
788	572078.8	4149046	0.005897	5.09E-03	1.77E-05		7.70E-03	7.38E-03	3.06E-05		1.36E-03	1.33E-03	5.63E-06		5.72E-04	5.85E-04	2.41E-06
789	572085.2	4149039	0.006148	5.31E-03	1.85E-05		8.03E-03	7.69E-03	3.19E-05		1.42E-03	1.38E-03	5.87E-06		5.96E-04	6.10E-04	2.52E-06
790	572091.6	4149032	0.006423	5.55E-03	1.93E-05		8.39E-03	8.04E-03	3.33E-05		1.48E-03	1.45E-03	6.13E-06		6.23E-04	6.37E-04	2.63E-06
791	572097.9	4149025	0.006725	5.81E-03	2.02E-05		8.78E-03	8.41E-03	3.49E-05		1.55E-03	1.51E-03	6.42E-06		6.52E-04	6.67E-04	2.75E-06
792	572104.3	4149019	0.007061	6.10E-03	2.12E-05		9.22E-03	8.83E-03	3.66E-05		1.63E-03	1.59E-03	6.74E-06		6.85E-04	7.00E-04	2.89E-06
793	572110.7	4149012	0.007436	6.42E-03	2.23E-05		9.71E-03	9.30E-03	3.85E-05		1.71E-03	1.67E-03	7.10E-06		7.21E-04	7.38E-04	3.04E-06
794	572117	4149005	0.007844	6.77E-03	2.35E-05		1.02E-02	9.81E-03	4.07E-05		1.81E-03	1.77E-03	7.49E-06		7.61E-04	7.78E-04	3.21E-06
795	572123.4	4148998	0.008278	7.15E-03	2.48E-05		1.08E-02	1.04E-02	4.29E-05		1.91E-03	1.86E-03	7.91E-06		8.03E-04	8.21E-04	3.39E-06
796	572129.8	4148992	0.008727	7.54E-03	2.62E-05		1.14E-02	1.09E-02	4.52E-05		2.01E-03	1.96E-03	8.33E-06		8.47E-04	8.66E-04	3.57E-06
797	572136.1	4148985	0.009191	7.94E-03	2.76E-05		1.20E-02	1.15E-02	4.76E-05		2.12E-03	2.07E-03	8.78E-06		8.92E-04	9.12E-04	3.76E-06
798	572142.5	4148978	0.009664	8.35E-03	2.90E-05		1.26E-02	1.21E-02	5.01E-05		2.23E-03	2.18E-03	9.23E-06		9.37E-04	9.58E-04	3.96E-06
799	572148.9	4148972	0.01015	8.77E-03	3.05E-05		1.33E-02	1.27E-02	5.26E-05		2.34E-03	2.28E-03	9.69E-06		9.85E-04	1.01E-03	4.15E-06
800	572155.2	4148965	0.01066	9.21E-03	3.20E-05		1.39E-02	1.33E-02	5.53E-05		2.46E-03	2.40E-03	1.02E-05		1.03E-03	1.06E-03	4.36E-06
801	572161.6	4148958	0.01121	9.68E-03	3.36E-05		1.46E-02	1.40E-02	5.81E-05		2.58E-03	2.52E-03	1.07E-05		1.09E-03	1.11E-03	4.59E-06
802	572060.3	4149295	0.006401	5.53E-03	1.92E-05		8.36E-03	8.01E-03	3.32E-05		1.48E-03	1.44E-03	6.11E-06		6.21E-04	6.35E-04	2.62E-06
803	572064.1	4149304	0.006788	5.86E-03	2.04E-05		8.86E-03	8.49E-03	3.52E-05		1.57E-03	1.53E-03	6.48E-06		6.58E-04	6.73E-04	2.78E-06
804	572067.9	4149312	0.007256	6.27E-03	2.18E-05		9.47E-03	9.08E-03	3.76E-05		1.67E-03	1.63E-03	6.93E-06		7.04E-04	7.20E-04	2.97E-06
805	572071.8	4149321	0.007818	6.75E-03	2.35E-05		1.02E-02	9.78E-03	4.05E-05		1.80E-03	1.76E-03	7.47E-06		7.58E-04	7.75E-04	3.20E-06
806	572050.9	4149290	0.005897	5.09E-03	1.77E-05		7.70E-03	7.38E-03	3.06E-05		1.36E-03	1.33E-03	5.63E-06		5.72E-04	5.85E-04	2.41E-06
807	572050.6	4149281	0.005763	4.98E-03	1.73E-05		7.52E-03	7.21E-03	2.99E-05		1.33E-03	1.30E-03	5.50E-06		5.59E-04	5.72E-04	2.36E-06
808	572050.3	4149272	0.005654	4.88E-03	1.70E-05		7.38E-03	7.07E-03	2.93E-05		1.30E-03	1.27E-03	5.40E-06		5.48E-04	5.61E-04	2.31E-06
809	572050	4149262	0.005565	4.81E-03	1.67E-05		7.27E-03	6.96E-03	2.88E-05		1.28E-03	1.25E-03	5.31E-06		5.40E-04	5.52E-04	2.28E-06
810	572044.3	4149078	0.004834	4.17E-03	1.45E-05		6.31E-03	6.05E-03	2.51E-05		1.11E-03	1.09E-03	4.62E-06		4.69E-04	4.79E-04	1.98E-06
811	572050.3	4149062	0.004936	4.26E-03	1.48E-05		6.44E-03	6.18E-03	2.56E-05		1.14E-03	1.11E-03	4.71E-06		4.79E-04	4.90E-04	2.02E-06
812	572056.7	4149056	0.005112	4.41E-03	1.53E-05		6.67E-03	6.40E-03	2.65E-05		1.18E-03	1.15E-03	4.88E-06		4.96E-04	5.07E-04	2.09E-06
813	572063	4149049	0.005301	4.58E-03	1.59E-05		6.92E-03	6.63E-03	2.75E-05		1.22E-03	1.19E-03	5.06E-06		5.14E-04	5.26E-04	2.17E-06
814	572069.3	4149042	0.005509	4.76E-03	1.65E-05		7.19E-03	6.89E-03	2.86E-05		1.27E-03	1.24E-03	5.26E-06		5.34E-04	5.46E-04	2.25E-06
815	572075.6	4149036	0.005732	4.95E-03	1.72E-05		7.48E-03	7.17E-03	2.97E-05		1.32E-03	1.29E-03	5.47E-06		5.56E-04	5.69E-04	2.35E-06
816	572082	4149029	0.005975	5.16E-03	1.79E-05		7.80E-03	7.47E-03	3.10E-05		1.38E-03	1.34E-03	5.71E-06		5.80E-04	5.93E-04	2.45E-06
817	572088.3	4149022	0.006241	5.39E-03	1.87E-05		8.15E-03	7.81E-03	3.24E-05		1.44E-03	1.40E-03	5.96E-06		6.05E-04	6.19E-04	2.55E-06
818	572094.6	4149016	0.006536	5.64E-03	1.96E-05		8.53E-03	8.18E-03	3.39E-05		1.51E-03	1.47E-03	6.24E-06		6.34E-04	6.48E-04	2.68E-06
819	572100.9	4149009	0.006866	5.93E-03	2.06E-05		8.96E-03	8.59E-03	3.56E-05		1.58E-03	1.55E-03	6.56E-06		6.66E-04	6.81E-04	2.81E-06
820	572107.2	4149002	0.007226	6.24E-03	2.17E-05		9.43E-03	9.04E-03	3.75E-05		1.67E-03	1.63E-03	6.90E-06		7.01E-04	7.17E-04	2.96E-06
821	572113.6	4148995	0.00761	6.57E-03	2.28E-05		9.94E-03	9.52E-03	3.95E-05		1.75E-03	1.71E-03	7.27E-06		7.38E-04	7.55E-04	3.11E-06
822	572119.9	4148989	0.008012	6.92E-03	2.40E-05		1.05E-02	1.00E-02	4.15E-05		1.85E-03	1.80E-03	7.65E-06		7.77E-04	7.95E-04	3.28E-06
823	572126.2	4148982	0.008426	7.28E-03	2.53E-05		1.10E-02	1.05E-02	4.37E-05		1.94E-03	1.90E-03	8.05E-06		8.17E-04	8.36E-04	3.45E-06
824	572132.5	4148975	0.008849	7.64E-03	2.66E-05		1.16E-02	1.11E-02	4.59E-05		2.04E-03	1.99E-03	8.45E-06		8.58E-04	8.78E-04	3.62E-06
825	572138.9	4148969	0.009282	8.02E-03	2.79E-05		1.21E-02	1.16E-02	4.81E-05		2.14E-03	2.09E-03	8.86E-06		9.00E-04	9.21E-04	3.80E-06
826	572051.2	4149299	0.006064	5.24E-03	1.82E-05		7.92E-03	7.59E-03	3.14E-05		1.40E-03	1.37E-03	5.79E-06		5.88E-04	6.01E-04	2.48E-06
827	572055	4149308	0.006424	5.55E-03	1.93E-05		8.39E-03	8.04E-03	3.33E-05		1.48E-03	1.45E-03	6.13E-06		6.23E-04	6.37E-04	2.63E-06

828	572058.8	4149316	0.006855	5.92E-03	2.06E-05	8.95E-03	8.58E-03	3.55E-05	1.58E-03	1.54E-03	6.55E-06	6.65E-04	6.80E-04	2.81E-06
829	572062.7	4149325	0.007372	6.37E-03	2.21E-05	9.62E-03	9.22E-03	3.82E-05	1.70E-03	1.66E-03	7.04E-06	7.15E-04	7.31E-04	3.02E-06
830	572041.8	4149294	0.005597	4.83E-03	1.68E-05	7.31E-03	7.00E-03	2.90E-05	1.29E-03	1.26E-03	5.35E-06	5.43E-04	5.55E-04	2.29E-06
831	572041.5	4149285	0.00547	4.72E-03	1.64E-05	7.14E-03	6.84E-03	2.84E-05	1.26E-03	1.23E-03	5.22E-06	5.31E-04	5.43E-04	2.24E-06
832	572041.2	4149276	0.005367	4.63E-03	1.61E-05	7.01E-03	6.71E-03	2.78E-05	1.24E-03	1.21E-03	5.13E-06	5.21E-04	5.32E-04	2.20E-06
833	572040.9	4149267	0.005281	4.56E-03	1.59E-05	6.89E-03	6.61E-03	2.74E-05	1.22E-03	1.19E-03	5.04E-06	5.12E-04	5.24E-04	2.16E-06
834	572040.6	4149258	0.005209	4.50E-03	1.56E-05	6.80E-03	6.52E-03	2.70E-05	1.20E-03	1.17E-03	4.97E-06	5.05E-04	5.17E-04	2.13E-06
835	572040.3	4149248	0.005147	4.44E-03	1.54E-05	6.72E-03	6.44E-03	2.67E-05	1.19E-03	1.16E-03	4.92E-06	4.99E-04	5.10E-04	2.11E-06
836	572040.1	4149239	0.005096	4.40E-03	1.53E-05	6.65E-03	6.38E-03	2.64E-05	1.17E-03	1.15E-03	4.87E-06	4.94E-04	5.05E-04	2.09E-06
837	572035	4149075	0.004554	3.93E-03	1.37E-05	5.95E-03	5.70E-03	2.36E-05	1.05E-03	1.03E-03	4.35E-06	4.42E-04	4.52E-04	1.86E-06
838	572040.9	4149059	0.004646	4.01E-03	1.39E-05	6.07E-03	5.81E-03	2.41E-05	1.07E-03	1.05E-03	4.44E-06	4.51E-04	4.61E-04	1.90E-06
839	572047.2	4149052	0.004805	4.15E-03	1.44E-05	6.27E-03	6.01E-03	2.49E-05	1.11E-03	1.08E-03	4.59E-06	4.66E-04	4.77E-04	1.97E-06
840	572053.5	4149046	0.004976	4.30E-03	1.49E-05	6.50E-03	6.23E-03	2.58E-05	1.15E-03	1.12E-03	4.75E-06	4.83E-04	4.94E-04	2.04E-06
841	572059.8	4149039	0.005161	4.46E-03	1.55E-05	6.74E-03	6.46E-03	2.68E-05	1.19E-03	1.16E-03	4.93E-06	5.01E-04	5.12E-04	2.11E-06
842	572066.1	4149032	0.00536	4.63E-03	1.61E-05	7.00E-03	6.71E-03	2.78E-05	1.24E-03	1.21E-03	5.12E-06	5.20E-04	5.32E-04	2.19E-06
843	572072.4	4149026	0.005575	4.81E-03	1.67E-05	7.28E-03	6.97E-03	2.89E-05	1.29E-03	1.25E-03	5.32E-06	5.41E-04	5.53E-04	2.28E-06
844	572078.6	4149019	0.005811	5.02E-03	1.74E-05	7.59E-03	7.27E-03	3.01E-05	1.34E-03	1.31E-03	5.55E-06	5.64E-04	5.76E-04	2.38E-06
845	572084.9	4149012	0.006072	5.24E-03	1.82E-05	7.93E-03	7.60E-03	3.15E-05	1.40E-03	1.37E-03	5.80E-06	5.89E-04	6.02E-04	2.49E-06
846	572091.2	4149006	0.006361	5.49E-03	1.91E-05	8.30E-03	7.96E-03	3.30E-05	1.47E-03	1.43E-03	6.07E-06	6.17E-04	6.31E-04	2.60E-06
847	572097.5	4148999	0.006678	5.77E-03	2.00E-05	8.72E-03	8.35E-03	3.46E-05	1.54E-03	1.50E-03	6.38E-06	6.48E-04	6.62E-04	2.73E-06
848	572103.8	4148992	0.00702	6.06E-03	2.11E-05	9.17E-03	8.78E-03	3.64E-05	1.62E-03	1.58E-03	6.70E-06	6.81E-04	6.96E-04	2.87E-06
849	572110.1	4148986	0.007379	6.37E-03	2.21E-05	9.63E-03	9.23E-03	3.83E-05	1.70E-03	1.66E-03	7.05E-06	7.16E-04	7.32E-04	3.02E-06
850	572116.3	4148979	0.007751	6.69E-03	2.33E-05	1.01E-02	9.70E-03	4.02E-05	1.79E-03	1.74E-03	7.40E-06	7.52E-04	7.69E-04	3.17E-06
851	572122.6	4148972	0.008131	7.02E-03	2.44E-05	1.06E-02	1.02E-02	4.22E-05	1.87E-03	1.83E-03	7.76E-06	7.89E-04	8.06E-04	3.33E-06
852	572042	4149303	0.005754	4.97E-03	1.73E-05	7.51E-03	7.20E-03	2.98E-05	1.33E-03	1.30E-03	5.49E-06	5.58E-04	5.71E-04	2.35E-06
853	572045.9	4149312	0.006089	5.26E-03	1.83E-05	7.95E-03	7.62E-03	3.16E-05	1.40E-03	1.37E-03	5.81E-06	5.91E-04	6.04E-04	2.49E-06
854	572049.7	4149320	0.006488	5.60E-03	1.95E-05	8.47E-03	8.12E-03	3.36E-05	1.50E-03	1.46E-03	6.20E-06	6.29E-04	6.43E-04	2.66E-06
855	572032.7	4149298	0.005323	4.60E-03	1.60E-05	6.95E-03	6.66E-03	2.76E-05	1.23E-03	1.20E-03	5.08E-06	5.16E-04	5.28E-04	2.18E-06
856	572032.4	4149289	0.005201	4.49E-03	1.56E-05	6.79E-03	6.51E-03	2.70E-05	1.20E-03	1.17E-03	4.97E-06	5.04E-04	5.16E-04	2.13E-06
857	572032.1	4149280	0.005103	4.41E-03	1.53E-05	6.66E-03	6.38E-03	2.65E-05	1.18E-03	1.15E-03	4.87E-06	4.95E-04	5.06E-04	2.09E-06
858	572031.8	4149271	0.005021	4.34E-03	1.51E-05	6.56E-03	6.28E-03	2.60E-05	1.16E-03	1.13E-03	4.79E-06	4.87E-04	4.98E-04	2.05E-06
859	572031.5	4149262	0.004952	4.28E-03	1.49E-05	6.47E-03	6.20E-03	2.57E-05	1.14E-03	1.11E-03	4.73E-06	4.80E-04	4.91E-04	2.03E-06
860	572031.2	4149253	0.004892	4.22E-03	1.47E-05	6.39E-03	6.12E-03	2.54E-05	1.13E-03	1.10E-03	4.67E-06	4.75E-04	4.85E-04	2.00E-06
861	572031	4149244	0.00484	4.18E-03	1.45E-05	6.32E-03	6.05E-03	2.51E-05	1.12E-03	1.09E-03	4.62E-06	4.69E-04	4.80E-04	1.98E-06
862	572030.7	4149235	0.004799	4.14E-03	1.44E-05	6.27E-03	6.00E-03	2.49E-05	1.11E-03	1.08E-03	4.58E-06	4.65E-04	4.76E-04	1.96E-06
863	572030.4	4149226	0.004773	4.12E-03	1.43E-05	6.23E-03	5.97E-03	2.47E-05	1.10E-03	1.07E-03	4.56E-06	4.63E-04	4.73E-04	1.95E-06
864	572030.1	4149217	0.004766	4.12E-03	1.43E-05	6.22E-03	5.96E-03	2.47E-05	1.10E-03	1.07E-03	4.55E-06	4.62E-04	4.73E-04	1.95E-06
865	572029.8	4149207	0.004782	4.13E-03	1.44E-05	6.24E-03	5.98E-03	2.48E-05	1.10E-03	1.08E-03	4.57E-06	4.64E-04	4.74E-04	1.96E-06
866	572025.9	4149080	0.004358	3.76E-03	1.31E-05	5.69E-03	5.45E-03	2.26E-05	1.00E-03	9.81E-04	4.16E-06	4.23E-04	4.32E-04	1.78E-06
867	572025.6	4149071	0.004297	3.71E-03	1.29E-05	5.61E-03	5.38E-03	2.23E-05	9.91E-04	9.67E-04	4.10E-06	4.17E-04	4.26E-04	1.76E-06
868	572031.6	4149055	0.004382	3.78E-03	1.32E-05	5.72E-03	5.48E-03	2.27E-05	1.01E-03	9.86E-04	4.18E-06	4.25E-04	4.35E-04	1.79E-06
869	572037.8	4149049	0.004526	3.91E-03	1.36E-05	5.91E-03	5.66E-03	2.35E-05	1.04E-03	1.02E-03	4.32E-06	4.39E-04	4.49E-04	1.85E-06
870	572044.1	4149042	0.004683	4.04E-03	1.41E-05	6.11E-03	5.86E-03	2.43E-05	1.08E-03	1.05E-03	4.47E-06	4.54E-04	4.64E-04	1.92E-06
871	572050.3	4149036	0.004849	4.19E-03	1.46E-05	6.33E-03	6.07E-03	2.51E-05	1.12E-03	1.09E-03	4.63E-06	4.70E-04	4.81E-04	1.98E-06
872	572056.5	4149029	0.005027	4.34E-03	1.51E-05	6.56E-03	6.29E-03	2.61E-05	1.16E-03	1.13E-03	4.80E-06	4.88E-04	4.99E-04	2.06E-06
873	572062.8	4149022	0.005218	4.51E-03	1.57E-05	6.81E-03	6.53E-03	2.71E-05	1.20E-03	1.17E-03	4.98E-06	5.06E-04	5.18E-04	2.14E-06
874	572069	4149016	0.005426	4.69E-03	1.63E-05	7.08E-03	6.79E-03	2.81E-05	1.25E-03	1.22E-03	5.18E-06	5.26E-04	5.38E-04	2.22E-06
875	572075.3	4149009	0.005657	4.89E-03	1.70E-05	7.39E-03	7.08E-03	2.93E-05	1.30E-03	1.27E-03	5.40E-06	5.49E-04	5.61E-04	2.32E-06
876	572081.5	4149002	0.005912	5.11E-03	1.77E-05	7.72E-03	7.40E-03	3.06E-05	1.36E-03	1.33E-03	5.65E-06	5.73E-04	5.86E-04	2.42E-06
877	572087.8	4148996	0.006192	5.35E-03	1.86E-05	8.08E-03	7.75E-03	3.21E-05	1.43E-03	1.39E-03	5.91E-06	6.01E-04	6.14E-04	2.53E-06
878	572094	4148989	0.006495	5.61E-03	1.95E-05	8.48E-03	8.13E-03	3.37E-05	1.50E-03	1.46E-03	6.20E-06	6.30E-04	6.44E-04	2.66E-06
879	572100.3	4148983	0.006817	5.89E-03	2.05E-05	8.90E-03	8.53E-03	3.53E-05	1.57E-03	1.53E-03	6.51E-06	6.61E-04	6.76E-04	2.79E-06
880	572106.5	4148976	0.007153	6.18E-03	2.15E-05	9.34E-03	8.95E-03	3.71E-05	1.65E-03	1.61E-03	6.83E-06	6.94E-04	7.09E-04	2.93E-06
881	572032.9	4149307	0.005471	4.72E-03	1.64E-05	7.14E-03	6.84E-03	2.84E-05	1.26E-03	1.23E-03	5.22E-06	5.31E-04	5.43E-04	2.24E-06
882	572036.8	4149316	0.005782	4.99E-03	1.74E-05	7.55E-03	7.23E-03	3.00E-05	1.33E-03	1.30E-03	5.52E-06	5.61E-04	5.73E-04	2.37E-06
883	572040.6	4149324	0.006153	5.31E-03	1.85E-05	8.03E-03	7.70E-03	3.19E-05	1.42E-03	1.39E-03	5.88E-06	5.97E-04	6.10E-04	2.52E-06
884	572023.5	4149303	0.005071	4.38E-03	1.52E-05	6.62E-03	6.34E-03	2.63E-05	1.17E-03	1.14E-03	4.84E-06	4.92E-04	5.03E-04	2.08E-06
885	572023.3	4149294	0.004957	4.28E-03	1.49E-05	6.47E-03	6.20E-03	2.57E-05	1.14E-03	1.12E-03	4.73E-06	4.81E-04	4.92E-04	2.03E-06
886	572023	4149284	0.004863	4.20E-03	1.46E-05	6.35E-03	6.08E-03	2.52E-05	1.12E-03	1.09E-03	4.64E-06	4.72E-04	4.82E-04	1.99E-06
887	572022.7	4149275	0.004784	4.13E-03	1.44E-05	6.25E-03	5.98E-03	2.48E-05	1.10E-03	1.08E-03	4.57E-06	4.64E-04	4.74E-04	1.96E-06
888	572022.4	4149266	0.004717	4.07E-03	1.42E-05	6.16E-03	5.90E-03	2.45E-05	1.09E-03	1.06E-03	4.50E-06	4.58E-04	4.68E-04	1.93E-06
889	572022.1	4149257	0.004658	4.02E-03	1.40E-05	6.08E-03	5.83E-03	2.41E-05	1.07E-03	1.05E-03	4.45E-06	4.52E-04	4.62E-04	1.91E-06
890	572021.9	4149248	0.004606	3.98E-03	1.38E-05	6.01E-03	5.76E-03	2.39E-05	1.06E-03	1.04E-03	4.40E-06	4.47E-04	4.57E-04	1.89E-06
891	572021.6	4149239	0.004562	3.94E-03	1.37E-05	5.96E-03	5.71E-03	2.37E-05	1.05E-03	1.03E-03	4.36E-06	4.43E-04	4.52E-04	1.87E-06
892	572021.3	4149230	0.00453	3.91E-03	1.36E-05	5.91E-03	5.67E-03	2.35E-05	1.04E-03	1.02E-03	4.33E-06	4.39E-04	4.49E-04	1.85E-06
893	572021	4149221	0.004514	3.90E-03	1.35E-05	5.89E-03	5.65E-03	2.34E-05	1.04E-03	1.02E-03	4.31E-06	4.38E-04	4.48E-04	1.85E-06
894	572020.7	4149212	0.004518	3.90E-03	1.36E-05	5.90E-03	5.65E-03	2.34E-05	1.04E-03	1.02E-03	4.31E-06	4.38E-04	4.48E-04	1.85E-06
895	572020.5	4149203	0.004542	3.92E-03	1.36E-05	5.93E-03	5.68E-03	2.35E-05	1.05E-03	1.02E-03	4.34E-06	4.41E-04	4.50E-04	1.86E-06
896	572020.2	4149194	0.004585	3.96E-03	1.38E-05	5.99E-03	5.74E-03	2.38E-05	1.06E-03	1.03E-03	4.38E-06	4.45E-04	4.55E-04	1.88E-06
897	572019.9	4149185	0.004643	4.01E-03	1.39E-05	6.06E-03	5.81E-03	2.41E-05	1.07E-03	1.05E-03	4.43E-06	4.50E-04	4.60E-04	1.90E-06
898	572016.8	4149086	0.004188	3.62E-03	1.26E-05	5.47E-03	5.24E-03	2.17E-05	9.66E-04	9.43E-04	4.00E-06	4.06E-04	4.15E-04	1.71E-06
899	572016.5	4149077	0.004119	3.56E-03	1.24E-05	5.38E-03	5.15E-03	2.14E-05	9.50E-04	9.27E-04	3.93E-06	4.00E-04	4.09E-04	1.69E-06
900	572016.2	4149068	0.004062	3.51E-03	1.22E-05	5.30E-03	5.08E-03	2.11E-05	9.37E-04	9.14E-04	3.88E-06	3.94E-04	4.03E-04	1.66E-06
901	572022.2	4149052	0.004139	3.57E-03	1.24E-05	5.40E-03	5.18E-03	2.15E-05	9.54E-04	9.32E-04	3.95E-06	4.01E-04	4.11E-04	1.69E-06
902	572028.4	4149045	0.004271	3.69E-03	1.28E-05	5.58E-03	5.34E-03	2.21E-05	9.85E-04	9.61E-04	4.08E-06	4.14E-04	4.24E-04	1.75E-06
903	572040.8	4149032	0.004565	3.94E-03	1.37E-05	5.96E-03	5.71E-03	2.37E-05	1.05E-03	1.03E-03	4.36E-06	4.43E-04	4.53E-04	1.87E-06
904	572047	4149026	0.004724	4.08E-03	1.42E-05	6.17E-03	5.91E-03	2.45E-05	1.09E-03	1.06E-03	4.51E-06	4.58E-04	4.69E-04	1.93E-06
905	572053.2	4149019	0.004895	4.23E-03	1.47E-05	6.39E-03	6.12E-03	2.54E-05	1.13E-03	1.10E-03	4.67E-06	4.75E-04	4.85E-04	2.00E-06
906	572065.6	4149006	0.005284	4.56E-03	1.59E-05	6.90E-03	6.61E-03	2.74E-05	1.22E-03	1.19E-03	5.05E-06	5.13E-04	5.24E-04	2.16E-06
907	572071.9	4148999	0.005509	4.76E-03	1.65E-05	7.19E-03	6.89E-03	2.86E-05	1.27E-03	1.24E-03	5.26E-06	5.34E-04	5.46E-04	2.25E-06
908	572084.3	4148986	0.006029	5.21E-03	1.81E-05	7.87E-03	7.54E-03	3.13E-05	1.39E-03	1.36E-03	5.76E-06	5.85E-04	5.98E-04	2.47E-06
909	572023.8	4149312	0.005209	4.50E-03	1.56E-05	6.80E-03	6.52E-03	2.70E-05	1.20E-03	1.17E-03	4.97E-06	5.05E-04	5.17E-04	2.13E-06
910	572027.7	4149320	0.0055	4.75E-03	1.65E-05	7.18E-03	6.88E-03	2.85E-05	1.27E-03	1.24E-03	5.25E-06	5.33E-04	5.45E-04	2.25E-06

911	572014.4	4149307	0.004835	4.18E-03	1.45E-05	6.31E-03	6.05E-03	2.51E-05	1.11E-03	1.09E-03	4.62E-06	4.69E-04	4.80E-04	1.98E-06
912	572014.2	4149298	0.004728	4.08E-03	1.42E-05	6.17E-03	5.91E-03	2.45E-05	1.09E-03	1.06E-03	4.52E-06	4.59E-04	4.69E-04	1.94E-06
913	572013.9	4149289	0.004639	4.01E-03	1.39E-05	6.06E-03	5.80E-03	2.40E-05	1.07E-03	1.04E-03	4.43E-06	4.50E-04	4.60E-04	1.90E-06
914	572013.6	4149280	0.004565	3.94E-03	1.37E-05	5.96E-03	5.71E-03	2.37E-05	1.05E-03	1.03E-03	4.36E-06	4.43E-04	4.53E-04	1.87E-06
915	572013.3	4149271	0.004501	3.89E-03	1.35E-05	5.88E-03	5.63E-03	2.33E-05	1.04E-03	1.01E-03	4.30E-06	4.37E-04	4.46E-04	1.84E-06
916	572013	4149262	0.004444	3.84E-03	1.33E-05	5.80E-03	5.56E-03	2.30E-05	1.02E-03	1.00E-03	4.24E-06	4.31E-04	4.41E-04	1.82E-06
917	572012.8	4149253	0.004393	3.79E-03	1.32E-05	5.74E-03	5.50E-03	2.28E-05	1.01E-03	9.89E-04	4.20E-06	4.26E-04	4.36E-04	1.80E-06
918	572012.5	4149244	0.004348	3.75E-03	1.30E-05	5.68E-03	5.44E-03	2.25E-05	1.00E-03	9.79E-04	4.15E-06	4.22E-04	4.31E-04	1.78E-06
919	572012.2	4149235	0.004311	3.72E-03	1.29E-05	5.63E-03	5.39E-03	2.23E-05	9.94E-04	9.70E-04	4.12E-06	4.18E-04	4.28E-04	1.76E-06
920	572011.9	4149226	0.004289	3.70E-03	1.29E-05	5.60E-03	5.37E-03	2.22E-05	9.89E-04	9.65E-04	4.10E-06	4.16E-04	4.25E-04	1.76E-06
921	572011.6	4149217	0.004281	3.70E-03	1.28E-05	5.59E-03	5.36E-03	2.22E-05	9.87E-04	9.64E-04	4.09E-06	4.15E-04	4.25E-04	1.75E-06
922	572011.4	4149208	0.004294	3.71E-03	1.29E-05	5.61E-03	5.37E-03	2.23E-05	9.90E-04	9.67E-04	4.10E-06	4.17E-04	4.26E-04	1.76E-06
923	572011.1	4149199	0.004325	3.73E-03	1.30E-05	5.65E-03	5.41E-03	2.24E-05	9.97E-04	9.74E-04	4.13E-06	4.20E-04	4.29E-04	1.77E-06
924	572010.8	4149190	0.004374	3.78E-03	1.31E-05	5.71E-03	5.47E-03	2.27E-05	1.01E-03	9.85E-04	4.18E-06	4.24E-04	4.34E-04	1.79E-06
925	572010.5	4149181	0.00443	3.83E-03	1.33E-05	5.78E-03	5.54E-03	2.30E-05	1.02E-03	9.97E-04	4.23E-06	4.30E-04	4.39E-04	1.81E-06
926	572010.2	4149172	0.004484	3.87E-03	1.35E-05	5.85E-03	5.61E-03	2.32E-05	1.03E-03	1.01E-03	4.28E-06	4.35E-04	4.45E-04	1.84E-06
927	572010	4149163	0.004524	3.91E-03	1.36E-05	5.91E-03	5.66E-03	2.35E-05	1.04E-03	1.02E-03	4.32E-06	4.39E-04	4.49E-04	1.85E-06
928	572009.7	4149154	0.004541	3.92E-03	1.36E-05	5.93E-03	5.68E-03	2.35E-05	1.05E-03	1.02E-03	4.34E-06	4.40E-04	4.50E-04	1.86E-06
929	572007.5	4149082	0.003963	3.42E-03	1.19E-05	5.17E-03	4.96E-03	2.05E-05	9.14E-04	8.92E-04	3.78E-06	3.84E-04	3.93E-04	1.62E-06
930	572007.2	4149073	0.003898	3.37E-03	1.17E-05	5.09E-03	4.88E-03	2.02E-05	8.99E-04	8.77E-04	3.72E-06	3.78E-04	3.87E-04	1.60E-06
931	572006.9	4149064	0.003846	3.32E-03	1.15E-05	5.02E-03	4.81E-03	1.99E-05	8.87E-04	8.66E-04	3.67E-06	3.73E-04	3.81E-04	1.57E-06
932	572012.8	4149048	0.003917	3.38E-03	1.18E-05	5.11E-03	4.90E-03	2.03E-05	9.03E-04	8.82E-04	3.74E-06	3.80E-04	3.88E-04	1.60E-06
933	572025.2	4149035	0.004169	3.60E-03	1.25E-05	5.44E-03	5.22E-03	2.16E-05	9.61E-04	9.38E-04	3.98E-06	4.04E-04	4.13E-04	1.71E-06
934	572037.5	4149022	0.004449	3.84E-03	1.34E-05	5.81E-03	5.57E-03	2.31E-05	1.03E-03	1.00E-03	4.25E-06	4.32E-04	4.41E-04	1.82E-06
935	572049.9	4149009	0.004767	4.12E-03	1.43E-05	6.22E-03	5.96E-03	2.47E-05	1.10E-03	1.07E-03	4.55E-06	4.62E-04	4.73E-04	1.95E-06
936	572062.2	4148996	0.00515	4.45E-03	1.55E-05	6.72E-03	6.44E-03	2.67E-05	1.19E-03	1.16E-03	4.92E-06	5.00E-04	5.11E-04	2.11E-06
937	572014.7	4149316	0.004965	4.29E-03	1.49E-05	6.48E-03	6.21E-03	2.57E-05	1.14E-03	1.12E-03	4.74E-06	4.82E-04	4.92E-04	2.03E-06
938	572018.5	4149324	0.005238	4.52E-03	1.57E-05	6.84E-03	6.55E-03	2.72E-05	1.21E-03	1.18E-03	5.00E-06	5.08E-04	5.20E-04	2.14E-06
939	572005.3	4149311	0.004612	3.98E-03	1.38E-05	6.02E-03	5.77E-03	2.39E-05	1.06E-03	1.04E-03	4.40E-06	4.47E-04	4.57E-04	1.89E-06
940	572005	4149301	0.004507	3.89E-03	1.35E-05	5.88E-03	5.64E-03	2.34E-05	1.04E-03	1.01E-03	4.30E-06	4.37E-04	4.47E-04	1.84E-06
941	572004.7	4149292	0.004422	3.82E-03	1.33E-05	5.77E-03	5.53E-03	2.29E-05	1.02E-03	9.95E-04	4.22E-06	4.29E-04	4.39E-04	1.81E-06
942	572004.5	4149283	0.004351	3.76E-03	1.31E-05	5.68E-03	5.44E-03	2.26E-05	1.00E-03	9.79E-04	4.16E-06	4.22E-04	4.32E-04	1.78E-06
943	572004.2	4149274	0.00429	3.70E-03	1.29E-05	5.60E-03	5.37E-03	2.22E-05	9.89E-04	9.66E-04	4.10E-06	4.16E-04	4.25E-04	1.76E-06
944	572003.9	4149264	0.004235	3.66E-03	1.27E-05	5.53E-03	5.30E-03	2.20E-05	9.76E-04	9.53E-04	4.04E-06	4.11E-04	4.20E-04	1.73E-06
945	572003.6	4149255	0.004185	3.61E-03	1.26E-05	5.46E-03	5.24E-03	2.17E-05	9.65E-04	9.42E-04	4.00E-06	4.06E-04	4.15E-04	1.71E-06
946	572003.3	4149246	0.004141	3.58E-03	1.24E-05	5.41E-03	5.18E-03	2.15E-05	9.55E-04	9.32E-04	3.95E-06	4.02E-04	4.11E-04	1.69E-06
947	572003	4149237	0.004104	3.54E-03	1.23E-05	5.36E-03	5.13E-03	2.13E-05	9.46E-04	9.24E-04	3.92E-06	3.98E-04	4.07E-04	1.68E-06
948	572002.7	4149227	0.004077	3.52E-03	1.22E-05	5.32E-03	5.10E-03	2.11E-05	9.40E-04	9.18E-04	3.89E-06	3.95E-04	4.04E-04	1.67E-06
949	572002.4	4149218	0.004067	3.51E-03	1.22E-05	5.31E-03	5.09E-03	2.11E-05	9.38E-04	9.15E-04	3.88E-06	3.94E-04	4.03E-04	1.66E-06
950	572002.2	4149209	0.004076	3.52E-03	1.22E-05	5.32E-03	5.10E-03	2.11E-05	9.40E-04	9.18E-04	3.89E-06	3.95E-04	4.04E-04	1.67E-06
951	572001.9	4149199	0.004104	3.54E-03	1.23E-05	5.36E-03	5.13E-03	2.13E-05	9.46E-04	9.24E-04	3.92E-06	3.98E-04	4.07E-04	1.68E-06
952	572001.6	4149190	0.004151	3.58E-03	1.25E-05	5.42E-03	5.19E-03	2.15E-05	9.57E-04	9.34E-04	3.96E-06	4.03E-04	4.12E-04	1.70E-06
953	572001.3	4149181	0.004206	3.63E-03	1.26E-05	5.49E-03	5.26E-03	2.18E-05	9.70E-04	9.47E-04	4.02E-06	4.08E-04	4.17E-04	1.72E-06
954	572001	4149172	0.00426	3.68E-03	1.28E-05	5.56E-03	5.33E-03	2.21E-05	9.82E-04	9.59E-04	4.07E-06	4.13E-04	4.23E-04	1.74E-06
955	572000.7	4149162	0.004302	3.72E-03	1.29E-05	5.62E-03	5.38E-03	2.23E-05	9.92E-04	9.68E-04	4.11E-06	4.17E-04	4.27E-04	1.76E-06
956	572000.4	4149153	0.004322	3.73E-03	1.30E-05	5.64E-03	5.41E-03	2.24E-05	9.96E-04	9.73E-04	4.13E-06	4.19E-04	4.29E-04	1.77E-06
957	572000.1	4149144	0.004313	3.72E-03	1.29E-05	5.63E-03	5.40E-03	2.24E-05	9.94E-04	9.71E-04	4.12E-06	4.18E-04	4.28E-04	1.77E-06
958	571999.9	4149135	0.004273	3.69E-03	1.28E-05	5.58E-03	5.35E-03	2.22E-05	9.85E-04	9.62E-04	4.08E-06	4.14E-04	4.24E-04	1.75E-06
959	571999.6	4149125	0.004208	3.63E-03	1.26E-05	5.49E-03	5.26E-03	2.18E-05	9.70E-04	9.47E-04	4.02E-06	4.08E-04	4.17E-04	1.72E-06
960	571998.4	4149088	0.003839	3.32E-03	1.15E-05	5.01E-03	4.80E-03	1.99E-05	8.85E-04	8.64E-04	3.67E-06	3.72E-04	3.81E-04	1.57E-06
961	571998.1	4149079	0.003762	3.25E-03	1.13E-05	4.91E-03	4.71E-03	1.95E-05	8.67E-04	8.47E-04	3.59E-06	3.65E-04	3.73E-04	1.54E-06
962	571997.8	4149070	0.003698	3.19E-03	1.11E-05	4.83E-03	4.63E-03	1.92E-05	8.53E-04	8.32E-04	3.53E-06	3.59E-04	3.67E-04	1.51E-06
963	571997.6	4149061	0.003648	3.15E-03	1.09E-05	4.76E-03	4.56E-03	1.89E-05	8.41E-04	8.21E-04	3.48E-06	3.54E-04	3.62E-04	1.49E-06
964	572003.6	4149045	0.003712	3.21E-03	1.11E-05	4.85E-03	4.64E-03	1.92E-05	8.56E-04	8.36E-04	3.54E-06	3.60E-04	3.68E-04	1.52E-06
965	572010	4149038	0.003829	3.31E-03	1.15E-05	5.00E-03	4.79E-03	1.99E-05	8.83E-04	8.62E-04	3.66E-06	3.71E-04	3.80E-04	1.57E-06
966	572016.3	4149031	0.003953	3.41E-03	1.19E-05	5.16E-03	4.95E-03	2.05E-05	9.11E-04	8.90E-04	3.78E-06	3.83E-04	3.92E-04	1.62E-06
967	572022.7	4149024	0.004083	3.53E-03	1.23E-05	5.33E-03	5.11E-03	2.12E-05	9.41E-04	9.19E-04	3.90E-06	3.96E-04	4.05E-04	1.67E-06
968	572029.1	4149018	0.00422	3.64E-03	1.27E-05	5.51E-03	5.28E-03	2.19E-05	9.73E-04	9.50E-04	4.03E-06	4.09E-04	4.19E-04	1.73E-06
969	572035.4	4149011	0.004365	3.77E-03	1.31E-05	5.70E-03	5.46E-03	2.26E-05	1.01E-03	9.83E-04	4.17E-06	4.23E-04	4.33E-04	1.79E-06
970	572041.8	4149004	0.004522	3.91E-03	1.36E-05	5.90E-03	5.66E-03	2.34E-05	1.04E-03	1.02E-03	4.32E-06	4.39E-04	4.48E-04	1.85E-06
971	572048.1	4148997	0.004695	4.05E-03	1.41E-05	6.13E-03	5.87E-03	2.43E-05	1.08E-03	1.06E-03	4.48E-06	4.55E-04	4.66E-04	1.92E-06
972	572054.5	4148991	0.004886	4.22E-03	1.47E-05	6.38E-03	6.11E-03	2.53E-05	1.13E-03	1.10E-03	4.67E-06	4.74E-04	4.85E-04	2.00E-06
973	572005.6	4149320	0.004738	4.09E-03	1.42E-05	6.19E-03	5.93E-03	2.46E-05	1.09E-03	1.07E-03	4.52E-06	4.60E-04	4.70E-04	1.94E-06
974	571996.2	4149315	0.004406	3.80E-03	1.32E-05	5.75E-03	5.51E-03	2.28E-05	1.02E-03	9.92E-04	4.21E-06	4.27E-04	4.37E-04	1.80E-06
975	571995.9	4149306	0.004308	3.72E-03	1.29E-05	5.62E-03	5.39E-03	2.23E-05	9.93E-04	9.70E-04	4.11E-06	4.18E-04	4.27E-04	1.76E-06
976	571995.6	4149296	0.004227	3.65E-03	1.27E-05	5.52E-03	5.29E-03	2.19E-05	9.75E-04	9.52E-04	4.04E-06	4.10E-04	4.19E-04	1.73E-06
977	571995.3	4149287	0.004159	3.59E-03	1.25E-05	5.43E-03	5.20E-03	2.16E-05	9.59E-04	9.36E-04	3.97E-06	4.03E-04	4.12E-04	1.70E-06
978	571995.1	4149278	0.004102	3.54E-03	1.23E-05	5.36E-03	5.13E-03	2.13E-05	9.46E-04	9.23E-04	3.92E-06	3.98E-04	4.07E-04	1.68E-06
979	571994.8	4149269	0.00405	3.50E-03	1.22E-05	5.29E-03	5.07E-03	2.10E-05	9.34E-04	9.12E-04	3.87E-06	3.93E-04	4.02E-04	1.66E-06
980	571994.5	4149260	0.004002	3.46E-03	1.20E-05	5.22E-03	5.01E-03	2.07E-05	9.23E-04	9.01E-04	3.82E-06	3.88E-04	3.97E-04	1.64E-06
981	571994.2	4149250	0.003958	3.42E-03	1.19E-05	5.17E-03	4.95E-03	2.05E-05	9.13E-04	8.91E-04	3.78E-06	3.84E-04	3.93E-04	1.62E-06
982	571993.9	4149241	0.003919	3.38E-03	1.18E-05	5.12E-03	4.90E-03	2.03E-05	9.04E-04	8.82E-04	3.74E-06	3.80E-04	3.89E-04	1.60E-06
983	571993.6	4149232	0.00389	3.36E-03	1.17E-05	5.08E-03	4.87E-03	2.02E-05	8.97E-04	8.76E-04	3.71E-06	3.77E-04	3.86E-04	1.59E-06
984	571993.3	4149223	0.003872	3.34E-03	1.16E-05	5.06E-03	4.84E-03	2.01E-05	8.93E-04	8.72E-04	3.70E-06	3.76E-04	3.84E-04	1.58E-06
985	571993.1	4149214	0.003871	3.34E-03	1.16E-05	5.05E-03	4.84E-03	2.01E-05	8.92E-04	8.71E-04	3.70E-06	3.75E-04	3.84E-04	1.58E-06
986	571992.8	4149204	0.003888	3.36E-03	1.17E-05	5.08E-03	4.86E-03	2.02E-05	8.96E-04	8.75E-04	3.71E-06	3.77E-04	3.86E-04	1.59E-06
987	571992.5	4149195	0.003921	3.39E-03	1.18E-05	5.12E-03	4.91E-03	2.03E-05	9.04E-04	8.83E-04	3.74E-06	3.80E-04	3.89E-04	1.60E-06
988	571992.2	4149186	0.003971	3.43E-03	1.19E-05	5.18E-03	4.97E-03	2.06E-05	9.16E-04	8.94E-04	3.79E-06	3.85E-04	3.94E-04	1.63E-06
989	571991.9	4149177	0.004024	3.48E-03	1.21E-05	5.25E-03	5.03E-03	2.09E-05	9.28E-04	9.06E-04	3.84E-06	3.90E-04	3.99E-04	1.65E-06
990	571991.6	4149167	0.004072	3.52E-03	1.22E-05	5.32E-03	5.09E-03	2.11E-05	9.39E-04	9.17E-04	3.89E-06	3.95E-04	4.04E-04	1.67E-06
991	571991.3	4149158	0.004106	3.55E-03	1.23E-05	5.36E-03	5.14E-03	2.13E-05	9.47E-04	9.24E-04	3.92E-06	3.98E-04	4.07E-04	1.68E-06
992	571991.1	4149149	0.004118	3.56E-03	1.24E-05	5.38E-03	5.15E-03	2.13E-05	9.49E-04	9.27E-04	3.93E-06	3.99E-04	4.08E-04	1.69E-06
993	571990.8	4149140	0.004101	3.54E-03	1.23E-05	5.35E-03	5.13E-03	2.13E-05	9.46E-04	9.23E-04	3.92E-06	3.98E-04	4.07E-04	1.68E-06

994	571990.5	4149131	0.004058	3.50E-03	1.22E-05	5.30E-03	5.08E-03	2.10E-05	9.36E-04	9.13E-04	3.88E-06	3.94E-04	4.02E-04	1.66E-06
995	571990.2	4149121	0.003991	3.45E-03	1.20E-05	5.21E-03	4.99E-03	2.07E-05	9.20E-04	8.98E-04	3.81E-06	3.87E-04	3.96E-04	1.63E-06
996	571989.4	4149094	0.003724	3.22E-03	1.12E-05	4.86E-03	4.66E-03	1.93E-05	8.59E-04	8.38E-04	3.56E-06	3.61E-04	3.69E-04	1.52E-06
997	571989.1	4149085	0.003641	3.14E-03	1.09E-05	4.75E-03	4.55E-03	1.89E-05	8.39E-04	8.20E-04	3.48E-06	3.53E-04	3.61E-04	1.49E-06
998	571988.8	4149075	0.003569	3.08E-03	1.07E-05	4.66E-03	4.46E-03	1.85E-05	8.23E-04	8.03E-04	3.41E-06	3.46E-04	3.54E-04	1.46E-06
999	571988.5	4149066	0.003509	3.03E-03	1.05E-05	4.58E-03	4.39E-03	1.82E-05	8.09E-04	7.90E-04	3.35E-06	3.40E-04	3.48E-04	1.44E-06
1000	571988.2	4149057	0.003464	2.99E-03	1.04E-05	4.52E-03	4.33E-03	1.80E-05	7.99E-04	7.80E-04	3.31E-06	3.36E-04	3.44E-04	1.42E-06
1001	571994.2	4149041	0.003528	3.05E-03	1.06E-05	4.61E-03	4.41E-03	1.83E-05	8.13E-04	7.94E-04	3.37E-06	3.42E-04	3.50E-04	1.44E-06
1002	572000.6	4149034	0.003635	3.14E-03	1.09E-05	4.75E-03	4.55E-03	1.88E-05	8.38E-04	8.18E-04	3.47E-06	3.53E-04	3.61E-04	1.49E-06
1003	572006.9	4149028	0.003748	3.24E-03	1.12E-05	4.89E-03	4.69E-03	1.94E-05	8.64E-04	8.44E-04	3.58E-06	3.64E-04	3.72E-04	1.53E-06
1004	572013.2	4149021	0.003866	3.34E-03	1.16E-05	5.05E-03	4.84E-03	2.00E-05	8.91E-04	8.70E-04	3.69E-06	3.75E-04	3.83E-04	1.58E-06
1005	572019.5	4149014	0.003991	3.45E-03	1.20E-05	5.21E-03	4.99E-03	2.07E-05	9.20E-04	8.98E-04	3.81E-06	3.87E-04	3.96E-04	1.63E-06
1006	572025.9	4149008	0.004122	3.56E-03	1.24E-05	5.38E-03	5.16E-03	2.14E-05	9.50E-04	9.28E-04	3.94E-06	4.00E-04	4.09E-04	1.69E-06
1007	572032.2	4149001	0.004263	3.68E-03	1.28E-05	5.57E-03	5.33E-03	2.21E-05	9.83E-04	9.60E-04	4.07E-06	4.14E-04	4.23E-04	1.74E-06
1008	571996.5	4149324	0.004526	3.91E-03	1.36E-05	5.91E-03	5.66E-03	2.35E-05	1.04E-03	1.02E-03	4.32E-06	4.39E-04	4.49E-04	1.85E-06
1009	571987.1	4149319	0.004216	3.64E-03	1.27E-05	5.50E-03	5.27E-03	2.19E-05	9.72E-04	9.49E-04	4.03E-06	4.09E-04	4.18E-04	1.73E-06
1010	571986.8	4149310	0.004121	3.56E-03	1.24E-05	5.38E-03	5.16E-03	2.14E-05	9.50E-04	9.28E-04	3.94E-06	4.00E-04	4.09E-04	1.69E-06
1011	571986.5	4149301	0.004044	3.49E-03	1.21E-05	5.28E-03	5.06E-03	2.10E-05	9.32E-04	9.10E-04	3.86E-06	3.92E-04	4.01E-04	1.66E-06
1012	571986.2	4149291	0.003981	3.44E-03	1.19E-05	5.20E-03	4.98E-03	2.06E-05	9.18E-04	8.96E-04	3.80E-06	3.86E-04	3.95E-04	1.63E-06
1013	571986	4149282	0.003925	3.39E-03	1.18E-05	5.12E-03	4.91E-03	2.03E-05	9.05E-04	8.84E-04	3.75E-06	3.81E-04	3.89E-04	1.61E-06
1014	571985.7	4149273	0.003877	3.35E-03	1.16E-05	5.06E-03	4.85E-03	2.01E-05	8.94E-04	8.73E-04	3.70E-06	3.76E-04	3.85E-04	1.59E-06
1015	571985.4	4149264	0.003832	3.31E-03	1.15E-05	5.00E-03	4.79E-03	1.99E-05	8.84E-04	8.63E-04	3.66E-06	3.72E-04	3.80E-04	1.57E-06
1016	571985.1	4149255	0.00379	3.27E-03	1.14E-05	4.95E-03	4.74E-03	1.96E-05	8.74E-04	8.53E-04	3.62E-06	3.68E-04	3.76E-04	1.55E-06
1017	571984.8	4149246	0.003751	3.24E-03	1.13E-05	4.90E-03	4.69E-03	1.94E-05	8.65E-04	8.44E-04	3.58E-06	3.64E-04	3.72E-04	1.54E-06
1018	571984.5	4149237	0.003719	3.21E-03	1.12E-05	4.86E-03	4.65E-03	1.93E-05	8.57E-04	8.37E-04	3.55E-06	3.61E-04	3.69E-04	1.52E-06
1019	571984.3	4149227	0.003697	3.19E-03	1.11E-05	4.83E-03	4.63E-03	1.92E-05	8.52E-04	8.32E-04	3.53E-06	3.59E-04	3.67E-04	1.51E-06
1020	571984	4149218	0.003688	3.18E-03	1.11E-05	4.82E-03	4.61E-03	1.91E-05	8.50E-04	8.30E-04	3.52E-06	3.58E-04	3.66E-04	1.51E-06
1021	571983.7	4149209	0.003695	3.19E-03	1.11E-05	4.82E-03	4.62E-03	1.92E-05	8.52E-04	8.32E-04	3.53E-06	3.58E-04	3.66E-04	1.51E-06
1022	571983.4	4149200	0.003718	3.21E-03	1.12E-05	4.85E-03	4.65E-03	1.93E-05	8.57E-04	8.37E-04	3.55E-06	3.61E-04	3.69E-04	1.52E-06
1023	571983.1	4149191	0.003757	3.24E-03	1.13E-05	4.91E-03	4.70E-03	1.95E-05	8.66E-04	8.46E-04	3.59E-06	3.64E-04	3.73E-04	1.54E-06
1024	571982.8	4149182	0.003806	3.29E-03	1.14E-05	4.97E-03	4.76E-03	1.97E-05	8.78E-04	8.57E-04	3.63E-06	3.69E-04	3.77E-04	1.56E-06
1025	571982.5	4149172	0.003856	3.33E-03	1.16E-05	5.03E-03	4.82E-03	2.00E-05	8.89E-04	8.68E-04	3.68E-06	3.74E-04	3.82E-04	1.58E-06
1026	571982.3	4149163	0.003898	3.37E-03	1.17E-05	5.09E-03	4.88E-03	2.02E-05	8.99E-04	8.77E-04	3.72E-06	3.78E-04	3.87E-04	1.60E-06
1027	571982	4149154	0.003923	3.39E-03	1.18E-05	5.12E-03	4.91E-03	2.03E-05	9.04E-04	8.83E-04	3.75E-06	3.81E-04	3.89E-04	1.61E-06
1028	571981.7	4149145	0.003926	3.39E-03	1.18E-05	5.13E-03	4.91E-03	2.04E-05	9.05E-04	8.84E-04	3.75E-06	3.81E-04	3.89E-04	1.61E-06
1029	571981.4	4149136	0.003903	3.37E-03	1.17E-05	5.10E-03	4.88E-03	2.02E-05	9.00E-04	8.79E-04	3.73E-06	3.79E-04	3.87E-04	1.60E-06
1030	571981.1	4149127	0.003855	3.33E-03	1.16E-05	5.03E-03	4.82E-03	2.00E-05	8.89E-04	8.68E-04	3.68E-06	3.74E-04	3.82E-04	1.58E-06
1031	571980.8	4149118	0.003788	3.27E-03	1.14E-05	4.95E-03	4.74E-03	1.96E-05	8.73E-04	8.53E-04	3.62E-06	3.67E-04	3.76E-04	1.55E-06
1032	571980	4149090	0.003533	3.05E-03	1.06E-05	4.61E-03	4.42E-03	1.83E-05	8.15E-04	7.95E-04	3.37E-06	3.43E-04	3.50E-04	1.45E-06
1033	571979.7	4149081	0.003458	2.99E-03	1.04E-05	4.51E-03	4.33E-03	1.79E-05	7.97E-04	7.78E-04	3.30E-06	3.35E-04	3.43E-04	1.42E-06
1034	571979.4	4149072	0.003389	2.93E-03	1.02E-05	4.42E-03	4.24E-03	1.76E-05	7.81E-04	7.63E-04	3.24E-06	3.29E-04	3.36E-04	1.39E-06
1035	571979.1	4149063	0.003335	2.88E-03	1.00E-05	4.35E-03	4.17E-03	1.73E-05	7.69E-04	7.51E-04	3.18E-06	3.23E-04	3.31E-04	1.36E-06
1036	571978.9	4149053	0.003293	2.84E-03	9.88E-06	4.30E-03	4.12E-03	1.71E-05	7.59E-04	7.41E-04	3.14E-06	3.19E-04	3.27E-04	1.35E-06
1037	571984.9	4149038	0.003354	2.90E-03	1.01E-05	4.38E-03	4.20E-03	1.74E-05	7.73E-04	7.55E-04	3.20E-06	3.25E-04	3.33E-04	1.37E-06
1038	571991.2	4149031	0.003454	2.98E-03	1.04E-05	4.51E-03	4.32E-03	1.79E-05	7.96E-04	7.78E-04	3.30E-06	3.35E-04	3.43E-04	1.41E-06
1039	571997.4	4149024	0.003559	3.07E-03	1.07E-05	4.65E-03	4.45E-03	1.85E-05	8.21E-04	8.01E-04	3.40E-06	3.45E-04	3.53E-04	1.46E-06
1040	572003.7	4149018	0.003668	3.17E-03	1.10E-05	4.79E-03	4.59E-03	1.90E-05	8.46E-04	8.26E-04	3.50E-06	3.56E-04	3.64E-04	1.50E-06
1041	572010	4149011	0.003781	3.27E-03	1.13E-05	4.94E-03	4.73E-03	1.96E-05	8.72E-04	8.51E-04	3.61E-06	3.67E-04	3.75E-04	1.55E-06
1042	572016.3	4149004	0.003901	3.37E-03	1.17E-05	5.09E-03	4.88E-03	2.02E-05	8.99E-04	8.78E-04	3.73E-06	3.78E-04	3.87E-04	1.60E-06
1043	571978	4149323	0.004038	3.49E-03	1.21E-05	5.27E-03	5.05E-03	2.09E-05	9.31E-04	9.09E-04	3.86E-06	3.92E-04	4.00E-04	1.65E-06
1044	571977.7	4149314	0.003948	3.41E-03	1.18E-05	5.15E-03	4.94E-03	2.05E-05	9.10E-04	8.89E-04	3.77E-06	3.83E-04	3.92E-04	1.62E-06
1045	571977.4	4149305	0.003874	3.35E-03	1.16E-05	5.06E-03	4.85E-03	2.01E-05	8.93E-04	8.72E-04	3.70E-06	3.76E-04	3.84E-04	1.59E-06
1046	571977.1	4149296	0.003813	3.29E-03	1.14E-05	4.98E-03	4.77E-03	1.98E-05	8.79E-04	8.58E-04	3.64E-06	3.70E-04	3.78E-04	1.56E-06
1047	571976.9	4149287	0.00376	3.25E-03	1.13E-05	4.91E-03	4.70E-03	1.95E-05	8.67E-04	8.46E-04	3.59E-06	3.65E-04	3.73E-04	1.54E-06
1048	571976.6	4149278	0.003714	3.21E-03	1.11E-05	4.85E-03	4.65E-03	1.93E-05	8.56E-04	8.36E-04	3.55E-06	3.60E-04	3.68E-04	1.52E-06
1049	571976.3	4149268	0.003672	3.17E-03	1.10E-05	4.79E-03	4.59E-03	1.90E-05	8.47E-04	8.27E-04	3.51E-06	3.56E-04	3.64E-04	1.50E-06
1050	571976	4149259	0.003632	3.14E-03	1.09E-05	4.74E-03	4.54E-03	1.88E-05	8.37E-04	8.18E-04	3.47E-06	3.52E-04	3.60E-04	1.49E-06
1051	571975.7	4149250	0.003594	3.10E-03	1.08E-05	4.69E-03	4.50E-03	1.86E-05	8.29E-04	8.09E-04	3.43E-06	3.49E-04	3.56E-04	1.47E-06
1052	571975.4	4149241	0.003561	3.08E-03	1.07E-05	4.65E-03	4.45E-03	1.85E-05	8.21E-04	8.02E-04	3.40E-06	3.45E-04	3.53E-04	1.46E-06
1053	571975.2	4149232	0.003535	3.05E-03	1.06E-05	4.62E-03	4.42E-03	1.83E-05	8.15E-04	7.96E-04	3.38E-06	3.43E-04	3.51E-04	1.45E-06
1054	571974.9	4149223	0.00352	3.04E-03	1.06E-05	4.60E-03	4.40E-03	1.82E-05	8.12E-04	7.92E-04	3.36E-06	3.41E-04	3.49E-04	1.44E-06
1055	571974.6	4149214	0.003519	3.04E-03	1.06E-05	4.59E-03	4.40E-03	1.82E-05	8.11E-04	7.92E-04	3.36E-06	3.41E-04	3.49E-04	1.44E-06
1056	571974.3	4149205	0.003535	3.05E-03	1.06E-05	4.62E-03	4.42E-03	1.83E-05	8.15E-04	7.96E-04	3.38E-06	3.43E-04	3.51E-04	1.45E-06
1057	571974	4149196	0.003563	3.08E-03	1.07E-05	4.65E-03	4.46E-03	1.85E-05	8.21E-04	8.02E-04	3.40E-06	3.46E-04	3.53E-04	1.46E-06
1058	571973.7	4149186	0.003605	3.11E-03	1.08E-05	4.71E-03	4.51E-03	1.87E-05	8.31E-04	8.11E-04	3.44E-06	3.50E-04	3.58E-04	1.48E-06
1059	571973.5	4149177	0.003653	3.15E-03	1.10E-05	4.77E-03	4.57E-03	1.89E-05	8.42E-04	8.22E-04	3.49E-06	3.54E-04	3.62E-04	1.50E-06
1060	571973.2	4149168	0.003699	3.19E-03	1.11E-05	4.83E-03	4.63E-03	1.92E-05	8.53E-04	8.33E-04	3.53E-06	3.59E-04	3.67E-04	1.51E-06
1061	571972.9	4149159	0.003735	3.23E-03	1.12E-05	4.88E-03	4.67E-03	1.94E-05	8.61E-04	8.41E-04	3.57E-06	3.62E-04	3.70E-04	1.53E-06
1062	571972.6	4149150	0.003753	3.24E-03	1.13E-05	4.90E-03	4.70E-03	1.95E-05	8.65E-04	8.45E-04	3.58E-06	3.64E-04	3.72E-04	1.54E-06
1063	571972.3	4149141	0.00375	3.24E-03	1.13E-05	4.90E-03	4.69E-03	1.94E-05	8.65E-04	8.44E-04	3.58E-06	3.64E-04	3.72E-04	1.53E-06
1064	571972.1	4149132	0.003722	3.21E-03	1.12E-05	4.86E-03	4.66E-03	1.93E-05	8.58E-04	8.38E-04	3.55E-06	3.61E-04	3.69E-04	1.52E-06
1065	571971.8	4149123	0.003672	3.17E-03	1.10E-05	4.79E-03	4.59E-03	1.90E-05	8.47E-04	8.27E-04	3.51E-06	3.56E-04	3.64E-04	1.50E-06
1066	571970.9	4149095	0.003441	2.97E-03	1.03E-05	4.49E-03	4.30E-03	1.78E-05	7.93E-04	7.75E-04	3.29E-06	3.34E-04	3.41E-04	1.41E-06
1067	571970.6	4149086	0.003359	2.90E-03	1.01E-05	4.39E-03	4.20E-03	1.74E-05	7.74E-04	7.56E-04	3.21E-06	3.26E-04	3.33E-04	1.37E-06
1068	571970.4	4149077	0.003286	2.84E-03	9.86E-06	4.29E-03	4.11E-03	1.70E-05	7.58E-04	7.40E-04	3.14E-06	3.19E-04	3.26E-04	1.34E-06
1069	571970.1	4149068	0.003224	2.78E-03	9.68E-06	4.21E-03	4.03E-03	1.67E-05	7.43E-04	7.26E-04	3.08E-06	3.13E-04	3.20E-04	1.32E-06
1070	571969.8	4149059	0.003174	2.74E-03	9.53E-06	4.14E-03	3.97E-03	1.65E-05	7.32E-04	7.14E-04	3.03E-06	3.08E-04	3.15E-04	1.30E-06
1071	571969.5	4149050	0.003135	2.71E-03	9.41E-06	4.09E-03	3.92E-03	1.63E-05	7.23E-04	7.06E-04	2.99E-06	3.04E-04	3.11E-04	1.28E-06
1072	571975.5	4149034	0.003193	2.76E-03	9.58E-06	4.17E-03	3.99E-03	1.66E-05	7.36E-04	7.19E-04	3.05E-06	3.10E-04	3.17E-04	1.31E-06
1073	571981.7	4149027	0.003284	2.84E-03	9.86E-06	4.29E-03	4.11E-03	1.70E-05	7.57E-04	7.39E-04	3.14E-06	3.19E-04	3.26E-04	1.34E-06
1074	571988	4149021	0.003382	2.92E-03	1.02E-05	4.42E-03	4.23E-03	1.75E-05	7.80E-04	7.61E-04	3.23E-06	3.28E-04	3.35E-04	1.38E-06
1075	571994.3	4149014	0.003483	3.01E-03	1.05E-05	4.55E-03	4.36E-03	1.81E-05	8.03E-04	7.84E-04	3.33E-06	3.38E-04	3.45E-04	1.43E-06
1076	572000.5	4149008	0.003587	3.10E-03	1.08E-05	4.68E-03	4.49E-03	1.86E-05	8.27E-04	8.07E-04	3.43E-06	3.48E-04	3.56E-04	1.47E-06

1077	571968.6	4149318	0.003786	3.27E-03	1.14E-05	4.94E-03	4.74E-03	1.96E-05	8.73E-04	8.52E-04	3.62E-06	3.67E-04	3.76E-04	1.55E-06
1078	571968.3	4149309	0.003715	3.21E-03	1.12E-05	4.85E-03	4.65E-03	1.93E-05	8.57E-04	8.36E-04	3.55E-06	3.60E-04	3.68E-04	1.52E-06
1079	571968	4149300	0.003656	3.16E-03	1.10E-05	4.77E-03	4.57E-03	1.90E-05	8.43E-04	8.23E-04	3.49E-06	3.55E-04	3.63E-04	1.50E-06
1080	571967.7	4149291	0.003606	3.11E-03	1.08E-05	4.71E-03	4.51E-03	1.87E-05	8.31E-04	8.12E-04	3.44E-06	3.50E-04	3.58E-04	1.48E-06
1081	571967.5	4149282	0.003562	3.08E-03	1.07E-05	4.65E-03	4.46E-03	1.85E-05	8.21E-04	8.02E-04	3.40E-06	3.46E-04	3.53E-04	1.46E-06
1082	571967.2	4149273	0.003522	3.04E-03	1.06E-05	4.60E-03	4.41E-03	1.83E-05	8.12E-04	7.93E-04	3.36E-06	3.42E-04	3.49E-04	1.44E-06
1083	571966.9	4149264	0.003483	3.01E-03	1.05E-05	4.55E-03	4.36E-03	1.81E-05	8.03E-04	7.84E-04	3.33E-06	3.38E-04	3.45E-04	1.43E-06
1084	571966.6	4149255	0.003447	2.98E-03	1.03E-05	4.50E-03	4.31E-03	1.79E-05	7.95E-04	7.76E-04	3.29E-06	3.34E-04	3.42E-04	1.41E-06
1085	571966.3	4149246	0.003413	2.95E-03	1.02E-05	4.46E-03	4.27E-03	1.77E-05	7.87E-04	7.68E-04	3.26E-06	3.31E-04	3.39E-04	1.40E-06
1086	571966.1	4149237	0.003385	2.92E-03	1.02E-05	4.42E-03	4.23E-03	1.75E-05	7.80E-04	7.62E-04	3.23E-06	3.28E-04	3.36E-04	1.39E-06
1087	571965.8	4149228	0.003366	2.91E-03	1.01E-05	4.39E-03	4.21E-03	1.74E-05	7.76E-04	7.58E-04	3.21E-06	3.26E-04	3.34E-04	1.38E-06
1088	571965.5	4149218	0.003359	2.90E-03	1.01E-05	4.39E-03	4.20E-03	1.74E-05	7.74E-04	7.56E-04	3.21E-06	3.26E-04	3.33E-04	1.37E-06
1089	571965.2	4149209	0.003365	2.91E-03	1.01E-05	4.39E-03	4.21E-03	1.74E-05	7.76E-04	7.57E-04	3.21E-06	3.26E-04	3.34E-04	1.38E-06
1090	571964.9	4149200	0.003386	2.92E-03	1.02E-05	4.42E-03	4.24E-03	1.76E-05	7.81E-04	7.62E-04	3.23E-06	3.28E-04	3.36E-04	1.39E-06
1091	571964.7	4149191	0.00342	2.95E-03	1.03E-05	4.47E-03	4.28E-03	1.77E-05	7.89E-04	7.70E-04	3.27E-06	3.32E-04	3.39E-04	1.40E-06
1092	571964.4	4149182	0.003464	2.99E-03	1.04E-05	4.52E-03	4.33E-03	1.80E-05	7.99E-04	7.80E-04	3.31E-06	3.36E-04	3.44E-04	1.42E-06
1093	571964.1	4149173	0.003511	3.03E-03	1.05E-05	4.58E-03	4.39E-03	1.82E-05	8.09E-04	7.90E-04	3.35E-06	3.41E-04	3.48E-04	1.44E-06
1094	571963.8	4149164	0.003552	3.07E-03	1.07E-05	4.64E-03	4.44E-03	1.84E-05	8.19E-04	8.00E-04	3.39E-06	3.45E-04	3.52E-04	1.45E-06
1095	571963.5	4149155	0.003582	3.09E-03	1.08E-05	4.68E-03	4.48E-03	1.86E-05	8.26E-04	8.06E-04	3.42E-06	3.47E-04	3.55E-04	1.47E-06
1096	571963.3	4149146	0.003594	3.10E-03	1.08E-05	4.69E-03	4.50E-03	1.86E-05	8.29E-04	8.09E-04	3.43E-06	3.49E-04	3.56E-04	1.47E-06
1097	571963	4149137	0.003583	3.09E-03	1.08E-05	4.68E-03	4.48E-03	1.86E-05	8.26E-04	8.07E-04	3.42E-06	3.48E-04	3.55E-04	1.47E-06
1098	571962.7	4149128	0.003551	3.07E-03	1.07E-05	4.64E-03	4.44E-03	1.84E-05	8.19E-04	7.99E-04	3.39E-06	3.44E-04	3.52E-04	1.45E-06
1099	571962.4	4149119	0.003497	3.02E-03	1.05E-05	4.57E-03	4.37E-03	1.81E-05	8.06E-04	7.87E-04	3.34E-06	3.39E-04	3.47E-04	1.43E-06
1100	571961.8	4149101	0.003351	2.89E-03	1.01E-05	4.38E-03	4.19E-03	1.74E-05	7.73E-04	7.54E-04	3.20E-06	3.25E-04	3.32E-04	1.37E-06
1101	571961.6	4149092	0.003272	2.83E-03	9.82E-06	4.27E-03	4.09E-03	1.70E-05	7.54E-04	7.37E-04	3.12E-06	3.17E-04	3.25E-04	1.34E-06
1102	571961.3	4149082	0.003196	2.76E-03	9.59E-06	4.17E-03	4.00E-03	1.66E-05	7.37E-04	7.19E-04	3.05E-06	3.10E-04	3.17E-04	1.31E-06
1103	571961	4149073	0.003128	2.70E-03	9.39E-06	4.08E-03	3.91E-03	1.62E-05	7.21E-04	7.04E-04	2.99E-06	3.03E-04	3.10E-04	1.28E-06
1104	571960.7	4149064	0.00307	2.65E-03	9.21E-06	4.01E-03	3.84E-03	1.59E-05	7.08E-04	6.91E-04	2.93E-06	2.98E-04	3.04E-04	1.26E-06
1105	571960.4	4149055	0.003024	2.61E-03	9.08E-06	3.95E-03	3.78E-03	1.57E-05	6.97E-04	6.81E-04	2.89E-06	2.93E-04	3.00E-04	1.24E-06
1106	571960.2	4149046	0.002989	2.58E-03	8.97E-06	3.90E-03	3.74E-03	1.55E-05	6.89E-04	6.73E-04	2.85E-06	2.90E-04	2.96E-04	1.22E-06
1107	571966.1	4149031	0.003044	2.63E-03	9.14E-06	3.97E-03	3.81E-03	1.58E-05	7.02E-04	6.85E-04	2.91E-06	2.95E-04	3.02E-04	1.25E-06
1108	571978.6	4149017	0.003218	2.78E-03	9.66E-06	4.20E-03	4.03E-03	1.67E-05	7.42E-04	7.24E-04	3.07E-06	3.12E-04	3.19E-04	1.32E-06
1109	571959.5	4149322	0.00363	3.13E-03	1.09E-05	4.74E-03	4.54E-03	1.88E-05	8.37E-04	8.17E-04	3.47E-06	3.52E-04	3.60E-04	1.49E-06
1110	571959.2	4149313	0.003561	3.08E-03	1.07E-05	4.65E-03	4.45E-03	1.85E-05	8.21E-04	8.02E-04	3.40E-06	3.45E-04	3.53E-04	1.46E-06
1111	571958.9	4149303	0.003504	3.03E-03	1.05E-05	4.57E-03	4.38E-03	1.82E-05	8.08E-04	7.89E-04	3.35E-06	3.40E-04	3.48E-04	1.43E-06
1112	571958.6	4149294	0.003456	2.98E-03	1.04E-05	4.51E-03	4.32E-03	1.79E-05	7.97E-04	7.78E-04	3.30E-06	3.35E-04	3.43E-04	1.41E-06
1113	571958.3	4149285	0.003413	2.95E-03	1.02E-05	4.46E-03	4.27E-03	1.77E-05	7.87E-04	7.68E-04	3.26E-06	3.31E-04	3.39E-04	1.40E-06
1114	571958	4149275	0.003374	2.91E-03	1.01E-05	4.41E-03	4.22E-03	1.75E-05	7.78E-04	7.59E-04	3.22E-06	3.27E-04	3.35E-04	1.38E-06
1115	571957.7	4149266	0.003337	2.88E-03	1.00E-05	4.36E-03	4.17E-03	1.73E-05	7.69E-04	7.51E-04	3.19E-06	3.24E-04	3.31E-04	1.37E-06
1116	571957.4	4149257	0.0033	2.85E-03	9.90E-06	4.31E-03	4.13E-03	1.71E-05	7.61E-04	7.43E-04	3.15E-06	3.20E-04	3.27E-04	1.35E-06
1117	571957.2	4149247	0.003267	2.82E-03	9.81E-06	4.27E-03	4.09E-03	1.69E-05	7.53E-04	7.35E-04	3.12E-06	3.17E-04	3.24E-04	1.34E-06
1118	571956.9	4149238	0.003239	2.80E-03	9.72E-06	4.23E-03	4.05E-03	1.68E-05	7.47E-04	7.29E-04	3.09E-06	3.14E-04	3.21E-04	1.33E-06
1119	571956.6	4149229	0.003218	2.78E-03	9.66E-06	4.20E-03	4.03E-03	1.67E-05	7.42E-04	7.24E-04	3.07E-06	3.12E-04	3.19E-04	1.32E-06
1120	571956.3	4149220	0.00321	2.77E-03	9.63E-06	4.19E-03	4.02E-03	1.66E-05	7.40E-04	7.23E-04	3.07E-06	3.11E-04	3.18E-04	1.31E-06
1121	571956	4149210	0.003215	2.78E-03	9.65E-06	4.20E-03	4.02E-03	1.67E-05	7.41E-04	7.24E-04	3.07E-06	3.12E-04	3.19E-04	1.32E-06
1122	571955.7	4149201	0.003234	2.79E-03	9.71E-06	4.22E-03	4.05E-03	1.68E-05	7.46E-04	7.28E-04	3.09E-06	3.14E-04	3.21E-04	1.32E-06
1123	571955.4	4149192	0.003266	2.82E-03	9.80E-06	4.26E-03	4.09E-03	1.69E-05	7.53E-04	7.35E-04	3.12E-06	3.17E-04	3.24E-04	1.34E-06
1124	571955.1	4149182	0.003309	2.86E-03	9.93E-06	4.32E-03	4.14E-03	1.72E-05	7.63E-04	7.45E-04	3.16E-06	3.21E-04	3.28E-04	1.35E-06
1125	571954.9	4149173	0.003356	2.90E-03	1.01E-05	4.38E-03	4.20E-03	1.74E-05	7.74E-04	7.55E-04	3.20E-06	3.26E-04	3.33E-04	1.37E-06
1126	571954.6	4149164	0.003397	2.93E-03	1.02E-05	4.44E-03	4.25E-03	1.76E-05	7.83E-04	7.65E-04	3.24E-06	3.30E-04	3.37E-04	1.39E-06
1127	571954.3	4149154	0.003427	2.96E-03	1.03E-05	4.47E-03	4.29E-03	1.78E-05	7.90E-04	7.71E-04	3.27E-06	3.32E-04	3.40E-04	1.40E-06
1128	571954	4149145	0.00344	2.97E-03	1.03E-05	4.49E-03	4.30E-03	1.78E-05	7.93E-04	7.74E-04	3.29E-06	3.34E-04	3.41E-04	1.41E-06
1129	571953.7	4149136	0.003431	2.96E-03	1.03E-05	4.48E-03	4.29E-03	1.78E-05	7.91E-04	7.72E-04	3.28E-06	3.33E-04	3.40E-04	1.40E-06
1130	571953.4	4149127	0.0034	2.94E-03	1.02E-05	4.44E-03	4.25E-03	1.76E-05	7.84E-04	7.65E-04	3.25E-06	3.30E-04	3.37E-04	1.39E-06
1131	571952.5	4149099	0.003208	2.77E-03	9.63E-06	4.19E-03	4.01E-03	1.66E-05	7.40E-04	7.22E-04	3.06E-06	3.11E-04	3.18E-04	1.31E-06
1132	571952.3	4149089	0.00313	2.70E-03	9.39E-06	4.09E-03	3.92E-03	1.62E-05	7.22E-04	7.05E-04	2.99E-06	3.04E-04	3.10E-04	1.28E-06
1133	571952	4149080	0.003056	2.64E-03	9.17E-06	3.99E-03	3.82E-03	1.58E-05	7.05E-04	6.88E-04	2.92E-06	2.96E-04	3.03E-04	1.25E-06
1134	571951.7	4149071	0.002989	2.58E-03	8.97E-06	3.90E-03	3.74E-03	1.55E-05	6.89E-04	6.73E-04	2.85E-06	2.90E-04	2.96E-04	1.22E-06
1135	571951.4	4149062	0.002933	2.53E-03	8.80E-06	3.83E-03	3.67E-03	1.52E-05	6.76E-04	6.60E-04	2.80E-06	2.84E-04	2.91E-04	1.20E-06
1136	571951.1	4149052	0.002888	2.49E-03	8.67E-06	3.77E-03	3.61E-03	1.50E-05	6.66E-04	6.50E-04	2.76E-06	2.80E-04	2.86E-04	1.18E-06
1137	571950.8	4149043	0.002855	2.47E-03	8.57E-06	3.73E-03	3.57E-03	1.48E-05	6.58E-04	6.43E-04	2.73E-06	2.77E-04	2.83E-04	1.17E-06
1138	571956.9	4149027	0.002907	2.51E-03	8.72E-06	3.80E-03	3.64E-03	1.51E-05	6.70E-04	6.54E-04	2.78E-06	2.82E-04	2.88E-04	1.19E-06
1139	571963.3	4149020	0.002988	2.58E-03	8.97E-06	3.90E-03	3.74E-03	1.55E-05	6.89E-04	6.73E-04	2.85E-06	2.90E-04	2.96E-04	1.22E-06
1140	571950.4	4149326	0.003489	3.01E-03	1.05E-05	4.56E-03	4.36E-03	1.81E-05	8.04E-04	7.85E-04	3.33E-06	3.38E-04	3.46E-04	1.43E-06
1141	571950.1	4149317	0.003423	2.96E-03	1.03E-05	4.47E-03	4.28E-03	1.77E-05	7.89E-04	7.71E-04	3.27E-06	3.32E-04	3.39E-04	1.40E-06
1142	571949.8	4149308	0.003368	2.91E-03	1.01E-05	4.40E-03	4.21E-03	1.75E-05	7.77E-04	7.58E-04	3.22E-06	3.27E-04	3.34E-04	1.38E-06
1143	571949.5	4149298	0.003322	2.87E-03	9.97E-06	4.34E-03	4.16E-03	1.72E-05	7.66E-04	7.48E-04	3.17E-06	3.22E-04	3.29E-04	1.36E-06
1144	571949.2	4149289	0.003281	2.83E-03	9.85E-06	4.28E-03	4.10E-03	1.70E-05	7.56E-04	7.39E-04	3.13E-06	3.18E-04	3.25E-04	1.34E-06
1145	571948.9	4149280	0.003244	2.80E-03	9.74E-06	4.24E-03	4.06E-03	1.68E-05	7.48E-04	7.30E-04	3.10E-06	3.15E-04	3.22E-04	1.33E-06
1146	571948.6	4149271	0.003208	2.77E-03	9.63E-06	4.19E-03	4.01E-03	1.66E-05	7.40E-04	7.22E-04	3.06E-06	3.11E-04	3.18E-04	1.31E-06
1147	571948.4	4149261	0.003174	2.74E-03	9.53E-06	4.14E-03	3.97E-03	1.65E-05	7.32E-04	7.14E-04	3.03E-06	3.08E-04	3.15E-04	1.30E-06
1148	571948.1	4149252	0.00314	2.71E-03	9.42E-06	4.10E-03	3.93E-03	1.63E-05	7.24E-04	7.07E-04	3.00E-06	3.05E-04	3.11E-04	1.29E-06
1149	571947.8	4149243	0.003111	2.69E-03	9.34E-06	4.06E-03	3.89E-03	1.61E-05	7.17E-04	7.00E-04	2.97E-06	3.02E-04	3.09E-04	1.27E-06
1150	571947.5	4149234	0.003087	2.67E-03	9.27E-06	4.03E-03	3.86E-03	1.60E-05	7.12E-04	6.95E-04	2.95E-06	2.99E-04	3.06E-04	1.26E-06
1151	571947.2	4149224	0.003073	2.65E-03	9.22E-06	4.01E-03	3.84E-03	1.59E-05	7.09E-04	6.92E-04	2.93E-06	2.98E-04	3.05E-04	1.26E-06
1152	571946.9	4149215	0.003071	2.65E-03	9.22E-06	4.01E-03	3.84E-03	1.59E-05	7.08E-04	6.91E-04	2.93E-06	2.98E-04	3.05E-04	1.26E-06
1153	571946.6	4149206	0.003083	2.66E-03	9.25E-06	4.03E-03	3.86E-03	1.60E-05	7.11E-04	6.94E-04	2.94E-06	2.99E-04	3.06E-04	1.26E-06
1154	571946.3	4149197	0.003106	2.68E-03	9.32E-06	4.06E-03	3.89E-03	1.61E-05	7.16E-04	6.99E-04	2.97E-06	3.01E-04	3.08E-04	1.27E-06
1155	571946.1	4149187	0.003142	2.71E-03	9.43E-06	4.10E-03	3.93E-03	1.63E-05	7.24E-04	7.07E-04	3.00E-06	3.05E-04	3.12E-04	1.29E-06
1156	571945.8	4149178	0.003185	2.75E-03	9.56E-06	4.16E-03	3.98E-03	1.65E-05	7.34E-04	7.17E-04	3.04E-06	3.09E-04	3.16E-04	1.30E-06
1157	571945.5	4149169	0.003229	2.79E-03	9.69E-06	4.22E-03	4.04E-03	1.67E-05	7.44E-04	7.27E-04	3.08E-06	3.13E-04	3.20E-04	1.32E-06
1158	571945.2	4149160	0.003266	2.82E-03	9.80E-06	4.26E-03	4.09E-03	1.69E-05	7.53E-04	7.35E-04	3.12E-06	3.17E-04	3.24E-04	1.34E-06
1159	571944.9	4149150	0.00329	2.84E-03	9.87E-06	4.30E-03	4.12E-03	1.71E-05	7.59E-04	7.41E-04	3.14E-06	3.19E-04	3.26E-04	1.35E-06

1160	571944.6	4149141	0.003297	2.85E-03	9.90E-06	4.30E-03	4.12E-03	1.71E-05	7.60E-04	7.42E-04	3.15E-06	3.20E-04	3.27E-04	1.35E-06
1161	571944.3	4149132	0.003282	2.83E-03	9.85E-06	4.28E-03	4.11E-03	1.70E-05	7.57E-04	7.39E-04	3.13E-06	3.18E-04	3.26E-04	1.34E-06
1162	571944	4149123	0.003248	2.80E-03	9.75E-06	4.24E-03	4.06E-03	1.68E-05	7.49E-04	7.31E-04	3.10E-06	3.15E-04	3.22E-04	1.33E-06
1163	571943.5	4149104	0.003131	2.70E-03	9.40E-06	4.09E-03	3.92E-03	1.62E-05	7.22E-04	7.05E-04	2.99E-06	3.04E-04	3.11E-04	1.28E-06
1164	571943.2	4149095	0.003058	2.64E-03	9.18E-06	3.99E-03	3.83E-03	1.59E-05	7.05E-04	6.88E-04	2.92E-06	2.97E-04	3.03E-04	1.25E-06
1165	571942.9	4149086	0.002985	2.58E-03	8.96E-06	3.90E-03	3.73E-03	1.55E-05	6.88E-04	6.72E-04	2.85E-06	2.90E-04	2.96E-04	1.22E-06
1166	571942.6	4149076	0.002915	2.52E-03	8.75E-06	3.81E-03	3.65E-03	1.51E-05	6.72E-04	6.56E-04	2.78E-06	2.83E-04	2.89E-04	1.19E-06
1167	571942.3	4149067	0.002852	2.46E-03	8.56E-06	3.72E-03	3.57E-03	1.48E-05	6.58E-04	6.42E-04	2.72E-06	2.77E-04	2.83E-04	1.17E-06
1168	571942	4149058	0.0028	2.42E-03	8.40E-06	3.66E-03	3.50E-03	1.45E-05	6.46E-04	6.30E-04	2.67E-06	2.72E-04	2.78E-04	1.15E-06
1169	571941.8	4149049	0.002759	2.38E-03	8.28E-06	3.60E-03	3.45E-03	1.43E-05	6.36E-04	6.21E-04	2.63E-06	2.68E-04	2.74E-04	1.13E-06
1170	571941.5	4149039	0.002729	2.36E-03	8.19E-06	3.56E-03	3.41E-03	1.41E-05	6.29E-04	6.14E-04	2.61E-06	2.65E-04	2.71E-04	1.12E-06
1171	571947.5	4149023	0.002778	2.40E-03	8.34E-06	3.63E-03	3.48E-03	1.44E-05	6.40E-04	6.25E-04	2.65E-06	2.69E-04	2.76E-04	1.14E-06
1172	571953.9	4149017	0.002853	2.46E-03	8.56E-06	3.72E-03	3.57E-03	1.48E-05	6.58E-04	6.42E-04	2.72E-06	2.77E-04	2.83E-04	1.17E-06
1173	571941	4149321	0.003293	2.84E-03	9.88E-06	4.30E-03	4.12E-03	1.71E-05	7.59E-04	7.41E-04	3.14E-06	3.19E-04	3.27E-04	1.35E-06
1174	571940.7	4149312	0.00324	2.80E-03	9.72E-06	4.23E-03	4.05E-03	1.68E-05	7.47E-04	7.29E-04	3.09E-06	3.14E-04	3.21E-04	1.33E-06
1175	571940.4	4149303	0.003196	2.76E-03	9.59E-06	4.17E-03	4.00E-03	1.66E-05	7.37E-04	7.19E-04	3.05E-06	3.10E-04	3.17E-04	1.31E-06
1176	571940.1	4149293	0.003157	2.73E-03	9.48E-06	4.12E-03	3.95E-03	1.64E-05	7.28E-04	7.11E-04	3.01E-06	3.06E-04	3.13E-04	1.29E-06
1177	571939.8	4149284	0.003122	2.70E-03	9.37E-06	4.08E-03	3.91E-03	1.62E-05	7.20E-04	7.03E-04	2.98E-06	3.03E-04	3.10E-04	1.28E-06
1178	571939.5	4149275	0.003088	2.67E-03	9.27E-06	4.03E-03	3.86E-03	1.60E-05	7.12E-04	6.95E-04	2.95E-06	3.00E-04	3.06E-04	1.26E-06
1179	571939.3	4149266	0.003055	2.64E-03	9.17E-06	3.99E-03	3.82E-03	1.58E-05	7.04E-04	6.88E-04	2.92E-06	2.96E-04	3.03E-04	1.25E-06
1180	571939	4149257	0.003022	2.61E-03	9.07E-06	3.95E-03	3.78E-03	1.57E-05	6.97E-04	6.80E-04	2.89E-06	2.93E-04	3.00E-04	1.24E-06
1181	571938.7	4149247	0.002992	2.58E-03	8.98E-06	3.91E-03	3.74E-03	1.55E-05	6.90E-04	6.74E-04	2.86E-06	2.90E-04	2.97E-04	1.22E-06
1182	571938.4	4149238	0.002967	2.56E-03	8.91E-06	3.87E-03	3.71E-03	1.54E-05	6.84E-04	6.68E-04	2.83E-06	2.88E-04	2.94E-04	1.21E-06
1183	571938.1	4149229	0.002948	2.55E-03	8.85E-06	3.85E-03	3.69E-03	1.53E-05	6.80E-04	6.64E-04	2.82E-06	2.86E-04	2.92E-04	1.21E-06
1184	571937.8	4149220	0.00294	2.54E-03	8.82E-06	3.84E-03	3.68E-03	1.52E-05	6.78E-04	6.62E-04	2.81E-06	2.85E-04	2.92E-04	1.20E-06
1185	571937.5	4149211	0.002944	2.54E-03	8.84E-06	3.84E-03	3.68E-03	1.53E-05	6.79E-04	6.63E-04	2.81E-06	2.86E-04	2.92E-04	1.20E-06
1186	571937.3	4149201	0.002961	2.56E-03	8.89E-06	3.87E-03	3.70E-03	1.54E-05	6.83E-04	6.67E-04	2.83E-06	2.87E-04	2.94E-04	1.21E-06
1187	571937	4149192	0.002989	2.58E-03	8.97E-06	3.90E-03	3.74E-03	1.55E-05	6.89E-04	6.73E-04	2.85E-06	2.90E-04	2.96E-04	1.22E-06
1188	571936.7	4149183	0.003027	2.61E-03	9.09E-06	3.95E-03	3.79E-03	1.57E-05	6.98E-04	6.81E-04	2.89E-06	2.94E-04	3.00E-04	1.24E-06
1189	571936.4	4149174	0.00307	2.65E-03	9.21E-06	4.01E-03	3.84E-03	1.59E-05	7.08E-04	6.91E-04	2.93E-06	2.98E-04	3.04E-04	1.26E-06
1190	571936.1	4149165	0.00311	2.69E-03	9.33E-06	4.06E-03	3.89E-03	1.61E-05	7.17E-04	7.00E-04	2.97E-06	3.02E-04	3.08E-04	1.27E-06
1191	571935.8	4149155	0.003142	2.71E-03	9.43E-06	4.10E-03	3.93E-03	1.63E-05	7.24E-04	7.07E-04	3.00E-06	3.05E-04	3.12E-04	1.29E-06
1192	571935.5	4149146	0.003161	2.73E-03	9.49E-06	4.13E-03	3.95E-03	1.64E-05	7.29E-04	7.12E-04	3.02E-06	3.07E-04	3.14E-04	1.29E-06
1193	571935.3	4149137	0.003161	2.73E-03	9.49E-06	4.13E-03	3.95E-03	1.64E-05	7.29E-04	7.12E-04	3.02E-06	3.07E-04	3.14E-04	1.29E-06
1194	571935	4149128	0.003143	2.71E-03	9.43E-06	4.10E-03	3.93E-03	1.63E-05	7.25E-04	7.07E-04	3.00E-06	3.05E-04	3.12E-04	1.29E-06
1195	571934.1	4149100	0.002989	2.58E-03	8.97E-06	3.90E-03	3.74E-03	1.55E-05	6.89E-04	6.73E-04	2.85E-06	2.90E-04	2.96E-04	1.22E-06
1196	571933.8	4149091	0.002919	2.52E-03	8.76E-06	3.81E-03	3.65E-03	1.51E-05	6.73E-04	6.57E-04	2.79E-06	2.83E-04	2.90E-04	1.19E-06
1197	571933.5	4149082	0.00285	2.46E-03	8.55E-06	3.72E-03	3.57E-03	1.48E-05	6.57E-04	6.42E-04	2.72E-06	2.76E-04	2.83E-04	1.17E-06
1198	571933.3	4149073	0.002783	2.40E-03	8.35E-06	3.63E-03	3.48E-03	1.44E-05	6.42E-04	6.26E-04	2.66E-06	2.70E-04	2.76E-04	1.14E-06
1199	571933	4149063	0.002725	2.35E-03	8.18E-06	3.56E-03	3.41E-03	1.41E-05	6.28E-04	6.13E-04	2.60E-06	2.64E-04	2.70E-04	1.12E-06
1200	571932.7	4149054	0.002676	2.31E-03	8.03E-06	3.49E-03	3.35E-03	1.39E-05	6.17E-04	6.02E-04	2.56E-06	2.60E-04	2.65E-04	1.10E-06
1201	571932.4	4149045	0.002638	2.28E-03	7.92E-06	3.44E-03	3.30E-03	1.37E-05	6.08E-04	5.94E-04	2.52E-06	2.56E-04	2.62E-04	1.08E-06
1202	571932.1	4149036	0.002611	2.25E-03	7.84E-06	3.41E-03	3.27E-03	1.35E-05	6.02E-04	5.88E-04	2.49E-06	2.53E-04	2.59E-04	1.07E-06
1203	571938.2	4149020	0.002657	2.29E-03	7.97E-06	3.47E-03	3.32E-03	1.38E-05	6.13E-04	5.98E-04	2.54E-06	2.58E-04	2.64E-04	1.09E-06
1204	571931.9	4149325	0.003173	2.74E-03	9.52E-06	4.14E-03	3.97E-03	1.64E-05	7.32E-04	7.14E-04	3.03E-06	3.08E-04	3.15E-04	1.30E-06
1205	571931.6	4149316	0.003123	2.70E-03	9.37E-06	4.08E-03	3.91E-03	1.62E-05	7.20E-04	7.03E-04	2.98E-06	3.03E-04	3.10E-04	1.28E-06
1206	571931.3	4149307	0.003079	2.66E-03	9.24E-06	4.02E-03	3.85E-03	1.60E-05	7.10E-04	6.93E-04	2.94E-06	2.99E-04	3.05E-04	1.26E-06
1207	571931	4149298	0.00304	2.63E-03	9.12E-06	3.97E-03	3.80E-03	1.58E-05	7.01E-04	6.84E-04	2.90E-06	2.95E-04	3.02E-04	1.24E-06
1208	571930.7	4149289	0.003007	2.60E-03	9.03E-06	3.93E-03	3.76E-03	1.56E-05	6.93E-04	6.77E-04	2.87E-06	2.92E-04	2.98E-04	1.23E-06
1209	571930.4	4149280	0.002975	2.57E-03	8.93E-06	3.88E-03	3.72E-03	1.54E-05	6.86E-04	6.70E-04	2.84E-06	2.89E-04	2.95E-04	1.22E-06
1210	571930.2	4149270	0.002943	2.54E-03	8.83E-06	3.84E-03	3.68E-03	1.53E-05	6.79E-04	6.62E-04	2.81E-06	2.85E-04	2.92E-04	1.20E-06
1211	571929.9	4149261	0.002912	2.51E-03	8.74E-06	3.80E-03	3.64E-03	1.51E-05	6.71E-04	6.55E-04	2.78E-06	2.82E-04	2.89E-04	1.19E-06
1212	571929.6	4149252	0.002882	2.49E-03	8.65E-06	3.76E-03	3.61E-03	1.49E-05	6.64E-04	6.49E-04	2.75E-06	2.80E-04	2.86E-04	1.18E-06
1213	571929.3	4149243	0.002855	2.47E-03	8.57E-06	3.73E-03	3.57E-03	1.48E-05	6.58E-04	6.43E-04	2.73E-06	2.77E-04	2.83E-04	1.17E-06
1214	571929	4149234	0.002834	2.45E-03	8.51E-06	3.70E-03	3.55E-03	1.47E-05	6.53E-04	6.38E-04	2.71E-06	2.75E-04	2.81E-04	1.16E-06
1215	571928.7	4149225	0.002821	2.44E-03	8.47E-06	3.68E-03	3.53E-03	1.46E-05	6.50E-04	6.35E-04	2.69E-06	2.74E-04	2.80E-04	1.15E-06
1216	571928.4	4149215	0.002819	2.43E-03	8.46E-06	3.68E-03	3.53E-03	1.46E-05	6.50E-04	6.35E-04	2.69E-06	2.73E-04	2.80E-04	1.15E-06
1217	571928.2	4149206	0.002829	2.44E-03	8.49E-06	3.69E-03	3.54E-03	1.47E-05	6.52E-04	6.37E-04	2.70E-06	2.74E-04	2.81E-04	1.16E-06
1218	571927.9	4149197	0.002849	2.46E-03	8.55E-06	3.72E-03	3.56E-03	1.48E-05	6.57E-04	6.41E-04	2.72E-06	2.76E-04	2.83E-04	1.17E-06
1219	571927.6	4149188	0.002881	2.49E-03	8.65E-06	3.76E-03	3.60E-03	1.49E-05	6.64E-04	6.49E-04	2.75E-06	2.79E-04	2.86E-04	1.18E-06
1220	571927.3	4149179	0.00292	2.52E-03	8.76E-06	3.81E-03	3.65E-03	1.51E-05	6.73E-04	6.57E-04	2.79E-06	2.83E-04	2.90E-04	1.20E-06
1221	571927	4149170	0.002961	2.56E-03	8.89E-06	3.87E-03	3.70E-03	1.54E-05	6.83E-04	6.67E-04	2.83E-06	2.87E-04	2.94E-04	1.21E-06
1222	571926.7	4149160	0.002998	2.59E-03	9.00E-06	3.91E-03	3.75E-03	1.55E-05	6.91E-04	6.75E-04	2.86E-06	2.91E-04	2.97E-04	1.23E-06
1223	571926.5	4149151	0.003025	2.61E-03	9.08E-06	3.95E-03	3.78E-03	1.57E-05	6.97E-04	6.81E-04	2.89E-06	2.93E-04	3.00E-04	1.24E-06
1224	571926.2	4149142	0.003038	2.62E-03	9.12E-06	3.97E-03	3.80E-03	1.57E-05	7.00E-04	6.84E-04	2.90E-06	2.95E-04	3.01E-04	1.24E-06
1225	571925.9	4149133	0.003034	2.62E-03	9.11E-06	3.96E-03	3.80E-03	1.57E-05	7.00E-04	6.83E-04	2.90E-06	2.94E-04	3.01E-04	1.24E-06
1226	571925	4149105	0.002919	2.52E-03	8.76E-06	3.81E-03	3.65E-03	1.51E-05	6.73E-04	6.57E-04	2.79E-06	2.83E-04	2.90E-04	1.19E-06
1227	571924.8	4149096	0.002856	2.47E-03	8.57E-06	3.73E-03	3.57E-03	1.48E-05	6.58E-04	6.43E-04	2.73E-06	2.77E-04	2.83E-04	1.17E-06
1228	571924.5	4149087	0.002789	2.41E-03	8.37E-06	3.64E-03	3.49E-03	1.45E-05	6.43E-04	6.28E-04	2.66E-06	2.71E-04	2.77E-04	1.14E-06
1229	571924.2	4149078	0.002723	2.35E-03	8.17E-06	3.56E-03	3.41E-03	1.41E-05	6.28E-04	6.13E-04	2.60E-06	2.64E-04	2.70E-04	1.11E-06
1230	571923.9	4149069	0.00266	2.30E-03	7.98E-06	3.47E-03	3.33E-03	1.38E-05	6.13E-04	5.99E-04	2.54E-06	2.58E-04	2.64E-04	1.09E-06
1231	571923.6	4149060	0.002605	2.25E-03	7.82E-06	3.40E-03	3.26E-03	1.35E-05	6.01E-04	5.86E-04	2.49E-06	2.53E-04	2.58E-04	1.07E-06
1232	571923.3	4149050	0.00256	2.21E-03	7.68E-06	3.34E-03	3.20E-03	1.33E-05	5.90E-04	5.76E-04	2.44E-06	2.48E-04	2.54E-04	1.05E-06
1233	571923	4149041	0.002526	2.18E-03	7.58E-06	3.30E-03	3.16E-03	1.31E-05	5.82E-04	5.69E-04	2.41E-06	2.45E-04	2.51E-04	1.03E-06
1234	571922.8	4149032	0.002501	2.16E-03	7.51E-06	3.27E-03	3.13E-03	1.30E-05	5.77E-04	5.63E-04	2.39E-06	2.43E-04	2.48E-04	1.02E-06
1235	571922.5	4149320	0.00301	2.60E-03	9.03E-06	3.93E-03	3.77E-03	1.56E-05	6.94E-04	6.78E-04	2.87E-06	2.92E-04	2.99E-04	1.23E-06
1236	571922.2	4149311	0.002969	2.56E-03	8.91E-06	3.88E-03	3.71E-03	1.54E-05	6.85E-04	6.68E-04	2.84E-06	2.88E-04	2.94E-04	1.22E-06
1237	571921.9	4149302	0.002933	2.53E-03	8.80E-06	3.83E-03	3.67E-03	1.52E-05	6.76E-04	6.60E-04	2.80E-06	2.84E-04	2.91E-04	1.20E-06
1238	571921.6	4149293	0.002901	2.51E-03	8.71E-06	3.79E-03	3.63E-03	1.50E-05	6.69E-04	6.53E-04	2.77E-06	2.81E-04	2.88E-04	1.19E-06
1239	571921.3	4149284	0.00287	2.48E-03	8.61E-06	3.75E-03	3.59E-03	1.49E-05	6.62E-04	6.46E-04	2.74E-06	2.78E-04	2.85E-04	1.17E-06
1240	571921.1	4149275	0.002839	2.45E-03	8.52E-06	3.71E-03	3.55E-03	1.47E-05	6.55E-04	6.39E-04	2.71E-06	2.75E-04	2.82E-04	1.16E-06
1241	571920.8	4149266	0.002809	2.43E-03	8.43E-06	3.67E-03	3.51E-03	1.46E-05	6.48E-04	6.32E-04	2.68E-06	2.72E-04	2.79E-04	1.15E-06
1242	571920.5	4149257	0.002779	2.40E-03	8.34E-06	3.63E-03	3.48E-03	1.44E-05	6.41E-04	6.26E-04	2.65E-06	2.70E-04	2.76E-04	1.14E-06

1243	571920.2	4149247	0.002752	2.38E-03	8.26E-06	3.59E-03	3.44E-03	1.43E-05	6.34E-04	6.19E-04	2.63E-06	2.67E-04	2.73E-04	1.13E-06
1244	571919.9	4149238	0.002729	2.36E-03	8.19E-06	3.56E-03	3.41E-03	1.41E-05	6.29E-04	6.14E-04	2.61E-06	2.65E-04	2.71E-04	1.12E-06
1245	571919.6	4149229	0.002712	2.34E-03	8.14E-06	3.54E-03	3.39E-03	1.41E-05	6.25E-04	6.10E-04	2.59E-06	2.63E-04	2.69E-04	1.11E-06
1246	571919.4	4149220	0.002705	2.34E-03	8.12E-06	3.53E-03	3.38E-03	1.40E-05	6.24E-04	6.09E-04	2.58E-06	2.62E-04	2.68E-04	1.11E-06
1247	571919.1	4149211	0.002708	2.34E-03	8.13E-06	3.54E-03	3.39E-03	1.40E-05	6.24E-04	6.10E-04	2.59E-06	2.63E-04	2.69E-04	1.11E-06
1248	571918.8	4149202	0.002722	2.35E-03	8.17E-06	3.55E-03	3.41E-03	1.41E-05	6.28E-04	6.13E-04	2.60E-06	2.64E-04	2.70E-04	1.11E-06
1249	571918.5	4149193	0.002747	2.37E-03	8.24E-06	3.59E-03	3.44E-03	1.42E-05	6.33E-04	6.18E-04	2.62E-06	2.66E-04	2.72E-04	1.12E-06
1250	571918.2	4149184	0.002781	2.40E-03	8.35E-06	3.63E-03	3.48E-03	1.44E-05	6.41E-04	6.26E-04	2.66E-06	2.70E-04	2.76E-04	1.14E-06
1251	571917.9	4149174	0.00282	2.44E-03	8.46E-06	3.68E-03	3.53E-03	1.46E-05	6.50E-04	6.35E-04	2.69E-06	2.74E-04	2.80E-04	1.15E-06
1252	571917.7	4149165	0.002859	2.47E-03	8.58E-06	3.73E-03	3.58E-03	1.48E-05	6.59E-04	6.44E-04	2.73E-06	2.77E-04	2.84E-04	1.17E-06
1253	571917.4	4149156	0.002892	2.50E-03	8.68E-06	3.78E-03	3.62E-03	1.50E-05	6.67E-04	6.51E-04	2.76E-06	2.81E-04	2.87E-04	1.18E-06
1254	571917.1	4149147	0.002914	2.52E-03	8.75E-06	3.80E-03	3.65E-03	1.51E-05	6.72E-04	6.56E-04	2.78E-06	2.83E-04	2.89E-04	1.19E-06
1255	571916.8	4149138	0.002922	2.52E-03	8.77E-06	3.81E-03	3.66E-03	1.51E-05	6.74E-04	6.58E-04	2.79E-06	2.83E-04	2.90E-04	1.20E-06
1256	571916	4149111	0.002846	2.46E-03	8.54E-06	3.72E-03	3.56E-03	1.48E-05	6.56E-04	6.41E-04	2.72E-06	2.76E-04	2.82E-04	1.16E-06
1257	571915.7	4149102	0.002793	2.41E-03	8.38E-06	3.65E-03	3.49E-03	1.45E-05	6.44E-04	6.29E-04	2.67E-06	2.71E-04	2.77E-04	1.14E-06
1258	571915.4	4149092	0.002732	2.36E-03	8.20E-06	3.57E-03	3.42E-03	1.42E-05	6.30E-04	6.15E-04	2.61E-06	2.65E-04	2.71E-04	1.12E-06
1259	571915.1	4149083	0.002668	2.30E-03	8.01E-06	3.48E-03	3.34E-03	1.38E-05	6.15E-04	6.01E-04	2.55E-06	2.59E-04	2.65E-04	1.09E-06
1260	571914.8	4149074	0.002605	2.25E-03	7.82E-06	3.40E-03	3.26E-03	1.35E-05	6.01E-04	5.86E-04	2.49E-06	2.53E-04	2.58E-04	1.07E-06
1261	571914.5	4149065	0.002546	2.20E-03	7.64E-06	3.32E-03	3.19E-03	1.32E-05	5.87E-04	5.73E-04	2.43E-06	2.47E-04	2.53E-04	1.04E-06
1262	571914.3	4149056	0.002494	2.15E-03	7.49E-06	3.26E-03	3.12E-03	1.29E-05	5.75E-04	5.61E-04	2.38E-06	2.42E-04	2.47E-04	1.02E-06
1263	571914	4149047	0.002452	2.12E-03	7.36E-06	3.20E-03	3.07E-03	1.27E-05	5.65E-04	5.52E-04	2.34E-06	2.38E-04	2.43E-04	1.00E-06
1264	571913.7	4149038	0.002421	2.09E-03	7.27E-06	3.16E-03	3.03E-03	1.26E-05	5.58E-04	5.45E-04	2.31E-06	2.35E-04	2.40E-04	9.91E-07
1265	571913.4	4149029	0.002398	2.07E-03	7.20E-06	3.13E-03	3.00E-03	1.24E-05	5.53E-04	5.40E-04	2.29E-06	2.33E-04	2.38E-04	9.81E-07
1266	571913.4	4149325	0.002903	2.51E-03	8.71E-06	3.79E-03	3.63E-03	1.50E-05	6.69E-04	6.53E-04	2.77E-06	2.82E-04	2.88E-04	1.19E-06
1267	571913.1	4149316	0.002864	2.47E-03	8.60E-06	3.74E-03	3.58E-03	1.48E-05	6.60E-04	6.45E-04	2.74E-06	2.78E-04	2.84E-04	1.17E-06
1268	571912.8	4149307	0.00283	2.44E-03	8.49E-06	3.69E-03	3.54E-03	1.47E-05	6.52E-04	6.37E-04	2.70E-06	2.75E-04	2.81E-04	1.16E-06
1269	571912.5	4149297	0.002799	2.42E-03	8.40E-06	3.65E-03	3.50E-03	1.45E-05	6.45E-04	6.30E-04	2.67E-06	2.71E-04	2.78E-04	1.15E-06
1270	571912.2	4149288	0.00277	2.39E-03	8.31E-06	3.62E-03	3.47E-03	1.44E-05	6.39E-04	6.24E-04	2.65E-06	2.69E-04	2.75E-04	1.13E-06
1271	571912	4149279	0.002741	2.37E-03	8.23E-06	3.58E-03	3.43E-03	1.42E-05	6.32E-04	6.17E-04	2.62E-06	2.66E-04	2.72E-04	1.12E-06
1272	571911.7	4149270	0.002712	2.34E-03	8.14E-06	3.54E-03	3.39E-03	1.41E-05	6.25E-04	6.10E-04	2.59E-06	2.63E-04	2.69E-04	1.11E-06
1273	571911.4	4149261	0.002683	2.32E-03	8.05E-06	3.50E-03	3.36E-03	1.39E-05	6.19E-04	6.04E-04	2.56E-06	2.60E-04	2.66E-04	1.10E-06
1274	571911.1	4149252	0.002656	2.29E-03	7.97E-06	3.47E-03	3.32E-03	1.38E-05	6.12E-04	5.98E-04	2.54E-06	2.58E-04	2.63E-04	1.09E-06
1275	571910.8	4149243	0.002631	2.27E-03	7.90E-06	3.44E-03	3.29E-03	1.36E-05	6.07E-04	5.92E-04	2.51E-06	2.55E-04	2.61E-04	1.08E-06
1276	571910.5	4149234	0.002612	2.26E-03	7.84E-06	3.41E-03	3.27E-03	1.35E-05	6.02E-04	5.88E-04	2.49E-06	2.53E-04	2.59E-04	1.07E-06
1277	571910.3	4149225	0.0026	2.25E-03	7.80E-06	3.39E-03	3.25E-03	1.35E-05	5.99E-04	5.85E-04	2.48E-06	2.52E-04	2.58E-04	1.06E-06
1278	571910	4149216	0.002598	2.24E-03	7.80E-06	3.39E-03	3.25E-03	1.35E-05	5.99E-04	5.85E-04	2.48E-06	2.52E-04	2.58E-04	1.06E-06
1279	571909.7	4149207	0.002606	2.25E-03	7.82E-06	3.40E-03	3.26E-03	1.35E-05	6.01E-04	5.87E-04	2.49E-06	2.53E-04	2.58E-04	1.07E-06
1280	571909.4	4149198	0.002624	2.27E-03	7.88E-06	3.43E-03	3.28E-03	1.36E-05	6.05E-04	5.91E-04	2.51E-06	2.55E-04	2.60E-04	1.07E-06
1281	571909.1	4149188	0.002653	2.29E-03	7.96E-06	3.46E-03	3.32E-03	1.38E-05	6.12E-04	5.97E-04	2.53E-06	2.57E-04	2.63E-04	1.09E-06
1282	571908.9	4149179	0.002688	2.32E-03	8.07E-06	3.51E-03	3.36E-03	1.39E-05	6.20E-04	6.05E-04	2.57E-06	2.61E-04	2.67E-04	1.10E-06
1283	571908.6	4149170	0.002726	2.35E-03	8.18E-06	3.56E-03	3.41E-03	1.41E-05	6.29E-04	6.14E-04	2.60E-06	2.64E-04	2.70E-04	1.12E-06
1284	571908.3	4149161	0.002762	2.39E-03	8.29E-06	3.61E-03	3.46E-03	1.43E-05	6.37E-04	6.22E-04	2.64E-06	2.68E-04	2.74E-04	1.13E-06
1285	571908	4149152	0.002791	2.41E-03	8.38E-06	3.64E-03	3.49E-03	1.45E-05	6.43E-04	6.28E-04	2.67E-06	2.71E-04	2.77E-04	1.14E-06
1286	571907.7	4149143	0.002808	2.42E-03	8.43E-06	3.67E-03	3.51E-03	1.46E-05	6.47E-04	6.32E-04	2.68E-06	2.72E-04	2.79E-04	1.15E-06
1287	571907.4	4149134	0.002811	2.43E-03	8.44E-06	3.67E-03	3.52E-03	1.46E-05	6.48E-04	6.33E-04	2.68E-06	2.73E-04	2.79E-04	1.15E-06
1288	571906.9	4149116	0.00277	2.39E-03	8.31E-06	3.62E-03	3.47E-03	1.44E-05	6.39E-04	6.24E-04	2.65E-06	2.69E-04	2.75E-04	1.13E-06
1289	571906.6	4149107	0.002727	2.35E-03	8.18E-06	3.56E-03	3.41E-03	1.41E-05	6.29E-04	6.14E-04	2.60E-06	2.65E-04	2.70E-04	1.12E-06
1290	571906.3	4149098	0.002675	2.31E-03	8.03E-06	3.49E-03	3.35E-03	1.39E-05	6.17E-04	6.02E-04	2.55E-06	2.59E-04	2.65E-04	1.09E-06
1291	571906	4149089	0.002615	2.26E-03	7.85E-06	3.41E-03	3.27E-03	1.36E-05	6.03E-04	5.89E-04	2.50E-06	2.54E-04	2.59E-04	1.07E-06
1292	571905.8	4149079	0.002554	2.21E-03	7.67E-06	3.33E-03	3.20E-03	1.32E-05	5.89E-04	5.75E-04	2.44E-06	2.48E-04	2.53E-04	1.05E-06
1293	571905.5	4149070	0.002494	2.15E-03	7.49E-06	3.26E-03	3.12E-03	1.29E-05	5.75E-04	5.61E-04	2.38E-06	2.42E-04	2.47E-04	1.02E-06
1294	571905.2	4149061	0.002438	2.11E-03	7.32E-06	3.18E-03	3.05E-03	1.26E-05	5.62E-04	5.49E-04	2.33E-06	2.36E-04	2.42E-04	9.98E-07
1295	571904.9	4149052	0.00239	2.06E-03	7.17E-06	3.12E-03	2.99E-03	1.24E-05	5.51E-04	5.38E-04	2.28E-06	2.32E-04	2.37E-04	9.78E-07
1296	571904.6	4149043	0.002352	2.03E-03	7.06E-06	3.07E-03	2.94E-03	1.22E-05	5.42E-04	5.29E-04	2.25E-06	2.28E-04	2.33E-04	9.63E-07
1297	571904.3	4149034	0.002323	2.01E-03	6.97E-06	3.03E-03	2.91E-03	1.20E-05	5.36E-04	5.23E-04	2.22E-06	2.25E-04	2.30E-04	9.51E-07
1298	571903.9	4149319	0.00276	2.38E-03	8.28E-06	3.60E-03	3.45E-03	1.43E-05	6.36E-04	6.21E-04	2.64E-06	2.68E-04	2.74E-04	1.13E-06
1299	571903.7	4149309	0.002727	2.35E-03	8.18E-06	3.56E-03	3.41E-03	1.41E-05	6.29E-04	6.14E-04	2.60E-06	2.65E-04	2.70E-04	1.12E-06
1300	571903.4	4149300	0.002698	2.33E-03	8.10E-06	3.52E-03	3.38E-03	1.40E-05	6.22E-04	6.07E-04	2.58E-06	2.62E-04	2.68E-04	1.10E-06
1301	571903.1	4149291	0.00267	2.31E-03	8.01E-06	3.49E-03	3.34E-03	1.38E-05	6.16E-04	6.01E-04	2.55E-06	2.59E-04	2.65E-04	1.09E-06
1302	571902.8	4149282	0.002643	2.28E-03	7.93E-06	3.45E-03	3.31E-03	1.37E-05	6.09E-04	5.95E-04	2.52E-06	2.56E-04	2.62E-04	1.08E-06
1303	571902.5	4149272	0.002615	2.26E-03	7.85E-06	3.41E-03	3.27E-03	1.36E-05	6.03E-04	5.89E-04	2.50E-06	2.54E-04	2.59E-04	1.07E-06
1304	571902.2	4149263	0.002586	2.23E-03	7.76E-06	3.38E-03	3.24E-03	1.34E-05	5.96E-04	5.82E-04	2.47E-06	2.51E-04	2.56E-04	1.06E-06
1305	571901.9	4149254	0.002558	2.21E-03	7.68E-06	3.34E-03	3.20E-03	1.33E-05	5.90E-04	5.76E-04	2.44E-06	2.48E-04	2.54E-04	1.05E-06
1306	571901.6	4149244	0.002533	2.19E-03	7.60E-06	3.31E-03	3.17E-03	1.31E-05	5.84E-04	5.70E-04	2.42E-06	2.46E-04	2.51E-04	1.04E-06
1307	571901.3	4149235	0.002513	2.17E-03	7.54E-06	3.28E-03	3.14E-03	1.30E-05	5.79E-04	5.66E-04	2.40E-06	2.44E-04	2.49E-04	1.03E-06
1308	571901.1	4149226	0.0025	2.16E-03	7.50E-06	3.26E-03	3.13E-03	1.30E-05	5.76E-04	5.63E-04	2.39E-06	2.42E-04	2.48E-04	1.02E-06
1309	571900.8	4149217	0.002496	2.16E-03	7.49E-06	3.26E-03	3.12E-03	1.29E-05	5.75E-04	5.62E-04	2.38E-06	2.42E-04	2.48E-04	1.02E-06
1310	571900.5	4149207	0.002504	2.16E-03	7.52E-06	3.27E-03	3.13E-03	1.30E-05	5.77E-04	5.64E-04	2.39E-06	2.43E-04	2.48E-04	1.02E-06
1311	571900.2	4149198	0.002521	2.18E-03	7.57E-06	3.29E-03	3.15E-03	1.31E-05	5.81E-04	5.67E-04	2.41E-06	2.45E-04	2.50E-04	1.03E-06
1312	571899.9	4149189	0.002549	2.20E-03	7.65E-06	3.33E-03	3.19E-03	1.32E-05	5.88E-04	5.74E-04	2.43E-06	2.47E-04	2.53E-04	1.04E-06
1313	571899.6	4149179	0.002583	2.23E-03	7.75E-06	3.37E-03	3.23E-03	1.34E-05	5.96E-04	5.81E-04	2.47E-06	2.51E-04	2.56E-04	1.06E-06
1314	571899.3	4149170	0.002621	2.26E-03	7.87E-06	3.42E-03	3.28E-03	1.36E-05	6.04E-04	5.90E-04	2.50E-06	2.54E-04	2.60E-04	1.07E-06
1315	571899	4149161	0.002657	2.29E-03	7.97E-06	3.47E-03	3.32E-03	1.38E-05	6.13E-04	5.98E-04	2.54E-06	2.58E-04	2.64E-04	1.09E-06
1316	571898.8	4149152	0.002686	2.32E-03	8.06E-06	3.51E-03	3.36E-03	1.39E-05	6.19E-04	6.05E-04	2.57E-06	2.61E-04	2.66E-04	1.10E-06
1317	571898.5	4149142	0.002704	2.34E-03	8.12E-06	3.53E-03	3.38E-03	1.40E-05	6.23E-04	6.09E-04	2.58E-06	2.62E-04	2.68E-04	1.11E-06
1318	571897.6	4149114	0.002669	2.30E-03	8.01E-06	3.48E-03	3.34E-03	1.38E-05	6.15E-04	6.01E-04	2.55E-06	2.59E-04	2.65E-04	1.09E-06
1319	571897.3	4149105	0.002628	2.27E-03	7.89E-06	3.43E-03	3.29E-03	1.36E-05	6.06E-04	5.92E-04	2.51E-06	2.55E-04	2.61E-04	1.08E-06
1320	571897	4149096	0.002576	2.22E-03	7.73E-06	3.36E-03	3.22E-03	1.34E-05	5.94E-04	5.80E-04	2.46E-06	2.50E-04	2.55E-04	1.05E-06
1321	571896.7	4149087	0.002518	2.17E-03	7.56E-06	3.29E-03	3.15E-03	1.31E-05	5.81E-04	5.67E-04	2.40E-06	2.44E-04	2.50E-04	1.03E-06
1322	571896.4	4149077	0.002458	2.12E-03	7.38E-06	3.21E-03	3.08E-03	1.27E-05	5.67E-04	5.53E-04	2.35E-06	2.38E-04	2.44E-04	1.01E-06
1323	571896.2	4149068	0.002398	2.07E-03	7.20E-06	3.13E-03	3.00E-03	1.24E-05	5.53E-04	5.40E-04	2.29E-06	2.33E-04	2.38E-04	9.81E-07
1324	571895.9	4149059	0.002344	2.02E-03	7.04E-06	3.06E-03	2.93E-03	1.22E-05	5.40E-04	5.28E-04	2.24E-06	2.27E-04	2.32E-04	9.59E-07
1325	571895.6	4149049	0.002297	1.98E-03	6.89E-06	3.00E-03	2.87E-03	1.19E-05	5.30E-04	5.17E-04	2.19E-06	2.23E-04	2.28E-04	9.40E-07

1326	571895.3	4149040	0.00226	1.95E-03	6.78E-06	2.95E-03	2.83E-03	1.17E-05	5.21E-04	5.09E-04	2.16E-06	2.19E-04	2.24E-04	9.25E-07
1327	571895	4149031	0.002232	1.93E-03	6.70E-06	2.91E-03	2.79E-03	1.16E-05	5.15E-04	5.02E-04	2.13E-06	2.17E-04	2.21E-04	9.14E-07
1328	571894.8	4149323	0.002666	2.30E-03	8.00E-06	3.48E-03	3.34E-03	1.38E-05	6.15E-04	6.00E-04	2.55E-06	2.59E-04	2.64E-04	1.09E-06
1329	571894.5	4149314	0.002634	2.27E-03	7.91E-06	3.44E-03	3.30E-03	1.37E-05	6.07E-04	5.93E-04	2.52E-06	2.55E-04	2.61E-04	1.08E-06
1330	571894.3	4149305	0.002607	2.25E-03	7.82E-06	3.40E-03	3.26E-03	1.35E-05	6.01E-04	5.87E-04	2.49E-06	2.53E-04	2.59E-04	1.07E-06
1331	571894	4149295	0.00258	2.23E-03	7.74E-06	3.37E-03	3.23E-03	1.34E-05	5.95E-04	5.81E-04	2.46E-06	2.50E-04	2.56E-04	1.06E-06
1332	571893.7	4149286	0.002555	2.21E-03	7.67E-06	3.34E-03	3.20E-03	1.32E-05	5.89E-04	5.75E-04	2.44E-06	2.48E-04	2.53E-04	1.05E-06
1333	571893.4	4149277	0.002528	2.18E-03	7.59E-06	3.30E-03	3.16E-03	1.31E-05	5.83E-04	5.69E-04	2.41E-06	2.45E-04	2.51E-04	1.03E-06
1334	571893.1	4149268	0.002502	2.16E-03	7.51E-06	3.27E-03	3.13E-03	1.30E-05	5.77E-04	5.63E-04	2.39E-06	2.43E-04	2.48E-04	1.02E-06
1335	571892.8	4149258	0.002475	2.14E-03	7.43E-06	3.23E-03	3.10E-03	1.28E-05	5.71E-04	5.57E-04	2.36E-06	2.40E-04	2.45E-04	1.01E-06
1336	571892.5	4149249	0.00245	2.12E-03	7.35E-06	3.20E-03	3.07E-03	1.27E-05	5.65E-04	5.52E-04	2.34E-06	2.38E-04	2.43E-04	1.00E-06
1337	571892.3	4149240	0.002428	2.10E-03	7.29E-06	3.17E-03	3.04E-03	1.26E-05	5.60E-04	5.47E-04	2.32E-06	2.36E-04	2.41E-04	9.94E-07
1338	571892	4149231	0.002411	2.08E-03	7.24E-06	3.15E-03	3.02E-03	1.25E-05	5.56E-04	5.43E-04	2.30E-06	2.34E-04	2.39E-04	9.87E-07
1339	571891.7	4149221	0.002403	2.08E-03	7.21E-06	3.14E-03	3.01E-03	1.25E-05	5.54E-04	5.41E-04	2.29E-06	2.33E-04	2.38E-04	9.83E-07
1340	571891.4	4149212	0.002404	2.08E-03	7.22E-06	3.14E-03	3.01E-03	1.25E-05	5.54E-04	5.41E-04	2.30E-06	2.33E-04	2.38E-04	9.84E-07
1341	571891.1	4149203	0.002416	2.09E-03	7.25E-06	3.15E-03	3.02E-03	1.25E-05	5.57E-04	5.44E-04	2.31E-06	2.34E-04	2.40E-04	9.89E-07
1342	571890.8	4149194	0.002437	2.10E-03	7.31E-06	3.18E-03	3.05E-03	1.26E-05	5.62E-04	5.49E-04	2.33E-06	2.36E-04	2.42E-04	9.97E-07
1343	571890.5	4149184	0.002466	2.13E-03	7.40E-06	3.22E-03	3.09E-03	1.28E-05	5.69E-04	5.55E-04	2.35E-06	2.39E-04	2.45E-04	1.01E-06
1344	571890.2	4149175	0.002501	2.16E-03	7.51E-06	3.27E-03	3.13E-03	1.30E-05	5.77E-04	5.63E-04	2.39E-06	2.43E-04	2.48E-04	1.02E-06
1345	571890	4149166	0.002538	2.19E-03	7.62E-06	3.31E-03	3.18E-03	1.32E-05	5.85E-04	5.71E-04	2.42E-06	2.46E-04	2.52E-04	1.04E-06
1346	571889.7	4149157	0.002571	2.22E-03	7.72E-06	3.36E-03	3.22E-03	1.33E-05	5.93E-04	5.79E-04	2.46E-06	2.49E-04	2.55E-04	1.05E-06
1347	571889.4	4149147	0.002596	2.24E-03	7.79E-06	3.39E-03	3.25E-03	1.35E-05	5.99E-04	5.84E-04	2.48E-06	2.52E-04	2.57E-04	1.06E-06
1348	571889.1	4149138	0.002609	2.25E-03	7.83E-06	3.41E-03	3.26E-03	1.35E-05	6.02E-04	5.87E-04	2.49E-06	2.53E-04	2.59E-04	1.07E-06
1349	571888.5	4149120	0.002594	2.24E-03	7.79E-06	3.39E-03	3.25E-03	1.34E-05	5.98E-04	5.84E-04	2.48E-06	2.52E-04	2.57E-04	1.06E-06
1350	571888.2	4149110	0.002564	2.21E-03	7.70E-06	3.35E-03	3.21E-03	1.33E-05	5.91E-04	5.77E-04	2.45E-06	2.49E-04	2.54E-04	1.05E-06
1351	571888	4149101	0.002522	2.18E-03	7.57E-06	3.29E-03	3.16E-03	1.31E-05	5.81E-04	5.68E-04	2.41E-06	2.45E-04	2.50E-04	1.03E-06
1352	571887.7	4149092	0.002471	2.13E-03	7.42E-06	3.23E-03	3.09E-03	1.28E-05	5.70E-04	5.56E-04	2.36E-06	2.40E-04	2.45E-04	1.01E-06
1353	571887.4	4149083	0.002415	2.09E-03	7.25E-06	3.15E-03	3.02E-03	1.25E-05	5.57E-04	5.44E-04	2.31E-06	2.34E-04	2.40E-04	9.88E-07
1354	571887.1	4149073	0.002357	2.04E-03	7.07E-06	3.08E-03	2.95E-03	1.22E-05	5.43E-04	5.31E-04	2.25E-06	2.29E-04	2.34E-04	9.65E-07
1355	571886.8	4149064	0.0023	1.99E-03	6.90E-06	3.00E-03	2.88E-03	1.19E-05	5.30E-04	5.18E-04	2.20E-06	2.23E-04	2.28E-04	9.41E-07
1356	571886.5	4149055	0.002249	1.94E-03	6.75E-06	2.94E-03	2.81E-03	1.17E-05	5.19E-04	5.06E-04	2.15E-06	2.18E-04	2.23E-04	9.20E-07
1357	571886.2	4149046	0.002206	1.91E-03	6.62E-06	2.88E-03	2.76E-03	1.14E-05	5.09E-04	4.97E-04	2.11E-06	2.14E-04	2.19E-04	9.03E-07
1358	571885.9	4149037	0.002171	1.87E-03	6.52E-06	2.83E-03	2.72E-03	1.13E-05	5.01E-04	4.89E-04	2.07E-06	2.11E-04	2.15E-04	8.89E-07
1359	571885.7	4149327	0.002577	2.23E-03	7.73E-06	3.36E-03	3.22E-03	1.34E-05	5.94E-04	5.80E-04	2.46E-06	2.50E-04	2.56E-04	1.05E-06
1360	571885.4	4149318	0.002547	2.20E-03	7.64E-06	3.33E-03	3.19E-03	1.32E-05	5.87E-04	5.73E-04	2.43E-06	2.47E-04	2.53E-04	1.04E-06
1361	571885.2	4149309	0.00252	2.18E-03	7.56E-06	3.29E-03	3.15E-03	1.31E-05	5.81E-04	5.67E-04	2.41E-06	2.44E-04	2.50E-04	1.03E-06
1362	571884.9	4149300	0.002495	2.15E-03	7.49E-06	3.26E-03	3.12E-03	1.29E-05	5.75E-04	5.62E-04	2.38E-06	2.42E-04	2.47E-04	1.02E-06
1363	571884.6	4149291	0.002471	2.13E-03	7.42E-06	3.23E-03	3.09E-03	1.28E-05	5.70E-04	5.56E-04	2.36E-06	2.40E-04	2.45E-04	1.01E-06
1364	571884.3	4149281	0.002446	2.11E-03	7.34E-06	3.19E-03	3.06E-03	1.27E-05	5.64E-04	5.51E-04	2.34E-06	2.37E-04	2.43E-04	1.00E-06
1365	571884	4149272	0.002421	2.09E-03	7.27E-06	3.16E-03	3.03E-03	1.26E-05	5.58E-04	5.45E-04	2.31E-06	2.35E-04	2.40E-04	9.91E-07
1366	571883.7	4149263	0.002395	2.07E-03	7.19E-06	3.13E-03	3.00E-03	1.24E-05	5.52E-04	5.39E-04	2.29E-06	2.32E-04	2.38E-04	9.80E-07
1367	571883.4	4149254	0.002371	2.05E-03	7.12E-06	3.10E-03	2.97E-03	1.23E-05	5.47E-04	5.34E-04	2.26E-06	2.30E-04	2.35E-04	9.70E-07
1368	571883.2	4149245	0.002348	2.03E-03	7.05E-06	3.07E-03	2.94E-03	1.22E-05	5.41E-04	5.29E-04	2.24E-06	2.28E-04	2.33E-04	9.61E-07
1369	571882.9	4149235	0.002329	2.01E-03	6.99E-06	3.04E-03	2.91E-03	1.21E-05	5.37E-04	5.24E-04	2.22E-06	2.26E-04	2.31E-04	9.53E-07
1370	571882.6	4149226	0.002317	2.00E-03	6.95E-06	3.03E-03	2.90E-03	1.20E-05	5.34E-04	5.22E-04	2.21E-06	2.25E-04	2.30E-04	9.48E-07
1371	571882.3	4149217	0.002314	2.00E-03	6.95E-06	3.02E-03	2.89E-03	1.20E-05	5.34E-04	5.21E-04	2.21E-06	2.24E-04	2.30E-04	9.47E-07
1372	571882	4149208	0.002319	2.00E-03	6.96E-06	3.03E-03	2.90E-03	1.20E-05	5.35E-04	5.22E-04	2.21E-06	2.25E-04	2.30E-04	9.49E-07
1373	571881.7	4149199	0.002334	2.02E-03	7.01E-06	3.05E-03	2.92E-03	1.21E-05	5.38E-04	5.25E-04	2.23E-06	2.26E-04	2.31E-04	9.55E-07
1374	571881.4	4149189	0.002359	2.04E-03	7.08E-06	3.08E-03	2.95E-03	1.22E-05	5.44E-04	5.31E-04	2.25E-06	2.29E-04	2.34E-04	9.65E-07
1375	571881.2	4149180	0.00239	2.06E-03	7.17E-06	3.12E-03	2.99E-03	1.24E-05	5.51E-04	5.38E-04	2.28E-06	2.32E-04	2.37E-04	9.78E-07
1376	571880.9	4149171	0.002424	2.09E-03	7.28E-06	3.16E-03	3.03E-03	1.26E-05	5.59E-04	5.46E-04	2.31E-06	2.35E-04	2.40E-04	9.92E-07
1377	571880.6	4149162	0.002458	2.12E-03	7.38E-06	3.21E-03	3.08E-03	1.27E-05	5.67E-04	5.53E-04	2.35E-06	2.38E-04	2.44E-04	1.01E-06
1378	571880.3	4149153	0.002488	2.15E-03	7.47E-06	3.25E-03	3.11E-03	1.29E-05	5.74E-04	5.60E-04	2.38E-06	2.41E-04	2.47E-04	1.02E-06
1379	571880	4149143	0.002509	2.17E-03	7.53E-06	3.28E-03	3.14E-03	1.30E-05	5.78E-04	5.65E-04	2.40E-06	2.43E-04	2.49E-04	1.03E-06
1380	571879.2	4149116	0.002496	2.16E-03	7.49E-06	3.26E-03	3.12E-03	1.29E-05	5.75E-04	5.62E-04	2.38E-06	2.42E-04	2.48E-04	1.02E-06
1381	571878.9	4149106	0.002465	2.13E-03	7.40E-06	3.22E-03	3.08E-03	1.28E-05	5.68E-04	5.55E-04	2.35E-06	2.39E-04	2.44E-04	1.01E-06
1382	571878.6	4149097	0.002422	2.09E-03	7.27E-06	3.16E-03	3.03E-03	1.26E-05	5.58E-04	5.45E-04	2.31E-06	2.35E-04	2.40E-04	9.91E-07
1383	571878.3	4149088	0.002372	2.05E-03	7.12E-06	3.10E-03	2.97E-03	1.23E-05	5.47E-04	5.34E-04	2.27E-06	2.30E-04	2.35E-04	9.71E-07
1384	571878	4149079	0.002318	2.00E-03	6.96E-06	3.03E-03	2.90E-03	1.20E-05	5.34E-04	5.22E-04	2.21E-06	2.25E-04	2.30E-04	9.49E-07
1385	571877.7	4149070	0.002262	1.95E-03	6.79E-06	2.95E-03	2.83E-03	1.17E-05	5.22E-04	5.09E-04	2.16E-06	2.19E-04	2.24E-04	9.26E-07
1386	571877.4	4149060	0.002208	1.91E-03	6.63E-06	2.88E-03	2.76E-03	1.14E-05	5.09E-04	4.97E-04	2.11E-06	2.14E-04	2.19E-04	9.04E-07
1387	571877.2	4149051	0.00216	1.87E-03	6.48E-06	2.82E-03	2.70E-03	1.12E-05	4.98E-04	4.86E-04	2.06E-06	2.10E-04	2.14E-04	8.84E-07
1388	571876.9	4149042	0.00212	1.83E-03	6.36E-06	2.77E-03	2.65E-03	1.10E-05	4.89E-04	4.77E-04	2.02E-06	2.06E-04	2.10E-04	8.68E-07
1389	571876.6	4149033	0.002088	1.80E-03	6.27E-06	2.73E-03	2.61E-03	1.08E-05	4.81E-04	4.70E-04	1.99E-06	2.03E-04	2.07E-04	8.55E-07
1390	571876.3	4149323	0.002463	2.13E-03	7.39E-06	3.22E-03	3.08E-03	1.28E-05	5.68E-04	5.54E-04	2.35E-06	2.39E-04	2.44E-04	1.01E-06
1391	571876.1	4149313	0.002437	2.10E-03	7.31E-06	3.18E-03	3.05E-03	1.26E-05	5.62E-04	5.49E-04	2.33E-06	2.36E-04	2.42E-04	9.97E-07
1392	571875.8	4149304	0.002414	2.08E-03	7.25E-06	3.15E-03	3.02E-03	1.25E-05	5.57E-04	5.43E-04	2.31E-06	2.34E-04	2.39E-04	9.88E-07
1393	571875.5	4149295	0.002391	2.06E-03	7.18E-06	3.12E-03	2.99E-03	1.24E-05	5.51E-04	5.38E-04	2.28E-06	2.32E-04	2.37E-04	9.79E-07
1394	571875.2	4149286	0.002368	2.04E-03	7.11E-06	3.09E-03	2.96E-03	1.23E-05	5.46E-04	5.33E-04	2.26E-06	2.30E-04	2.35E-04	9.69E-07
1395	571874.9	4149277	0.002345	2.03E-03	7.04E-06	3.06E-03	2.93E-03	1.22E-05	5.41E-04	5.28E-04	2.24E-06	2.27E-04	2.33E-04	9.60E-07
1396	571874.6	4149268	0.00232	2.00E-03	6.96E-06	3.03E-03	2.90E-03	1.20E-05	5.35E-04	5.22E-04	2.22E-06	2.25E-04	2.30E-04	9.50E-07
1397	571874.3	4149258	0.002296	1.98E-03	6.89E-06	3.00E-03	2.87E-03	1.19E-05	5.29E-04	5.17E-04	2.19E-06	2.23E-04	2.28E-04	9.40E-07
1398	571874.1	4149249	0.002273	1.96E-03	6.82E-06	2.97E-03	2.84E-03	1.18E-05	5.24E-04	5.12E-04	2.17E-06	2.20E-04	2.25E-04	9.30E-07
1399	571873.8	4149240	0.002253	1.95E-03	6.76E-06	2.94E-03	2.82E-03	1.17E-05	5.19E-04	5.07E-04	2.15E-06	2.19E-04	2.23E-04	9.22E-07
1400	571873.5	4149231	0.002239	1.93E-03	6.72E-06	2.92E-03	2.80E-03	1.16E-05	5.16E-04	5.04E-04	2.14E-06	2.17E-04	2.22E-04	9.16E-07
1401	571873.2	4149222	0.002232	1.93E-03	6.70E-06	2.91E-03	2.79E-03	1.16E-05	5.15E-04	5.02E-04	2.13E-06	2.17E-04	2.21E-04	9.14E-07
1402	571872.9	4149213	0.002233	1.93E-03	6.70E-06	2.92E-03	2.79E-03	1.16E-05	5.15E-04	5.03E-04	2.13E-06	2.17E-04	2.21E-04	9.14E-07
1403	571872.6	4149203	0.002242	1.94E-03	6.73E-06	2.93E-03	2.80E-03	1.16E-05	5.17E-04	5.05E-04	2.14E-06	2.17E-04	2.22E-04	9.18E-07
1404	571872.4	4149194	0.002261	1.95E-03	6.79E-06	2.95E-03	2.83E-03	1.17E-05	5.21E-04	5.09E-04	2.16E-06	2.19E-04	2.24E-04	9.25E-07
1405	571872.1	4149185	0.002287	1.97E-03	6.86E-06	2.99E-03	2.86E-03	1.19E-05	5.27E-04	5.15E-04	2.18E-06	2.22E-04	2.27E-04	9.36E-07
1406	571871.8	4149176	0.002319	2.00E-03	6.96E-06	3.03E-03	2.90E-03	1.20E-05	5.35E-04	5.22E-04	2.21E-06	2.25E-04	2.30E-04	9.49E-07
1407	571871.5	4149167	0.002352	2.03E-03	7.06E-06	3.07E-03	2.94E-03	1.22E-05	5.42E-04	5.29E-04	2.25E-06	2.28E-04	2.33E-04	9.63E-07
1408	571871.2	4149158	0.002384	2.06E-03	7.16E-06	3.11E-03	2.98E-03	1.24E-05	5.50E-04	5.37E-04	2.28E-06	2.31E-04	2.36E-04	9.76E-07

1409	571870.9	4149148	0.00241	2.08E-03	7.23E-06	3.15E-03	3.01E-03	1.25E-05	5.56E-04	5.42E-04	2.30E-06	2.34E-04	2.39E-04	9.86E-07
1410	571870.1	4149121	0.002424	2.09E-03	7.28E-06	3.16E-03	3.03E-03	1.26E-05	5.59E-04	5.46E-04	2.31E-06	2.35E-04	2.40E-04	9.92E-07
1411	571869.8	4149112	0.002403	2.08E-03	7.21E-06	3.14E-03	3.01E-03	1.25E-05	5.54E-04	5.41E-04	2.29E-06	2.33E-04	2.38E-04	9.83E-07
1412	571869.5	4149103	0.00237	2.05E-03	7.11E-06	3.09E-03	2.96E-03	1.23E-05	5.46E-04	5.33E-04	2.26E-06	2.30E-04	2.35E-04	9.70E-07
1413	571869.2	4149093	0.002327	2.01E-03	6.98E-06	3.04E-03	2.91E-03	1.21E-05	5.37E-04	5.24E-04	2.22E-06	2.26E-04	2.31E-04	9.52E-07
1414	571868.9	4149084	0.002278	1.97E-03	6.84E-06	2.97E-03	2.85E-03	1.18E-05	5.25E-04	5.13E-04	2.18E-06	2.21E-04	2.26E-04	9.32E-07
1415	571868.7	4149075	0.002227	1.92E-03	6.68E-06	2.91E-03	2.79E-03	1.15E-05	5.13E-04	5.01E-04	2.13E-06	2.16E-04	2.21E-04	9.11E-07
1416	571868.4	4149066	0.002173	1.88E-03	6.52E-06	2.84E-03	2.72E-03	1.13E-05	5.01E-04	4.89E-04	2.08E-06	2.11E-04	2.16E-04	8.89E-07
1417	571868.1	4149057	0.002121	1.83E-03	6.37E-06	2.77E-03	2.65E-03	1.10E-05	4.89E-04	4.77E-04	2.03E-06	2.06E-04	2.10E-04	8.68E-07
1418	571867.8	4149048	0.002076	1.79E-03	6.23E-06	2.71E-03	2.60E-03	1.08E-05	4.79E-04	4.67E-04	1.98E-06	2.01E-04	2.06E-04	8.50E-07
1419	571867.5	4149038	0.002039	1.76E-03	6.12E-06	2.66E-03	2.55E-03	1.06E-05	4.70E-04	4.59E-04	1.95E-06	1.98E-04	2.02E-04	8.35E-07
1420	571867.2	4149327	0.002384	2.06E-03	7.16E-06	3.11E-03	2.98E-03	1.24E-05	5.50E-04	5.37E-04	2.28E-06	2.31E-04	2.36E-04	9.76E-07
1421	571867	4149318	0.002359	2.04E-03	7.08E-06	3.08E-03	2.95E-03	1.22E-05	5.44E-04	5.31E-04	2.25E-06	2.29E-04	2.34E-04	9.65E-07
1422	571866.7	4149309	0.002337	2.02E-03	7.01E-06	3.05E-03	2.92E-03	1.21E-05	5.39E-04	5.26E-04	2.23E-06	2.27E-04	2.32E-04	9.56E-07
1423	571866.4	4149299	0.002316	2.00E-03	6.95E-06	3.02E-03	2.90E-03	1.20E-05	5.34E-04	5.21E-04	2.21E-06	2.25E-04	2.30E-04	9.48E-07
1424	571866.1	4149290	0.002294	1.98E-03	6.89E-06	3.00E-03	2.87E-03	1.19E-05	5.29E-04	5.16E-04	2.19E-06	2.23E-04	2.28E-04	9.39E-07
1425	571865.8	4149281	0.002272	1.96E-03	6.82E-06	2.97E-03	2.84E-03	1.18E-05	5.24E-04	5.11E-04	2.17E-06	2.20E-04	2.25E-04	9.30E-07
1426	571865.5	4149272	0.002249	1.94E-03	6.75E-06	2.94E-03	2.81E-03	1.17E-05	5.19E-04	5.06E-04	2.15E-06	2.18E-04	2.23E-04	9.20E-07
1427	571865.3	4149263	0.002225	1.92E-03	6.68E-06	2.90E-03	2.78E-03	1.15E-05	5.13E-04	5.01E-04	2.12E-06	2.16E-04	2.21E-04	9.11E-07
1428	571865	4149254	0.002202	1.90E-03	6.61E-06	2.87E-03	2.75E-03	1.14E-05	5.08E-04	4.96E-04	2.10E-06	2.14E-04	2.18E-04	9.01E-07
1429	571864.7	4149245	0.002182	1.88E-03	6.55E-06	2.85E-03	2.73E-03	1.13E-05	5.03E-04	4.91E-04	2.08E-06	2.12E-04	2.16E-04	8.93E-07
1430	571864.4	4149236	0.002165	1.87E-03	6.50E-06	2.83E-03	2.71E-03	1.12E-05	4.99E-04	4.87E-04	2.07E-06	2.10E-04	2.15E-04	8.86E-07
1431	571864.1	4149226	0.002155	1.86E-03	6.47E-06	2.81E-03	2.70E-03	1.12E-05	4.97E-04	4.85E-04	2.06E-06	2.09E-04	2.14E-04	8.82E-07
1432	571863.8	4149217	0.002152	1.86E-03	6.46E-06	2.81E-03	2.69E-03	1.12E-05	4.96E-04	4.84E-04	2.06E-06	2.09E-04	2.13E-04	8.81E-07
1433	571863.6	4149208	0.002156	1.86E-03	6.47E-06	2.81E-03	2.70E-03	1.12E-05	4.97E-04	4.85E-04	2.06E-06	2.09E-04	2.14E-04	8.82E-07
1434	571863.3	4149199	0.00217	1.87E-03	6.51E-06	2.83E-03	2.71E-03	1.12E-05	5.00E-04	4.88E-04	2.07E-06	2.10E-04	2.15E-04	8.88E-07
1435	571863	4149190	0.002192	1.89E-03	6.58E-06	2.86E-03	2.74E-03	1.14E-05	5.05E-04	4.93E-04	2.09E-06	2.13E-04	2.17E-04	8.97E-07
1436	571862.7	4149181	0.00222	1.92E-03	6.66E-06	2.90E-03	2.78E-03	1.15E-05	5.12E-04	5.00E-04	2.12E-06	2.15E-04	2.20E-04	9.09E-07
1437	571862.4	4149172	0.002252	1.94E-03	6.76E-06	2.94E-03	2.82E-03	1.17E-05	5.19E-04	5.07E-04	2.15E-06	2.18E-04	2.23E-04	9.22E-07
1438	571862.1	4149163	0.002285	1.97E-03	6.86E-06	2.98E-03	2.86E-03	1.18E-05	5.27E-04	5.14E-04	2.18E-06	2.22E-04	2.27E-04	9.35E-07
1439	571861.9	4149153	0.002314	2.00E-03	6.95E-06	3.02E-03	2.89E-03	1.20E-05	5.34E-04	5.21E-04	2.21E-06	2.24E-04	2.30E-04	9.47E-07
1440	571861.6	4149144	0.002336	2.02E-03	7.01E-06	3.05E-03	2.92E-03	1.21E-05	5.39E-04	5.26E-04	2.23E-06	2.27E-04	2.32E-04	9.56E-07
1441	571861	4149126	0.002351	2.03E-03	7.06E-06	3.07E-03	2.94E-03	1.22E-05	5.42E-04	5.29E-04	2.25E-06	2.28E-04	2.33E-04	9.62E-07
1442	571860.7	4149117	0.00234	2.02E-03	7.02E-06	3.06E-03	2.93E-03	1.21E-05	5.40E-04	5.27E-04	2.23E-06	2.27E-04	2.32E-04	9.58E-07
1443	571860.4	4149108	0.002317	2.00E-03	6.95E-06	3.03E-03	2.90E-03	1.20E-05	5.34E-04	5.22E-04	2.21E-06	2.25E-04	2.30E-04	9.48E-07
1444	571860.2	4149099	0.002283	1.97E-03	6.85E-06	2.98E-03	2.86E-03	1.18E-05	5.26E-04	5.14E-04	2.18E-06	2.21E-04	2.26E-04	9.34E-07
1445	571859.9	4149089	0.00224	1.93E-03	6.72E-06	2.92E-03	2.80E-03	1.16E-05	5.16E-04	5.04E-04	2.14E-06	2.17E-04	2.22E-04	9.17E-07
1446	571859.6	4149080	0.002191	1.89E-03	6.58E-06	2.86E-03	2.74E-03	1.14E-05	5.05E-04	4.93E-04	2.09E-06	2.13E-04	2.17E-04	8.97E-07
1447	571859.3	4149071	0.002139	1.85E-03	6.42E-06	2.79E-03	2.68E-03	1.11E-05	4.93E-04	4.81E-04	2.04E-06	2.07E-04	2.12E-04	8.75E-07
1448	571859	4149062	0.002088	1.80E-03	6.27E-06	2.73E-03	2.61E-03	1.08E-05	4.81E-04	4.70E-04	1.99E-06	2.03E-04	2.07E-04	8.55E-07
1449	571858.7	4149053	0.00204	1.76E-03	6.12E-06	2.66E-03	2.55E-03	1.06E-05	4.70E-04	4.59E-04	1.95E-06	1.98E-04	2.02E-04	8.35E-07
1450	571858.5	4149044	0.001998	1.73E-03	6.00E-06	2.61E-03	2.50E-03	1.04E-05	4.61E-04	4.50E-04	1.91E-06	1.94E-04	1.98E-04	8.18E-07
1451	572365.5	4149252	0.4908	4.24E-01	1.47E-03	6.41E-01	6.14E-01	2.54E-03	1.13E-01	1.10E-01	4.69E-04	4.76E-02	4.87E-02	2.01E-04
1452	572382.6	4149247	0.4682	4.04E-01	1.41E-03	6.11E-01	5.86E-01	2.43E-03	1.08E-01	1.05E-01	4.47E-04	4.54E-02	4.64E-02	1.92E-04
1453	572352.8	4149263	0.3749	3.24E-01	1.13E-03	4.89E-01	4.69E-01	1.94E-03	8.64E-02	8.44E-02	3.58E-04	3.64E-02	3.72E-02	1.53E-04
1454	572368.3	4149261	0.3819	3.30E-01	1.15E-03	4.99E-01	4.78E-01	1.98E-03	8.81E-02	8.60E-02	3.65E-04	3.70E-02	3.79E-02	1.56E-04
1455	572385.4	4149256	0.3622	3.13E-01	1.09E-03	4.73E-01	4.53E-01	1.88E-03	8.35E-02	8.15E-02	3.46E-04	3.51E-02	3.59E-02	1.48E-04
1456	572402.5	4149251	0.3181	2.75E-01	9.55E-04	4.15E-01	3.98E-01	1.65E-03	7.33E-02	7.16E-02	3.04E-04	3.09E-02	3.15E-02	1.30E-04
1457	572355.6	4149273	0.3014	2.60E-01	9.05E-04	3.94E-01	3.77E-01	1.56E-03	6.95E-02	6.78E-02	2.88E-04	2.92E-02	2.99E-02	1.23E-04
1458	572341.6	4149272	0.3037	2.62E-01	9.12E-04	3.97E-01	3.80E-01	1.57E-03	7.00E-02	6.84E-02	2.90E-04	2.95E-02	3.01E-02	1.24E-04
1459	572329.7	4149266	0.3145	2.72E-01	9.44E-04	4.11E-01	3.93E-01	1.63E-03	7.25E-02	7.08E-02	3.00E-04	3.05E-02	3.12E-02	1.29E-04
1460	572371.1	4149271	0.3016	2.60E-01	9.05E-04	3.94E-01	3.77E-01	1.56E-03	6.95E-02	6.79E-02	2.88E-04	2.93E-02	2.99E-02	1.23E-04
1461	572388.2	4149266	0.2881	2.49E-01	8.65E-04	3.76E-01	3.60E-01	1.49E-03	6.64E-02	6.49E-02	2.75E-04	2.79E-02	2.86E-02	1.18E-04
1462	572339.2	4149281	0.2517	2.17E-01	7.55E-04	3.29E-01	3.15E-01	1.30E-03	5.80E-02	5.67E-02	2.40E-04	2.44E-02	2.50E-02	1.03E-04
1463	572324.3	4149274	0.2625	2.27E-01	7.88E-04	3.43E-01	3.28E-01	1.36E-03	6.05E-02	5.91E-02	2.51E-04	2.55E-02	2.60E-02	1.07E-04
1464	572320.3	4149283	0.2196	1.90E-01	6.59E-04	2.87E-01	2.75E-01	1.14E-03	5.06E-02	4.94E-02	2.10E-04	2.13E-02	2.18E-02	8.99E-05
1465	572316.3	4149293	0.1865	1.61E-01	5.60E-04	2.43E-01	2.33E-01	9.67E-04	4.30E-02	4.20E-02	1.78E-04	1.81E-02	1.85E-02	7.63E-05
1466	572304.8	4149281	0.1944	1.68E-01	5.83E-04	2.54E-01	2.43E-01	1.01E-03	4.48E-02	4.38E-02	1.86E-04	1.89E-02	1.93E-02	7.96E-05
1467	572301	4149291	0.169	1.46E-01	5.07E-04	2.21E-01	2.11E-01	8.76E-04	3.90E-02	3.80E-02	1.61E-04	1.64E-02	1.68E-02	6.92E-05
1468	572289.7	4149279	0.1592	1.37E-01	4.78E-04	2.08E-01	1.99E-01	8.25E-04	3.67E-02	3.58E-02	1.52E-04	1.54E-02	1.58E-02	6.52E-05
1469	572297.1	4149300	0.1481	1.28E-01	4.45E-04	1.93E-01	1.85E-01	7.68E-04	3.41E-02	3.33E-02	1.41E-04	1.44E-02	1.47E-02	6.06E-05
1470	572286	4149289	0.1431	1.24E-01	4.29E-04	1.87E-01	1.79E-01	7.42E-04	3.30E-02	3.22E-02	1.37E-04	1.39E-02	1.42E-02	5.86E-05
1471	572278.7	4149295	0.1254	1.08E-01	3.76E-04	1.64E-01	1.57E-01	6.50E-04	2.89E-02	2.82E-02	1.20E-04	1.22E-02	1.24E-02	5.13E-05
1472	572275.2	4149305	0.1139	9.84E-02	3.42E-04	1.49E-01	1.42E-01	5.90E-04	2.63E-02	2.56E-02	1.09E-04	1.10E-02	1.13E-02	4.66E-05
1473	572263.2	4149292	0.09911	8.56E-02	2.97E-04	1.29E-01	1.24E-01	5.14E-04	2.29E-02	2.23E-02	9.46E-05	9.61E-03	9.83E-03	4.06E-05
1474	572271.6	4149314	0.1032	8.91E-02	3.10E-04	1.35E-01	1.29E-01	5.35E-04	2.38E-02	2.32E-02	9.86E-05	1.00E-02	1.02E-02	4.22E-05
1475	572259.8	4149302	0.09315	8.04E-02	2.80E-04	1.22E-01	1.17E-01	4.83E-04	2.15E-02	2.10E-02	8.90E-05	9.04E-03	9.24E-03	3.81E-05
1476	572256.2	4149312	0.08691	7.51E-02	2.61E-04	1.13E-01	1.09E-01	4.51E-04	2.00E-02	1.96E-02	8.30E-05	8.43E-03	8.62E-03	3.56E-05
1477	572244.5	4149300	0.07303	6.31E-02	2.19E-04	9.53E-02	9.14E-02	3.79E-04	1.68E-02	1.64E-02	6.97E-05	7.08E-03	7.24E-03	2.99E-05
1478	572252.6	4149322	0.08077	6.98E-02	2.42E-04	1.05E-01	1.01E-01	4.19E-04	1.86E-02	1.82E-02	7.71E-05	7.83E-03	8.01E-03	3.31E-05
1479	572241	4149310	0.07023	6.06E-02	2.11E-04	9.17E-02	8.79E-02	3.64E-04	1.62E-02	1.58E-02	6.71E-05	6.81E-03	6.97E-03	2.87E-05
1480	572233.2	4149315	0.06287	5.43E-02	1.89E-04	8.21E-02	7.87E-02	3.26E-04	1.45E-02	1.42E-02	6.00E-05	6.10E-03	6.24E-03	2.57E-05
1481	572217.7	4149313	0.04932	4.26E-02	1.48E-04	6.44E-02	6.17E-02	2.56E-04	1.14E-02	1.11E-02	4.71E-05	4.78E-03	4.89E-03	2.02E-05
1482	572199.2	4149321	0.03853	3.33E-02	1.16E-04	5.03E-02	4.82E-02	2.00E-04	8.88E-03	8.67E-03	3.68E-05	3.74E-03	3.82E-03	1.58E-05

BIOLOGICAL ASSESSMENT REPORT

FOR THE

MOXY HOTEL PROJECT

MENLO PARK BAYFRONT

SAN MATEO COUNTY, CALIFORNIA

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Abbreviations Used

CCR	California Code of Regulations
CDFA	California Department of Food and Agriculture
CDFW	California Department of Fish and Wildlife
CESA	California Endangered Species Act
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
FESA	Federal Endangered Species Act
MBTA	Migratory Bird Treaty Act
PG&E	Pacific Gas and Electric Company
USFWS	United States Fish and Wildlife Service
WBWG	Western Bat Working Group

1 Introduction

The following baseline biological resources assessment (BRA) provides a baseline inventory of site conditions and biological resources that have the potential to be present within and/or immediately adjacent to the Moxy Hotel Project (Project). This baseline BRA is required for compliance with the Biological Resources requirements of the ConnectMenlo program level Environmental Impact Report (EIR) due to the proximity of the project to Atherton Channel, the adjacency of the project to Don Edwards San Francisco Bay National Wildlife Refuge (Refuge) and the proposed removal of trees and/or structures that provide suitable nesting bird habitat. This assessment includes a desktop analysis using aerial imagery and other available mapped features, literature/database review, and a site visit to characterize existing onsite conditions.

2 Project Overview

2.1 Project Location

The Project Site consists of one parcel with a total lot area of approximately 33,192 square feet (0.762 acres) located at 3723 New Haven Ave, Menlo Park, CA. The Project Site currently contains a one-story office building, approximately 13,700 square feet in size. The existing building would be demolished as part of the redevelopment of the site. The project site is located to the west of the intersection of Marsh Road/Bayfront Expressway (State Route 84) and Haven Avenue, specifically near a bend in the road where Haven Avenue transitions from an east-west to a north-south orientation. East of the intersection, Haven Avenue intersects with Bayfront Expressway.

The Project Site is bounded by Haven Avenue to the east, and other properties in the other directions. The parcels to the west of the project site include multi-family dwelling units, one parcel to the south (3715 Haven Avenue) contains professional offices, and parcels to the north include warehousing uses and an animal kennel. On the east side of Haven Avenue is Atherton Channel which drains into the Bayfront Canal and currently discharges into Flood Slough through a five-gate tide control structure and eventually connects to San Francisco Bay (Figure 1 and 2).

The assessment of the biological resources and potential for special status species to occur involved evaluating habitats and habitat features on the Project Site in the field and evaluation of adjacent land from public roads and/or aerial imagery within a five-mile buffer of the project site, defined as the assessment area.

2.2 Project Description

The proposed Project includes demolishing the existing onsite office building and construct a new eight-story, 167-room hotel with three levels of podium parking and five floors of hotel rooms. There would also be a ground floor coffee shop that would be open to the public and a fourth floor bar and lounge area, which would include an outdoor rooftop garden. The building would have a parallelogram-shaped footprint with a landscaped courtyard along the front of the building, facing onto Haven Avenue. The front and left sides of the building would be eight stories in height, with the exception of some building breaks along both of these sides, while the rear and right side (generally the southwest corner of the building) would step down

to four stories to provide a podium open area and the aforementioned outdoor rooftop garden. The proposed hotel would have a maximum height of 94 feet, eight inches. The Project will be accessed from Haven Avenue via a driveway near the southern portion of the site.

3 Methods

The analysis presented in this report is based on a review of existing information regarding biological resource conditions known to occur on the Project Site and within the region, and a field reconnaissance visit conducted to evaluate conditions within the Project Site.

3.1 Literature Review and Database Queries

Existing biological resource conditions within and adjacent to the Project Site were investigated prior to conducting the field survey. A query of federally listed wildlife species for the Project was obtained from the US Fish and Wildlife Service's Sacramento Endangered Species Office IPac website. The list generated is provided in Attachment C. Additional information about the locations of known occurrences of sensitive species in the vicinity of the Project Site was compiled from the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) within 5 miles of the Project and by searching within the six U.S. Geological Survey 7.5-minute quadrangles that surround the Project Site (Attachment D, Figure 3, Table 3). The California Rare Plant Inventory was searched for special status plant species within the six U.S. Geological Survey 7.5-minute quadrangles that surround the Project (Attachment E, Figure 4, Table 3). In addition, the ConnectMenlo program level EIR biological resources assessment (Placeworks 2016) and other relevant regional documents were consulted.

3.2 Field Survey

A visual reconnaissance survey of the Project Site was conducted by biologist Leslie Koenig on April 19, 2021. During the field survey, the biologists walked the entire Project Site and Atherton Channel from the north corner of Haven Avenue to Haven Court to evaluate biological resource conditions at and surrounding the site.

3.3 Species Considered for Analysis

The potential for plant and wildlife species to occur within the Project Site was classified generally as high, moderate, low, or absent (none) using the guidelines described below. Table 2 includes descriptions of the special status plant and wildlife species that were identified through research and database queries along with their potential to occur on the Project Site. Some species may have a range of potential resulting in a categorization of two of the classifications. If used, the specific reason for the classification range is explained in the "potential to occur" species accounts.

High: The potential for a species to occur was considered high when the Project Site was located within the range of the species, recorded observations were identified within normal movement distance of the project, and suitable habitat is present.

Moderate: The potential for a species to occur was considered moderate when the Project Site was located within the range of the species, recorded observations were identified nearby but outside normal movement distance of the Project Site, and habitat within assessment area was suitable. Alternatively, the potential

was classified as moderate when recorded observations were identified within normal movement distance of the Project Site but habitat present was limited to that of low or marginal quality.

Low: The potential for a species to occur was considered low when the Project Site was within the range of the species, and habitat was limited to that of low or of marginal quality. Alternatively, the potential was classified as low when the Project Site was located at the edge of the range of a species and recorded observations were extremely rare, but habitat within the assessment area was suitable.

Absent (None): The potential for a species to occur was considered absent when the species was included within the database searches as having the potential to occur but habitat for the species is not present.

4 Existing Environmental Setting

The Project Site is located within the Bayfront Canal watershed in the City of Menlo Park's Bayfront Area at the San Francisco Bay margin. The Project Site is within the Palo Alto U.S. Geological Survey 7.5-minute quadrangle map. The Project Site is a currently a flat, developed lot with a paved parking lot, an existing office building with associated ornamental landscaping along the margins and is surrounded by residential and commercial development. The site is at an elevation of 10 feet (3.05 meters).

4.1 Jurisdictional Aquatic Resources

There are no jurisdictional aquatic resources within the Project Site, however, the Project is located near the Atherton Channel which drains to the Bayfront Canal which connects to the wetlands of Flood Slough and San Francisco Bay. There is no current hydrologic connection to the managed ponds of the Don Edwards National Wildlife Refuge, however, once the Bayfront Canal and Atherton Channel Flood Management and Restoration Project is complete the Bayfront Canal will be connected by underground drainage connections during peak flood flows. The connection will direct a portion of these peak flood flows into managed ponds that are part of the Ravenswood Pond Complex Portion of the South Bay Salt Pond Restoration Project within the Don Edwards National Wildlife Refuge.

Atherton Channel is an engineered channel that carries storm flow from the developed lands that surround it. The channel is comprised of weedy, non native herbaceous vegetation (fennel, harding grass, perennial pepper weed, vetch, vinca, wild oats and radish) on the slopes. Trees along the top of bank include willow, coast live oak, palm, weeping willow and other plants. Cattails were present in the channel bottom and margins with less than 6" of water present in the channel. There are two box culverts at Haven Court to the south and Haven Avenue to the north that carry storm flows with evidence of high flows depositing debris piles in the upper channel slopes.

A list of these aquatic resources and their distance from the Project Site are included in Table 1. below. These are sensitive biological resource areas that inform the potential indirect impacts of the site but are not directly impacted by Project activities.

Table 1. Aquatic Resources Near the Moxy Hotel Project Site

Aquatic Resource	National Wetland Inventory Type	Approx. Distance to Project Site
Atherton Channel	Riverine	50 feet (0.01 miles)
Bayfront Canal Confluence	Riverine	220 feet (0.04 miles)
Flood Slough	Estuarine and Marine Wetland	500 feet (0.10 miles)
Ravenswood Pond Complex	Lake	1,060 feet (0.2 miles)

4.2 Vegetation

The site is a commercially developed lot with landscaped vegetation including mature trees. There are eight on-site trees and one off-site tree that will be relocated and/or removed as part of the Project activities.

Table 2. Tree Inventory

Tag No.	Common Name	Scientific Name	Diameter (inches)
On Site Trees to be Relocated			
253	Little Leaf Linden	Tilia tomentosa	2”
254	Little Leaf Linden	Tilia tomentosa	3”
On Site Trees to be Removed			
252	Olive	Olea sp.	14”
255	Ash	Fraxinus sp.	17”
256	Ash	Fraxinus sp.	15”
257	Sycamore	Platanus sp.	14”
257A	Monterey Pine[1]	Pinus radiata	8”
261			10”
Off Site Trees to be Removed			
260	Maple	Acer sp.	9”

[1] The Monterey pine was in poor health (potentially dead) at the April 19, 2021 site visit.

4.3 General Wildlife Species Observed

Wildlife species observed during the site visit within the Project Site and the adjacent Atherton Channel include Canada goose (*Branta canadensis*), house finch (*Haemorhous mexicanus*), northern mockingbird (*Mimus polyglottos*), American crow (*Sturnella neglecta*), mourning dove (*Zenaida macroura*) and black phoebe (*Sayornis nigricans*).

5 Sensitive Biological Resources

The following discussion describes the sensitive biological resources that have the potential to be present within and adjacent to the Project Site based on the literature review and site reconnaissance results. Sensitive biological resources include habitats and/or individual species that have special recognition by federal, state or local conservation agencies. For purposes of this analysis, special-status species are defined as animals that are protected under the California and Federal Endangered Species Acts (CESA and FESA) or other regulations, and species that are considered rare by the scientific community. Special-status species include:

- Animals listed or proposed for listing as threatened or endangered under the CESA (Fish and Game Code §2050 et seq.; 14 CCR §670.1et seq.) or the FESA (50 CFR 17.11);
- Animals that are candidates for possible future listing as threatened or endangered under the FESA (50 CFR 17; FR Vol. 64, No. 205, pages 57533-57547, October 25, 1999); and under the CESA (California Fish and Game Code §2068);
- Animals that meet the definition of endangered, rare, or threatened under the California Environmental Quality Act (CEQA) (14 CCR §15380) that may include species not found on either State or Federal Endangered Species lists;
- Animals that are designated as "species of special concern" by CDFW (2016);
- Animal species that are designated as “fully protected” under California (Fish and Game Code 3511, 4700, 5050, and 5515).
- Bat Species that are designated on the Western Bat Working Group’s (WBWG) Regional Bat Species Priority Matrix as: “Red or High.” These species are considered to be “imperiled or are at high risk of imperilment.”
- Plants that are listed by CNPS Rare Plant Program as rank 1A – plants presumed extirpated in California and either rare or extinct elsewhere, 1B – plants rare, threatened or endangered in California or elsewhere, 2A – plants presumed extirpated in California but common elsewhere, 2B – plants rare, threatened or endangered in California by common elsewhere, 3 – plants about which more is needed and 4 – plants of limited distribution.

5.1 Special Status Wildlife

A total of 40 special status wildlife species were identified through the literature review and database queries as having the potential to occur (Attachment C, D, E and Figure 3 and 4). Species guilds determined to have moderate potential to be present within the Project Site and are discussed below. The complete list of plant and wildlife species evaluated are included in Table 2.

5.1.1 Roosting and Breeding Bats

The Project Site includes trees that will be relocated and removed that provide potential roosting habitat for roosting bats. The building, while occupied, could also serve as potential roost habitat. The aquatic resources of the adjacent Atherton Channel serve as potential foraging habitat and the box culverts within the channel serve as potential roost sites.

5.1.2 Nesting Raptors and Migratory Birds

The Project Site includes trees that will be relocated and removed that provide potential foraging and nesting habitat for migratory bird species. Trees within the Atherton Channel could also support nesting migratory birds and raptors. Focused discussions on each bird species with the potential to occur is included in Table 2.

5.2 Special Status Plants

A total of 60 special status plant species were identified to have the potential to occur in the region on database searches. The Project Site is completely developed, and no special status plant species have the potential to occur within the impact areas.

6 Impacts and Mitigation Measures

The Project Site is a developed lot with some existing vegetation (trees and landscaping) and an existing building. The demolition of the building and the removal of existing trees and vegetation serve as the primary direct impacts associated with the Project.

The Atherton Channel, Bayfront Canal, Flood Slough and Don Edwards National Wildlife Refuge adjacent to the Project Site provide suitable habitat for sensitive species for which indirect impacts could occur. No direct or indirect impacts to these aquatic resources or potentially jurisdictional waters will occur.

6.1 Roosting and Breeding Bats

Roosting and breeding bats have a low to moderate likelihood of occurrence on the Project Site and in adjacent habitats within Atherton Channel. Within the Project Site bats could utilize the foliage of trees that are to be relocated and/or removed and cracks and crevices on the existing building that is scheduled to be demolished. In Atherton Channel the foliage and the box culverts serve as potential roost sites.

Demolition of the building may cause direct mortality if roosting bats that are using the structure. Removal of trees that contain active bat roosts could result in the loss of individual bats, bat colonies or their habitat. Although adult bats may be able to escape during tree removal and building demolition, if activities occur during the breeding season for bats (March 1 through August 31), young bats that cannot fly could be killed or injured during vegetation and building demolition.

To prevent direct mortality to bats, preconstruction surveys should be completed by a qualified bat biologist if the structure or trees are scheduled to be removed during the breeding season. At least two weeks prior to tree removal or demolition activities a qualified bat biologist with demonstrated bat survey experience shall conduct a focused survey for bats and potential roosting sites within trees and the building to be removed through visual surveys and emergence acoustic surveys. If no roosting sites or bats are found the biologist shall submit a letter report confirming the absence and no further measures are required.

If roosting bats are found during the above survey and roosts will be affected, an avoidance and minimization plan shall be developed by the qualified bat biologist in consultation with CDFW. The avoidance measures may include no-disturbance buffer zones during construction, temporal avoidance during the maternity season or other measures deemed necessary based on the specifics of the survey results.

6.2 Nesting Raptors and Migratory Birds

Project activities including tree and shrub removal, building demolition and grading operations to clear the site could result in the direct mortality of adult or young birds, the destruction of active nests and/or disturbance to nesting adults causing nest abandonment and/or loss of reproductive effort if project activities occur during the nesting bird breeding season from February 1 to August 31. Native bird species are protected by both state California Fish and Game Code Section s3503 and 3513 and the Federal Migratory Bird Treaty Act laws.

To avoid and minimize impacts to nesting raptors and migratory birds, project activities that occur during the nesting bird breeding season from February 1 through August 31 require a qualified biologist with demonstrated experience conducting surveys for nesting birds including raptors to conduct preconstruction surveys. The survey shall be conducted for birds in all habitats within the Project Site, including all disturbance, staging and access areas and a 250-foot buffer. This survey should be conducted no more than 14 days prior to the initiation of project activities during the breeding season. If there is a lapse in construction related activities for more than seven (7) days a new survey should be conducted.

If an active nest is identified during preconstruction surveys, the qualified biologist shall establish species- and site-specific no disturbance buffer zones for each nest using high-visibility fencing, flagging or other method deemed appropriate by the biologist. No construction activities shall be allowed to occur within the buffer zones. The size of the buffer shall be determined based on the species sensitivity to disturbance and the planned activities within the vicinity. The qualified biologist shall develop a schedule for monitoring and evaluating the status of the nest(s). The buffer shall remain in effect until the nest is no longer active as determined by the qualified biologist. If determined necessary by the qualified biologist, consultation with the USFWS and/or CDFW may be required depending upon the species and the circumstances. The results of the preconstruction surveys and/or nest disturbance activities shall be provided in a memorandum detailing the survey results.

6.3 Special Status Wildlife and Bird Impacts on Building Design and Lighting

The development of the hotel could result in indirect impacts on special status species that inhabit the nearby sensitive wetland, saltwater and brackish water habitats in Flood Slough and Don Edwards National Wildlife Refuge. The hotels height at a maximum of 94 feet and the fourth floor bar and lounge area outdoor rooftop garden could provide perch sites from which raptors and other avian predators could prey on special-status species including the western snowy plover, California Ridgway's rail, and salt-marsh harvest mouse that are present in the Refuge. Additionally, the installation of the hotel may result in impacts associated with the height of the building and outdoor garden, installation of lighting, reflective surfaces and landscaping.

To mitigate these potential indirect impacts on the adjacent sensitive habitats along the Bayfront and the nearby Refuge, bird safe standards are recommended to minimize hazards to special status species and birds.

1. Install bird perching deterrents along suitable perching sites to deter avian predators. Such deterrents may include bird spikes, netting, sound deterrents or perching deterrents approved by USFWS and CDFW.

2. Landscaping used on the rooftop garden should consist of species that do not exceed 30 feet in height and may include native or non-invasive ornamental species. Species with broad canopies are preferred. Trees that are planted on the rooftop garden should be located away from the edge of the roof.
3. Reduce large areas transparent or reflective glass.
4. Locate water features, trees and bird habitat away from building exteriors to reduce reflection.
5. Reduce or eliminate the visibility of landscaped areas behind glass.
6. Turn non-emergency lighting off at night, especially during the bird migration season (February to May and August to November).
7. Include window coverings that adequately block light transmission from rooms where interior lighting is used at night and installation motion sensors or controls to extinguish lights in unoccupied spaces.
8. Design or install lighting fixtures that minimize light pollution including light trespass, over-illumination, glare, light clutter, and skyglow while using bird-friendly colors for lighting when possible. San Francisco's Standards for Bird-Safe Buildings (City and County of San Francisco, 2011) provides a good overview of building design and lighting guidelines to minimize bird/building collision.

7 References

California Department of Fish and Wildlife (CDFW). 2021. California Natural Diversity Database query for Mountain View (3712241), Palo Alto (3712242), Woodside (3712243), Newark (3712251), Redwood Point (3712252) and San Mateo (3712253) U.S. Geological Survey 7.5-minute quadrangles. April 2021.

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California Native Plant Society (CNPS), Rare Plant Program. 2021. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Database query for the for Mountain View (3712241), Palo Alto (3712242), Woodside (3712243), Newark (3712251), Redwood Point (3712252) and San Mateo (3712253) U.S. Geological Survey 7.5-minute quadrangles. April 2021. Website http://www.rareplants.cnps.org [accessed 2021].

Horizon Water and Environment. 2019. Bayfront Canal and Atherton Channel Flood Management and Restoration Project – Initial Study/Mitigated Negative Declaration. Prepared for County of San Mateo, CA.

ICF International. 2016. Final Facebook Campus Expasion Project Environmental Impact Report, prepared for City of Menlo Park, San Mateo County, CA.

U. S. Fish and Wildlife Service (USFWS). 2021. Special Status Species Environmental Conservation Online System, IPaC database query for 3723 Haven Ave. Menlo Park, CA. Accessed April 19, 2021.

3723 Haven Avenue

N

0 2.5 5 10 Miles

Figure 1. Location Map

Moxy Hotel
Bayfront Area, Menlo Park, CA
FPG Development Group, LLC

3723 Haven Avenue

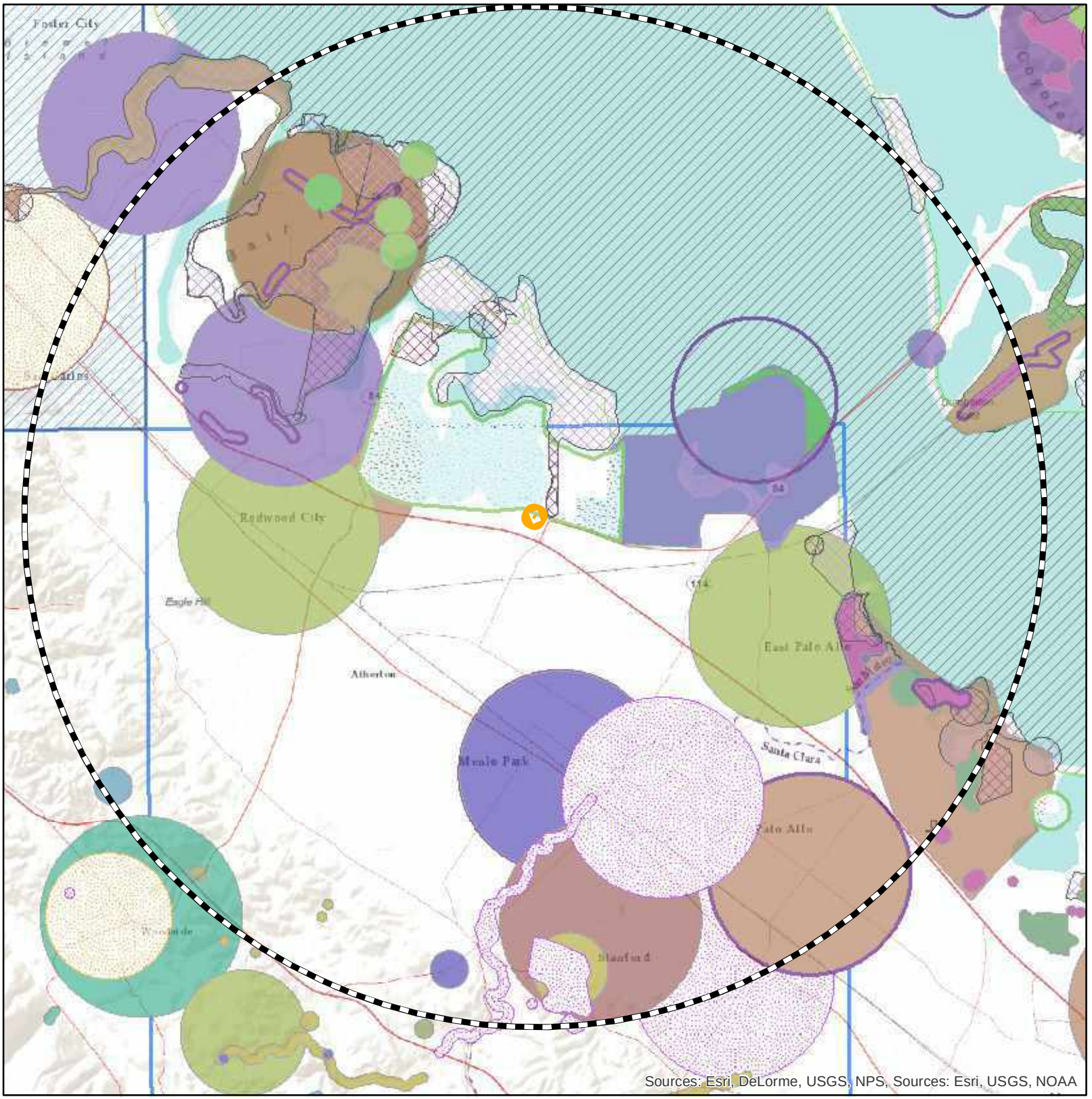
N

0 0.05 0.1 0.2 Miles

Figure 2. Detailed Location and Adjacent Habitats Map

Moxy Hotel
Bayfront Area, Menlo Park, CA
FPG Development Group, LLC

SBI



- 3723 Haven Avenue
- 5_mi_buffer
- Alameda song sparrow
- American badger
- American peregrine falcon
- Bay checkerspot butterfly
- California Ridgway's rail
- California black rail
- California giant salamander
- California least tern
- California red-legged frog
- California tiger salamander
- Crotch bumble bee
- San Francisco dusky-footed woodrat
- San Francisco gartersnake
- burrowing owl
- foothill yellow-legged frog
- longfin smelt
- northern harrier
- pallid bat
- salt-marsh harvest mouse
- salt-marsh wandering shrew
- saltmarsh common yellowthroat
- short-eared owl
- western bumble bee
- western snowy plover
- white-tailed kite
- yellow rail

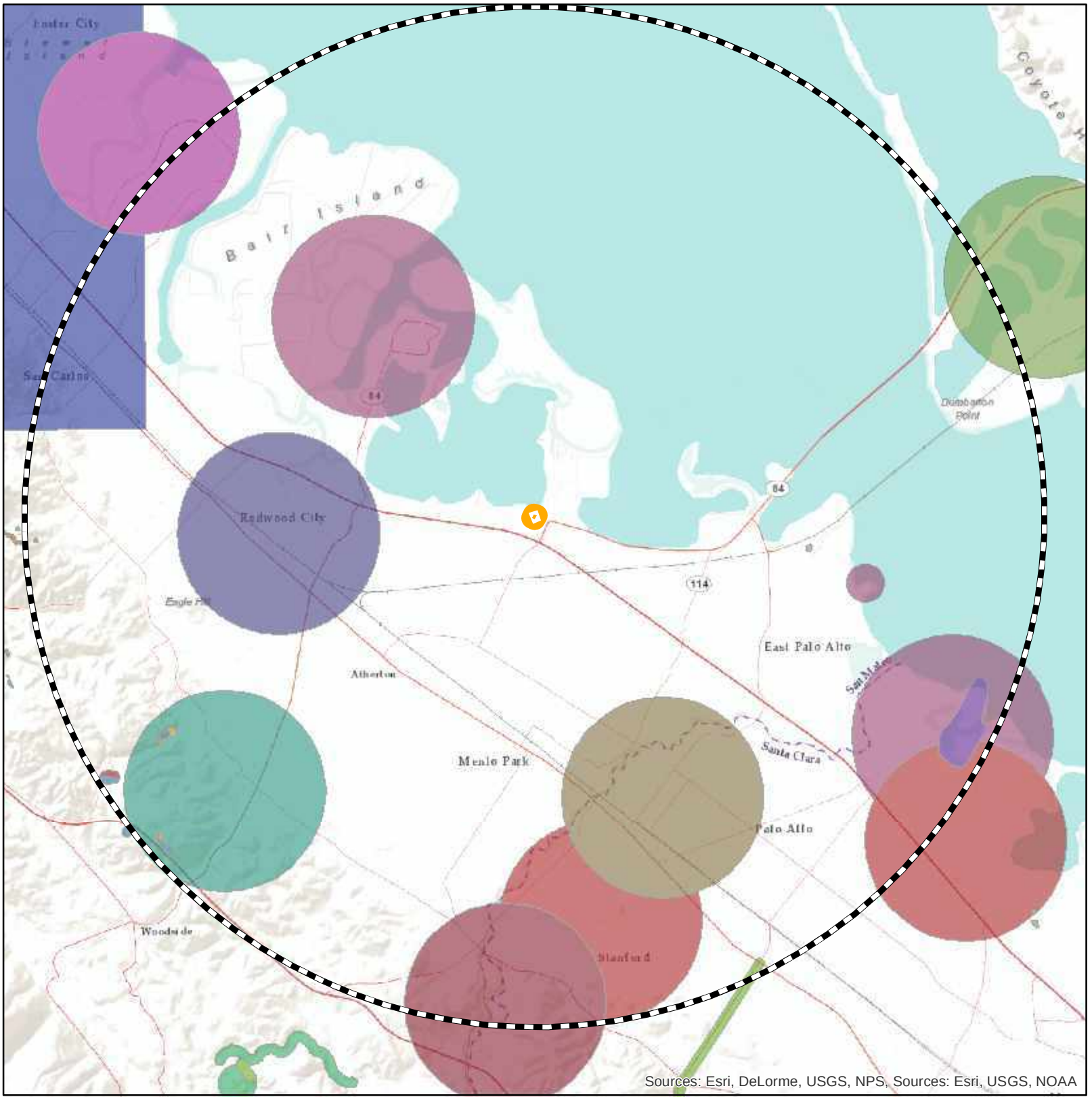
0 0.75 1.5 3 Miles

N

Figure 3. CNDDB Animals Occurrences

Moxy Hotel
Bayfront Area, Menlo Park, CA
FPG Development Group, LLC

SBI



3723 Haven Avenue
5_mi_buffer
California seablite
Congdon's tarplant
Hoover's button-celery
Marin western flax
Point Reyes salty bird's-beak
San Francisco collinsia
San Mateo thorn-mint
alkali milk-vetch
bent-flowered fiddleneck
fountain thistle
lost thistle
round-headed Chinese-houses
saline clover
western leatherwood
Franciscan onion
Hillsborough chocolate lily
fragrant fritillary
slender-leaved pondweed

Figure 4. CNDDB Plant Occurrences

Moxy Hotel
Bayfront Area, Menlo Park, CA
FPG Development Group, LLC

0 0.75 1.5 3 Miles

N

SBI

Table 3. List of Species with Potential to Occur.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Amphibians							
Ambystoma californiense	California tiger salamander	FT	ST	-	-	Ponds and vernal pools in grasslands and oak woodlands. Needs underground refuges, especially ground squirrel burrows.	**None.** Suitable habitat is not present at the Project Site.
Aneides niger	Santa Cruz black salamander	-	-	SSC	-	Restricted to mesic forests in the fog belt of the outer Coast Ranges. Occurs in moist streamside microhabitats, often in shallow standing water or seeps under stones and debris along stream edges.	**None.** Suitable habitat is not present at the Project Site.
Dicamptodon ensatus	California giant salamander	-	-	SSC	-	Mesic coastal forests and chaparral. Breeds in cold permanent and semi-permanent streams.	**None.** Suitable habitat is not present at the Project Site.
Rana boylii	Foothill yellow-legged frog (West/Central Coast population)	-	SE	-	-	Rocky streams and rivers with rocky substrate and open, sunny banks in forests, chaparral and woodlands.	**None.** Suitable habitat is not present at the Project Site.
Rana draytonii	California red-legged frog	FT	-	SSC	-	Sill or slow-moving water for breeding, stream channels and riparian zones with vegetative cover and moisture during summer months. May disperse across a variety of habitat types under wet conditions.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Reptiles							
Chelonia mydas	Green sea turtle	FT	-	-	-	Feeding occurs in shallow, low energy waters with abundant submerged vegetation, and also in convergence zones in the open ocean. Nesting occurs on beaches, usually on islands but also on the mainland.	**None.** Suitable habitat is not present at the Project Site.
Emys marmorata	Western pond turtle	-	-	SSC	-	Ponds, rivers, marshes, streams, and irrigation ditches, usually with aquatic vegetation. Basking sites and suitable upland cover for egg laying.	**Low.** Potentially **s**uitable aquatic habitat is present in Atherton Channel although limited by marginal upland habitat due to development on both sides of the steep channel.
Thamnophis sirtalis tetrataenia	San Francisco garter snake	FE	SE	-	-	Densely vegetated ponds near open hillsides, aquatic habitats with shallow water edges are essential. South or west facing slopes with suitable sites for basking, rodent burrows or thick mats of grass for shelter and hibernacula.	**None.** Suitable habitat is not present at the Project Site.
Fish							
Hypomesus transpacificus	Delta smelt	FT	SE	-	-	Sacramento-San Joaquin Delta. Seasonally in Suisun Bay, Carquinez Strait & San Pablo Bay. Seldom found at salinities > 10 ppt. Most often at salinities < 2ppt.	**None.** Suitable habitat is not present at the Project Site and is outside of the range of the species.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Spirinchus thaleichthys	longfin smelt	FC	ST	SSC		Pelagic estuarine fish found in the San Francisco Bay Delta	**None.** Suitable habitat is not present at the Project Site.
Birds							
Agelaius tricolor	tricolored blackbird	-	ST	-	-	Emergent wetlands, grasslands, and agricultural fields. Breeds near fresh water, preferably in emergent wetlands in cattails or tules, but also in thickets of willow, wild rose, blackberry, or tall herbaceous species.	**None.** Suitable habitat is not present at the Project Site.
Asio flammeus	short-eared owl (nesting)	-	-	SSC	-	Occurs within a wide variety of open habitats. Nests on dry ground in open areas with dense herbaceous cover.	**None.** Suitable habitat is not present at the Project Site.
Athene cunicularia	Burrowing owl	-	-	SSC	-	Open arid and semiarid habitats with short emergent vegetation, including grasslands, deserts, agricultural fields, ruderal areas and open landscaped areas.	**None.** They are known to nest in Bedwell Park but not anticipated to be present in the Project Site due to lack of suitable habitat.
Brachyramphus marmoratus	Marbled murrelet	FE	SE	-	-	Forages in the ocean, nests inland up to 15 miles from the coast. Primarily nests in old-growth and mature coniferous forests or in younger forests with structural elements similar to old growth. Winters at sea.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Charadrius nivosus nivosus	Western snowy plover	FT	-	SSC	-	Sandy beaches, large alkali lake shorelines, salt pond levees and dunes. Require sandy, gravelly or friable soils for nesting.	**None.** Suitable habitat is not present at the Project Site. May occur at salt marshes along the Bay and Refuge.
Circus cyaneus	Northern harrier (nesting)	-	-	SSC	-	Sloughs, wet meadows, marshlands, swamps, prairies, plains, grasslands, and shrub lands, large forest openings, open, low woody or herbaceous vegetation for nesting and hunting, nest on ground.	**None.** Suitable habitat is not present at the Project Site. Known to occur on the nearby Refuge.
Coccyzus americanus occidentalis	western yellow-billed cuckoo	FT	SE	-	-	Riparian forest nester, along the broad, lower flood-bottoms of larger river systems. Nests in riparian jungles of willow, often mixed with cottonwoods, with lower story of blackberry, nettles, or wild grape.	**None.** Suitable habitat is not present at the Project Site.
Coturnicops noveboracensis	yellow rail	-	-	SSC	-	Shallow marshes, and wet meadows; in winter, drier fresh-water and brackish marshes, as well as dense, deep grass, and rice fields.	**None.** Suitable habitat is not present at the Project Site. May occur at salt marshes along the Bay and Refuge.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Elanus leucurus	White-tailed kite	-	-	FP	-	Open grasslands, meadows, or marshes for foraging close to isolated, dense-topped trees for nesting and perching.	**Low.** The Monterey pine tree slated for removal is large enough to support nesting, however it is in poor health and nesting is not anticipated within urban setting. May forage in nearby managed ponds on the Refuge, records occur on nearby Bair Island to the north.
Falco peregrinus anatum	American Peregrine Falcon	FD	SD	FP	-	Frequently nests near water on ledges of rocky cliffs or buildings, also found along rivers and coastlines or in cities.	**None.** Suitable habitat is not present at the Project Site. May forage in nearby managed ponds on the Refuge.
Geothlypis trichas sinuosa	Saltmarsh common yellowthroat	-	-	SSC	-	Resident of the San Francisco Bay region, in fresh and saltwater marshes. Requires thick, continuous cover down to water surface for foraging; tall grasses, tule patches, willows for nesting.	**None.** Suitable habitat is not present at the Project Site. May occur at salt marshes along the Bay and Refuge.
Haliaeetus leucocephalus	bald eagle	-	SE	FP	-	Ocean shore, lake margins, and rivers for both nesting and wintering. Nests in large, old-growth, or dominant live tree with open branches, especially ponderosa pine. Roosts communally in winter.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Laterallus jamaicensis coturniculus	California black rail	-	ST	FP	-	Inhabits freshwater marshes, wet meadows and shallow margins of saltwater marshes bordering larger bays.	**None.** Suitable habitat is not present at the Project Site. May occur at salt marshes along the Bay and Refuge.
Melospiza melodia pusillula	Alameda song sparrow	-	-	SSC	-	Resident of salt marshes bordering south arm of San Francisco Bay. Inhabits Salicornia marshes; nests low in Grindelia bushes (high enough to escape high tides).	**None.** Suitable habitat is not present at the Project Site. May occur at salt marshes along the Bay and Refuge.
Rallus obsoletus obsoletus	California Ridgway's rail	FE	SE	FP	-	Salt-water and brackish marshes traversed by tidal sloughs in the vicinity of San Francisco Bay.	**None.** Suitable habitat is not present at the Project Site. May occur at salt marshes along the Bay and Refuge.
Riparia riparia	bank swallow	-	ST	-	-	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, ocean to dig nesting hole.	**None.** Suitable habitat is not present at the Project Site.
Rynchops niger	black skimmer	-	-	SSC	-	Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies usually less than 200 pairs.	**None.** Suitable habitat is not present at the Project Site. May forage in nearby managed ponds on the Refuge.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Sternula antillarum browni	California least tern	FE	SE	FP	-	Abandoned salt ponds and along estuarine shores in San Francisco Bay. Feeds primarily in shallow estuaries or lagoons where small fish are abundant. Nests on barren to sparsely vegetated site near water, usually on sandy or gravelly substrate.	**None.** Suitable habitat is not present at the Project Site. May forage in nearby managed ponds on the Refuge.
Invertebrates							
Bombus crotchii	Crotch's bumblebee	-	SCE	-	-	Grassland and scrub habitats with wildflower foraging habitat; occurs at relatively warm and dry sites, including the inner Coast Range of California and margins of the Mojave Desert	**None.** Suitable habitat is not present at the Project Site.
Bombus occidentalis occidentalis	western bumble bee, southern subspecies	-	SCE	-	-	Wet/moist meadows with abundant floral resources, roadside areas, and other areas containing forage species preferred by bumble bees.	**None.** Suitable habitat is not present at the Project Site.
Callophrys mossii bayensis	San Bruno elfin butterfly	FE	-	-	-	Occurs in coastal grassy mountainous areas near San Francisco Bay. Located on steep north facing slopes above 500' elevation that contain populations of host plant; Sedum spathulifolium. Uses a variety of nectar plants occurring in upper elevation grasslands and scrub.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Danaus plexippus	monarch - California overwintering population	CE	-	-	-	Requires milkweed for larval host plant, and late-blooming plants for adult nectar during migration. Overwinters in dense groves of trees, usually eucalyptus, pine, and cypress.	**None.** Suitable habitat is not present at the Project Site.
Euphydryas editha bayensis	Bay checkerspot butterfly	FT	-	-	-	Restricted to native grasslands on outcrops of serpentine soil in the vicinity of San Francisco Bay. *Plantago erecta* is the primary host plant; *Orthocarpus densiflorus* & *O. purpurscens* are the secondary host plants.	**None.** Suitable habitat is not present at the Project Site.
Speyeria zerene myrtleae	Myrtle's silverspot butterfly	FE	-	-	-	Restricted to the foggy, coastal dunes/hills of the Point Reyes peninsula; extirpated from coastal San Mateo County. Larval foodplant thought to be *Viola adunca*.	**None.** Suitable habitat is not present at the Project Site.
Mammals							
Antrozous pallidus	Pallid bat	-	-	SSC	-	Regionally found in low elevation arid or semi-arid areas near water. Their day roost is often in a warm horizontal opening (e.g. rock cracks, attics); the night roost is often in the open, near foliage; and the hibernation roost is often in buildings, caves, or cracks in rocks.	**Low to moderate.** Potential for bats to be using the trees and/or building for roosting.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Corynorhinus townsendii	Townsend's big-eared bat	-	-	SSC	-	Found in pine forests and arid desert scrub, almost always near hibernation caves and mines, or near roosting areas. Prefer large open areas for roosting.	**None.** Suitable habitat is not present at the Project Site.
Neotoma fuscipes annectens	San Francisco dusky-footed woodrat	-	-	SSC	-	Oak and conifer woodlands, scrub communities, riparian habitats.	**None.** Suitable habitat is not present at the Project Site.
Reithrodontomys raviventris	Salt-marsh harvest mouse	FE	SE	FP	-	Salt and brackish marshes of San Francisco; San Pablo; and Suisun Bay. Pickleweed is primary habitat. Requires upland areas for flood escape.	**None.** Suitable habitat is not present at the Project Site.
Sorex vagrans halicoetes	salt-marsh wandering shrew	-	-	SSC	-	Salt marshes of the south arm of San Francisco Bay. Medium high marsh 6-8 ft above sea level where abundant driftwood is scattered among Salicornia.	**None.** Suitable habitat is not present at the Project Site.
Taxidea taxus	American badger	-	-	SSC	-	Open areas, plains and prairies, farmland and woodland edges. Constructs deep burrows for the pursuit of prey and for sleeping.	**None.** Suitable habitat is not present at the Project Site.
Plants							
Acanthomintha duttonii	San Mateo thorn-mint	FE	SCE	-	1B.1	Chaparral, valley and foothill grassland, serpentinite. Elevation 50 to 300 m. April to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Allium peninsulare var. franciscanum	Franciscan onion	-	-	-	1B.2	Cismontane woodland, valley and foothill grassland. Clay, volcanic,	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
						often serpentinite. Elevation 52 to 305 m. May to June bloom period.	
Amsinckia lunaris	bent-flowered fiddleneck	-	-	-	1B.2	Coastal bluff scrub, Cismontane woodland, Valley and foothill grassland. Elevation 3 to 500 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Androsace elongata ssp. acuta	California androsace	-	-	-	4.2	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland. Elevation 150 to 1305 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Arctostaphylos andersonii	Anderson's manzanita	-	-	-	1B.2	Broadleafed upland forest, Chaparral, North Coast coniferous forest. Elevation 60 to 760 m. November to May bloom period.	**None.** Suitable habitat is not present at the Project Site.
Arctostaphylos montaraensis	Montara manzanita	-	-	-	1B.2	Chaparral (maritime), Coastal scrub. Elevation 80 to 500 m. January to March bloom period.	**None.** Suitable habitat is not present at the Project Site.
Arctostaphylos regismontana	Kings Mountain manzanita	-	-	-	1B.2	Broadleafed upland forest, chaparral, north coast coniferous forest. Granitic or sandstone outcrops. Elevation 305 to 730 m. December to April bloom period.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	-	-	-	1B.2	Coastal dunes (mesic), Coastal scrub, Marshes and swamps (coastal salt, streamsides). Elevation 0 to 30 m. April to October bloom period.	**None.** Suitable habitat is not present at the Project Site.
Astragalus tener var. tener	alkali milk-vetch	-	-	-	1B.2	Alkaline Playas, Valley and foothill grassland (adobe clay), Vernal pools. Elevation 1 to 60 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Calandrinia breweri	Brewer's calandrinia	-	-	-	4.2	Chaparral, coastal scrub. Sandy or loamy soils. Disturbed sites, burns. Elevation 10 to 1200 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Calochortus umbellatus	Oakland star-tulip	-	-	-	4.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Valley and foothill grassland Often on serpentine. Elevation 100 to 700 m. March to May bloom period.	**None.** Suitable habitat is not present at the Project Site.
Castilleja ambigua var. ambigua	johnny-nip	-	-	-	4.2	Coastal bluff scrub, coastal scrub, coastal prairie, marshes and swamps, valley and foothill grassland, vernal pool margins. Elevation 0 to 435 m. March to August bloom period	**None.** Suitable habitat is not present at the Project Site.
Centromadia parryi ssp. congdonii	Congdon's tarplant	-	-	-	1B.1	Valley and foothill grassland (alkaline). Elevation 0 to 230 m. May to October bloom period.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	-	-	-	1B.2	Marshes and swamps (coastal salt). Elevation 0 to 10 m. June to October bloom period.	**None.** Suitable habitat is not present at the Project Site.
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	-	-	-	1B.2	Coastal bluff scrub, Coastal dunes, Coastal prairie, Coastal scrub, sandy soil. Elevation 3 to 215 m. April to July bloom period.	**None.** Suitable habitat is not present at the Project Site.
Cirsium fontinale var. fontinale	Crystal Springs fountain thistle	FE	SE	-	1B.1	Chaparral (openings), Cismontane woodland, Meadows and seeps, Valley and foothill grassland, serpentine seeps. Elevation 45 to 175 m. May to October bloom period.	**None.** Suitable habitat is not present at the Project Site.
Cirsium praeteriens	lost thistle	-	-	-	1A	Little information exists on this plant; it was collected from the Palo Alto area at the turn of the 20th Century. Elevation 0 to 100 m. June to July bloom period.	**None.** Suitable habitat is not present at the Project Site.
Clarkia concinna ssp. automixa	Santa Clara red ribbons	-	-	-	4.3	Chaparral, Cismontane woodland. Elevation 90 to 1500 m. May to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Collinsia corymbosa	round-headed Chinese-houses	-	-	-	1B.2	Coastal dunes. Elevation 0 to 20 m. April to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Collinsia multicolor	San Francisco collinsia	-	-	-	1B.2	Closed-cone coniferous forest, coastal scrub, sometimes on serpentine. Elevation 30 to 250 m. March to May bloom period.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Cypripedium fasciculatum	clustered lady's-slipper	-	-	-	4.2	Lower montane coniferous forest, North Coast coniferous forest usually serpentinite seeps and streambanks. Elevation 100 to 2435 m. March to April bloom period.	**None.** Suitable habitat is not present at the Project Site.
Dirca occidentalis	western leatherwood	-	-	-	1B.2	Broadleafed upland forest, Closed-cone coniferous forest, Chaparral, Cismontane woodland, North Coast coniferous forest, Riparian forest, Riparian woodland, mesic. Elevation 25 to 425 m. January to March bloom period.	**None.** Suitable habitat is not present at the Project Site.
Elymus californicus	California bottle-brush grass	-	-	-	4.3	Broadleafed upland forest, Cismontane woodland, North Coast coniferous forest, Riparian woodland. Elevation 15 to 470 m. March to August bloom period.	**None.** Suitable habitat is not present at the Project Site.
Eriophyllum latilobum	San Mateo woolly sunflower	FE	SCE	-	1B.1	Cismontane woodland (often serpentinite, on roadcuts), Coastal scrub, Lower montane coniferous forest. Elevation 45 to 330 m. May to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Eryngium aristulatum var. hooveri	Hoover's button-celery	-	-	-	1B.1	Vernal pools, Elevation 3 to 45 m. Bloom June to August.	**None.** Suitable habitat is not present at the Project Site.
Eryngium jepsonii	Jepson's coyote thistle	-	-	-	1B.2	Vernal pools, valley and foothill grassland. Clay. Elevation 3 to 300 m. April to August bloom period.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Erysimum franciscanum	San Francisco wallflower	-	-	-	4.2	Chaparral, Coastal dunes, Coastal scrub, Valley and foothill grassland, often serpentinite. Elevation 0 to 550 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Extriplex joaquinana	San Joaquin spearscale	-	-	-	1B.2	Chenopod scrub, alkali meadow, playas, valley and foothill grassland. Elevation 1 to 835 m. April to October bloom period.	**None.** Suitable habitat is not present at the Project Site.
Fritillaria biflora var. ineziana	Hillsborough chocolate lily	-	-	-	1B.1	Cismontane woodland, valley and foothill grassland, serpetinite. Elevation 150m. March to April bloom period.	**None.** Suitable habitat is not present at the Project Site.
Fritillaria liliacea	fragrant fritillary	-	-	-	1B.2	Cismontane woodland, Coastal prairie, Coastal scrub, Valley and foothill grassland. Often serpetinite. Elevation 3 to 410 m. February to April bloom period.	**None.** Suitable habitat is not present at the Project Site.
Hesperevax sparsiflora var. brevifolia	short-leaved evax	-	-	-	1B.2	Coastal bluff scrub, coastal dunes, coastal prairie. Elevation 0 to 215 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Hesperolinon congestum	Marin western flax	FT	SCT	-	1B.1	Chaparral, valley and foothill grassland. In serpentine barrens and in serpentine grassland and chaparral. 60-370 m. April to July bloom period.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Lasthenia conjugens	Contra Costa goldfields	FE	-	-	1B.1	Cismontane woodland, Playas (alkaline), Valley and foothill grassland, Vernal pools, mesic. Elevation 0 to 470 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Leptosiphon ambiguus	serpentine leptosiphon	-	-	-	4.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland, usually serpentine soils. Elevation 120 to 1130 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Lessingia arachnoidea	Crystal Springs lessingia	-	-	-	1B.2	Cismontane woodland, Coastal scrub, Valley and foothill grassland, serpentine soils, sometimes on roadsides. Elevation 60 to 200 m. July to October bloom period.	**None.** Suitable habitat is not present at the Project Site.
Lessingia hololeuca	woolly-headed lessingia	-	-	-	3	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland, clay and serpentine soils. Elevation 15 to 355 m. June to October bloom period.	**None.** Suitable habitat is not present at the Project Site.
Lilium maritimum	coast lily	-	-	-	1B.1	Broadleafed upland forest, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland, sometimes roadside. Elevation 5 to 475 m. May to August bloom period.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Lupinus arboreus var. eximius	San Mateo tree lupine	-	-	-	3.2	Coastal scrub, chaparral. Elevation 90 to 550 m. April to July bloom period.	**None.** Suitable habitat is not present at the Project Site.
Malacothamnus arcuatus	arcuate bush-mallow	-	-	-	1B.2	Chaparral, cismontane woodland. Elevation 15 to 355 m. April to September bloom period.	**None.** Suitable habitat is not present at the Project Site.
Malacothamnus davidsonii	Davidson's bush-mallow	-	-	-	1B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland. Elevation 185 to 1140 m. June to January bloom period.	**None.** Suitable habitat is not present at the Project Site.
Micropus amphibolus	Mt. Diablo cottonweed	-	-	-	3.2	Broadleafed upland forest, Chaparral, Cismontane woodland, Valley and foothill grassland, rocky slopes. Elevation 45 to 825 m. March to May bloom period.	**None.** Suitable habitat is not present at the Project Site.
Monolopia gracilens	woodland woolythreads	-	-	-	1B.2	Broadleafed upland forest (openings), Chaparral (openings), Cismontane woodland, North Coast coniferous forest (openings), Valley and foothill grassland, serpentine soils. Elevation 100 to 1200 m. March to July bloom period.	**None.** Suitable habitat is not present at the Project Site.
Navarretia myersii ssp. myersii	pincushion navarretia	-	-	-	1B.1	Vernal pools, often acidic. Elevation 20 to 330 m. April to May bloom period.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Navarretia paradoxiclara	Patterson's navarretia	-	-	-	1B.3	Meadows and seeps. Serpentinite, openings, vernally mesic, often drainages. Elevation 150 to 435 m. May to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Pedicularis dudleyi	Dudley's lousewort	-	SCR	-	1B.2	Chaparral (maritime), Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland. Elevation 60 to 900 m. April to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Pentachaeta bellidiflora	white-rayed pentachaeta	FE	SCE	-	1B.1	Cismontane woodland, Valley and foothill grassland (often serpentinite). Elevation 35 to 620 m. March to May bloom period.	**None.** Suitable habitat is not present at the Project Site.
Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	-	-	-	1B.2	Chaparral, Coastal prairie, Coastal scrub. Elevation 3 to 160 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Plagiobothrys glaber	hairless popcornflower	-	-	-	1A	Meadows and seeps (alkaline), Marshes and swamps (coastal salt). Elevation 15 to 180 m. March to May bloom period	**None.** Suitable habitat is not present at the Project Site.
Polemonium carneum	Oregon polemonium	-	-	-	2B.2	Coastal prairie, Coastal scrub, Lower montane coniferous forest. Elevation 0 to 1830 m. April to September bloom period.	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Ranunculus lobbii	Lobb's aquatic buttercup	-	-	-	4.2	Cismontane woodland, North Coast coniferous forest, Valley and foothill grassland, Vernal pools, mesic. Elevation 15 to 470 m. February to May bloom period.	**None.** Suitable habitat is not present at the Project Site.
Senecio aphanactis	chaparral ragwort	-	-	-	2B.2	Chaparral, Cismontane woodland, Coastal scrub, sometimes alkaline. Elevation 15 to 800 m. January to April bloom period.	**None.** Suitable habitat is not present at the Project Site.
Silene verecunda ssp. verecunda	San Francisco campion	-	-	-	1B.2	Coastal bluff scrub, Chaparral, Coastal prairie, Coastal scrub, Valley and foothill grassland. Elevation 30 to 645 m. March to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	-	-	-	1B.2	Meadows and seeps, Marshes and swamps. Elevation 0 to 255 m. February to May bloom period.	**None.** Suitable habitat is not present at the Project Site.
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	-	-	-	2B.2	Marshes and swamps (assorted shallow freshwater). Elevation 300 to 2150. May to July bloom period.	**None.** Suitable habitat is not present at the Project Site.
Suaeda californica	California seablite	FE	-	-	1B.1	Marshes and swamps (coastal salt). Elevation 0 to 15 m. July to October bloom period.	**None.** Suitable habitat is not present at the Project Site.
Trifolium amoenum	two-fork clover	FE	-	-	1B.1	Coastal bluff scrub, Valley and foothill grassland (sometimes serpentinite). Elevation 5 to 415 m. April to June bloom period	**None.** Suitable habitat is not present at the Project Site.

Scientific Name	Common Name	Listing status*				Habitat	Potential to Occur at the Project Site.
		FESA	CESA	CDFW	CNPS		
Trifolium hydrophilum	saline clover	-	-	-	1B.2	Marshes and swamps, Valley and foothill grassland (mesic, alkaline), Vernal pools. Elevation 0 to 300 m. April to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Triphysaria floribunda	San Francisco owl's-clover	-	-	-	1B.2	Coastal prairie, Coastal scrub, Valley and foothill grassland. Elevation 10 to 160 m. April to June bloom period.	**None.** Suitable habitat is not present at the Project Site.
Tropidocarpum capparideum	caper-fruited tropidocarpum	-	-	-	1B.1	Valley and foothill grassland (alkaline hills). Elevation 1 to 455 m. March to April bloom period.	**None.** Suitable habitat is not present at the Project Site.
Usnea longissima	Methuselah's beard lichen	-	-	-	4.2	Broadleafed upland forest, North Coast coniferous forest	**None.** Suitable habitat is not present at the Project Site.

*Status:

Federal Endangered Species Act (FESA) Designations: (FD) Federally Delisted, (FE) Federally Endangered, (FT) Federally Threatened, (FPE) Federally Proposed for listing as Endangered, (FPT) Federally Proposed for listing as Threatened, (FPD) Federally proposed for delisting, (FC) Federal candidate species

California Endangered Species Act (CESA) Designations: (SD) State Delisted, (SE) State Endangered, (ST) State Threatened, (SCE) Candidate Endangered, (SCT) Candidate Threatened, (SR) State Rare, (SCR) State Candidate Rare

California Department of Fish and Wildlife (CDFW) Designations:(SSC) Species of Special Concern, (FP) Fully Protected Species

California Native Plant Society (CNPS) Rare Plant Rank: (1A) Presumed extinct in California; (1B) Rare, threatened, or endangered in California and elsewhere; (2) Rare, threatened, or endangered in California, but more common elsewhere; (3) More information is needed; (4) Limited distribution, watch list

Threat Rank: 0.1 Seriously threatened in California (more than 80% of occurrences threatened / high degree and immediacy of threat); 0.2 Fairly threatened in California (20 to 80% occurrences threatened/moderate degree and immediacy of threat); 0.3 Not very threatened in California (less than 20% of occurrences threatened / low degree and immediacy of threat or no current threats known)

**Species list developed from CNDDB Records, IPaC species list, CNPS Rare Plant Inventory, adjacent project CEQA documents and ConnectMenlo EIR. All sources accessed in 2021.

MOXY HOTEL

MENLO PARK, CALIFORNIA

ABBREVIATIONS

AC	ASPHALT CONCRETE
CONC.	CONCRETE
(E), EXIST	EXISTING
E	ELECTRICAL
G	GAS
GV	GAS VALVE
HSB	HEAVY SANDBLAST
HT	HEIGHT
IC	IRRIGATION CONTROL
IRR	IRRIGATION
JB	JUNCTION BOX
LSB	LIGHT SANDBLAST
MFR	MANUFACTURER
MIN.	MINIMUM
MED	MEDIUM
MSB	MEDIUM SANDBLAST
(N)	NEW
NIC	NOT IN CONTRACT
NO.	NUMBER
NTS	NOT TO SCALE
O.C.	ON CENTER
OFCI	OWNER FURNISHED, CONTRACTOR INSTALLED
PA	PLANTING AREA
PL	PROPERTY LINE
PR	PROPOSED
R	RADIUS–ALL RADII GIVEN FOR WALLS ARE DIMENSIONSED TO OUTSIDE OF WALLS
(R)	RELOCATED
SIM.	SIMILAR
S.A.D.	SEE ARCHITECTURAL DRAWINGS
S.C.D.	SEE CIVIL DRAWINGS
S.E.D.	SEE ELECTRICAL DRAWINGS
S.S.D.	SEE STRUCTURAL DRAWINGS
S.M.D.	SEE MECHANICAL DRAWINGS
S.P.D.	SEE PLUMBING CONSULTANT DRAWINGS
SB	SANDBLAST
SP	SPACING
SD	STORM DRAIN
SQ.	SQUARE
SS	STAINLESS STEEL
SS	SANITARY SEWER (CIVIL)
SSCO	SANITARY SEWER CLEANOUT
SSMH	SANITARY SEWER MANHOLE
S/W	SIDEWALK
TBD	TO BE DETERMINED
T.B.D.	TO BE DETERMINED
TYP.	TYPICAL
UNO	UNLESS OTHERWISE NOTED
W	WATER LINE (CIVIL)
WP	WATERPROOF
W.P.M.	WATERPROOF MEMBRANE
	SCORELINE

LAYOUT NOTES

1. CONTRACTOR SHALL VERIFY ALL UTILITIES, GRADES, EXISTING CONDITIONS AND DIMENSIONS IN THE FIELD PRIOR TO COMMENCING WORK. ALL DISCREPANCIES OR QUESTIONS SHALL BE BROUGHT TO THE ATTENTION OF THE LANDSCAPE ARCHITECT FOR RESOLUTION.
2. ALL WRITTEN DIMENSIONS SUPERCEDE ALL SCALED DISTANCES AND DIMENSIONS. DIMENSIONS SHOWN ARE FROM THE FACE OF THE BUILDING, WALL, BACK OF CURB, EDGE OF WALK, PROPERTY LINE, OR CENTERLINE OF COLUMN UNLESS OTHERWISE NOTED ON THE DRAWINGS.
3. ALL DIMENSIONS AT BUILDING ARE TO FACE OF BUILDING. ALL DIMENSIONS AT ROADWAY ARE TO FACE OF CURB.
4. ALL ANGLES ARE 45 DEGREE, 90 DEGREE, OR 135 DEGREE UNLESS OTHERWISE NOTED.
5. ALL CURVES AND ALL TRANSITIONS BETWEEN CURVES AND STRAIGHT EDGES SHALL BE SMOOTH.
6. ALL RETURN RADII AND CURB DATA ARE TO FACE OF CURB.
7. WHENEVER BOTTOM OF WALL (BW) ELEVATION IS GIVEN, IT IS FINISH PAVEMENT OR GRADE ELEVATION AT FACE OF WALL.
8. SCORE LINES IN SIDEWALKS SHALL BE SPACED TO EQUAL THE WIDTH OF THE WALKWAY, UNLESS OTHERWISE SHOWN. EXPANSION JOINTS IN SIDEWALKS SHALL BE 20' ON CENTER MAXIMUM.
9. EXPANSION JOINTS IN CONCRETE WALLS SHALL BE AT 40' O.C. MAXIMUM.
10. BUILDING LAYOUT AND LOCATION, SIDEWALK, CURB AND GUTTER, GRADING AND DRAINAGE IS BASED ON DRAWINGS PREPARED BY THE ARCHITECT AND THE CIVIL ENGINEER.
11. STATIONING HEREON IS ALONG CONSTRUCTION CENTERLINE UNLESS OTHERWISE SHOWN OR INDICATED.
12. ANY EXTRA CONSTRUCTION STAKING NECESSITATED SOLELY BY THE CONTRACTOR'S NEGLIGENCE WILL BE CHARGED TO THE CONTRACTOR ON A TIME AND EXPENSES BASIS AND PAID FOR BY THE CONTRACTOR.
13. SEE IRRIGATION DRAWINGS FOR GENERAL SYSTEM REQUIREMENTS AND FOR LOCATION OF IRRIGATION MAINLINE PIPING. SLEEVES TO ACCOMMODATE IRRIGATION PIPING, SIZED AS NEEDED, SHALL BE IN PLACE UNDER AND THROUGH SLABS AND WALLS, PRIOR TO POURING.
14. PROVIDE CONTINUOUS HEADERS AT THE EDGES OF ALL AC PAVING, SHRUB AREAS, LAWN AREAS, DECOMPOSED GRANITE WHERE IT IS NOT CONSTRAINED BY A CONCRETE PAVING OR MOW BAND.
15. ALL CONCRETE PAVEMENTS SHALL BE DOWELED INTO CURBS, SIDEWALKS, AND BUILDING FOUNDATIONS.
16. REFER TO GEOTECHNICAL REPORT FOR ADDITIONAL INFORMATION, SECTIONS, REINFORCEMENT, AND PREPARATION. IN CASE OF DISCREPANCY THE GEOTECHNICAL REPORT SHALL GOVERN.
17. ALL TYPICAL DETAILS SHALL APPLY UNLESS NOTED OTHERWISE.
18. ANY AND ALL WORK WITHIN CITY RIGHT OF WAY SHALL CONFORM TO ALL CITY STANDARD DETAILS AND SPECIFICATIONS.
19. CONCRETE FOOTINGS INSTALLED FOR ALL SITE FURNISHINGS, SPORTS EQUIPMENT, ETC.. IN DECORATIVE PAVEMENT, ASPHALT PAVING, DECOMPOSED GRANITE, CONCRETE PAVING, AND PLANTERS SHALL BE HELD BELOW GRADE.
20. ALL EXISTING ITEMS TO REMAIN SHALL BE PROTECTED AS REQUIRED. ANY DAMAGED ITEMS SHALL BE FULLY REPAIRED OR REPLACED AT THE CONTRACTOR'S EXPENSE TO THE FULL SATISFACTION OF THE OWNER.
21. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COORDINATION WITH SUBCONTRACTORS AS REQUIRED TO ACCOMPLISH OPERATIONS.
22. ALL QUANTITIES AND PAY ITEMS ARE AND WILL BE BASED ON HORIZONTAL MEASUREMENTS.
23. ALL PATTERNS, LINE TYPES, AND SYMBOLS SHOWN WITHIN THE PLAN SET REFERENCE THE LAYOUT LEGEND AND ARE PART OF THE SCOPE OF WORK. CALLOUTS ARE SHOWN FOR CLARIFICATION OF WORK, BUT DO NOT INDICATE EVERY AND ALL INSTANCES OF SUCH WORK. THE CONTRACTOR SHALL REQUEST CLARIFICATION TO ANY ITEMS (INCLUDING BUT NOT LIMITED TO PAVING, WALLS, FINISHES, COLORS, FENCING, FOUNTAINS, POTS, AND SITE FURNITURE) NOT CLEARLY IDENTIFIED TO BE PART OF THE SCOPE OF WORK PRIOR TO BID.
24. THE CONTRACT DRAWINGS MUST BE ACCOMPANIED BY CONTRACT SPECIFICATIONS. THE CONTRACTOR MUST CONTACT THE LANDSCAPE ARCHITECT AT 925–736–8176 FOR SPECIFICATIONS IF NOT RECEIVED.
25. THE CONTRACTOR IS RESPONSIBLE FOR ALL WORK AND MATERIALS OF THE CONTRACT DOCUMENTS INCLUDING ALL WORK AND MATERIALS PROVIDED BY SUBCONTRACTORS. ALL QUALIFICATIONS OF THE CONTRACT DOCUMENTS INCLUDING ALL SPECIFIC EXCLUSIONS OF ANY WORK, DETAILS, MATERIALS, AND INCIDENTALS SHALL BE CONFIRMED AND ACCEPTED IN WRITING BY THE CONTRACTOR AND OWNER UPON FINALIZATION OF BIDS AND CONTRACT. THE LANDSCAPE ARCHITECT SHALL BE NOTIFIED OF ALL QUALIFICATIONS AND NOTIFICATIONS.

LAYOUT LEGEND

AC PAVING

PEDESTRIAN CONCRETE PAVING (1 / L4.2)
FINISH: BROOM
COLOR: STANDARD GREY

INTERLOCKING PAVERS (2 / L4.2)
FINISH: TBD
COLOR: TBD

INTERLOCKING PAVERS (2 / L4.2)
FINISH: TBD
COLOR: TBD

24"X48" DECORATIVE PAVERS

24"X48" DECORATIVE PAVERS

36"X36" DECORATIVE PAVERS

BIKE RACK
MODEL: H-2892BL
COLOR: BLACK
FINSIH: POWDER COATING
MOUNT: SURFACE
INSTALL PER MFR SPECS

DECORATIVE POT

RECTANGULAR POT

LIVEROOF SYSTEM

SHEET INDEX

SHEET NUMBER	SHEET TITLE
L0.1	COVER SHEET
L0.2	PLANTING NOTES
L1.1	TREE REMOVAL PLAN
L1.2	TREE INVENTORY AND TREE PROTECTION NOTES
L2.1	GROUND LEVEL ILLUSTRATIVE SITE PLAN
L2.2	LEVEL 4 ILLUSTRATIVE SITE PLAN
L3.1	PLANT PALETTE
L4.1	PLANTING DETAILS
L4.2	CONSTRUCTION DETAILS

I HAVE COMPLIED WITH THE CRITERIA OF THE ORDINANCE AND APPLIED THEM ACCORDINGLY FOR THE EFFICIENT USE OF WATER IN THE IRRIGATION AND LANDSCAPE DESIGN

SIGNATURE _____ DATE

GATES +ASSOCIATES
LANDSCAPE ARCHITECTURE
LAND PLANNING · URBAN DESIGN
2671 CROW CANYON RD. SAN RAMON, CA 94583
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MOXY HOTEL

HAVEN AVENUE
MENLO PARK
CALIFORNIA

ISSUE: DESCRIPTION: DATE:

NOT FOR CONSTRUCTION

PROJECT NUMBER: P5673
DRAWN: MF, JT
CHECK: EG
DATE: 09/18/2020
SCALE: SCALE

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PLANTING NOTES

GENERAL

1. ALL WORK SHALL BE PERFORMED BY PERSONS FAMILIAR WITH PLANTING WORK AND UNDER THE SUPERVISION OF A QUALIFIED PLANTING FOREMAN.

2. ALL QUANTITIES AND PLANT COUNTS ARE FOR THE CONVENIENCE OF THE CONTRACTOR. IN CASE OF DISCREPANCIES, THE PLAN SHALL GOVERN.

3. THE LANDSCAPE ARCHITECT RESERVES THE RIGHT TO MAKE SUBSTITUTIONS, ADDITIONS, AND DELETIONS IN THE PLANTING SCHEME AS THEY FEEL NECESSARY WHILE WORK IS IN PROGRESS, UPON APPROVAL BY THE OWNER. SUCH CHANGES ARE TO BE ACCOMPANIED BY EQUITABLE ADJUSTMENTS IN THE CONTRACT PRICE, WHEN NECESSARY.

4. PLANT MATERIAL LOCATIONS SHOWN ARE DIAGRAMMATIC AND MAY BE SUBJECT TO CHANGE IN THE FIELD BY THE LANDSCAPE ARCHITECT. PLANT LOCATIONS ARE TO BE ADJUSTED IN THE FIELD AS NECESSARY TO SCREEN UTILITIES, BUT SHALL NOT BLOCK WINDOWS, BLOCK SIGNS NOR IMPEDE ACCESS.

5. THE DESIGN INTENT OF THE PLANTING PLAN IS TO ESTABLISH AN ATTRACTIVE MATURE LANDSCAPE APPEARANCE. FUTURE PLANT GROWTH WILL NECESSITATE TRIMMING, SHAPING, AND IN SOME CASE REMOVAL OF TREES AND SHRUBS AS AN ON-GOING MAINTENANCE PROCEDURE.

6. ALL PLANTING AREA MUST BE IRRIGATED WITH AUTOMATIC IRRIGATION SYSTEM. IRRIGATION SYSTEM SHALL BE FULLY AUTOMATED AND OPERATIONAL WITH FULL COVERAGE PRIOR TO PLANTING.

7. CONTRACTOR TO REVIEW ALL EXISTING, PROPOSED, & AS BUILT UTILITY PLANS PRIOR TO CONSTRUCTION. CONTRACTOR TO TAKE PRECAUTIONS IN EXCAVATION OF ALL TREE PLANTING PITS. CONTRACTOR TO NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICTS FOUND DURING CONSTRUCTION.

8. CONTRACTOR MUST REVIEW ALL PLANS PRIOR TO THE BEGINNING OF CONSTRUCTION AND MAINTAIN THE FOLLOWING CLEARANCES FOR ALL TREE PLANTINGS. CONTRACTOR TO TAKE PRECAUTION IN ALL EXCAVATION ACTIVITY. NOTIFY LANDSCAPE ARCHITECT OF ANY CONFLICTS PRIOR TO INSTALLATION.
   - FIRE HYDRANTS AND PIVS: 5' MINIMUM
   - LIGHT POLES: 10' MINIMUM
   - UTILITIES: 5' MINIMUM
   - BUILDING ROOF EDGE: 5' MINIMUM

9. CONTRACTOR TO PROVIDE AND ARRANGE FOR PLANT MATERIAL THRU CONTRACT GROW, PLANT BROKERS, OR DIRECT PURCHASE AS REQUIRED FOR THE FULL IMPLEMENTATION OF THE PROJECTS PLANTING PLAN. CONTRACTOR MUST SUBMIT WITHIN 30 DAYS AFTER AWARD OF A BID A DETAILED NURSERY LIST OF SECURED PLANT MATERIAL, CONTRACT GROW PLANT MATERIAL, AND ANY SUBSTITUTION REQUESTS. CONTRACTOR SHALL ARRANGE AND SECURE ALL PLANT MATERIAL WITHIN 30 DAYS OF BID. UPON DELIVERY, PLANT MATERIAL THAT DOES NOT MEET NURSERY STANDARDS, IS ROOTBOUND, OF POOR QUALITY & HEALTH, SUBSTANDARD SIZE, AND / OR IS NOT APPROVED BY THE LANDSCAPE ARCHITECT SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE. MATERIAL WHICH IS NOT SECURED AND IS UNAVAILABLE IN THE SIZE SPECIFIED SHALL BE UP-SIZED, IF AVAILABLE. ALL REPLACEMENT MATERIAL, SUBSTITUTIONS OR UP-SIZED PLANT MATERIAL MUST BE PROVIDED AS REQUIRED FOR THE FULL IMPLEMENTATION OF THE PLANTING PLAN AT NO ADDITIONAL COST TO THE CONTRACT AND OWNER.

10. PROCUREMENT OF PLANT MATERIAL SHALL NOT BE LIMITED TO NORTHERN CALIFORNIA. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TRUCKING, INSPECTIONS, AND INCIDENTALS FOR PROVIDING PLANT MATERIAL FROM SOURCES OUT OF STATE AS REQUIRED BY THE PROJECT PLANTING PLAN.

EXISTING PLANT MATERIAL

1. ALL EXISTING PLANT MATERIAL, TREES, OR LAWN TO REMAIN MUST BE PROTECTED AND MAINTAINED IN PLACE BY THE CONTRACTOR.

2. ANY DAMAGED MATERIAL MUST BE FULLY REPLACED TO MATCH EXISTING BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT AND OWNER.

3. CONTRACTOR MUST MAINTAIN ANY EXISTING IRRIGATION SYSTEMS OR PROVIDE TEMPORARY IRRIGATION SYSTEMS AS REQUIRED TO ALL EXISTING PLANTING AREAS TO REMAIN.

SOILS

1. THE CONTRACTOR MAY PROTECT AND STOCKPILE EXISTING SITE SOILS WHICH MAY BE REUSED FOR PLANTING PURPOSES. EXISTING SOILS SHALL BE TESTED PRIOR TO STOCKPILE FOR SOILS SUITABILITY PER THE REQUIREMENTS BELOW.

3. ALL ORGANIC COMPOST SHALL HAVE AN AGRICULTURAL SUITABILITIES TEST FOR COMPATIBILITY TO EXISTING SITE SOILS. TEST RESULTS SHALL BE DATED WITHIN THE LAST 3 MONTHS OF THE SUBMITTAL.

4. ALL EXISTING SITE SOILS SHALL HAVE AN AGRICULTURAL SUITABILITIES TEST BY AN APPROVED SOILS TESTING LAB (WAYPOINT ANALYTICAL OR APPROVED EQUAL) AND ANALYSIS FOR RECOMMENDATIONS ON ORGANIC COMPOST, AMENDMENTS, GRO POWER FERTILIZER AND ANY INCIDENTALS. RECOMMENDATIONS CONTAINED IN THE SOILS ANALYSIS RESULTS ARE TO BE IMPLEMENTED BEFORE PLANTING OCCURS. CONTRACTOR SHALL PROVIDE UP TO 4 COMBINED TESTS AT LOCATIONS SELECTED BY THE LANDSCAPE ARCHITECT. SOIL SAMPLES TO BE TAKEN AND COMBINED FROM A DEPTH OF 6" AND 24". PROVIDE ADDITIONAL TESTING (ONE 6" AND ONE 24" DEPTH TEST PER 25,000 SF FOR AREAS WHICH WERE LIME TREATED). THE ORGANIC COMPOST TEST RESULTS LISTED ABOVE SHALL BE SUBMITTED TO THE SOILS LAB FOR ACCURATE RECOMMENDATIONS OF THE SOIL AMENDMENT REQUIREMENTS. TEST RESULTS SHALL BE TAKEN AFTER ALL GRADING OPERATIONS ARE COMPLETE.

5. ALL LIME TREATED SOILS IN AREAS TO RECEIVE PLANTING SHALL BE FULLY REMOVED AND REPLACED WITH CLEAN APPROVED IMPORT TOP SOIL AT NO COST TO THE OWNER. AN ADDITIONAL 8 SOILS TESTS MAY BE REQUESTED BY THE LANDSCAPE ARCHITECT. ALL TESTING SHALL BE PAID FOR BY THE CONTRACTOR.

6. ALL SOILS IMPORTED ONTO THE SITE FOR ANY PURPOSE SUCH AS GRADING, NON EXPANSIVE FILL, FILL, OR FOR ANY GENERAL PURPOSE MUST BE TESTED FOR PLANT SUITABILITY PRIOR TO PLACEMENT. ALL IMPORT SOILS SHALL BE NON-DETRIMENTAL TO PLANT MATERIAL AND SOILS ANALYSIS SUBMITTED TO THE LANDSCAPE ARCHITECT FOR REVIEW AND APPROVAL. PROVIDE 1 TEST PER 500 CY OF MATERIAL.

7. ALL IMPORT SOILS SHALL BE FREE OF DELETERIOUS MATERIALS, AGGREGATES, AND ROCK. IMPORT SOIL SHALL BE LOAM/ CLAY LOAM WITH A PH BETWEEN 6 AND 7.5. SEE SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS

8. FOR BID PURPOSES AMEND ALL SOIL WITH 6 YARDS OMRI COMPOST, 50LBS GYPSUM, 20LBS SOIL SULFUR AND 160LBS OF GRO-POWER PLUS 5-3-1 W/ M PER 1000SF. CONTRACTOR TO SUBMIT ALL DELIVERY TICKETS FOR COMPOST AND FERTILIZERS FOR VERIFICATION.

9. SOIL IS TO BE AMENDED, AT THE RATE INDICATED BY THE SOIL ANALYSIS, TO BRING THE SOIL ORGANIC MATTER CONTENT TO A MINIMUM OF 3.5% BY DRY WEIGHT, AND A MINIMUM OF 2" OF QUALITY RECYCLED COMPOST, ON ALL PLANTING AREAS.

10. ALL PLANTERS IN AREAS WHICH HAVE BEEN COMPACTED, SUCH AS CONSTRUCTION STAGING AREAS AND IN PARKING LOTS, SHALL BE CROSS RIPPED TO THE FOLLOWING DEPTHS: PLANTERS LESS THAN THREE (3) FEET WIDE SHALL HAVE COMPACTION RELIEVED TO A MINIMUM DEPTH OF TWENTY-FOUR (24) INCHES BELOW SUBGRADE. PLANTERS THREE TO TEN (3-10) FEET WIDE MUST HAVE COMPACTION RELIEVED TO A MINIMUM DEPTH OF 18" BELOW SUBGRADE, PLANTERS MORE THAN 10' WIDE SHALL HAVE COMPACTION RELIEVED TO A MINIMUM DEPTH OF 12" BELOW SUBGRADE. AREAS SHALL BE PROTECTED AFTER DECOMPACTION.

11. CONTRACTOR SHALL PERFORM A PERCOLATION TEST AT THE BEGINNING OF CONSTRUCTION AT 1 LOCATION PER ACRE (MAX OF 4) TO DETERMINE THE DRAINAGE CAPACITY OF THE EXISTING SITE SOIL FOR TREE HEALTH. NOTIFY THE LANDSCAPE ARCHITECT IF DRAINAGE IS LESS THAN 2" PER HOUR.

PLANTING NOTES (CONT)

TREES

1. ALL TREES SHALL BE STANDARDS UNLESS SPECIFICALLY NOTED.

2. ALL TREES ARE TO BE STAKED AS SHOWN ON THE TREE STAKING/GUYING DIAGRAMS. BRANCHING HEIGHT OF TREES SHALL BE A 6'-0" MINIMUM ABOVE FINISH GRADE. ALL TREES IN A FORMAL GROUP PLANTING MUST BE MATCHING IN SIZE AND SHAPE. ALL STREET TREES TO BE INSTALLED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE OWNER. LANDSCAPE ARCHITECT SHALL BE CONSULTED REGARDING ORIENTATION OF TREES PRIOR TO PLANTING AND/OR BACKFILLING.

3. PLANT TREES 3'-0" MINIMUM FROM FACE OF CURB AT PARKING, AND FROM EDGES OF PAVING. ALL TREES WITHIN 5' OF PAVING AREAS AND BUILDINGS MUST HAVE ROOT BARRIERS INSTALLED. SEE ROOT BARRIER DETAIL. DEEP ROOT BARRIER MODEL NO. UB.24.2. (415) 344-1464. INSTALL PER MANUFACTURER'S SPECIFICATIONS. WHERE WATER BARRIERS AND ROOT BARRIERS ARE REQUIRED, USE CENTURY PRODUCTS DUAL PURPOSE WATER/ ROOT BARRIER CR-PE24-20, (714)632-7083, S.C.D. FOR LOCATIONS OF WATER BARRIER.

4. PROVIDE 4" BERM AROUND TREE FOR WATER BASIN. SEE TREE STAKING DETAIL. BERM TO BE REMOVED IN LAWN AREA AFTER INITIAL MAINTENANCE PERIOD. MULCH TREE WELL WITH 3" LAYER OF RECYCLED CHIPPED MULCH. KEEP MULCH AWAY FROM TREE TRUNK. HOLD LAWN AND HYDROSEED 2' CLEAR FROM TRUNKS, TYP.

5. TREES MUST HAVE AN UNCUT LEADER THAT HAS A UNIFORM TAPER FROM BASE TO TIP. TREES MUST MEET AT LEAST NORMAL CALIPER AND HEIGHT FOR CONTAINER SIZE. OVERGROWN OR ROOT BOUND TREES ARE NOT ACCEPTABLE.

6. FOR ALL TREES IN STORMWATER INFILTRATION ZONES HOLD FG OF ROOTBALL 4" ABOVE FG OF FLOWLINE. ADJUST ADJACENT GRADE OF SOIL TO BLEND UNIFORMLY AROUND ROOTBALL AND ALLOW UNIMPEDED FLOW OF WATER.

SHRUBS, GROUNDCOVERS AND VINES

1. GROUNDCOVER MUST BE PLANTED AS SHOWN ON THE PLAN, INCLUDING UNDER SHRUBS AND IN TREE WATERING BASINS.

2. SHRUBS AND PERENNIALS MUST HAVE ADEQUATE SETBACK FROM THE ADJACENT SIDEWALK AND EDGES OF PARKING LOT CURBS. NOTIFY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION IF PLANT MATERIAL MAY PROTRUDE INTO THE PATH OF TRAVEL.

3. THE CONTRACTOR IS TO SECURE ALL VINES TO TRELLISES WITH APPROVED FASTENERS, ALLOWING FOR TWO (2) YEARS GROWTH. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT.

ACCESSORIES

1. ALL PLANTING NOT BOUNDED BY CONCRETE OR A HARDSCAPE EDGE SHALL BE COMPLETELY SURROUNDED BY HEADERS. ALL ASPHALT AND DECOMPOSED GRANITE AREAS TO BE COMPLETELY SURROUNDED BY HEADERS OR ADJACENT CONCRETE WORK.

2. ALL PLANTING AREAS MUST BE TOP-DRESSED WITH 3" LAYER OF RECYCLED CHIPPED MULCH. COLOR: BROWN. SUBMIT SAMPLE TO LANDSCAPE ARCHITECT FOR APPROVAL PRIOR TO ORDERING.

3. ALL MULCH WITHIN STORMWATER PLANTING AREAS MUST BE 3" OF WASHED PEA GRAVEL. SUBMIT SAMPLE FOR REVIEW AND APPROVAL.

4. ALL STORMWATER CURB CUTS MUST BE REINFORCED WITH A MINIMUM 12" WIDE x18" LONG x 6" DEEP BAND OF COBBLE. COBBLE SHALL BE 40% 4"-6" AND 60% 2"-3" NOIYO COBBLE. PROVIDE 24" WIDE BY 6" DEPTH OF COBBLE AROUND ALL CATCH BASINS LOCATED IN DRAINAGE AREAS. SUBMIT SAMPLE FOR REVIEW AND APPROVAL

5. ALL RAINWATER LEADERS DISCHARGING INTO LANDSCAPE AREAS MUST HAVE SPLASH BLOCKS. MODEL: CDI 16X24". COLOR: TO MATCH PAVING. (800) 279-2278.

6. ALL SLOPES GREATER THAN 2.5:1 MUST BE COVERED WITH EROSION CONTROL NETTING PER THE MANUFACTURER'S SPECIFICATIONS. OVERLAP ALL EDGES A MINIMUM OF 12" AND SECURE AS REQUIRED WITH METAL STAPLES. EROSION CONTROL NETTING TO BE WESTERN EXCELSIOR, EXCEL CS-3 OR APPROVED EQUAL. AVAILABLE FROM REED & GRAHAM 888-381-0800.

7. THE LANDSCAPE CONTRACTOR SHALL AS A PART OF THIS BID PROVIDE FOR A PLANTING ALLOWANCE FOR THE AMOUNT OF $3,000.00 (THREE THOUSAND DOLLARS), TO BE USED FOR SUPPLYING AND INSTALLING ADDITIONAL PLANT MATERIAL AS DIRECTED BY THE LANDSCAPE ARCHITECT AND APPROVED BY THE OWNER IN WRITING. THE UNUSED PORTION OF THE ALLOWANCE SHALL BE RETURNED TO THE OWNER AT THE BEGINNING OF THE MAINTENANCE PERIOD.

8. SEE SPECIFICATIONS FOR ALL FERTILIZER REQUIREMENTS

SUBMITTALS

1. CONTRACTOR MUST SUBMIT ALL TESTS, PRODUCTS, ACCESSORIES, INCIDENTALS, CUT SHEETS OF ALL ITEMS SPECIFIED FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION.

2. ALL PLANT MATERIAL MUST BE REVIEWED AND APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO DELIVERY. CONTRACTOR SHALL SUBMIT PHOTOS OF ALL SHRUBS, GROUND COVERS, VINES, AND TREES FOR PRELIMINARY REVIEW AND APPROVAL.

3. ALL SUBMITTALS AND PLANT MATERIAL NOT REVIEWED AND APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT MAY BE SUBJECT TO FULL REMOVAL AND REPLACEMENT WITH APPROVED SOILS, FERTILIZERS, AND PLANT MATERIAL AT NO ADDITIONAL COST TO THE CONTRACT OR OWNER.

4. SUBMITTALS AND SITE MOCKUPS OF ALL WORK SHALL BE REQUIRED PRIOR TO FINAL PLACEMENT INCLUDING BUT NOT LIMITED TO ALL WALLS, PAVEMENTS, COLORS, FINISHES, METAL WORK, FENCING, AND PAINTING FOR REVIEW AND APPROVAL BY THE LANDSCAPE ARCHITECT. SEE SPECIFICATIONS.

MUNICIPAL REQUIREMENTS

1. ALL PLANT MATERIAL TO BE INSPECTED & APPROVED BY CITY REPRESENTATIVE AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

2. CONTACT THE PROJECT LANDSCAPE ARCHITECT FOR FINAL INSPECTION OF LANDSCAPE AND IRRIGATION. PRIOR TO RELEASE OF BUILDING FOR OCCUPANCY, THE PROJECT LANDSCAPE ARCHITECT WILL SUBMIT A LETTER TO THE CITY CERTIFYING THE PLANTING AND IRRIGATION HAS BEEN INSTALLED IN CONFORMANCE WITH THE APPROVED PLANTING AND IRRIGATION PLANS, SUBJECT TO THE REVIEW AND APPROVAL OF THE CITY LANDSCAPE ARCHITECT. SECURITIES IN LIEU OF INSTALLATION WILL NOT BE ACCEPTED.

3. DURING THE INSTALLATION OF LANDSCAPING AND INSTALLATION AND PRIOR TO THE ISSUANCE OF A BUILDING OCCUPANCY PERMIT, THE LANDSCAPE ARCHITECT MUST INSPECT AND MONITOR THE INSTALLATION OF MATERIALS TO VERIFY CONFORMANCE TO THESE PLANS. ONCE APPROVED, THE LANDSCAPE ARCHITECT SHALL PROVIDE A WRITTEN LETTER TO DEPARTMENT OF PLANNING AND DEVELOPMENT STATING COMPLIANCE WITH THE APPROVED PLANS.

TREE PROTECTION NOTES:

1. PRIOR TO INITIATING ANY CONSTRUCTION ACTIVITY IN THE AREA, INCLUDING GRADING, TEMPORARY PROTECTIVE FENCING SHALL BE INSTALLED AT EACH SITE TREE. FENCING SHALL BE LOCATED AT OR BEYOND THE CANOPY DRIP LINE SO THAT 100% OF THE DRIP LINE WILL BE PROTECTED BY FENCING. TO REDUCE SOIL COMPACTION FROM EQUIPMENT.

2. THE CONTRACTOR IS REQUIRED TO WATER, FERTILIZE AND ATTEND TO OTHER MAINTENANCE NEEDS OF EXISTING TREES AS NEEDED PER ARBORIST'S RECOMMENDATIONS TO MAINTAIN HEALTHY GROWTH THROUGHOUT THE CONSTRUCTION PERIOD. SIX FEET DIAMETER, MINIMUM, BY SIX INCH TALL EARTH BERMS SHALL BE CONSTRUCTED AT THE BASE OF EACH TREE TO FUNCTION AS TEMPORARY WATERING BASINS DURING THE CONSTRUCTION PERIOD. TREES SHALL BE WATERED ACCORDING TO WEATHER AND TREE REQUIREMENTS. APPROVED MULCH OF 1-2 INCH SIZED WOOD CHIPS SHALL BE PLACED AT A DEPTH OF 4 INCHES WHERE NO EXCAVATION IS TO OCCUR IN THE VICINITY OF THE TREES TO BE PROTECTED.

3. THE TREE PROTECTION FENCE SHALL BE 6' HIGH SNOW FENCE WITH IMMOVABLE POSTS. THE FENCING SHALL FORM A CONTINUOUS BARRIER WITHOUT ENTRY POINTS AROUND EACH TREE. ANY ENCROACHMENT INTO THE DRIP LINE FOR FENCING OR CONSTRUCTION PURPOSES SHALL NOT BE PERMITTED.

4. LOW HANGING LIMBS OF SAVED TREES SHALL BE PRUNED PRIOR TO GRADING, OR ANY EQUIPMENT MOBILIZATION ON SITE. THE PURPOSE OF THIS REQUIREMENT IS TO AVOID TEARING LIMBS BY HEAVY EQUIPMENT. ALL LIMBS TO BE PRUNED SHALL BE SUPERVISED BY THE ARBORIST OF RECORD FOR THE JO.

5. THIS FENCING SHALL SERVE AS A BARRIER TO PREVENT DRIP LINE ENCROACHMENT OF ANY TYPE OF CONSTRUCTION ACTIVITIES AND EQUIPMENT. NO OILS,. GAS, CHEMICALS, LIQUID WASTE, SOLID WASTE CONSTRUCTION MACHINERY OR CONSTRUCTION MATERIALS SHALL BE STORED OR ALLOWED TO STAND FOR ANY PERIOD OF TIME WITHIN THE DRIP LINE OF THE TREE. FURTHER, NO ONE SHALL ENTER THE FENCE PERIMETER FOR ANY REASON EXCEPT FOR THE PURPOSE OF MONITORING THE HEALTH OF THE TREE. ACCIDENTAL DAMAGE TO BARK, ROOT CROWN, OR LIMBS MAY INCREASE POTENTIAL FOR FUTURE DECLINE.

6. CONTRACTORS AND SUBCONTRACTORS SHALL DIRECT ALL EQUIPMENT AND PERSONNEL TO REMAIN OUTSIDE THE FENCED AREA AND AT ALL TIMES UNTIL PROJECT IS COMPLETE, AND SHALL INSTRUCT EMPLOYEES AS TO THE PURPOSE AND IMPORTANCE OF FENCING.

7. A 'TREE PROTECTION ZONE' SIGN SHALL BE POSTED AT EACH TREE INDICATING THE PURPOSE OF THE FENCING.

8. THE ARBORIST OF RECORD FOR THE JOB OR THE CITY ARBORIST SHALL BE RESPONSIBLE FOR INSPECTION AND APPROVAL OF THE FENCING PRIOR TO ANY GRADING OPERATIONS.

9. FENCING MUST REMAIN IN PLACE AND SHALL NOT BE REMOVED UNTIL ALL CONSTRUCTION ACTIVITIES ARE COMPLETED. THIS SHALL INCLUDE GRADING AND COMPACTION ACTIVITIES, INSTALLATION OF UNDERGROUND, ALL CONSTRUCTION ACTIVITIES AND ANY OTHER CONSTRUCTION OR ACTIVITY WHICH IS SCHEDULED PRIOR OR LANDSCAPE INSTALLATION.

10. ROOTS OF SINGLE STANDING TREES OFTEN EXTEND UP TO THREE TIMES THE DISTANCE OF THE ACTUAL DRIP LINE AND FUNCTION PRIMARILY IN THEY UPTAKE OF NUTRIENTS AND WATER. THE DRIP LINE IS ARBITRARILY ESTABLISHED AS THE MINIMUM ROOT AREA GENERALLY REQUIRED TO PRESERVE TREE HEALTH. AS MUCH AREA AROUND THE CIRCUMFERENCE OF THE TREE SHOULD HAVE MINIMUM INTRUSION TO FURTHER INSURE TREE SURVIVAL AND HEALTH.

11. UNAUTHORIZED TREE REMOVAL IS SUBJECT TO IN-KIND REPLACEMENT EQUAL TO THE VALUE OF THE MATURE RESOURCE LOST, AS DETERMINED BY THE CITY.

12. NO MECHANICAL TRENCHING SHALL OCCUR WITHIN THE TREE PROTECTION ZONE. ANY EXCAVATION IF REQUIRED SHALL BE BY HAND, AIR SPADE OR BY VACUUM. CUTTING OF ANY ROOTS OVER 3" DIA SHALL BE REVIEWED BY AN ARBORIST.

13. SEE TREE PRESERVATION SPECIFICATIONS FOR ADDITIONAL INFORMATION.

14. THE CONTRACTOR SHALL CONTRACT WITH AN ARBORIST AS REQUIRED TO ENSURE PROPER TREE HEALTH IF A PROJECT ARBORIST OR CITY ARBORIST HAS NOT BEEN CONTRACTED.

PLANTING LIST

TREES

BOTANICAL NAME	COMMON NAME	SIZE	SPACING	WATER USAGE
Arbustus x 'Marina'	Strawberry Tree	24" Box	AS SHOWN	LOW
Cotinus coggygria	Smoke Tree	24" Box	AS SHOWN	LOW
Dodonaea viscosa 'Purpurea'	Hopseed Bush	24" Box	AS SHOWN	LOW
Ginkgo biloba 'Princeton Sentry'	Maidenhair Tree	24" Box	AS SHOWN	MODERATE
Koelreuteria paniculata	Golden Rain Tree	36" Box	AS SHOWN	MODERATE
Lagerstroemia indica 'Muskagee'	Crape Myrtle	24" Box	AS SHOWN	LOW
Tristaniopsis laurina 'Elegant'	Elegant Water Gum	24" Box	AS SHOWN	MODERATE

SHRUBS

BOTANICAL NAME	COMMON NAME	SIZE	SPACING	WATER USAGE
Achillea millefolium 'Terra Cotta'	Terra Cotta Yellow	1 Gal	2' O.C.	LOW
Agave attenuata 'Blue Flame'	Foxtail Agave	5 Gal	6' O.C.	LOW
Bouteloua gracilis 'Blonde Ambition'	Blue Grama	1 Gal	2' O.C.	LOW
Calamogrostis x Acutiflora 'Karl Forester'	Feather Reed Grass	5 Gal	3' O.C.	MODERATE
Carpenteria californica 'Elizabeth'	Bush Anemone	5 Gal	5' O.C.	MODERATE
Chondropetalum tectorum 'El Campo'	Small Cape Rush	5 Gal	4' O.C.	LOW
Cistus x pulverulentus 'Sunset'	Magenta Rock Rose	5 Gal	6' O.C.	LOW
Coprosma x kirkii 'Variegata'	Variegated Kirkii Coprosma	5 Gal	4' O.C.	LOW
Dietes grandiflora 'Variegata'	Variegated Fortnight Lily	5 Gal	3' O.C.	LOW
Erigeron karvinskianus	Santa Barbara Daisy	1 Gal	3' O.C.	LOW
Eriogonum grande rubescens	Red Buckwheat	5 Gal	3' O.C.	LOW
Festuca mairei	Atlas Fescue	1 Gal	2' O.C.	LOW
Juncus patens 'Carmen's Grey'	Spreading Rush	1 Gal	2' O.C.	LOW
Leymus condensatus 'Canyon Prince'	Canyon Prince Wild Rye	5 Gal	6' O.C.	LOW
Limonium perezii	Sea Lavender	1 Gal	3' O.C.	LOW
Lomandra longifolia 'Breeze'	Dwarf Mat Rush	5 Gal	4' O.C.	LOW
Muhlenbergia rigens	Deer Grass	5 Gal	6' O.C.	LOW
Perovskia atriplicifilia 'Little Spire'	Russian Sage	5 Gal	3' O.C.	LOW
Rhamnus californica 'Mound San Bruno'	Coffeeberry	5 Gal	10' O.C.	LOW
Salvia 'Bee's Bliss'	Bee's Bliss Sage	5 Gal	6' O.C.	LOW
Salvia leucantha 'Santa Barbara'	Mexican Sage	5 Gal	6' O.C.	LOW
Teucrium fruticans 'Compacta'	Blue Germander	1 Gal	5' O.C.	LOW

WATER CONSERVATION STATEMENT

1. THE PLANT LIST IS PRELIMINARY IN NATURE. SPECIES SHALL BE ADDED AND SUBTRACTED TO FULFILL THE DESIGN AND HORTICULTURAL REQUIREMENTS AS NECESSARY.

2. THE IRRIGATION SYSTEM SHALL BE DESIGNED WITH WATER CONSERVATION IN MIND WHILE ACHIEVING THE GOAL OF EFFECTIVELY AND EFFICIENTLY PROVIDING THE LANDSCAPE WITH WATER BY MEANS OF SPRAY IRRIGATION TO THE SHRUBS/GROUNDCOVER AREAS AND BUBBLERS TO THE TREES.

3. THE SPRAY SYSTEM SHALL BE TORO SPRAY HEADS WITH PRESSURE COMPENSATING NOZZLES IN A HEAD TO HEAD LAYOUT TO ACHIEVE AN EVEN LEVEL OF PRECIPITATION THROUGHOUT THE IRRIGATION SYSTEM.

4. A STATE-OF-THE-ART IRRIGATION CONTROLLER SHALL BE SPECIFIED FOR THIS PROJECT TO CONTROL THE WATER ALLOCATED TO EACH VALVE GROUPED PER INDIVIDUAL HYDROZONE (BASED ON PLANT TYPE AND EXPOSURE).

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0 0' 1/2" 1" 2"

PLANTING NOTES

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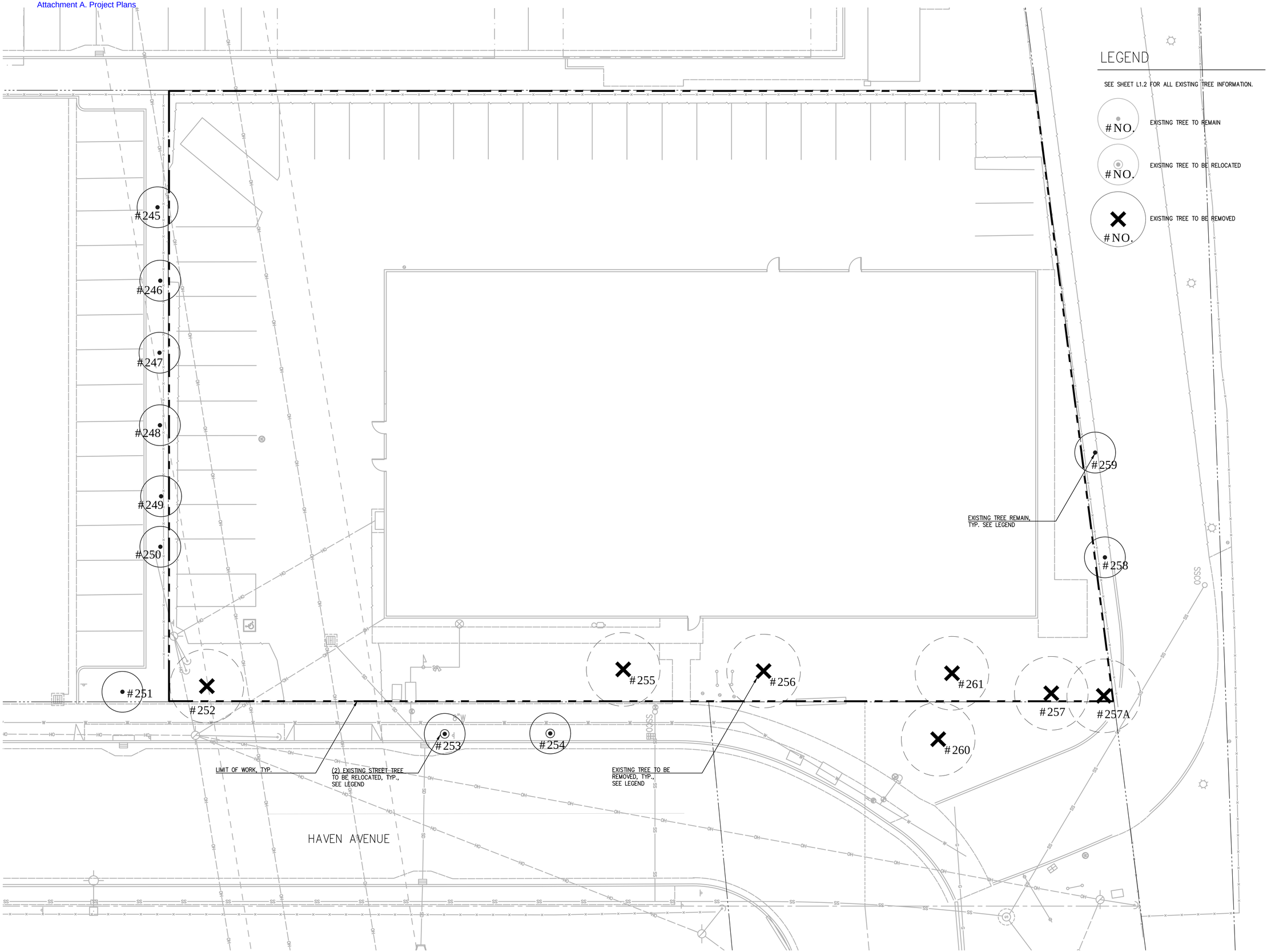
PATH: P:\MENLO PARK\MOXY MARRIOTT (P5673)\ACAD\SHEETS_00-C-MOXY.DWG
PLOT DATE: 9/23/2020 3:53 PM

Attachment A. Project Plans



LEGEND

SEE SHEET L1.2 FOR ALL EXISTING TREE INFORMATION.

#NO. EXISTING TREE TO REMAIN

#NO. EXISTING TREE TO BE RELOCATED

#NO. EXISTING TREE TO BE REMOVED

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0 5' 10' 20'

TREE REMOVAL PLAN

L1.1

of -

TREE INVENTORY

ON SITE TREES TO BE RELOCATED

TAG NO.	COMMON NAME	BOTANICAL NAME	DIAMETER (INCHES)
253	LITTLE LEAF LINDEN	TILIA TOMENTOSA	2"
254	LITTLE LEAF LINDEN	TILIA TOMENTOSA	3"

ON SITE TREES TO BE REMOVED

TAG NO.	COMMON NAME	BOTANICAL NAME	DIAMETER (INCHES)
252	OLIVE	OLEA SPP.	14"
255	ASH	FRAXINUS SPP.	17"
256	ASH	FRAXINUS SPP.	15"
257	MONTEREY PINE	PINUS RADIATA	8"
257A	SYCAMORE	PLATANUS SPP.	14"
261	MAPLE	ACER SPP.	10"

OFF SITE TREES TO BE REMOVED

TAG NO.	COMMON NAME	BOTANICAL NAME	DIAMETER (INCHES)
260	MAPLE	ACER SPP.	9"

TREE PROTECTION SPECIFICATIONS – CITY OF MENLO PARK

1. A 6" LAYER OF COARSE MULCH OR WOODCHIPS IS TO BE PLACED BENEATH THE DRIPLINE OF THE PROTECTED TREES. MULCH IS TO BE KEPT 12" FROM THE TRUNK.

2. A PROTECTIVE BARRIER OF 6' CHAIN LINK FENCING SHALL BE INSTALLED AROUND THE DRIPLINE OF PROTECTED TREE(S). THE FENCING CAN BE MOVED WITHIN THE DRIPLINE IF AUTHORIZED BY THE PROJECT ARBORIST OR CITY ARBORIST BUT NOT CLOSER THAN 2' FROM THE TRUNK OF ANY TREE. FENCE POSTS SHALL BE 1.5" IN DIAMETER AND ARE TO BE DRIVEN 2' INTO THE GROUND. THE DISTANCE BETWEEN POSTS SHALL NOT BE MORE THAN 10'. THIS ENCLOSED AREA IS THE TREE PROTECTION ZONE (TPZ).

3. MOVABLE BARRIERS OF CHAIN LINK FENCING SECURED TO CEMENT BLOCKS CAN BE SUBSTITUTED FOR "FIXED" FENCING IF THE PROJECT ARBORIST AND CITY ARBORIST AGREE THAT THE FENCING WILL HAVE TO BE MOVED TO ACCOMMODATE CERTAIN PHASES OF CONSTRUCTION. THE BUILDER MAY NOT MOVE THE FENCE WITHOUT AUTHORIZATION FORM THE PROJECT ARBORIST OR CITY ARBORIST.

4. WHERE THE CITY ARBORIST OR PROJECT ARBORIST HAS DETERMINED THAT TREE PROTECTION FENCING WILL INTERFERE WITH THE SAFETY OF WORK CREWS, TREE WRAP MAY BE USED AS AN ALTERNATIVE FORM OF TREE PROTECTION. WOODEN SLATS AT LEAST ONE INCH THICK ARE TO BE BOUND SECURELY, EDGE TO EDGE, AROUND THE TRUNK. A SINGLE LAYER OR MORE OF ORANGE PLASTIC CONSTRUCTION FENCING IS TO BE WRAPPED AND SECURED AROUND THE OUTSIDE OF THE WOODEN SLATS. MAJOR SCAFFOLD LIMBS MAY REQUIRE PROTECTION AS DETERMINED BY THE CITY ARBORIST OR PROJECT ARBORIST. STRAW WADDLE MAY ALSO BE USED AS A TRUNK WRAP BY COILING THE WADDLE AROUND THE TRUNK UP TO A MINIMUM HEIGHT OF SIX FEET FROM GRADE. A SINGLE LAYER OR MORE OF ORANGE PLASTIC CONSTRUCTION FENCING IS TO BE WRAPPED AND SECURED AROUND THE STRAW WADDLE.

5. AVOID THE FOLLOWING CONDITIONS.
   DO NOT:
   - A. ALLOW RUN OFF OF SPILLAGE OF DAMAGING MATERIALS INTO THE AREA BELOW ANY TREE CANOPY.
   - B. STORE MATERIALS, STOCKPILE SOIL, OR PARK OR DRIVE VEHICLES WITHIN THE TPZ.
   - C. CUT, BREAK, SKIN, OR BRUISE ROOTS, BRANCHES, OR TRUNKS WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CITY ARBORIST.
   - D. ALLOW FIRES UNDER AND ADJACENT TO TREES.
   - E. DISCHARGE EXHAUST INTO FOLIAGE.
   - F. SECURE CABLE, CHAIN, OR ROPE TO TREES OR SHRUBS.
   - G. TRENCH, DIG, OR OTHERWISE EXCAVATE WITHIN THE DRIPLINE OR TPZ OF THE TREE(S) WITHOUT FIRST OBTAINING AUTHORIZATION FROM THE CITY ARBORIST.
   - H. APPLY SOIL STERILANTS UNDER PAVEMENT NEAR EXISTING TREES.

6. ONLY EXCAVATION BY HAND OR COMPRESSED AIR SHALL BE ALLOWED WITHIN THE DRIPLINE OF TREES. MACHINE TRENCHING SHALL NOT BE ALLOWED.

7. AVOID INJURY TO TREE ROOTS. WHEN A DITCHING MACHINE, WHICH IS BEING USED OUTSIDE OF THE DRIPLINE OF TREES, ENCOUNTERS ROOTS SMALLER THAN 2", THE WALL OF THE TRENCH ADJACENT TO THE TREES SHALL BE HAND TRIMMED, MAKING CLEAR, CLEAN CUTS THROUGH THE ROOTS. ALL DAMAGED, TORN AND CUT ROOTS SHALL BE GIVEN A CLEAN CUT TO REMOVE RAGGED EDGES, WHICH PROMOTE DECAY. TRENCHES SHALL BE FILLED WITHIN 24 HOURS, BUT WHERE THIS IS NOT POSSIBLE, THE SIDE OF THE TRENCH ADJACENT TO THE TREES SHALL BE KEPT SHADED WITH FOUR LAYERS OF DAMPENED, UNTREATED BURLAP, WETTED AS FREQUENTLY AS NECESSARY TO KEEP THE BURLAP WET. ROOTS 2" OR LARGER, WHEN ENCOUNTERED, SHALL BE REPORTED IMMEDIATELY TO THE PROJECT ARBORIST, WHO WILL DECIDE WHETHER THE CONTRACTOR MAY CUT THE ROOT AS MENTIONED ABOVE OR SHALL EXCAVATE BY HAND OR WITH COMPRESSED AIR UNDER THE ROOT. ROOT IS TO BE PROTECTED WITH DAMPENED BURLAP.

8. ROUTE PIPES OUTSIDE OF THE AREA THAT IS 10 TIMES THE DIAMETER OF A PROTECTED TREE TO AVOID CONFLICT WITH ROOTS.

9. WHERE IT IS NOT POSSIBLE TO REROUTE PIPES OR TRENCHES, THE CONTRACTOR SHALL BORE BENEATH THE DRIPLINE OF THE TREE. THE BORING SHALL TAKE PLACE NOT LESS THAN 3' BELOW THE SURFACE OF THE SOIL IN ORDER TO AVOID ENCOUNTERING "FEEDER" ROOTS.

10. TREES THAT HAVE BEEN IDENTIFIED IN THE ARBORIST'S REPORT AS BEING IN POOR HEALTH AND/OR POSING A HEALTH OR SAFETY RISK, MAY BE REMOVED OR PRUNED BY MORE THAN ONE–THIRD, SUBJECT TO APPROVAL OF THE REQUIRED PERMIT BY THE PLANNING DIVISION. PRUNING OF EXISTING LIMBS AND ROOTS SHALL ONLY OCCUR UNDER THE DIRECTION OF A CERTIFIED ARBORIST.

11. ANY DAMAGE DUE TO CONSTRUCTION ACTIVITIES SHALL BE REPORTED TO THE PROJECT ARBORIST OR CITY ARBORIST WITHIN SIX HOURS SO THAT REMEDIAL ACTION CAN BE TAKEN.

12. AN ISA CERTIFIED ARBORIST OR ASCA REGISTERED CONSULTING ARBORIST SHALL BE RETAINED AS THE PROJECT ARBORIST TO MONITOR THE TREE PROTECTION SPECIFICATIONS. THE PROJECT ARBORIST SHALL BE RESPONSIBLE FOR THE PRESERVATION OF THE DESIGNATED TREES. SHOULD THE BUILDER FAIL TO FOLLOW THE TREE PROTECTION SPECIFICATIONS, IT SHALL BE THE RESPONSIBILITY OF THE PROJECT ARBORIST TO REPORT THE MATTER TO THE CITY ARBORIST AS AN ISSUE OF NON–COMPLIANCE.

13. VIOLATION OF ANY OF THE ABOVE PROVISIONS MAY RESULT IN SANCTIONS OR OTHER DISCIPLINARY ACTION.

MONTHLY INSPECTIONS

1. IT IS REQUIRED THAT THE SITE ARBORIST PROVIDE PERIODIC INSPECTIONS DURING CONSTRUCTION. FOUR–WEEK INTERVALS WOULD BE SUFFICIENT TO ACCESS AND MONITOR THE EFFECTIVENESS OF THE TREE PROTECTION PLAN AND TO PROVIDE RECOMMENDATIONS FOR ANY ADDITIONAL CARE OR TREATMENT.

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T 925.736.8176 www.dgates.com

MOXY
HOTEL

HAVEN AVENUE
MENLO PARK
CALIFORNIA

ISSUE:	DESCRIPTION:	DATE:

NOT FOR CONSTRUCTION

PROJECT NUMBER:	P5673
DRAWN:	MF, JT
CHECK:	EG
DATE:	09/18/2020
SCALE:	

0
0" 1/2" 1" 2"

TREE INVENTORY AND TREE PROTECTION NOTES

L1.2

of -

Attachment A. Project Plans

PATH: P:\MENLO PARK\MOXY MARRIOTT (P5673)\ACAD\SHEETS_DG-SD-MOXY.DWG
PLOT DATE: 9/23/2020 3:54 PM

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HAVEN AVENUE
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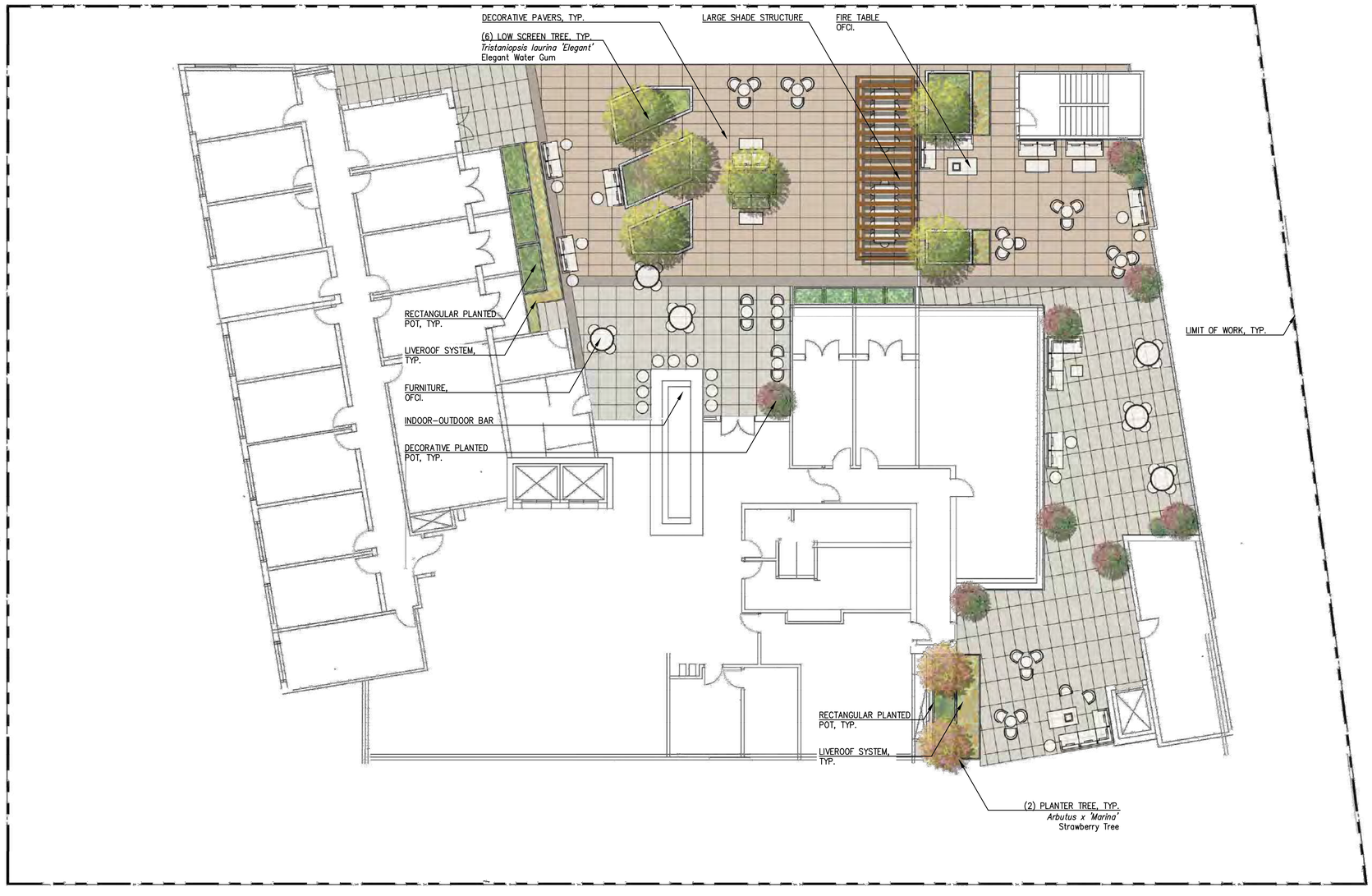
SCALE:	1"=10'-0"

0 5' 10' 20'
0" ½" 1" 2"

GROUND LEVEL ILLUSTRATIVE SITE PLAN

L2.1

of -



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SCALE:	1"=10'-0"

0 5' 10' 20'
0" ½" 1" 2"

LEVEL 4
ILLUSTRATIVE
SITE PLAN

L2.2

of –

PATH: P:\MENLO PARK\MOXY MARRIOTT (P5673)\CAD\SHEETS_00-SD-MOXY.DWG
PLOT DATE: 9/23/2020 3:55 PM

TREES

Arbutus x 'Marina'
Strawberry Tree

Cotinus coggygria
Smoke Tree

Dodonaea viscosa 'Purpurea'
Hopseed Bush

Ginkgo biloba 'Princeton Sentry'
Maidenhair Tree

Koelreuteria paniculata
Golden Rain Tree

Trisaniopsis laurina 'Elegant'
Elegant Water Gum

SHRUBS

Agave attenuata 'Blue Flame'
Blue Flame Agave

Bouteloua gracilis 'Blonde Ambition'
Blue Grama

Calamogrostis x Acutiflora 'Karl Foerster'
Feather Reed Grass

Carpenteria californica 'Elizabeth'
Bush Anemone

Dietes grandiflora 'Variegata'
Variegated Fortnight Lily

Festuca mairei
Atlas Fescue

Lomandra longifolia 'Breeze'
Dwarf Mat Rush

Muhlenbergia rigens
Deer Grass

Perovskia atriplicifolia 'Little Spire'
Russian Sage

Rhamnus californica 'Mound San Bruno'
Coffeeberry

Salvia leucantha 'Santa Barbara'
Mexican Sage Bush

Teucrium fruticans 'Compacta'
Bush Germander

ACCENT SHRUBS

Erigeron karvinskianus
Santa Barbara Daisy

Eriogonum grande rubescens
Red Buckwheat

Cistus x pulverulentus 'Sunset'
Magenta Rock Rose

Coprosma x kirkii 'Variegata'
Variegated Kirkii Coprosma

Limonium perezii
Sea Lavender

Salvia 'Bee's Bliss'
Bee's Bliss Sage

STORMWATER TREATMENT SHRUBS

Achillea millefolium 'Terra Cotta'
Terra Cotta Yarrow

Chondropetalum tectorum 'El Campo'
Small Cape Rush

Juncus patens 'Carmen's Grey'
Spreading Rush

Leymus condensatus 'Canyon Prince'
Canyon Prince Wild Rye

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CHECK:	EG
DATE:	09/18/2020
SCALE:	SCALE

0 .5X 1X 2X
0" 6" 1" 2"

PLANT PALETTE

L3.1

of -

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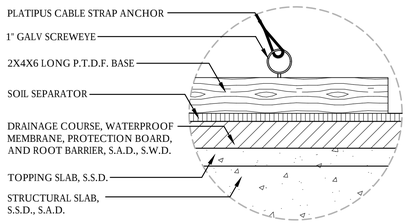
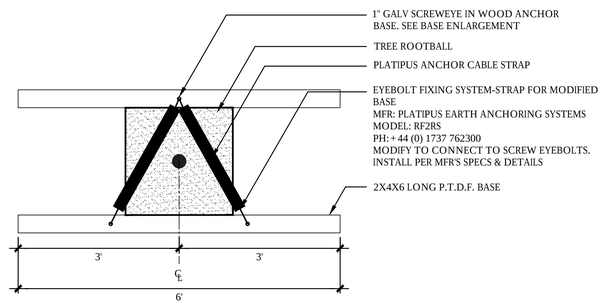
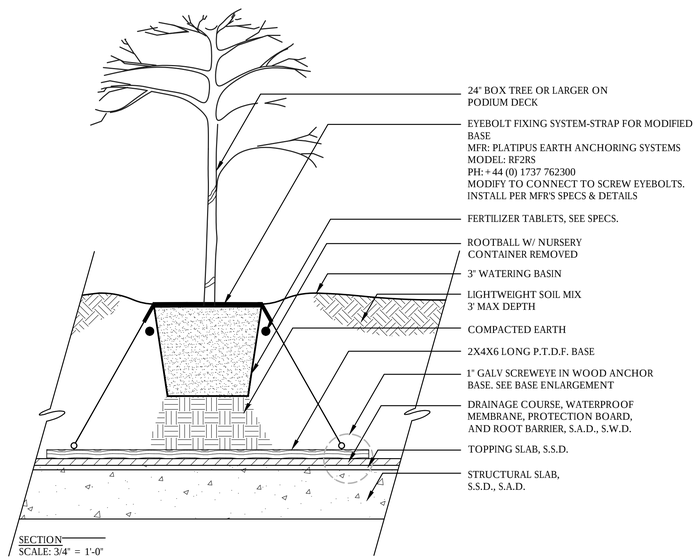


BASE ENLARGEMENT
SCALE: 3/16" = 1'-0"



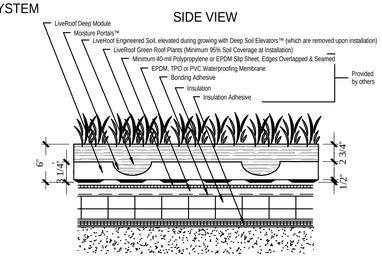
PLAN VIEW
SCALE: 3/4" = 1'-0"



SECTION
SCALE: 3/4" = 1'-0"

7 TREE GUYING ON PODIUM DECK
SCALE: 3/4" = 1'-0"

LiveRoof DEEP SYSTEM
Over Conventional Roofing Assembly



LiveRoof System Saturated Weight: 40-50 lbs / sf

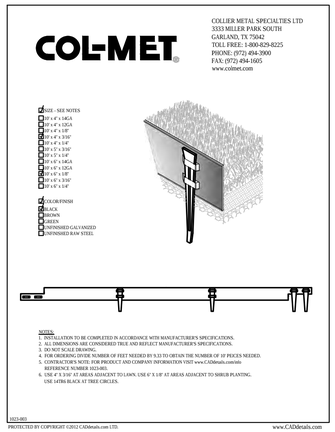
ILLUSTRATIONS ARE TO CONCEPTUALLY ASSIST PROFESSIONALS IN DESIGNING LIVEROOF SYSTEMS. ALL DESIGNS SHOULD BE BASED ON SPECIFIC PROJECTS AND NEEDS ON ILLUSTRATIONS. A QUALIFIED ROOFING SPECIALIST SHOULD BE CONSULTED TO DETERMINE APPROPRIATE WATERPROOFING AND ROOF DECK MATERIALS AND SUITABLE DESIGN.

LiveRoof, LLC
P.O. Box 533
Lake, MI 49456

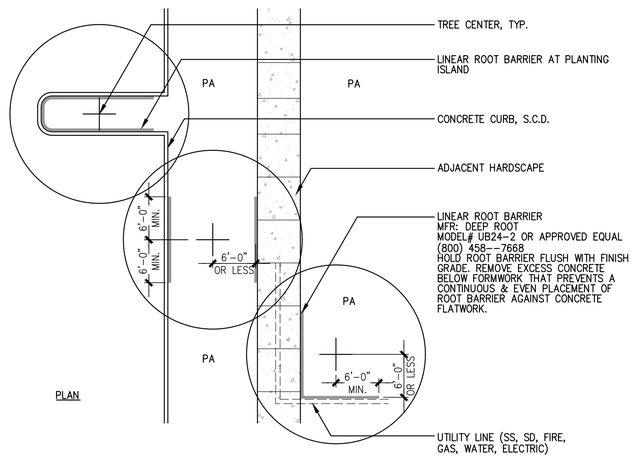
(800) 875-1392
www.liveroof.com

DEEP A

6 LIVEROOF DEEP MODULES
SCALE: NTS



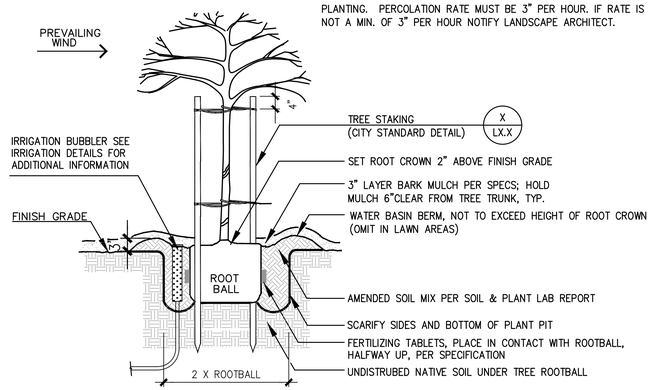
5 STEEL HEADER
SCALE: 1/4" = 1'-0"



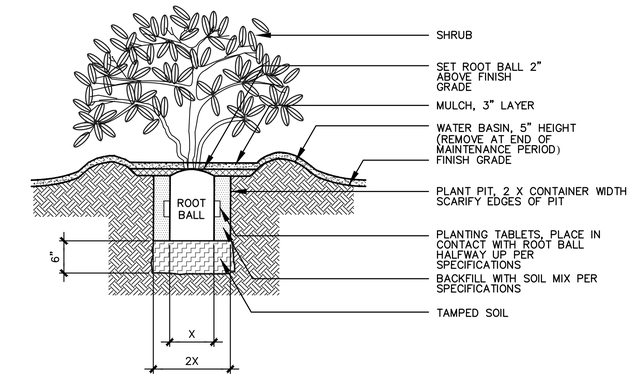
PLAN

4 LINEAR ROOT BARRIER
SCALE: 1" = 10'-0"

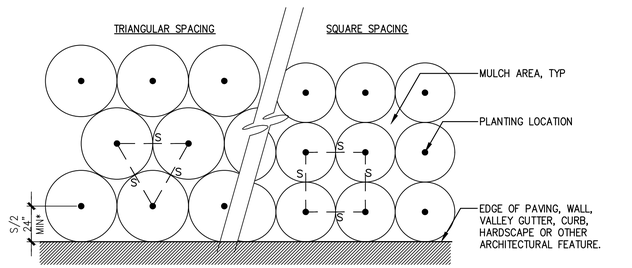
NOTES:
1. ROOT CONTROL BARRIER MUST BE USED IF TREE IS PLANTED WITHIN 5' OF CURB OR SIDEWALK. SEE DETAIL, THIS SHEET
2. CONTRACTOR TO VERIFY PERCOLATION OF PLANTING PIT PRIOR TO PLANTING. PERCOLATION RATE MUST BE 3" PER HOUR. IF RATE IS NOT A MIN. OF 3" PER HOUR NOTIFY LANDSCAPE ARCHITECT.



3 TREE PLANTING
SCALE: 3/8" = 1'-0"



2 SHRUB PLANTING
SCALE: N.T.S.



NOTES:
A. S = PLANT SPACING DISTANCE ON CENTER, SEE CHART
B. FOR USE AS A GUIDE FOR SHRUBS AND GROUNDCOVER WHEN PLANTS ARE SPACED EQUIDISTANT FROM EACH OTHER.
*AT ALL SHRUB AND GROUNDCOVER LOCATIONS WHERE SPRAY IRRIGATION IS USED. HOLD PLANTING 24" CLEAR OF CURB LINE IN CONJUNCTION WITH IRRIGATION PER AB 1881.

Plant Quantity Chart	
Spacing	# of Plants/S.F.
6" o.c.	4.60
8" o.c.	2.60
12" o.c.	1.15
18" o.c.	.512
24" o.c.	.290
30" o.c.	.185
36" o.c.	.128
42" o.c.	.087
48" o.c.	.063

1 PLANT SPACING
SCALE: 1" = 1'-0"

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MOXY HOTEL

HAVEN AVENUE
MENLO PARK
CALIFORNIA

ISSUE:	DESCRIPTION:	DATE:

NOT FOR CONSTRUCTION

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DRAWN:	MF, JT
CHECK:	EG
DATE:	09/18/2020
SCALE:	SCALE

0 .5X 1X 2X
0" ½" 1" 2"

PLANTING DETAILS

L4.1

of -

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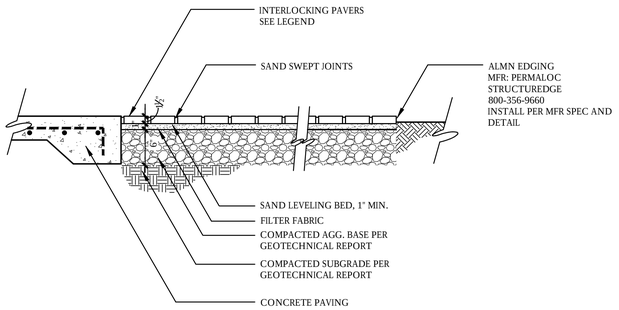
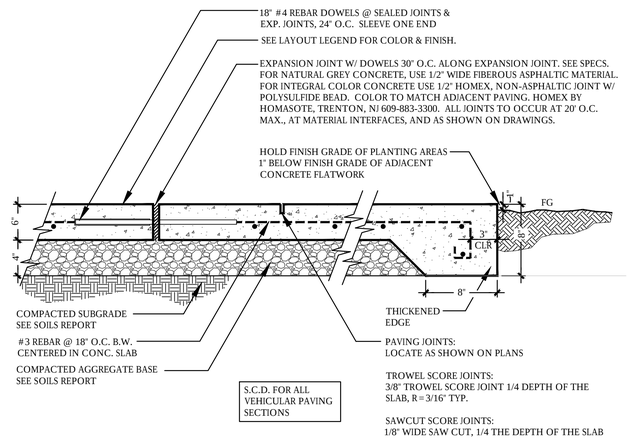


2 INTERLOCKING PAVERS ON SAND

SCALE: 1" = 1'-0"



1 CONCRETE PAVING

SCALE: 1 1/2" = 1'-0"

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MOXY HOTEL

HAVEN AVENUE
MENLO PARK
CALIFORNIA

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CHECK:	EG
DATE:	09/18/2020
SCALE:	SCALE

0 .5X 1X 2X

CONSTRUCTION DETAILS

L4.2

of -

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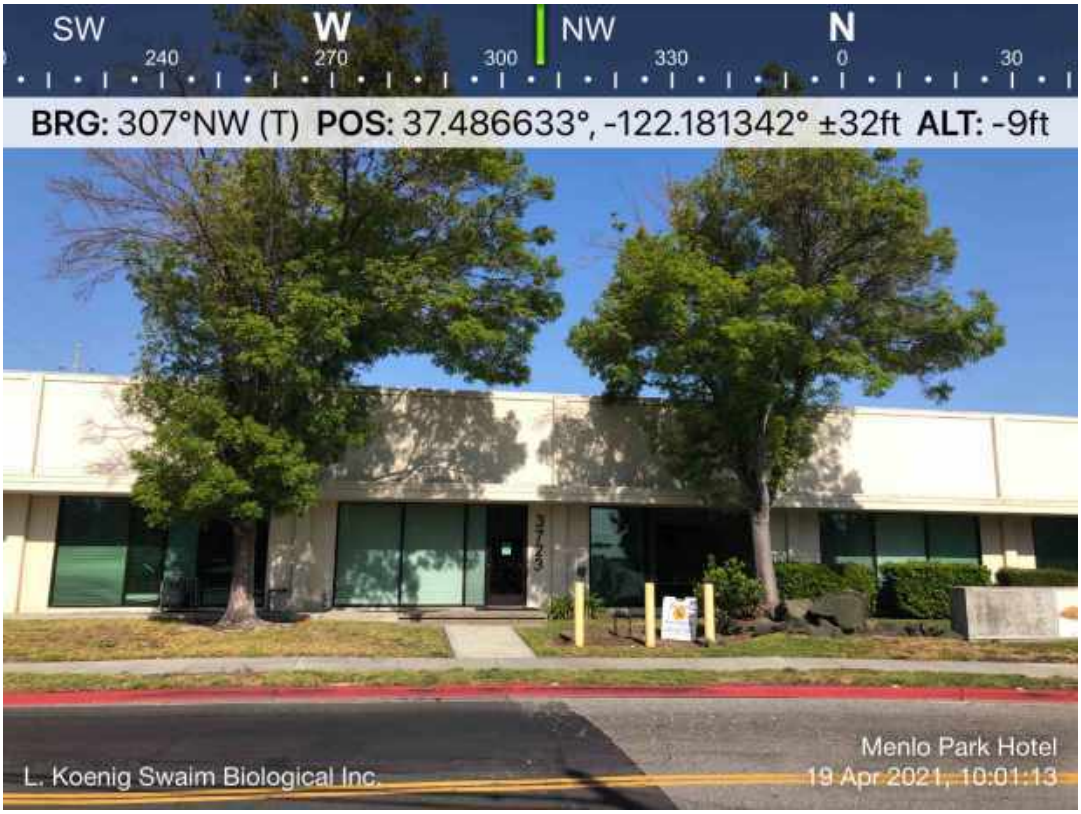


Photo 1. Project Site looking towards building from sidewalk on east side of Haven Road. Two little leaf linden trees will be relocated.

Photo 2. Haven Avenue, Atherton Channel and front of building, driveway entrance shown.

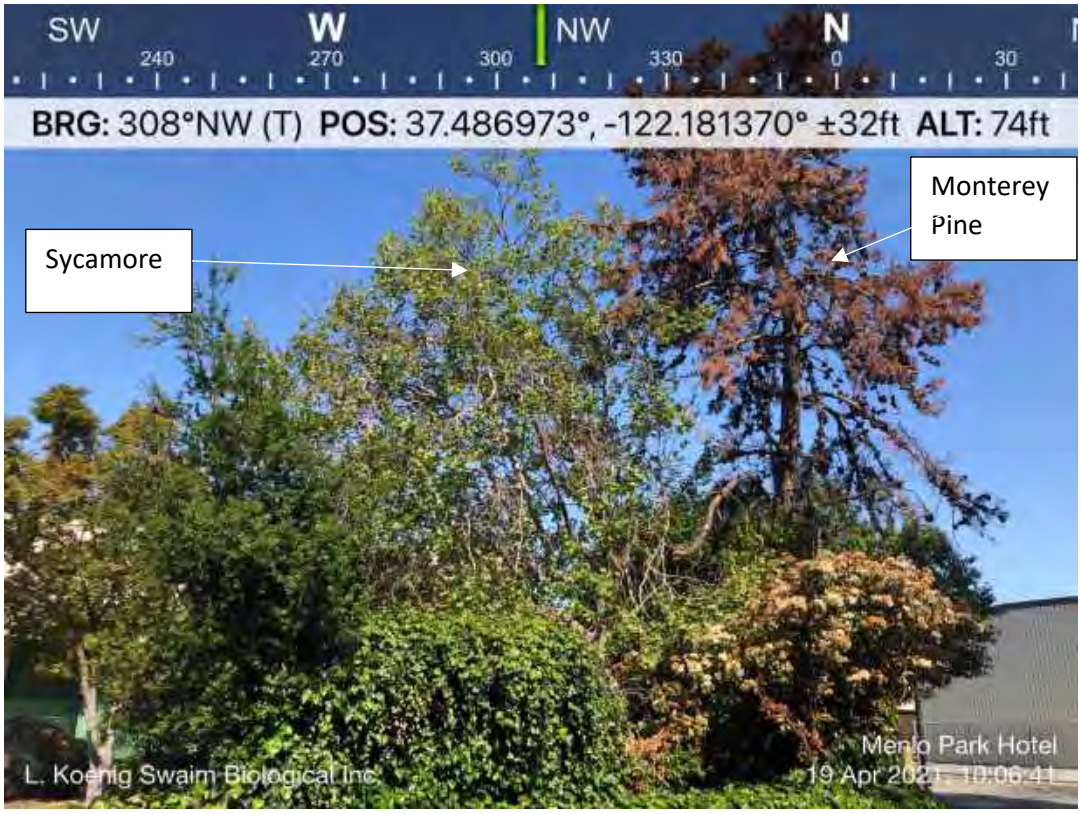


Photo 3. Vegetation to be removed on corner of Haven Avenue. Sycamore and poor health (or possibly dead) heritage Monterey Pine tree shown with other landscaping.

Photo 4. Atherton Channel box culverts at Haven Avenue.

Photo 5. Atherton Channel looking upstream with Haven Avenue on the right.

Photo 6. Atherton Channel downstream of Haven Avenue box culverts. Confluence with Bayfront Canal see in the far distance.

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

San Mateo County, California

Local office

Sacramento Fish And Wildlife Office

(916) 414-6600
(916) 414-6713

Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

NOT FOR CONSULTATION

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

Salt Marsh Harvest Mouse Reithrodontomys raviventris — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/613

Birds

NAME	STATUS

California Clapper Rail Rallus longirostris obsoletus — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/4240

California Least Tern Sterna antillarum browni — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8104

Marbled Murrelet Brachyramphus marmoratus — Threatened
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/4467

Western Snowy Plover Charadrius nivosus nivosus — Threatened
There is **final** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/8035

Yellow-billed Cuckoo Coccyzus americanus — Threatened
There is **proposed** critical habitat for this species. The location of the critical habitat is not available.
https://ecos.fws.gov/ecp/species/3911

NOT FOR CONSULTATION

Reptiles

NAME	STATUS

Green Sea Turtle Chelonia mydas — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6199

San Francisco Garter Snake Thamnophis sirtalis tetrataenia — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5956

Amphibians

NAME	STATUS
California Red-legged Frog Rana draytonii Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2891	Threatened
California Tiger Salamander Ambystoma californiense There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2076	Threatened

Fishes

NAME	STATUS
Delta Smelt Hypomesus transpacificus Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/321	Threatened

Insects

NAME	STATUS
Bay Checkerspot Butterfly Euphydryas editha bayensis Wherever found There is **final** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/2320	Threatened
San Bruno Elfin Butterfly Callophrys mossii bayensis Wherever found There is **proposed** critical habitat for this species. The location of the critical habitat is not available. https://ecos.fws.gov/ecp/species/3394	Endangered

Flowering Plants

NAME	STATUS
Fountain Thistle Cirsium fontinale var. fontinale Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/7939	Endangered

NOT FOR CONSULTATION

Marin Dwarf-flax Hesperolinon congestum — Threatened
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/5363

San Mateo Thornmint Acanthomintha obovata ssp. duttonii — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/2038

Showy Indian Clover Trifolium amoenum — Endangered
Wherever found
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6459

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

NOT FOR CONSULTATION

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NOT FOR CONSULTATION

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Allen's Hummingbird *Selasphorus sasin* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9637	Breeds Feb 1 to Jul 15
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Jan 1 to Aug 31
Black Rail *Laterallus jamaicensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/7717	Breeds Mar 1 to Sep 15

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Burrowing Owl Athene cunicularia — Breeds Mar 15 to Aug 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9737

Clark's Grebe Aechmophorus clarkii — Breeds Jan 1 to Dec 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Common Yellowthroat Geothlypis trichas sinuosa — Breeds May 20 to Jul 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/2084

Golden Eagle Aquila chrysaetos — Breeds Jan 1 to Aug 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1680

Lawrence's Goldfinch Carduelis lawrencei — Breeds Mar 20 to Sep 20
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9464

Long-billed Curlew Numenius americanus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5511

Marbled Godwit Limosa fedoa — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9481

Nuttall's Woodpecker Picoides nuttallii — Breeds Apr 1 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/9410

NOT FOR CONSULTATION

Oak Titmouse Baeolophus inornatus — Breeds Mar 15 to Jul 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9656

Rufous Hummingbird selasphorus rufus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8002

Short-billed Dowitcher Limnodromus griseus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9480

Song Sparrow Melospiza melodia — Breeds Feb 20 to Sep 5
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Spotted Towhee Pipilo maculatus clementae — Breeds Apr 15 to Jul 20
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA
https://ecos.fws.gov/ecp/species/4243

Tricolored Blackbird Agelaius tricolor — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/3910

Whimbrel Numenius phaeopus — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9483

Willet Tringa semipalmata — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Wrentit Chamaea fasciata — Breeds Mar 15 to Aug 10
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

NOT FOR CONSULTATION

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ

"Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

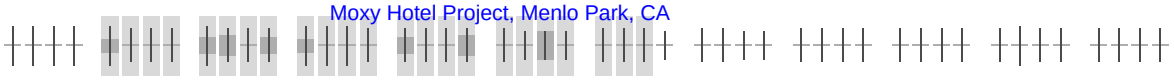
Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

■ probability of presence ■ breeding season | survey effort — no data

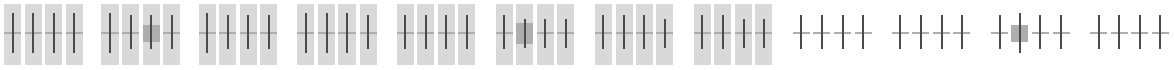
SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC

NOT FOR CONSULTATION

Allen's Hummingbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



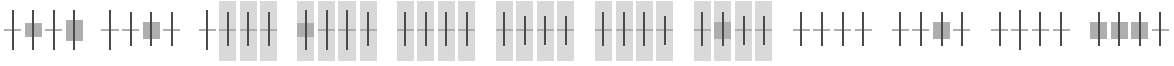
Bald Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)



Black Rail BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

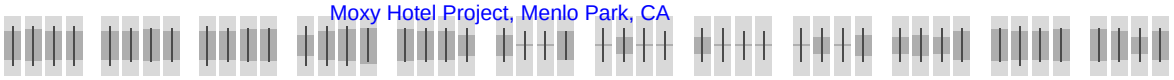
Black Skimmer BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Burrowing Owl BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



NOT FOR CONSULTATION

Clark's Grebe BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Common Yellowthroat BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Golden Eagle Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Lawrence's Goldfinch BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Long-billed Curlew BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

NOT FOR CONSULTATION

Marbled Godwit BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Nuttall's Woodpecker BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

SPECIES JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC

Oak Titmouse BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Rufous Hummingbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Short-billed Dowitcher BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

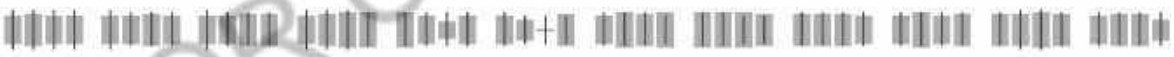
NOT FOR CONSULTATION

Song Sparrow BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Spotted Towhee BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Tricolored Blackbird BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

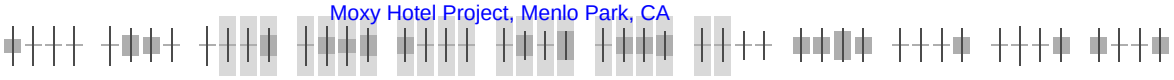
Whimbrel BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Willet BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

NOT FOR CONSULTATION

Wrentit BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

NOT FOR CONSULTATION

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

NOT FOR CONSULTATION

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

THERE ARE NO KNOWN WETLANDS AT THIS LOCATION.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters.

NOT FOR CONSULTATION

Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Mountain View (3712241) OR Palo Alto (3712242) OR Woodside (3712243) OR Newark (3712251) OR Redwood Point (3712252) OR San Mateo (3712253))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Acanthomintha duttonii San Mateo thorn-mint	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley	170 600	5 S:5	0	1	0	1	2	1	4	1	3	1	1
Agelaius tricolor tricolored blackbird	G1G2 S1S2	None Threatened	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	5 21	955 S:2	0	0	0	0	1	1	2	0	1	1	0
Allium peninsulare var. franciscanum Franciscan onion	G5T2 S2	None None	Rare Plant Rank - 1B.2	20 670	25 S:15	2	4	1	0	0	8	4	11	15	0	0
Ambystoma californiense California tiger salamander	G2G3 S2S3	Threatened Threatened	CDFW_WL-Watch List IUCN_VU-Vulnerable	40 400	1335 S:5	0	1	0	0	3	1	3	2	2	1	2
Amsinckia lunaris bent-flowered fiddleneck	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCBG-UC Botanical Garden at Berkeley SB_UCSC-UC Santa Cruz	220 475	93 S:5	0	2	1	0	0	2	2	3	5	0	0
Aneides niger Santa Cruz black salamander	G3 S3	None None	CDFW_SSC-Species of Special Concern	340 1,300	78 S:2	0	0	0	0	0	2	2	0	2	0	0
Antrozous pallidus pallid bat	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	30 420	420 S:6	0	0	0	0	0	6	6	0	6	0	0

Summary Table Report

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Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Arctostaphylos andersonii Anderson's manzanita	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCSC-UC Santa Cruz		64 S:1	0	0	0	1	0	0	1	0	1	0	0
Arctostaphylos regismontana Kings Mountain manzanita	G2 S2	None None	Rare Plant Rank - 1B.2	586 2,100	17 S:13	1	3	3	3	0	3	1	12	13	0	0
Ardea herodias great blue heron	G5 S4	None None	CDF_S-Sensitive IUCN_LC-Least Concern	1 1	156 S:1	1	0	0	0	0	0	0	1	1	0	0
Asio flammeus short-eared owl	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern		11 S:1	0	0	0	0	0	1	1	0	1	0	0
Astragalus pycnostachyus var. pycnostachyus coastal marsh milk-vetch	G2T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_SBBG-Santa Barbara Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley		25 S:1	0	0	0	0	0	1	1	0	1	0	0
Astragalus tener var. tener alkali milk-vetch	G2T1 S1	None None	Rare Plant Rank - 1B.2	5 5	65 S:2	0	0	0	0	2	0	2	0	0	2	0
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	0 60	2011 S:19	0	4	0	9	3	3	7	12	16	3	0
Bombus caliginosus obscure bumble bee	G4? S1S2	None None	IUCN_VU-Vulnerable	75 400	181 S:3	0	0	0	0	0	3	3	0	3	0	0
Bombus crotchii Crotch bumble bee	G3G4 S1S2	None Candidate Endangered		100 100	437 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Bombus occidentalis western bumble bee	G2G3 S1	None Candidate Endangered	USFS_S-Sensitive	10 400	306 S:7	0	0	0	0	0	7	7	0	7	0	0
Brachyramphus marmoratus marbled murrelet	G3 S2	Threatened Endangered	CDF_S-Sensitive IUCN_EN-Endangered NABCI_RWL-Red Watch List	800 800	110 S:1	0	0	0	0	0	1	0	1	1	0	0
Calicina minor Edgewood blind harvestman	G1 S1	None None		400 560	2 S:2	0	0	0	0	0	2	2	0	2	0	0
Centromadia parryi ssp. congdonii Congdon's tarplant	G3T1T2 S1S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	2 10	98 S:6	0	0	3	2	0	1	1	5	6	0	0
Charadrius nivosus nivosus western snowy plover	G3T3 S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	0 15	138 S:8	0	3	0	0	1	4	5	3	7	1	0
Chloropyron maritimum ssp. palustre Point Reyes salty bird's-beak	G4?T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	1 7	76 S:5	0	1	0	0	4	0	4	1	1	4	0
Circus hudsonius northern harrier	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	5 10	53 S:6	0	1	0	0	0	5	5	1	6	0	0
Cirsium fontinale var. fontinale fountain thistle	G2T1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	150 600	5 S:5	0	1	3	0	1	0	1	4	4	1	0
Cirsium praeteriens lost thistle	GX SX	None None	Rare Plant Rank - 1A	50 50	1 S:1	0	0	0	0	1	0	1	0	0	1	0
Collinsia corymbosa round-headed Chinese-houses	G1 S1	None None	Rare Plant Rank - 1B.2		13 S:1	0	0	0	0	1	0	1	0	0	0	1

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Collinsia multicolor San Francisco collinsia	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCSC-UC Santa Cruz	100 560	36 S:9	0	5	0	0	0	4	1	8	9	0	0
Corynorhinus townsendii Townsend's big-eared bat	G4 S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFS_S-Sensitive WBWG_H-High Priority	160 2,170	635 S:4	0	0	0	0	0	4	3	1	4	0	0
Coturnicops noveboracensis yellow rail	G4 S1S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_RWL-Red Watch List USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	7 18	45 S:5	0	0	0	0	0	5	5	0	5	0	0
Danaus plexippus pop. 1 monarch - California overwintering population	G4T2T3 S2S3	Candidate None	USFS_S-Sensitive	10 150	383 S:3	0	1	1	0	0	1	0	3	3	0	0
Dicamptodon ensatus California giant salamander	G3 S2S3	None None	CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	300 1,400	234 S:8	1	1	0	0	0	6	5	3	8	0	0
Dipodomys venustus venustus Santa Cruz kangaroo rat	G4T1 S1	None None		20 600	29 S:4	0	0	0	0	4	0	4	0	0	4	0
Dirca occidentalis western leatherwood	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	150 565	71 S:12	4	5	0	0	0	3	1	11	12	0	0
Egretta thula snowy egret	G5 S4	None None	IUCN_LC-Least Concern	10 10	20 S:1	0	0	0	0	0	1	0	1	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Elanus leucurus white-tailed kite	G5 S3S4	None None	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern	5 10	180 S:6	0	0	0	0	0	6	6	0	6	0	0
Emys marmorata western pond turtle	G3G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable USFS_S-Sensitive	0 340	1398 S:11	0	7	1	0	0	3	3	8	11	0	0
Eriophyllum latilobum San Mateo woolly sunflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	100 100	8 S:1	0	1	0	0	0	0	0	1	1	0	0
Eryngium aristulatum var. hooveri Hoover's button-celery	G5T1 S1	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	10 80	16 S:3	0	0	1	0	2	0	2	1	1	2	0
Eryngium jepsonii Jepson's coyote-thistle	G2 S2	None None	Rare Plant Rank - 1B.2	525 625	19 S:2	0	0	0	0	0	2	1	1	2	0	0
Euphydryas editha bayensis Bay checkerspot butterfly	G5T1 S1	Threatened None		300 640	30 S:5	0	1	0	0	4	0	4	1	1	2	2
Extriplex joaquinana San Joaquin spearscale	G2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	10 10	127 S:1	0	0	0	0	0	1	1	0	1	0	0
Falco peregrinus anatum American peregrine falcon	G4T4 S3S4	Delisted Delisted	CDF_S-Sensitive CDFW_FP-Fully Protected USFWS_BCC-Birds of Conservation Concern	5 5	58 S:1	0	0	0	0	0	1	0	1	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Fritillaria biflora var. ineziana Hillsborough chocolate lily	G3G4T1 S1	None None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley SB_USDA-US Dept of Agriculture	550 550	2 S:2	0	1	0	0	0	1	1	1	2	0	0
Fritillaria liliacea fragrant fritillary	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden USFS_S-Sensitive	295 720	82 S:7	0	5	0	0	0	2	3	4	7	0	0
Geothlypis trichas sinuosa saltmarsh common yellowthroat	G5T3 S3	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	3 360	112 S:18	0	6	0	0	0	12	13	5	18	0	0
Gonidea angulata western ridged mussel	G3 S1S2	None None		200 200	157 S:1	0	0	0	0	1	0	1	0	0	1	0
Haliaeetus leucocephalus bald eagle	G5 S3	Delisted Endangered	BLM_S-Sensitive CDF_S-Sensitive CDFW_FP-Fully Protected IUCN_LC-Least Concern USFS_S-Sensitive USFWS_BCC-Birds of Conservation Concern	430 430	329 S:1	0	0	1	0	0	0	0	1	1	0	0
Hesperevax sparsiflora var. brevifolia short-leaved evax	G4T3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	400 400	72 S:1	0	0	0	0	0	1	1	0	1	0	0
Hesperolinon congestum Marin western flax	G1 S1	Threatened Threatened	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley	200 700	27 S:10	0	5	3	0	2	0	2	8	8	2	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Hydrochara rickseckeri Ricksecker's water scavenger beetle	G2? S2?	None None		35 280	13 S:2	0	0	0	0	0	2	2	0	2	0	0
Ischnura gemina San Francisco forktail damselfly	G2 S2	None None	IUCN_VU-Vulnerable	75 75	7 S:1	0	0	0	0	0	1	1	0	1	0	0
Lasiurus cinereus hoary bat	G3G4 S4	None None	IUCN_LC-Least Concern WBWG_M-Medium Priority		238 S:8	0	0	0	0	0	8	8	0	8	0	0
Lasthenia conjugens Contra Costa goldfields	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley	10 10	36 S:1	0	0	0	0	1	0	1	0	0	0	1
Laterallus jamaicensis coturniculus California black rail	G3G4T1 S1	None Threatened	BLM_S-Sensitive CDFW_FP-Fully Protected IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	1 51	303 S:15	2	6	2	1	0	4	4	11	15	0	0
Lessingia arachnoidea Crystal Springs lessingia	G2 S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	300 550	11 S:6	1	1	1	0	0	3	1	5	6	0	0
Linderiella occidentalis California linderiella	G2G3 S2S3	None None	IUCN_NT-Near Threatened	110 110	508 S:1	0	0	0	0	0	1	1	0	1	0	0
Malacothamnus arcuatus arcuate bush-mallow	G2Q S2	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden	10 500	30 S:9	0	1	1	1	1	5	4	5	8	0	1
Melospiza melodia pusillula Alameda song sparrow	G5T2? S2S3	None None	CDFW_SSC-Species of Special Concern USFWS_BCC-Birds of Conservation Concern	1 70	38 S:21	0	12	0	0	0	9	10	11	21	0	0
Microcina edgewoodensis Edgewood Park micro-blind harvestman	G1 S1	None None		600 600	1 S:1	0	0	0	0	0	1	1	0	1	0	0

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Monolopia gracilens woodland woollythreads	G3 S3	None None	Rare Plant Rank - 1B.2	400 675	68 S:6	0	1	0	0	0	5	3	3	6	0	0
Neotoma fuscipes annectens San Francisco dusky-footed woodrat	G5T2T3 S2S3	None None	CDFW_SSC-Species of Special Concern	215 522	42 S:7	0	1	2	0	0	4	0	7	7	0	0
Northern Coastal Salt Marsh Northern Coastal Salt Marsh	G3 S3.2	None None		10 15	53 S:8	0	1	0	0	0	7	8	0	8	0	0
Nycticorax nycticorax black-crowned night heron	G5 S4	None None	IUCN_LC-Least Concern	10 10	37 S:1	0	0	1	0	0	0	1	0	1	0	0
Oncorhynchus mykiss irideus pop. 8 steelhead - central California coast DPS	G5T2T3Q S2S3	Threatened None	AFS_TH-Threatened	200 485	44 S:2	0	1	0	0	0	1	2	0	2	0	0
Pentachaeta bellidiflora white-rayed pentachaeta	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1 SB_UCBG-UC Botanical Garden at Berkeley	520 520	14 S:2	1	0	0	0	0	1	1	1	2	0	0
Phalacrocorax auritus double-crested cormorant	G5 S4	None None	CDFW_WL-Watch List IUCN_LC-Least Concern	1 30	39 S:2	1	0	0	0	0	1	1	1	2	0	0
Plagiobothrys chorisianus var. chorisianus Choris' popcornflower	G3T1Q S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_UCSC-UC Santa Cruz	400 1,100	42 S:4	0	2	0	0	0	2	2	2	4	0	0
Plagiobothrys glaber hairless popcornflower	GX SX	None None	Rare Plant Rank - 1A	15 15	9 S:1	0	0	0	0	1	0	1	0	0	1	0
Rallus obsoletus obsoletus California Ridgway's rail	G3T1 S1	Endangered Endangered	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List	0 15	99 S:21	4	5	2	0	1	9	13	8	20	1	0
Rana boylii foothill yellow-legged frog	G3 S3	None Endangered	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	80 500	2468 S:3	0	0	0	0	3	0	3	0	0	0	3
Rana draytonii California red-legged frog	G2G3 S2S3	Threatened None	CDFW_SSC-Species of Special Concern IUCN_VU-Vulnerable	45 4,005	1643 S:28	0	9	4	1	2	12	5	23	26	1	1

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						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Reithrodontomys raviventris salt-marsh harvest mouse	G1G2 S1S2	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	0 5	144 S:35	3	5	3	0	0	24	34	1	35	0	0
Riparia riparia bank swallow	G5 S2	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern	10 10	298 S:1	0	0	0	0	0	1	1	0	1	0	0
Rynchops niger black skimmer	G5 S2	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern NABCI_YWL-Yellow Watch List USFWS_BCC-Birds of Conservation Concern	11 11	7 S:1	0	0	0	0	0	1	0	1	1	0	0
Senecio aphanactis chaparral ragwort	G3 S2	None None	Rare Plant Rank - 2B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_CRES-San Diego Zoo CRES Native Gene Seed Bank	640 640	98 S:2	0	0	0	0	0	2	2	0	2	0	0
Serpentine Bunchgrass Serpentine Bunchgrass	G2 S2.2	None None		500 5,800	22 S:4	2	0	1	0	0	1	4	0	4	0	0
Silene verecunda ssp. verecunda San Francisco campion	G5T1 S1	None None	Rare Plant Rank - 1B.2 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCSC-UC Santa Cruz	600 600	20 S:1	0	0	0	0	1	0	1	0	0	1	0
Sorex vagrans halicoetes salt-marsh wandering shrew	G5T1 S1	None None	CDFW_SSC-Species of Special Concern	1 5	12 S:7	0	0	0	0	1	6	7	0	6	0	1
Spergularia macrotheca var. longistyla long-styled sand-spurrey	G5T2 S2	None None	Rare Plant Rank - 1B.2	10 10	22 S:1	0	0	0	0	0	1	1	0	1	0	0
Speyeria zerene myrtleae Myrtle's silverspot butterfly	G5T1 S1	Endangered None		20 20	17 S:1	0	0	0	0	1	0	1	0	0	0	1
Spirinchus thaleichthys longfin smelt	G5 S1	Candidate Threatened		0 0	46 S:1	0	0	0	0	0	1	1	0	1	0	0

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Sternula antillarum browni California least tern	G4T2T3Q S2	Endangered Endangered	CDFW_FP-Fully Protected NABCI_RWL-Red Watch List	1 3	75 S:7	0	0	0	0	1	6	7	0	6	0	1
Stuckenia filiformis ssp. alpina slender-leaved pondweed	G5T5 S2S3	None None	Rare Plant Rank - 2B.2	40 50	21 S:2	0	0	0	0	0	2	2	0	2	0	0
Suaeda californica California seablite	G1 S1	Endangered None	Rare Plant Rank - 1B.1	5 5	18 S:1	0	0	0	0	1	0	1	0	0	1	0
Taxidea taxus American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	70 347	594 S:5	0	0	0	0	0	5	2	3	5	0	0
Thamnophis sirtalis tetrataenia San Francisco gartersnake	G5T2Q S2	Endangered Endangered	CDFW_FP-Fully Protected	250 475	66 S:6	1	3	1	0	0	1	2	4	6	0	0
Trifolium amoenum two-fork clover	G1 S1	Endangered None	Rare Plant Rank - 1B.1 SB_CalBG/RSABG-California/Rancho Santa Ana Botanic Garden SB_UCBG-UC Botanical Garden at Berkeley SB_USDA-US Dept of Agriculture		26 S:1	0	0	0	0	0	1	1	0	1	0	0
Trifolium hydrophilum saline clover	G2 S2	None None	Rare Plant Rank - 1B.2	10 10	56 S:2	0	0	0	0	0	2	1	1	2	0	0
Triphysaria floribunda San Francisco owl's-clover	G2? S2?	None None	Rare Plant Rank - 1B.2	5 5	50 S:2	0	0	0	0	1	1	2	0	1	0	1
Tryonia imitator mimic tryonia (=California brackishwater snail)	G2 S2	None None	IUCN_DD-Data Deficient	0 0	39 S:1	0	0	0	0	0	1	1	0	1	0	0
Usnea longissima Methuselah's beard lichen	G4 S4	None None	Rare Plant Rank - 4.2 BLM_S-Sensitive	590 590	206 S:1	0	0	0	0	1	0	1	0	0	1	0
Valley Oak Woodland Valley Oak Woodland	G3 S2.1	None None		40 40	91 S:1	0	0	0	0	0	1	1	0	1	0	0

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

60 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3712253, 3712252, 3712243, 3712242 3712251 and 3712241;

Modify Search Criteria | Export to Excel | Modify Columns | Modify Sort | Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Acanthomintha duttonii	San Mateo thorn-mint	Lamiaceae	annual herb	Apr-Jun	1B.1	S1	G1
Allium peninsulare var. franciscanum	Franciscan onion	Alliaceae	perennial bulbiferous herb	(Apr)May-Jun	1B.2	S2	G5T2
Amsinckia lunaris	bent-flowered fiddleneck	Boraginaceae	annual herb	Mar-Jun	1B.2	S3	G3
Androsace elongata ssp. acuta	California androsace	Primulaceae	annual herb	Mar-Jun	4.2	S3S4	G5? T3T4
Arctostaphylos andersonii	Anderson's manzanita	Ericaceae	perennial evergreen shrub	Nov-May	1B.2	S2	G2
Arctostaphylos montaraensis	Montara manzanita	Ericaceae	perennial evergreen shrub	Jan-Mar	1B.2	S1	G1
Arctostaphylos regismontana	Kings Mountain manzanita	Ericaceae	perennial evergreen shrub	Dec-Apr	1B.2	S2	G2
Astragalus pycnostachyus var. pycnostachyus	coastal marsh milk-vetch	Fabaceae	perennial herb	(Apr)Jun-Oct	1B.2	S2	G2T2
Astragalus tener var. tener	alkali milk-vetch	Fabaceae	annual herb	Mar-Jun	1B.2	S1	G2T1
Calandrinia breweri	Brewer's calandrinia	Montiaceae	annual herb	(Jan)Mar-Jun	4.2	S4	G4
Calochortus umbellatus	Oakland star-tulip	Liliaceae	perennial bulbiferous herb	Mar-May	4.2	S3?	G3?
Castilleja ambigua var. ambigua	johnny-nip	Orobanchaceae	annual herb (hemiparasitic)	Mar-Aug	4.2	S3S4	G4T4
Centromadia parryi ssp. congdonii	Congdon's tarplant	Asteraceae	annual herb	May-Oct(Nov)	1B.1	S1S2	G3T1T2
Chloropyron maritimum ssp. palustre	Point Reyes bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	Jun-Oct	1B.2	S2	G4?T2
Chorizanthe cuspidata var. cuspidata	San Francisco Bay spineflower	Polygonaceae	annual herb	Apr-Jul(Aug)	1B.2	S1	G2T1

Cirsium fontinale var. fontinale	Crystal Springs fountain thistle	Asteraceae	perennial herb	(Apr)May-Oct	1B.1	S1	G2T1
Cirsium praeteriens	lost thistle	Asteraceae	perennial herb	Jun-Jul	1A	SX	GX
Clarkia concinna ssp. automixa	Santa Clara red ribbons	Onagraceae	annual herb	(Apr)May-Jun(Jul)	4.3	S3	G5?T3
Collinsia corymbosa	round-headed Chinese-houses	Plantaginaceae	annual herb	Apr-Jun	1B.2	S1	G1
Collinsia multicolor	San Francisco collinsia	Plantaginaceae	annual herb	(Feb)Mar-May	1B.2	S2	G2
Cypripedium fasciculatum	clustered lady's-slipper	Orchidaceae	perennial rhizomatous herb	Mar-Aug	4.2	S4	G4
Dirca occidentalis	western leatherwood	Thymelaeaceae	perennial deciduous shrub	Jan-Mar(Apr)	1B.2	S2	G2
Elymus californicus	California bottle-brush grass	Poaceae	perennial herb	May-Aug(Nov)	4.3	S4	G4
Eriophyllum latilobum	San Mateo woolly sunflower	Asteraceae	perennial herb	May-Jun	1B.1	S1	G1
Eryngium aristulatum var. hooveri	Hoover's button-celery	Apiaceae	annual / perennial herb	(Jun)Jul(Aug)	1B.1	S1	G5T1
Eryngium jepsonii	Jepson's coyote thistle	Apiaceae	perennial herb	Apr-Aug	1B.2	S2?	G2?
Erysimum franciscanum	San Francisco wallflower	Brassicaceae	perennial herb	Mar-Jun	4.2	S3	G3
Extriplex joaquinana	San Joaquin spearscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Fritillaria biflora var. ineziana	Hillsborough chocolate lily	Liliaceae	perennial bulbiferous herb	Mar-Apr	1B.1	S1	G3G4T1
Fritillaria liliacea	fragrant fritillary	Liliaceae	perennial bulbiferous herb	Feb-Apr	1B.2	S2	G2
Hesperevax sparsiflora var. brevifolia	short-leaved evax	Asteraceae	annual herb	Mar-Jun	1B.2	S2	G4T3
Hesperolinon congestum	Marin western flax	Linaceae	annual herb	Apr-Jul	1B.1	S1	G1
Lasthenia conjugens	Contra Costa goldfields	Asteraceae	annual herb	Mar-Jun	1B.1	S1	G1
Leptosiphon ambiguus	serpentine leptosiphon	Polemoniaceae	annual herb	Mar-Jun	4.2	S4	G4
Lessingia arachnoidea	Crystal Springs lessingia	Asteraceae	annual herb	Jul-Oct	1B.2	S2	G2
Lessingia hololeuca	woolly-headed lessingia	Asteraceae	annual herb	Jun-Oct	3	S2S3	G3?
Lilium maritimum	coast lily	Liliaceae	perennial bulbiferous herb	May-Aug	1B.1	S2	G2
Lupinus arboreus var. eximius	San Mateo tree lupine	Fabaceae	perennial evergreen shrub	Apr-Jul	3.2	S2	G2Q
Malacothamnus arcuatus	arcuate bush-mallow	Malvaceae	perennial evergreen shrub	Apr-Sep	1B.2	S2	G2Q
Malacothamnus davidsonii	Davidson's bush-mallow	Malvaceae	perennial deciduous shrub	Jun-Jan	1B.2	S2	G2
Micropus amphibolus	Mt. Diablo cottonweed	Asteraceae	annual herb	Mar-May	3.2	S3S4	G3G4
Monolopia gracilens	woodland woolythreads	Asteraceae	annual herb	(Feb)Mar-Jul	1B.2	S3	G3

Navarretia myersii ssp. myersii	pincushion navarretia	Polemoniaceae	annual herb	Apr-May	1B.1	S2	G2T2
Navarretia paradoxiclara	Patterson's navarretia	Polemoniaceae	annual herb	May-Jun(Jul)	1B.3	S2	G2
Pedicularis dudleyi	Dudley's lousewort	Orobanchaceae	perennial herb	Apr-Jun	1B.2	S2	G2
Pentachaeta bellidiflora	white-rayed pentachaeta	Asteraceae	annual herb	Mar-May	1B.1	S1	G1
Plagiobothrys chorisianus var. chorisianus	Choris' popcornflower	Boraginaceae	annual herb	Mar-Jun	1B.2	S1	G3T1Q
Plagiobothrys glaber	hairless popcornflower	Boraginaceae	annual herb	Mar-May	1A	SH	GH
Polemonium carneum	Oregon polemonium	Polemoniaceae	perennial herb	Apr-Sep	2B.2	S2	G3G4
Ranunculus lobbii	Lobb's aquatic buttercup	Ranunculaceae	annual herb (aquatic)	Feb-May	4.2	S3	G4
Senecio aphanactis	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
Silene verecunda ssp. verecunda	San Francisco campion	Caryophyllaceae	perennial herb	(Feb)Mar-Jun(Aug)	1B.2	S1	G5T1
Spergularia macrotheca var. longistyla	long-styled sand-spurrey	Caryophyllaceae	perennial herb	Feb-May(Jun)	1B.2	S2	G5T2
Stuckenia filiformis ssp. alpina	slender-leaved pondweed	Potamogetonaceae	perennial rhizomatous herb (aquatic)	May-Jul	2B.2	S2S3	G5T5
Suaeda californica	California seablite	Chenopodiaceae	perennial evergreen shrub	Jul-Oct	1B.1	S1	G1
Trifolium amoenum	two-fork clover	Fabaceae	annual herb	Apr-Jun	1B.1	S1	G1
Trifolium hydrophilum	saline clover	Fabaceae	annual herb	Apr-Jun	1B.2	S2	G2
Triphysaria floribunda	San Francisco owl's-clover	Orobanchaceae	annual herb	Apr-Jun	1B.2	S2?	G2?
Tropidocarpum capparideum	caper-fruited tropidocarpum	Brassicaceae	annual herb	Mar-Apr	1B.1	S1	G1
Usnea longissima	Methuselah's beard lichen	Parmeliaceae	fruticose lichen (epiphytic)		4.2	S4	G4

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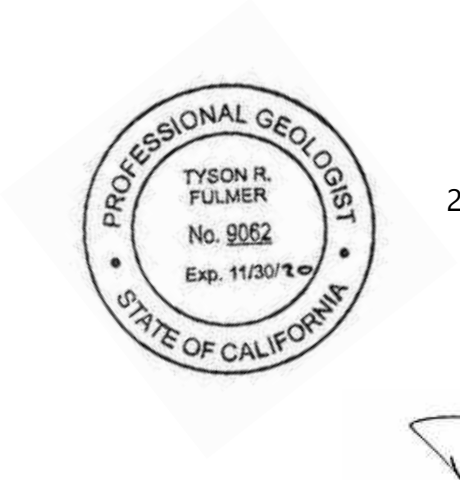
Risk Management Plan

3723 Haven Ave
Menlo Park, California

April 2021

Prepared for:
FPG Development Group



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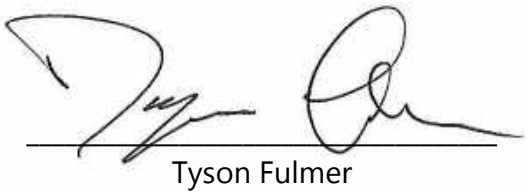

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AWR ENVIRONMENTAL

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Figure 4. TCE Concentrations in A Zone Ground Water
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Figure 6. TCE and Vinyl Chloride Concentrations in Soil Vapor

APPENDICES

Appendix A. Deed Restriction and Risk Management Plan (1999)
Appendix B. Agreement and Acknowledgement Statement

1. INTRODUCTION

This Risk Management Plan (RMP) has been prepared by AWR Environmental on behalf of the FPG Development Group (Developer) and Integris Millennium Joint Ventures, LLC (Owner) in support of earthwork redevelopment construction activities associated with the proposed Hotel development at 3723 Haven Ave, Menlo Park, CA (Figure 1). 3723 Haven Ave comprises San Mateo County Assessor Parcel Numbers (APN) 55-17-35. The Regional Water Quality Control Board – San Francisco Region 2 (Water Board) is the lead regulatory oversight agency for the environmental matters related to 3723 Haven Ave.

The Water Board directed the preparation of this RMP in a letter correspondence dated November 18, 2019 and July 27, 2020. The purpose of this RMP is to (1) specify procedures to be implemented during redevelopment construction activities for handling contaminated soil and ground water that is potentially encountered, and (2) describe the additional documentation that must be provided to the Water Board for approval prior to commencing construction.

3723 Haven Ave is the northern most property of the former Siltec site (Water Board Case No. 41S0105) that encompasses the current addresses of 3705, 3715 and 3723 Haven Avenue, Menlo Park. As described below, a Risk Management Plan was issued for the all three properties associated with the Siltec operations (3705-3723 Haven Ave) in 1999 (1999 RMP; Appendix A). This RMP, however, is specific to 3723 Haven Ave.

1.1 BACKGROUND

A release of chlorinated volatile organic compounds (CVOCs) was identified on the parcel with the current address of 3715 Haven Ave in a 1994 investigation (Geomatrix, 1995). In August 1999, a covenant and environmental restriction (deed restriction) (Appendix A) was recorded, which specified prohibitions on certain site uses and outlined certain monitoring responsibilities of the new owners. A risk management plan (RMP) accompanied the deed restriction to allow for property use with residual concentrations remaining in the soil and ground water. The deed restriction included practices specified in the RMP for all three parcels (3705-3723 Haven Ave). Both the RMP and deed restriction and both were recorded in the Official records of San Mateo County on August 9, 1999.

In November and December of 1999 and again in January 2001, excavation of contaminated soil was performed at what is currently the 3715 Haven Ave property, and two parcels adjacent to 3715 Haven Ave (3645 and 3665 Haven Ave). A request for no further action was prepared for the 3705-3723 Haven Ave properties in an environmental conditions report submitted in December of 2013 (EKI, 2013). In June of 2014, a no further action letter was prepared by the Water Board for the 3705-3723 Haven Ave facility based on the assessment tool for low threat closure of chlorinated solvent sites (RWQCB, 2009).

However, ground water data collected in 2018 and 2019 in accordance with the 1999 RMP indicated the VOC plume was not stable (AWR, 2018, 2019a). Based the data, the case was

reopened "due to changed site conditions and planned redevelopment" by the Water Board in June of 2019. A regulatory directive was issued to Sumco and Integris pursuant to water code Section 13267, requiring additional environmental site investigation.

AWR, on behalf of Integris, performed two separate site investigations in 2019 (AWR, 2019a, 2019b) to characterize soil vapor and ground water conditions at the 3723 Haven Ave property and to evaluate the lateral and vertical extent of VOCs and threat to indoor air from soil vapor. The data and records indicate that the source area for the CVOC release is the central parcel of the former Siltec facility (3715 Haven Avenue), which is adjacent to 3723 Haven Ave in the upgradient direction. This parcel (3715 Haven Ave) has been redeveloped since remediation occurred and is not part of the 3723 Haven Ave property that is proposed for redevelopment.

The Water Board issued a correspondence in November of 2018, which required a Risk Management Plan (RMP) to be prepared by the owner of the 3723 Haven Ave property (Integris Millennium Joint Venture, LLC). The requested RMP for 3723 Haven Ave is provided herein.

Additional detail regarding the nature and extent of contamination can be reviewed on the State Water Boards Geotracker database under two separate cases. Data and reports for the former Siltec facility are filed under SILTEC (SL18322742); data for recent work conducted as part of redevelopment of the 3723 Haven Ave Site is filed under 3723 Haven Avenue Development (T10000012491).

1.2 Site Description

The 3723 Haven Avenue is located in Menlo Park, California (Figure 1, 2). The surrounding area has historically been commercial/industrial land use, which appears to be transitioning to more residential land use. A large apartment complex was constructed in 2017 on the adjacent property to the west of the 3723 Haven Ave (3645-3665 Haven Ave). The proposed land use for 3723 haven Ave is a multistory hotel as described below.

Currently the building located at 3723 Haven Ave is divided into multiple office/warehouse type spaces, which are used by multiple tenants. The remaining area of the property is used for parking with some landscaping in the front of the building along Haven Ave. There is currently one entrance facing Haven Avenue on the 3723 Haven parcel with an L-shaped paved parking/driving area along the south and west sides of 3723 Haven Ave (Figure 2). The single-story building at 3723 Haven was constructed between 1968 and 1974 and has a multiple tenant office area in the east, and a raised ceiling warehouse style area that is occupied by two separate tenants in the west. Landscaping and hardscaping near the building and Haven Avenue is also present at 3723 Haven Ave.

1.3 Proposed Use of the Property

It is our understanding that the property is proposed for redevelopment as a nine-story hotel with the lower four levels used for parking, one level as a lobby and entrance floor, and the upper four levels with hotel rooms for occupancy. The current building will be demolished as part of the redevelopment for the hotel.

1.4 Operational History

From 1970 through 1989, Siltec Corporation used the three parcels (3705-3723 Haven Ave) for manufacturing polished silicon wafers, conducting various industrial activities in the three on-site buildings. CVOCs were used on site during this period. Based on the historical phone directories, BSG Associates occupied the property in 1992, the nature of this business in unknown. Four separate company phone numbers were listed for the property in 2000. From 2005 to 2014 the number of company phone numbers associated with the property ranges from 9 to 28. The types of businesses listed for the property are highly varied. Further details for the occupancy history are provided in the Phase I ESA (AWR, 2018). The only documented releases in the historical records are associated with the former Siltec facility at 3715 Haven Ave.

1.5 RMP Purpose & Objectives

This RMP is designed to provide FPG Development Group and the construction contractor with guidance to perform earthwork related activities during redevelopment construction activities, including the handling and management of contaminated soil and ground water. In addition, this RMP identifies additional documentation to be provided to the Water Board prior to construction.

The objectives of this RMP are to provide detailed information regarding known environmental conditions at 3723 Haven Ave and establish a decision-making structure to assist the construction team in the identification and management of contaminated media, when and if they are encountered, as follows:

- Communicate information to Site construction workers about Site environmental conditions;
- Present protocols for appropriate community protection;
- Present guidelines for health and safety precautions for on-Site workers who may access soil or ground water that could contain residual chemicals of concern;
- Present notification and reporting requirements;
- Present protocols for management of known contaminated soil or extracted ground water generated during Site redevelopment activities; and

- Present contingency procedures if localized areas of unanticipated chemically affected soil or other subsurface features of environmental concern are encountered during earthwork or excavation activities.

2. CURRENT ENVIRONMENTAL CONDITIONS

2.1 SOURCE AREA

There were no contaminant sources or remedial actions that occurred at 3723 Haven Ave. As described in the Summary of Environmental Conditions report (EKI, 2013) "sumps in the floor of Building 2 [3715 Haven Ave] of the manufacturing facility were identified as having likely provided a conduit for movement of VOCs into the fine-grained sediments of the shallow subsurface." Currently a parking lot exists in the area where the source area was located and remedial excavation occurred. As shown in Figure 3, the source areas and the remedial excavation were located on the 3715 Haven Ave property, with some excavation extending into the adjacent properties located at 3645-3665 Haven Ave.

2.2 DISTRIBUTION OF CVOCS IN GROUND WATER

Concentrations of TCE are plotted with isoconcentration contours in Figures 4 and 5. The highest TCE concentrations were observed in GP-1A, GP2B, and MW-8 at the southern end of the property, which are the closest down gradient sample locations to the former release at 3715 Haven Ave. Two of these sample locations (GP-1A and MW-8) are screened in the shallow A Zone water bearing zone. The GP-2 location, in the southwest portion of 3723 Haven Ave, shows concentrations in the B Zone ground water are 2 orders of magnitude higher that the A zone sample.

Based on the data, A Zone CVOC concentrations appear highest in the south-central portion of the property and likely extend beneath the current building. B Zone ground water concentrations appear to be highest towards the southwestern portion of 3723 Haven Ave and are bound in the down gradient direction by non-detect concentrations observed at GP5B and GP-4B.

The deepest ground water sample (32-36 feet bgs) collected at 3723 Haven Ave is GP-5C collected on the western border of 3723 Haven Ave. CVOC concentrations were non-detect in this sample. Based on the data, it appears that the CVOC concentrations have not extended into the C Zone beneath 3723 Haven Ave.

2.3 SOIL VAPOR

Figure 6 shows the distribution of TCE and vinyl chloride in soil vapor at 3723 Haven Ave. As shown on Table 2, several compounds were detected in one or both samples. All concentrations were below current commercial/industrial ESLs with the exception of benzene in SV-5.

Benzene exceeded the residential ESL of 3.2 ug/m3 in sample SV-5, measured at 12 ug/m3. There are no known benzene sources at 3723 Haven Ave. Furthermore, benzene is not detected in ground water beneath 3723 Haven Ave. Therefore, benzene concentrations in soil gas appear to be associated with an off-site release or a regional condition. There were no CVOC concentrations detected above ESL screening criteria.

3. RESPONSIBILITY FOR RMP IMPLEMENTATION

Representatives for the Developer will oversee implementation of the RMP at 3723 Haven Ave. A copy of this RMP will be maintained at 3723 Haven Ave at all times. The Developer and General Contractor(s) will make all third-party subcontractors working at 3723 Haven Ave aware of the requirements of the RMP, and provide an electronic copy and hard-copy to all subcontractors that are performing activities covered by this RMP and who may encounter suspect subsurface conditions during execution of their work.

The project Environmental Consultant will be present to assist the Developer and contractors with the implementation of this RMP when ground-disturbing activities are being conducted in areas where contamination is known or suspected or when unknown conditions are encountered.

3.1 ACTIVITIES COVERED BY THE RMP

The following activities constitute the work covered under this RMP.

- **Transiting Across and Exiting 3723 Haven Ave** – vehicular travel within 3723 Haven Ave and exiting 3723 Haven Ave.
- **Subsurface Construction or Repair** – any activity occurring beneath the grade level of existing or future ground surface;
- **Utility Line Work** – any subterranean inspection, excavation, or repair of electrical, telephone, water, sanitary sewer or storm drains occurring within or outside of existing vaults (conducted prior to excavation)
- **Site Grading and Soil Stockpiling -**any handling or movement of surface soil or above grade soil stockpiles; and
- **Other** – other subgrade activities not expressly listed above (e.g., deep landscaping work, sub-slab work, etc.)

3.2 CONSTRUCTION TEAM CONTACT INFORMATION

Prior to the initiation of construction activities that are covered under this RMP, the Developer will confirm the Developer's project representative, General Contractor and project Environmental Consultant. Contact information for each entity will accompany this RMP, once

the team is assembled. Regular and 24-hour emergency contact information for these individuals will be confirmed and updated as necessary. A project contact sheet will be provided to the General Contractor and posted in an accessible and suitable location at 3723 Haven Ave.

3.3 Worker Health and Safety

In addition to following the RMP, each Contractor and subcontractor is responsible for the safety of its employee and site visitors including but not limited to adherence to a Site-specific Health and Safety Plan (HASP) and use of property-trained personnel:

- **Preparation of HASP:** A HASP will be prepared for the project in accordance with California Occupational Safety and Health Administration (CAL-OSHA) Construction Safety Orders within Title 8 of the California Code of Regulations (CCR). The General Contractor is responsible for notifying subcontractors and visitors of pertinent environmental conditions to ensure adequate protection for workers and visitors while on Site. Subcontractors may either adopt the General Contractor's HASP or prepare their own HASP. In the event that unanticipated conditions occur at 3723 Haven Ave, the HASP will be modified accordingly.

- **Use of Properly-Trained Personnel**: Each contractor engaged in contact and management of contaminated soil or ground water will use properly trained personnel in accordance CCR, Title 29, Part 1910.120 Hazardous Waste Operations and Emergency Response (HAZWOPER) standards.

3.4 Community Protection During Site Redevelopment

Land use in the vicinity of 3723 Haven Ave is mixed commercial and residential. During the development of 3723 Haven Ave, the Developer and contractors will implement measures to control potential risks to the surrounding community from fugitive dust emissions. These activities will be implemented when there is the potential for contaminated soil to affect the nearby community. It is anticipated that following placement of fill, hardscapes, and building pads, air monitoring will not be required as there will not be exposed soil surfaces with concentrations exceeding residential and shallow soil exposure concentrations (if present).

3.5 Agreement and Acknowledgement Statement

Prior to commencement of any Site activities that disturb the ground surface, the General Contractor and subcontractors of the Developer will read this plan and sign the Agreement and Acknowledgement Statement (Appendix A) to certify that they have read, understood and agreed to abide by its provisions.

4. AGENCY NOTIFICATION & REPORTING REQUIREMENTS

The Developer will notify the Water Board and other agencies as applicable during Site development activities in accordance with the protocols described below.

4.1 WATER BOARD NOTIFICATION

The Developer will notify the Water Board during Site redevelopment activities in accordance with the protocols below.

4.1.1 Twenty-four (24) Hour Notification

The Water Board will be notified within 24 hours after any of the following potentially hazardous conditions are encountered:

- Releases spills or releases of hazardous substances or petroleum hydrocarbons to soil or water that are considered, based on best professional judgement and/or physical evidence (including but not limited to olfactory, visual, field instrument, and lab data), to be an immediate threat to human health and the environment; and/or
- Discovery of unknown conditions (underground storage tanks, sumps, vaults, piping, etc.) or newly found contamination.

In the event of the discovery of USTs, vaults, hoists, & pipelines, and Menlo Park Fire Department must also be notified within 24 hours of the discovery.

4.1.2 Seventy-two (72) Hour Notification

The Water Board will be notified 72 hours in advance of ground disturbing activities in areas of known or suspected contamination.

4.1.3 Water Board Contact and Menlo Park Fire Department Information

The primary points of contact for the Water Board and CUPA are provided below. All agency notifications must be made by phone and email. A Water Board contact sheet will be provided to the General Contractor and posted in an accessible and suitable location at 3723 Haven Ave.

Person / Agency	Contact Information
Nicole Fry Water Board Case Worker	510-622-2460 nicole.fry@waterboards.ca.gov
Menlo Park Fire Department	650-688-8400

4.2 Other Agency Notification

In addition to the Water Board and Menlo Park Fire Department notification requirements discussed above, other agency notifications may be required. Contact information for other agency notifications that may be required is provided below. Prior to the initiation of construction activities that are covered under this RMP, the Developer will confirm the contact information listed below. An agency contact sheet will be provided to the General Contractor and posted in an accessible and suitable location at 3723 Haven Ave.

Conditions Posing an Immediate Threat For life-threatening or serous hazardous materials incidents, the following number will be contacted immediately upon discovery.	
Local police, fire and rescue services	911
Releases to Water For spills or releases of hazardous substances or petroleum hydrocarbons to surface water, the following agencies will be contacted immediately upon discovery.	
National Spill Response Center	(800) 424-8802
United States Coast Guard – San Francisco (if spill might reach navigable waters)	(415) 399-3547
California Office of Emergency Services	(800) 852-7550; (916) 845-8911
San Mateo County Department of Environmental Health	(650) 372-6200
Local Emergency Response Agency	911
VOC-Impacted Soil If VOC-impacted soil is discovered during Site grading activities, the following agency will be notified	
BAAQMD	415-749-4900
Dust Complaints For dust complaints during ground disturbing activities, the following agencies will be notified.	
City of Menlo Park Building Department	650-330-6704
BAAQMD	415-749-4900

4.3 Record Keeping & Reporting Requirements

If required during construction, any ground water removal or soil excavation and disposal activities will be documented in daily field reports by the Contractor and/or Environmental Consultant and will be kept at 3723 Haven Ave and made available to Water Board upon request. Documentation will include at a minimum the following, as applicable:

- Ground water
    - Ground water is at approximately 5 feet below ground surface. Based on the current construction design, it is not expected to be encountered in excavations during construction activities. However building support piers

will be advanced through ground water.

  - If ground water is encountered, documentation will include the location, volume of ground water that is removed, characterization, treatment, and destination (transported to temporary holding tanks, used as dust suppression, and/or disposed of off-Site);

- Underground Structures
  - type, contents, characterization, and destination (abandoned in place or disposed of off-Site) of any underground structures discovered during site development activities;

- Impacted Soil
  - origin, volume, characterization, and destination of any contaminated soil removed from 3723 Haven Ave;

- Imported Soil
  - origin, volume, characterization, and destination (location used on-Site) of imported fill if obtained from a non-commercial quarry;

- Disposal Records
  - date, time, trucking company, driver and vehicles used for the trip, equipment decontamination and tarping, waste/material type, volume, copies of bills-of-lading, and hazardous waste manifests; and

- Dust Complaint Logs
  - time, name and contact information, compliant description, earthwork activities associated with complaint, and measures taken to mitigate dust;

- Analytical Reports
  - laboratory analytical reports of samples of soil, ground water, dust, and soil vapor, if samples are collected.

Following completion of the work covered by this RMP, the Environmental Consultant will prepare a report for submittal to Water Board that documents compliance with this RMP including soil and/or ground water sampling, removal and management of unknown structures, chemical analysis and proper disposal of contaminated materials and soil import. The report will include at a minimum the information described above.

4.4 Additional Documentation

In addition to the information provided herein, the Water Board's July 27, 2020 letter requires the RMP to:

- "Specify the drilling methods and pier design for the structural foundation and provide a justification explaining why groundwater contamination will not migrate to the deeper groundwater bearing zones during construction"
    - However, because the structural design for the hotel has not yet been developed, this information will be provided to the Water Board under separate cover at least 3 months prior to commencing construction.

- "Specify the vapor intrusion mitigation measures that will be implemented during redevelopment"
    - However, because the structural design for the hotel has not yet been developed, this information will be provided to the Water Board under separate cover at least 3 months prior to commencing construction, which will include:
        - design criteria and drawing(s) of any proposed mitigation systems;
        - type and location of monitoring points;
        - operation, maintenance, and monitoring plan;
        - contingency plans, including contingency trigger criteria, for situations where mitigation measures are or become ineffective, considering long- and short-term exposure risks
        - record of construction report
        - annual inspection and performance monitoring report.

- Submit a "Groundwater Treatment Plan" to addresses residual CVOCs by assessing the utility of monitored natural attenuation, describing pathways and risk to human health and water resources, proposing cleanup goals, and evaluating the feasibility of remediation alternatives.
    - However, because the source of the residual CVOCs is located on the 3715 Haven Ave, the Water Board should redirect this requirement to the party responsible for 3715 Haven Ave.

5. Environmental Site Conditions

A brief summary of known environmental conditions in soil and ground water is provided below. Additional detail is available in the environmental reports uploaded to the State Water Board's Geotracker database. The following conclusions are based on the environmental data and historical records:

- Elevated chlorinated volatile organic compounds (CVOCs) have been detected in soil and ground water beneath 3723 Haven Ave that could potentially pose a health risk to on-site receptors if encountered during construction activities.

- The data support that no release occurred at 3723 Haven Ave, and that contamination has migrated in ground water from the adjacent property (3715 Haven Ave) to beneath the 3723 Haven Ave Site.

- Based on the records and environmental data, the original release of CVOCs occurred on 3715 Haven Ave the adjacent property to the south. A soil excavation occurred that removed contaminated soil in this area to approximately 7 feet, however, residual contamination likely remains at depth. This residual contamination from the release at 3715 Haven Ave is likely what is impacting ground water beneath the 3723 Haven Ave Property. The highest levels of contamination on the 3723 Haven Ave site are located in the southwest corner of the property, closest to where the release occurred.

- Because there is no documented release at the 3723 Haven Ave site, the unsaturated vadose zone soils should be free of contamination. The water table at 3723 Haven Ave is approximately five feet below grade, so the upper five feet of soil at 3723 Haven Ave should be free of contamination.

5.1 Discovery of Unknown Conditions

It is possible that the redevelopment activities may encounter currently unknown areas of contamination, and/or unknown potential threats of contamination, such as USTs, vaults, hoists, sumps, maintenance pits, pipelines, etc. the Water Board will be notified if any of these unknown conditions are encountered.

6. PRE-FIELD ACTIVITIES

The pre-field activities include planning the construction aspects of the earthwork activities and implementing certain administrative and organizational tasks prior to commencing of earthwork activities.

6.1 Site Security and Access

During development activities, 3723 Haven Ave will be secured to provide protection and safety to on-Site personnel and equipment. A chain link fence currently surrounds the entire perimeter of 3723 Haven Ave and will be maintained throughout the period of construction. During non-working hours, the fencing will be fully closed and locked. During development activities, access will be restricted to authorized personnel only.

6.2 Traffic Control

Caution will be exercised during entering and exiting of the work area to ensure safe and uninterrupted traffic flow. Entrance into and departure from 3723 Haven Ave by trucks will be facilitated by a flagman, or comparable contractor personnel, in compliance with the Traffic Control Plan approved by the City of Menlo Park.

6.3 PERMITS

All necessary permits for removal activities, transportation, and/or air quality will be obtained prior work at 3723 Haven Ave. The permits will be kept on-Site and made available for inspection during working hours. The procedures proposed for development activities will comply with federal, State and local rules and regulations, regardless of whether permit documents are required.

6.4 NOTIFICATIONS AND UTILITY CLEARANCE

FPG Development Group or their agent will notify Water Board of any soil excavation activities deeper than five feet below existing grade at least 72 hours prior to commencing work. The proposed excavation areas will be marked in white paint prior to contacting Underground Service Alert (USA) at least 48 hours prior to excavating, as required by law. Pier installations that do not bring soil to the surface, such as auger cast piles, are not considered excavations.

7. SOIL MANAGEMENT

Redevelopment activities will likely consist of (1) importing fill, grading, filling, and soil excavation for utilities, foundations, and potentially other subsurface features such as elevator shafts, and (2) construction of a new buildings, parking areas, and landscaped areas. Any excess soil generated during grading will be temporarily stockpiled on-Site and either placed in areas requiring fill or transported off-Site for landfill disposal or beneficial reuse, depending on the environmental quality of the soil as characterized from the soil samples.

Currently, the project is in the design phase and the amount of import/export material is unknown. Soil management activities at 3723 Haven Ave will be reviewed with the contractor prior to groundbreaking, once the takeoff quantities have been calculated. Protocols for testing and disposing of outlined below.

7.1 IMPACTED SOIL

At present, CVOC contaminated soil is present beneath 3723 Haven Ave starting at approximately five feet and extending to approximately 25 feet bgs. However, it is possible that areas of 3723 Haven Ave may require soil excavation and removal during grading activities. While the need for and design of such an action is currently unknown, it will likely require the following basic steps (which will be revised, if warranted):

7.1.1 Remove Impacted Soil (if required)

If contaminated soil is to be removed, excavation will be conducted in the following general sequence:

- Use dust control measures to minimize the amount of dust to non-visible levels

- Develop staging areas, access paths for equipment, work zones, and decontamination areas for use during handling of contaminated soil to reduce the potential of tracking waste off-Site;

- Stockpile soil for characterization or direct load onto trucks for appropriate off-Site disposal.

- Characterize the sidewall and bottom limits of the excavation to ensure that the contamination has been adequately removed.

- Characterize stockpiled soil by collecting samples using a pre-cleaned hand trowel and transferred into laboratory-supplied glass containers. One 4-point composite sample will be collected for every 200 cubic yards of material generated per disposal/accepting facility requirements.

- Following soil sample collection, the containers will be labeled for identification and immediately placed in a chilled, thermally insulated cooler containing bagged ice or blue ice. The cooler containing the samples will then be delivered under chain-of-custody protocol to a state-certified laboratory.

- Once characterized, the soil will be loaded into trucks and hauled for disposal at the appropriate landfill.

7.2 Contingency Measures for Previously Unidentified Suspect Soils

The following contingency measures will be implemented if previously unidentified suspected chemically affected soil is identified during site excavation. All contingency measures will be conducted by HAZWOPER-trained environmental professionals in accordance with the HASP.

Additionally, as a precaution, the Environmental Consultant will be present during excavation and grading activities in areas of historic underground storage tanks, subsurface anomaly detections, and soil contamination in case unknown contamination or subsurface structures are encountered.

7.2.1 Identification of Suspected Contaminated Soil

The Contractor will be instructed to report indicators of suspected contaminated soil, in particular, petroleum hydrocarbons. The three primary physical indicators of petroleum-related contamination in soil include staining, sheen, and petroleum-like odor, as described below:

- **Staining:** Generally, soil that is impacted with petroleum hydrocarbons exhibits gray, black or green staining, although other contaminants and natural conditions may also cause staining.

- **Sheen:** Sheen is another indication of petroleum contamination. Soil exhibiting sheen may appear shiny and reflective. Sheens from heavily impacted soil may appear iridescent with rainbow-like colors.

- **Odor:** Soil impacted with petroleum products, volatile organics, and other types of contamination may release vapors when exposed to the atmosphere. These vapors can be interpreted as an odor. Odor can be subjective, and inhalation of vapors from impacted soil is harmful to human health. Therefore, odor is considered an inadvertent field indicator and should not be used for continuous screening of soil.

If soil exhibiting evidence of suspected contamination is encountered during redevelopment, the Contractor will cease excavation activities in the area and will notify the Environmental Consultant within 24 hours. The Environmental Consultant will then assess the situation as described below.

7.2.2 Preliminary Assessment

Preliminary assessment of the previously unidentified suspect soil will include first confirming that access control measures installed by the Contractor are adequate to provide necessary protection to on-Site workers and the public during the evaluation phase. Confirmation will consist of visual assessment of the installed barriers as well as monitoring of the air outside and within the control area.

Air sampling will be conducted around the perimeter of the secured area using a combination photoionization detector (PID) meter to measure volatile organic compounds (VOCs) in the breathing zone and a lower explosive limit (LEL)/oxygen (O_2) meter to measure concentrations of combustible gases and available oxygen. If the air monitoring suggests that the control measures are improperly positioned to provide necessary protection to on-Site workers, the barriers will be relocated as necessary.

7.2.3 Field Observations Suggest Suspect Conditions Are *De Minimis*

The Environmental Consultant will conduct a preliminary assessment to determine if the previously unidentified suspect soil is considered a potentially significant risk to human health or the environment. If field observations suggest that the suspect conditions are considered *de minimis* (per ASTM D1527-13) and: (1) do not present a threat to human health or the environment; or (2) would generally not be subject of an enforcement action if brought to the attention of appropriate governmental agencies; then the Environmental Consultant will terminate the contingency plan process and release the suspect areas to the General Contractor.

7.2.4 Field Observations Suggest Suspect Conditions Are Not *De Minimis*

If the Environmental Consultant concludes that the suspect conditions might not be *de minimis*, then the Environmental Consultant will notify the Water Board on behalf of the

Developer within 24-hours and will immediately commence to evaluate the nature and extent of the potentially chemically-affected soil in accordance with the protocols below.

- **In-Situ Soil Samples.** An in-situ soil sample will be collected from the same location and depth as the previously unidentified suspect soil and 1-foot below this depth. Additional samples will also be collected at the same depths at a minimum of four step-out locations in an attempt to delineate the lateral extent of the suspected contamination. The four step-out locations will be located approximately 5 feet to the north, south, east, and west of the suspect sample location. Each sample will be collected using 5035-complaint terracores for analysis of VOCs by EPA Method 8260 and observed for evidence of odors and staining and screened for VOCs using a PID. If any of the in-situ soil samples show evidence of odors and staining or VOCs are detected above 10 parts per million by volume (ppmv) then environmental sample(s) will be retained for analyses.

Stockpiled Soil Samples. If previously unidentified suspect soil is stockpiled on-Site, samples will be obtained using a pre-cleaned hand trowel and transferred into laboratory-supplied glass containers. One 4-point composite sample will be collected for every 200 cubic yards of material generated per disposal/accepting facility requirements.

Laboratory Analysis. Following soil sample collection, the containers will be labeled for identification and immediately placed in a chilled, thermally insulated cooler containing bagged ice or blue ice. The cooler containing the samples will then be delivered under chain-of-custody protocol to a state-certified laboratory. Discrete and composite samples will be submitted for analysis using methods relevant to the type of suspected contaminant. After the preliminary evaluation is complete, the Environmental Consultant will provide the Developer, General Contractor, and Water Board with the conclusions regarding potential risks of the suspected contaminant(s) to human health and the environment as well as recommendations for proper removal and disposal of the affected soil. All soil removal work will be approved by the Water Board prior to implementation. If VOC-affected soil is encountered, notification will also be provided to BAAQMD as required in the guidelines and notification requirements set by Regulation 8, Rule 40 of the BAAQMD Rules and Regulations for aeration of contaminated soil.

7.2.5 Import of Fill Material

Redevelopment may require importing soil and rock fill material to attain the design grades. If the imported material is obtained from a non-commercial quarry, then the provenance, quality, and quantity of the imported soil will be characterized as directed by the Water Board. If the imported soil is obtained from a commercial quarry, then the quarry will be identified, and the quantity of imported materials will be documented. All imported fill material shall be managed in compliance with all applicable laws, regulations and agency requirements and shall be clean in accordance with the provisions in the 2001 DTSC Clean Imported Fill Material guidance or its successor.

8. CONTINGENCY MEASURES FOR DISCOVERY OF UNKNOWN UNDERGROUND STRUCTURES

If unknown underground structures including tanks, vaults, sumps, containment structures, separators, or similar infrastructure designed to store liquids are encountered during Site grading activities, the Water Board and Menlo Park Fire Department will be notified within 24-hours and consulted on appropriate next steps. Similarly, if pipes suspected of containing or conducting anything other than water, electrical, storm water, sanitary sewage, or natural gas are encountered, then the Water Board and Menlo Park Fire Department will be notified.

The removal or burying of any of these structures without prior acknowledgement and approval form Water Board will not be performed. Discovered structures will be assessed as follows:

- The structure will be inspected to assess whether it contains any indication of chemical residuals or free-phase liquids other than water. This assessment will be conducted by the Environmental Consultant and will be based on visual evidence and the results of vapor monitoring using a PID. Under no circumstances will any personnel enter an unknown subsurface structure at any time. If chemicals are not indicated within the structure by the above-referenced means and with Water Board approval the structure may be removed or abandoned in place in a safe manner by the contractor;

- If liquids or solids are present within the structure, measures will be taken to contain the liquids to avoid spills to the subsurface. Samples will be collected and submitted to a California-certified laboratory for analysis. Liquids or solids may be temporarily drummed, or liquids may be collected by vacuum truck, while analysis is pending. Based on analytical results, the liquids or solids will be disposed of under the direction of the Environmental Consultant in accordance with all applicable environmental laws and disposal requirements;

- If contaminated liquid or solids are present in the structure, the structure will be inspected for physical integrity following removal of the contaminated media. The Environmental Consultant will document the results of this inspection, including an estimation of the volume and former use of the structure.

- If, based on the opinion of the Environmental Consultant and Water Board it is assessed that the structure is intact, that subsurface releases of the chemicals to the underlying soils likely did not occur, and no free-phase liquids or chemical residues remain inside, removal of the structure may not be required for environmental reasons.

- Otherwise, with Water board approval, the structure will be excavated and disposed of at the direction of the Environmental Professional. Once the structure is removed, soils adjacent to and beneath the structure will be assessed for contamination through visual observation and organic vapor analysis and the results documented. If soils are

determined to be "contaminated" with VOCs in the context of BAAQMD Rule 8-40, the appropriate response will be determined in consultation with Water Board.

Water Board may require further response actions based on the discovery of hazardous materials that pose an unreasonable risk to human health and safety or the environment.

9. GROUND WATER MANAGEMENT

The depth to ground water at 3723 Haven Ave is typically encountered at 5 feet or more below ground surface. Based on the current design, significant construction dewatering is not anticipated. However, if construction dewatering of ground water becomes necessary, then the water will be pumped to a tank and a discharged under permit to the sanitary sewer system, or removed by a vacuum truck deployed to haul the water offsite for disposal. Samples of the proposed discharge water will be analyzed prior to discharge. If necessary, based on the sample data, ground water treatment will be conducted prior to discharge.

10. WASTE MANAGEMENT

10.1 SOIL CHARACTERIZATION PRIOR TO OFF-SITE DISPOSAL

Some soil may need to be placed in temporary on-site stockpiles because: (1) the landfill requires further characterization prior to accepting the soil; (2) short-term storage is necessary until haul trucks are available to transport the soil off-site for disposal; or (3) the need for processing or sorting prior to landfilling. Stockpiled soil will be characterized as required by the receiving facility (landfill). Stockpiled soil may also be segregated into different types of wastes based the analytical results and subject to the approval of the landfill and Water Board.

10.2 MANAGEMENT OF CONTAMINATED SOIL STOCKPILES

Contaminated soil that is placed in temporary stockpiles will be well maintained at all times to prevent runon/runoff and fugitive dust emissions. All stockpiled soil will be placed on impermeable plastic sheeting (minimum 6-mil-thick) with a berm around the perimeter of the stockpile. The plastic sheeting and berm will prevent the runoff of soil and potential contaminants to surrounding areas. The berm will be constructed with hay bales, dimensional lumber, wattles, or other equivalent methods. The bottom plastic sheeting will be lapped over the berm materials, and the soil stockpile will be covered with plastic sheeting to prevent erosion or leaching of contaminants to underlying soil and prevent exposure to precipitation and wind. Plastic sheeting that covers the soil stockpile will be secured using sandbags or equivalent. Following removal, the soil stockpile area will be restored to a pre-stockpile condition. Residual plastic or debris will also be disposed of following stockpile removal.

10.3 Decontamination Procedures

In order to prevent residual contamination from leaving 3723 Haven Ave by construction equipment and personnel during excavation activities, the following decontamination procedures will be followed:

- To minimize the spread of contaminated soil, equipment will be cleaned prior to movement out of active work zones. The equipment wheels/tires will be cleaned over plastic sheeting by means of shovels and stiff-bristled brooms or brushes until they are fully cleaned.

- Minimize track-out by installing rumble pads, or similar control devices at the existing paved roadway being used during construction.

10.4 Off-Site Disposal of Contaminated Soil (if required)

If required, following acceptance of the excavated contaminated soil at an appropriate-licensed disposal facility, the soil will be loaded into licensed haul trucks. Prior to loading excavated materials into trucks, plastic sheeting will be placed on the ground such that any spilled material will be prevented from contacting the ground surface. The soil will be wetted, as necessary, to reduce the potential for dust generation during loading activities. During loading, dust and odor emissions will be monitored and mitigated as necessary. Upon completion of loading, spilled soil will be placed into the truck or returned to the stockpile and the plastic sheeting will be reused or disposed.

The truck driver will be handed a waste manifest provided by the landfill and the trucks will haul the soil to an appropriately licensed landfill. Manifests will be collected upon completion of the job from the landfill and provided in the construction completion report.

As each truck is filled, an inspection will be made to verify that the waste soil is securely covered, to the extent practicable, and that the tires of the trucks are free of accumulated soil prior to leaving 3723 Haven Ave. During transportation, the hauling trucks will be equipped and required to fully cover all soil and debris, such as with a heavy tarpaulin.

A detailed log of the loads hauled from 3723 Haven Ave will be maintained. The log will include, at a minimum, the date and the time trucks were loaded and off-loaded, the destination, size (volume or weight) of the load, description of contents, name and signature of the hauler, and name and signature of the contractor's representative. The waste will be off-loaded for treatment or disposal in a manner consistent with current Federal, State, and local regulations. Shipments of hazardous waste will be tracked with the appropriate hazardous waste manifests.

10.4.1 Transportation Plan

All transportation activities will be performed in strict compliance with all regulations and ordinances. Hauling contractor(s) used to transport non-hazardous or hazardous waste will be fully licensed and permitted by the State of California. For hazardous waste haulers, the selected transportation company will be certified by the State of California as a hazardous waste hauler, and appropriately permitted to haul contaminated waste material. All Department of Transportation (DOT) and California Highway Patrol (CHP) safety regulations will be strictly followed by both hazardous and non-hazardous waste haulers.

Transportation routes will be developed to minimize transporting the affected soil through residential areas. The affected soil will be transported via surface streets to the closest suitable freeway,

10.5 Spill Response Plan

In the event of a spill, the Contractor will be responsible and prepared to respond in a safe and efficient manner, specific to the particular spill situation. Standards will be set, and consistent procedures will be used for handling of spills, whether they are on-Site spills or spills occurring during transportation. Haulers will have an Emergency Spill Contingency Plan (ESCP) to ensure that all drivers and dispatchers know their responsibilities in the unlikely event that an accidental spill occurs while transporting contaminated material off-Site. The drivers and dispatchers will be required to know the procedures for emergency spill response. The ESCP will meet or exceed all Federal, State, and County regulations currently in effect. The provisions of the ESCP will be strictly adhered to, in order to ensure continued protection of the public safety and the environment.

11. Dust and Odor Emissions

During excavation activities, depending on soil and weather conditions, there is potential to generate airborne dust and fugitive emissions. Standard dust and fugitive emissions control measures will be followed during the ground disturbing activities to comply with OSHA and BAAQMD rules and accomplish the following goals:

- Minimize the potential for health impacts to workers;
- Minimize the potential for health impacts to facility neighbors;
- Prevent violations of ambient air quality standards;
- Minimize nuisance dust complaints from facility neighbors; and
- Minimize the migration of contaminants adhered to fugitive dust particles outside 3723 Haven Ave.

11.1 General Construction Mitigation Measures

The following basic construction mitigation measures will be implemented in accordance with recommendations for all proposed projects in the BAAQMD California Environmental Quality Act Air Quality Guidelines (BAAQMD, 2017):

- All haul trucks transporting soil, sand, or other loose material off-site will be covered;
- All visible mud or dirt track-out onto adjacent public roads will be removed using wet power vacuum street sweepers at least once per day. The use of dry power sweeping is prohibited;
- All vehicle speeds on unpaved roads will be limited to 15 miles per hour (mph);
- All roadways, driveways, and sidewalks to be paved will be completed as soon as possible. Building pads will be laid as soon as possible after grading unless seeding or soil binders are used;
- Idling times will be minimized either by shutting equipment off when not in use or reducing the maximum idling time to 5 minutes (as required by the California airborne toxics control measure CCR Title 13, Section 2485). Clear signage will be provided for construction workers at all access points;
- All construction equipment will be maintained and properly tuned in accordance with manufacturer's specifications. All equipment will be checked by a certified mechanic and determined to be running in proper condition prior to operation; and

11.2 Dust Control Measures

Measures will be performed to minimize the generation of dust. The goal is to not generate visible dust. Typically, dust control is accomplished by keeping the areas where soil is being worked damp and keeping vehicle speeds under 15 mph. Dust control measures will at a minimum comply with those established by OSHA and the BAAQMD for construction-related activities. Dust control measures will be based on "Best Management Practices" and will be used throughout all phases of construction.

If dust is excessive, then operations will cease and adjustments to the dust control measures will be developed and implemented until compliance with the requirements is met. Other measures may include on or more of the following:

- Minimize visible dust by keeping the soil damp prior to disturbance.
- Active areas adjacent to residences to be kept damp at all times.
- Apply water or (non-toxic) soil stabilizers to unpaved access roads, parking areas, and staging areas.

- Sweep (with water sweepers) paved access roads, parking areas, and staging areas.
- Cover or otherwise stabilize exposed soil stockpiles.
- Suspend construction activities that cause visible dust plumes and odors to extend beyond the limits of 3723 Haven Ave.

11.3 Odor and Vapor Suppression Measures

By controlling the dust as described above, the emission of odor and vapors should also be reduced to levels that likely will not pose a risk to the health of the public and Site workers. The water spray used to control dust will also significantly reduce the emissions of any potential volatiles that may be present in the soil. The selective loading and transportation of impacted soils could minimize the use of soil stockpiling, further reducing potential emissions of volatiles. Any active stockpile of contaminated soil or exposed excavation left overnight at 3723 Haven Ave will be properly covered with plastic so emissions of volatiles will be minimized.

If odor is excessive and vapor emissions are detected, some or all of the following mitigation procedures may be implemented:

- Use of chemical suppressants mixed with water and applied using various applications such as spray or mist;
- Use of plastic sheeting to cover the sidewalls of the trench during non-active excavation activities will minimize the migration of VOCs and odors;
- Alternative work sequencing, such that excavation of soil with potential odor during mid- day or afternoon (during hot weather) is avoided;
- Any highly odorous soil could be segregated and placed inside a roll-off bin equipped with a lid. This will minimize the amount of highly odorous soil during loading; and
- Balancing the excavation with transportation so that the need for large stockpiles is reduced.

Other emissions include exhaust from construction equipment. The equipment proposed for 3723 Haven Ave redevelopment will be maintained properly so that exhaust emissions will be within acceptable standards. Trucks will be instructed by 3723 Haven Ave foreman to idle no longer than 15 minutes.

12. STORM WATER MANAGEMENT

Once the pre-construction ground surface is stripped from 3723 Haven Ave, the exposed soil will become susceptible to erosion by wind and water. Therefore, erosion control measures and dust control measures will in place before construction begins, in accordance with the

Storm Water Pollution Prevention Plan requirements from the Regional Water Quality Control Board.

Other environmental controls may be required in the event that anticipated conditions at 3723 Haven Ave change. In the event that grading activities occur during the rainy season, then water management procedures will be implemented in addition to probable modifications of other plans, such as the HASP.

Storm water best management practices (BMPs) will be followed in accordance with the contractors Storm Water Pollution Prevention Plan (SWPPP) to be prepared for 3723 Haven Ave. The BMPs for 3723 Haven Ave development activities should include: use of fiber rolls; inlet protection; stabilized construction entrance; landscape and paving; street cleaning and catch basin cleaning.

13. DESIGN CONSIDERATIONS FOR NEW CONSTRUCTION

Based on the environmental site conditions summarized above and detailed in 3723 Haven Ave investigation reports available on the Geotracker database, environmental risks at 3723 Haven Ave requiring mitigation measures are as follows:

- Potential vapor intrusion to indoor air,
- Potential mobilization of CVOCs in ground water to deeper water bearing zones due to the construction of foundation elements,

These mitigation measures will be detailed in the documents described in Section 4.4.

13.1 PROTECTION OF MONITOR WELLS

Currently, there is one monitor well (MW-8) present on 3723 Haven Ave that is being monitored as part of the long-term monitoring program. The construction company will either protect and preserve the monitor well, or abandon and reinstall a well with similar construction details. Any abandonment and reconstruction activities will be subject to the terms and conditions of a well permit to be obtained by San Mateo County Environmental Health Department SMCEHD). The Environmental Consultant will be tasked with supervising any well abandonment or construction activities. If the above referenced monitoring program is terminated by the Water Board, the well will be abandoned in accordance with SMCEHD permit and a well destruction report will be submitted.

The following Reports and documents will be submitted to the Water Board prior to Construction:

14. REFERENCES

AWR Environmental, Ground Water Sampling Results, 3723 Haven Ave, Menlo Park, CA, 2018

AWR Environmental, Phase I Environmental Site Assessment,3705 and 3723 Haven Ave, Menlo Park, CA, 2018

AWR Environmental, Environmental Sampling Report, 3723 Haven Ave, Menlo Park, April 2019a

AWR Environmental, Site Investigation Report, 3723 Haven Ave, Menlo Park, August 2019b

Geomatrix, *Groundwater Investigation Report, 3705-3715 Haven Ave,* Menlo Park CA

Regional Water Quality Control Board – San Francisco Region 2, *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites*, July 2009.

TABLES

TABLE 1

Grab Ground Water Analytical Results

3723 Haven Avenue, Menlo Park CA

Method				8260B										
Sample ID	**Sample Date**	**Sample Depth (ft bgs)**	**Ground Water Zone**	*CARBON TETRACHLORIDE*	*CHLOROFORM*	*1,2-DICHLOROBENZENE*	*1,1-DICHLOROETHENE*	*CIS-1,2-DICHLOROETHENE*	*METHYL TERT-BUTYL ETHER*	*TRANS-1,2-DICHLOROETHENE*	*1,1,2-TRICHLOROTRIFLUOROETHANE*	*TETRACHLOROETHENE*	*TRICHLOROETHENE*	*VINYL CHLORIDE*
		Units		µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
Residential Cancer Risk[1]				0.061	0.81	--	--	--	360	--	--	0.64	1.2	0.0086
Residential Non Cancer Hazard[2]				38	680	2,700	66	49	100,000	220	--	58	5.2	95
Commercial/Industrial Cancer Hazard[3]				0.27	3.6	--	--	--	1,600	--	--	2.8	7.5	0.14
Commercial/Industrial Non Cancer Hazard[4]				160	2,900	11,000	280	210	440,000	920	--	240	22	400
GP-1A	01/25/2019	13-16	A	**3.01**	**8.82**	1.64	1.19	80.6	*< 1.00*	1.78	9.85	*<1.00*	**1,810**	**3.51**
GP-2A	01/25/2019	13-16	A	**176**	**55.2**	*<1.00*	*<1.00*	*<1.00*	*<1.00*	*<1.00*	2.13	*<1.00*	**27**	*<1.00*
GP-2B	01/25/2019	23-26	B	**20.5**	**25.5**	*<1.00*	*<1.00*	3.88	*<1.00*	*<1.00*	24.1	*<1.00*	**2,220**	**1.39**
GP-3B	01/25/2019	23-26	B	*<5.00*	*<25.0*	*<5.00*	*<5.00*	*<5.00*	*<5.00*	*<5.00*	*<5.00*	*<5.00*	*<5.00*	*<5.00*
MW-8	1/7/2019	5-13	A	**64.5**	**27**	3.18	4.66	2,030	*<1.00*	18.7	14.3	1.36	**4,820**	**74.4**
GP-4B	08/14/2019	16-20	B	*<1.00*	*<5.00*	*< 1.00*	*< 1.00*	*<1.00*	1	*< 1.00*	1.08	*< 1.00*	**2**	*< 1.00*
GP-5B	08/14/2019	16-20	B	*<1.00*	*<5.00*	*< 1.00*	*< 1.00*	*<1.00*	1	*< 1.00*	*<1.00*	*< 1.00*	1	*< 1.00*
GP-5C	08/14/2019	32-36	C	*< 1.00*	*< 1.00*	*< 1.00*	*< 1.00*	*< 1.00*	*< 1.00*	*< 1.00*	*< 1.00*	*< 1.00*	*< 1.00*	*< 1.00*
GP-6C	08/14/2019	24-28	B	**4.41**	**26**	*< 1.00*	*< 1.00*	2	*<1.00*	*< 1.00*	8.47	*< 1.00*	**307**	*< 1.00*

Notes:

1: CA SF Bay RWQCB Table GW-3 Ground Water Vapor Intrusion Residential Cancer Risk ESL - Jan 2019

2: CA SF Bay Table GW-3 Ground Water Vapor Intrusion Residential Noncancer Hazard ESL - Jan 2019

3: CA SF Bay RWQCB Table GW-3 Ground Water Vapor Intrusion Commercial/Industrail Cancer Risk ESL - Jan 2019

4: CA SF Bay Table GW-3 Ground Water Vapor Intrusion Commercial/Industrial Noncancer Hazard ESL - Jan 2019

Concentrations are compared to Commercial/Industrial ESLs

Bold where above cancer hazard

Highlighed where above non cancer hazard

--: not established

µg/L: micrograms per liter

<: not detected above laboratory reported detection level

TABLE 2

Soil Vapor Analytical Results

3723 Haven Avenue, Menlo Park CA

Sample ID	Sample Date	Method	ASTM 1946	TO-15																																
			HELIUM	ACETONE	BENZENE	1,3-BUTADIENE	CARBON DISULFIDE	CHLOROETHANE	CHLOROMETHANE	CYCLOHEXANE	CIS-1,2-DICHLOROETHENE	TRANS-1,2-DICHLOROETHENE	DICHLORODIFLUOROMETHANE	ETHANOL	ETHYLBENZENE	4-ETHYLTOLUENE	HEPTANE	N-HEXANE	ISOPROPYLBENZENE	METHYLENE CHLORIDE	METHYL BUTYL KETONE	4-METHYL-2-PENTANONE (MIBK)	METHYL TERT-BUTYL ETHER	2-BUTANONE (MEK)	PROPENE	2-PROPANOL	TETRACHLOROETHENE	TOLUENE	TRICHLOROETHENE*	TRICHLOROFLUOROMETHANE	1,2,4-TRIMETHYLBENZENE	1,3,5-TRIMETHYLBENZENE	2,2,4-TRIMETHYLPENTANE	VINYL CHLORIDE	M&P-XYLENE	O-XYLENE	TPH (GC/MS) LOW FRACTION
Units			%	µg/m3																																
SG Residential Cancer Risk[1]			--	--	3.2	--	--	--	--	--	--	--	--	--	37	--	--	--	--	34	--	--	360	--	--	--	15	--	*16*	--	--	--	0.32	--	--	--
SG Residential Non Cancer Hazard[2]			--	1,100,000	100	--	--	350,000	3,100	--	280	2,800	--	--	35,000	--	--	--	--	14,000	--	100,000	100,000	--	--	--	1,400	10,000	70	--	--	--	3,500	--	--	20,000
SG Com/Ind Cancer Risk[3]			--	--	14.0	--	--	--	--	--	--	--	--	--	160	--	--	--	--	410	--	--	1600	--	--	--	67	--	*100*	--	--	--	5.2	--	--	--
SG Com/Ind Non Cancer Hazard[4]			--	4,500,000	440	--	--	1,500,000	13,000	--	1200	12,000	--	--	150,000	--	--	--	--	58,000	--	440,000	440,000	--	--	--	5,800	44,000	290	--	--	--	15,000	--	--	83,000
SV-1	01/25/2019		*< 0.1*	219	**30.8**	53.8	94.4	51.4	30.7	60.7	52.8	*<1.59*	*< 1.98*	7.03	98.6	31.4	181	278	3.35	*<1.39*	13	*< 10.2*	*< 1.44*	84	903	*< 6.15*	*< 2.72*	442	*<2.14*	*< 2.25*	16.9	6.7	10.4	**8.62**	278	97.1	6,370
SV-2	01/25/2019		*< 0.1*	181	**41.9**	*<8.85*	9.15	*<1.06*	3.71	420	41.5	2.28	*< 1.98*	9.99	16.3	8.12	733	324	*<1.97*	*<1.39*	*<10.2*	*< 10.2*	*< 1.44*	46	*<1.38*	*< 6.15*	*< 2.72*	55.1	2.89	*< 2.25*	4.68	2.25	927	**44.1**	51.8	16.7	13,400
SV-3	01/25/2019		0.121	84	9.8	26.2	9.24	*<1.06*	2.16	27.5	*<1.59*	*<1.59*	*< 1.98*	14.4	8.79	*<1.96*	81.9	112	*<1.97*	*<1.39*	*<10.2*	*< 10.2*	*< 1.44*	23	461	*< 6.15*	*< 2.72*	68.9	*<2.14*	*< 2.25*	4.63	2.09	6.38	*<1.02*	28.9	8.23	1,990
SV-4	01/25/2019		*< 0.1*	6.69	3	*<8.85*	*<1.24*	*<1.06*	*<0.826*	*<1.38*	*<1.59*	*<1.59*	*< 1.98*	33.7	123	55.5	35.7	2.7	4.73	3.45	*<10.2*	*< 10.2*	*< 1.44*	*<7.37*	2.5	*< 6.15*	*< 2.72*	284	*<2.14*	*< 2.25*	28	10.7	2.22	*<1.02*	374	136	2,690
SV-5	08/14/2019		*< 0.1*	787	**12**	*< 4.43*	48.5	*< 0.528*	3.65	36.6	*< 0.793*	*< 0.793*	2.69	17.5	4.08	3.81	22.1	73.4	*<0.983*	*<0.694*	9.7	19.7	1.08	107	561	*<3.07*	6.42	18.9	1.87	2.2	4.65	1.56	5.11	*< 0.511*	8.89	3.56	1,940
SV-6	08/14/2019		*< 0.1*	76.2	1	*< 4.43*	0.769	*< 0.528*	1.55	0.952	*< 0.793*	*< 0.793*	2.53	34.3	8.09	1.7	1.03	2.34	1.32	3.57	*<5.11*	*<5.12*	*<0.721*	7.14	6.94	3.99	2.48	18.7	*<1.07*	1.47	1.41	*<0.982*	*<0.934*	*< 0.511*	7.04	2.42	739

Notes:

1: CA SF Bay RWQCB Table SG-1 Subslab/Soil Gas Vap Intrusion Residential Cancer Risk ESL - Jan 2019

2: CA SF Bay RWQCB Table SG-1 Subslab/Soil Gas Vapor Intrusion Final Residential Non Cancer Risk ESL - Jan 2019

3: CA SF Bay RWQCB Table SG-1 Subslab/Soil Gas Vap Intrusion Commercial/Industrial Cancer Risk ESL - Jan 2019

4: CA SF Bay RWQCB Table SG-1 Subslab/Soil Gas Vapor Intrusion Final Commercial/Industrial Non Cancer Risk ESL - Jan 2019

Concentrations are compared to Commercial/Industrial ESLs

*per request by the San Francisco Regional Water Control Board, TCE is compared to Residential ESLs

Bold where above cancer hazard

Highlighed where above non cancer hazard

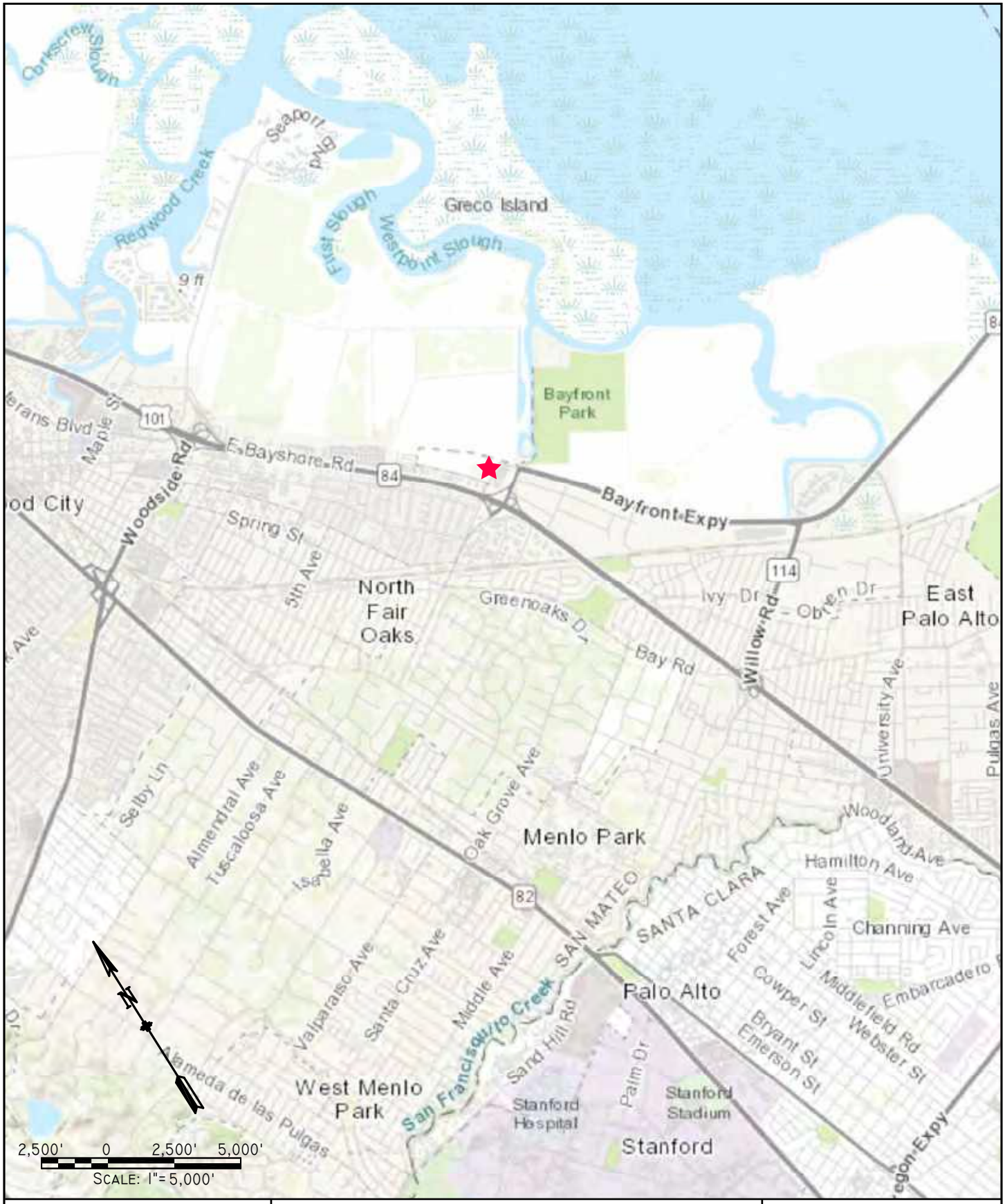
µg/m^3: micrograms per cubic meter

--: not established

<: not detected above laboratory reported detection level

Per request of the Water Board TCE is compared to residential ESLs

FIGURES



Site

Figure 1

Vicinity Map

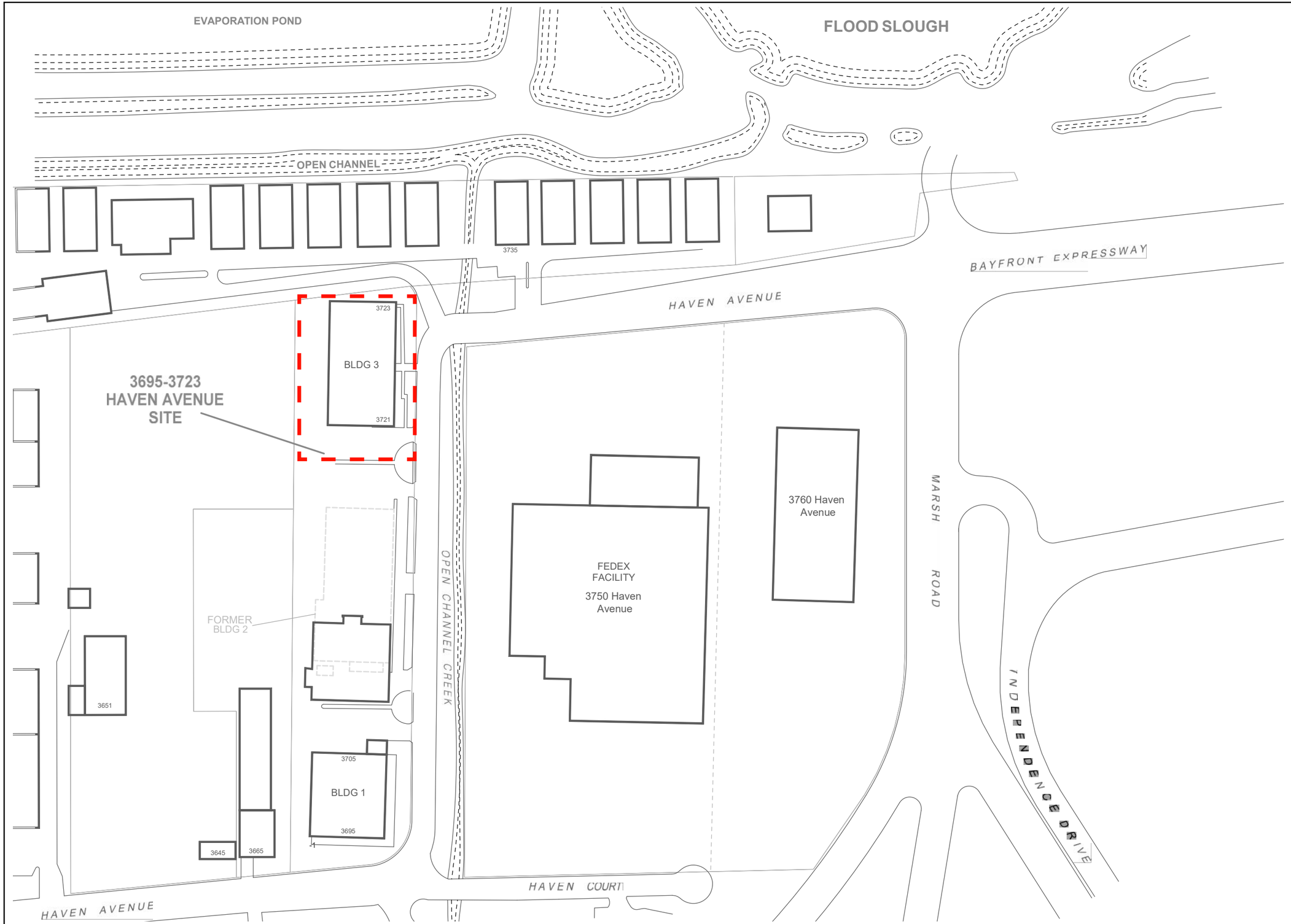
3723 Haven Ave, Menlo Park, CA

AWR ENVIRONMENTAL

Figure 2

Site Map

3723 Haven Ave, Menlo Park, CA



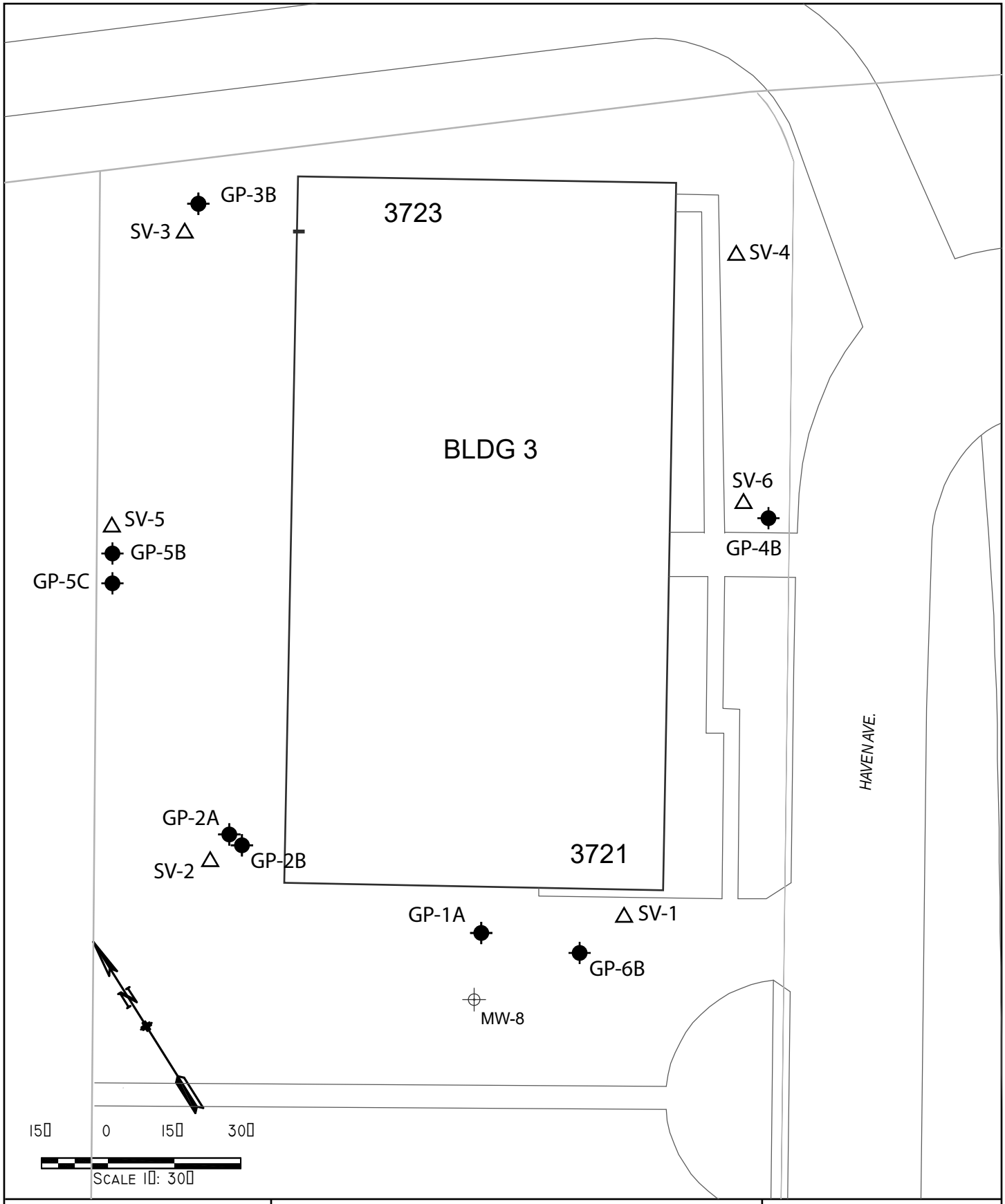
3723 Haven Ave. Site

60' 0 60' 120'

SCALE 1": 120'

Scale is approximate

AWR ENVIRONMENTAL



AWR ENVIRONMENTAL

Grab Ground Water Samples A: 5-10 ft bgs, B: 20-25 ft bgs C: 30-32 ft bgs

Soil Vapor Sample 0-4 ft bgs

Ground Water Monitor Well (ESI, 1994)

Figure 2

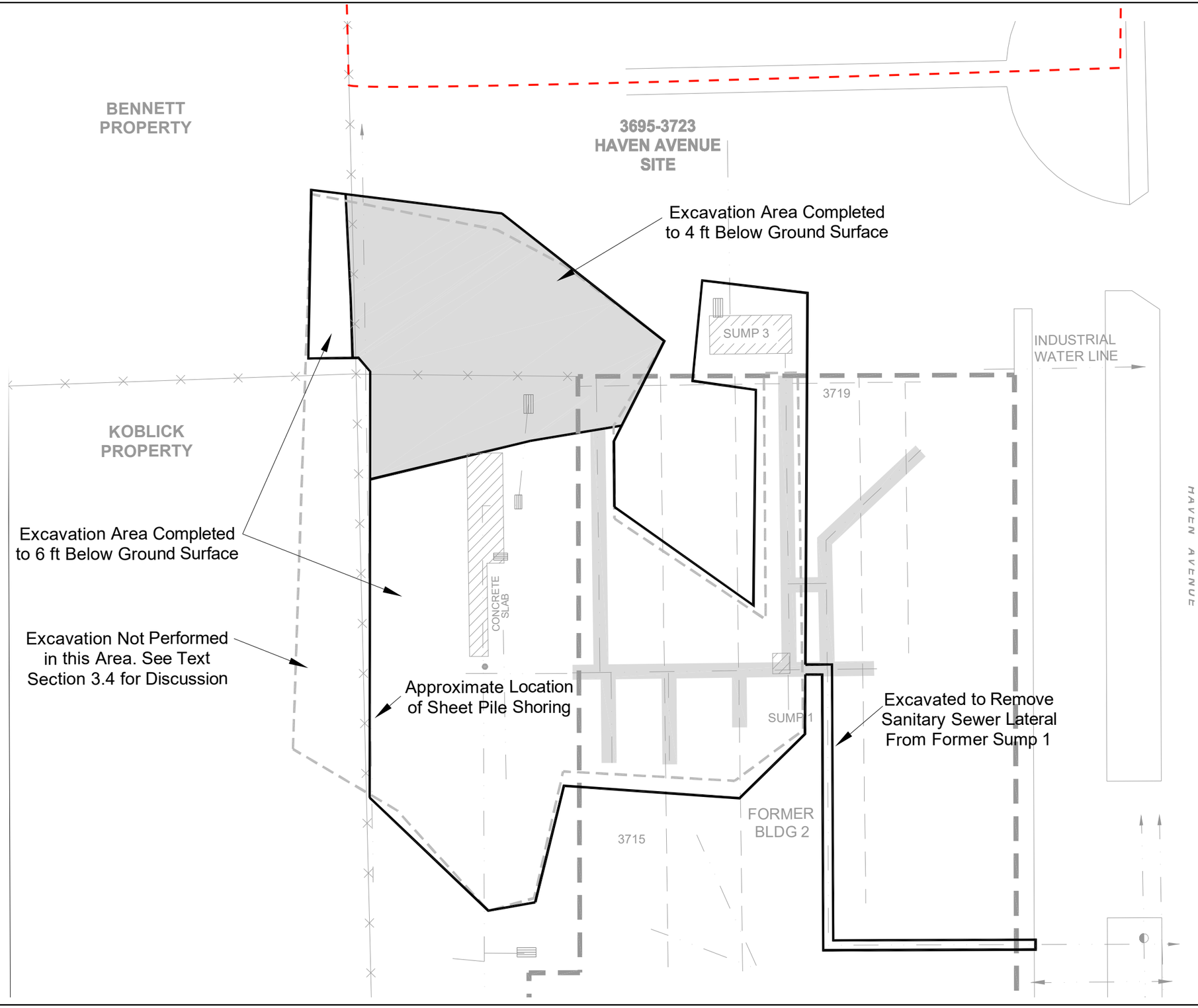
Site Map

3723 Haven Ave, Menlo Park, CA

Figure 3

Source Area Map

3715 Haven Ave, Menlo Park, CA



3723 Haven Ave. Site

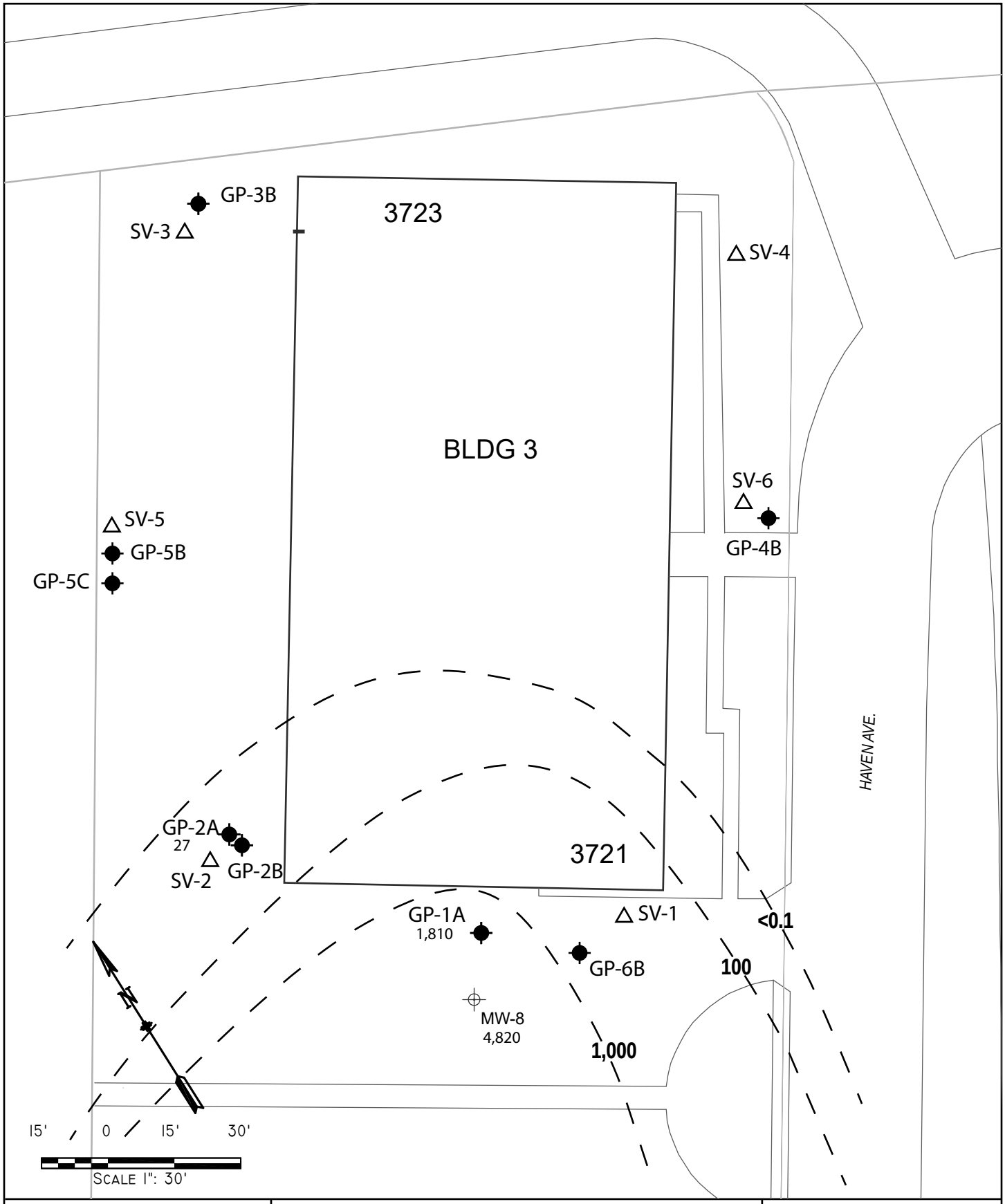
Base Map from EKI Remedial Excavation Summary Report (EKI, 2000)

60' 0 60' 120'

SCALE 1": 120'

Scale is approximate

AWR ENVIRONMENTAL



AWR ENVIRONMENTAL

Grab Ground Water Samples, A:5-10 ft bgs

TCE Concentration (µg/L)

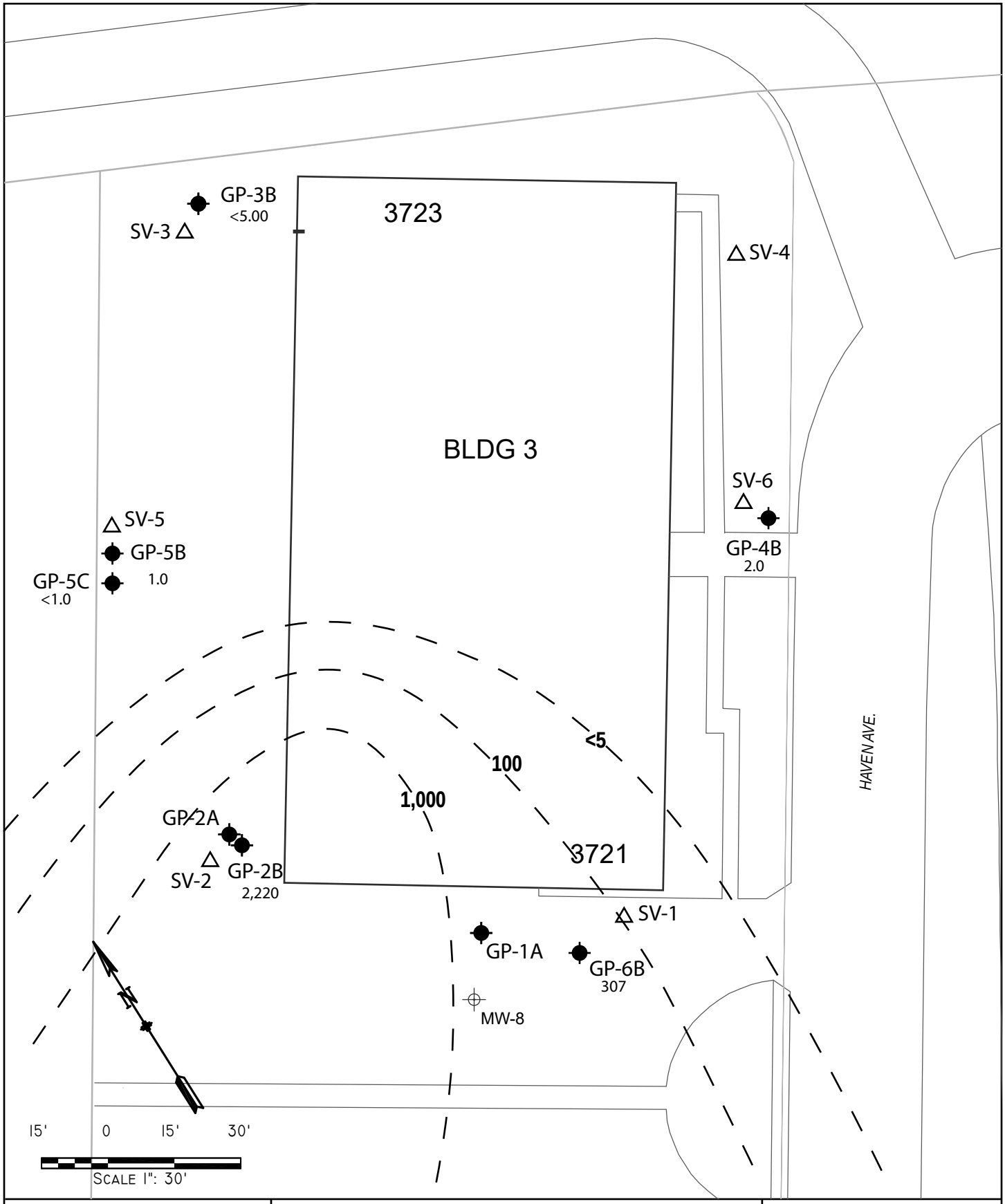
Ground Water Monitor Well (ESI, 1994)

Soil Vapor Sample 0-4 ft bgs

Figure 4

TCE Concentrations in A Zone in Groundwater

3723 Haven Ave, Menlo Park, CA



AWR ENVIRONMENTAL

Grab Ground Water Samples B: 20-25 ft bgs C: 30-32 ft bgs

TCE Concentration (µg/L)
*Only B Zone is Contoured

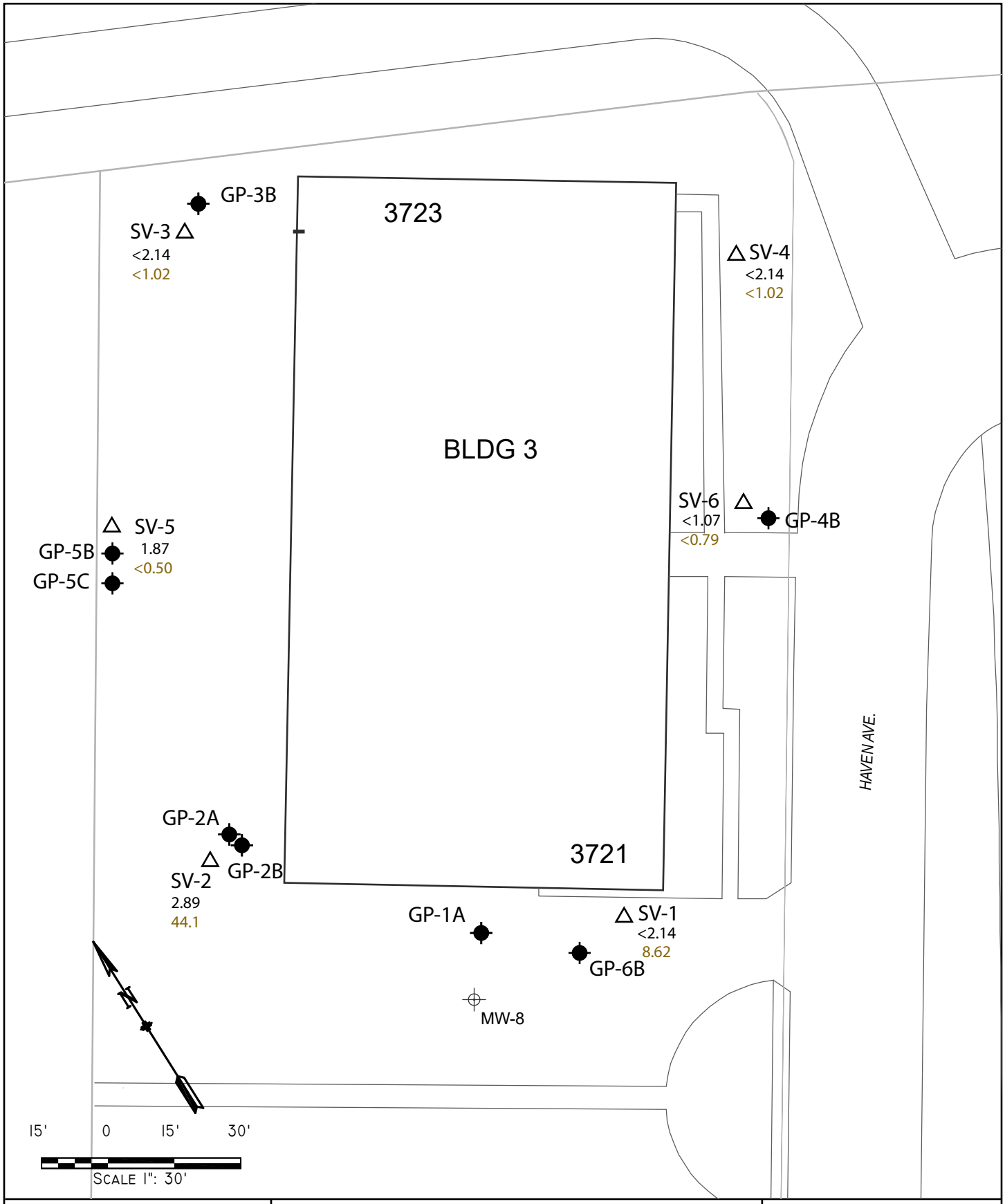
Ground Water Monitor Well (ESI, 1994)

Soil Vapor Sample 0-4 ft bgs

Figure 5

TCE Concentrations in B Zone in Groundwater

3723 Haven Ave, Menlo Park, CA



AWR ENVIRONMENTAL

△ Soil Vapor Sample 0-4 ft bgs

TCE Concentration (µg/m³)

Vinyl Chloride Concentration (µg/m³)

⊕ Ground Water Monitor Well (ESI, 1994)

● Grab Ground Water Sample 5-10, 20-25, 30-32 ft bgs

Figure 6

TCE and Vinyl Chloride Concentrations in Soil Vapor

3723 Haven Ave, Menlo Park, CA

APPENDIX A

DOC # 1999-135815
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Recorded in Official Records
County of San Mateo
Warren Slocum
Assessor-County Clerk-Recorder
Recorded By CHICAGO TITLE INSURANCE COMPANY

Recording Requested By:

Integris/Millenium Joint Venture LLC,
A California Limited Liability Company

When Recorded, Mail To:
Loretta K. Barsamian, Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

COVENANT AND ENVIRONMENTAL RESTRICTION ON PROPERTY

3695-3723 Haven Avenue
Menlo Park, California

This Covenant and Environmental Restriction on Property (this "Covenant") is made as of the 9th day of Aug., 1999 by Integris/Millenium Joint Venture LLC ("Covenantor") who is the Owner of record of that certain property situated at 3695-3723 Haven Avenue, in the City of Menlo Park, County of San Mateo, State of California, which is more particularly described in Exhibit A attached hereto and incorporated herein by this reference (such portion hereinafter referred to as the "Burdened Property"), for the benefit of the California Regional Water Quality Control Board for the San Francisco Bay Region (the "Board"), with reference to the following facts:

A. The Burdened Property and groundwater underlying the property contain hazardous materials.

B. Contamination of the Burdened Property. It is believed that certain industrial operations caused soil and groundwater at the Burdened Property to be contaminated with halogenated volatile organic compounds, including trichloroethene and vinyl chloride, which constitute hazardous materials as that term is defined in Health & Safety Code section 25260. To mitigate potential exposure to such chemicals, soil excavation, in-situ chemical oxidation, if feasible, and institutional controls, including this Covenant, are to be implemented.

C. Exposure Pathways. The contaminants addressed in this Covenant are present in soil and groundwater on the Burdened Property. Without the mitigation measures described above, exposure to these contaminants could take place via direct contact, resulting in dermal exposure, inhalation, or ingestion by humans. The risk of public exposure to the contaminants has been and will be substantially lessened by the remediation and controls described herein.

D. Adjacent Land Uses and Population Potentially Affected. The Burdened Property is currently vacant but has been used for industrial and commercial uses, and is adjacent to industrial and commercial land uses.

3229 V01

E. Full and voluntary disclosure to the Board of the presence of hazardous materials on the Burdened Property has been made and extensive sampling of the Burdened Property has been conducted.

F. Covenantor desires and intends that in order to benefit the Board, and to protect the present and future public health and safety, the Burdened Property shall be used in such a manner as to avoid potential harm to persons or property that may result from hazardous materials that may have been deposited on portions of the Burdened Property.

ARTICLE I

GENERAL PROVISIONS

1.1 Provisions to Run with the Land. This Covenant sets forth protective provisions, covenants, conditions and restrictions (collectively referred to as "Restrictions") upon and subject to which the Burdened Property and every portion thereof shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. The restrictions set forth in Article III are reasonably necessary to protect present and future human health and safety or the environment as a result of the presence on the land of hazardous materials. Each and all of the Restrictions shall run with the land, and pass with each and every portion of the Burdened Property, and shall apply to, insure to the benefit of, and bind the respective successors in interest thereof, for the benefit of the Board and all Owners and Occupants. Each and all of the Restrictions are imposed upon the entire Burdened Property unless expressly stated in the Risk Management Plan, see below, as applicable to a specific portion of the Burdened Property. Each and all of the Restrictions run with the land pursuant to section 1471 of the Civil Code. Each and all of the Restrictions are enforceable by the Board.

1.2 Concurrence of Owners and Lessees Presumed. All purchasers, lessees, or possessors of any portion of the Burdened Property shall be deemed by their purchase, leasing, or possession of such Burdened Property, to be in accord with the foregoing and to agree for and among themselves, their heirs, successors, and assignees, and the agents, employees, and lessees of such owners, heirs, successors, and assignees, that the Restrictions as herein established must be adhered to for the benefit of the Board and the Owners and Occupants of the Burdened Property and that the interest of the Owners and Occupants of the Burdened Property shall be subject to the Restrictions contained herein.

1.3 Apportionment of Burden Among Multiple Owners. Where ownership of the Burdened Property is held by multiple persons, holding by several titles, the burdens imposed by this Covenant shall be apportioned between them proportionate to the value of the property held by each owner, if such value can be ascertained, and if not, then according to their respective interests in point of quantity. (Cal. Civ. Code § 1467.)

1.4 Incorporation into Deeds and Leases. Covenantor desires and covenants that the Restrictions set out herein shall be incorporated in and attached to each and all deeds and leases of any portion of the Burdened Property. Recordation of this Covenant shall be deemed binding on all successors, assigns, and lessees, regardless of whether a copy of this Covenant and Agreement has been attached to or incorporated into any given deed or lease.

1.5 Purpose. It is the purpose of this instrument to convey to the Board real property rights, which will run with the land, to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

ARTICLE II

DEFINITIONS

2.1 Board. "Board" shall mean the California Regional Water Quality Control Board for the San Francisco Bay Region and shall include its successor agencies, if any.

2.2 Improvements. "Improvements" shall mean all buildings, roads, driveways, regradings, and paved parking areas, constructed or placed upon any portion of the Burdened Property.

2.3 Occupants. "Occupants" shall mean Owners and those persons entitled by ownership, leasehold, or other legal relationship to the exclusive right to occupy any portion of the Burdened Property.

2.4 Owner or Owners. "Owner" or "Owners" shall mean the Covenantor and/or its successors in interest, who hold title to all or any portion of the Burdened Property.

2.5 Risk Management Plan. "Risk Management Plan" (also referred to herein as "RMP") shall mean that certain Plan concerning the Burdened Property, prepared by Erler & Kalinowski, Inc. and dated March 12, 1999, and any and all subsequent addenda thereto, on file with the California Regional Water Quality Control Board, San Francisco Bay Region; the San Mateo County Division of Environmental Health and the City of Menlo Park Building Department. Covenantor shall cause the RMP to be filed with the aforementioned three agencies. Owner, at the time of any addenda to the RMP, shall cause the addenda to be filed with the aforementioned three agencies. The RMP is attached hereto and incorporated herein by this reference as Exhibit B.

ARTICLE III

DEVELOPMENT, USE AND CONVEYANCE OF THE BURDENED PROPERTY

3.1 Restrictions on Development and Use. Covenantor promises to restrict the use of the Burdened Property as follows:

a. Development of the Burdened Property shall be restricted to industrial, commercial or office space;

b. No residence for human habitation shall be permitted on the Burdened Property;

c. No hospitals shall be permitted on the Burdened Property;

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d. No schools for persons under 21 years of age shall be permitted on the Burdened Property;

e. No day care centers for children or day care centers for Senior Citizens shall be permitted on the Burdened Property;

f. No Owners or Occupants of the Burdened Property or any portion thereof shall conduct any excavation work on the Burdened Property, except in strict compliance with the RMP or unless expressly permitted in writing by the Board. Any contaminated soils brought to the surface by grading, excavation, trenching, or backfilling shall be managed by Covenantor or his agent in accordance with all applicable provisions of local, state and federal law;

g. All uses and development of the Burdened Property shall be consistent with the Risk Management Plan or any applicable Board Order, each of which is hereby incorporated by reference including future amendments thereto. All uses and development shall preserve the integrity of any cap, any remedial measures taken or remedial equipment installed, and any groundwater monitoring system installed on the Burdened Property pursuant to the requirements of the Board, unless otherwise expressly permitted in writing by the Board;

h. No Owners or Occupants of the Property or any portion thereof shall drill, bore, otherwise construct, or use a well for the purpose of extracting water for any use, including but not limited to, domestic, potable, or industrial uses, unless expressly permitted in writing by the Board;

i. The Owner shall notify the Board of each of the following: (1) The type, cause, location and date of any disturbance to any cap, any remedial measures taken or remedial equipment installed, and of the groundwater monitoring system installed on the Burdened Property pursuant to the requirements of the Board, which could affect the ability of such cap or remedial measures, remedial equipment, or monitoring system to perform their respective functions and (2) the type and date of repair of such disturbance. Notification to the Board shall be made by registered mail within ten (10) working days of both the discovery of such disturbance and the completion of repairs;

j. The Covenantor agrees that the Board, and/or any persons acting pursuant to Board orders, shall have reasonable access to the Burdened Property for the purposes of inspection, surveillance, maintenance, or monitoring, as provided for in Division 7 of the Water Code,

k. No Owner or Occupant of the Burdened Property shall act in any manner that will aggravate or contribute to the existing environmental conditions of the Burdened Property. All use and development of the Burdened Property shall preserve the integrity of any capped areas;

3.2 Enforcement. Failure of an Owner or Occupant to comply with any of the restrictions, as set forth in paragraph 3.1, shall be grounds for the Board, by reason of this Covenant, to have the authority to require that the Owner modify or remove any Improvements constructed in violation of that paragraph. Violation of the Covenant shall be grounds for the Board to file civil actions against the Owner as provided by law.

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3.3 Notice in Agreements. After the date of Recordation hereof, all Owners and Occupants shall execute a written instrument which shall accompany all purchase agreements or leases relating to the property. Any such instrument shall contain the following statement:

> This statement is not a declaration that a hazard exists. The land described herein contains hazardous materials in soils and in the groundwater under the property, and is subject to a deed restriction dated as of July _____, 1999, and recorded on July _____, 1999, in the Official Records of San Mateo County, California, as Document No. _____, which Covenant and Restriction imposes certain covenants, conditions, and restrictions on usage of the property described herein.

ARTICLE IV

VARIANCE AND TERMINATION

4.1 Variance Any Owner or, with the Owner's consent, any Occupant of the Burdened Property or any portion thereof may apply to the Board for a written variance from the provisions of this Covenant.

4.2 Termination Any Owner or, with the Owner's consent, any Occupant of the Burdened Property or a portion thereof may apply to the Board for a termination of the Restrictions as they apply to all or any portion of the Burdened Property.

4.3 Term. Unless terminated in accordance with paragraph 4 2 above, by law or otherwise, this Covenant shall continue in effect in perpetuity.

ARTICLE V

MISCELLANEOUS

5.1 No Dedication Intended. Nothing set forth herein shall be construed to be a gift or dedication, or offer of a gift or dedication of the Burdened Property or any portion thereof to the general public.

5 2 Notices. Whenever any person gives or serves any notice, demand, or other communication with respect to this Covenant, each such notice, demand, or other communication shall be in writing and shall be deemed effective (1) when delivered, if personally delivered to the person being served or official of a government agency being served, or (2) three (3) business days after deposit in the mail if mailed by United States mail, postage paid certified, return receipt requested:

If To: "Covenantor"

Integris/Millenium Joint Venture LLC
Attention: Mr Loren Baxter
16 Pulido Court

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Danville, California 94526
and

BCMW LLC
Attention: Mr. Blair Walker
597 Daffodil Drive
Benicia, California 94510

If To: "Board"

Regional Water Quality Control Board
San Francisco Bay Region
Attention: Executive Officer
1515 Clay Street, Suite 1400
Oakland, California 94512

5.3 Partial Invalidity. If any portion of the Restrictions or terms set forth herein is determined to be invalid for any reason, the remaining portion shall remain in full force and effect as if such portion had not been included.

5.4 Article Headings. Headings at the beginning of each numbered article of this Covenant are solely for the convenience of the parties and are not a part of the Covenant.

5.5 Recordation. This instrument shall be executed by the Covenantor and by the Executive Officer of the Board. This instrument shall be recorded by the Covenantor in the County of San Mateo within ten (10) days of the date of execution.

5.6 References. All references to Code sections include successor provisions

5.7 Construction. Any general rule of construction to the contrary notwithstanding, this instrument shall be liberally construed in favor of the Covenant to effect the purpose of this instrument and the policy and purpose of the Water Code. If any provision of this instrument is found to be ambiguous, an interpretation consistent with the purpose of this instrument that would render the provision invalid shall be favored over any interpretation that would render it invalid.

5.8 Effective Date. This Covenant, its terms and conditions, and the burdens imposed and the benefits derived therefrom, shall become effective upon Recordation of this Covenant.

IN WITNESS WHEREOF, the parties execute this Covenant as of the date set forth above.

Covenantor:

INTEGRIS/MILLENIUM JOINT VENTURE LLC,
A California Limited Liability Company

BY: _____
GARY WILLIAMS, MEMBER

DATE: 8/9/99

BY: _____
GARY WILLIAMS, MEMBER

DATE: 7/6/99

BCMW, LLC, A California Limited Liability Company

BY: _____
BLAIR WALKER, MEMBER, BCMW, LLC

DATE: 7/2/99

Agency:

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

BY: _____
Acting LAWRENCE P KOLB
TITLE: Executive Officer

DATE: 7/6/99

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08/06/1999 02:24P
OR Page: 7 of 153

STATE OF CALIFORNIA)
) SS.
COUNTY OF ALAMEDA)

On July 6, 1999 before me, Suzanne Muniz

a Notary Public in and for said County and State, personally appeared LAWRENCE P. Kolb

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Suzanne Muniz
Signature of Notary

SUZANNE MUNIZ
COMM. NO. 1182516
NOTARY PUBLIC - CALIFORNIA
ALAMEDA COUNTY
My comm. expires May 03, 2002

STATE OF)
) SS.
COUNTY OF)

On before me,

a Notary Public in and for said County and State, personally appeared

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature of Notary

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CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Marin } ss.

On JULY 2, 1999 (Date), before me, RAFAEL CONSING JR (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared BLAIR WALKER (Name(s) of Signer(s))

X personally known to me
☐ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

RAFAEL CONSING JR.
Commission # 1187674
Notary Public - California
Marin County
My Comm. Expires Jun 20, 2002

Place Notary Seal Above

Rafael Consing Jr.
Signature of Notary Public

OPTIONAL

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☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
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RIGHT THUMBPRINT OF SIGNER
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Order No. 8760436 - AD

EXHIBIT "A"

LEGAL DESCRIPTION

EXHIBIT "A"

CITY OF MENLO PARK

PARCELS 1 AND 2, AS SHOWN ON THAT CERTAIN MAP ENTITLED "PARCEL MAP BEING A RESUBDIVISION OF RECORD OF SURVEY RECORDED IN VOLUME 5, PAGE 89 OF LICENSED LAND SURVEYORS MAPS, BEING A PORTION OF LOT 4 SWEENEY RANCH", WHICH MAP WAS RECORDED DECEMBER 15, 1972, IN BOOK 18 OF PARCEL MAPS, AT PAGE 38, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A CONCRETE MONUMENT MARKING THE NORTHWESTERLY CORNER OF LOT 4 AS SAID LOT IS SHOWN ON THE MAP ENTITLED, "SWEENEY RANCH SUBDIVISION", FILED IN THE OFFICE OF THE RECORDER OF THE COUNTY OF SAN MATEO ON JUNE 24, 1898, IN BOOK "C" OF MAPS, AT PAGE 36; THENCE FROM SAID POINT OF BEGINNING, SOUTH 88° 56' 15" EAST, A DISTANCE OF 2049.31 FEET; NORTH 89° 41' 15" EAST, A DISTANCE OF 1944.05 FEET; AND SOUTH 73° 03' 30" EAST, A DISTANCE OF 871.52 FEET TO THE TRUE POINT OF BEGINNING; THENCE FROM SAID TRUE POINT OF BEGINNING AND ALONG THE NORTHWESTERLY LINE OF THE LANDS CONVEYED TO HOWARD J. WHITE, III, ET AL, BY DEED RECORDED DECEMBER 17, 1968, IN BOOK 5573, AT PAGE 309, OFFICIAL RECORDS, AND ALONG THE NORTHWESTERLY LINE OF THE LANDS CONVEYED TO HOWARD J. WHITE, III, ET AL, BY DEED RECORDED FEBRUARY 17, 1969, IN BOOK 5599, AT PAGE 525, OFFICIAL RECORDS, AND THE NORTHWESTERLY LINE OF THE LANDS CONVEYED TO HUETTIG & SCHROMM INC., A CALIFORNIA CORPORATION, ET AL, BY DEED RECORDED OCTOBER 20, 1967, IN BOOK 5380, AT PAGE 521, OFFICIAL RECORDS, SOUTH 24° 13' WEST, 719.33 FEET TO THE NORTHEASTERLY LINE OF THE LANDS CONVEYED TO THE CITY OF MENLO PARK BY DEED RECORDED JUNE 28, 1963, IN BOOK 4491, AT PAGE 68, OFFICIAL RECORDS; THENCE ALONG THE LANDS SO CONVEYED TO THE CITY, EASTERLY ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 10,508.50 FEET, A CENTRAL ANGLE OF 0° 42' 54", AN ARC DISTANCE OF 131.14 FEET; THENCE EASTERLY AND NORTHERLY ALONG THE ARC OF A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 20 FEET, THROUGH A CENTRAL ANGLE OF 86° 36' 05", AN ARC DISTANCE OF 30.23 FEET TO THE WESTERLY LINE OF THE LANDS CONVEYED TO THE CITY OF MENLO PARK BY DEED RECORDED JUNE 28, 1963, IN BOOK 4491, AT PAGE 65, OFFICIAL RECORDS; THENCE ALONG SAID WESTERLY LINE, NORTH 24° 13' EAST, 709.88 FEET TO THE NORTHERLY LINE OF THE AFORESAID LANDS CONVEYED TO HOWARD J. WHITE, III, ET AL, BY DEED RECORDED DECEMBER 17, 1968, IN BOOK 5573, AT PAGE 309, OFFICIAL RECORDS; THENCE NORTH 73° 03' 30" WEST ALONG SAID NORTHERLY LINE, 150.89 FEET TO THE TRUE POINT OF BEGINNING.

ASSESSOR'S PARCEL NOS. 055-170-240
055-170-250

JOINT PLANT NOS. 055-017-170-24.00A
055-017-170-25.00A

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EXHIBIT "B"

APPENDIX C

RISK MANAGEMENT PLAN

3695 - 3723 HAVEN AVENUE
MENLO PARK, CALIFORNIA

Prepared by:

Erler & Kalinowski, Inc.
1730 South Amphlett Blvd., Suite 320
San Mateo, CA 94402

12 March 1999
EKI 960007.07

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3695 - 3723 Haven Avenue
Menlo Park, California

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A. Human Health Risk Assessment (Appendix A from Feasibility Study/Remedial Action Plan, dated 12 March 1999)

1. INTRODUCTION

This Risk Management Plan is intended to address residual concentrations of chemicals of concern in environmental media at the 3695-3673 Haven Avenue property located in Menlo Park, California (the "Site"; Figure 1). The term Site, as used in this Risk Management Plan, refers to the entire property at the address 3695 -3723 Haven Avenue, Menlo Park, California and any parcels or subdivided parcels that may result from sale of portions of the current property to other owners. Mitsubishi Silicon America ("MSA"), the present owner, has made the property available for sale in whole or in part. Because current zoning of the Site is industrial, the Risk Management Plan contemplates redevelopment of the Site for a variety of industrial/commercial purposes.

The Risk Management Plan provides a decision framework to manage residual chemicals [(i.e., halogenated volatile organic compounds ("VOCs")] in soil and groundwater at the Site in a manner that is: (1) satisfactory to the RWQCB, as lead agency, and other involved regulatory agencies with oversight authority, as required, (2) protective of human health and the environment, and (3) consistent with planned land uses. This Risk Management Plan contains the following:

- description of the Site background, including a brief history of Site usage, discussion of environmental investigations and remedial actions performed at the Site, and a summary of identified remaining environmental conditions;
- summary of the risk assessment that was conducted to evaluate potential human health impacts at the Site;
- short-term risk management plan to be implemented during construction at the Site, which includes worker health and safety planning requirements and construction impact mitigation measures; and,
- non-construction risk management plan for mitigation of potential long-term risks to human health and the environment, which includes a provision to ensure long-term compliance with this Risk Management Plan.

1.1 Representations

This Risk Management Plan is based on a current understanding of environmental conditions at the Site as well as current environmental policies, laws, and regulations. If environmental conditions are found to differ from those described herein or in the environmental reports referenced in Section 2.3.1, or if environmental policies, laws, and regulations change, then the Risk Management Plan may have to be modified to accommodate those differing conditions. No representation is made by any present or future owner or developer of the Site or their consultants, agents, and contractors as to the

applicability of this Risk Management Plan with respect to future environmental policies, laws, and regulations.

1.2 Owner Responsibilities

All owners, developers, and any other entities with responsibility for Site activities shall have a continuing obligation to:

- determine the adequacy of this Risk Management Plan in light of the conditions actually encountered and the intended land use;
- comply with policies, laws, and regulations applicable at the time; and,
- establish a notification procedure and protocols for future sub-surface activity to ensure long-term compliance with the Risk Management Plan.

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2. SITE BACKGROUND

This section describes the Site background, including the previous Site uses and the geology and hydrology at the Site.

2.1 Site Setting

The Site is located in an industrial section of east Menlo Park, adjacent to San Francisco Bay (Figures 1 and 2). Directly to the east of the Site is a channelized creek that runs to the Bay via Flood and Westpoint Sloughs. A public storage facility, salt evaporators, and Bayfront Park (the former Menlo Park landfill) are located north of the Site. West of the Site is a yard that contains used equipment and materials, and to the south, across Haven Avenue, are two-story buildings that are occupied by light industrial and commercial tenants. Figure 2 is an aerial photograph taken during early October 1998 of the Site and vicinity, prior to demolition of "Building 2".

2.2 Site History

The Site, as defined in Chapter 1, refers to the entire property at the address 3695 -3723 Haven Avenue, Menlo Park, California. Currently, the MSA Property is occupied by two vacant buildings ("Building 1" and "Building 3" in Figure 2) and covered by asphalt or concrete pavement with narrow planted areas along Haven Avenue.

Based on a review of historical aerial photographs performed by EKI, the MSA Property was formerly bare land with a few scattered buildings and cars prior to its development in 1969. In the 1969 aerial photograph, the MSA Property was developed with three buildings, two of which are standing as of this writing.

Based on a review of file information from the San Mateo County Department of Health Services and files provided by MSA, uses of the MSA Property have included:

- the fabrication and manufacturing of magnetic materials and electronic devices;
- manufacturing and fabrication of electronic components;
- manufacturing of polished silicon wafers;
- distribution of electronic equipment;
- warehousing and installation of automobile wheels and automotive accessories; and,
- a musical recording studio.

One of the prior tenants of the MSA Property was Siltec Corporation, a corporate predecessor to MSA. From 1970 through 1989, Siltec Corporation used the MSA

Property as manufacturing facility for polished silicon wafers, and as office space. Other more recent tenants of the MSA Property have included KOB Auto Inc., Nor Cal Tire and Wheel, Multiplex Studios, Huettig & Schromm Landscape Contractors, and BSG Associates, Inc.

During October 1998, the middle of the three buildings originally built at the Site during 1969 was demolished. The purpose of demolishing this building (Building 2) was to allow excavation of Site soils with elevated concentrations of halogenated VOCs.

2.3 Summary of Site Investigations and Remedial Actions

This section summarizes:

- the reports submitted to the RWQCB regarding investigative work, risk assessments, treatability studies, and work plans describing future work to be performed at the Site;
- the subsurface geology at the Site;
- the local hydrology;
- the chemicals detected in both soil and groundwater at the Site; and,
- the remedial actions performed or planned for the Site.

2.3.1 Documents Summary

The following documents describe the results of previous investigations and remedial, treatability, and risk assessments performed at the Site:

- *Feasibility Study and Remedial Action Plan, 3695 - 3723 Haven Avenue, Menlo Park, California*, Erler & Kalinwoski, Inc., 10 March 1999 (EKI 1999a)
- *In Situ Chemical Oxidation Bench-Scale Treatability Test Results, 3695-3723 Haven Avenue, Menlo Park, Californi*- Erler & Kalinowski, Inc., 8 January 1999 (EKI 1999b)
- *Revised Risk Calculations and Cleanup Goals for Source Area Soil Excavation, 3695-3723 Haven Avenue, Menlo Park, California*, Erler & Kalinowski, Inc., 12 February 1999 (EKI 1999c)
- *Results of Sampling and Analysis, 3645 and 3665 Haven Avenue, Menlo Park, California*, Erler & Kalinowski, Inc., 30 June 1998 (EKI 1998a)
- *Results of Sampling and Analysis, Vicinity of 3695-3723 Haven Avenue, Menlo Park, California*, Erler & Kalinowski, Inc., 28 October 1998 (EKI 1998b)

Directly underlying the A-zone are sediments that are generally coarser grained, consisting of sand and gravel. For the purposes of this report, these sediments that occur between approximately 15 and 38 feet bgs are referred to as the "B-zone".

2.3.3 Hydrology

During the on-Site and off-Site investigations, selected groundwater samples from borings and monitoring wells were measured for density, total dissolved solids, and chloride. The purpose of collecting such data for groundwater was to allow generalized mapping of the various water bodies that are present along the bay margin: fresh water, salt water associated with the Bay, and brines associated with the evaporation ponds. The available data indicate that brines have apparently leaked from salt evaporation ponds and have intruded primarily into the B-zone. Landward incursion of brines is pronounced beneath the Site as well as at the adjacent Fedex Facility to the east. It appears that the presence of brines in the subsurface has served as a barrier, limiting off-Site migration of chemicals of concern (see Section 2.3.4).

During drilling at the Site, groundwater has been encountered in the subsurface at depths of approximately 8 to 11 feet bgs in fine-grained sediments of the A-zone (EKI 1997a). During October 1998, the piezometric surface for the A-zone occurred at elevations of approximately 0.8 to 1.2 feet relative to the National Geodetic Vertical Datum 1929 (EKI 1999a). The groundwater gradient was to the southeast with a magnitude of approximately 0.003 ft/ft (EKI 1999a). During October 1998, the piezometric surface for the B-zone, corrected for variable density, occurred at elevations of 1.3 to 1.9 feet, relative to the National Geodetic Vertical Datum 1929. The groundwater gradient for the B-zone was generally to the north with a magnitude of approximately 0.003 ft/ft (EKI 1997a). These data indicate that there is a relative upward groundwater gradient at the Site. It should be noted that the local groundwater gradient is strongly affected by density variations. Thus, changes in operation of the nearby salt evaporation ponds could result in changed groundwater gradients.

2.3.4 Chemicals of Concern Detected in Soil and Groundwater

The primary chemicals of concern ("COCs") at the Site, based on prevalence in soil and groundwater at the Site and the results from the risk assessment, are halogenated VOCs. The VOCs that contribute most to the estimated risks at the Site are trichloroethene ("TCE") and vinyl chloride ("VC"). Tables 1 and 2 list all the VOCs that have been detected in soil or groundwater samples collected from the Site. The VOCs that have been detected in more than ten groundwater samples collected at the Site include, in order of decreasing frequency of detection:

- TCE;
- cis-1,2-dichloroethene ("cis-1,2-DCE");
- chloroform;
- 1,1,2-trichloro-1,2,2-trifluoro ethane ("CFC-113");
- carbon tetrachloride; and
- VC.

TCE and CFC-113 are believed to have been used historically at the Site. Further, the cis-1,2-DCE and VC found at the Site are presumed to be daughter products of naturally occurring reductive dechlorination of TCE in the soil and groundwater.

TCE is present in groundwater samples collected from the Site in the vicinity of former Building 2 at concentrations that suggest the presence of separate-phase dense non-aqueous phase liquid ("DNAPL"). The presence of separate-phase DNAPL can result in the long-term persistence of VOCs in groundwater. Furthermore, DNAPL liquids can, in some instances, migrate to deeper depths if remedial activities or other subgrade activities penetrate confining media or alter the hydrologic conditions.

Carbon tetrachloride has been detected at significantly higher concentrations in groundwater samples collected from the adjacent property to the west. The source of carbon tetrachloride is unknown but appears to be up-gradient of the Site. The chloroform found in groundwater samples collected on-Site may be a product of the naturally occurring degradation of the carbon tetrachloride.

2.3.5 Soil Remedial Actions

As discussed in the FS/RAP, source area soil near the northwestern corner of the former Building 2 will be excavated to a depth of approximately 6 feet during 1999. The extent of planned excavation is shown on Figure 3 (EKI 1998c). The remedial excavation will remove soil known to contain concentrations of COCs above the risk-based action levels listed in Table 3. Results of the remedial excavation will be documented in the Remedial Action Completion Report anticipated to be submitted to the RWQCB as described in Section 2.5.1.

After source area soil is excavated, clean backfill will be placed in the excavation. A high-density polyethylene ("HDPE") liner will be installed as a vapor barrier in the backfill at approximately 4 feet bgs. The vapor barrier will reduce the potential for the clean backfill to be contaminated by VOC vapors emanating from the underlying groundwater. The vapor barrier will also reduce the potential for migration of VOC vapors from groundwater into any buildings that may be constructed in that location in the future, thereby further reducing the potential future risks at the Site.

As discussed below, future owners of the property will be required to protect the integrity of the vapor barrier by not penetrating through the barrier during construction or maintenance activity at the Site unless (a) damage to the barrier can be effectively repaired, or (b) the underlying groundwater no longer contains VOCs above risk-based action levels.

2.3.6 Groundwater Remedial Actions

As discussed in the FS/RAP, a pilot test is planned to evaluate the efficacy of ICO by injecting potassium permanganate ("Oxidant") into saturated zone soils and groundwater

near the northwestern corner of the former Building 2 (EKI 1998d). The oxidant is intended to oxidize halogenated VOCs in soil and groundwater to less toxic daughter products. If the pilot test is successful, full-scale ICO treatment will be performed as described in the FS/RAP.

2.4 Remaining Environmental Conditions

This Section describes the available information regarding the residual concentrations of VOCs in soil, groundwater, and soil gas beneath concrete slabs. For the purposes of this document, it is assumed that soil excavation activities, including removal of the concrete slab and installation of a vapor barrier, as proposed in EKI (1998e) will have been executed.

2.4.1 Residual Concentrations of Halogenated VOCs in Soil

Figure 3 shows the locations of soil borings drilled in and around the source area at the northwestern corner of the former Building 2 as well as the proposed extent of the remedial soil excavation. Table 1 summarizes the data for soil samples collected from the area outside the remedial excavation area and represents the available data regarding residual concentrations of VOCs in Site soils post-excavation. The concentrations of TCE and VC in post-excavation Site soils are shown on Figures 4 and 5, respectively.

For the purposes of this Risk Management Plan, it has been assumed that there may exist on the Site areas of contamination undetected by previous investigations. Therefore, risk management for all future activities involving disturbance of soil at the Site will be performed under the assumption that VOCs may be present in soil, as discussed further in Chapter 4.

2.4.2 Residual Concentrations of Halogenated VOCs in Groundwater

Figures 6, 7, and 8 show the extents of TCE, VC, and carbon tetrachloride, respectively, in groundwater at the Site. Table 2 summarizes data for groundwater samples collected from the Site.

Elevated concentrations of VOCs have been detected in groundwater in the vicinity of the northern portion of former Building 2. The area of groundwater containing VOCs in excess of the risk-based action levels for groundwater is shown on Figure 9. For the purposes of this Risk Management Plan, this area is defined as the Groundwater Risk Area.

2.4.3 Possible Presence of Chlorinated VOCs Under Concrete Slabs

The VOCs detected in soil gas during the remedial investigation include trichloroethene, cis-1,2-dichloroethene, CFC-113, chloroform, and benzene (EKI 1997a). Trichloroethene, cis-1,2-dichloroethene, and CFC-113 are the three chemicals detected at highest concentrations (EKI 1997a). Elevated concentrations of these chemicals were

detected in soil gas from the vicinity of the northwestern corner of the former Building 2, both inside and outside of the former building.

It should be noted that some of the soil gas samples from locations within the former building were collected within the gravel base beneath the building slab. It is possible that the concentrations of chemicals detected in these samples reflect some relatively increased lateral migration because of the permeable gravel base. It is possible that, in the future, without proper engineering controls, VOCs could migrate from groundwater into permeable subgrade material beneath new structures. Chapter 5 discusses the use of engineering controls to prevent this type of VOC migration.

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3. SUMMARY OF HUMAN HEALTH RISK ASSESSMENT

A human health risk assessment was undertaken to:

- Evaluate potential impacts to human health by chemicals of concern ("COCs") present in soil and groundwater at the Site; and
- Develop risk-based action levels for soil and groundwater at the Site.

The risk assessment is included in Attachment A.

Note that baseline risks at the Site were calculated previously for development of risk-based action levels for soil excavation using data collected prior to April 1998 (EKI 1998c; EKI 1999b). However, some additional groundwater data were collected for the Site after April 1998. Therefore, the data set used herein and in Appendix A to calculate the baseline risk at the Site has been updated to include the soil and groundwater data for the Site available as of February 1999. Also, the proposed risk-based action levels have now been developed to consider VOCs in both soil and groundwater, and one of the physical assumptions (soil saturated porosity) for the Site has been modified.

The risk assessment was conducted assuming hypothetical exposure scenarios for future occupants of the Site. Occupants were subdivided into several receptor populations based on their expected locations and activities. Each group was assumed to be subjected to different concentrations of chemicals for different amounts of time. All assumptions used in the risk assessment are quantified in the text and tables included in Attachment A.

Baseline risks were calculated for the following three hypothetical receptor populations at the Haven Avenue Site:

- Future commercial/industrial building occupants, who will work indoors on-Site over a long period of time ("Indoor Workers");
- Workers involved in the construction of new buildings or subsurface utilities on-Site, who will occupy the Site for much more limited periods ("Construction Workers"); and,
- Future maintenance personnel such as groundskeepers, who will labor primarily outdoors over a long period of time ("Maintenance Workers").

3.1 Risk Calculations

As discussed in the risk assessment (Attachment A), summation of Hazard Indices over all pathways and chemicals gives the non-carcinogenic effects Hazard Index for each hypothetical receptor population. A total Hazard Index less than or equal to one indicates

that the population will not be exposed to the chemical beyond a dosage considered safe for non-carcinogenic adverse health affects.

Summation of the estimated incremental carcinogenic risk from all carcinogenic chemicals over all pathways valid for a particular receptor population gives an estimated overall incremental excess carcinogenic risk ("Cancer Risk") for the hypothetical receptor population (Appendix A). The National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR §300) mandates an acceptable range of Cancer Risk between 10^{-4} (1 in 10,000) and 10^{-6} (1 in 1,000,000). California law requires notification of on-Site workers if the Cancer Risk is estimated to exceed 10^{-5} (1 in 100,000) (California Code of Regulations ("CCR") Title 22, Section 12703). The targeted maximum Cancer Risk of 10^{-5}, used in the risk assessment for the Site, satisfies both sets of regulations.

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3.2 Estimated Baseline Risks

The estimated baseline risks for the three hypothetical future populations at the Site are summarized below based on the results of the risk assessment in Attachment A. Several references are made below to tables in Attachment A (e.g., "Table A-19").

Estimated baseline Hazard Indices and Cancer Risk for Indoor Workers are listed in Table A-19. Non-carcinogenic hazard for this population is calculated to have a Hazard Index equal to 0.08, less than the maximum target value of 1. The estimated Cancer Risk is 1.9×10^{-5}, above the maximum target level of 10^{-5}. The most significant chemical/pathway combination for Indoor Workers, in terms of the estimated Cancer Risk, is inhalation of TCE and VC evaporating from groundwater.

Estimated baseline Hazard Indices and Cancer Risks for Maintenance Workers through all pathways are listed in Table A-20. Non-carcinogenic hazard for this population is calculated to be 0.03, less than the maximum target level of 1. The estimated Cancer Risk is 4.5×10^{-6}, below the maximum target level of 1.0×10^{-5}. The most significant chemical/pathway combination for the Maintenance Worker receptor population is inhalation of VC evaporating from soil.

Estimated baseline risk and Hazard Indices and Cancer Risk for all Construction Worker exposure pathways are listed in Table A-21. The estimated Cancer Risk is 1.0×10^{-7}, less than the target level of 10^{-5}. Non-carcinogenic hazard for this population is calculated to be 0.01, less than the target level of 1. The most significant chemical/pathway combination, both in terms of Cancer Risk and non-carcinogenic health hazard for the Construction Worker receptor population is inhalation of VC evaporating from soil.

3.3 Calculation of Risk-Based Action Levels for Soil and Groundwater

Using the baseline risks calculated for the hypothetical receptor populations at the Site, risk-based action levels for soil and groundwater have been calculated, as discussed below. Risk-based action levels have been calculated considering potential exposures to the future hypothetical receptor populations, i.e., Maintenance Workers, Construction Workers, and Indoor Workers.

Risk-based action levels (cleanup goals) for soil and groundwater were calculated to apportion post-remediation risk such that Cancer Risk to the Indoor Worker, Construction Worker, and Maintenance Worker populations are each at or below 10^{-5}, and Hazard Indices are at or below 1.0. The method used for apportioning risk was to allocate most of the risk to the more hazardous chemicals and those more commonly found at the Site. This approach minimizes the volume of material to be remediated, while keeping future hypothetical populations' exposure to hazardous chemicals below the target maximum risk levels.

Tables 3 and 4 (and Tables A-22 and A-23 in Attachment A) list the calculated risk-based action levels for soil and groundwater, respectively. For soil, the risk-based action levels for TCE and VC are 3.2 mg/kg and 0.075 mg/kg, respectively. For groundwater, the risk-based action levels for TCE and VC are 8,000 ug/L and 500 ug/L, respectively, and carbon tetrachloride and chloroform have action levels of 2,600 ug/L and 2,000 ug/L, respectively.

Tables A-24, A-25, and A-26 show the estimated Hazard Indices and Cancer Risks for the receptor populations, i.e., Indoor Workers, Maintenance Workers and Construction Workers, assuming VOCs are present in soil and groundwater at the risk-based action level concentrations. For each population, the estimated total Hazard Index is less than 1 and the estimated cumulative Cancer Risk is less than or equal to 10^{-5}. Therefore, the risk-based action levels result in an acceptable level of risk for the future potentially exposed populations.

Future collection and analysis of soil or groundwater samples from the Site could potentially indicate the presence of chemical concentrations different from the current dataset. In this case, risk-based action levels for the Site may be recalculated to reflect the improved understanding of the distribution and concentrations of chemicals in Site soil or groundwater.

4. RISK MANAGEMENT DURING CONSTRUCTION

Risk management during construction activities at the Site involves precautions that will be taken by the property owner to mitigate risks to human health and the environment from possible exposure to chemicals of concern during various activities that involve disturbing soil at the Site. As discussed in Section 2.4.1, it is assumed for the purposes of this Risk Management Plan that residual VOCs may be present in soils located anywhere on-Site. Therefore, construction-related risk management procedures should be evaluated and implemented by the property owner, its contractors, agents, and consultants any time work will be performed that involves disturbing soil at the Site.

When establishing the procedures and precautions to be implemented, the evaluation should include, but not necessarily be limited to, the following:

- Establishing a notification procedure and protocols for future sub-surface activity to ensure long-term compliance with this Risk Management Plan;
- Establishment of health and safety training, worker protection procedures, and worker notification procedures for workers who may be exposed to VOC-containing soil or groundwater during any subsurface works;
- Use of construction methods that ensure that conduits to deeper groundwater zones are not created; and,
- Establishment of soil and groundwater management procedures to:
  (1) appropriately manage soil and groundwater encountered during construction;
  (2) characterize soil and groundwater that have indicators of VOC contamination;
  (3) manage potential VOC vapors that could emanate from excavated soils or groundwater;
  (4) properly store and dispose of soil and groundwater; and
  (5) control or prevent storm water from contacting stored soils.

4.1 Site-Specific Health And Safety Worker Planning Requirements

Considering that VOCs may remain in soil, groundwater, and soil gas at the Site following completion of the remedial actions, preparation and implementation of health and safety plans ("HSPs") will be required for activities at the Site during which workers may encounter VOCs in soil, groundwater, or soil gas during subgrade work. Separate HSPs may be prepared for different types of work, i.e., depending on the nature of the work and the estimated potential for exposure to VOCs based on the available data. It will be the responsibility of the property owner to evaluate work activities at the Site and identify those activities that require preparation of a HSP, subject to the constraints described below.

It will be assumed for the preparation of HSPs that VOCs may be present in soil throughout the Site. Therefore, subgrade work activities requiring a HSP include, but are not limited to, (a) excavation and grading during demolition or construction activity, (b) subgrade utility installation or repair, (c) entrance into subgrade confined spaces, such as utility vaults or manholes, and (d) landscaping work that disturbs native soil, including but not limited to activities such as tree and shrub planting, sprinkler installation, and soil relocation.

A HSP is not required by this RMP for activities where no more than the upper 12 inches of soil will be disturbed if the work is in an area where clean fill soil has been imported during 1999 or later (e.g., new topsoil in landscaped areas, backfill installed in the source area soil excavation). For those activities, however, a HSP should still be prepared if required by applicable laws or regulations or if determined appropriate by the responsible party.

A HSP is not required by this RMP for workers who will perform activities at the Site without disturbing soil (e.g., carpenters, painters, carpet installers). When constructed, buildings and cover materials such as roads and walk-ways will prevent exposure to VOC-containing soil. It remains the responsibility of the property owner to determine if a health and safety plan is required for compliance with other federal, state, and local requirements.

4.2 Site-Specific Health And Safety Plans

Each HSP prepared pursuant to the requirements of this RMP will be required to address potential worker exposures to VOCs that could result from the work if VOCs are encountered in soil, groundwater, or soil gas during the work. To the extent required by applicable law, each HSP will be prepared in accordance with Federal and California Occupational Safety and Health Administration ("OSHA") standards for hazardous waste operations (29 CFR 1910.120 and 8 CCR 5192), or applicable regulations promulgated in the future. The HSP should also include but not be limited to a description of health and safety training requirements for the affected workers, a description of the level of personal protective equipment to be used, if any, air quality monitoring plans if necessary, and any other applicable precautions to reduce potential exposure to VOCs to acceptable levels.

4.3 Construction Impact Mitigation Measures

This section outlines measures that should be considered to mitigate potential impacts to human health and the environment during construction at the Site. The need to implement any active measures should be identified in a Construction Impact Mitigation Plan to be prepared by the property owner or its agent. Identified mitigation measures should be implemented during construction. At a minimum, measures to be considered for implementation should include:

- Management of soil;

- Management of groundwater (e.g., during excavation dewatering);
- Preventing creation of migration pathways for contamination to deeper aquifer zones;
- Protection of the vapor barrier installed by MSA in the source area soil excavation backfill (see Section 2.3.5); and
- Protection of groundwater monitoring wells at the Site.

4.3.1 Soil Management Plan

The Construction Impact Mitigation Plan should include a section that establishes procedures for safely managing excavated soil. The soil management plan should consider, at a minimum, the following:

- Methods for the safe excavation and on-Site storage of removed soil;
- Methods for screening excavated soil for the presence of VOCs, as discussed in Section 4.3.1.1;
- Methods for preventing exposure to VOC vapors that may emanate from excavated soil;
- Methods for controlling storm water runoff such that contact with excavated soils is eliminated; and
- Procedures for characterizing and properly disposing excavated soil.

4.3.1.1 Soil Screening Methodology During Construction

During future excavation of soil, an appropriate field instrument should be used during the excavation to help determine if VOCs are present in the soil. VOC screening measurements should be taken periodically as soil is excavated at the Site. A soil screening plan also should be developed as part of the Site-specific health and safety plan generally described in Section 4.2. The soil screening plan should describe procedures for screening soil for the presence of VOCs and action levels for terminating work activities or upgrading worker personal protective equipment. Elevated VOC screening readings may be an indication of VOC contamination in soil.

4.3.1.2 Management of Soil with Indications of VOC Contamination

Contingency protocols should be included in the Construction Impact Management Plan for management of soils should VOC screening indicate the presence of VOC contamination. These contingency protocols should include methods for safely stockpiling soil until the actual concentrations of VOCs in soil are identified and, based

on regulations governing management of excavated soil, an appropriate management method is determined. Excavated soil should be stored in a manner so as to limit access to and contact by unauthorized personnel and to minimize contact with storm water.

4.3.2 Groundwater Management Plan

If construction at the Site is performed such that groundwater will be removed, a groundwater management plan should be included in the Construction Impact Mitigation Plan. The groundwater management plan should, at a minimum, consider implementing methods in accordance with applicable regulations to perform the following:

- safely remove and store groundwater during construction;
- limit exposure to VOC vapors that may emanate from groundwater; and
- characterize and properly dispose of stored groundwater.

4.3.3 Use Of Construction Methods that Minimize the Potential for Creating Vertical Conduits

As discussed in Section 2.6.2, residual concentrations of VOCs currently exist in shallow groundwater at concentrations that suggest the presence of separate-phase DNAPL. The top of this shallow groundwater zone is typically encountered at a depth of approximately 6 to 8 feet bgs (EKI 1997a). DNAPLs can, in some instances, migrate to deeper depths if conduits are created in confining media or hydrologic conditions are altered.

If in the future chemical concentrations in groundwater suggest the presence of DNAPL, construction activities should be conducted such that the potential for DNAPL migration is limited. For example, penetrations through the bottom of the B-zone at the Site into deeper aquifers could potentially provide a conduit for the migration of groundwater containing elevated concentrations of VOCs to deeper aquifers that are currently not impacted. A specific example of a penetration to a deeper aquifer is the installation of pilings for the foundation of new construction.

Penetrations to below the B-zone will not be allowed in areas where VOCs are present in groundwater above California Maximum Contaminant Levels ("MCLs") for drinking water, unless (a) sufficient precautions are taken to prevent migration of impacted groundwater to deeper groundwater zones, and (b) RWQCB concurs that the design is adequate to prevent impacts to deeper groundwater.

4.3.4 Protection of Vapor Barrier

A vapor barrier will be installed at approximately 4 feet bgs in the backfill for the source area soil excavation. The barrier is designed to prevent possible migration of VOC vapors from underlying groundwater into the clean backfill. The barrier would also reduce the rate at which VOCs from groundwater could migrate into any overlying

structures. Owners of the property are required to protect the integrity of the vapor barrier by not penetrating through the barrier during construction or maintenance activity at the Site unless (a) damage to the barrier can be effectively repaired, or (b) the underlying groundwater no longer contains VOCs above risk-based action levels.

4.3.5 Protection of Monitoring Wells

It is anticipated that selected existing groundwater monitoring wells at the Site will be required for future groundwater monitoring. Existing monitoring wells at the Site include monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5B, MW-6B, and MW-7B. Of these, monitoring wells MW-2, MW-5B, MW-6B, and MW-7B are planned for a future groundwater monitoring program. In addition two additional on-Site wells, MW-8 and MW-9 are planned for installation and monitoring. Existing and proposed on-Site monitoring wells are shown on Figure 10.

As long as groundwater monitoring is required by the RWQCB or other regulatory agency, construction procedures should be implemented to prevent accidental damage to the required groundwater monitoring wells. With the approval of the RWQCB, groundwater monitoring wells may be abandoned and replaced with new groundwater monitoring wells at a different locations.

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5. DESIGN CONSIDERATIONS FOR NEW CONSTRUCTION

Based on the results of the human health risk assessment (Chapter 3), the highest identified risk to indoor workers at the Site is exposure to VOCs migrating into enclosed spaces. No buildings currently exist over the Groundwater Risk Area, discussed in Section 2.4.2. Unless it is demonstrated that VOC concentrations in groundwater are less than risk-based action levels, any new buildings should be designed so that migration of VOCs into new buildings is limited. Materials and methods (e.g., liners, sub-slab aeration, low permeability concrete, crack sealants) are available to restrict vapor intrusion through building floors. At the time of building design, a professional engineer experienced in this type of work should be consulted to design appropriate barriers to prevent the potential migration of VOCs into new buildings.

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6. NON-CONSTRUCTION RISK MANAGEMENT

This risk management plan also addresses precautions that should be implemented to mitigate long-term risks to human health and the environment related to exposure to COCs during periods of normal, non-construction activity. Any construction that will disturb the soil, building foundations, or pavement should be completed in a manner that is consistent with Chapters 4 and 5 and applicable environmental policies, laws, and regulations.

Components of the risk management plan for non-construction activities are as follows:

- Ensuring that future land uses are consistent with the commercial/industrial uses assumed under this Risk Management Plan;
- Monitoring groundwater at the perimeter of the Groundwater Risk Area to monitor for possible future expansion of the Groundwater Risk Area, unless VOC concentrations in groundwater samples collected in all on-Site wells are less than risk-based action levels;
- Prohibiting the use of groundwater at the Site, unless VOC concentrations in groundwater are less than MCLs;
- Establishing a notification procedure and protocols for future sub-surface activity to ensure long-term compliance with this Risk Management Plan; and
- Inspecting the Site as necessary to verify that risk management controls are being implemented and that they are effective in limiting potential exposure to VOCs at the Site.

6.1 Property Manager and Tenant Notification

The property owner shall provide notification of the known environmental conditions at the Site and of the requirements of this RMP to (a) the property manager, and (b) tenants and other entities leasing or otherwise exercising control over space at the Site.

6.2 Maintaining Commercial/Industrial Land Use

The Site is restricted to commercial/industrial use, except that uses for day-care or primary education are explicitly not allowed. If other uses are proposed, the owner may make a proposal to the RWQCB or other appropriate agency, supported by analysis, that the provisions of this RMP should be changed.

6.3 Monitoring of Existing Buildings

As discussed in Section 2.4.2, groundwater with VOC concentrations above the risk-based action levels has not been detected outside the Groundwater Risk Area shown on Figure 7. However, over time, it is possible that the groundwater flow regime at the Site

7. REFERENCES

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Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
B101	2.0-2.5	4-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
B102	2.0-2.5	4-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
C-1	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	0.65	<0.025	<0.025	0.11	-[b]	<0.05
C-1	5.5-6.0	19-Jun-97	<0.05	<0.05	<0.05	<0.05	1.5	<0.05	<0.05	<0.05	-	<0.1
C-2	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.14	-	<0.05
C-2	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.067	<0.025	<0.025	0.52	-	<0.05
C-3	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-4	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-5	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-6	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-7	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-1	14-14.5	10-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-2	12.5-13	7-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-3	12.5-13	10-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-4	12.5-13	7-Oct-96	<0.005	<0.005	<0.005	<0.005	0.035	<0.005	<0.005	0.061	-	<0.01
EC-5	12-12.5	11-Oct-96	<0.005	<0.005	<0.005	<0.005	0.014	<0.005	<0.005	[illegible]	-	<0.01
EC-6	12-12.5	11-Oct-96	0.021	<0.02	0.021	<0.02	<0.02	<0.02	<0.02	[illegible]	-	<0.04
EC-7	15-15.5	9-Oct-96	<0.01	0.011	<0.01	<0.01	0.11	<0.01	<0.01	[illegible]	-	<0.02
EC-8	14.5-15	9-Oct-96	<0.1	<0.1	<0.1	<0.1	0.29	[illegible]	[illegible]	[illegible]	-	<0.2
EC-9	15-15.5	8-Oct-96	<0.005	0.016	<0.005	<0.005	<0.005	<0.005	<0.005	0.024	-	<0.01
EC-10	14.5-15	8-Oct-96	<0.005	0.0056	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-12	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.073	-	<0.05
EC-12	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.027	<0.025	<0.025	0.048	-	<0.05
EC-13	1.5-2.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.08	<0.025	<0.025	0.073	-	<0.05

Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-13	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.1	-	<0.05
EC-14	2.0-2.5	19-Jun-97	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	-	<0.1
EC-14	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.097	<0.025	<0.025	0.18	-	<0.05
EC-15-A	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.35	<0.025	<0.025	0.49	-	<0.05
EC-15-A	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.91	<0.025	<0.025	0.086	-	<0.05
EC-16	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.039	<0.025	<0.025	0.056	-	<0.05
EC-16	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.048	<0.025	<0.025	<0.025	-	<0.05
EC-17	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	[illegible]	<0.05
EC-17	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-18	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-19	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-19	5.5-6.0	19-Jun-97	<0.05	<0.05	<0.05	0.38	[illegible]	[illegible]	<0.05	[illegible]	[illegible]	[illegible]
EC-20	2.0-2.5	19-Jun-97	<0.5	<0.5	<0.5	<0.5	[illegible]	[illegible]	<0.5	[illegible]	[illegible]	[illegible]
EC-20	5.5-6.0	19-Jun-97	<0.25	<0.25	<0.25	<0.25	[illegible]	<0.25	<0.25	[illegible]	[illegible]	[illegible]
EC-21	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-21	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.027	<0.05	<0.05
EC-22	3.0-3.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.039	<0.05	<0.05
EC-22	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-23	3.0-3.5	10-Sep-97	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	6.9	<0.5	<0.5
EC-23	5.0-5.5	10-Sep-97	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	<1	<1
EC-24	3.5-4.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.51	<0.025	<0.025	[illegible]	<0.05	<0.05
EC-24	5.0-5.5	10-Sep-97	<2	<2	<2	<2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-25	3.5-4.0	10-Sep-97	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	[illegible]	[illegible]	[illegible]
EC-25	5.0-5.5	10-Sep-97	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	[illegible]	<1	<1

Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
[illegible]	<0.5	<0.5
[illegible]	[illegible]	[illegible]
0.089	<0.05	<0.05
0.23	<0.05	<0.05
<0.025	<0.05	<0.05
0.061	<0.05	<0.05
[illegible]	[illegible]	[illegible]
[illegible]	0.67	0.19
[illegible]	<0.05	<0.05
0.07	0.083	<0.05
0.29	<0.05	<0.05

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Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)					
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
EC-26	3.5-4.0	11-Sep-97	<0.25	<0.25	<0.25	<0.25	0.27	<0.25
EC-26	5.0-5.5	11-Sep-97	<0.25	<0.25	<0.25	<0.25	5.4	<0.25
EC-27	3.0-3.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-27	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-28	1.0-1.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-28	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-29	2.5-3.0	11-Sep-97	<0.2	<0.2	<0.2	<0.2	0.76	<0.2
EC-29	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]
EC-30	1.5-2.0	11-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]
EC-30	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]
EC-31	3.0-3.5	10-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]
EC-31	5.0-5.5	10-Sep-97	<0.25	<0.25	<0.25	<0.25	[illegible]	[illegible]
EC-32	2.5-3.0	10-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]
EC-32	5.0-5.5	10-Sep-97	<1	<1	<1	<1	[illegible]	[illegible]
EC-33	2.5-3.0	10-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]
EC-33	5.0-5.5	10-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]
EC-34	3.0-3.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]
EC-34	5.0-5.5	10-Sep-97	<0.2	<0.2	<0.2	<0.2	[illegible]	[illegible]
EC-35	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]
EC-35	5.0-5.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]
EC-36	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-36	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.21	<0.025
EC-37	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.28	<0.025

Table 1
Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property
Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-37	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.39	<0.025	<0.025	0.39	0.7	0.08
EC-38	3.0-3.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-38	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.17	<0.025	<0.025	<0.025	0.079	<0.05
EC-39	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-39	5.0-5.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	0.85	<0.05	<0.05	0.18	1.5	<0.1
EC-40	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.16	<0.025	<0.025	0.4	0.93	<0.05
EC-41	2.0-2.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-41	5.0-5.5	11-Sep-97	<0.05	<0.05	<0.05	<0.05	0.28	<0.05	<0.05	0.68	0.87	<0.1
EC-42	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.051	<0.025	<0.025	0.038	0.084	<0.05
EC-42	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]	[illegible]	[illegible]	0.91	[illegible]
EC-43	3.0-3.5	11-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-43	5.0-5.5	11-Sep-97	<1	<1	<1	<1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-44	3.5-4.0	11-Sep-97	<0.05	<0.05	<0.05	<0.05	0.13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-44	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]	[illegible]	[illegible]	0.4	[illegible]
EC-45	2.5-3.0	11-Sep-97	<0.2	<0.2	<0.2	<0.2	0.52	[illegible]	[illegible]	[illegible]	<0.4	[illegible]
EC-45	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.57	0.11	<0.025	0.084	<0.05	<0.05
EC-46	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.047	<0.05	<0.05
EC-46	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-47	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.15	<0.05	<0.05
EC-47	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	2.9	<0.2	<0.2	0.44	<0.4	<0.4
EC-48	2.0-2.5	15-Sep-97	<0.1	<0.1	<0.1	<0.1	1.1	<0.1	<0.1	0.28	<0.2	<0.2
EC-48	5.0-5.5	15-Sep-97	<1	<1	<1	<1	10	<1	<1	1.8	<2	<2
EC-49	1.5-2.0	12-Sep-97	<0.1	<0.1	<0.1	<0.1	1.6	<0.1	<0.1	0.68	0.43	<0.2
EC-49	5.0-5.5	12-Sep-97	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	5.2	1.2	<1

Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-50	1.5-2.0	12-Sep-97	<0.25	<0.25	<0.25	<0.25	3.5	<0.25	<0.25	1	<0.5	<0.5
EC-50	5.0-5.5	12-Sep-97	<2	<2	<2	<2	9.2	[illegible]	<2	40	7.6	<4
EC-51	2.0-2.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.68	<0.05	<0.05	0.35	0.12	<0.1
EC-51	5.0-5.5	12-Sep-97	<1	<1	<1	<1	10	<1	<1	2.7	3	<2
EC-52	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.061	<0.025	<0.025	<0.025	0.12	<0.05
EC-52	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	1.2	<0.2	<0.2	1.1	5.3	<0.4
EC-53	2.0-2.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	1.8	<0.2	<0.2	0.37	<0.4	<0.4
EC-53	5.0-5.5	12-Sep-97	<1	<1	<1	<1	22	<1	<1	5.5	11	<2
EC-54	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.12	<0.025	<0.025	<0.025	0.22	<0.05
EC-54	5.0-5.5	12-Sep-97	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	5.6	<1
EC-55	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.079	<0.025	<0.025	0.058	0.12	<0.05
EC-55	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.06	<0.025	<0.025	<0.025	0.16	<0.05
EC-56	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.087	<0.025	<0.025	0.081	<0.05	<0.05
EC-56	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.66	<0.05	<0.05	0.36	0.65	<0.1
EC-57	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.032	<0.025	<0.025	<0.025	<0.05	0.19
EC-57	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	2.3	<0.2	<0.2	0.16	2.1	<0.4
EC-58	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.049	<0.025	<0.025	<0.025	0.059	<0.05
EC-58	5.0-5.5	12-Sep-97	<0.25	<0.25	<0.25	<0.25	6.4	<0.25	<0.25	0.75	2.7	<0.5
EC-59	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.053	<0.025	<0.025	<0.025	<0.05	<0.05
EC-59	5.0-5.5	12-Sep-97	<0.1	<0.1	<0.1	<0.1	2.8	<0.1	<0.1	0.51	1.6	<0.2
EC-60	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.073	<0.025	<0.025	<0.025	<0.05	<0.05
EC-60	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.78	<0.05	<0.05	<0.05	0.48	<0.1
EC-61	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.046	<0.025	<0.025	0.083	<0.05	<0.05
EC-61	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.41	<0.025	<0.025	<0.025	0.17	0.072

Erler & Kalinowski, Inc.
10 March 1999

Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-62	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.27	<0.05	<0.05
EC-62	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-63	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-63	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.078	<0.05	<0.05
EC-64	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.21	<0.05	<0.05
EC-64	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.15	<0.025	<0.025	0.21	0.12	<0.05
EC-65	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-65	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.25	<0.025	<0.025	0.33	0.24	<0.05
EC-66	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-66	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.34	<0.05	<0.05	0.42	0.22	<0.1
EC-67	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.11	<0.05
EC-67	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.19	<0.025	<0.025	0.088	0.081	<0.05
EC-68	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-68	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.29	<0.025	<0.025	0.23	0.17	<0.05
EC-69	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-69	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.072	<0.025	<0.025	0.098	0.17	<0.05
EC-70	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-70	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.053	<0.025	<0.025	0.22	<0.05	<0.05
EC-71	1.5-2.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-71	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.049	<0.025	<0.025	0.19	<0.05	<0.05
EC-72	2.0-2.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.049	<0.05	<0.05
EC-72	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.063	<0.05	<0.05
EC-73	2.0-2.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-73	6.0-6.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05

Erler & Kalinowski, Inc.

10 March 1999

Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-73	14.0-14.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	2.0-2.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	5.0-5.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	11.5-12.0	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-75	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-75	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.37	<0.05	<0.05
EC-76	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-76	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.065	<0.025	<0.025	0.25	<0.05	<0.05
MW-7B	4.0-4.5	23-Oct-96	<2	<2	<2	<2	51	<2	<2	11	-	<4
S2-3	3.0-3.5	4-Sep-97	<0.1	<0.1	<0.1	<0.1	1	<0.1	<0.1	<0.1	-	<0.1
TR-1	2.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.41	<0.05	<0.05

Notes:

(a) Sample depth range in feet below ground surface (ft bgs).

(b) A hyphen (-) indicates that the sample was not analyzed for the chemical.

(c) Shaded rows indicate samples collected from soil to be removed as part of the remedial soil excavation.

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Table 2
Analytical Results for Volatile Organic Compounds in Groundwater

3695-3723 Haven Avenue Property
Menlo Park, California

Sample Location	Screened Interval Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane[b]	Trichlorofluoromethane[c]	Vinyl Chloride
B1	10-15	4-Oct-94	8240	<100[d]	<5.0	230	280	<5.0	[d]	<5.0	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2000	-	(f)	<10
GP-1	10-15	29-Dec-94	8240	<20	4.7	26	100	<4.0	-	10	280	<4.0	<10	<4.0	<4.0	<4.0	170	-	(f)	<4.0
GP-2	10-15	29-Dec-94	8240	<63	<13	<13	<13	<13	-	53	180	<13	<32	<13	<13	14	840	-	(f)	22
GP-3	10-15	29-Dec-94	8240	<77	<16	22	320	<16	-	<16	96	<16	<38	<16	<16	<16	1200	-	(f)	<16
GP-4	10-15	29-Dec-94	8240	<1200	<230	<230	<230	<230	-	<230	3600	<230	<560	<230	<230	<230	2300	-	(f)	<230
GP-5	10-15	29-Dec-94	8240	<2000	<400	<400	<400	<400	-	<400	25000	<400	<1000	<400	<400	<400	35000	-	(f)	1300
GP-6	10-15	29-Dec-94	8240	<25	<5.0	330	420	<5.0	-	<5.0	<5.0	<5.0	<12	<5.0	<5.0	<5.0	18	-	(f)	<5.0
GP-7	10-15	29-Dec-94	8240	<840	<170	<170	1000	<170	-	<170	3000	<170	<420	<170	<170	<170	11000	-	(f)	<170
GP-7Dup(g)	10-15	29-Dec-94	8240	(f)	<100	<100	1,100	(f)	(f)	<100	3000	(f)	(f)	(f)	(f)	<100	2000	(f)	(f)	<100
S-5B	38-46	6-Jul-95	8010	-	-	<0.5	1.6	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	3.8	-	(f)	<1.0
CPT1-33	28-33	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT1-44	41-44	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-28	25-28	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-44	40-44	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-58	53-58	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-B(g)	53-58	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT3-33	30-33	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT3-44	40-44	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT4-22	18-22	31-Jul-96	8240	<10	<5.0	13	230	<5.0	-	1.5 (h)	230	1.6 (h)	<5.0	<5.0	<5.0	<5.0	580	220	<5.0	8.1
CPT4-28	25-28	31-Jul-96	8240	30	<5.0	<5.0	5.1	<5.0	-	<5.0	5.7	<5.0	<5.0	<5.0	<5.0	<5.0	9.7	<5.0	<5.0	<5.0
CPT4-34	30-34	31-Jul-96	8240	13	<5.0	<5.0	41	<5.0	-	<5.0	56	<5.0	<5.0	<5.0	<5.0	<5.0	150	10	<5.0	1.1 (h)

Table 2
Analytical Results for Volatile Organic Compounds in Groundwater

3695-3723 Haven Avenue Property
Menlo Park, California

Sample Location	Screened Interval Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																	
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane [b]	Trichlorofluoromethane [c]	Vinyl Chloride
EC3-45	42-45	10-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
EC4-15	5-15	9-Oct-96	8010	-	-	<100	<100	140	-	270	3300	<100	<1000	<100	-	<100	2100	-	<100	<200
EC4-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
EC4-43	40-43	7-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	0.57	-	<0.5	<1.0
EC5-15	5-15	9-Oct-96	8010	-	-	<25	94	<25	-	35	470	<25	<250	<25	-	27	1000	-	<2.5	<50
EC5-30	25-30	14-Oct-96	8010	-	-	<0.5	0.83	<0.5	-	<0.5	0.85	<0.5	<5.0	<0.5	-	<0.5	3.1	-	<0.5	<1.0
EC-5-A (g)	25-30	14-Oct-96	8010	-	-	<0.5	0.88	<0.5	-	<0.5	0.88	<0.5	<5.0	<0.5	-	<0.5	3.4	-	<0.5	<1.0
EC5-45	42-45	11-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	1.9	-	<0.5	<1.0
EC6-15	5-15	7-Oct-96	8010	-	-	75	120	<10	-	<10	63	<10	<100	<10	-	<10	530	-	<10	<20
EC6-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	0.97	<0.5	<0.5	<5.0	<0.5	-	1.2	<0.5	-	<0.5	<1.0
EC6-45	42-45	11-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	1.7	-	<0.5	<1.0
EC7-15	5-15	9-Oct-96	8010	-	-	<250	380	<250	-	<250	6500	<250	<2500	<250	-	<250	12000	-	<250	<500
EC7-30	25-30	15-Oct-96	8010	-	-	<0.5	1.4	<0.5	-	<0.5	17	<0.5	<5.0	<0.5	-	<0.5	2.5	-	<0.5	<1.0
EC7-45	42-45	9-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
EC8-15	5-15	9-Oct-96	8010	-	-	<500	660	<500	-	<500	8600	<500	<5000	<500	-	<500	33000	-	<2.5	<1000
EC8-25	23-25	15-Oct-96	8010	-	-	<5.0	10	<5.0	-	<5.0	34	<5.0	<50	<5.0	-	<5.0	220	-	<5	<10
EC8-35	33-35	15-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	0.62	<0.5	<5.0	<0.5	-	<0.5	3	-	<0.5	1.7
EC8-45	42-45	9-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	1.7	<0.5	<5.0	<0.5	-	<0.5	14	-	<0.5	<1.0
EC9-15	5-15	9-Oct-96	8010	-	-	250	530	<25	-	<25	80	<25	<250	<25	-	<25	1340	-	<25	<50
EC-DUP1 (g)	5-15	9-Oct-96	8010	-	-	260	510	<25	-	<25	76	<25	<250	<25	-	<25	1300	-	<25	<50
EC9-25	23-25	15-Oct-96	8010	-	-	<1.2	9.2	<1.2	-	<1.2	2.5	<1.2	<12	<1.2	-	<1.2	77	-	<1.2	<2.5
EC9-34	32-34	15-Oct-96	8010	-	-	<0.5	0.6	<0.5	-	<0.5	1.7	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
EC9-45	40-45	8-Oct-96	8010	-	-	<0.5	0.53	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	2.7	-	<0.5	<1.0
EC10-15	5-15	10-Oct-96	8010	-	-	<2.5	160	<2.5	-	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	<2.5	-	<2.5	<5.0
EC10-25	23-25	9-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0

Erler & Kalinowski, Inc.
10 March 1999

Table 2
Analytical Results for Volatile Organic Compounds in Groundwater

3695-3723 Haven Avenue Property
Menlo Park, California

Sample Location	Screened Interval Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane [b]	Trichlorofluoromethane [c]	Vinyl Chloride
BC10-37	35-37	9-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
BC10-45	42-45	8-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
BC11-18	15-18	14-Oct-96	8010	-	-	<5.0	110	<5.0	-	<5.0	280	<5.0	<50	<5.0	-	<5.0	<5.0	-	<5	19
BC11-35	30-35	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	7.8	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	2.6
BC11-45	39-45	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
BC-77	5-15	23-Apr-98	8010	-	-	<500	<500	<500	<500	<500	11000	<500	<5000	<500	-	<500	11000	-	<500	<1000
BC-79	21-25	23-Apr-98	8010	-	-	<500	<250	<250	<250	<250	<250	<250	<2500	<250	-	<250	9900	-	<250	<500
BC-81	10	8-Sep-98	8010	-	-	2300	<500	<500	<500	<500	<500	<500	<5000	<500	-	<500	19000	-	<250	<1000
BC-81	20	8-Sep-98	8010	-	-	<5000	<5000	<5000	<5000	<5000	<5000	<5000	<50000	<5000	-	<5000	260000	-	<5000	<10000
MW-1	5.5-15.5	4-Oct-94	8240	-	460	250	310	<5.0	5	<5.0	350	<5.0	<5.0	<5.0	-	<5.0	280	-	<5.0	<10
MW-1	5.5-15.5	8-Aug-96	8010	-	-	380	310	<5.0	<5.0	<5.0	260	<5.0	<50	<5.0	-	<5.0	318	-	<5.0	<10
MW-1	5.5-15.5	17-Sep-97	8010	-	-	460	250	<12	<12	<12	220	<12	<125	<12	-	<12	290	65	<12	<25
MW-1	5.5-15.5	17-Apr-98	8010	-	-	150	100	<5.0	<5.0	<5.0	98	<5.0	<50	<5.0	-	<5.0	130	-	<5	<10
MW-2	5.5-15.5	4-Oct-94	8240	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	23000	<5.0	<5.0	<5.0	-	<5.0	140000	-	<5.0	<10
MW-2	5.5-15.5	8-Aug-96	8010	-	-	<2500	<2500	<2500	<2500	<2500	11000	<2500	<25000	<2500	-	<2500	91000	-	<2500	<5000
MW-2	5.5-15.5	18-Sep-97	8010	-	-	<500	<500	<500	<500	<500	8400	<500	<5000	<500	-	<500	26000	<1000	<500	<1000
MW-2	5.5-15.5	17-Apr-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	5000	<2500	<25000	<2500	-	<2500	140000	-	<2500	<5000
MW-2	5.5-15.5	8-Sep-98	8010	-	-	<1250	<1250	<1250	<1250	<1250	7100	<1250	<12500	<1250	-	<1250	29000	-	<1250	<2500
MW-3	5.5-15.5	4-Oct-94	8240	-	<5.0	90	110	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	9	-	<5.0	<10
MW-3	5.5-15.5	8-Aug-96	8010	-	-	<2.5	6.9	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	130	-	<2.5	<5.0
MW-3	5.5-15.5	17-Sep-97	8010	-	-	100	110	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	8.5	6.6	<2.5	<5.0
MW-3	5.5-15.5	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	3	-	<0.5	<1.0
MW-4	6-16	8-Aug-96	8010	-	-	77	140	<10	<10	<10	14	<10	<100	<10	-	<10	750	-	<10	<20
MW-4D (g)	6-16	8-Aug-96	8010	-	-	82	140	<10	<10	<10	15	<10	<100	<10	-	<10	740	-	<10	<20
MW-4	6-16	1-Nov-96	8010	-	-	75	100	<12	<12	<12	15	<12	<125	<12	-	<12	710	-	<12	<25

Table 2
Analytical Results for Volatile Organic Compounds in Groundwater

3695-3723 Haven Avenue Property
Menlo Park, California

Sample Location	Screened Interval Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (b)	Trichlorofluoromethane (c)	Vinyl Chloride
MW-4	6-16	18-Sep-97	8010	-	-	82	110	<10	<10	<10	14	<10	<300	<10	-	<10	430	200	<10	<20
MW-4	6-16	17-Apr-98	8010	-	-	39	90	<12	<12	<12	16	<12	<125	<12	-	<12	590	-	<12	<25
MW-5D	24-34	1-Nov-96	8010	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	-	0.73	3.1	-	<0.5	<1.0
MW-5D	24-34	18-Sep-97	8010	-	-	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<5.0	<0.5	-	1	8.7	5.9	<0.5	<1.0
MW-5D	24-34	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	2.6	<0.5	<0.5	<5.0	<0.5	-	6.8	16	-	<0.5	<1.0
MW-5D (g)	24-34	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<5.0	<0.5	-	5.4	17	-	<0.5	<1.0
MW-6B	21-31	1-Nov-96	8010	-	-	<100	<100	<100	<100	<100	250	<100	<1000	<100	-	<100	4500	-	<100	<200
MW-6B	21-31	17-Sep-97	8010	-	-	<50	60	<50	<50	<50	180	<50	<50	<50	-	<50	2600	2200	<50	<100
MW-6D	21-31	17-Apr-98	8010	-	-	<25	<25	<25	<25	<25	38	<25	<250	<25	-	<25	1200	-	<25	<50
MW-6B	21-31	8-Sep-98	8010	-	-	<100	<100	<100	<100	<100	120	<100	<1000	<100	-	<100	3500	-	<100	<200
MW-7D	18-28	1-Nov-96	8010	-	-	1000	<1000	<1000	<1000	<1000	<1000	<1000	<10000	<1000	-	<1000	37000	-	<1000	<2000
MW-7B (g)	18-28	1-Nov-96	8010	-	-	1000	<1000	<1000	<1000	<1000	<1000	<1000	<10000	<1000	-	<1000	3800	-	<1000	<2000
MW-7B	18-28	18-Sep-97	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	31000	<5000	<2500	<5000
MW-7BD (g)	18-28	18-Sep-97	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	30000	<5000	<2500	<5000
MW-7B	18-28	17-Apr-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	51000	-	<2500	<5000
MW-7B	18-28	8-Sep-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	49000	-	<2500	<2500

Notes
(a) Depth of groundwater interval sampled in feet below ground surface ("ft bgs").
(b) 1,1,2-Trichloro-1,2,2-Trifluoroethane = Freon 113
(c) Trichlorofluoromethane = Freon 11
(d) Less than symbol ("<") denotes that analyte was not present above the laboratory detection limit indicated.
(e) A hyphen (-) indicates that no analysis was performed for the chemical.
(f) Sample collected by Geomatrix, 1995; value unknown.
(g) Duplicate sample.
(h) Laboratory indicates this result is an estimated value.

Table 3
Risk-Based Action Levels for Soil

3695-3723 Haven Avenue Property
Menlo Park, California

Chemical	Risk-Based Action Level for Soil (mg/kg)
Acetone	1000
Benzene	0.50
Carbon Tetrachloride	0.50
Chloroform	0.50
1,2-Dichlorobenzene	50
1,1-Dichloroethane	5.0
1,2-Dichloroethane	0.50
1,1-Dichloroethene	5.0
cis-1,2-Dichloroethene	500
trans-1,2-Dichloroethene	50
Methylene Chloride	0.50
Tetrachloroethene	0.50
Toluene	5.0
1,1,1-Trichloroethane	5.0
Trichloroethene	3.2 (b)
1,1,2-Trichloro-1,2,2-Trifluoroethane	1000
Vinyl Chloride	0.075 (b)

Note:
(a) Risk-based action level concentrations rounded to two significant digits.
(b) These volatile organic compounds have been detected in Site soil at concentrations greater than the risk-based action level.

Table 4

Risk-Based Action Levels for Groundwater

3695-3723 Haven Avenue Property

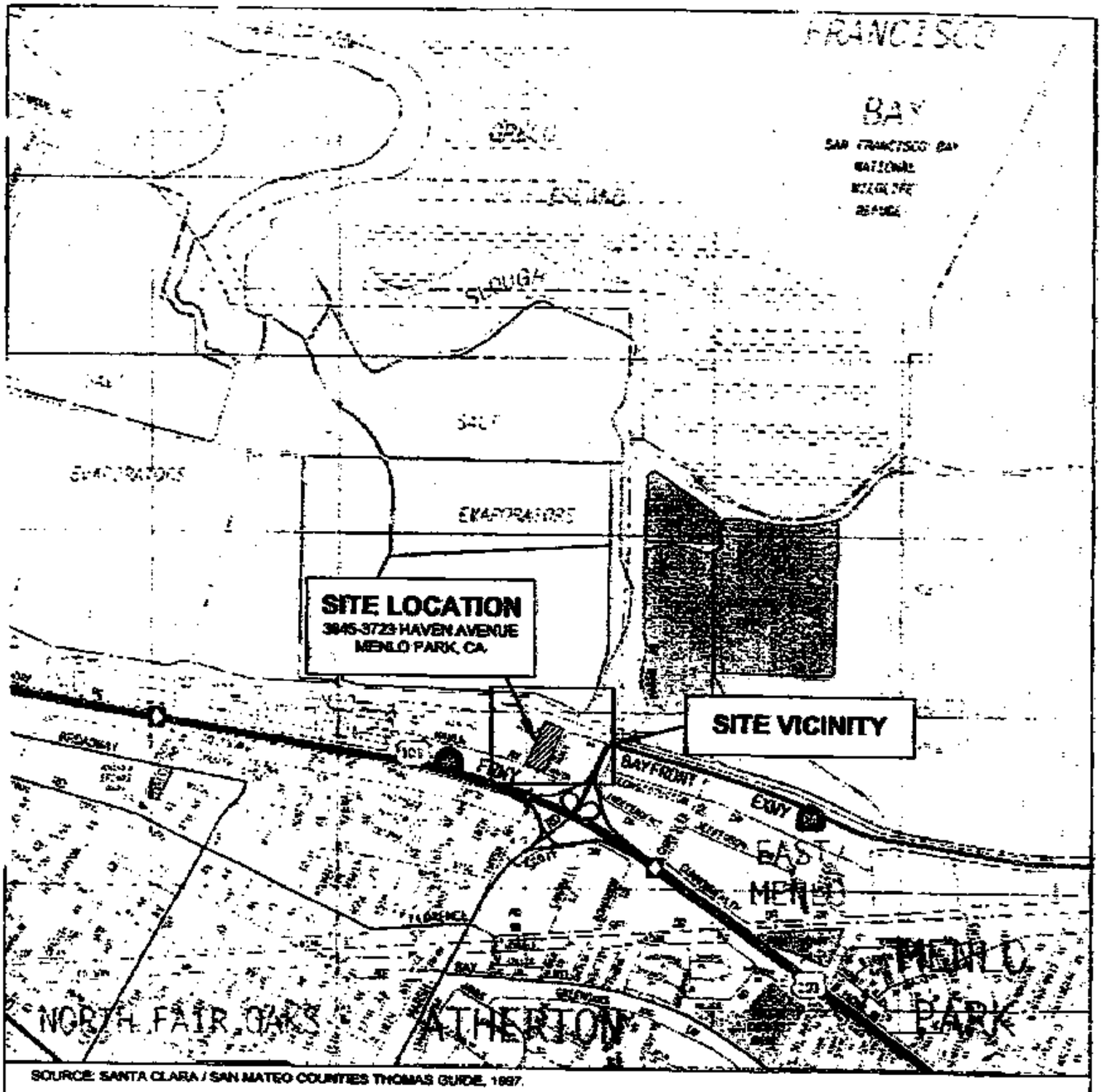
Menlo Park, California

Chemical	Risk-Based Action Level for Groundwater (ug/L)
Acetone	500
Benzene	1,000
Carbon Tetrachloride	2,600
Chloroform	2,000
1,2-Dichlorobenzene	500
1,1-Dichloroethane	510
1,2-Dichloroethane	500
1,1-Dichloroethene	520
cis-1,2-Dichloroethene	50,000
trans-1,2-Dichloroethene	510
Methylene Chloride	500
Tetrachloroethene	510
Toluene	510
1,1,1-Trichloroethane	510
Trichloroethene	8,000 (b)
1,1,2-Trichloro-1,2,2-Trifluoroethane	29,000
Vinyl Chloride	500 (b)

Notes

(a) Risk-based action level concentrations rounded to two significant digits.

(b) These volatile organic compounds have been detected in Site groundwater at concentrations greater than the risk-based action level.



SOURCE: SANTA CLARA / SAN MATEO COUNTIES THOMAS GUIDE, 1997.

N

0 2400 4800

(Approximate Scale in Feet)

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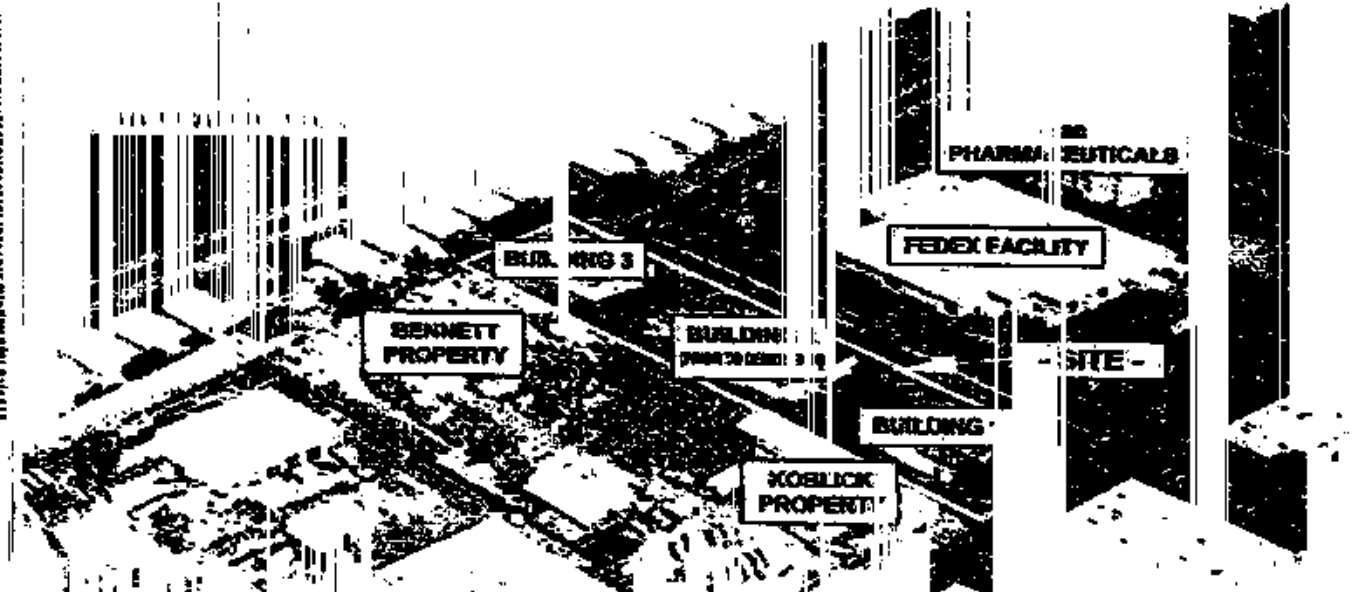
Site Location

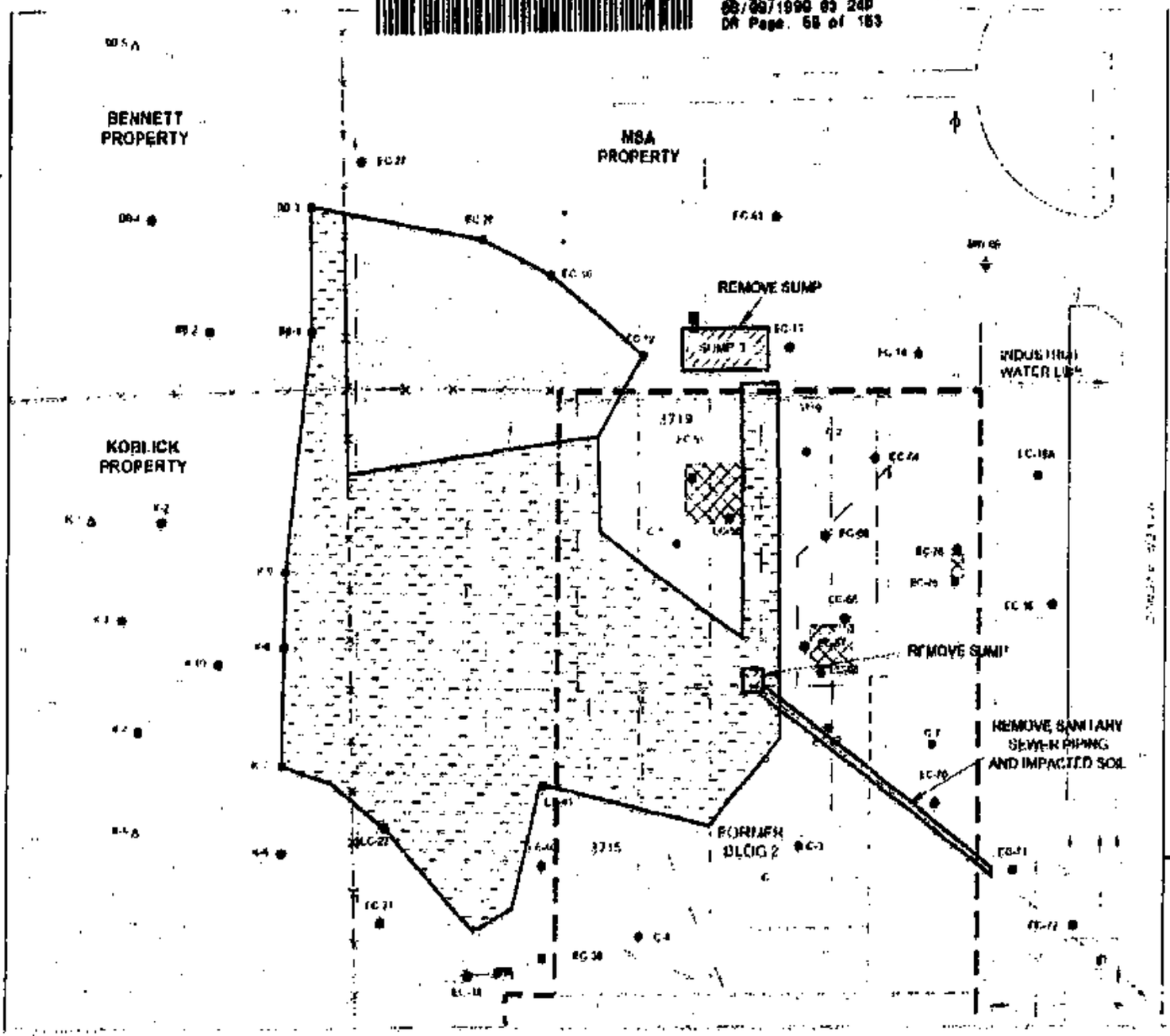
3645–3723 Haven Avenue
Menlo Park, CA
March 1999
EKI 960007.07

Figure 1

FORMER MENLO
PARK LANDFILL


FEDEX FACILITY
SITE
BENNETT PROPERTY
BUILDING
KOBLICK PROPERTY

1999-135815
09/09/1999 03 24P
DR Page 68 of 183



N

0 20 40

(Approximate Scale in Feet)

LEGEND

- Groundwater Monitoring Well Screened in the A-Zone (ESE, 1994; TRI, August 1998)
- Groundwater Monitoring Well Screened in the B-Zone (October, 1998)
- Envirо-Core Borehole with Soil Sample (October 1998; April 1999)
- Hand-Auger Soil Sample (May and June 1997)
- Incantation in Asphalt
- Pole
- Drain
- Manhole Cover or Drain
- Overhead Line
- Power Pole
- Underground Pipe
- Elevation
- Underground Electronic Line
- Possible Near Drain Location
- Sump Location
- Possible Former Degreaser Location
- Extent of Soil to Be Excavated to Approximately 6 Feet Below Existing Grade
- Extent of Soil to Be Excavated to Approximately 4 Feet Below Existing Grade

Notes:

1. All locations are approximate.
2. Exceedance of soil samples collected as part of Remedial Investigations from within the excavation area are not shown on this figure.
3. Locations of subsurface utilities, pumps, conduits, etc. from "Geophysical Investigation at 3645-3723 Haven Avenue, Menlo Park, California" by JP Associates, dated 24 June 1997.

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Estimated Extent of Soil Excavation

3645-3723 Haven Avenue and Vicinity
Menlo Park, CA
March 1999
EKI 96C067.07
Figure 5

1999-138815
08/09/1999 03:24P
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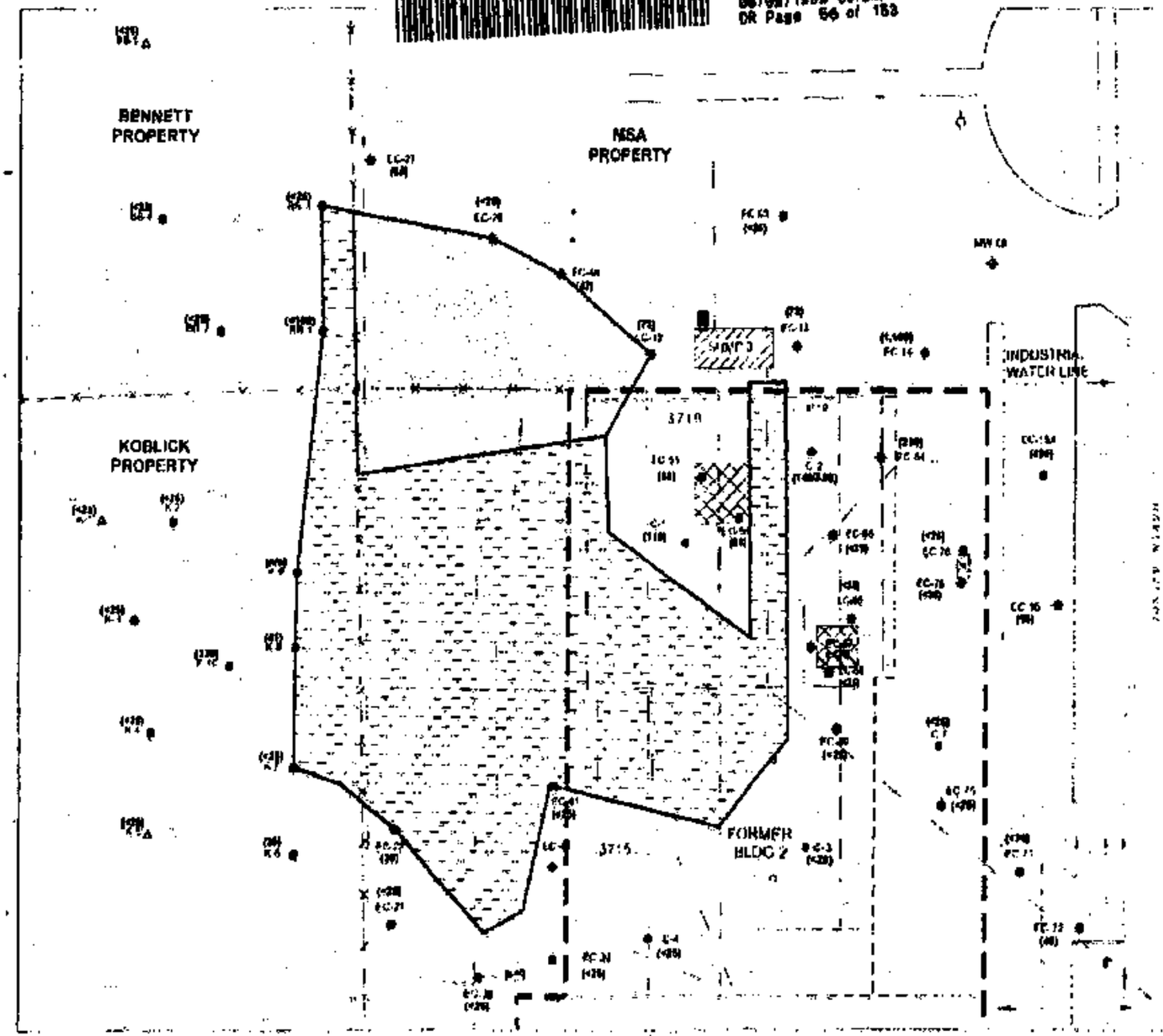

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Residual TCE Concentrations (ug/kg) Detected in Soils Between 1 and 4 Foot Depths

3685, 3723 Haven Avenue and Vicinity
Menlo Park, CA
March 1999
EKI 960007.01
Figure 4

1999-135615
08/09/1999 03:24P
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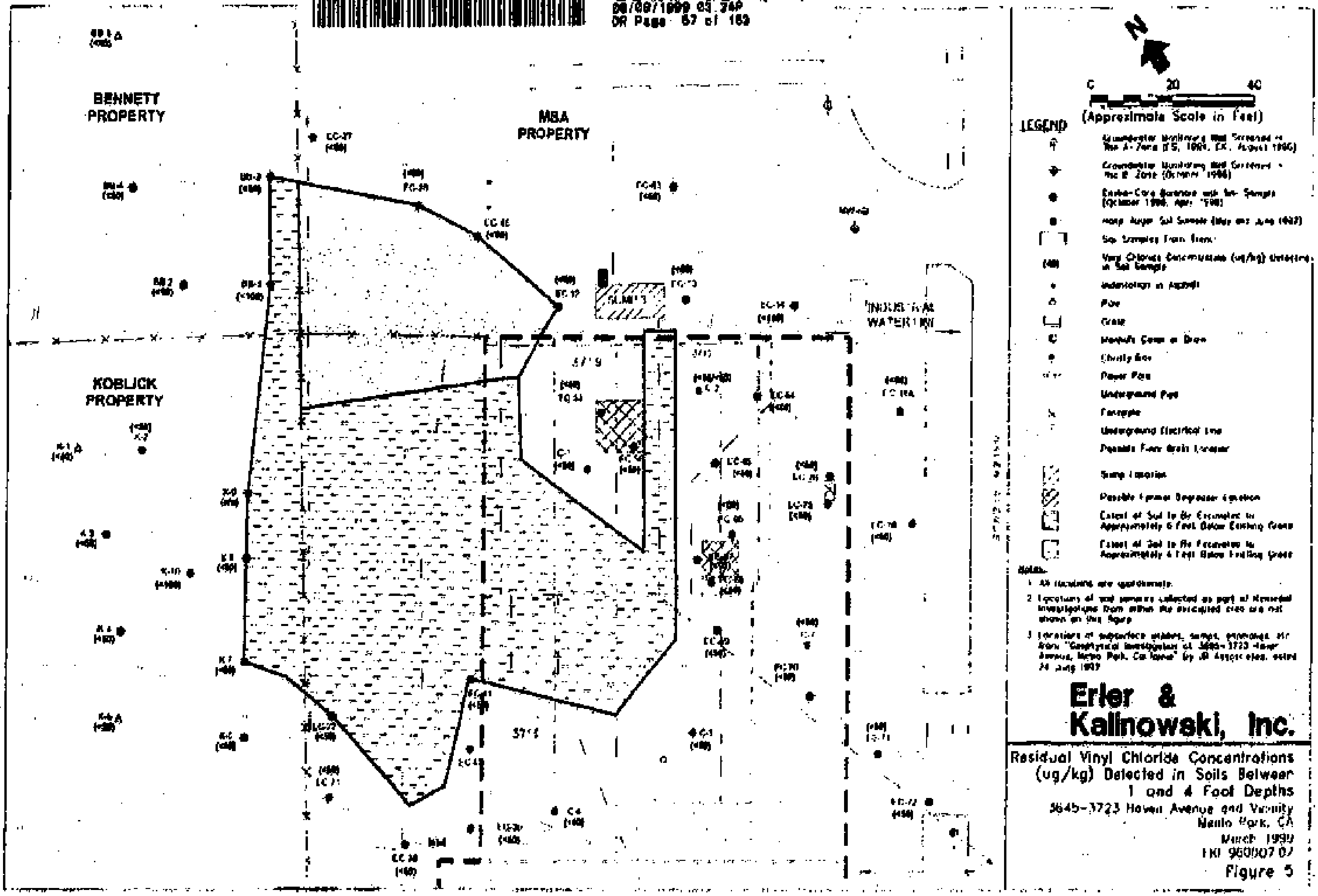

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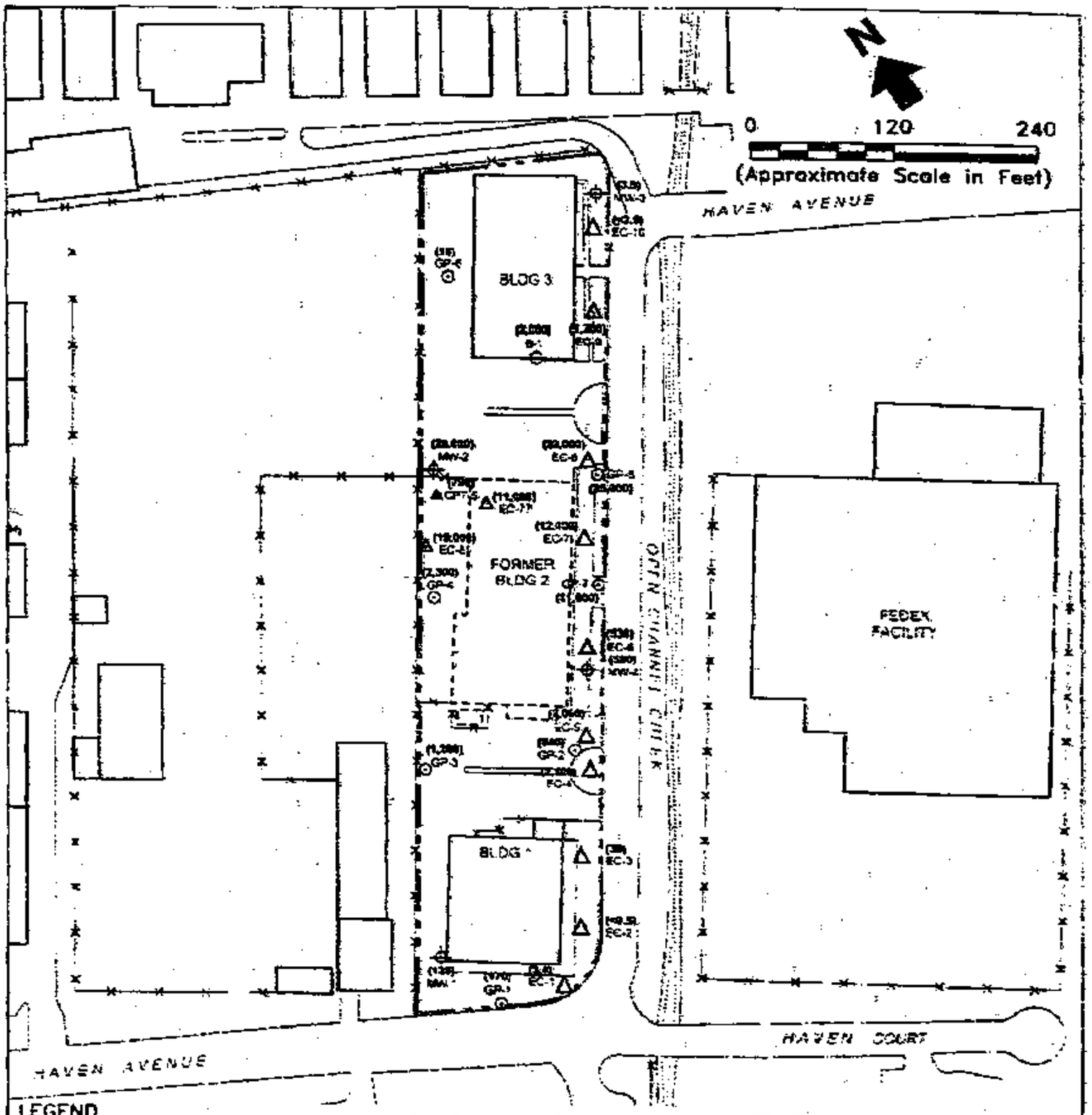
Residual Vinyl Chloride Concentrations (ug/kg) Detected in Soils Between 1 and 4 Foot Depths

3645–3723 Haven Avenue and Vicinity
Menlo Park, CA

March 1999
EKI 960007.07

Figure 5



LEGEND

- Groundwater Monitoring Well Screened In The A-Zone (ESI, 1994, EKI, August 1996)
- Grab Groundwater Sample (ESI, 1994)
- Geoprobe Sample From 10-15 feet bgs (Geomatrix, 1995)
- CPT/PIPP Sample (July and August, 1996)
- Grab Groundwater Sample (October 1996)
- Grab Groundwater Sample (April and September 1998)
- (TCE) TCE Concentration (ug/L) Detected in Groundwater Sample

Notes:

1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-38 feet bgs.
4. bgs = below ground surface.
5. CPT/PIPP = Cone Penetrometer Test/Push in PVC Piezometer.
6. TCE = Trichloroethene

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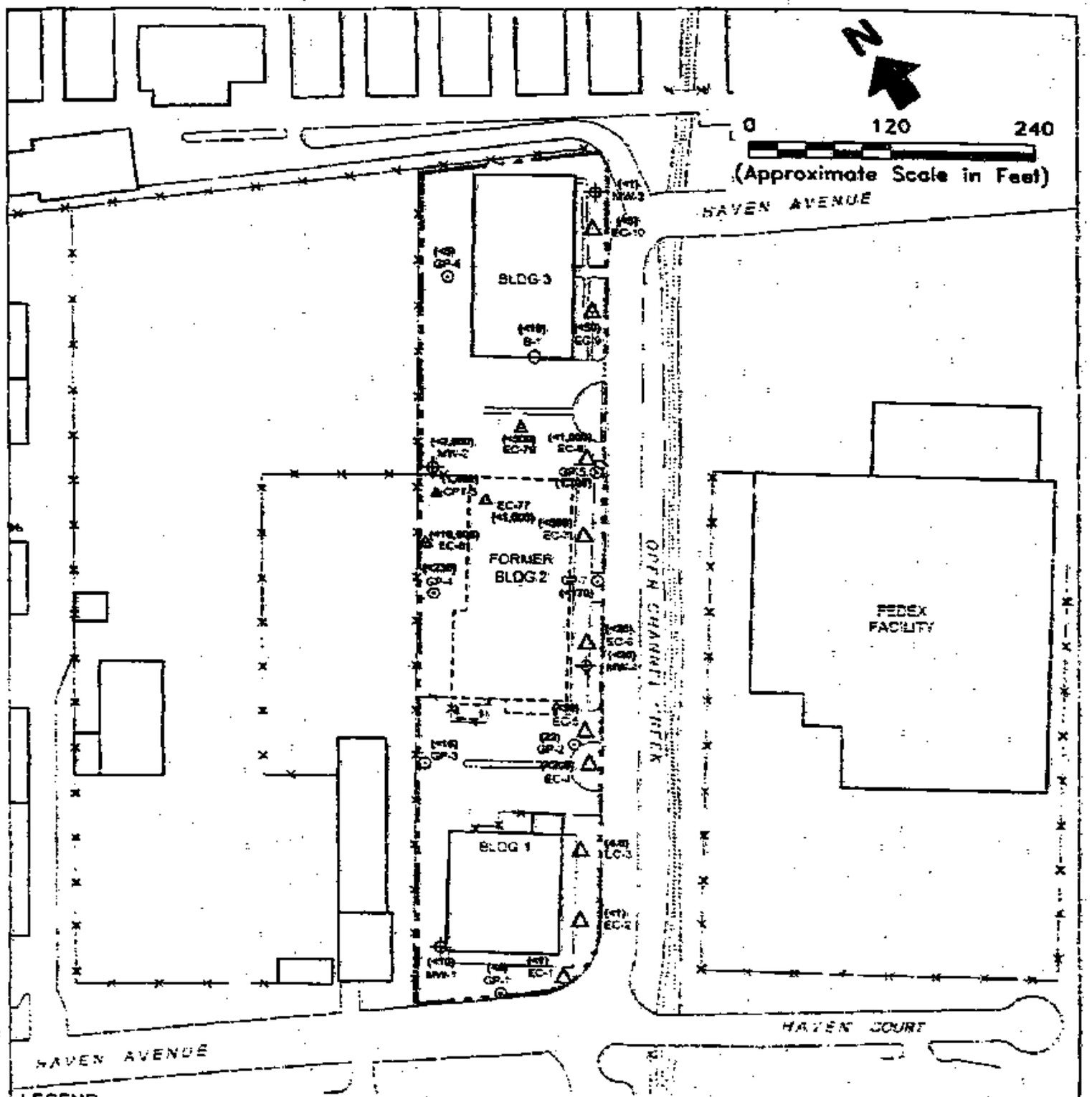
Concentrations of TCE (ug/L) Detected in Groundwater Samples Collected From the A-Zone

3645-3723 Haven Avenue and Vicinity
Menlo Park, CA

March 1999
EKI 960007.07

Figure 6



LEGEND

- Groundwater Monitoring Well Screened In The A-Zone (ESI, 1994; EKI, August 1996)
- Grab Groundwater Sample (ESI, 1994)
- Geoprobe Sample From 10-15 feet bgs (Geomatrix, 1995)
- CPT/PIPP Sample (July and August 1996)
- Grab Groundwater Sample (October 1996)
- Grab Groundwater Sample (April and September 1998)
- (170) Vinyl Chloride Concentration (ug/L) Detected in Groundwater Sample

Notes:

1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-38 feet bgs
4. bgs = below ground surface.
5. CPT/PIPP = Cone Penetrometer Test/Push In PVC Piezometer.

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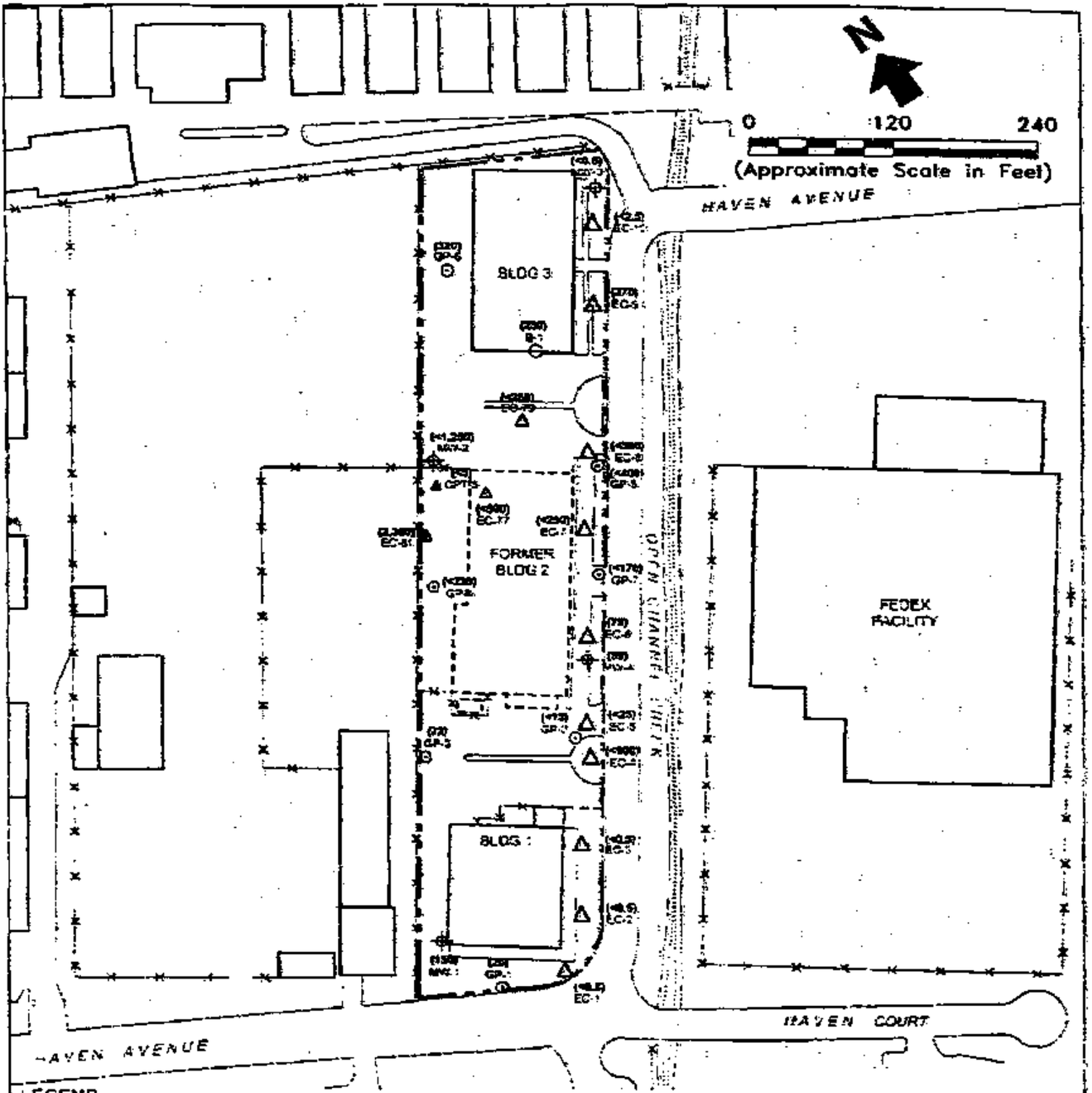
Concentrations of Vinyl Chloride (ug/L) Detected in Groundwater Samples Collected From the A-Zone

3645-3723 Haven Avenue and Vicinity
Menlo Park, CA

March 1999
EKI 960007.07

Figure 7



LEGEND

- Groundwater Monitoring Well Screened In The A-Zone (ESI, 1994; EKI, August 1996)
- Grab Groundwater Sample (ESI, 1994)
- Geoprobe Sample From 10-15 feet bgs (Geomatrix, 1995)
- CPT/PiPP Sample (July and August 1996)
- Grab Groundwater Sample (October 1996)
- Grab Groundwater Sample (April and September 1998)
- (170) Carbon Tetrachloride Concentration (ug/L) Detected in Groundwater Sample

Notes:

1. All locations are approximate
2. The A-Zone extends from 0 to approximately 15 feet bgs
3. The B-Zone extends from approximately 15-35 feet bgs
4. bgs = below ground surface
5. CPT/PiPP = Cone Penetrometer Test/Push In PVC Piezometer
6. TCE = Trichloroethene

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Concentrations of Carbon Tetrachloride (ug/L) Detected in Groundwater Samples Collected From the A-Zone
3645-3723 Haven Avenue and Vicinity
Menlo Park, CA

March 1999
EKI S60007.07

Figure 8

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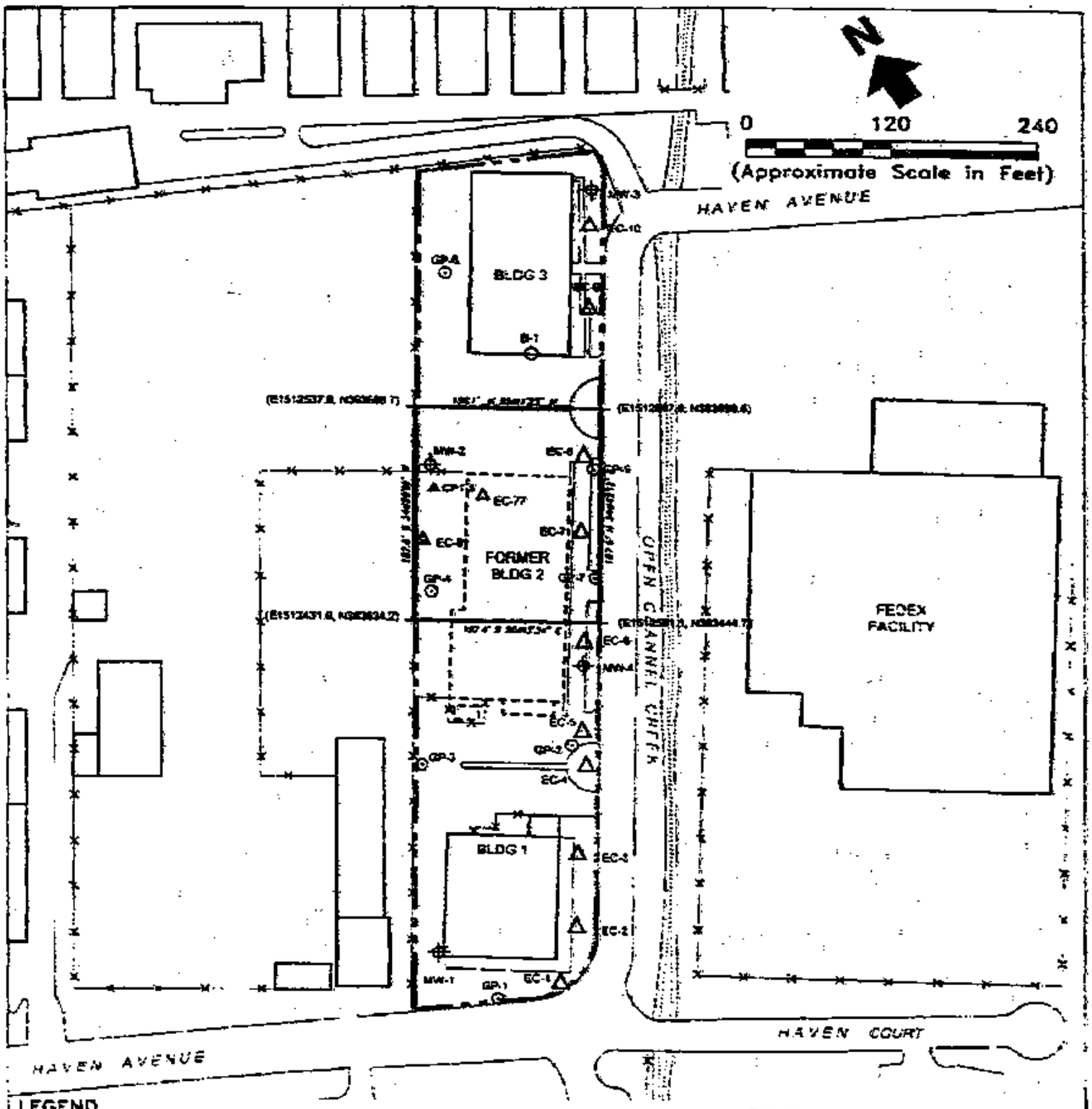

LEGEND

- Groundwater Monitoring Well Screened in The A-Zone (ESI, 1994; EKI, August 1996)
- Grab Groundwater Sample (ESI, 1994)
- Geoprobe Sample From 10-15 feet bgs (Geomatrix, 1995)
- CPT/PIPP Sample (July and August 1996)
- Grab Groundwater Sample (October 1996)
- Grab Groundwater Sample (April and September 1998)
- Lateral Extent of A-Zone Groundwater Exceeding Risk-Based Action Levels
- N3834288 Northing Coordinate
- E1512597.1 Easting Coordinate

Notes:

1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-38 feet bgs.
4. bgs = below ground surface.
5. CPT/PIPP = Cone Penetrometer Test/Push in PVC Piezometer.

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A-Zone Groundwater Exceeding Risk-Based Action Levels

3645-3723 Haven Avenue and Vicinity
Menlo Park, CA
March 1999
EKI 960007.07
Figure 9

Erler &
Kalinowski, Inc.

ATTACHMENT A

(Appendix A of Feasibility Study/ Remedial Action Plan, dated 12 March 1999)

HUMAN HEALTH RISK ASSESSMENT

3695 - 3723 HAVEN AVENUE
MENLO PARK, CALIFORNIA

Prepared by:

Erler & Kalinowski, Inc.
1730 South Amphlett Blvd., Suite 320
San Mateo, CA 94402

12 March 1999
EKI 960007.07

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APPENDIX A

HUMAN HEALTH RISK ASSESSMENT

3695-3723 Haven Avenue Property
Menlo Park, California
(EKI 960807.07)

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EXECUTIVE SUMMARY

This human health risk assessment was performed to:

- Evaluate potential impacts to human health by chemicals of concern ("COCs") present in soil and groundwater at the commercial/industrial property located at 3695-3723 Haven Avenue, Menlo Park, California (the "Site"); and,
- Develop risk-based action levels for soil and groundwater at the Site.

An analysis of risk was conducted assuming hypothetical exposure scenarios for potential future occupants of the Site. Occupants were subdivided into three hypothetical receptor populations based on their expected locations and activities. Each hypothetical population is described herein with a unique set of environmental and physiological assumptions, and was thus assumed to be exposed to different concentrations of chemicals for different amounts of time. All assumptions used in the risk assessment are quantified in the attached tables.

Baseline risks were calculated for the following three hypothetical receptor populations at the Site:

- Future commercial/industrial building occupants, who will work indoors on-Site over a long period of time ("Indoor Workers");
- Future maintenance personnel such as groundskeepers, who will labor primarily outdoors over a long period of time ("Maintenance Workers").
- Workers involved in the construction of new buildings or subsurface utilities on-Site, who will occupy the Site for much more limited periods ("Construction Workers"); and

A summary table of calculated baseline risks to each of the hypothetical future populations is shown below (Table A-I). These values represent the estimated total (a) Hazard Index for non-carcinogenic adverse health affects, and (b) incremental excess carcinogenic risk ("Cancer Risk"), to the hypothetical populations due to current Site conditions. In general, potential exposure pathways considered in the calculation of these baseline risks include exposure through incidental ingestion of soil, dermal contact with soil, inhalation of vapors from soil, and inhalation of vapors from groundwater.

One of the assumptions regarding the future Indoor Worker receptor population is that, unlike future Maintenance and Construction Workers, its members never work directly with soil. Thus, incidental ingestion and dermal contact with contaminated soil are not considered exposure pathways for this population. Inhalation of volatile organic

compounds evaporating from soil and groundwater were considered as complete pathways for all hypothetical populations.

Hypothetical Population	Baseline Hazard Index	Baseline Cancer Risk
Future Indoor Workers	0.08	1.9×10^{-5}
Future Maintenance Workers	0.03	4.5×10^{-6}
Construction Workers	0.01	1.0×10^{-7}

Table A-I. Summary of Baseline Risks to Hypothetical Future Site Populations.

A more complete summary of estimated Hazard Index and Cancer Risk for the above populations may be found in Tables A-19, A-20, and A-21. Risk calculations are further documented in Tables A-9 through A-18.

Risk Calculations

Table A-19 is a summary of estimated baseline risks for Indoor Workers. The most significant chemical/pathway combination for Indoor Workers, in terms of Cancer Risk, is inhalation of TCE evaporating from groundwater. The non-carcinogenic Hazard Index for this population is dominated by inhalation of vinyl chloride, trichloroethene ("TCE"), and *cis*-1,2-dichloroethene ("*cis*-1,2-DCE") from groundwater.

Baseline estimated Hazard Indices and Cancer Risk for Maintenance Workers through all pathways are listed in Table A-20. The most significant chemical/pathway combination for the Maintenance Worker receptor population is inhalation of vinyl chloride volatilizing from soil.

Baseline estimated Hazard Indices and Cancer Risk for all Construction Worker exposure pathways are listed in Table A-21. The most significant chemical/pathway combination, both in terms of Cancer Risk and the non-carcinogenic Hazard Index for the Construction Worker receptor population is inhalation of vinyl chloride volatilizing from soil.

Calculation of Risk-Based Action Levels

Using the baseline risks calculated for the hypothetical receptor populations at the Site, risk-based action levels for soil and groundwater have been calculated, as discussed below.

Risk-based action levels for soil and groundwater were calculated to apportion post-remediation risk such that overall Cancer Risk to the Indoor Worker, Maintenance Worker, and Construction Worker are each at or below 1.0×10^{-5}, and overall Hazard Index is at or below 1.0.

Table A-II is a listing of the risk-based action levels for those chemicals found in Site soil at concentrations exceeding the risk-based action levels. These include vinyl chloride and TCE. A more complete listing of risk-based action levels in soil for all chemicals of concern is provided in Table A-22.

VOLATILE ORGANIC COMPOUND	RISK-BASED ACTION LEVEL IN SOIL (ug/kg)
vinyl chloride	75
trichloroethene	3,200

Table A-II. Risk-Based Action Levels for VOCs in Soil

Table A-III is a summary of risk-based action levels for chemicals with maximum concentrations found in Site groundwater exceeding the risk-based action levels, i.e. TCE and vinyl chloride. Table A-23 is a more detailed enumeration of the calculated groundwater risk-based action levels.

VOLATILE ORGANIC COMPOUND	RISK-BASED ACTION LEVEL IN GROUNDWATER (ug/L)
vinyl chloride	500
trichloroethene	8,000

Table A-III. Risk-Based Action Levels for VOCs in Groundwater.

The method used for apportioning risk was to allocate most of the "available" risk to the more hazardous chemicals and those more commonly found at the Site. This approach minimizes the volume of soil and groundwater potentially requiring remediation, while keeping future hypothetical populations' estimated risks below target levels. Concentrations of vinyl chloride and TCE have been encountered in soil and groundwater samples from the Site in exceedence of their risk-based action levels. Other chemicals of concern have been discovered at concentrations consistently below the action levels.

Tables A-24, A-25, and A-26 are summaries of Hazard Index and Cancer Risk to each of the three hypothetical future worker populations at the calculated risk-based action levels

for soil and groundwater. Cumulative Hazard Indices and Cancer Risks are equal to or below 1.0 and 1.0×10^{-5}, respectively, in each case. Therefore, the risk-based action levels for soil and groundwater presented in Tables A-II and A-III result in an acceptable level of risk for future potentially exposed populations.

Future installation of monitoring wells (or other on-Site environmental work) may involve the collection of soil or groundwater samples for chemical analysis. Such analyses could potentially indicate the presence of chemical concentrations different from the current dataset. In this case, risk-based action levels for the Site may be recalculated to reflect the improved understanding of the distribution and concentrations of chemicals in Site soil or groundwater.

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1. INTRODUCTION

This appendix presents a human health risk assessment that was performed to:

- evaluate potential impacts to human health by chemicals of concern ("COCs") present in soil and groundwater at the commercial/industrial property located at 3705-3723 Haven Avenue, Menlo Park, California (the "Site"), and
- develop risk-based action levels for soil and groundwater at the Site.

Note that baseline risks at the Site were calculated previously for development of risk-based action levels for soil excavation using data collected prior to April 1998 (EKI 1998c; EKI 1999b). The methods and assumptions used in the risk calculations described herein are consistent with the previous risk calculations, with the following exceptions. The previous risk assessment used the most conservative measured values of vadose and capillary zone saturated porosities for Site soil. The calculated risks presented herein have instead assumed Site-average values for each parameter. Some additional groundwater data were collected for the Site after April 1998. Therefore, the data set used herein to calculate the baseline risk at the Site has been updated to include all the soil and groundwater data for the Site available as of February 1999. Also, the proposed risk-based action levels have now been developed to consider VOCs in both soil and groundwater.

The risk assessment was conducted assuming hypothetical exposure scenarios for future occupants of the Site. Occupants are subdivided into several receptor populations based on their expected locations and activities. Each group was assumed to be subjected to different concentrations of chemicals for different amounts of time. All assumptions used in the risk assessment are quantified in the attached tables.

This report is divided into three major sections. The first discusses criteria used to define each of the future occupant populations, outlines the chemicals present at the Site and their representative concentrations, and explains the toxicity criteria used in calculations. The second section presents and discusses the calculation of risk-based cleanup goals at the Site, and the third section discusses conservative assumptions used and uncertainty involved in the calculations.

This risk assessment was performed using guidelines published by the U.S. Environmental Protection Agency ("USEPA"), the California Environmental Protection Agency ("Cal-EPA"), and the American Society for Testing and Materials ("ASTM"), in the following documents:

- USEPA. December 1989, *Risk Assessment Guidance for Superfund. Volume 1. Human Health Evaluation Manual.*

- Cal-EPA, July 1992, *Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities.*

- ASTM, September 1995, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites ("RBCA").*

Although all three documents are used for guidance in the risk assessment calculations, RBCA was the source of transport models used to calculate indoor and outdoor air exposure point concentrations for the assessment.

Chemicals of concern at the Site include halogenated volatile organic compounds ("VOCs"), acetone, and the aromatics benzene and toluene. Ordered by frequency of detection, the most common contaminants in soil and groundwater are trichloroethene ("TCE"), *cis*-1,2-dichloroethene ("cis-1,2-DCE"), and 1,1,2-trichloro-1,2,2-trifluoroethane ("CFC-113"). In groundwater, chloroform is also a common constituent. Based on the current set of samples, more chemicals appear to be present at detectable levels in groundwater than in soil.

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2. ASSESSMENT OF BASELINE HUMAN HEALTH RISKS

The objective of a risk assessment for a particular location is to calculate the potential for adverse health effects, caused by chemicals present at the Site, to hypothetical current and future populations that may use the Site. The Site is currently unoccupied. Therefore, risk calculations in this report concern only hypothetical future populations. This section presents a discussion of the following topics:

- Potentially exposed receptor populations and relevant exposure pathways,
- Chemicals of concern present in soil and groundwater,
- Toxicity criteria for the chemicals of concern used in risk calculations,
- Assumptions used to calculate representative and exposure-point contaminant concentrations, and
- Results of the risk calculations.

2.1 Identification of Potentially Exposed Receptor Populations and Relevant Exposure Pathways

The Site is a commercial/industrial property, previously used for the manufacture of polished silicon wafers. It is located in a low-elevation, industrial/commercial area, approximately one hundred feet south of the salt evaporation ponds at the margin of San Francisco Bay. Two buildings are located on the Site; both are currently vacant. Populations at risk of potential exposure to chemicals of concern at the Site are therefore limited to hypothetical future populations of workers, which for the purpose of this study are grouped into three categories:

- Future commercial/industrial building occupants, who will work indoors on-Site over a long period of time ("Indoor Workers");
- Future maintenance personnel such as groundskeepers, who will labor primarily outdoors over a long period of time ("Maintenance Workers"); and
- Workers involved in the construction of new buildings or subsurface utilities on-Site, who will occupy the Site for much more limited periods ("Construction Workers").

Based on current land use and zoning, no residential, health-care, or educational facilities are expected to be built on-Site. Thus, all potentially exposed receptor populations in the risk assessment are assumed to be adults. Each potentially exposed future population at the Site has a set of possible exposure mechanisms, or pathways, through which it may come in contact with various chemicals of concern. These exposure pathways are dependent upon the type of activity or tasks expected from the population.

Oral ingestion of groundwater is a potential exposure pathway that was considered and rejected. Analytical results for samples of groundwater from the Site range from 8,600 mg/L to 154,200 mg/L total dissolved solids ("TDS") [EKI, 1999a], which classifies the water as brackish to saline [Drever, 1988]. The groundwater beneath the Site cannot be considered a potential source of drinking water because these values exceed the California state TDS guideline of 3,000 mg/L for drinking water sources (CRWQCB, 1995).

Dermal contact with groundwater was also rejected. Historic depth to groundwater at the Site is six to eight feet below ground surface ("bgs") [EKI, 1997a]. Expected depth of excavation for future construction utility installation or repair is estimated to be less than six to eight feet, so direct dermal exposure to groundwater is not treated as a valid exposure pathway for any of the hypothetical future Site receptor populations.

For the purpose of calculating baseline risk, parameters assumed in this study for each of the receptor populations are the following:

- INDOOR WORKERS
  - Exposure Pathways:
    - Inhalation of volatiles from groundwater
    - Inhalation of volatiles from soil
  - Exposure Parameters:
    - Frequency: 250 working days per year, none doing excavation work; all days spent working indoors
    - Duration: 25 years
- MAINTENANCE WORKERS
  - Exposure Pathways:
    - Inhalation of volatiles from soil
    - Inhalation of volatiles from groundwater
    - Dermal contact with soil
    - Incidental ingestion of soil
  - Exposure Parameters:
    - Frequency: 250 working days per year; 5 days of excavation work, 245 days of non-excavation work; all working days spent outside
    - Duration: 25 years

- CONSTRUCTION WORKERS

- Exposure Pathways:
  - Inhalation of volatiles from soil
  - Inhalation of volatiles from groundwater
  - Dermal contact with soil
  - Incidental ingestion of soil

- Exposure Parameters:
  - Frequency: 250 working days per year, 87 spent doing excavation work
    - Duration: 4 months

Unlike the Indoor Worker population, Maintenance and Construction Workers are assumed to have contact with Site soil in the course of their jobs during excavation work. Thus, dermal contact and incidental ingestion pathways are considered for these populations. Although the hypothetical Maintenance and Construction Worker populations share the same potential exposure pathways, the two groups differ in exposure duration. Maintenance Workers, being permanent employees, are assumed to undergo exposure through activities at the Site for 25 years [USEPA, 1991]. Construction Workers are assumed to have a much shorter per-individual exposure of one year, a span of time assumed to encompass the earthwork stage of a construction project. An additional difference between the two outdoor receptor populations is the assumption that Maintenance Workers engage in excavation-type activities for an average of 5 days per year of 250 days, whereas Construction Workers perform excavation 87 days (four months) of their work year. This is significant in that excavation work is modeled with a higher soil ingestion rate than non-excavation activity.

The Site is almost completely covered by asphalt or concrete. Due to this cover, mobilization of chemicals through inhalation of particulate matter from surficial soils is not considered as a viable exposure pathway. The assumption was made that the Site will retain a similar type of cover, such as asphalt, concrete, or clean landscaping fill, in the future. Volatilization of chemicals from surficial soils to ambient air is similarly precluded, as almost none of the soil at the Site exists at the surface. For modeling purposes, all contaminated soil is treated as subsurface soil.

Mobilization and diffusion of vapor-phase chemicals (volatilized from soil or groundwater) from the subsurface to the surface is driven by a concentration gradient between the subsurface source of the vapors and the local atmosphere. Many chemicals at the Site are present in both soil and groundwater, and are conservatively assumed, in the baseline risk calculations, to volatilize and diffuse from both soil and groundwater into the atmosphere.

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1992a; Cal-EPA, 1992]. The conservative assumption is made whereby analyses that did not detect a particular chemical of concern are treated as though the chemical had been detected at a concentration of one half the detection limit [USEPA, 1989]. Representative concentrations for all chemicals of concern at the Site are shown in Table A-3.

2.3 Toxicity Criteria

Accumulated data from various laboratory toxicity studies have been compiled and interpreted by a number of Federal and State agencies, among them the U.S. Environmental Protection Agency and the California Environmental Protection Agency. Results from human and, more commonly, animal trials are summarized into reference doses ("RfDs") for non-carcinogenic chemicals and risk slope factors ("SFs") for carcinogens. Toxicity values used in this risk assessment are taken from a hierarchy of several sources. If the needed value was not available in the preferred source, the next most reviewed source was consulted, and so on.

Non-carcinogen RfDs are preferentially obtained from the U.S. EPA Integrated Risk Information System ("IRIS") [USEPA, 1996], an on-line database of peer-reviewed toxicity information. The next most desirable RfD sources, in order of preference, are the U.S. EPA Health Effects Summary Tables ("HEAST") [USEPA, 1997], the U.S. EPA National Center for Environmental Assessment ("NCEA") Risk Assessment Issue Papers, and the Cal-EPA Office of Environmental Health Hazard Assessment Technical Support Document for the Determination of Non-Cancer Chronic Reference Exposure Levels ("OEHHA") [Cal-EPA, 1997].

Carcinogen SFs are preferentially culled from the Cal-EPA Memorandum Concerning Cancer Potency Factors: Update [Cal-EPA, 1996]. Values unavailable in that document are obtained from one of the above references for RfDs, in the same order of preference.

2.3.1 Non-Carcinogenic Toxicity Criteria

Toxicity of non-carcinogenic chemicals is expressed through reference doses, or RfDs, in units of milligrams per kilogram of body weight per day (mg/kg-day). The RfD for a particular chemical of concern is the hypothetical dose which will cause no adverse effects in human populations. An oral or ingestion reference dose ("RfDo") for a chemical is calculated from a different set of experiments than is an inhalation reference dose ("RfDi"). When one quantity or the other is unavailable, a "route-to-route extrapolation," or substitution, is sometimes used in the above data sources to estimate the missing value. As most toxicity studies are performed on laboratory animals, direct quantitative data for human toxicity of a particular chemical are uncommon. Published RfDs therefore generally contain safety factors of one or two orders of magnitude, to account for cross-species uncertainty, uncertainty from experimental procedures, and other effects. RfDs may be interpreted as representing the maximum "safe" dosage of a non-carcinogenic chemical. A low RfD indicates a low threshold dose, and therefore a

more toxic chemical; a high RfD denotes a substance with less toxicity. Reference doses for each chemical of concern at the Site are listed in Table A-4, together with a summary of demonstrated health effects and sources of the toxicological data.

2.3.2 Carcinogenic Toxicity Criteria

Toxicity for carcinogens is expressed as a risk slope factor, or "SF". Units of an SF are inverse exposure units, or $(mg/kg\text{-}day)^{-1}$. When multiplied by a dose, the inverse dosage units cancel, resulting in a dimensionless value that represents the risk associated with that dose. Slope factors are therefore the "plausible upper-bound estimates of the probability of a carcinogenic response per unit of chemical intake over a lifetime" [USEPA, 1989]. As opposed to RfDs, chemicals with low SFs are less carcinogenic than those with high SFs. Slope factors for chemicals of concern at the Site are summarized in Table A-5, along with carcinogenic effects and SF data sources for each chemical.

2.4 Calculation of Exposure Point Concentrations and Chronic Daily Intakes

Based on the calculated representative concentrations for the chemicals of concern at the Site, estimates can be calculated for the concentration each potentially exposed receptor population might experience through a particular set of exposure pathways. Called exposure point concentrations ("EPCs"), these values, along with parameters describing the potentially exposed populations, allow determination of a Chronic Daily Intake ("CDI") for each chemical, population, and pathway. CDIs are expressed as dosages, in units of milligram of chemical per kilogram of body weight per day (mg/kg-day). Carcinogenic CDIs are calculated differently from non-carcinogenic CDIs. Averaging time is assumed to be 25 years for non-carcinogens but a full lifetime of 70 years for carcinogens. Assumed values for all parameters, along with the sources of the assumptions, are summarized in Table A-6.

2.4.1 Ingestion and Dermal Contact Exposure Pathways

For the cases of soil ingestion and dermal contact, exposure point concentrations are identical to representative concentrations. CDIs for the two potential future receptor populations assumed to have the greatest likelihood of contact with Site soil, Maintenance Workers and Construction Workers, are calculated according to equations [1] and [2]:

Ingestion:

$$CDI_i = \frac{C_s \times IR_s \times EF \times ED \times 10^{-6}\,\frac{kg}{mg}}{BW \times AT} \qquad [1]$$

where

CDI_i = Chronic daily intake through ingestion (mg/kg-day)

C_s = Representative Concentration = Concentration in soil (mg/kg)

IR_s = Ingestion rate of soil (mg/day)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
BW = Body weight (kg)
AT = Averaging time (days)

Dermal Contact:

$$CDI_{dc} = \frac{C_s \times SA_s \times ABS \times AF \times EF \times ED \times 10^{-6} \frac{kg}{mg}}{BW \times AT} \quad [2]$$

where
CDI_{dc} = Chronic daily intake through dermal contact (mg/kg-day)
C_s = Representative Concentration = Concentration in soil (mg/kg)
SA_s = Surface area of skin exposed to soil contact (cm^2/event)
ABS = Soil-dermal absorption fraction (unitless)
AF = Soil adherence factor (mg/cm^2)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
BW = Body weight (kg)
AT = Averaging time (days)

The Maintenance and Construction Worker scenarios differ with regard to incidental ingestion of soil. A Maintenance Worker is assumed to excavate soil for a total of 5 days during a work year of 250 days. In contrast, a Construction Worker is assumed to engage in excavation labor for four months (approximately 87 days) throughout the 250-day work year. Soil ingestion is assumed to occur at a rate of 480 mg/day during excavation activity and 50 mg/day during routine maintenance activities [USEPA, 1991; Cal-EPA, 1992]. See Table A-6 for more details of human exposure assumptions.

2.4.2 Inhalation Exposure Pathways

Chemicals of concern can volatilize from the subsurface into the air, posing a potential hazard to on-Site workers breathing in the vicinity. Different algorithms are used to calculate Exposure Point Concentrations ("EPCs") for indoor and outdoor air. When chemicals evaporate from soil and groundwater, the rate of transfer, based on each chemical's volatility, must first be determined before air EPCs can be calculated. Volatilization is modeled as a linear transfer function of the chemical's concentration in soil or groundwater [ASTM, 1995]. Expressed as a volatilization factor ("VF"), the transfer function is based, in part, on a chemical's Henry's Law constant, diffusion coefficients in air and water, and organic carbon partition coefficient. Exposure point concentrations in air due to volatilization of chemicals present in soil and groundwater are calculated for all future worker receptor populations through equations [3] and [4]:

$$C_a = VFx \times RC \times AgF \quad [3]$$

for excavation work, and

$$C_a = VFx \times RC \quad [4]$$

for non-excavation work, where

C_a = Concentration in air, or EPC (mg/m³)
RC = Representative concentration of the chemical (mg/kg or mg/L)
AgF = Agitation factor to model enhanced evaporation from excavation (unitless)

and the general term VFx refers to one of the following pathway and chemical-specific Volatilization Factors ("VFs"):

VFs_{amb} = Soil-to-outdoor air (ambient) pathway (kg soil/m³ air):

$$VFs_{amb} = \frac{H \times \rho_S \times 10^3 \frac{cm^3 kg}{m^3 g}}{\left[\theta_{WS} + (k_{OC} \times f_{OC} \times \rho_S) + (H \times \theta_{AS})\right] \times \left(1 + \frac{U_{AIR} \times \delta_{AIR} \times L_S}{D_S^{eff} \times W}\right)} \quad [5]$$

VFw_{amb} = Groundwater-to-outdoor air (ambient) pathway (L H_2O/m³ air):

$$VFw_{amb} = \frac{H \times 10^3 \frac{L}{m^3}}{\left(1 + \frac{U_{AIR} \times \delta_{AIR} \times L_{GW}}{D_{WS}^{eff} \times W}\right)} \quad [6]$$

VFs_{enp} = Soil-to-indoor air (enclosed space) pathway (kg soil/m³ air):

$$VFs_{enp} = \frac{\left[\theta_{WS} + (k_{OC} \times f_{OC} \times \rho_S) + (H \times \theta_{AS})\right] \times \left[\frac{H \times \rho_S}{\frac{D_S^{eff}}{L_S \times ER \times L_B}}\right] \times 10^3 \frac{cm^3 kg}{m^3 g}}{1 + \left[\frac{D_S^{eff}}{L_S \times ER \times L_B}\right] + \left[\frac{D_S^{eff} \times L_{CRACK}}{L_S \times D_{CRACK}^{eff} \times \eta}\right]} \quad [7]$$

VFw_{enp}= Groundwater-to-indoor air (enclosed space) pathway (L H_2O/m^3 air):

$$VFw_{enp} = \frac{H \times \left[\frac{D^{eff}_{WS}}{L_{GW} \times ER \times L_B}\right] \times 10^3 \frac{L}{m^3}}{1 + \left[\frac{D^{eff}_{WS}}{L_{GW} \times ER \times L_B}\right] + \left[\frac{D^{eff}_{WS} \times L_{CRACK}}{L_{GW} \times D^{eff}_{CRACK} \times \eta}\right]} \quad [8]$$

VFs are based, in part, upon effective diffusion coefficients for each chemical, calculated as follows:

D^{eff}_S = Effective diffusion coefficient in soil based on vapor concentration (cm^2 / s):

$$D^{eff}_S = \left[D^{air} \times \frac{(\theta_{AS})^{3.3}}{(\theta_T)^2}\right] + \left[D^{water} \times \frac{(\theta_{WS})^{3.3}}{H \times (\theta_T)^2}\right] \quad [9]$$

D^{eff}_{CAP} = Effective diffusion coefficient through capillary fringe (cm^2 / s):

$$D^{eff}_{CAP} = \left[D^{air} \times \frac{(\theta_{ACAP})^{3.3}}{(\theta_T)^2}\right] + \left[D^{water} \times \frac{(\theta_{WCAP})^{3.3}}{H \times (\theta_T)^2}\right] \quad [10]$$

D^{eff}_{WS} = Effective diffusion coefficient between groundwater and surface (cm^2 / s):

$$D^{eff}_{WS} = \frac{(h_{CAP} + h_V)}{\left[\frac{h_{CAP}}{D^{eff}_{CAP}} + \frac{h_V}{D^{eff}_S}\right]} \quad [11]$$

D^{eff}_{CRACK} = Effective diffusion coefficient through floor or wall cracks (cm^2 / s)

$$D^{eff}_{CRACK} = \left[D^{air} \times \frac{(\theta_{ACRACK})^{3.3}}{(\theta_T)^2}\right] + \left[D^{water} \times \frac{(\theta_{WCRACK})^{3.3}}{H \times (\theta_T)^2}\right] \quad [12]$$

Where:

D^{air} = Diffusion coefficient of the chemical in air (cm^2 / s)

D^{water} = Diffusion coefficient of the chemical in water (cm^2 / s)

ER = Enclosed-space air exchange rate (L / sec)
f_{OC} = Fraction of organic carbon in soil (g C / g soil)
H = Henry's Law constant (cm³ H_2O / cm³ air)
h_{cap} = Thickness of capillary fringe (cm)
h_v = Thickness of vadose zone (cm)
k_{OC} = Organic carbon-water sorption coefficient (cm³ H_2O / g C)
L_B = Enclosed-space volume / infiltration area ratio (cm)
L_{CRACK} = Enclosed-space floor or wall thickness (cm)
L_{GW} = Depth to groundwater, i.e. $h_{cap} + h_v$ (cm)
L_S = Depth to subsurface soil sources (cm)
U_{AIR} = Wind speed above ground surface in ambient mixing zone (cm / sec)
W = Width of source area parallel to wind or groundwater flow direction (cm)
δ_{AIR} = Ambient air mixing zone height (cm)
δ_{GW} = Groundwater mixing zone thickness (cm)
η = Areal fraction of cracks in floor or wall (cm² cracks / cm² total area)
θ_{ACAP} = Volumetric air content in capillary fringe soil (cm³ air / cm³ soil)
θ_{ACRACK} = Volumetric air content in floor or wall cracks (cm³ air / cm³ crack vol.)
θ_{AS} = Volumetric air content in vadose zone soil (cm³ air / cm³ soil)
θ_T = Total soil porosity (cm³ / cm³ soil)
θ_{WCAP} = Volumetric water content in capillary fringe soil (cm³ water / cm³ soil)
θ_{WCRACK} = Volumetric water content in floor or wall cracks (cm³ water / cm³ crack vol.)
θ_{WS} = Volumetric water content in vadose zone soil (cm³ water / cm³ soil)
ρ_S = Soil bulk density (g soil / cm³ soil)

Volatilization Factors are calculated according to the method described in the ASTM RBCA guidance [ASTM, 1995]. Air diffusion coefficients ("D_{air}") for chemicals of concern at the Site are estimated using the FSG method [Lyman, et al., 1990; USEPA, 1988]. Water diffusion coefficients ("D_{water}") are calculated through the method of Hayduk and Laudie [Lyman, et al., 1990]. Ambient-air VFs are used for calculations regarding Construction and Maintenance Workers, while enclosed-space air VFs are used for Indoor Worker EPC calculations. Specific physical parameter assumptions used in the above VF equations can be found in Table A-7; the quantities are Site-specific and noted as such where available, and otherwise are default values from the ASTM RBCA guidance [ASTM, 1995]. Table A-8 lists the resulting VFs and other data for each chemical of concern and volatilization pathway.

Construction Workers are modeled herein as performing excavation for their four month on-Site tenure of 87 working days (USEPA, 1991; Cal-EPA, 1992), consequently equation [3] is applied throughout. Maintenance Workers, however, are assumed to only labor five days per year in excavation tasks; AgF is only factored in through the use of equation [3] for those five days annually. The rest of the time, Maintenance Worker air EPCs are calculated using equation [4]. Indoor Workers are assumed to never perform excavation tasks, thus air EPCs are calculated with equation [4].

Chronic Daily Intakes in air due to volatilization of chemicals present in soil are calculated for all future worker receptor populations through equation [13]:

$$CDI_{air} = \frac{C_a \times IR_a \times EF \times ED}{BW \times AT} \qquad [13]$$

where

CDI_{air} = Chronic daily intake through inhalation (mg/kg-day)
C_a = Concentration in air, or EPC (mg/m^3)
IR_a = Inhalation rate of air (m^3/day)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
BW = Body weight (kg)
AT = Averaging time (days)

Chronic daily intakes of chemicals of concern for each valid population/pathway combination are summarized in Table A-9 through Table A-18.

2.5 Baseline Risk Characterization

For the purpose of risk assessment at the Site, effects from chemicals of concern are split into two broad categories, Cancer Risk and non-carcinogenic Hazard Index. Each of these types of risk is calculated differently, although many contaminants at the Site have both effects, and are assigned both classifications. The separation is driven by the toxicity data for the two chemical effect categories. Non-carcinogens are assigned a Reference Dose ("RfD") in mg/kg-day, and carcinogens are assigned a Slope Factor ("SF"), having inverse dosage units of (mg/kg-day)$^{-1}$. This section outlines assumptions used to calculate quantitative, Site-specific estimates of potential health hazards from non-carcinogens and of incremental lifetime Cancer Risk from carcinogens occurring at the Site.

Note that baseline risks are calculated assuming receptor populations are unprotected from exposure to hazardous chemicals (i.e. no engineering controls or personal protection equipment used).

As discussed in Section 1.3, non-carcinogenic RfDs are generally based on the highest no-adverse-effects chronic dosages from several studies. The hazard of a chemical of concern through a particular exposure pathway is calculated as the Chronic Daily Intake ("CDI") divided by the RfD for that pathway. This quantity is called the Hazard Index ("HI"). It is unique to the site, chemical, exposure pathway, and receptor population:

$$HI_a = \frac{CDI_a}{RfD_a} \qquad [14]$$

where

HI_n = Hazard Index for the nth combination of population, exposure pathway, and chemical of concern (dimensionless)

CDI_n = Chronic Daily Intake for the nth combination of population, exposure pathway, and chemical of concern (mg/kg-day)

RfD_n = Reference Dose for the nth combination of exposure pathway and chemical of concern (mg/kg-day)

For an explanation of CDI calculation for each population / pathway combination, please see footnotes to Tables A-9 through A-18, as appropriate.

Summation of Hazard Indices over all pathways and chemicals gives the Hazard Index for each population, which is targeted to remain at or below a value of one. A total HI less than or equal to one indicates that the population will not be exposed to the chemical beyond a dosage considered safe.

Carcinogenic chemicals are assigned, based on experimental evidence and mathematical modeling, a published Slope Factor for each exposure pathway. When multiplied by the CDI for that pathway, a unitless quantity results which represents the incremental risk of developing cancer from exposure to that chemical, through that exposure pathway, over a lifetime of 70 years [USEPA, 1989].

$$CR_n = CDI_n \times SF_n \qquad [15]$$

where

CR_n = Estimated incremental excess Cancer Risk for the nth combination of population, exposure pathway, and chemical of concern (dimensionless)

CDI_n = Chronic Daily Intake for the nth combination of population, exposure pathway, and chemical of concern (mg/kg-day)

SF_n = Slope Factor for the nth combination of exposure pathway and chemical of concern $(mg/kg\text{-}day)^{-1}$

As with the non-cancer Hazard Index, summation of risk from all chemicals over all pathways valid for a particular receptor population gives an overall Cancer Risk for the population at the Site. This value is targeted to remain at or below 10^{-5}. The National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR §300) mandates an acceptable range of maximum incremental carcinogenic risk between 10^{-4} and 10^{-6}. California law requires notification of on-Site workers if Cancer Risk is estimated to exceed 10^{-5} (California Code of Regulations ("CCR") Title 22, Section 12703). The targeted maximum carcinogenic risk of 10^{-5} satisfies both sets of regulations.

All potentially exposed populations are assumed to be unprotected in the baseline risk calculations.

2.5.1 Future Indoor Workers

One of the assumptions regarding the future Indoor Worker receptor population is that its members never work with soil, thus, incidental ingestion and dermal contact with contaminated soil are not considered exposure pathways for this population. Inhalation of volatile organic compounds evaporating from soil, however, is valid and is presented in Table A-9. The same data for inhalation of VOCs from groundwater is shown in Table A-10.

A summary of baseline hazard and risk for Indoor Workers may be found in Table A-19. The most significant chemical/pathway combination for Indoor Workers, in terms of Cancer Risk, is inhalation of TCE evaporating from groundwater. The non-carcinogenic Hazard Index for this population is dominated by inhalation of vinyl chloride, TCE, and cis-1,2-DCE from groundwater.

2.5.2 Future Maintenance Workers

Baseline risk characterization data for Maintenance Workers is compiled in several tables. Table A-11 summarizes the soil ingestion exposure pathway, and Table A-12 displays similar data for the soil dermal contact exposure pathway. Table A-13 displays Hazard Index and Cancer Risk for the inhalation pathway through volatilization of organic compounds from soil. The same calculations for inhalation of VOCs from groundwater are shown in Table A-14.

Hazard and risk for Maintenance Workers through all pathways is summarized in Table A-20. The most significant chemical/pathway combination for the Maintenance Worker receptor population is inhalation of vinyl chloride volatilizing from soil. Note that under existing Site conditions, potential risks experienced by the hypothetical Maintenance Worker population are within acceptable limits.

2.5.3 Construction Workers

Baseline Hazard Indices and Cancer Risks for each chemical of concern at the Site are organized in the same way as for Maintenance Workers. Table A-15 lists the soil ingestion exposure pathway, and Table A-16 lists similar data for the soil dermal contact pathway. Table A-17 lists Hazard Index and Cancer Risk for the inhalation pathway of volatile organic compounds evaporating from soil; groundwater VOC volatilization is detailed in Table A-18. A summary of baseline Cancer Risks and Hazard Indices for all Construction Worker exposure pathways is listed in Table A-21. The most significant chemical/pathway combination, both in terms of potential carcinogenic risk and non-carcinogenic health hazard for the Construction Worker receptor population, is inhalation of vinyl chloride volatilizing from soil. Dermal contact with vinyl chloride is also a significant pathway in terms of generation of carcinogenic risk for Construction Workers. Note that under current conditions, potential risks experienced by the hypothetical Construction Worker population are less than the acceptable maximum values.

3. CALCULATION OF RISK-BASED ACTION LEVELS FOR SOIL AND GROUNDWATER

Using the baseline risks calculated for the hypothetical receptor populations at the Site, risk-based action levels for soil and groundwater have been calculated, as discussed below. Risk-based action levels have been calculated considering potential exposures to future hypothetical receptor populations, i.e., Indoor Workers, Maintenance Workers, and Construction Workers.

Risk-based action levels for soil and groundwater were calculated to apportion post-remediation risk such that overall Cancer Risk to all hypothetical worker populations is at or below 1.0×10^{-5}, and overall Hazard Index is at or below 1.0. The method used for apportioning risk was to allocate most of the risk to the more hazardous chemicals and those more commonly found at the Site. This approach minimizes the volume of soil and groundwater potentially requiring remediation, while keeping future hypothetical populations' estimated risks below target levels.

Table A-22 lists risk-based action levels for soil, and Table A-23 lists risk-based action levels for groundwater. Current representative concentrations of chemicals within soil and groundwater are also shown on Tables A-22 and A-23 for comparison. TCE and vinyl chloride have been detected in Site soil and groundwater at concentrations greater than their respective risk-based action levels.

Estimates of future estimated Hazard Indices and Cancer Risks for each of the hypothetical populations are listed in Tables A-24, A-25, and A-26. These risks represent estimates of what would result from cleanup of both soil and groundwater at the Site to the respective risk-based action levels. Estimated cumulative Hazard Indices and Cancer Risks for each hypothetical population are equal to or below 1.0 and 1.0×10^{-5}, respectively. Therefore, the risk-based action levels for soil and groundwater listed in Tables A-22 and A-23 would result in an acceptable level of risk for future potentially exposed populations.

If, in the future, chemicals are measured in soil or groundwater samples that differ significantly from the current dataset, risk-based action levels may be recalculated to more accurately reflect the distribution and concentrations of the chemicals.

4. CONSERVATIVE ASSUMPTIONS IN THE RISK ASSESSMENT

The estimated baseline risks and the risk-based action levels presented in the attached tables are upper-bound, health conservative estimates of baseline risks and risk-based action levels for reasonable maximum exposure scenarios. Actual risks may be lower. This section discusses the conservative nature of some of the assumptions in the risk assessment.

Major conservative assumptions include:

- the method used to calculate representative concentrations for chemicals in soil and groundwater;
- the use of all chemicals detected on-Site for risk calculation, even if the frequency of detection was very low;
- the use of conservative exposure frequency assumptions (in days of exposure per year) for hypothetical future worker populations;
- "double counting" of certain calculated risks caused by summing the risks due to volatilization of VOCs from soil and from groundwater; and
- apportionment of risk to each chemical of concern in both soil and groundwater, even when the chemical was actually detected in only one medium.

4.1 Calculation of Representative Concentrations

Representative concentrations of chemicals used to calculate baseline risks are assumed to be the lesser of the maximum detected concentration or the 95% upper confidence limit of the mean concentration ("95% UCL"), based on a lognormal model. When calculating the 95% UCL, samples without detectable concentrations were conservatively assumed to contain chemicals at concentrations equal to half the detection limit for the analyses. Potentially exposed populations may actually be exposed to a lesser concentration than either the maximum or the 95% UCL, as the distribution of chemicals at the Site is not homogeneous.

4.2 Frequency of Detection

Chemicals detected in Site soil and groundwater are dominated by TCE and cis-1,2-DCE. As a conservative approach, however, all detected chemical species were used in calculation of baseline risks, regardless of each chemical's frequency of detection. Table A-3 shows frequencies of detection for all chemicals detected on-Site.

Given the overall conservative nature of the risk assessment, actual non-carcinogenic and carcinogenic risks to potentially exposed populations are likely to be significantly lower than reported herein. The calculated health risk-based action levels are founded on the same conservative assumptions as the baseline risk calculations. Consequently, chemicals present in soil and groundwater at their human health risk-based action level concentrations should not pose an adverse risk to occupants at the Site.

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Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
B101	2.0-2.5	04-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
B102	2.0-2.5	04-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
C-1	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	0.65	<0.025	<0.025	0.11	[b]	<0.05
C-1	5.5-6.0	19-Jun-97	<0.05	<0.05	<0.05	<0.05	1.5	<0.05	<0.05	<0.05	-	<0.1
C-2	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.14	-	<0.05
C-2	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.867	<0.025	<0.025	0.52	-	<0.05
C-3	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-4	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-5	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-6	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-7	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-1	14-14.5	10-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-2	12.5-13	07-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-3	12.5-13	10-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-4	12.5-13	07-Oct-96	<0.005	<0.005	<0.005	<0.005	0.035	<0.005	<0.005	0.061	-	<0.01
EC-5	12-12.5	11-Oct-96	<0.005	<0.005	<0.005	<0.005	0.014	<0.005	<0.005	0.064	-	<0.01
EC-6	12-12.5	11-Oct-96	0.021	<0.02	0.021	<0.02	<0.02	<0.02	<0.02	0.34	-	<0.04
EC-7	15-15.5	09-Oct-96	<0.01	0.011	<0.01	<0.01	0.11	<0.01	<0.01	0.25	-	<0.02
EC-8	14.5-15	09-Oct-96	<0.1	<0.1	<0.1	<0.1	0.29	<0.1	<0.1	1.5	-	<0.2
EC-9	15-15.5	08-Oct-96	<0.005	0.016	<0.005	<0.005	<0.005	<0.005	<0.005	0.024	-	<0.01
EC-10	14.5-15	08-Oct-96	<0.005	0.0056	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-12	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.073	-	<0.05
EC-12	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.027	<0.025	<0.025	0.048	-	<0.05
EC-13	1.5-2.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.08	<0.025	<0.025	0.073	-	<0.05
EC-13	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.1	-	<0.05

Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-14	2.0-2.5	19-Jun-97	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	-	<0.1
EC-14	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.097	<0.025	<0.025	0.18	-	<0.05
EC-15-A	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.35	<0.025	<0.025	0.49	-	<0.05
EC-15-A	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.91	<0.025	<0.025	0.086	-	<0.05
EC-16	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.039	<0.025	<0.025	0.056	-	<0.05
EC-16	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.048	<0.025	<0.025	<0.025	-	<0.05
EC-17	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-17	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-18	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-19	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-19	5.5-6.0	19-Jun-97	<0.05	<0.05	<0.05	0.38	0.55	<0.05	<0.05	0.19	-	<0.05
EC-20	2.0-2.5	19-Jun-97	<0.5	<0.5	<0.5	<0.5	7.6	<0.5	<0.5	15	-	<1
EC-20	5.5-6.0	19-Jun-97	<0.25	<0.25	<0.25	<0.25	8.5	<0.25	<0.25	0.99	-	<0.5
EC-21	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-21	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.017	<0.05	<0.05
EC-22	3.0-3.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.039	<0.05	<0.05
EC-22	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-23	3.0-3.5	10-Sep-97	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	6.9	<0.5	<0.5
EC-23	5.0-5.5	10-Sep-97	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	<1	<1
EC-24	3.5-4.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.51	<0.025	<0.025	0.68	<0.05	<0.05
EC-24	5.0-5.5	10-Sep-97	<2	<2	<2	<2	36	<2	<2	<2	<4	<4
EC-25	3.5-4.0	10-Sep-97	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	4.2	<0.5	<0.5
EC-25	5.0-5.5	10-Sep-97	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	13	<1	<1
EC-26	3.5-4.0	11-Sep-97	<0.25	<0.25	<0.25	<0.25	0.27	<0.25	<0.25	3.6	<0.5	<0.5
EC-26	5.0-5.5	11-Sep-97	<0.25	<0.25	<0.25	<0.25	5.4	<0.25	<0.25	0.77	<0.5	<0.5

Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-27	3.0-3.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.089	<0.05	<0.05
EC-27	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.23	<0.05	<0.05
EC-28	1.0-1.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-28	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.061	<0.05	<0.05
EC-29	2.5-3.0	11-Sep-97	<0.2	<0.2	<0.2	<0.2	0.26	<0.2	<0.2	3.4	<0.4	<0.4
EC-29	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-30	1.5-2.0	11-Sep-97	<0.1	<0.1	<0.1	<0.1	0.19	<0.1	<0.1	1.3	<0.2	<0.2
EC-30	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	1.8	<0.1	<0.1	0.21	<0.2	<0.2
EC-31	3.0-3.5	10-Sep-97	<0.1	<0.1	<0.1	<0.1	0.84	<0.1	<0.1	2.1	<0.2	<0.2
EC-31	5.0-5.5	10-Sep-97	<0.25	<0.25	<0.25	<0.25	4.6	<0.25	<0.25	0.92	<0.5	<0.5
EC-32	2.5-3.0	10-Sep-97	<0.05	<0.05	<0.05	<0.05	0.44	<0.05	0.073	1.0	<0.1	<0.1
EC-32	5.0-5.5	10-Sep-97	<1	<1	<1	<1	23	<1	<1	1.1	<2	<2
EC-33	2.5-3.0	10-Sep-97	<0.05	<0.05	<0.05	<0.05	1.1	<0.05	<0.05	1.0	<0.1	<0.1
EC-33	5.0-5.5	10-Sep-97	<0.1	<0.1	<0.1	<0.1	2.6	<0.1	<0.1	<0.1	<0.2	0.41
EC-34	3.0-3.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	0.71	<0.05	<0.05	1.3	0.11	<0.1
EC-34	5.0-5.5	10-Sep-97	<0.2	<0.2	<0.2	<0.2	4.9	<0.2	<0.2	<0.2	<0.4	<0.4
EC-35	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.031	<0.025	<0.025	0.12	0.18	<0.05
EC-35	5.0-5.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	1.2	<0.05	<0.05	1.1	0.67	0.19
EC-36	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.1	<0.05	<0.05
EC-36	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.21	<0.025	<0.025	0.07	0.083	<0.05
EC-37	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.28	<0.025	<0.025	0.29	<0.05	<0.05
EC-37	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.39	<0.025	<0.025	0.39	0.7	0.08
EC-38	3.0-3.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-38	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.17	<0.025	<0.025	<0.025	0.079	<0.05
EC-39	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05

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Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-39	5.0-5.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	0.85	<0.05	<0.05	0.18	1.5	<0.1
EC-40	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.16	<0.025	<0.025	0.4	0.93	<0.05
EC-41	2.0-2.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-41	5.0-5.5	11-Sep-97	<0.05	<0.05	<0.05	<0.05	0.28	<0.05	<0.05	0.68	0.87	<0.1
EC-42	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.051	<0.025	<0.025	0.038	0.084	<0.05
EC-42	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	1.6	<0.1	<0.1	2.7	0.91	<0.2
EC-43	3.0-3.5	11-Sep-97	<0.05	<0.05	<0.05	<0.05	1.0	<0.05	<0.05	0.84	<0.1	<0.1
EC-43	5.0-5.5	11-Sep-97	<1	<1	<1	<1	23	<1	<1	<1	<2	<2
EC-44	3.5-4.0	11-Sep-97	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	0.89	<0.1	<0.1
EC-44	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	2.5	<0.1	<0.1	<0.1	0.4	0.56
EC-45	2.5-3.0	11-Sep-97	<0.2	<0.2	<0.2	<0.2	0.52	<0.2	<0.2	4.1	<0.4	<0.4
EC-45	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.57	0.11	<0.025	0.084	<0.05	<0.05
EC-46	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.047	<0.05	<0.05
EC-46	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-47	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.15	<0.05	<0.05
EC-47	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	2.9	<0.2	<0.2	0.44	<0.4	<0.4
EC-48	2.0-2.5	15-Sep-97	<0.1	<0.1	<0.1	<0.1	1.1	<0.1	<0.1	0.28	<0.2	<0.2
EC-48	5.0-5.5	15-Sep-97	<1	<1	<1	<1	10	<1	<1	1.8	<2	<2
EC-49	1.5-2.0	12-Sep-97	<0.1	<0.1	<0.1	<0.1	1.6	<0.1	<0.1	0.68	0.43	<0.2
EC-49	5.0-5.5	12-Sep-97	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	5.2	1.2	<1
EC-50	1.5-2.0	12-Sep-97	<0.25	<0.25	<0.25	<0.25	3.3	<0.25	<0.25	1	<0.5	<0.5
EC-50	5.0-5.5	12-Sep-97	<2	<2	<2	<2	9.2	<2	<2	40	7.6	<4
EC-51	2.0-2.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.68	<0.05	<0.05	0.35	0.12	<0.1
EC-51	5.0-5.5	12-Sep-97	<1	<1	<1	<1	10	<1	<1	2.7	3	<2
EC-52	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.061	<0.025	<0.025	<0.025	0.12	<0.05

Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-52	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	1.2	<0.2	<0.2	1.1	5.3	<0.4
EC-53	2.0-2.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	1.8	<0.2	<0.2	0.37	<0.4	<0.4
EC-53	5.0-5.5	12-Sep-97	<1	<1	<1	<1	22	<1	<1	5.5	11	<2
EC-54	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.12	<0.025	<0.025	<0.025	0.22	<0.05
EC-54	5.0-5.5	12-Sep-97	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	5.6	<1
EC-55	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.079	<0.025	<0.025	0.058	0.12	<0.05
EC-55	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.06	<0.025	<0.025	<0.025	0.16	<0.05
EC-56	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.087	<0.025	<0.025	0.081	<0.05	<0.05
EC-56	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.66	<0.05	<0.05	0.36	0.65	<0.1
EC-57	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.032	<0.025	<0.025	<0.025	<0.05	0.19
EC-57	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	2.3	<0.2	<0.2	0.16	2.1	<0.4
EC-58	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.049	<0.025	<0.025	<0.025	0.059	<0.05
EC-58	5.0-5.5	12-Sep-97	<0.25	<0.25	<0.25	<0.25	6.4	<0.25	<0.25	0.75	2.7	<0.5
EC-59	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.053	<0.025	<0.025	<0.025	<0.05	<0.05
EC-59	5.0-5.5	12-Sep-97	<0.1	<0.1	<0.1	<0.1	2.8	<0.1	<0.1	0.51	1.6	<0.2
EC-60	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.073	<0.025	<0.025	<0.025	<0.05	<0.05
EC-60	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.78	<0.05	<0.05	<0.05	0.48	<0.1
EC-61	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.046	<0.025	<0.025	0.083	<0.05	<0.05
EC-61	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.41	<0.025	<0.025	<0.025	0.17	0.072
EC-62	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.27	<0.05	<0.05
EC-62	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-63	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-63	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.078	<0.05	<0.05
EC-64	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.21	<0.05	<0.05
EC-64	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.15	<0.025	<0.025	0.21	0.12	<0.05

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Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-65	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-65	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.25	<0.025	<0.025	0.33	0.24	<0.05
EC-66	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-66	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.34	<0.05	<0.05	0.42	0.22	<0.1
EC-67	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.11	<0.05
EC-67	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.19	<0.025	<0.025	0.088	0.081	<0.05
EC-68	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-68	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.39	<0.025	<0.025	0.23	0.17	<0.05
EC-69	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-69	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.072	<0.025	<0.025	0.098	0.17	<0.05
EC-70	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-70	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.053	<0.025	<0.025	0.22	<0.05	<0.05
EC-71	1.5-2.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-71	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.049	<0.025	<0.025	0.19	<0.05	<0.05
EC-72	2.0-2.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.049	<0.05	<0.05
EC-72	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.063	<0.05	<0.05
EC-73	2.0-2.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-73	6.0-6.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-73	14.0-14.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	2.0-2.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	5.0-5.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	11.5-12.0	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-75	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-75	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.37	<0.05	<0.05
EC-76	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05

Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-76	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.065	<0.025	<0.025	0.25	<0.05	<0.05
MW-7B	4.0-4.5	23-Oct-96	<2	<2	<2	<2	51	<2	<2	11	-	<4
S2-3	3.0-3.5	04-Sep-97	<0.1	<0.1	<0.1	<0.1	1.0	<0.1	<0.1	<0.1	-	<0.1
TR-1	2.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.41	<0.05	<0.05
Summary of Concentrations (mg/kg)												
Number of Samples Analyzed			154	154	154	154	154	154	154	154	117	154
Number of Analyte Detections			1	3	2	1	92	1	1	95	39	6
Frequency of Detection (%)			1%	2%	1%	1%	60%	1%	1%	62%	33%	4%
Minimum Concentration			0.021	0.0056	0.021	0.38	0.014	0.11	0.073	0.024	0.059	0.072
Maximum Concentration			0.021	0.016	1.5	0.38	51	0.11	0.073	40	11	0.56
95% Upper Confidence Limit[c]			0.062	0.061	0.066	0.065	3.950	0.063	0.063	1.811	0.575	0.137
Representative Concentration in mg/kg[d]			**0.021**	**0.016**	**0.066**	**0.065**	**4.0**	**0.063**	**0.063**	**1.8**	**0.57**	**0.14**

Notes:

(a) Sample depth range in feet below ground surface (ft bgs).

(b) A hyphen (-) indicates that the sample was not analyzed for the chemical.

(c) The 95% upper confidence limit of the mean concentration was calculated assuming a log-normal data distribution. One-half the detection limit value was used for samples in which the analyte concentration was reported as below the detection limit.

(d) The representative concentration was selected as the lesser of either the 95% upper confidence limit or the maximum detected concentration.

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Table A-2
Summary of Chemical Analytical Data for Groundwater Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Collection Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)															
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
B1	10-15	04-Oct-94	8240	<100	<5.0	230	280	<5.0	[b]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2000	-	<10
GP-1	10-15	29-Dec-94	8240	<20	5	20	100	<4.0	-	10	280	<4.0	<10	<4.0	<4.0	<4.0	170	-	<4.0
GP-2	10-15	29-Dec-94	8240	<63	<13	<13	<13	<13	-	53	180	<13	<32	<13	<13	14	840	-	22
GP-3	10-15	29-Dec-94	8240	<77	<16	72	320	<16	-	<16	96	<16	<38	<16	<16	<16	1200	-	<16
GP-4	10-15	29-Dec-94	8240	<1200	<230	<230	<230	<230	-	<230	3600	<230	<560	<230	<230	<230	2300	-	<230
GP-5	10-15	29-Dec-94	8240	<2000	<400	<400	<400	<400	-	<400	25000	<400	<1000	<400	<400	<400	35000	-	1300
GP-6	10-15	29-Dec-94	8240	<25	<5.0	320	420	<5.0	-	<5.0	<5.0	<5.0	<12	<5.0	<5.0	<5.0	18	-	<5.0
GP-7	10-15	29-Dec-94	8240	<840	<170	<170	1000	<170	-	<170	3000	<170	<420	<170	<170	<170	11000	-	<170
S-5B	38-46	06-Jul-95	8010	-	-	<0.5	2	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	4	-	<1.0
CPT1-33	28-33	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT1-44	41-44	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-28	25-28	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-44	40-44	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-58	53-58	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT3-33	30-33	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT3-44	40-44	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT4-22	18-22	31-Jul-96	8240	<10	<5.0	13	230	<5.0	-	2	230	1.6	<5.0	<5.0	<5.0	<5.0	580	220	8
CPT4-28	25-28	31-Jul-96	8240	30	<5.0	<5.0	5	<5.0	-	<5.0	6	<5.0	<5.0	<5.0	<5.0	<5.0	10	<5.0	<5.0
CPT4-34	30-34	31-Jul-96	8240	13	<5.0	<5.0	41	<5.0	-	<5.0	56	<5.0	<5.0	<5.0	<5.0	<5.0	180	10	1
CPT5-16	12-16	31-Jul-96	8240	<10	<5.0	<5.0	190	<5.0	-	<5.0	13000	<5.0	<5.0	<5.0	<5.0	<5.0	790	<5.0	1400
CPT5-36	31-36	01-Aug-96	8240	<10	<5.0	18	20	<5.0	-	<5.0	600	<5.0	32	46	6.6	<5.0	1900	12000	56
CPT6-24	20-24	31-Jul-96	8240	<10	<5.0	6	67	<5.0	-	<5.0	130	<5.0	<5.0	<5.0	<5.0	<5.0	310	120	10
CPT6-34	31-34	31-Jul-96	8240	17	<5.0	<5.0	9	<5.0	-	<5.0	50	<5.0	<5.0	<5.0	<5.0	<5.0	80	6	2
CPT7-22	17-22	01-Aug-96	8240	<10	<5.0	70	<5.0	<5.0	-	<5.0	16	<5.0	<5.0	<5.0	<5.0	<5.0	1800	130	<5.0
CPT7-28	23-28	01-Aug-96	8240	<10	<5.0	<5.0	13	<5.0	-	<5.0	21	<5.0	<5.0	<5.0	<5.0	<5.0	320	30	<5.0
CPT7-34	31-34	01-Aug-96	8240	<10	<5.0	<5.0	6	<5.0	-	<5.0	14	<5.0	<5.0	<5.0	<5.0	<5.0	24	9	<5.0
CPT7-44	40-44	01-Aug-96	8240	<10	<5.0	<5.0	18	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	73	12	<5.0

Table A-2
Summary of Chemical Analytical Data for Groundwater Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Collection Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
CPT8-24	19-24	01-Aug-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT8-32	23-32	01-Aug-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT9-27	22-27	02-Aug-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT9-35	32-35	02-Aug-96	8240	37	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT9-48	44-48	02-Aug-96	8240	25	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT9-54	54-59	02-Aug-96	8240	11	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
EC1-15	5-15	07-Oct-96	8010	-	-	<0.5	1	2	-	<0.5	1	<0.5	<5.0	<0.5	-	1	3	-	<1.0
EC1-28	23-28	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC1-45	42-45	10-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC2-15	5-15	07-Oct-96	8010	-	-	<0.5	<0.5	2	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC2-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC2-46	44-46	07-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC3-15	5-15	07-Oct-96	8010	-	-	<0.5	1	4	-	3	33	1.6	<5.0	<0.5	-	<0.5	39	-	5
EC3-30	28-30	10-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC3-45	42-45	10-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC4-15	5-15	09-Oct-96	8010	-	-	<100	<100	140	-	270	3300	<100	<1000	<100	-	<100	2100	-	<200
EC4-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC4-43	40-43	07-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	1	-	<1.0
EC5-15	5-15	09-Oct-96	8010	-	-	<25	94	<25	-	25	470	<25	<250	<25	-	27	2000	-	<50
EC5-30	25-30	14-Oct-96	8010	-	-	<0.5	1	<0.5	-	<0.5	1	<0.5	<5.0	<0.5	-	<0.5	3	-	<1.0
EC5-45	42-45	11-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	2	-	<1.0
EC6-15	5-15	07-Oct-96	8010	-	-	75	120	<10	-	<10	63	<10	<100	<10	-	<10	530	-	<20
EC6-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	1	<0.5	<0.5	<5.0	<0.5	-	1	<0.5	-	<1.0
EC6-45	42-45	11-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	2	-	<1.0
EC7-15	5-15	09-Oct-96	8010	-	-	<250	380	<250	-	<250	6500	<250	<2500	<250	-	<250	12000	-	<500
EC7-30	25-30	15-Oct-96	8010	-	-	<0.5	1	<0.5	-	<0.5	17	<0.5	<5.0	<0.5	-	<0.5	3	-	<1.0
EC7-45	42-45	09-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0

Table A-2
Summary of Chemical Analytical Data for Groundwater Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Collection Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)															
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
MW-2	5.5-15.5	08-Sep-98	8010	-	-	<1250	<1250	<1250	<1250	<1250	7100	<1250	<12500	<1250	-	<1250	29000	-	<2500
MW-3	5.5-15.5	04-Oct-94	8240	-	<5.0	90	110	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	9	-	<10
MW-3	5.5-15.5	08-Aug-96	8010	-	-	<2.5	7	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	130	-	<5.0
MW-3	5.5-15.5	17-Sep-97	8010	-	-	100	110	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	9	7	<5.0
MW-3	5.5-15.5	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	3	-	<1.0
MW-4	6-16	08-Aug-96	8010	-	-	77	140	<10	<10	<10	14	<10	<100	<10	-	<10	750	-	<20
MW-4	6-16	01-Nov-96	8010	-	-	75	100	<12	<12	<12	15	<12	<125	<12	-	<12	710	<12	<25
MW-4	6-16	18-Sep-97	8010	-	-	82	110	<10	<10	<10	14	<10	<300	<10	-	<10	430	200	<20
MW-4	6-16	17-Apr-98	8010	-	-	39	90	<12	<12	<12	16	<12	<125	<12	-	<12	590	-	<25
MW-5B	24-34	01-Nov-96	8010	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	-	1	3	-	<1.0
MW-5B	24-34	18-Sep-97	8010	-	-	<0.5	<0.5	<0.5	<0.5	1	<0.5	<0.5	<5.0	<0.5	-	2	9	6	<1.0
MW-5B	24-34	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	2.6	<0.5	<0.5	<5.0	<0.5	-	6.5	16	-	<1.0
MW-5D	24-34	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<5.0	<0.5	-	5.4	17	-	<1.0
MW-6B	21-31	01-Nov-96	8010	-	-	<100	<100	<100	<100	<100	250	<100	<1000	<100	-	<100	4500	-	<200
MW-6B	21-31	17-Sep-97	8010	-	-	<50	60	<50	<50	<50	180	<50	<50	<50	-	<50	2600	2200	<100
MW-6B	21-31	17-Apr-98	8010	-	-	<25	<25	<25	<25	<25	35	<25	<250	<25	-	<25	1200	-	<50
MW-6B	21-31	08-Sep-98	8010	-	-	<100	<100	<100	<100	<100	120	<100	<1000	<100	-	<100	3500	-	<200
MW-7B	18-28	01-Nov-96	8010	-	-	1000	<1000	<1000	<1000	<1000	<1000	<1000	<10000	<1000	-	<1000	37000	-	<2000
MW-7B	18-28	18-Sep-97	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	31000	<5000	<5000
MW-7B	18-28	17-Apr-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	52000	-	<5000
MW-7B	18-28	08-Sep-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	49000	-	<2500

Table A-2
Summary of Chemical Analytical Data for Groundwater Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Collection Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)															
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
Summary of Concentrations (ug/L)																			
Number of Samples Analyzed				32	35	102	102	102	34	102	102	102	102	102	33	102	102	32	102
Number of Analyte Detections				6	2	22	43	4	2	10	51	2	1	1	1	8	71	14	12
Frequency of Detection (%)				19%	6%	22%	42%	4%	6%	10%	50%	2%	1%	1%	3%	8%	70%	44%	12%
Minimum Concentration				11	4.7	6.1	0.5	1.9	5	0.9	0.62	1.6	32	46	6.6	0.73	0.57	5.9	1.1
Maximum Concentration				37	460	2300	1000	140	5	270	25000	1.6	32	46	6.6	27	260000	12000	1400
95% Upper Confidence Limit[c]				88	23	2014	3308	262	31941	288	52099	259	2621	284	14	247	3130151	2221	651
Representative Concentration (ug/L)[d]				37	23	2,000	1,000	140	5.0	270	25,000	2.0	32	46	7.0	27	260,000	2,200	650

Notes:

(a) Depth of groundwater interval sampled in feet below ground surface ("ft bgs").

(b) A hyphen (-) indicates that no analysis was performed for the chemical.

(c) The 95% upper confidence limit of the mean concentration was calculated assuming a log-normal data distribution. One-half the detection limit value was used for samples in which the analyte concentration was reported as below the detection limit.

(d) The representative concentration was selected as the lesser of either the 95% upper confidence limit concentration or the maximum detected concentration.

Table A-3
Representative Concentrations of Chemicals in Soil and Groundwater
3695-3723 Haven Avenue Property, Menlo Park, California

Chemical	Soil		Groundwater	
	Frequency of Detection	Representative Concentration[a] (mg/kg)	Frequency of Detection	Representative Concentration[a] (ug/L)
Acetone	-[b]	-	19%	37
Benzene	-	-	6%	23
Carbon Tetrachloride	1%	0.021	22%	2000
Chloroform	2%	0.016	42%	1000
1,2-Dichlorobenzene	1%	0.066	-	-
1,1-Dichloroethane	1%	0.065	4%	140
1,2-Dichloroethane	-	-	6%	5.0
1,1-Dichloroethene	-	-	10%	270
cis-1,2-Dichloroethene	60%	4.0	50%	25000
trans-1,2-Dichloroethene	1%	0.063	2%	2
Methylene Chloride	-	-	1%	32
Tetrachloroethene	1%	0.063	1%	46
Toluene	-	-	3%	7
1,1,1-Trichloroethane	-	-	8%	27
Trichloroethene	62%	1.8	70%	260000
1,1,2-Trichloro-1,2,2-Trifluoroethane	33%	0.57	44%	2200
Vinyl Chloride	4%	0.14	12%	650

Notes:

(a) Representative Concentrations ("RCs") were calculated as the lesser of the maximum concentration or the 95% Upper Confidence Limit of the mean concentration ("UCL95"), assuming a lognormal distribution.

(b) A hyphen (-) means the chemical was not detected.

Table A-4
Oral and Inhalation Non-Carcinogenic Toxicity Information for Chemicals of Concern
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Oral Reference Dose (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Non-Carcinogenic Effects	Source[a]
Acetone	0.1	0.1[b]	Liver toxicity in mice, liver and kidney weight gain in rats.	IRIS
Benzene	0.003	0.0017	Neoplasia in rats and mice.	NCEA
Carbon Tetrachloride	0.0007	0.011	Liver lesions in rats.	IRIS (o), OEHHA (i)
Chloroform	0.01	0.086	Liver cyst formation in dogs.	IRIS (o), OEHHA (i)
1,2-Dichlorobenzene	0.09	0.057	Liver necrosis and lymphocyte depletion in rats and mice.	IRIS (o), HEAST (i)
1,1-Dichloroethane	0.1	0.14	Under review	HEAST
1,2-Dichloroethane	-[c]	-	-	-
1,1-Dichloroethene	0.009	0.0057	Hepatic lesions in rats, alimentary system effects.	IRIS (o), HEAST (i)
cis-1,2-Dichloroethene	0.01	0.01[b]	Decreased hematocrit and hemoglobin in rats.	HEAST
trans-1,2-Dichloroethene	0.02	0.02[b]	Changes in serum chemistry, decreased thymus gland weight in rats.	IRIS
Methylene Chloride	0.06	0.086	Liver toxicity in rats.	IRIS (o), OEHHA (i)
Tetrachloroethene	0.01	0.011	Liver toxicity in mice, liver and kidney weight gain in rats.	IRIS (o), OEHHA (i)
Toluene	0.2	0.11	Neurotoxicity in humans when inhaled; change in liver, kidney weights in rats.	IRIS (o), OEHHA & IRIS (i)
1,1,1-Trichloroethane	0.035	0.29	Central nervous system depression, psychomotor effects in humans.	NCEA
Trichloroethene	0.17[d]	0.17	Under review.	OEHHA
1,1,2-Trichloro-1,2,2-Trifluoroethane	30	26	Psychomotor impairment in occupationally exposed humans.	IRIS (o), OEHHA (i)
Vinyl Chloride	0.0014[d]	0.0014	Under review.	OEHHA

Table A-4
Oral and Inhalation Non-Carcinogenic Toxicity Information for Chemicals of Concern
3695-3723 Haven Avenue Property, Menlo Park, California

Notes:

(a) Reference doses ("RfDs") were obtained from the California EPA Office of Environmental Health Hazard Assessment, 1997 Technical Support Document for the Determination of Noncancer Chronic Reference Exposure Levels ("OEHHA"); the U.S. Environmental Protection Agency Integrated Risk Information System ("IRIS"); the U.S. EPA 1997 Health Effects Assessment Summary Tables ("HEAST"); or the U.S. EPA National Center for Environmental Assessment Risk Assessment Issue Papers ("NCEA"); in order of precedence. Notation: (o) = oral reference dose, (i) = inhalation reference dose.

(b) An inhalation RfD is not defined in the listed sources, so the corresponding oral RfD (i.e. route-to-route extrapolation) is shown.

(c) A hyphen (-) indicates that no data for the indicated parameter was available from the listed sources.

(d) An oral RfD is not defined in the listed sources, so the corresponding inhalation RfD (i.e. route-to-route extrapolation) is shown.

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Table A-5
Oral and Inhalation Carcinogenic Toxicity Information for Chemicals of Concern
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Weight of Evidence Classification[a]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Inhalation Slope Factor $(mg/kg\text{-}d)^{-1}$	Carcinogenic Effects	Source[b]
Acetone	D	-[c]	-	-	IRIS
Benzene	A	0.1	0.1	Non-lymphocytic leukemia from occupational exposure of humans.	Memo
Carbon Tetrachloride	B2	0.15	0.15	Liver cell carcinomas in rats, mice, hampsters.	Memo
Chloroform	B2	0.031	0.019	Several tumor types formed in rats and mice.	Memo
1,2-Dichlorobenzene	D	-	-	-	IRIS
1,1-Dichloroethane	C	0.0057	0.0057	Mammary gland carcinomas, liver cell carcinomas, benign uterine polyps in female rats and mice.	Memo
1,2-Dichloroethane	B2	0.07	0.07	Several tumor types in rats. Lung papillomas in mice.	Memo
1,1-Dichloroethene	C	-	-	-[d]	IRIS
cis-1,2-Dichloroethene	D	-	-	-	IRIS
trans-1,2-Dichloroethene	-	-	-	-	-
Methylene Chloride	B2	0.014	0.0035	Liver cell and lung neoplasms in mice. Salivary gland sarcomas, benign mammary tumors in rats.	Memo
Tetrachloroethene	B2	0.051	0.021	-	Memo
Toluene	D	-	-	-	IRIS
1,1,1-Trichloroethane	D	-	-	-	IRIS
Trichloroethene	B2	0.015	0.01	-	Memo
1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-
Vinyl Chloride	A	0.27	0.27	Liver, lung tumors in rats.	Memo

Table A-5
Oral and Inhalation Carcinogenic Toxicity Information for Chemicals of Concern
3695-3723 Haven Avenue Property, Menlo Park, California

Notes:

(a) U.S. EPA weight-of-evidence classification is as follows:

A = Human Carcinogen

B1 or B2 = Probable Human Carcinogen; B1 indicates that limited human data are available; B2 indicates that there is sufficient evidence in animals and inadequate or no evidence in humans.

C = Possible Human Carcinogen

D = Not Classifiable as to Human Carcinogenicity

E = Evidence of Non-Carcinogenicity for Humans

Weight-of-evidence information obtained from the U.S. Environmental Protection Agency Integrated Risk Information System database ("IRIS"); the July 1997 U.S. EPA Health Effects Assessment Summary Tables ("HEAST"); or the U.S. EPA National Center for Environmental Assessment Risk Assessment Issue Papers ("NCEA"); in order of precedence.

(b) Slope factors were obtained from the California Environmental Protection Agency, 1996 Memorandum of Cancer Potency Factors Update ("Memo", see below); the U.S. EPA IRIS database; the 1997 U.S. EPA HEAST; or the U.S. EPA NCEA, in order of precedence.

(c) A hyphen (-) indicates that no data for the indicated field was available in the listed sources.

(d) 1,1-Dichloroethene is not recognized as a human carcinogen by the State of California (source: California EPA, 1996, *California Cancer Potency Factors*, California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Sacramento, California, 1 April 1996)

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Table A-6
Human Exposure Assumptions
3695-3723 Haven Avenue Property, Menlo Park, California

Parameter	Variable	Value	Reference [a]
Air Inhalation Rate (m^3/day)	IRa		
All Adult Workers		20	USEPA (1991), Cal-EPA (1992)
Averaging Time (days)	AT		
Non-Carcinogens			
Maintenance Worker (25 yrs)		9125	USEPA (1991), Cal-EPA (1992)
Construction Worker (1 yr)		365	USEPA (1991), Cal-EPA (1992)
Indoor Worker (25 yrs)		9125	USEPA (1991), Cal-EPA (1992)
Carcinogens			
All Workers (70 yrs)		25550	USEPA (1991), Cal-EPA (1992)
Body Weight (kg)	BW		
All Adult Workers		70	USEPA (1991), Cal-EPA (1992)
Exposure Duration (years)	ED		
Maintenance Worker		25	USEPA (1991), Cal-EPA (1992)
Construction Worker		1	Best Professional Judgement
Indoor Worker		25	USEPA (1991), Cal-EPA (1992)
Exposure Frequency (days/year or events/year)	EF		
Maintenance Worker - excavation		5	Best Professional Judgement
Maintenance Worker - nonexcavation		245	Best Professional Judgement
Construction Worker		87	USEPA (1991), Cal-EPA (1992)
Indoor Worker		250	USEPA (1991), Cal-EPA (1992)
Skin Surface Area (cm^2/event)	SAs		
All Adult Workers		3160	Based on U.S. EPA (1989a)
Soil Adherence Factor (mg/cm^2)	AF		
All Outdoor Workers - Excavation		0.5	ASTM (1995)
All Outdoor Workers - Nonexcavation		0.5	ASTM (1995)
Soil Agitation Factor for Volatilization During Excavation (dimensionless)	AgF	1	U.S. EPA (1989b)
Soil Ingestion Rate (mg/day)	IRs		
Maintenance Worker - excavation		480	USEPA (1991)
Maintenance Worker - nonexcavation		50	USEPA (1991), Cal-EPA (1992)
Construction Worker		480	USEPA (1991)
Soil-Dermal Absorbtion Fraction (dimensionless)	ABS		Cal-EPA (1994)
VOCs		0.1	

Table A-6
Human Exposure Assumptions
3695-3723 Haven Avenue Property, Menlo Park, California

Notes:

(a) References for exposure assumptions:

ASTM, 1995, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*. American Society for Testing and Materials, Designation E 1739-95, 10 September 1995.

Cal-EPA, 1992, *Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities*. California Environmental Protection Agency, Department of Toxic Substances Control, Sacramento, California, July 1992.

Cal-EPA, 1994, *Preliminary Endangerment Assessment Guidance Manual*. California Environmental Protection Agency, Department of Toxic Substances Control, Sacramento, California, January 1994.

USEPA, 1989a, *Risk Assessment Guidance for Superfund ("RAGS"), Volume 1, Human Health Evaluation Manual (Part A)*. EPA/540/1-89/002, U.S. Environmental Protection Agency, Office of Emergency and Remedial Response ("OERR"), December 1989.

USEPA, 1989b, *Air Superfund National Technical Guidance Series, Volume III*. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA/450/1-89/002-004.

USEPA, 1991, *RAGS, Volume 1 - Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors*. Interim Final, OSWER Directive 9285.6-03, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, March 1991.

Table A-7
Site Physical Parameter Assumptions
3695-3723 Haven Avenue Property, Menlo Park, California

Symbol	Value	Variable	Source
h_{cap}	15	Thickness of capillary fringe (cm)	EKI, 1997b [a]
h_v	175	Thickness of vadose zone (cm)	EKI, 1997b
θ_{as}	0.083	Volumetric air content in vadose zone soil (cm^3 air / cm^3 soil)	EKI, 1997b
θ_{ws}	0.331	Volumetric water content in vadose zone soil (cm^3 water / cm^3 soil)	EKI, 1997b
θ_{acap}	0.018	Volumetric air content in capillary fringe soil (cm^3 air / cm^3 soil)	EKI, 1997b
θ_{wcap}	0.396	Volumetric water content in capillary fringe soil (cm^3 water / cm^3 soil)	EKI, 1997b
θ_{acrack}	0.083	Volumetric air content in foundation or wall cracks (cm^3 air / cm^3 crack vol.)	ASTM, 1995 [b]
θ_{wcrack}	0.331	Volumetric water content in foundation or wall cracks (cm^3 water / cm^3 crack vol.)	ASTM, 1995
θ_T	0.414	Total soil porosity (cm^3 / cm^3 soil)	EKI, 1997b
η	0.001	Areal fraction of cracks in foundation or wall (cm^2 cracks / cm^2 total area)	Daugherty, 1992 [c]
ρ_s	1.57	Soil bulk density (g soil / cm^3 soil)	EKI, 1997b
Θ_m	0.225	Soil moisture content by mass (kg water / kg dry soil)	EKI, 1997b
L_B	244	Enclosed-space volume / infiltration area ratio (cm)	EKI [d]
L_{crack}	11	Enclosed-space foundation or wall thickness (cm)	EKI, 1997b
L_{gw}	190	Depth to groundwater, i.e. $h_{cap} + h_v$ (cm)	EKI, 1997b
L_s	30	Depth to subsurface soil sources (cm)	EKI, 1997b
ER	0.00023	Enclosed-space air exchange rate (L / sec)	ASTM, 1995
U_{air}	410	Wind speed above ground surface in ambient mixing zone (cm / sec)	WRRC, 1998 [e]
δ_{air}	200	Ambient air mixing zone height (cm)	ASTM, 1995
W	5100	Width of source area parallel to wind or groundwater flow direction (cm)	EKI, 1997a
foc	0.0061	Fraction of organic carbon in soil (g C / g soil)	EKI, 1997b

Notes:

(a) Parameter values were derived or estimated from physical properties measured onsite and documented in one of the following:

EKI, 1997a, *Remedial Investigation Report, 3695-3723 Haven Avenue and Vicinity, Menlo Park, California.* Erler & Kalinowski, Inc., 21 April 1997.

EKI, 1997b, *Results of Additional Investigations and Testing, 3695-3723 Haven Avenue and Vicinity, Menlo Park, California.* Erler & Kalinowski, Inc., 30 December 1997.

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Table A-7
Site Physical Parameter Assumptions
3695-3723 Haven Avenue Property, Menlo Park, California

(b) Parameter values were defaults taken from the ASTM RBCA guide:

ASTM, 1995, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*. American Society for Testing and Materials, Designation E 1739-95, 10 September 1995.

Volumetric air and water content of foundation and wall cracks assumed to be identical to air and water content of vadose zone soil, as in RBCA.

(c) Taken from:

Daugherty, S.J., 1992, *Regulatory Approaches to Hydrocarbon Contamination from Underground Storage Tanks*. in Kostecki, P.T, and E.J. Calabrese, eds., Hydrocarbon Contaminated Soils and Groundwater: Analysis, Fate, Environmental and Public Health Effects, Remediation. Vol. 1. Lewis Publishers.

(d) Best professional judgement by EKI personnel.

(e) Western Regional Climate Center data for Moffett Field, Mountain View, CA.

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Table A-8

Chemical Parameters of Compounds Present in Site Soil or Groundwater
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Solubility[a] (mg/L)	C_{sat}[b] (mg/kg)	C_{max}[c] (mg/kg)	H' (unitless)	D^{air} (cm^2/s)	D^{water} (cm^2/s)	K_{oc} ($cm^3 H_2O/g soil$)	VFw_{esp} (L H_2O/m^3 air)	VFs_{esp} (kg soil/m^3 air)	VFw_{amb} (L H_2O/m^3 air)	VFs_{amb} (kg soil/m^3 air)
Acetone	1.0E+06	47,925	-	0.0017	0.10	1.0E-05	0.37	2.8E-06	1.4E-05	6.0E-07	1.7E-05
Benzene	1700	267	-	0.23	0.087	9.0E-06	78	4.8E-05	7.1E-05	5.4E-06	9.1E-05
Carbon Tetrachloride	850	452	0.021	0.96	0.079	8.2E-06	344	1.7E-04	7.9E-05	9.3E-06	1.0E-04
Chloroform	8200	1,380	0.016	0.11	0.088	9.2E-06	87	2.6E-05	3.5E-05	3.8E-06	4.6E-05
1,2-Dichlorobenzene	130	75	1.5	0.076	0.071	7.3E-06	385	1.4E-05	5.7E-06	2.3E-06	7.4E-06
1,1-Dichloroethane	5200	473	0.38	0.18	0.089	9.1E-06	30	3.9E-05	1.0E-04	4.9E-06	1.3E-04
1,2-Dichloroethane	8400	592	-	0.045	0.089	9.1E-06	16	1.2E-05	3.7E-05	2.1E-06	4.8E-05
1,1-Dichloroethene	2500	366	-	0.86	0.091	9.6E-06	65	1.8E-04	2.9E-04	1.0E-05	3.8E-04
cis-1,2-Dichloroethene	600	78	51	0.12	0.091	9.6E-06	59	2.8E-05	5.0E-05	4.1E-06	6.5E-05
trans-1,2-Dichloroethene	4900	646	0.11	0.30	0.091	9.6E-06	59	6.6E-05	1.2E-04	6.6E-06	1.5E-04
Methylene Chloride	16000	963	-	0.0709	0.10	1.1E-05	8.7	2.0E-05	7.5E-05	3.2E-06	9.6E-05
Tetrachloroethene	590	252	0.073	0.54	0.074	7.6E-06	272	9.4E-05	5.2E-05	6.8E-06	6.7E-05
Toluene	540	125	-	0.28	0.078	8.0E-06	132	5.3E-05	5.3E-05	5.3E-06	6.8E-05
1,1,1-Trichloroethane	1500	339	-	0.55	0.079	8.1E-06	125	1.0E-04	1.1E-04	7.3E-06	1.4E-04
Trichloroethene	1100	200	40	0.30	0.081	8.4E-06	95	5.8E-05	7.4E-05	5.8E-06	9.5E-05

Table A-8
Chemical Parameters of Compounds Present in Site Soil or Groundwater
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Solubility[a] (mg/L)	C_{sat}[b] (mg/kg)	C_{max}[c] (mg/kg)	H' (unitless)	D^{air} (cm^2/s)	D^{water} (cm^2/s)	K_{oc} ($cm^3H_2O/gsoil$)	VFw_{esp} ($L\ H_2O/m^3\ air$)	VFs_{esp} (kg soil/m^3 air)	VFw_{amb} ($L\ H_2O/m^3$ air)	VFs_{amb} (kg soil/m^3 air)
1,1,2-Trichloro-1,2,2-Trifluoroethane	200	149	11	13.85	0.061	7.5E-06	389	1.7E-03	6.2E-04	3.8E-05	7.9E-04
Vinyl Chloride	4300	265	0.56	0.90	0.11	1.1E-05	2.5	2.2E-04	8.6E-04	1.2E-05	1.1E-03

Notes:

(a) Solubility values from Montgomery, J.H. and L.M. Welkom, 1991, *Groundwater Chemicals Desk Reference*. Lewis Pub. Co., Chelsea, Mich.

(b) Saturation soil concentration ("Csat") calculated through the equation:

$C_{sat} = (S \times \Theta m / \rho_s) \times (Koc \times foc \times \rho_s + \theta_{ws} + H' \times \theta_{as})$

(Parameters and values used in the above equation are shown in Table A-7 and Table A-8.)

(c) Definition of terms (for an explanation of calculations, see section 2.4 of the text):

- S = Solubility
- C_{sat} = Saturation concentration
- C_{max} = Maximum analysed concentration in soil samples
- H' = Dimensionless Henry's Law constant
- D_{air} = Diffusivity in air
- D_{water} = Diffusivity in water
- K_{oc} = Organic carbon partition coefficient
- VFw_{esp} = Volatilization factor for the groundwater to enclosed space air pathway
- VFs_{esp} = Volatilization factor for the soil to enclosed space air pathway
- VFw_{amb} = Volatilization factor for the groundwater to ambient air pathway
- VFs_{amb} = Volatilization factor for the soil to ambient air pathway

Table A-9
Characterization of Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Indoor Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VFs_{sup} [b] (kg soil/m^3 air)	Indoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	-	1.4E-05	-	-	-	0.1	-	-	-
Benzene	-	7.1E-05	-	-	-	0.0017	0.1	-	-
Carbon Tetrachloride	0.021	7.9E-05	1.7E-06	3.3E-07	1.2E-07	0.011	0.15	3.0E-05	1.7E-08
Chloroform	0.016	3.5E-05	5.7E-07	1.1E-07	4.0E-08	0.086	0.019	1.3E-06	7.5E-10
1,2-Dichlorobenzene	0.066	5.7E-06	3.8E-07	7.4E-08	-	0.057	-	1.3E-06	-
1,1-Dichloroethane	0.065	1.0E-04	6.5E-06	1.3E-06	4.5E-07	0.14	0.0057	9.1E-06	2.6E-09
1,2-Dichloroethane	-	3.7E-05	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	2.9E-04	-	-	-	0.0057	-	-	-
cis-1,2-Dichloroethene	3.950	5.0E-05	2.0E-04	3.9E-05	-	0.01	-	3.9E-03	-
trans-1,2-Dichloroethene	0.063	1.2E-04	7.4E-06	1.4E-06	-	0.02	-	7.2E-05	-
Methylene Chloride	-	7.5E-05	-	-	-	0.086	0.0035	-	-
Tetrachloroethene	0.063	5.2E-05	3.3E-06	6.4E-07	2.3E-07	0.011	0.021	5.8E-05	4.8E-09

Table A-9
Characterization of Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Indoor Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VF_{esp} [b] (kg soil/m^3 air)	Indoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDI) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	-	5.3E-05	-	-	-	0.11	-	-	-
1,1,1-Trichloroethane	-	1.1E-04	-	-	-	0.29	-	-	-
Trichloroethene	1.811	7.4E-05	1.3E-04	2.6E-05	9.4E-06	0.17	0.01	1.5E-04	9.4E-08
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	6.2E-04	3.6E-04	6.9E-05	-	26	-	2.7E-06	-
Vinyl Chloride	0.137	8.6E-04	1.2E-04	2.3E-05	8.2E-06	0.0014	0.27	1.6E-02	2.2E-06
Total Estimated Risk due to Inhalation of COCs Volatilized from Soil to Indoor Air:								0.02	2.35E-06

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from soil to enclosed-space air ("VFesp") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Ca * IRa * EF * ED}{BW * AT}$$

Table A-9

Characterization of Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Indoor Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)
Ca = Exposure Point Air Concentration (mg/m^3) = VFssp * RC
IRa = Air Inhalation Rate (m^3/day)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-10

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Indoor Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{esp} [b] (L H_2O / m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [e] (mg/kg-day)	Carcinogenic Chronic Daily Intake [e] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	37	2.8E-06	1.0E-07	2.1E-08	-	0.1	-	2.1E-07	-
Benzene	23	4.8E-05	1.1E-06	2.2E-07	7.7E-08	0.0017	0.1	1.3E-04	7.7E-09
Carbon Tetrachloride	2000	1.7E-04	3.5E-04	6.8E-05	2.4E-05	0.011	0.15	6.2E-03	3.7E-06
Chloroform	1000	2.6E-05	2.6E-05	5.1E-06	1.8E-06	0.086	0.019	5.9E-05	3.4E-08
1,2-Dichlorobenzene	-	1.4E-05	-	-	-	0.057	-	-	-
1,1-Dichloroethane	140	3.9E-05	5.5E-06	1.1E-06	3.8E-07	0.14	0.0057	7.7E-06	2.2E-09
1,2-Dichloroethane	5.0	1.2E-05	5.8E-08	-	4.0E-09	-	0.07	-	2.8E-10
1,1-Dichloroethene	270	1.8E-04	4.8E-05	9.5E-06	-	0.0057	-	1.7E-03	-
cis-1,2-Dichloroethene	25000	2.8E-05	7.1E-04	1.4E-04	-	0.01	-	1.4E-02	-
trans-1,2-Dichloroethene	2.0	6.6E-05	1.3E-07	2.6E-08	-	0.02	-	1.3E-06	-
Methylene Chloride	32	2.0E-05	6.3E-07	1.2E-07	4.4E-08	0.086	0.0035	1.4E-06	1.5E-10
Tetrachloroethene	46	9.4E-05	4.3E-06	8.5E-07	3.0E-07	0.011	0.021	7.7E-05	6.4E-09

Table A-10

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Indoor Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{esp} [b] ($L H_2O / m^3 air$)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	7.0	5.3E-05	3.7E-07	7.2E-08	-	0.11	-	6.6E-07	-
1,1,1-Trichloroethane	27	1.0E-04	2.8E-06	5.4E-07	-	0.29	-	1.9E-06	-
Trichloroethene	260000	5.8E-05	1.5E-02	2.9E-03	1.1E-03	0.17	0.01	1.7E-02	1.1E-05
1,1,2-Trichloro-1,2,2 Trifluoroethane	2200	1.7E-03	3.8E-03	7.4E-04	-	26	-	2.9E-05	-
Vinyl Chloride	650	2.2E-04	1.4E-04	2.8E-05	1.0E-05	0.0014	0.27	2.0E-02	2.7E-06
Total Estimated Risk due to Inhalation of COCs Volatilized from Groundwater to Outdoor Air:								0.06	1.7E-05

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from groundwater to enclosed-space air ("VFwesp") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Ca * IRa * EF * ED}{BW * AT}$$

Table A-10

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Indoor Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)

Ca = Exposure Point Air Concentration (mg/m^3) * VFwamb * RC

IRa = Air Inhalation Rate (m^3/day)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-11
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index	Estimated Lifetime Incremental Cancer Risk[f]
Acetone	-	-	-	0.1	-	-	-
Benzene	-	-	-	0.003	0.1	-	-
Carbon Tetrachloride	0.021	1.2E-08	4.3E-09	0.0007	0.13	1.7E-05	6.5E-10
Chloroform	0.016	9.2E-09	3.3E-09	0.01	0.031	9.2E-07	1.0E-10
1,2-Dichlorobenzene	0.066	3.8E-08	-	0.09	-	4.2E-07	-
1,1-Dichloroethane	0.065	3.7E-08	1.3E-08	0.1	0.0057	3.7E-07	7.6E-11
1,2-Dichloroethane	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	-	-	0.009	-	-	-
cis-1,2-Dichloroethene	3.950	2.3E-06	-	0.01	-	2.3E-04	-
trans-1,2-Dichloroethene	0.063	3.6E-08	-	0.02	-	1.8E-06	-
Methylene Chloride	-	-	-	0.06	0.014	-	-
Tetrachloroethene	0.063	3.6E-08	1.3E-08	0.01	0.051	3.6E-06	6.5E-10

Table A-11
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg\text{-}d)^{-1}$	Non-Carcinogenic Hazard Index	Estimated Lifetime Incremental Cancer Risk[f]
Toluene	-	-	-	0.2	-	-	-
1,1,1-Trichloroethane	-	-	-	0.035	-	-	-
Trichloroethene	1.811	1.0E-06	3.7E-07	0.17	0.015	6.1E-06	5.6E-09
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	3.3E-07	-	30	-	1.1E-08	-
Vinyl Chloride	0.137	7.8E-08	2.8E-08	0.0014	0.27	5.6E-05	7.6E-09
Total Estimated Risk due to Ingestion of Soil Containing COCs:						3.1E-04	1.5E-08

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations.

(b) Chronic daily intakes (CDIs) were estimated using methods recommended by U.S. EPA or Cal-EPA, as follows:
(Note that different soil ingestion rates were assumed for excavation and non-excavation work. See Table A-6 for details.)

$$CDI_{(ingestion)} = \frac{Cs*IRs*EF*ED*10^{-6}\ kg/mg}{BW*AT}$$

where:

$CDI_{(ingestion)}$ = Chronic daily intake (mg/kg-day)

Cs = Concentration in soil (mg/kg)

IRs = Ingestion Rate of soil (mg/day)

Table A-11
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

EP = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)
and assuming Cs = RCsoj]

(c) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(d) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(e) Non-carcinogenic hazard index (HI) for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(f) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-12

Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Future Maintenance Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg\text{-}d)^{-1}$	Non-Carcinogenic Hazard Index[e]	Estimated Lifetime Incremental Cancer Risk[f]
Acetone	-	-	-	0.1	-	-	-
Benzene	-	-	-	0.003	0.1	-	-
Carbon Tetrachloride	0.021	3.2E-08	1.2E-08	0.0007	0.15	4.6E-05	1.7E-09
Chloroform	0.016	2.5E-08	8.8E-09	0.01	0.031	2.5E-06	2.7E-10
1,2-Dichlorobenzene	0.066	1.0E-07	-	0.09	-	1.1E-06	-
1,1-Dichloroethane	0.065	1.0E-07	3.6E-08	0.1	0.0057	1.0E-06	2.0E-10
1,2-Dichloroethane	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	-	-	0.009	-	-	-
cis-1,2-Dichloroethene	3.950	6.1E-06	-	0.01	-	6.1E-04	-
trans-1,2-Dichloroethene	0.063	9.8E-08	-	0.02	-	4.9E-06	-
Methylene Chloride	-	-	-	0.06	0.014	-	-
Tetrachloroethene	0.063	9.7E-08	3.5E-08	0.01	0.051	9.7E-06	1.8E-09

Table A-12

Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Future Maintenance Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg\text{-}d)^{-1}$	Non-Carcinogenic Hazard Index[e]	Estimated Lifetime Incremental Cancer Risk[f]
Toluene	-	-	-	0.2	-	-	-
1,1,1-Trichloroethane	-	-	-	0.035	-	-	-
Trichloroethene	1.811	2.8E-06	1.0E-06	0.17	0.015	1.6E-05	1.5E-08
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	8.9E-07	-	30	-	3.0E-08	-
Vinyl Chloride	0.137	2.1E-07	7.6E-08	0.0014	0.27	1.5E-04	2.0E-08
Total Estimated Risk due to Dermal Contact with Soil Containing COCs:						**8.4E-04**	**3.9E-08**

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations.

(b) Chronic daily intakes (CDIs) were estimated using methods recommended by U.S. EPA or Cal-EPA, as follows:

$$CDI_{(dermal\ contact)} = \frac{Cs * SAs * ABS * AF * EF * ED * 10^{-6}\ kg/mg}{BW * AT}$$

Table A-13
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VFs_{amb} [b] (kg soil /m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	-	1.7E-05	-	-	-	0.1	-	-	-
Benzene	-	9.1E-05	-	-	-	0.0017	0.1	-	-
Carbon Tetrachloride	0.021	1.0E-04	2.1E-06	4.2E-07	1.5E-07	0.011	0.15	3.8E-05	2.2E-08
Chloroform	0.016	4.6E-05	7.3E-07	1.4E-07	5.1E-08	0.086	0.019	1.7E-06	9.7E-10
1,2-Dichlorobenzene	0.066	7.4E-06	4.9E-07	9.5E-08	-	0.057	-	1.7E-06	-
1,1-Dichloroethane	0.065	1.3E-04	8.3E-06	1.6E-06	5.8E-07	0.14	0.0057	1.2E-05	3.3E-09
1,2-Dichloroethane	-	4.8E-05	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	3.8E-04	-	-	-	0.0057	-	-	-
cis-1,2-Dichloroethene	3.950	6.5E-05	2.6E-04	5.0E-05	-	0.01	-	5.0E-03	-
trans-1,2-Dichloroethene	0.063	1.5E-04	9.4E-06	1.8E-06	-	0.02	-	9.2E-05	-
Methylene Chloride	-	9.6E-05	-	-	-	0.086	0.0035	-	-
Tetrachloroethene	0.063	6.7E-05	4.2E-06	8.2E-07	2.9E-07	0.011	0.021	7.5E-05	6.2E-09

Table A-13
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	VFs_{amb}[b] (kg soil /m^3 air)	Outdoor Air Exposure Point Concentration[c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake[c] (mg/kg-day)	Carcinogenic Chronic Daily Intake[c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose[d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope[e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index[f]	Estimated Lifetime Incremental Cancer Risk[g]
Toluene	-	6.8E-05	-	-	-	0.11	-	-	-
1,1,1-Trichloroethane	-	1.4E-04	-	-	-	0.29	-	-	-
Trichloroethene	1.811	9.5E-05	1.7E-04	3.4E-05	1.2E-05	0.17	0.01	2.0E-04	1.2E-07
1,1,2-Trichlorn-1,2,2-Trifluoroethane	0.575	7.9E-04	4.6E-04	8.9E-05	-	26	-	3.4E-06	-
Vinyl Chloride	0.137	1.1E-03	1.5E-04	3.0E-05	1.1E-05	0.0014	0.27	2.1E-02	2.9E-06
Total Estimated Risk due to Inhalation of COCs Volatilized from Soil to Outdoor Air:								0.03	3.0E-06

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from soil to ambient air ("VFsamb") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") (ASTM, 1995). Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Cp * IRa * EF * ED}{BW * AT}$$

Table A-13

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Maintenance Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)

Ca = Exposure Point Air Concentration (mg/m^3) = VFsamb * RC for non-excavation work and Ca = VFsamb * RC * AgF for excavation work, where AgF = Agitation Factor = 18.

IRa = Air Inhalation Rate (m^3/day)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-14
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{amb} [b] (L H_2O / m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [e] (mg/kg-day)	Carcinogenic Chronic Daily Intake [e] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	37	6.0E-07	2.2E-08	4.3E-09	-	0.1	-	4.3E-08	-
Benzene	23	5.4E-06	1.2E-07	2.4E-08	8.7E-09	0.0017	0.1	1.4E-05	8.7E-10
Carbon Tetrachloride	2000	9.3E-06	1.9E-05	3.6E-06	1.3E-06	0.011	0.13	3.3E-04	1.9E-07
Chloroform	1000	3.8E-06	3.8E-06	7.4E-07	2.6E-07	0.086	0.019	8.6E-06	5.0E-09
1,2-Dichlorobenzene	-	2.3E-06	-	-	-	0.057	-	-	-
1,1-Dichloroethane	140	4.9E-06	6.8E-07	1.3E-07	4.8E-08	0.14	0.0057	9.5E-07	2.7E-10
1,2-Dichloroethane	5.0	2.1E-06	1.0E-08	-	7.2E-10	-	0.07	-	5.0E-11
1,1-Dichloroethene	270	1.0E-05	2.8E-06	5.4E-07	-	0.0057	-	9.5E-05	-
cis-1,2-Dichloroethene	25000	4.1E-06	1.0E-04	2.0E-05	-	0.01	-	2.0E-03	-
trans-1,2-Dichloroethene	2.0	6.6E-06	1.3E-08	2.6E-09	-	0.02	-	1.3E-07	-
Methylene Chloride	32	3.2E-06	1.0E-07	2.0E-08	7.2E-09	0.086	0.0035	2.3E-07	2.5E-11
Tetrachloroethene	46	6.8E-06	3.1E-07	6.1E-08	2.2E-08	0.011	0.021	5.6E-06	4.6E-10

Table A-14
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{amb} [b] (L H_2O / m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDI) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) (mg/kg-d)$^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	7.0	5.3E-06	3.7E-08	7.3E-09	-	0.11	-	6.7E-08	-
1,1,1-Trichloroethane	27	7.3E-06	2.0E-07	3.9E-08	-	0.29	-	1.3E-07	-
Trichloroethene	260000	5.8E-06	1.5E-03	2.9E-04	1.0E-04	0.17	0.01	1.7E-03	1.0E-06
1,1,2-Trichloro-1,2,2 Trifluoroethane	2200	3.8E-05	8.4E-05	1.6E-05	-	26	-	6.3E-07	-
Vinyl Chloride	650	1.2E-05	8.0E-06	1.6E-06	5.6E-07	0.0014	0.27	1.1E-03	1.5E-07
Total Estimated Risk due to Inhalation of COCs Volatilized from Groundwater to Outdoor Air:								0.005	1.4E-06

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from groundwater to ambient air ("VFwamb") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Ca * IRa * EF * ED}{BW * AT}$$

Table A-14

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Maintenance Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)

Ca = Exposure Point Air Concentration (mg/m^3) = VFwamb * RC

IRa = Air Inhalation Rate (m^3/day)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "j" is defined as the CDI_j/RfD_j. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "j" is defined as $CDI_j \times SF_j$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-15
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index	Estimated Lifetime Incremental Cancer Risk[f]
Acetone	-	-	-	0.1	-	-	-
Benzene	-	-	-	0.003	0.1	-	-
Carbon Tetrachloride	0.021	3.4E-08	4.9E-10	0.0007	0.15	4.9E-05	7.3E-11
Chloroform	0.016	2.6E-08	3.7E-10	0.01	0.031	2.6E-06	1.2E-11
1,2-Dichlorobenzene	0.066	1.1E-07	-	0.09	-	1.2E-06	-
1,1-Dichloroethane	0.065	1.1E-07	1.5E-09	0.1	0.0057	1.1E-06	8.6E-12
1,2-Dichloroethane	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	-	-	0.009	-	-	-
cis-1,2-Dichloroethene	3.950	6.4E-06	-	0.01	-	6.4E-04	-
trans-1,2-Dichloroethene	0.063	1.0E-07	-	0.02	-	5.2E-06	-
Methylene Chloride	-	-	-	0.06	0.014	-	-
Tetrachloroethene	0.063	1.0E-07	1.5E-09	0.01	0.051	1.0E-05	7.4E-11

Table A-15
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index	Estimated Lifetime Incremental Cancer Risk[f]
Toluene	-	-	-	0.2	-	-	-
1,1,1-Trichloroethane	-	-	-	0.035	-	-	-
Trichloroethene	1.811	2.9E-06	4.2E-08	0.17	0.015	1.7E-05	6.3E-10
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	9.4E-07	-	30	-	3.1E-08	-
Vinyl Chloride	0.137	2.2E-07	3.2E-09	0.0014	0.27	1.6E-04	8.6E-10
Total Estimated Risk due to Ingestion of Soil Containing COCs:						0.0009	1.7E-09

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations.

(b) Chronic daily intakes (CDIs) were estimated using methods recommended by U.S. EPA or Cal-EPA, as follows:
(Note that different soil ingestion rates were assumed for excavation and non-excavation work. See Table A-6 for details.)

$$CDI_{(ingestion)} = \frac{Cs * IRs * EF * ED * 10^{-6}\ kg/mg}{BW * AT}$$

where:

$CDI_{(ingestion)}$ = Chronic daily intake (mg/kg-day)
Cs = Concentration in soil (mg/kg)
IRs = Ingestion Rate of soil (mg/day)

Table A-15
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)
and assuming Cs = RCsoil

(c) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(d) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(e) Non-carcinogenic hazard index (HI) for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(f) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-16
Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index[e]	Estimated Lifetime Incremental Cancer Risk[f]
Acetone	-	-	-	0.1	-	-	-
Benzene	-	-	-	0.003	0.1	-	-
Carbon Tetrachloride	0.021	3.2E-08	1.2E-08	0.0007	0.15	4.6E-05	1.7E-09
Chloroform	0.016	2.5E-08	8.8E-09	0.01	0.031	2.5E-06	2.7E-10
1,2-Dichlorobenzene	0.066	1.0E-07	-	0.09	-	1.1E-06	-
1,1-Dichloroethane	0.065	1.0E-07	3.6E-08	0.1	0.0057	1.0E-06	2.0E-10
1,2-Dichloroethane	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	-	-	0.009	-	-	-
cis-1,2-Dichloroethene	3.950	6.1E-06	-	0.01	-	6.1E-04	-
trans-1,2-Dichloroethene	0.063	9.8E-08	-	0.02	-	4.9E-06	-
Methylene Chloride	-	-	-	0.06	0.014	-	-
Tetrachloroethene	0.063	9.7E-08	3.5E-08	0.01	0.051	9.7E-06	1.8E-09

Table A-16
Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) (mg/kg-d)$^{-1}$	Non-Carcinogenic Hazard Index[e]	Estimated Lifetime Incremental Cancer Risk[f]
Toluene	-	-	-	0.2	-	-	-
1,1,1-Trichloroethane	-	-	-	0.035	-	-	-
Trichloroethene	1.811	2.8E-06	1.0E-06	0.17	0.015	1.6E-05	1.5E-08
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	8.9E-07	-	30	-	3.0E-08	-
Vinyl Chloride	0.137	2.1E-07	7.6E-08	0.0014	0.27	1.5E-04	2.0E-08
Total Estimated Risk due to Dermal Contact with Soil Containing COCs:						**8.4E-04**	**3.9E-08**

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations.

(b) Chronic daily intakes (CDIs) were estimated using methods recommended by U.S. EPA or Cal-EPA, as follows:

$$CDI_{(dermal\ contact)} = \frac{Cs*SAs*ABS*AF*EF*ED*10^{-6}\ kg/mg}{BW*AT}$$

Table A-16
Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(dermal\ contact)}$ = Chronic daily intake (mg/kg-day)
Cs = Concentration in soil (mg/kg)
SAs = Surface Area of Skin exposed to soil contact (cm^2/event)
AF = Soil Adherence Factor (mg/cm^2)
ABS = Soil-Dermal Absorbtion Fraction (dimensionless)
EF = Exposure Frequency (events/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)
and assuming Cs = RCsoil

(c) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(d) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(e) Non-carcinogenic hazard index (HI) for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(f) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-17

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Construction Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VFs_{amb} [b] (kg soil /m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) (mg/kg-d)$^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	-	1.7E-05	-	-	-	0.1	-	-	-
Benzene	-	9.1E-05	-	-	-	0.0017	0.1	-	-
Carbon Tetrachloride	0.021	1.0E-04	2.1E-06	1.4E-07	2.1E-09	0.011	0.15	1.3E-05	3.1E-10
Chloroform	0.016	4.6E-05	7.3E-07	4.9E-08	7.1E-10	0.086	0.019	5.7E-07	1.3E-11
1,2-Dichlorobenzene	0.066	7.4E-06	4.9E-07	3.3E-08	-	0.057	-	5.8E-07	-
1,1-Dichloroethane	0.065	1.3E-04	8.3E-06	5.7E-07	8.1E-09	0.14	0.0057	4.0E-06	4.6E-11
1,2-Dichloroethane	-	4.8E-05	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	3.8E-04	-	-	-	0.0057	-	-	-
cis-1,2-Dichloroethene	3.950	6.5E-05	2.6E-04	1.7E-05	-	0.01	-	1.7E-03	-
trans-1,2-Dichloroethene	0.063	1.5E-04	9.4E-06	6.4E-07	-	0.02	-	3.2E-05	-
Methylene Chloride	-	9.6E-05	-	-	-	0.086	0.0035	-	-
Tetrachloroethene	0.063	6.7E-05	4.2E-06	2.8E-07	4.1E-09	0.011	0.021	2.6E-05	8.5E-11

Table A-17
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VFs_{amb} [b] (kg soil /m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	-	6.8E-05	-	-	-	0.11	-	-	-
1,1,1-Trichloroethane	-	1.4E-04	-	-	-	0.29	-	-	-
Trichloroethene	1.811	9.5E-05	1.7E-04	1.2E-05	1.7E-07	0.17	0.01	6.9E-05	1.7E-09
1,1,2-Trichloro-1,2,2-Trifluorgethane	0.575	7.9E-04	4.6E-04	3.1E-05	-	26	-	1.2E-06	-
Vinyl Chloride	0.137	1.1E-03	1.5E-04	1.0E-05	1.5E-07	0.0014	0.27	7.3E-03	4.0E-08
Total Estimated Risk due to Inhalation of COCs Volatilized from Soil to Outdoor Air:								**0.0**	**4.2E-08**

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from soil to ambient air ("VFsamb") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Ca * IRa * EF * ED}{BW * AT}$$

Table A-17
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)

Cs = Exposure Point Air Concentration (mg/m^3) = VFsamb * RC for non-excavation work and Cs = VFsamb * RC * AgF for excavation work, where AgF = Agitation Factor = 1.

IRa = Air Inhalation Rate (m^3/day)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-18

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Construction Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{amb} [b] (L H_2O / m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDI) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	7.0	5.3E-06	3.7E-08	2.5E-09	-	0.11	-	2.3E-08	-
1,1,1-Trichloroethane	27	7.3E-06	2.0E-07	1.3E-08	-	0.29	-	4.6E-08	-
Trichloroethene	260000	5.8E-06	1.5E-03	1.0E-04	1.5E-06	0.17	0.01	6.0E-04	1.5E-08
1,1,2-Trichloro-1,2,2 Trifluoroethane	2200	3.8E-05	8.4E-05	5.7E-06	-	26	-	2.2E-07	-
Vinyl Chloride	650	1.2E-05	8.0E-06	5.5E-07	7.8E-09	0.0014	0.27	3.9E-04	2.1E-09
Total Estimated Risk due to Inhalation of COCs Volatilized from Groundwater to Outdoor Air:								0.00	1.9E-08

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from groundwater to ambient air ("VFwamb") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Cg * IRa * EF * ED}{BW * AT}$$

Table A-18

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Construction Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)
Ca = Exposure Point Air Concentration (mg/m^3) = VFwamb * RC
IRa = Air Inhalation Rate (m^3/day)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-19
Summary of Baseline Human Health Risks from All Exposure Pathways for Future Indoor Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index				Estimated Lifetime Cancer Risk			
	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	-	2.1E-07	2.1E-07	0%	-	-	-	-
Benzene	-	1.3E-04	1.3E-04	0%	-	7.7E-09	7.7E-09	0%
Carbon Tetrachloride	3.0E-05	6.2E-03	6.3E-03	8%	1.7E-08	3.7E-06	3.7E-06	19%
Chloroform	1.3E-06	5.9E-05	6.0E-05	0%	7.5E-10	3.4E-08	3.5E-08	0%
1,2-Dichlorobenzene	1.3E-06	-	1.3E-06	0%	-	-	-	-
1,1-Dichloroethane	9.1E-06	7.7E-06	1.7E-05	0%	2.6E-09	2.2E-09	4.8E-09	0%
1,2-Dichloroethane	-	-	-	-	-	2.8E-10	2.8E-10	0%
1,1-Dichloroethene	-	1.7E-03	1.7E-03	2%	-	-	-	-
cis-1,2-Dichloroethene	3.9E-03	1.4E-02	1.8E-02	22%	-	-	-	-
trans-1,2-Dichloroethene	7.2E-05	1.3E-06	7.3E-05	0%	-	-	-	-
Methylene Chloride	-	1.4E-06	1.4E-06	0%	-	1.5E-10	1.5E-10	0%
Tetrachloroethene	5.8E-05	7.7E-05	1.4E-04	0%	4.8E-09	6.4E-09	1.1E-08	0%
Toluene	-	6.6E-07	6.6E-07	0%	-	-	-	-
1,1,1-Trichloroethane	-	1.9E-06	1.9E-06	0%	-	-	-	-
Trichloroethene	1.5E-04	1.7E-02	1.7E-02	22%	9.4E-08	1.1E-05	1.1E-05	55%
1,1,2-Trichloro-1,2,2-	2.7E-06	2.9E-05	3.1E-05	0%	-	-	-	-
Vinyl Chloride	1.6E-02	2.0E-02	3.7E-02	46%	2.2E-06	2.7E-06	4.9E-06	26%
Subtotal Hazard Index or Risk	0.02	0.06			2.3E-06	1.7E-05		
% of Total	26%	74%			12%	88%		
Totals:	**Total Non-Carcinogenic Hazard Index for all COCs (Future Indoor Workers)**		**0.08**		**Total Estimated Lifetime Cancer Risk for all COCs (Future Indoor Workers)**		**1.9E-05**	

Table A-20
Summary of Baseline Human Health Risks from All Exposure Pathways for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index						Estimated Lifetime Cancer Risk					
	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	-	-	-	4.3E-08	4.3E-08	0%	-	-	-	-	-	-
Benzene	-	-	-	1.4E-05	1.4E-05	0%	-	-	-	8.7E-10	8.7E-10	0%
Carbon Tetrachloride	1.7E-05	4.6E-05	3.8E-05	3.3E-04	4.3E-04	1%	6.5E-10	1.7E-09	2.2E-08	1.9E-07	2.2E-07	5%
Chloroform	9.2E-07	2.5E-06	1.7E-06	8.6E-06	1.4E-05	0%	1.0E-10	2.7E-10	9.7E-10	5.0E-09	6.3E-09	0%
1,2-Dichlorobenzene	4.2E-07	1.1E-06	1.7E-06	-	3.2E-06	0%	-	-	-	-	-	-
1,1-Dichloroethane	3.7E-07	1.0E-06	1.2E-05	9.5E-07	1.4E-05	0%	7.6E-11	2.0E-10	3.3E-09	2.7E-10	3.9E-09	0%
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-	5.0E-11	5.0E-11	0%
1,1-Dichloroethene	-	-	-	9.5E-05	9.5E-05	0%	-	-	-	-	-	-
cis-1,2-Dichloroethene	2.3E-04	6.1E-04	5.0E-03	2.0E-03	7.8E-03	24%	-	-	-	-	-	-
trans-1,2-Dichloroethene	1.8E-06	4.9E-06	9.2E-05	1.3E-07	9.9E-05	0%	-	-	-	-	-	-
Methylene Chloride	-	-	-	2.3E-07	2.3E-07	0%	-	-	-	2.5E-11	2.5E-11	0%
Tetrachloroethene	3.6E-06	9.7E-06	7.5E-05	5.6E-06	9.3E-05	0%	6.5E-10	1.8E-09	6.2E-09	4.6E-10	9.0E-09	0%
Toluene	-	-	-	6.7E-08	6.7E-08	0%	-	-	-	-	-	-
1,1,1-Trichloroethane	-	-	-	1.3E-07	1.3E-07	0%	-	-	-	-	-	-
Trichloroethene	6.1E-06	1.6E-05	2.0E-04	1.7E-03	1.9E-03	6%	5.6E-09	1.5E-08	1.2E-07	1.0E-06	1.2E-06	27%
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.1E-08	3.0E-08	3.4E-06	6.3E-07	4.1E-06	0%	-	-	-	-	-	-
Vinyl Chloride	5.6E-05	1.5E-04	2.1E-02	1.1E-03	2.2E-02	68%	7.6E-09	2.0E-08	2.9E-06	1.5E-07	3.0E-06	68%
Subtotal Hazard Index or Risk	3.1E-04	8.4E-04	0.03	0.005			1.5E-08	3.9E-08	3.0E-06	1.4E-06		
% of Total	1%	3%	80%	16%			0%	1%	67%	31%		
Totals:	Total Estimated Non-Carcinogenic Hazard Index for All COC (Future Maintenance Workers)				0.03		Total Estimated Lifetime Cancer Risk for All COCs: (Future Maintenance Workers)				4.5E-06	

Table A-21
Summary of Baseline Human Health Risks from All Exposure Pathways for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index						Estimated Lifetime Incremental Cancer Risk					
	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	-	-	-	1.5E-08	1.5E-08	0%	-	-	-	-	-	-
Benzene	-	-	-	5.0E-06	5.0E-06	0%	-	-	-	1.2E-11	1.2E-11	0%
Carbon Tetrachloride	4.9E-05	4.6E-05	1.3E-05	1.1E-04	2.2E-04	2%	7.3E-11	1.7E-09	3.1E-10	2.7E-09	4.8E-09	5%
Chloroform	2.6E-06	2.5E-06	5.7E-07	3.0E-06	8.6E-06	0%	1.2E-11	2.7E-10	1.3E-11	6.9E-11	3.7E-10	0%
1,2-Dichlorobenzene	1.2E-06	1.1E-06	5.8E-07	-	2.9E-06	0%	-	-	-	-	-	-
1,1-Dichloroethane	1.1E-06	1.0E-06	4.0E-06	3.3E-07	6.4E-06	0%	8.6E-12	2.0E-10	4.6E-11	3.8E-12	2.6E-10	0%
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-	7.0E-13	7.0E-13	0%
1,1-Dichloroethene	-	-	-	3.3E-05	3.3E-05	0%	-	-	-	-	-	-
cis-1,2-Dichloroethene	6.4E-04	6.1E-04	1.7E-03	6.9E-04	3.7E-03	29%	-	-	-	-	-	-
trans-1,2-Dichloroethene	5.2E-06	4.9E-06	3.2E-05	4.4E-08	4.2E-05	0%	-	-	-	-	-	-
Methylene Chloride	-	-	-	8.1E-08	8.1E-08	0%	-	-	-	3.5E-13	3.5E-13	0%
Tetrachloroethene	1.0E-05	9.7E-06	2.6E-05	1.9E-06	4.8E-05	0%	7.4E-11	1.8E-09	8.5E-11	6.4E-12	1.9E-09	2%
Toluene	-	-	-	2.3E-08	2.3E-08	0%	-	-	-	-	-	-
1,1,1-Trichloroethane	-	-	-	4.6E-08	4.6E-08	0%	-	-	-	-	-	-
Trichloroethene	1.7E-05	1.6E-05	6.9E-05	6.0E-04	7.0E-04	5%	6.3E-10	1.5E-08	1.7E-09	1.5E-08	3.2E-08	31%
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.1E-08	3.0E-08	1.2E-06	2.2E-07	1.5E-06	0%	-	-	-	-	-	-
Vinyl Chloride	1.6E-04	1.5E-04	7.3E-03	3.9E-04	8.0E-03	63%	8.6E-10	2.0E-08	4.0E-08	2.1E-09	6.3E-08	62%
Subtotal Hazard Index or Risk	8.9E-04	8.4E-04	9.2E-03	1.8E-03			1.7E-09	3.9E-08	4.2E-08	1.9E-08		
% of Total	7%	7%	72%	14%			2%	39%	41%	19%		
Totals:	Total Estimated Noncarcinogenic Hazard Index for All COCs: (Construction Workers)				0.01		Total Estimated Lifetime Cancer Risk for All COCs: (Construction Workers)				1.0E-07	

Table A-22

Risk-Based Action Levels for Soil
3695-3723 Haven Avenue Property, Menlo Park, California

Chemical	Risk-Based Action Level for Soil (mg/kg)[a]		Representative Site Soil Concentration (mg/kg)
Acetone	1000		-
Benzene	0.50		-
Carbon Tetrachloride	0.50		0.021
Chloroform	0.50		0.016
1,2-Dichlorobenzene	50		0.066
1,1-Dichloroethane	5.0		0.065
1,2-Dichloroethane	0.50		-
1,1-Dichloroethene	5.0		-
cis-1,2-Dichloroethene	500		4.0
trans-1,2-Dichloroethene	50		0.063
Methylene Chloride	0.50		-
Tetrachloroethene	0.50		0.063
Toluene	5.0		-
1,1,1-Trichloroethane	5.0		-
Trichloroethene	3.2	[b]	1.8
1,1,2-Trichloro-1,2,2-Trifluoroethane	1000		0.57
Vinyl Chloride	0.075	[b]	0.14

Notes:

(a) Risk based action levels rounded to two significant figures

(b) These volatile organic compounds have been detected in Site soil at concentrations greater than the risk-based action level

Table A-23
Risk-Based Action Levels for Groundwater
3695-3723 Haven Avenue Property, Menlo Park, California

Chemical	Risk-Based Action Level for Groundwater (ug/L)[a]		Representative Groundwater Concentration (ug/L)
Acetone	500		37
Benzene	1,000		23
Carbon Tetrachloride	2,600		2,000
Chloroform	2,000		1,000
1,2-Dichlorobenzene	500		-
1,1-Dichloroethane	510		140
1,2-Dichloroethane	500		5.0
1,1-Dichloroethene	520		270
cis-1,2-Dichloroethene	50,000		25,000
trans-1,2-Dichloroethene	510		2.0
Methylene Chloride	500		32
Tetrachloroethene	510		46
Toluene	510		7.0
1,1,1-Trichloroethane	510		27
Trichloroethene	8,000	(b)	260,000
1,1,2-Trichloro-1,2,2-Trifluoroethane	29,000		2,200
Vinyl Chloride	500	(b)	650

Note:

(a) Risk based action levels rounded to two significant figures

(b) These volatile organic compounds have been detected in Site groundwater at concentrations greater than the risk-based action level

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Table A-24
Summary of Estimated Human Health Risks from All Exposure Pathways at ACTION LEVELS for FUTURE INDOOR WORKERS
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index				Estimated Lifetime Cancer Risk			
	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	0.0264	2.8E-06	0.0264	4%	-	-	-	-
Benzene	0.0040	0.0056	0.0096	1%	2.5E-07	3.4E-07	5.9E-07	6%
Carbon Tetrachloride	7.0E-04	8.0E-03	8.7E-03	1%	4.2E-07	4.7E-06	5.1E-06	51%
Chloroform	4.1E-05	1.2E-04	1.6E-04	0%	2.4E-08	6.9E-08	9.3E-08	1%
1,2-Dichlorobenzene	0.0010	2.5E-05	0.0010	0%	-	-	-	-
1,1-Dichloroethane	6.9E-04	2.8E-05	0.0007	0%	2.0E-07	8.0E-09	2.1E-07	2%
1,2-Dichloroethane	-	-	-	-	9.2E-08	2.8E-08	1.2E-07	1%
1,1-Dichloroethene	0.05	0.003	0.05	7%	-	-	-	-
cis-1,2-Dichloroethene	0.49	0.03	0.52	73%	-	-	-	-
trans-1,2-Dichloroethene	0.06	0.0003	0.06	8%	-	-	-	-
Methylene Chloride	8.5E-05	2.2E-05	0.0001	0%	9.1E-09	2.4E-09	1.2E-08	0%
Tetrachloroethene	0.0005	0.0009	0.0013	0%	3.8E-08	7.1E-08	1.1E-07	1%
Toluene	0.000	4.8E-05	0.001	0%	-	-	-	-
1,1,1-Trichloroethane	0.000	3.5E-05	0.000	0%	-	-	-	-
Trichloroethene	0.0003	0.0005	0.0008	0%	1.7E-07	3.2E-07	4.9E-07	5%
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0047	0.0004	0.0050	1%	-	-	-	-
Vinyl Chloride	0.009	0.0156	0.025	3%	1.2E-06	2.1E-06	3.3E-06	33%
Subtotal Hazard Index or Risk	0.65	0.06			2.4E-06	7.6E-06		
% of Total	91%	9%			24%	76%		
Totals:	Estimated Non-Carcinogenic Total Hazard Index: (Future Indoor Workers)		0.71		Estimated Lifetime Total Cancer Risk: (Future Indoor Workers)		1.0E-05	

Table A-25
Summary of Estimated Human Health Risks from All Exposure Pathways at ACTION LEVELS for FUTURE MAINTENANCE WORKERS
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index						Estimated Lifetime Cancer Risk					
	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	5.7E-03	1.5E-02	0.0339	5.9E-07	0.0551	6%	-	-	-	-	-	-
Benzene	9.5E-05	2.6E-04	0.0052	6.3E-04	0.0062	1%	1.0E-08	2.7E-08	3.2E-07	3.8E-08	3.9E-07	10%
Carbon Tetrachloride	4.1E-04	1.1E-03	9.0E-04	4.2E-04	2.8E-03	0%	1.5E-08	4.1E-08	5.3E-07	2.5E-07	8.4E-07	22%
Chloroform	2.9E-05	7.8E-05	5.2E-05	1.7E-05	1.8E-04	0%	3.2E-09	8.6E-09	3.0E-08	1.0E-08	5.2E-08	1%
1,2-Dichlorobenzene	3.2E-04	8.6E-04	0.0013	4.0E-06	0.0024	0%	-	-	-	-	-	-
1,1-Dichloroethane	2.8E-05	7.7E-05	8.9E-04	3.5E-06	1.0E-03	0%	5.8E-09	1.6E-08	2.5E-07	9.9E-10	2.8E-07	7%
1,2-Dichloroethane	-	-	-	-	-	-	7.2E-09	1.9E-08	1.2E-07	5.0E-09	1.5E-07	4%
1,1-Dichloroethene	3.2E-04	8.5E-04	0.06	0.0002	0.07	7%	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0287	0.0773	0.63	0.0040	0.74	76%	-	-	-	-	-	-
trans-1,2-Dichloroethene	0.0014	0.0039	0.07	3.2E-05	0.08	8%	-	-	-	-	-	-
Methylene Chloride	4.8E-06	1.3E-05	0.0001	3.7E-06	0.0001	0%	1.4E-09	3.9E-09	1.2E-08	3.9E-10	1.7E-08	0%
Tetrachloroethene	2.9E-05	7.7E-05	0.0006	6.2E-05	0.0008	0%	5.2E-09	1.4E-08	4.9E-08	5.1E-09	7.4E-08	2%
Toluene	1.4E-05	3.9E-05	0.001	4.8E-06	0.001	0%	-	-	-	-	-	-
1,1,1-Trichloroethane	8.2E-05	0.0002	0.000	2.5E-06	0.001	0%	-	-	-	-	-	-
Trichloroethene	1.1E-05	2.9E-05	0.0004	5.3E-05	0.0004	0%	9.9E-09	2.7E-08	2.1E-07	3.2E-08	2.8E-07	7%
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.9E-05	5.2E-05	0.0060	8.3E-06	0.0060	1%	-	-	-	-	-	-
Vinyl Chloride	3.1E-05	8.3E-05	0.012	8.7E-04	0.013	1%	4.1E-09	1.1E-08	1.6E-06	1.2E-07	1.7E-06	45%
Subtotal Hazard Index or Risk	0.0372	0.100	0.83	0.006			6.2E-08	1.7E-07	3.1E-06	4.6E-07		
% of Total	4%	10%	85%	1%			2%	4%	82%	12%		
Totals:	Estimated Non-Carcinogenic Total Hazard Index: (Future Maintenance Workers)				0.98		Estimated Lifetime Total Cancer Risk: (Future Maintenance Workers)				3.8E-06	

Table A-26
Summary of Estimated Human Health Risks From All Exposure Pathways at ACTION LEVELS, for FUTURE CONSTRUCTION WORKERS
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index						Estimated Lifetime Cancer Risk					
	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	1.6E-02	1.5E-02	1.2E-02	2.0E-07	0.0435	9%	-	-	-	-	-	-
Benzene	2.7E-04	2.6E-04	0.0018	2.2E-04	0.0025	1%	1.2E-09	2.7E-08	4.4E-09	5.3E-10	3.4E-08	15%
Carbon Tetrachloride	1.2E-03	1.1E-03	3.1E-04	1.5E-04	2.7E-03	1%	1.7E-09	4.1E-08	7.4E-09	3.5E-09	5.4E-08	24%
Chloroform	8.2E-05	7.8E-05	1.8E-05	6.0E-06	1.8E-04	0%	3.6E-10	8.6E-09	4.2E-10	1.4E-10	9.5E-09	4%
1,2-Dichlorobenzene	9.0E-04	8.6E-04	0.0004	1.4E-06	0.0022	0%	-	-	-	-	-	-
1,1-Dichloroethane	8.1E-05	7.7E-05	3.1E-04	1.2E-06	4.7E-04	0%	6.6E-10	1.6E-08	3.5E-09	1.4E-11	2.0E-08	9%
1,2-Dichloroethane	-	-	-	-	-	-	8.2E-10	1.9E-08	1.6E-09	7.0E-11	2.2E-08	10%
1,1-Dichloroethene	9.0E-04	8.5E-04	0.02	6.4E-05	0.02	5%	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0814	0.0773	0.220	0.0014	0.38	76%	-	-	-	-	-	-
trans-1,2-Dichloroethene	0.0041	0.0039	0.025	1.1E-05	0.0331	7%	-	-	-	-	-	-
Methylene Chloride	1.4E-05	1.3E-05	3.8E-05	1.3E-06	6.5E-05	0%	1.6E-10	3.9E-09	1.6E-10	5.5E-12	4.2E-09	2%
Tetrachloroethene	8.2E-05	7.7E-05	0.0002	2.2E-05	0.0004	0%	5.9E-10	1.4E-08	6.8E-10	7.1E-11	1.5E-08	7%
Toluene	4.1E-05	3.9E-05	-	1.7E-06	8.1E-05	0%	-	-	-	-	-	-
1,1,1-Trichloroethane	0.0002	0.0002	0.0002	8.8E-07	0.001	0%	-	-	-	-	-	-
Trichloroethene	3.1E-05	2.9E-05	1.2E-04	1.8E-05	2.0E-04	0%	1.1E-09	2.7E-08	3.9E-09	4.5E-10	3.1E-08	14%
1,1,2-Trichloro-1,2,2-Trifluoroethane	5.4E-05	5.2E-05	2.1E-03	2.9E-06	2.2E-03	0%	-	-	-	-	-	-
Vinyl Chloride	8.7E-05	8.3E-05	0.004	3.0E-04	0.004	1%	4.7E-10	1.1E-08	2.2E-08	1.6E-09	3.5E-08	16%
Subtotal Hazard Index or Risk	0.1057	0.100	0.29	0.002			7.1E-09	1.7E-07	4.3E-08	6.4E-09		
% of Total	21%	20%	58%	0%			3%	75%	19%	3%		
Totals:	Total Estimated Non-Carcinogenic Hazard Index: (Future Maintenance Workers)				0.50		Total Estimated Lifetime Cancer Risk for All COCs: (Future Maintenance Workers)				2.2E-07	

APPENDIX B

APPENDIX A

AGREEMENT AND ACKNOWLEDGMENT STATEMENT
3723 Haven Ave
Menlo Park, CA

Soil Management Plan Agreement

All project personnel and subcontractors are required to sign the following agreement prior to conducting work at the site.

1. I have read and fully understand the plan and my individual responsibilities.

2. I agree to abide by the provisions of the plan.

Name	Signature
Company	Date
Name	Signature
Company	Date
Name	Signature
Company	Date
Name	Signature
Company	Date

(Add additional sheets if necessary)

2363 Mariner Square Drive, Suite 245, Alameda CA, 94501 awrcorp.net

April 14, 2021

Matthew Pruter
Associate Planner
City of Menlo Park
701 Laurel Street
Menlo Park, CA 94025

via email: MAPruter@menlopark.org

Subject: Response to City of Menlo Park April 9, 2021 Email Request
Proposed Development Project
3723 Haven Ave, Menlo Park CA

AWR prepared this letter on behalf of FPG Development Group and the proposed development at 3723 Haven Ave, Menlo Park CA . This letter responds to the City of Menlo Park's April 9, 2021 email, which requests clarification regarding the reports describing environmental conditions 3723 Haven Avenue in relation to the proposed development.

Environmental Conditions

AWR previously sent the City the *Environmental Sampling Report* (AWR, April 2019). An updated report titled *Site Investigation Report* (AWR, August 2019) is attached. The *Site Investigation Reports* states that its purpose was "to investigate and evaluate the lateral and vertical extent of chlorinated volatile organic compounds (CVOCs) in ground water and soil vapor at 3723 Haven Ave., Menlo Park, CA (Site)." The report also recommends actions to mitigate risks posed by environmental conditions to the proposed development. The findings documented in the *Site Investigation Report* remain valid today.

Please know that the Regional Water Quality Control Board (Water Board) is currently in receipt of a Risk Management Plan (RMP) for the development proposed at 3723 Haven Avenue. Based on the environmental conditions, the RMP describes mitigation measures to be performed during construction. Our communications with the Water Board indicate that the RMP will be approved.

Since August 2019, others have performed and documented environmental investigations in the immediate area. The most recent environmental reports can be found on the State Water Board's Geotracker database.

Phase II Report is Not Needed

Phase II ESAs typically evaluate if known or suspected contamination identified in a preceding Phase I ESA are present or absent at a property. However, many years of environmental investigations already have been performed at and adjacent to 3723 Haven Avenue pursuant to the Water Board's directives and Siltec's prior operations. Therefore, a formal Phase II was deemed

unnecessary. Instead, the *Site Investigation Report* was conducted to inform the design of environmental mitigation measures for the proposed development, as described in the RMP.

Phase I ESA

A Phase I ESA (attached) was prepared in 2018 and is attached.

If you have any questions regarding the environmental matters related to this property, please contact me at 925-786-5230 or tfulmer@awrcorp.net, or the Regional Water Quality Control Board's case manager for the site Nicole Fry, 510-622-5047 Nicole.Fry@Waterboards.ca.gov .

Regards,

AWR ENVIRONMENTAL

Tyson Fulmer, PG
Senior Project Manager

ATTACHMENTS

Site Investigation Report, 3723 Haven Avenue, Menlo Park, CA, AWR, August 2019

Phase I Environmental Site Assessment, 3705 and 3723 Haven Avenue, Menlo Park, CA, AWR, 2018

Phase I Environmental Site Assessment

3705 and 3723 Haven Avenue
Menlo Park, California

March 21, 2018

Prepared by:
AWR Environmental
1046 W Taylor Street, Suite 209
San Jose, CA 95126

Executive Summary

Consultant: AWR Environmental

Subject Property: 3705 and 3723 Haven Avenue, Menlo Park, California

Client: Huettig & Schromm, Inc

Location: The Subject Property is located at 3705 and 3723 Haven Avenue in Menlo Park, California. The site is two detached parcels referenced as Assessor's Parcel Number (APN) 055-170-240 and 055-170-350. A parcel currently with the address of 3515 Haven Avenue is located between the two subject site parcels and is not included as part of this Phase I ESA.

Current Use: The two parcels each have a single story building that is divided into multiple tenant spaces. The building at 3723 Haven was initially constructed between 1968 and 1974 and has a multiple tenant office area in the front and the rear is a raised ceiling warehouse style area that is occupied by two separate tenants. The building at 3705 Haven was initially constructed between 1963 and 1968 and is currently multiple tenant office space. Paved parking/driving areas and landscaping and hardscaping near the buildings and property perimeter is also present on both parcels.

Current Owner: The current property owner of both parcels is Integris/Millenium Joint Venture LLC.

Vicinity Characteristics: The surrounding area was traditionally industrial but is becoming mixed use with a large apartment complex recently constructed on the larger parcel located behind both of the subject site parcels.

Purpose: This Phase I Environmental Site Assessment (ESA) was performed to (1) identify any recognized environmental conditions (RECs), (2) identify any vapor encroachment conditions (VECs), and (3) permit a user to satisfy one of the requirements to qualify for the innocent landowner defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) liability protection (42 U.S.C. §9601). All components of this ESA were performed or overseen by Environmental Professionals as defined in the All Appropriate Inquiries (AAI) Standard and the American Society for Testing and Materials (ASTM) E 1527-13.

Conclusions:

Our assessment revealed the following for the site:

Recognized Environmental Conditions (REC): none

Historical Recognized Environmental Conditions (HREC): none

Controlled Recognized Environmental Conditions (CREC):
The release from the Siltec Corporation is a controlled recognized environmental condition (CREC) because it has been granted a no further action determination letter but environmental impacts were known to be present at the site at the time of closure and the environmental restrictions and requirements in the deed restriction apply. These known residual conditions have the potential to pose ongoing risks to the quality of soil vapor, soil, ground water, and indoor air at 3705 and 3723 Haven Avenue.

From 1970 through 1989, Siltec Corporation used the site for manufacturing polished silicon wafers, conducting various industrial activities on the site and adjoining properties. Chlorinated volatile organic compounds (VOCs) were used on site during this period and in 1994 VOCs were detected in local soil and groundwater.

The site and adjoining parcels were reported and investigated under the name Siltec at 3702-3723-Haven Avenue. This release address is listed in other records as 3695-3723 Haven Avenue and 3705-3723 Haven Avenue.

Vapor Encroachment Condition - It was identified during the screening process that a Vapor Encroachment Condition (VEC) has a potential to be present or cannot be ruled out at the subject property due to residual concentrations of chlorinated solvents used and released at and adjacent to both parcels.

In 1999, a deed restriction specifying prohibitions on certain site uses for all three parcels in the original Siltec property, and outlining certain monitoring responsibilities of the property owners, including practices specified in the Risk Management Plan (RMP). The RMP was incorporated into the deed restriction and both were recorded in the Official records of San Mateo County for all three Siltec properties (including the two parcels that are the subject site) on August 9, 1999.

The RWQCB No Further Action (NFA) letter dated June 16, 2014 addresses the site as 3695-3723 Haven Ave. However, the GeoTracker file lists 3705-3723 Haven

Based on the 1960s-1970s construction dates, asbestos containing materials and lead based paint may have been used in the buildings. This is not a REC as defined in the ASTM standard practice. Any renovation or demolition should comply with applicable sampling and abatement requirements.

Recommendations:

The previous release appears to have been resolved to the satisfaction of the overseeing agency and no additional investigation or remediation is needed. We do, however, recommend the following:

Confirm with the Regional Water Board the requirement to continue sampling ground water from the remaining monitoring well MW-8 and if this well can now be destroyed.

Evaluate the quality of soil gas and potential risks to indoor air at the subject properties.

Based on the 1960s-1970s construction dates, asbestos containing materials and lead based paint may have been used in the buildings. This is not a REC as defined in the ASTM standard practice. Any renovation or

demolition should comply with applicable sampling and abatement requirements. Evaluation of lead in soil due to lead based paint may be prudent.

Evaluate the quality of ground water at the subject properties to assess the adequacy of the prior remediation and any persistent residual impacts from on-site and off-site conditions.

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1. INTRODUCTION

On behalf of Huettig & Schromm, Inc (hereinafter referred to as the "Client"), Applied Water Resources Corporation (AWR), performed a Phase I Environmental Site Assessment (ESA) of the property located at 3705 and 3723 Haven Ave, Menlo Park, California (hereinafter referred to as the "subject property").

1.1 PURPOSE

This Phase I Environmental Site Assessment (ESA) was performed to (1) identify any recognized environmental conditions (RECs), (2) identify any vapor encroachment conditions (VECs), and (3) permit a user to satisfy one of the requirements to qualify for the innocent landowner defense under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) liability protection (42 U.S.C. §9601). All components of this ESA were performed or overseen by Environmental Professionals as defined in the All Appropriate Inquiries (AAI) Standard and the American Society for Testing and Materials (ASTM) E 1527-13.

1.2 DETAILED SCOPE OF SERVICES

The following tasks were performed in accordance with the Scope of Services.

- Visual site inspection of the subject property to investigate for recognized environmental conditions. AWR is not responsible for inspecting areas covered by parked vehicles, overgrown vegetation, and other obstacles preventing access.
- A historical review of the use and improvements of the subject property through a review of aerial photographs, historical topographic maps, city directories, fire insurance maps, title reports, and/or building department records.
- A review of available geologic and hydrogeologic literature concerning the property and surrounding area.
- Interviews of persons familiar with the history of the subject property, including key site managers, owners, tenants, past tenants, and/or previous owners.
- Review of appropriate federal, state, and local regulatory agencies to reveal known hazardous wastes sites or significant leaks or spills of hazardous materials that May have occurred at the subject property and immediate vicinity.
- Interviews with applicable local agencies familiar with the areas in the vicinity of the subject property such as local fire departments, health departments, Regional Water Quality Control Board, and/or other local government agencies.

1.3 Significant Assumptions

No significant assumptions were made during this Phase I ESA.

1.4 Limitations and Expectations of Agreement

AWR has performed the services for this project in accordance with our proposal, and within the current standards of the American Society for Testing and Materials (ASTM 1527-13) for Phase I Environmental Site Assessments and the standards for All Appropriate Inquiries (AAI) approved by the Federal Environmental Protection Agency. Except for the representations set forth in this Phase I ESA, no other representations, guarantees, or warrantees are either expressed or implied. A record search was limited to reasonably ascertainable information that could be obtained within 20 calendar days.

The review was limited to a search for RECs at the subject property. The term REC means the presence or likely presence of any hazardous substances or petroleum products on a property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the property or into the ground, groundwater, or surface water of the property including vapor encroachment conditions. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include *de minimus* conditions that generally do not present a material risk of harm to public health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies.

The term vapor encroachment condition (VEC) means the presence or likely presence of chemical of concern vapors in the subsurface of the subject property caused by the release of vapors from contaminated soil or ground water either on or near the subject property as identified by Tier 1 or Tier 2 procedures.

There is no investigation that is thorough enough to preclude the presence of hazardous materials that presently, or in the future, may be considered hazardous at the site. Because regulatory evaluation criteria are constantly changing, concentrations of contaminants presently considered low may, in the future, fall under more stringent regulatory standards that require remediation.

The Site Reconnaissance was limited to visual observation of surface conditions at the subject property. Interviews with public agency personnel were conducted. Reasonably ascertainable information was reviewed. This approach reflects current ASTM standards and AAI regulations.

Where there is a conflict between the environmental database and AWR's actual knowledge with regard to the distance and direction from the subject property of sites listed on the database, information obtained by AWR from the site reconnaissance was used. Whenever feasible, AWR notes such conflict within the text of the report.

This ESA addresses recognized environmental conditions at the subject property. However, certain conditions, such as those listed below may not be revealed:

1) naturally occurring toxic materials in subsurface soils, rocks, or water, or toxicity of onsite flora;
2) toxicity of substances common in current habitable environments, such as stored household products, building materials, and consumables;
3) biological pathogens;

4) contaminant plume below the depths sampled or from remote source;
5) contaminants or contaminant concentrations that do not violate present regulatory standards, but may violate future standards; and
6) unknown site contamination, such as illegal dumping and/or accidental spillage which may occur following the site visit by AWR.

Opinions and judgments expressed herein, which are based on our understanding and interpretation of current regulatory standards, should not be construed as legal opinions. This document and the information contained herein have been prepared solely for the Client and any reliance on this report by third parties not authorized by the Client shall be at such party's sole risk.

Conducting an AAI Phase I ESA alone does not provide a landowner with protection against CERCLA liability. Landowners who want to qualify as bona fide prospective purchasers or contiguous property owner must comply with all of the statutory requirements identified in CERCLA Section 107(r) and 107(q).

1.5 Special Terms and Conditions

No special terms or conditions were agreed upon for conducting this Phase I ESA.

1.6 User Reliance

As specified in ASTM E 1527-13, Sections 7.5.2 and 7.5.2.1, AWR is not required to independently verify the information provided by the User (Client), obtained from interviews, previous environmental reports, and/or reviewed documents during records review.

2. SITE DESCRIPTION

2.1 Site Location

The Subject Property is located at 3705 and 3723 Haven Avenue in Menlo Park, California. The site is two detached parcels referenced as Assessor's Parcel Number (APN) 055-170-240 and 055-170-350. A parcel currently with the address of 3515 Haven Avenue is located between the two subject site parcels and is not included as part of this Phase I ESA. Maps showing the site location are included in Appendix A.

2.2 Site and Vicinity General Characteristics

The surrounding area was traditionally industrial but is becoming mixed use with a large apartment complex recently constructed on the larger parcel located behind both of the subject site parcels.

2.3 Current and Proposed Use of the Property

The two parcels each have a single story building that is divided into multiple tenant spaces. The building at 3723 Haven was initially constructed between 1968 and 1974 and has a multiple tenant office area in the front and the rear is a raised ceiling warehouse style area that is occupied by two separate tenants. The building at 3705 Haven was initially constructed between 1963 and 1968 and is currently multiple tenant office space. Paved parking/driving areas and landscaping and hardscaping near the buildings and property perimeter is also present on both parcels.

It is our understanding the property may be sold. The prospective buyer indicated there are no immediate plans to change the site uses although the potential for future redevelopment is being evaluated as part of the property transfer due diligence.

2.4 Description of Structures, Road, and Other Improvements

The two parcels each have a single story building that is divided into multiple tenant spaces. The building at 3723 Haven was initially constructed between 1968 and 1974 and has a multiple tenant office area in the front and the rear is a raised ceiling warehouse style area that is occupied by two separate tenants. The building at 3705 Haven was initially constructed between 1963 and 1968 and is currently multiple tenant office space. Paved parking/driving areas and landscaping and hardscaping near the buildings and property perimeter is also present on both parcels.

Both site parcels are accessed from Haven Avenue. There is one entrance off of Haven Avenue on the 3723 Haven parcel and there are two entrances connected in an L-shaped parking and driveway area on the 3705 Haven parcel.

3. USER PROVIDED INFORMATION

3.1 Title Records

An Environmental Liens Search was performed by EDR as a part of this Phase I ESA. No additional title information was provided by the user.

3.2 Environmental Liens or Activity and Use Limitations

The Environmental Professional is required to search for Activity and Use Limitations (AULs) if such records are available in *"publicly available lists or registries."* Typical AULs include land use restrictions (LURs), institutional controls (ICs), and Engineering Controls (ECs). Typical ICs include: 1) governmental controls such as zoning; 2) proprietary controls such as covenants or easements; 3) enforcement documents such as orders or consent decrees; and 4) information devices such as land record or deed notices. Typical ECs include: 1) passive measures such as vapor barriers and setbacks; 2) active measures such as remediation systems; and 3)

monitoring of passive and/or active measures. According to 40 CFR Part 312.26 (b) (7), ICs are to be investigated on the subject property and according to 40 CFR Part 312.26 (b) (6) and (c) (2) (ii), ECs are to be reviewed to a 0.5 mile radius of the subject property. ASTM 1527-13 recommends that ECs be reviewed only for the subject property.

There is a deed restriction with use limitations on both the subject site parcels. A copy of the deed restriction is included in Appendix J.

3.3 Specialized Knowledge

AWR has done previous work on nearby properties and is familiar with some of the regional and site specific environmental issues but AWR has done no previous work on the subject parcels and has no other specialized knowledge associated with the subject property.

3.4 Commonly Known or Reasonably Ascertainable Information

As noted elsewhere within the report, the site and adjacent property are a known release property and information on the past site use, investigation, and remediation is commonly known.

3.5 Valuation Reduction for Environmental Issues

AWR was not provided with purchase price information.

3.6 Owner, Property Manager, and Occupant Information

The current property owner of both parcels is Integris/Millenium Joint Venture LLC. The property manager is Mr. Howard Gruber.

Both buildings are occupied by multiple tenants as office executive suites with shared common restroom and breakroom areas.

At the time of the assessment, signage indicated the following in 3705 Haven:

100 Soccer Shots
101 Beau Monde Image
102 Dentu-Temps
103 William A. Jonson
104 Kind Homecare, Inc.
105 Svetlana Kreimer, LMFT
106 Accounting Services
107 Aukum Management

108 Daniel L. Sheehan, Attorney
109 Palo Alto Media Company
110 Wanda Smith-Schonk, Wellness Practitioner
111 Crosspond Law
113 TAF Associates
115 Michelle Joy, MA MFT
115 Stacy Lee, MA MFT
117 Arias Electronic
118 Noreen Suczek, LMT
119 Anychime
123 Bay Cities Driving School
124 Castanea Labs, Inc
126 Cadena Advisory
131 Nano Wave Institute
124 Alex Abella Properties
137 Banish Law LLP

At the time of the assessment, signage indicated the following occupants of 3723 Haven:

102 iO Lifescience, LLC
104 Academ
105 Elizabeth Kiss
109 Ibukku
110 Indo Restaurant (office)
111 California Driver Academy
112 League of Women Voters SSMC
114 Key Ideas
115 FV Management
117 Scale DB
119 Stephanie Massage
120 Trantor Foundation 3 Continuum Global
130 Cambria Corporation
133 Future Today, Inc.

In addition, signage on the outside of the building indicated a non-profit identified as Computers for Everyone which was not identified on the internal signage. There were some empty offices in each of the buildings.

3.7 Reason for Performing the Phase I ESA

AWR has performed this Phase I ESA to evaluate current site conditions in preparation of a proposed property transfer.

3.8 PREVIOUS REPORTS

There were previous environmental investigation reports prepared for the site. These reports were obtained from the San Mateo County Environmental Health Department and the San Francisco Bay Regional Water Quality Control Board and are discussed in more detail in Section 4.1.1. Copies of portions of these reports are included in Appendix K.

4. RECORDS REVIEW

The government environmental agency databases AWR reviewed are listed on pages 4 through 18 of the Map Findings Summary of the database obtained from Environmental Data Resources, Inc. (EDR), included as Appendix C. Please refer to the EDR report in Appendix C for additional information on the searched databases including the full names of the databases, the regulatory agency overseeing the databases, a summary of the types of facilities listed on each database, and the dates the information was obtained from the regulatory agencies. Where locations and distances reported by EDR were observed to be incorrect, AWR amended the information to provide a more accurate assessment.

AWR also requested information from the San Francisco Bay Regional Water Quality Control Board, the San Mateo County Environmental Health Department, and the California Department of Toxic Substance Control Envirostor database. Information from these sources for the subject site is included in Section 4.1.1.

4.1 STANDARD ENVIRONMENTAL RECORD SOURCES

4.1.1 Subject Property

The site addresses were listed on several of the searched databases.

- Siltec was listed as 3705-3723 Haven Avenue (an address range which includes the site parcels) on the FINDS, CA SPILLS 90, and CA SLIC database. The EDR report lists this site as **Completed-Case Closed** with soil and non-drinking water impacts of trichloroethylene (TCE), vinyl chloride, other chlorinated hydrocarbons, and volatile organic compounds. AWR obtained additional information on this site and also an overlapping investigation for Siltec site at 3695-3723 Haven Avenue which was closed by the RWQCB in June 2014. This information is discussed in more detail under the SF Bay RWQCB listing below.

- Thysen Management Co as identified at 3705 Haven Avenue was listed in the CA LUST, CA San Mateo BI, CA HIST CORTESE, FINDS, and CA RGA LUST databases. The listings list it as Completed-Case Closed in 1999 for a solvents release

- B S G Associates was listed at 3705 Haven Avenue on the CA HAZNET databases. According to the information in the EDR report, this listing was for a shipment from the site to an offsite recycler of 0.01 tons of other organic solids in 1995. Inclusion on this list is not indicative of a spill or release.

AWR also reviewed information from the San Francisco Bay Regional Water Quality Control Board, the San Mateo County Environmental Health Department, and the California Department of Toxic Substance Control Envirostor database.

San Francisco Bay Regional Water Quality Control Board (RWQCB) Geotracker

AWR reviewed information at the SF Bay RWQCB Geotracker website. AWR obtained additional information on release investigations for Siltec. One is listed as Siltec at 3705-3723 Haven Avenue and the other has information on a site listed as former Siltec property 3695-3723 Haven Avenue which has been issued a no further action determination.

A copy of the no further action letter, closure package, and final summary report is included as Appendix K of this report.

The records reviewed include the following summary of the release investigation, findings, and status:

From 1970 through 1989, Siltec Corporation used the site for manufacturing polished silicon wafers, conducting various industrial activities in the three on-site buildings. Chlorinated volatile organic compounds (VOCs) were used on site during this period and in 1994 VOCs were detected in local soil and groundwater.

In 1999, after extensive investigation of soil and groundwater and pilot-testing of in-situ remediation at the site, the middle of the three original buildings (Building 2 – 3717 Haven located in the central parcel that is not part of the subject site) was demolished to allow excavation and offsite disposal of soil containing chlorinated VOCs and other chemicals of concern. After excavation, some concentrations of VOCs remained in subsurface soil within the saturated zone. A risk management plan (RMP was prepared for the residual concentrations in the soil and groundwater.

In 1999, a deed restriction was finalized and recorded with San Mateo County specifying prohibitions on certain site uses, and outlining certain monitoring responsibilities of the new owners, including practices specified in the RMP. The RMP was incorporated into the deed restriction and both were recorded in the Official records of San Mateo County on August 9, 1999.

The areas of highest impacts were on the central parcel which is not part of the current subject site. After the deed restriction was recorded, the release continued to be remediated and monitored and subsequently a no further action letter was issued for the Siltec Release.

The following summary is directly from the no further action letter:

> *The listed release is comprised of three commercial buildings and was formerly used for semiconductor manufacturing which resulted in adverse impact of subsurface soil and groundwater by volatile organic compounds (VOCs), principally Trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2- DCE). Due to the close proximity to former salt ponds, groundwater in the area has extremely elevated salinity and is not suitable for municipal supply. Extensive investigations of on-site and off-site soil and groundwater have been conducted from 1994 through 2012. Risk-based cleanup goals were developed as part of the 1999 Feasibility Study/Remedial Action Plan (FS/RAP) prepared by EKI. Remedial options were evaluated, including a pilot study of in-situ chemical oxidation using*

potassium permanganate injection. Ultimately, in-situ treatment did not achieve targeted reductions in VOC concentrations, and Site remediation was accomplished in 1999 through excavation and removal of impacted soil that exceeded risk-based cleanup goal. In accordance with the FS/RAP, approximately 2,860 cubic yards of VOC-impacted soil were excavated from the Site and the adjacent 3645 and 3665 Haven Avenue properties to the northwest. The excavation was backfilled with a multilayered mixture of materials intended to inhibit movement of VOC vapors from groundwater into the clean fill. As part of the excavation effort, the building in the middle (Building No. 2 at 3715 Haven Avenue) was demolished and a new two story building was constructed south of the former Building 2 footprint, outside of the high groundwater risk area. A paved parking lot currently occupies this soil remediation area. SUMCO and its predecessors have conducted groundwater monitoring for 13 years since Site source excavation, using on-site and off-site downgradient wells. Based on the available data, VOCs in groundwater have migrated off-site to the east and northeast, but the concentrations of chemicals of concern in groundwater have stabilized or declined over this time period through natural attenuation process. Shallow soil vapor sampling conducted by SUMCO's predecessors in 1999 near the commercial building on the adjacent downgradient property to the east (3750 Haven Avenue) did not detect chemicals of concern originated from the Site above laboratory reporting limits. Currently, Building 2 (3715 Haven Avenue) is owned by Deerfield Realty, and Buildings 1 (3695- 3705 Haven Avenue) and 3 (3721-3723 Haven Avenue) are owned by Integris Millennium Joint Venture LLC (Integris). A Risk Management Plan (RMP) was prepared and incorporated into a 1999 Covenant (a.k.a. Deed Restriction) between the Site owner and the Regional Water Board. In addition to specific measures to protect human health risk from residual contamination in the groundwater, the RMP also requires the performance of groundwater monitoring in certain on-site wells, and evaluation of changing Site and regulatory conditions, by the Site owner. SUMCO sampled the two on-site shallow (A-zone) wells MW-8 and MW-9 from 1999 through 2004, during which time the concentrations remained below site-specific risk-based screening levels. After 2004, Regional Water Board approved SUMCO's proposal to discontinue monitoring of these wells and they have not been sampled by the current owner since 2004. Based on the 2004 groundwater data, 95 and 3,300 µg/l *of TCE remain in the sample collected from MW-8 and MW-9, respectively, which are lower than the site specific screening levels.*

Based on our review, we conclude that the Site meets the Water Board's criteria for a low-threat chlorinated solvent site. Remedial actions implemented to date have effectively removed the source and resulted in stabilized and improving groundwater condition. Further remedial actions will have marginal effect and it is anticipated that groundwater quality will further improve over time due to natural attenuation processes. There is an isolated pocket of elevated TCE concentrations in groundwater near MW-9 based on 2004 sampling result, which is above the existing Regional Water Board's Environmental Screening Levels (ESLs) for commercial land use. However, MW-9 is located outside of existing building footprint areas and the detected TCE concentrations were SUMCO Phoenix Corp. - 3 - below the site-specific risk-based screening levels. Based on groundwater data since 2004 from other monitoring wells at the Site, it is reasonable to expect that current TCE concentrations at MW- 9 have also decreased significantly from its 2004 level.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, I

> *conclude that no further action is necessary at the subject Site. Any risk associated with residual contamination can be adequately managed by the RMP and the deed restrictions. However, in the event the current or future land owner(s) proposes a more sensitive land use at the Site, we will require the use of up-to date groundwater information, especially near the MW-9 area, to evaluate* the risk before any revision of the deed restrictions can be granted.

The MW-8 area discussed in the no further action letter is on the 3723 parcel that is part of the current subject site. The monitoring well was observed at the site during the site reconnaissance conducted as part of the Phase I ESA. Well MW-9 discussed in the letter was near the center of the central 3715 Haven parcel and is not on the current subject site.

San Mateo County Environmental Health Department

AWR reviewed all files available at the San Mateo County Environmental Health Department for the subject site. Both hazardous material and groundwater protection program files were available for the site. The San Mateo County Environmental Health Department provided copies of some of the reports and related correspondence for the former Siltec site discussed above but no additional information beyond that previously discussed for this site.

Other than Siltec, we found no records of known releases or even hazardous material use by other site occupants on either of the subject site parcels.

California Department of Toxic Substance Control (DTSC) Envirostor

AWR reviewed information at the DTSC Envirostor website. None of the listings appeared to correspond to the site.

The MW-8 area discussed in the no further action letter is on the 3723 parcel that is part of the subject site. The monitoring well was observed at the site during the site reconnaissance conducted as part of the Phase I ESA. Well MW-9 was near the center of the central 3715 Haven parcel and is not on the current subject site.

The RWQCB No Further Action (NFA) letter dated June 16, 2014 addresses the site as 3695-3723 Haven Ave. However, the GeoTracker file lists 3705-3723 Haven

4.1.2 Offsite Listings

Based upon a review of groundwater monitoring data collected at the subject property and nearby properties, groundwater beneath the subject property was calculated to flow toward the east to northeast and was initially encountered at depths ranging from 4.11 to 9 feet below ground surface (bgs). Based on this inferred groundwater flow direction, offsite listings that are adjacent to or west to southwest of the subject site have the greatest potential to impact the subject site.

There are many listings for 3717 and 3715 Haven Avenue which correspond to the parcel located between the two subject site parcels and also part of the former Siltec property. These listings appear to correspond to issues investigated and addressed with the Siltec release investigation and these listings do not appear to pose any additional concerns to the subject site parcels beyond those previously discussed with regards to the former Siltec release. Given the extensive groundwater investigation conducted at the site and the nature of the other listings in the vicinity of the site, there is no indication that either of the subject site parcels has been impacted by offsite releases other than those associated with the larger Siltec release previously described in this report.

Based on the distance, direction, and/or nature of the remaining listings in conjunction with the previous extensive investigation on our site which would have likely discovered impacts from an offsite source, in our opinion, none of the other listings are likely to significantly impact the subject site.

4.1.3 Other Sites of Potential Environmental Concern

AWR did not identify any other sites of environmental concern. AWR reviewed the sites in the EDR Database that were unable to be mapped. None of the listings appeared to correspond to the site or adjacent properties. None of the unmapped listings appear likely to have the potential to impact the site.

4.2 Agency File Reviews

AWR reviewed information on this site from the San Mateo County Environmental Health Department, and searched for information on the site and nearby properties at the California Department of Toxic Substance Control (DTSC) Envirostor database, and the California Geotracker Database, and US EPA. Information from these sources were included in Section 4.1.

4.3 Physical Setting Sources(s)

The EDR Report in Appendix C indicates that the underlying hard rock geology consists of Cenozoic Quaternary stratified sequence. Surface soils in the vicinity of the site are classified by the United States Department of Agriculture (USDA) Soil Conservation Service (SCS) as Urban Land.

Based upon a review of groundwater monitoring data collected at the subject property and nearby properties, groundwater beneath the subject property was calculated to flow toward the east to northeast and was initially encountered at depths ranging from 4.11 to 9 feet below ground surface (bgs).

According to the 2012 USGS Palo Alto, California Quadrangle Map, the site elevation is approximately 9 feet above mean sea level with a slight regional topographic slope downward to the north-northeast.

4.4 HISTORICAL USE INFORMATION ON THE PROPERTY AND ADJOINING PARCELS

AWR reconstructed a brief history of the subject property through a review of historical Topographic Maps; the EDR City Abstract; available records, permits and other documents available at San Mateo County; and historical aerial photographs provided by EDR. A summary of historical sources can be found in Section 12.0 of this Report with pertinent documents available in Appendices.

1939-1950	Based on aerial photographs and topographic maps, the site and adjacent properties appear to be farmed land. Haven Avenue does not appear to be present in the site vicinity
1958-1963	An aerial photograph shows a road at the approximate location of Haven Avenue adjacent to the site. The site parcels as well as the parcel between the two site parcels appear to be graded land. The property adjacent to the site to the west appears to be being developed with material storage.
1968	Aerial photographs show a building at 3705 Haven similar to the current site configuration.
1974-2014	Aerial photographs show buildings at 3705 and 3723 Haven similar to the current site configuration.
1999-2001	The parcel between the two parcels appears to have the former building demolished and a new building constructed at the site. There was no obvious change to the buildings on the subject site parcels.
2015	The large parcel located west of the site is redeveloped as a large multiple building apartment complex.

City directories list the following occupants of current and former site addresses:

2014 (3705 Haven)
AGETAK INC
AUKUM MANAGEMENT LLC
BI GUI YUAN RE USA LLC
BRANDON HYMES
CALIFORNIA PACIFIC ADVISORS
FOXFAM LLC
IRON PORTAL INC
LAW OFFICE OF BRIAN RAFT
PARTOE INC

TELECOM MEDIA AND FIN ASSOC
UNIVERSAL HOSPITAL SYSTEMS INC

2014 (3723 Haven)
ABOS LABS INC
ACA DERM INC
CALIFORNIAS DRIVER SCHOOL
COMPUTERS FOR EVERYONE
CONTINUUM DIGITAL
CORE SOLUTIONS INC
FUTURE TODAY INC
HEALTHONOMY CORPORATION
INTERIS MLLNIUM JINT VENTR LLC

2010 (3705 Haven)
2020 VENTURE PARTERS LLC
ALLOCADE INC
AWAKEN SOLUTIONS
BLUE RIDGE MASONRY
BRANDON HYMES
FLEXCOR INC
FLIPTRACK
FOXFAM LLC
HUMAN SERVICE MANAGEMENT CORP
MENLO PARTNERS STAFFING INC
NONPROFIT KNOWLEDGE NETWORK
PHILANTHROPEDIA
TELECOM MEDIA AND FIN ASSOC

2010 (3723 Haven)
ACA DERM INC
AQUA VISTA ENTERPRISES INC
BABA EDUCATIONAL SERVICES
CALISOLAR INC
CONIFER NETWORKS LLC
CORE SOLUTIONS INC
EMIFINANCIAL INC
GLOBAL CONVERGENCE TECHNOLOGY
HEALTH FREEDOM NETWORK
HIGHMONT INVESTMENTS LLC
IBEX TECHNOLOGY GROUP
IEC
INTERIS MLLNIUM JINT VENTR LLC
LAB IT SOLUTIONS LLC
LATEST MEDICAL
ONLINE REPUTATION MGT ASSN
PRINT THAT
PROSPECT PARTNERS

SPARTAN SYSTEMS INC
STRATGIC SCHOLARLY INSIGHT INC
SUBUTHI OVERSEAS INC
TRANSCNTNENTAL CAPITL PARTNERS
TRIAL AND TECHNOLOGY LAW GROUP
UNIQUE CARE
VALUEBROS INC
WINE MARKET ASSISTANTS LLC
WORLD INFO INC
XCARTA CORP

2005 (3705 Haven)
BLUE RIDGE MASONRY
FATIMA FUNDING SOLUTIONS
FLEXCOR INC
FRIENDLY ISLE HOME CARE HMC
INVESTWEST CAPITOL
IPLAYMUSIC
MS BROKERAGE INC
REDDY SOFTWARE
TELECOM MEDIA & FIN ASSOC INC

2005 (3723 Haven)
3723 HAVEN ASSOCIATES LLC
ACA DERM INC
AGORICS INC
ATHERTON MENLO EXECUTIVE SUITE
EMIFINANCIAL CORPORATION
EMIFINANCIAL INC
FODOJO CORP
GLOBAL CONVERGENCE TECHNOLOGY
HARRIS KENNETH
HELP U SELL TRI COUNTY
LAB IT SOLUTIONS LLC
LINKORE LLC
MENLO HOME SALES
MINFON INC
PRINTHAT
PROSPECT PARTNERS
SECOND FOUNDATION INCORPORATED
SILICON VALLEY RECRUITERS
SPARTAN SYSTEMS INC
SUBUTHI OVERSEAS INC
TITANIUM TECHNOLOGY
VIPMOBILE
WHITE FIELD INCWORLD INFO INC
XCARTA CORP

2000 (3705 Haven)
INVESTOOLS INC

2000 (3723 Haven)
ATHERTON MENLO EXECUTIVE SUITE
SECOND FOUNDATION INCORPORATED
SILICON VALLEY RECRUITERS
SUBUTHI OVERSEAS CORPORATION

1992 (3705 Haven)
B S G ASSOCIATES INC

1992 (3723 Haven)
URBAN UNDERGROUND PRODUCTIONS

1987(3723 Haven)
No listings for this address

1987(3723 Haven)
CLEARVIEW TELEVISION SYS CAL*

1980
No listings for the subject site addresses – 3717 Haven was listed as Siltec.

1977 (3705 Haven)
R O Associates

1977 (3723 Haven)
No listings for the subject site addresses – 3717 Haven was listed as Siltec.

1973 (3705 Haven)
R O Associates electronic power supplies

1973 (3723 Haven)
Heaton James L Co electronic equipment and H&K Sales In electronic equipment

5. SITE RECONNAISSANCE

Ms. Janelle Amendola of AWR conducted a site reconnaissance visits at the subject site on March 7, 2018. Ms. Amendola was accompanied by the property manager, Mr. Howard Gruber, as well as Barry Coggins from Huettig & Schromm, Inc (the client) during the site visit.

The goal of the site reconnaissance is to obtain information indicating the likelihood of identifying RECs in connection with the subject property. The subject property is visually observed and any structures located on the property are observed to the extent not obstructed by bodies of water, adjacent buildings, and/or other obstructions.

5.1 Methodology and Limiting Conditions

AWR conducted a site reconnaissance as part of the preparation of this Phase I ESA. AWR observed the entire parcel including the interior and exterior of the subject site.

The exterior site reconnaissance was performed by walking open areas of the property in a grid fashion. Special attention was given to observe surfaces adjacent to the structures and sidewalks, surfaces in storage areas, and potential conduits to the subsurface such as drains and sumps. The interior site reconnaissance was performed by systematically observing each room and open space of the property. Additional attention was given to doors, utility rooms, storage areas, areas where hazardous materials were used or stored, and any other accessible areas.

5.2 General Site Setting

The site is located in a primarily light industrial area in Menlo Park with a newer apartment complex constructed on the parcel west of both the subject site parcels.

5.3 Site Observations

5.3.1 Site Exterior

The majority of the both site parcels is occupied by the building and asphalt parking and drive areas with landscaping near the building, and around the property perimeter. The parcel at 3705 Haven Avenue is at a bend in Haven Avenue and can be accessed from Haven Avenue on both the side and rear of the building with the parking and driveway area forming an L-shaped thoroughfare around the building. The parcel at 3723 Haven Avenue also has an L-shaped paved parking and driveway area around the building but it can only be accessed from one entrance off of Haven at the side of the building with a dead end at the other property boundary.

One monitoring well was observed in the driveway area of the parcel at 3723 Haven Avenue. Based on the location of the well, this appears to be MW-8 installed for the former Siltec investigation and remediation and discussed elsewhere throughout this report. No other monitoring or other wells were observed on the subject site.

Other than dumpster enclosures, no outdoor storage or storage areas was observed on either of the site parcels.

Minimal staining typical of parking lot use was observed in several of the parking stalls. No significant staining, odors, sumps, stressed vegetation, sheens, tanks, evidence of former tanks, or other potential environmental concerns were noted in the site exterior on either of the site parcels.

No aboveground tanks, evidence of underground tanks, drums, or other large chemical storage vessels were observed at the site or site parcel or in the exterior area of any of the adjoining parcels.

5.3.2 Site Interior

Both buildings are executive offices with numerous tenants leasing one or more individual offices and sharing common restrooms, breakrooms, and reception areas. The building at 3723 Haven Avenue is single story but has two larger tenant spaces using a divided warehouse type area with taller ceilings. The remainder of the building at 3723 and all of 3715 is single story office with dropped ceiling and typical office finishes.

One tenant in 3723, Computers for Everyone, uses very small quantities of WD-40, isopropyl alcohol, and other similar materials for cleaning and repairing computers. All of the containers were retail size and labeled and all were less than ¼-gallon is size.

Other than routine janitorial and housekeeping supplies, no other hazardous materials were observed at the site.

No sumps, wells, staining, odors, stressed vegetation, sheens or other potential visual evidence of environmental impacts was observed in either of the site interiors.

5.3.3 Adjacent Properties

The property is in a mixed use area. West of both site parcels is a newer multiple story, multiple building residential complex. North of 3723 Haven is a dog boarding business. Between the two parcels (north of 3705 and south of 3723) is a multiple story, multiple tenant commercial office building and bank with associated parking and landscaping areas. South of 3705 Haven Avenue, is Haven Avenue, beyond which is a multiple tenant light industrial building. East of the site, across Haven Avenue, is a Federal Express shipping center.

5.4 Non-Scope Considerations

The following potential business environmental risk items were included as part of this report based on site observations and readily available information.

5.4.1 Suspect Asbestos Containing Building Materials and Lead-Based Paint

Based on the 1960s-1970s construction dates, asbestos containing materials and lead based paint may have been used in the buildings. This is not a REC as defined in the ASTM standard practice. Any renovation or demolition should comply with applicable sampling and abatement requirements.

6. INTERVIEWS

6.1 INTERVIEW WITH OWNER REPRESENTATIVE

AWR was accompanied during the site visit by Mr. Howard Gruber, the property manager and owner representative. AS noted below, Mr. Gruber provided information on current and former occupants.

6.2 INTERVIEW WITH SITE MANAGER

AWR was accompanied during the site visit by Mr. Howard Gruber, the property manager and owner representative. Mr. Gruber provided information on current and former occupants. The former occupants were similar to the existing occupants and used the site as offices for a variety of professional services. MR. Gruber indicated none have used or stored significant quantities of hazardous materials or conducted manufacturing at the site during the time he has been involved with the site. Mr. Gruber was unaware if the monitoring well at the site had been sampled during the time he has been involved with the site.

6.3 INTERVIEWS WITH OCCUPANTS

AWR obtained information on the site operations from the occupants during the site reconnaissance. Based on the nature of the business at the site, formal interviews were not conducted.

6.4 INTERVIEWS WITH LOCAL GOVERNMENT OFFICIALS

AWR reviewed information from the San Mateo County Environmental Health Department, the San Francisco Bay Regional Quality Control Board, and the California Department of Toxic Substance Control. Information from these requests is presented elsewhere throughout this report.

6.5 INTERVIEWS WITH OTHERS

AWR did not conduct any other interviews for this ESA.

7. FINDINGS

From 1970 through 1989, Siltec Corporation used the site for manufacturing polished silicon wafers, conducting various industrial activities on the site and adjoining properties. Chlorinated volatile organic

compounds (VOCs) were used on site during this period and in 1994 VOCs were detected in local soil and groundwater.

The site and adjoining parcels were reported and investigated under the name Siltec at 3702-3723-Haven Avenue. This release address is listed in other records as 3695-3723 Haven Avenue and 3705-3723 Haven Avenue.

In 1999, after extensive investigation of soil and groundwater and pilot-testing of in-situ remediation at the original Siltec parcels, the middle of the three original buildings (Building 2 – 3717 Haven located on the central parcel that is not part of the current site) was demolished to allow excavation and offsite disposal of soil containing chlorinated VOCs and other chemicals of concern. After excavation, some concentrations of VOCs remained in subsurface soil within the saturated zone. A risk management plan (RMP) was prepared for the residual concentrations in the soil and groundwater.

In 1999, a deed restriction specifying prohibitions on certain site uses for all three parcels in the original Siltec property, and outlining certain monitoring responsibilities of the property owners, including practices specified in the Risk Management Plan (RMP). The RMP was incorporated into the deed restriction and both were recorded in the Official records of San Mateo County for all three Siltec properties (including the two parcels that are the subject site) on August 9, 1999.

Remediation continued on the central Siltec parcel (currently 3715 Haven and not part of the subject site). The release has since been issued a no further action determination, but that letter specifies that the limitations of the deed restriction remain active for the subject site.

The MW-8 area discussed in the no further action letter is on the 3723 parcel that is part of the subject site. The monitoring well was observed at the site during the site reconnaissance conducted as part of the Phase I ESA. Well MW-9 was near the center of the central 3715 Haven parcel and is not on the current subject site.

The RWQCB No Further Action (NFA) letter dated June 16, 2014 addresses the site as 3695-3723 Haven Ave. However, the GeoTracker file lists 3705-3723 Haven

Based on the 1960s-1970s construction dates, asbestos containing materials and lead based paint may have been used in the buildings.

A Tier 1 and Tier II screening was performed to assess whether any vapor encroachment conditions (VECs) are present on the subject property. A VEC has a potential to be present or cannot be ruled out at the subject property due to the residual concentrations of chlorinated solvents used and released at and adjacent to both parcels.

7.1 Data Gaps

AWR was not able to review a Chain of Title Report for the subject property. It is AWR's opinion that the lack of this information does not pose a significant data gap because as an environmental lien search was performed that revealed a deed restriction with use limitations on both the subject site parcels.

7.2 CONTINUING OBLIGATIONS

Continuing obligations start on the date that a landowner acquires title to a property. The landowner must: 1) comply with land use restrictions and institutional controls; 2) take "reasonable" steps with respect to hazardous substances releases; 3) provide full cooperation, assistance and access to persons that are authorized to conduct response actions or natural resource restoration; 4) comply with information requests and administrative subpoenas; and 5) provide all legally required notices. Continuing obligations must be satisfied to maintain liability protection under CERCLA for innocent landowners, bona fide prospective purchasers, and contiguous property owners.

As noted elsewhere within this report, there is a deed restriction for the site. The limitations and requirements of that deed restriction remain in place and must be adhered to.

8. OPINION

8.1 OPINION OF FINDINGS

The Siltec release is a controlled recognized environmental condition (CREC) since it has been granted a no further action determination letter but environmental impacts were known to be present at the site at the time of closure and the environmental restrictions and requirements in the deed restriction apply. Consequently, these residual impacts are interpreted to pose ongoing risks to the quality of soil vapor, soil, ground water, and indoor air 3705 and 3723 Haven Avenue.

In addition, because these residual chemicals are volatile solvents, they have the potential pose a risk to indoor air. Consequently, a vapor encroachment condition has a potential to be present or cannot be ruled out at either parcel.

Based on the 1960s-1970s construction dates, asbestos containing materials and lead based paint may have been used in the buildings. This is not a REC as defined in the ASTM standard practice. Any renovation or demolition should comply with applicable sampling and abatement requirements.

8.2 RECOMMENDATIONS

The previous release appears to have been resolved to the satisfaction of the overseeing agency and no additional investigation or remediation is needed. We do, however, recommend the following:

- Confirm with the Regional Water Board the requirement to continue sampling ground water from the remaining monitoring well MW-8 and if this well can now be destroyed.
- Evaluate the quality of soil gas and potential risks to indoor air at the subject properties.

- Based on the 1960s-1970s construction dates, asbestos containing materials and lead based paint may have been used in the buildings. This is not a REC as defined in the ASTM standard practice. Any renovation or demolition should comply with applicable sampling and abatement requirements. Evaluation of lead in soil due to lead based paint may be prudent.

- Evaluate the quality of ground water at the subject properties to assess the adequacy of the prior remediation and any persistent residual impacts from on-site and off-site conditions.

9. CONCLUSIONS

We have performed a Phase I Environmental Site Assessment in conformance with the scope and limitations of ASTM Practice E 1527-13 of 3705 and 3723 Haven Avenue, Menlo Park, San Mateo County, California, the subject property. Any exceptions to, or deletions from, this practice are described in Section 5.1 of this Report.

Our assessment revealed the following for the site:

Recognized Environmental Conditions (REC): none

Historical Recognized Environmental Conditions (HREC): none

Controlled Recognized Environmental Conditions (CREC):
The release from the Siltec Corporation is a controlled recognized environmental condition (CREC) because it has been granted a no further action determination letter but environmental impacts were known to be present at the site at the time of closure and the environmental restrictions and requirements in the deed restriction apply. These known residual conditions have the potential to pose ongoing risks to the quality of soil vapor, soil, ground water, and indoor air 3705 and 3723 Haven Avenue.

Vapor Encroachment Condition - It was identified during the screening process that a Vapor Encroachment Condition (VEC) has a potential to be present or cannot be ruled out at the subject property due to residual concentrations of chlorinated solvents used and released at and adjacent to both parcels.

Based on the 1960s-1970s construction dates, asbestos containing materials and lead based paint may have been used in the buildings. This is not a REC as defined in the ASTM standard practice. Any renovation or demolition should comply with applicable sampling and abatement requirements.

10. DEVIATIONS

AWR did not evaluate the purchase price versus property value as AWR is not qualified to evaluate this issue.

11. ADDITIONAL SERVICES

No additional services were provided for this site in conjunction with this Phase I ESA.

12. REFERENCES

EDR City Abstract:– 1945-2014.

EDR Historic Sanborn® Fire Insurance Maps: No Coverage

EDR Aerial Photographs: 1939, 1948 1956, 1968, 1974, 1982, 1991, 1999, 2005, 2006, 2009, 2010, and 2014.

Erler & Kalinowsi, Inc (EKI), *Feasibility Study and Remedial Action Plan, 3695-3723 Haven Avenue Site, Menlo Park, California*, March 1999

Erler & Kalinowsi, Inc (EKI), *Remedial Excavation Summary Report, 3695-3723 Haven Avenue Site, Menlo Park, California*, May 5, 2000

Erler & Kalinowsi, Inc (EKI), *Remedial Excavation Summary Report Addendum, 3695-3723 Haven Avenue Site, Menlo Park, California*, April 18, 2001

Erler & Kalinowsi, Inc (EKI), *Report of Groundwater Monitoring Activities, 2008-2009, 3695-3723 Haven Avenue Site, Menlo Park, California*, August 30, 2010

Erler & Kalinowsi, Inc (EKI), *Destruction of Monitoring Wells at the Former Siltec Site*, *3695-3723 Haven Avenue Site, Menlo Park, California*, February 20, 2015

San Francisco Bay Regional Water Quality Control Board, *No Further Action Required at the Former Siltec Site Located at 3695-3723 Haven Avenue, Menlo Park, San Mateo County*, June 16, 2014

San Mateo County Covenant and Environmental Restriction on Property, 3695-3723 Haven Avenue, Menlo Park, Document 1999-135815, August 9, 1999

The following governmental agencies were contacted to obtain the information in this report:

Jurisdiction	Agency
Federal	U.S. Environmental Protection Agency, Region IX, San Francisco
State and Regional	State of California Environmental Protection Agency, Department of Toxic Substances Control, Berkeley San Francisco Bay Regional Water Quality Control Board
County and Local	San Mateo County Environmental Health Dept. Menlo Park Fire Department Menlo Park Building Department

Websites:
http://www.envirostor.dtsc.ca.gov/public/
http://www.geotracker.swrcb.ca.gov/
http://www.dhs.ca.gov/radon/default.htm

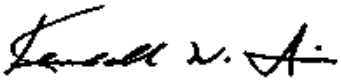
13. SIGNATURES OF ENVIRONMENTAL PROFESSIONALS

We declare that to the best of our professional knowledge and belief, we meet the definition of an Environmental Professional as defined in §312.21 of 40 CFR Part 312 and we have the specific qualifications based on education, training, and experience to assess a property of the nature, history, and setting of the subject property. We have developed and performed the all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.

Prepared by:

Janelle Amendola, REA
Environmental Assessor

Reviewed by:



Kendall W. Price, CEG, REA
Regional Manager/Principal Consultant

14. QUALIFICATIONS OF ENVIRONMENTAL PROFESSIONALS

Pursuant to 40 CFR 10 and according to 40 CFR Part 312, the Environmental Professionals listed in Section 13.0 possess sufficient education, training, and experience necessary to exercise the professional judgment to develop the opinions and conclusions regarding conditions indicative of releases or threatened releases on, at, in or to a property, sufficient to meet the objectives and performance factors in §312.20(e) and (f). See Appendix D for resumes on the following individuals:

Ms. Janelle Amendola

Mr. Kendall W. Price

Appendix A

Site Location Map

NOTE: Base map from figure prepared by USGS and provided to AWR by EDR. N

FIGURE 1 – Site Location

3705 and 3723 Haven Avenue
Menlo Park, California

APPLIED WATER RESOURCES

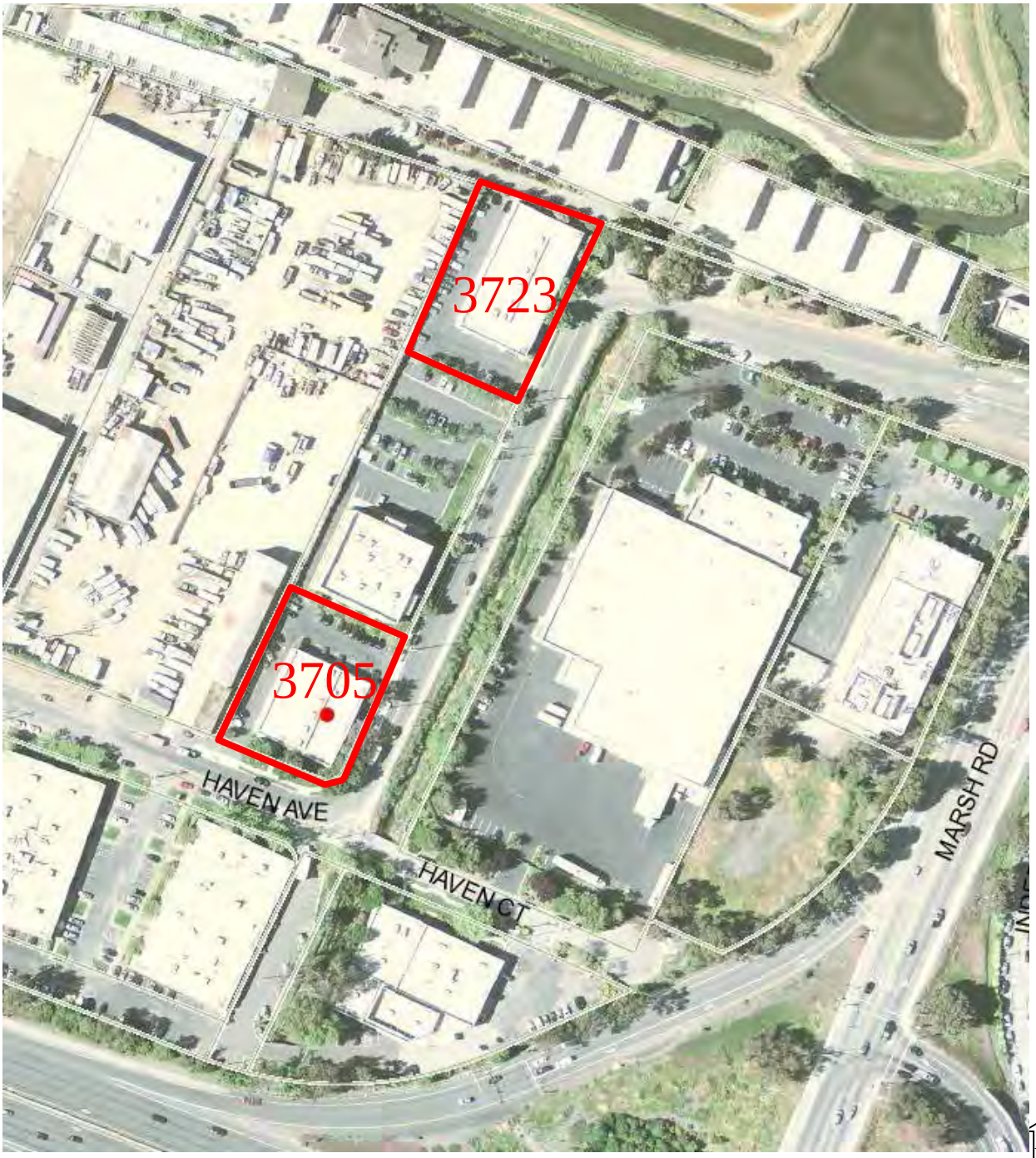
NOTE: Base photo provided to AWR by EDR.

N

FIGURE 2 – Site Location

3705 and 3723 Haven Avenue
Menlo Park, California

APPLIED WATER RESOURCES



NOTE: Base photo from Menlo Park Zoning Public GIS System – 2011 Aerial

FIGURE 3 – Site Aerial Photograph

3705 and 3723 Haven Avenue
Menlo Park, California

APPLIED WATER RESOURCES

Appendix B

Site Photographs

Photo 1: View of front of 3723 Haven Avenue site building

Photo 2: View of side of 3723 Haven Avenue site building

APPLIED WATER RESOURCES

Photo 3: View of rear of 3723 Haven Avenue site building

Photo 4: View of common breakroom area in 3723 Haven Avenue

APPLIED WATER RESOURCES

Photo 7: View of MW-8 at 3723 Haven Avenue parcel

Photo 8: Location of MW-8 at 3723 Haven Avenue Parcel

APPLIED WATER RESOURCES

Photo 9: View of side of 3705 Haven building exterior

Photo 10: View of rear of 3705 Haven Avenue

APPLIED WATER RESOURCES

Photo 11: View of interior of 3705 Haven Avenue

Photo 12: View of front and side of 3705 Haven

APPLIED WATER RESOURCES

Appendix C

EDR Database Report

3705 and 3723 Haven Avenue
3705 Haven Avenue
Redwood City, CA 94063

Inquiry Number: 5204371.2s
March 01, 2018

The EDR Radius Map™ Report with GeoCheck®

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

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Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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EXECUTIVE SUMMARY

A search of available environmental records was conducted by Environmental Data Resources, Inc (EDR). The report was designed to assist parties seeking to meet the search requirements of EPA's Standards and Practices for All Appropriate Inquiries (40 CFR Part 312), the ASTM Standard Practice for Environmental Site Assessments (E 1527-13), the ASTM Standard Practice for Environmental Site Assessments for Forestland or Rural Property (E 2247-16), the ASTM Standard Practice for Limited Environmental Due Diligence: Transaction Screen Process (E 1528-14) or custom requirements developed for the evaluation of environmental risk associated with a parcel of real estate.

TARGET PROPERTY INFORMATION

ADDRESS

3705 HAVEN AVENUE
REDWOOD CITY, CA 94063

COORDINATES

Latitude (North):	37.4855990 - 37° 29' 8.15''
Longitude (West):	122.1822500 - 122° 10' 56.10''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	572297.3
UTM Y (Meters):	4148853.2
Elevation:	10 ft. above sea level

USGS TOPOGRAPHIC MAP ASSOCIATED WITH TARGET PROPERTY

Target Property Map:	5640620 PALO ALTO, CA
Version Date:	2012
North Map:	5640622 REDWOOD POINT, CA
Version Date:	2012

AERIAL PHOTOGRAPHY IN THIS REPORT

Portions of Photo from:	20140608
Source:	USDA

MAPPED SITES SUMMARY

Target Property Address:
3705 HAVEN AVENUE
REDWOOD CITY, CA 94063

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
A1	SILTEC	3705-3723 HAVEN AVEN	FINDS		TP
A2	SILTEC	3705-3723 HAVEN AVEN	CA SLIC		TP
A3	THYSEN MANAGEMENT CO	3705 HAVEN AVE	CA LUST, CA San Mateo Co. BI, CA HIST CORTESE		TP
A4	THYSEN MANAGEMENT CO	3705 HAVEN AVE	FINDS		TP
A5	SILTECH	3705-3723 HAVEN AVE	CA SPILLS 90		TP
A6	THYSEN MANAGEMENT CO	3705 HAVEN AVE	CA RGA LUST		TP
A7	THYSEN MANAGEMENT CO	3705 HAVEN AVE	CA RGA LUST		TP
A8	B S G ASSOCIATES	3705 HAVEN AVENUE	CA HAZNET		TP
B9	KOB AUTO INC	3717 HAVEN AVENUE	CA EMI	Lower	1 ft.
B10	SILTEC CORPORATION (	3717 HAVEN AVE	CA HIST UST, CA San Mateo Co. BI	Lower	1 ft.
B11	SUMCO OREGON	3717 HAVEN AVE	FINDS	Lower	1 ft.
B12	K O B AUTO	3717 HAVEN AVE	RCRA-SQG	Lower	1 ft.
B13	KOB AUTO	3717 HAVEN AVENUE	CA HAZNET	Lower	1 ft.
B14	KOB AUTO INC	3717 HAVEN AVENUE	FINDS, ECHO	Lower	1 ft.
B15	MITSUBISHI SILICON A	3717 HAVEN AVE	RCRA-SQG	Lower	1 ft.
B16	SUMCO OREGON	3717 HAVEN AVE	CA HAZNET	Lower	1 ft.
A17	BAY MATERIALS LLC	3700 HAVEN	CA LUST, CA San Mateo Co. BI, CA HIST CORTESE	Higher	42, 0.008, South
A18	INDUSTRIAL GARDEN MA	3700 HAVEN AVE	CA HIST UST	Higher	61, 0.012, SW
B19	ENGENICS, INC.	3760 HAVEN AVE	CA HIST UST, CA San Mateo Co. BI	Lower	72, 0.014, NE
B20	ENGENICS	3760 HAVEN AVE	RCRA NonGen / NLR	Lower	72, 0.014, NE
B21	NANOSYN	3760 HAVEN AVE	CA HIST UST, CA HAZNET	Lower	72, 0.014, NE
B22	NANOSYN INC	3760 HAVEN AVE	RCRA NonGen / NLR, CA HAZNET	Lower	72, 0.014, NE
B23	NANOSYN	3760 HAVEN AVE.	RCRA-LQG	Lower	72, 0.014, NE
A24	SUNESIS PHARMACEUTIC	3696C HAVEN AVE	RCRA-SQG, NY MANIFEST	Higher	79, 0.015, WSW
A25	CHEMOCENTRYX	3696 HAVEN AVE STE B	RCRA-SQG, CA HAZNET	Higher	79, 0.015, WSW
A26	SILTEC CORPORATION (	3698 HAVEN AVE	CA HIST UST	Higher	79, 0.015, WSW
A27	BAROSENSE INC	3698 HAVEN	CA San Mateo Co. BI	Higher	128, 0.024, WSW
A28	ACHELOIS ONCOLOGY IN	3698 HAVEN	CA San Mateo Co. BI	Higher	128, 0.024, WSW
A29	CARDIOKINETIX INC	3698 HAVEN	CA San Mateo Co. BI	Higher	128, 0.024, WSW
A30	EOPLEX TECHNOLOGIES	3698 HAVEN	CA San Mateo Co. BI	Higher	128, 0.024, WSW
C31	CHEMO CENTRYX	3696 HAVEN	CA San Mateo Co. BI	Higher	146, 0.028, WSW
C32	ADVANCED POLYMER SYS	3696 HAVEN	CA San Mateo Co. BI	Higher	146, 0.028, WSW
C33	KOVIO, INC	3696 HAVEN	CA San Mateo Co. BI	Higher	146, 0.028, WSW
C34	UBIQUITOUS ENERGY	3696 HAVEN	CA San Mateo Co. BI	Higher	146, 0.028, WSW
C35	ENVIVO PHARMACEUTICA	3696C HAVEN	CA San Mateo Co. BI	Higher	146, 0.028, WSW
C36	NANOSTELLAR INC	3696 HAVEN	CA San Mateo Co. BI	Higher	146, 0.028, WSW
C37	SYNTHEGO CORP	3696 HAVEN	CA San Mateo Co. BI	Higher	146, 0.028, WSW
C38	ROOTES GROUP DEPOT	3651 HAVEN	CA San Mateo Co. BI	Higher	206, 0.039, West
D39	CARL OLSON AND SONS	3750 HAVEN AVE	RCRA-SQG, CA LUST, CA HIST UST, FINDS, ECHO, CA...	Lower	238, 0.045, NE

MAPPED SITES SUMMARY

Target Property Address:
3705 HAVEN AVENUE
REDWOOD CITY, CA 94063

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
D40	FEDERAL EXPRESS CORP	3750 HAVEN AVE	CA HIST UST, CA HAZNET	Lower	238, 0.045, NE
41	HUETTIG & SCHROMM, I	3700 HAVEN CT.	CA SWEEPS UST, CA HIST UST, CA FID UST, CA HAZNET	Lower	242, 0.046, SSE
42	CT INTERNATIONAL SAL	3645 HAVEN	CA LUST, CA SLIC, CA DEED, CA San Mateo Co. BI, CA...	Higher	243, 0.046, NNW
C43	DESIGNCO	3641 HAVEN	CA San Mateo Co. BI	Higher	279, 0.053, West
C44	BARIENT INC	3641 HAVEN AVE	RCRA-SQG, FINDS, ECHO	Higher	279, 0.053, West
C45	DESIGNCO	3641 HAVEN AVE	CA HIST UST, CA HAZNET	Higher	279, 0.053, West
C46	CORRELL PROPERTIES	3641 HAVEN AVE	CA HIST UST	Higher	279, 0.053, West
C47	CHEVRON SERVICE STAT	3639 HAVEN	CA San Mateo Co. BI, CA HIST CORTESE	Higher	306, 0.058, West
C48	DOUBLE D PAVING	3637 HAVEN	CA San Mateo Co. BI	Higher	333, 0.063, West
C49	LEMMONS SIGNS	3636 HAVEN AVENUE	CA SWEEPS UST, CA FID UST	Higher	370, 0.070, West
C50	CARLSEN MOTOR CARS,	3636 HAVEN	CA San Mateo Co. BI	Higher	370, 0.070, West
C51	LEMMON'S SIGNS	3636 HAVEN	CA LUST, CA HIST CORTESE	Higher	370, 0.070, West
C52	LEMMON SIGNS	3636 HAVEN	CA San Mateo Co. BI	Higher	370, 0.070, West
C53	CARLSEN MOTOR CARS I	3636 HAVEN AVE	RCRA-SQG, FINDS, ECHO	Higher	370, 0.070, West
E54	RB TRACTOR WORK	3633 HAVEN	CA LUST, CA SLIC, CA San Mateo Co. BI	Higher	387, 0.073, West
55	COMCAST OF CALIFORNI	3760 HAVEN AVE	RCRA-SQG	Lower	492, 0.093, East
E56	ANGIES POOL REPAIR	3624 HAVEN	CA San Mateo Co. BI	Higher	617, 0.117, West
E57	A J EITNER REPAIRS	3624 HAVEN	CA San Mateo Co. BI	Higher	617, 0.117, West
E58	C F ARCHIBALD PAVING	3624 HAVEN AVE	CA San Mateo Co. BI, CA HAZNET	Higher	617, 0.117, West
E59	J D GIUSTI TRANSPORA	3615 HAVEN	CA San Mateo Co. BI	Higher	632, 0.120, West
F60	PIERS DAIRY	3611 HAVEN AVE	CA HIST UST, CA San Mateo Co. BI	Higher	687, 0.130, West
F61	BLACK MOUNTAIN SPRIN	3609 HAVEN	CA San Mateo Co. BI	Higher	713, 0.135, West
F62	GUYS ROOFING	3620 HAVEN	CA San Mateo Co. BI	Higher	717, 0.136, West
F63	EL DORADO FORKLIFT C	3607 HAVEN	CA SWEEPS UST, CA San Mateo Co. BI	Higher	740, 0.140, WNW
F64	SHOOTER LANDSCAPING	3605 HAVEN	CA LUST, CA HIST UST, CA San Mateo Co. BI, CA...	Higher	768, 0.145, WNW
F65	JOHN J SHOOTER INC	3605 HAVEN AVE	CA SWEEPS UST, CA HIST UST, CA FID UST	Higher	768, 0.145, WNW
F66	TELOMERE DIAGNOSTICS	3603 HAVEN	CA San Mateo Co. BI	Higher	795, 0.151, WNW
F67	LANDEC CORPORATION	3603 HAVEN AVE	RCRA-SQG, FINDS, ECHO	Higher	795, 0.151, WNW
F68	PROSETTA BIOSCIENCES	3603 HAVEN	CA San Mateo Co. BI, CA HAZNET	Higher	795, 0.151, WNW
F69	SPACE CONTROL CO	3600 HAVEN AVE UNIT	RCRA-SQG, FINDS, ECHO	Higher	815, 0.154, West
F70	AT & T WIRELESS	3600 HAVEN	CA San Mateo Co. BI	Higher	815, 0.154, West
G71	SCALE MODELS UNLIMIT	111 INDEPENDENCE DR	RCRA-SQG, FINDS, ECHO, CA San Mateo Co. BI, CA...	Higher	937, 0.177, ESE
F72	ANTON MENLO	3605-3639 HAVEN AVEN	CA SLIC	Higher	940, 0.178, West
H73	REDWOOD MOTOR COURT	3706 ROLISON ROAD	CA LUST	Higher	947, 0.179, WSW
H74	REDWOOD COURT MOTEL	3706 ROLISON	CA San Mateo Co. BI	Higher	947, 0.179, WSW
75	AT&T	1200 MARSH RD	CA San Mateo Co. BI, CA HAZNET	Higher	953, 0.180, South
I76	HAVEN OWNERS	3592 HAVEN	CA San Mateo Co. BI	Higher	963, 0.182, West
I77	BENNETT HOPKINS CORP	3592 HAVEN	CA San Mateo Co. BI	Higher	963, 0.182, West
I78	PIERCE INGER TRUST,	3592 HAVEN	CA LUST	Higher	1040, 0.197, West

MAPPED SITES SUMMARY

Target Property Address:
3705 HAVEN AVENUE
REDWOOD CITY, CA 94063

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
I79	GENERAL CIRCUITS INC	3585 HAVEN AVENUE	SEMS-ARCHIVE, CORRACTS, RCRA-SQG, CA HAZNET	Higher	1041, 0.197, WNW
I80	GENERAL CIRCUITS INC	3585 HAVEN AVENUE	CA ENVIROSTOR, CA HIST UST, CA San Mateo Co. BI,...	Higher	1041, 0.197, WNW
I81	ALS ROOFING SUPPLY	3586 HAVEN	CA San Mateo Co. BI	Higher	1050, 0.199, West
H82	B & D AUTOWORKS	1253 ANNETTE	CA San Mateo Co. BI	Higher	1107, 0.210, WSW
I83	ELDORADO FORKLIFT CO	3582 HAVEN AVE	RCRA-SQG	Higher	1112, 0.211, West
I84	EL DORADO FORKLIFT C	3582 HAVEN	CA San Mateo Co. BI	Higher	1112, 0.211, West
H85	T MOBILE WEST CORP S	1251 ANNETTE	CA San Mateo Co. BI	Higher	1120, 0.212, WSW
H86	VAZQUEZ GARAGE	1251 ANNETTE	CA San Mateo Co. BI	Higher	1120, 0.212, WSW
I87	WOLFS PRECISION WORK	3549 HAVEN	CA San Mateo Co. BI	Higher	1142, 0.216, WNW
I88	NOREN PRODUCTS, INC	3543 HAVEN AVE	RCRA-SQG, FINDS, ECHO	Higher	1142, 0.216, WNW
I89	CALIFORNIA CABINETS	3559 HAVEN AVE	CA HIST UST	Higher	1142, 0.216, WNW
J90	115 CONSTITUTION DR	115 CONSTITUTION DR	CA LUST	Lower	1152, 0.218, East
J91	OPTIVIA BIOTECHNOLOG	115 CONSTITUTION	CA San Mateo Co. BI	Lower	1152, 0.218, East
J92	THERMAL TECHNOLOGY I	110 CONSTITUTION DR	RCRA-SQG, FINDS, ECHO	Lower	1175, 0.223, ESE
J93	SPACESONICS INC	110 CONSTITUTION	CA San Mateo Co. BI	Lower	1175, 0.223, ESE
G94	STUDIO RED	115 INDEPENDENCE	CA SLIC, CA San Mateo Co. BI, CA EMI	Higher	1176, 0.223, ESE
I95	GRIFFIN PAINTING, IN	3580 HAVEN	CA San Mateo Co. BI	Higher	1222, 0.231, West
I96	ACTION SIGN SYSTEMS,	3580 HAVEN	CA San Mateo Co. BI	Higher	1222, 0.231, West
97	GAS RECOVERY SYSTEMS	1680 MARSH	CA San Mateo Co. BI	Higher	1226, 0.232, SSW
98	GENERAL CIRCUITS INC	3549 J HAVEN AVENUE	SEMS-ARCHIVE, CORRACTS, RCRA-TSDF, RCRA-SQG, CA...	Higher	1246, 0.236, West
K99	CRITCHFIELD MECHANIC	4085 CAMPBELL	CA San Mateo Co. BI, CA NPDES	Higher	1313, 0.249, South
K100	FITNESS 101 AND FORM	4085 CAMPBELL AVENUE	CA SLIC	Higher	1313, 0.249, South
101	SEIBERT, J., MACHINE	119 INDEPENDENCE DR.	CA ENVIROSTOR, CA San Mateo Co. BI	Higher	1357, 0.257, ESE
J102	JA MOREING COMPANY	120 CONSTITUTION DR	CA SLIC	Lower	1374, 0.260, ESE
J103	MOREING COMPANY	120 CONSTITUTION DR	CA LUST	Lower	1374, 0.260, ESE
J104	MOREING COMPANY	120 CONSTITUTION	CA LUST, CA SLIC, CA HIST CORTESE	Lower	1374, 0.260, ESE
L105	MARSH ROAD CHEVRON	1110 MARSH	CA LUST, CA FID UST, CA San Mateo Co. BI	Higher	1654, 0.313, SSW
L106	BP OIL COMPANY SITE	1110 MARSH RD	CA SWEEPS UST, CA HIST CORTESE	Higher	1654, 0.313, SSW
107	MIDLAND PACIFIC CORP	3536 HAVEN	CA LUST, CA HIST CORTESE	Higher	1706, 0.323, West
M108	HORIZON	4060 CAMPBELL	CA LUST, CA SWEEPS UST, CA San Mateo Co. BI, CA...	Higher	1785, 0.338, SSE
M109	AUTOMATIC RAIN CO.	4060 CAMPBELL	CA LUST, CA FID UST	Higher	1785, 0.338, SSE
N110	WVP III	4040 CAMPBELL	CA SLIC, CA San Mateo Co. BI, CA HIST CORTESE	Higher	1943, 0.368, South
N111	WEST VALLEY PROP (WV	4040 CAMPBELL AVENUE	CA BROWNFIELDS, CA HAZNET	Higher	1943, 0.368, South
O112	KNAPPKINS	4055 BOHANNON	CA LUST, CA San Mateo Co. BI	Higher	1961, 0.371, SSE
O113	KNAPPKINS	4055 BOHANNON	CA LUST, CA HIST CORTESE	Higher	1961, 0.371, SSE
P114	KREBS ENGINEERS	1205 CHRYSLER DR	CA SLIC, CA San Mateo Co. BI, CA HIST CORTESE	Higher	2100, 0.398, ESE
P115	L3 COMMUNICATIONS RA	1150 CHRYSLER DR	CA LUST, CA San Mateo Co. BI, CA HIST CORTESE, CA...	Higher	2229, 0.422, ESE
116	AMOROSO PROPERTY	135 COMMONWEALTH DRI	CA LUST, CA SLIC, CA San Mateo Co. BI	Higher	2380, 0.451, SE
Q117	APRIA HEALTHCARE	3905 BOHANNON	CA LUST, CA San Mateo Co. BI	Higher	2405, 0.455, SSE

MAPPED SITES SUMMARY

Target Property Address:
3705 HAVEN AVENUE
REDWOOD CITY, CA 94063

Click on Map ID to see full detail.

MAP ID	SITE NAME	ADDRESS	DATABASE ACRONYMS	RELATIVE ELEVATION	DIST (ft. & mi.) DIRECTION
Q118	PHARM CHEM LABS INC	3925 BOHANNON DR	CA LUST, CA SLIC	Higher	2424, 0.459, SSE
Q119	PHARM CHEM LABORATOR	3925 BOHANNON DRIVE	RCRA-SQG, CA SLIC, FINDS, ECHO, CA San Mateo Co....	Higher	2424, 0.459, SSE
120	U.S. POSTAL SERVICE	3875 BOHANNON	CA LUST, CA San Mateo Co. BI, CA HIST CORTESE	Higher	2489, 0.471, South
R121	CHEVRON 9-0754	3805 BOHANNON	CA LUST, CA SWEEPS UST, CA San Mateo Co. BI, CA...	Higher	2498, 0.473, SSW
R122	CHEVRON 9-0754	3805 BOHANNON	CA LUST	Higher	2527, 0.479, SSW
123	ELECTRICAL WIRE PROD	150 JEFFERSON DR	CA ENVIROSTOR, CA SCH, RCRA NonGen / NLR, FINDS,...	Higher	3005, 0.569, ESE
124	MENLOTECH INC	188 CONSTITUTION DR	RCRA-SQG, CA ENVIROSTOR, CA LUST, CA SLIC, CA VCP,...	Lower	3043, 0.576, ESE
125	BROWNING-FERRIS INDU	END OF MARSH ROAD, E	CA ENVIROSTOR	Lower	3186, 0.603, NE
126	FORMER GAS STATION	955 MARSH ROAD	CA Notify 65	Higher	3237, 0.613, SSW
127	MENLO PARK SANITATIO	1700 MARSH ROAD EXTE	CA ENVIROSTOR, CA San Mateo Co. BI, CA HIST...	Higher	3300, 0.625, NNE
128	REDWOOD CITY USD / T	903 10TH AVE	CA ENVIROSTOR, CA SCH, CA HAZNET	Higher	3840, 0.727, WSW
S129	TYCO ELECTRONICS COR	304 CONSTITUTION DR.	SEMS-ARCHIVE, CORRACTS, RCRA-TSDF, RCRA-LQG, US...	Lower	4331, 0.820, ESE
S130	TE CONNECTIVITY LTD	300 CONSTITUTION DR	CA HIST UST, CA DEED, CA EMI, CA HWP	Lower	4331, 0.820, ESE

EXECUTIVE SUMMARY

TARGET PROPERTY SEARCH RESULTS

The target property was identified in the following records. For more information on this property see page 8 of the attached EDR Radius Map report:

Site	Database(s)	EPA ID
SILTEC 3705-3723 HAVEN AVEN MENLO PARK, CA 94025	FINDS Registry ID:: 110065206217	N/A
SILTEC 3705-3723 HAVEN AVEN MENLO PARK, CA 94025	CA SLIC Database: SLIC REG 2, Date of Government Version: 09/30/2004 Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Completed - Case Closed Facility Id: SL18322742 Global Id: SL18322742	N/A
THYSEN MANAGEMENT CO 3705 HAVEN AVE MENLO PARK, CA 94025	CA LUST Database: LUST REG 2, Date of Government Version: 09/30/2004 Database: LUST, Date of Government Version: 12/11/2017 Status: Completed - Case Closed Facility Id: 41-0991 Facility Status: Case Closed Global Id: T0608100906 date9: 7/30/1999 CA San Mateo Co. BI Facility Id: FA0022530 CA HIST CORTESE Reg Id: 41-0991	N/A
THYSEN MANAGEMENT CO 3705 HAVEN AVE MENLO PARK, CA 94025	FINDS Registry ID:: 110065382311	N/A
SILTECH 3705-3723 HAVEN AVE REDWOOD CITY, CA 94063	CA SPILLS 90 Status: INACTIVE Site Id: SLC241S0105	N/A
THYSEN MANAGEMENT CO 3705 HAVEN AVE MENLO PARK, CA	CA RGA LUST	N/A
THYSEN MANAGEMENT CO 3705 HAVEN AVE MENLO PARK, CA	CA RGA LUST	N/A
B S G ASSOCIATES 3705 HAVEN AVENUE MENLO PARK, CA 94025	CA HAZNET	N/A

EXECUTIVE SUMMARY

GEPAID: CAC001105104

DATABASES WITH NO MAPPED SITES

No mapped sites were found in EDR's search of available ("reasonably ascertainable ") government records either on the target property or within the search radius around the target property for the following databases:

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL ---------- National Priority List
Proposed NPL ---------- Proposed National Priority List Sites
NPL LIENS ---------- Federal Superfund Liens

Federal Delisted NPL site list

Delisted NPL ---------- National Priority List Deletions

Federal CERCLIS list

FEDERAL FACILITY ---------- Federal Facility Site Information listing
SEMS ---------- Superfund Enterprise Management System

Federal RCRA generators list

RCRA-CESQG ---------- RCRA - Conditionally Exempt Small Quantity Generator

Federal institutional controls / engineering controls registries

LUCIS ---------- Land Use Control Information System
US ENG CONTROLS ---------- Engineering Controls Sites List

Federal ERNS list

ERNS ---------- Emergency Response Notification System

State- and tribal - equivalent NPL

CA RESPONSE ---------- State Response Sites

State and tribal landfill and/or solid waste disposal site lists

CA SWF/LF ---------- Solid Waste Information System

State and tribal leaking storage tank lists

INDIAN LUST ---------- Leaking Underground Storage Tanks on Indian Land

State and tribal registered storage tank lists

FEMA UST ---- Underground Storage Tank Listing
CA UST ---- Active UST Facilities
CA AST ---- Aboveground Petroleum Storage Tank Facilities
INDIAN UST ---- Underground Storage Tanks on Indian Land

State and tribal voluntary cleanup sites

INDIAN VCP ---- Voluntary Cleanup Priority Listing

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS ---- A Listing of Brownfields Sites

Local Lists of Landfill / Solid Waste Disposal Sites

CA WMUDS/SWAT ---- Waste Management Unit Database
CA SWRCY ---- Recycler Database
CA HAULERS ---- Registered Waste Tire Haulers Listing
INDIAN ODI ---- Report on the Status of Open Dumps on Indian Lands
ODI ---- Open Dump Inventory
DEBRIS REGION 9 ---- Torres Martinez Reservation Illegal Dump Site Locations
IHS OPEN DUMPS ---- Open Dumps on Indian Land

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL ---- Delisted National Clandestine Laboratory Register
CA HIST Cal-Sites ---- Historical Calsites Database
CA CDL ---- Clandestine Drug Labs
CA Toxic Pits ---- Toxic Pits Cleanup Act Sites
US CDL ---- National Clandestine Laboratory Register

Local Land Records

CA LIENS ---- Environmental Liens Listing
LIENS 2 ---- CERCLA Lien Information

Records of Emergency Release Reports

HMIRS ---- Hazardous Materials Information Reporting System
CA LDS ---- Land Disposal Sites Listing
CA MCS ---- Military Cleanup Sites Listing

Other Ascertainable Records

FUDS ---- Formerly Used Defense Sites
DOD ---- Department of Defense Sites
SCRD DRYCLEANERS ---- State Coalition for Remediation of Drycleaners Listing
EPA WATCH LIST ---- EPA WATCH LIST
TSCA ---- Toxic Substances Control Act

TRIS	Toxic Chemical Release Inventory System
SSTS	Section 7 Tracking Systems
ROD	Records Of Decision
RMP	Risk Management Plans
RAATS	RCRA Administrative Action Tracking System
PRP	Potentially Responsible Parties
ICIS	Integrated Compliance Information System
FTTS	FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
MLTS	Material Licensing Tracking System
COAL ASH DOE	Steam-Electric Plant Operation Data
COAL ASH EPA	Coal Combustion Residues Surface Impoundments List
PCB TRANSFORMER	PCB Transformer Registration Database
RADINFO	Radiation Information Database
HIST FTTS	FIFRA/TSCA Tracking System Administrative Case Listing
DOT OPS	Incident and Accident Data
CONSENT	Superfund (CERCLA) Consent Decrees
INDIAN RESERV	Indian Reservations
FUSRAP	Formerly Utilized Sites Remedial Action Program
UMTRA	Uranium Mill Tailings Sites
LEAD SMELTERS	Lead Smelter Sites
US AIRS	Aerometric Information Retrieval System Facility Subsystem
US MINES	Mines Master Index File
ABANDONED MINES	Abandoned Mines
UXO	Unexploded Ordnance Sites
DOCKET HWC	Hazardous Waste Compliance Docket Listing
FUELS PROGRAM	EPA Fuels Program Registered Listing
CA BOND EXP. PLAN	Bond Expenditure Plan
CA Cortese	"Cortese" Hazardous Waste & Substances Sites List
CA CUPA Listings	CUPA Resources List
CA DRYCLEANERS	Cleaner Facilities
CA ENF	Enforcement Action Listing
CA Financial Assurance	Financial Assurance Information Listing
CA ICE	ICE
CA HWT	Registered Hazardous Waste Transporter Database
CA MINES	Mines Site Location Listing
CA MWMP	Medical Waste Management Program Listing
CA PEST LIC	Pesticide Regulation Licenses Listing
CA PROC	Certified Processors Database
CA UIC	UIC Listing
CA WASTEWATER PITS	Oil Wastewater Pits Listing
CA WIP	Well Investigation Program Case List

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP	EDR Proprietary Manufactured Gas Plants
EDR Hist Auto	EDR Exclusive Historical Auto Stations
EDR Hist Cleaner	EDR Exclusive Historical Cleaners

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

CA RGA LF	Recovered Government Archive Solid Waste Facilities List

EXECUTIVE SUMMARY

SURROUNDING SITES: SEARCH RESULTS

Surrounding sites were identified in the following databases.

Elevations have been determined from the USGS Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified. Sites with an elevation equal to or higher than the target property have been differentiated below from sites with an elevation lower than the target property.
Page numbers and map identification numbers refer to the EDR Radius Map report where detailed data on individual sites can be reviewed.

Sites listed in ***bold italics*** are in multiple databases.

Unmappable (orphan) sites are not considered in the foregoing analysis.

STANDARD ENVIRONMENTAL RECORDS

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

A review of the SEMS-ARCHIVE list, as provided by EDR, and dated 12/11/2017 has revealed that there are 2 SEMS-ARCHIVE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GENERAL CIRCUITS INC	***3585 HAVEN AVENUE***	***WNW 1/8 - 1/4 (0.197 mi.)***	***I79***	***114***
GENERAL CIRCUITS INC	***3549 J HAVEN AVENUE***	***W 1/8 - 1/4 (0.236 mi.)***	***98***	***131***

Federal RCRA CORRACTS facilities list

CORRACTS: CORRACTS is a list of handlers with RCRA Corrective Action Activity. This report shows which nationally-defined corrective action core events have occurred for every handler that has had corrective action activity.

A review of the CORRACTS list, as provided by EDR, and dated 12/11/2017 has revealed that there are 3 CORRACTS sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GENERAL CIRCUITS INC	***3585 HAVEN AVENUE***	***WNW 1/8 - 1/4 (0.197 mi.)***	***I79***	***114***
GENERAL CIRCUITS INC	***3549 J HAVEN AVENUE***	***W 1/8 - 1/4 (0.236 mi.)***	***98***	***131***

Lower Elevation	Address	Direction / Distance	Map ID	Page
TYCO ELECTRONICS COR	***304 CONSTITUTION DR.***	***ESE 1/2 - 1 (0.820 mi.)***	***S129***	***203***

EXECUTIVE SUMMARY

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

A review of the RCRA-TSDF list, as provided by EDR, and dated 12/11/2017 has revealed that there is 1 RCRA-TSDF site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GENERAL CIRCUITS INC	***3549 J HAVEN AVENUE***	***W 1/8 - 1/4 (0.236 mi.)***	***98***	***131***

Federal RCRA generators list

RCRA-LQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

A review of the RCRA-LQG list, as provided by EDR, and dated 12/11/2017 has revealed that there is 1 RCRA-LQG site within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
NANOSYN	3760 HAVEN AVE.	NE 0 - 1/8 (0.014 mi.)	B23	34

RCRA-SQG: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

A review of the RCRA-SQG list, as provided by EDR, and dated 12/11/2017 has revealed that there are 16 RCRA-SQG sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SUNESIS PHARMACEUTIC	***3696C HAVEN AVE***	***WSW 0 - 1/8 (0.015 mi.)***	***A24***	***37***
CHEMOCENTRYX	***3696 HAVEN AVE STE B***	***WSW 0 - 1/8 (0.015 mi.)***	***A25***	***41***
BARIENT INC	***3641 HAVEN AVE***	***W 0 - 1/8 (0.053 mi.)***	***C44***	***64***
CARLSEN MOTOR CARS I	***3636 HAVEN AVE***	***W 0 - 1/8 (0.070 mi.)***	***C53***	***74***
LANDEC CORPORATION	***3603 HAVEN AVE***	***WNW 1/8 - 1/4 (0.151 mi.)***	***F67***	***95***
SPACE CONTROL CO	***3600 HAVEN AVE UNIT***	***W 1/8 - 1/4 (0.154 mi.)***	***F69***	***99***
SCALE MODELS UNLIMIT	***111 INDEPENDENCE DR***	***ESE 1/8 - 1/4 (0.177 mi.)***	***G71***	***101***
GENERAL CIRCUITS INC	***3585 HAVEN AVENUE***	***WNW 1/8 - 1/4 (0.197 mi.)***	***I79***	***114***
ELDORADO FORKLIFT CO	3582 HAVEN AVE	W 1/8 - 1/4 (0.211 mi.)	I83	120
NOREN PRODUCTS, INC	***3543 HAVEN AVE***	***WNW 1/8 - 1/4 (0.216 mi.)***	***I88***	***123***
GENERAL CIRCUITS INC	***3549 J HAVEN AVENUE***	***W 1/8 - 1/4 (0.236 mi.)***	***98***	***131***

Lower Elevation	Address	Direction / Distance	Map ID	Page
K O B AUTO	3717 HAVEN AVE	0 - 1/8 (0.000 mi.)	B12	14

Lower Elevation	Address	Direction / Distance	Map ID	Page
MITSUBISHI SILICON A	3717 HAVEN AVE	0 - 1/8 (0.000 mi.)	B15	18
CARL OLSON AND SONS	***3750 HAVEN AVE***	***NE 0 - 1/8 (0.045 mi.)***	***D39***	***49***
COMCAST OF CALIFORNI	3760 HAVEN AVE	E 0 - 1/8 (0.093 mi.)	55	78
THERMAL TECHNOLOGY I	***110 CONSTITUTION DR***	***ESE 1/8 - 1/4 (0.223 mi.)***	***J92***	***127***

State- and tribal - equivalent CERCLIS

CA ENVIROSTOR: The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

A review of the CA ENVIROSTOR list, as provided by EDR, and dated 10/30/2017 has revealed that there are 9 CA ENVIROSTOR sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GENERAL CIRCUITS INC Facility Id: 80001497 Status: Inactive - Needs Evaluation	***3585 HAVEN AVENUE***	***WNW 1/8 - 1/4 (0.197 mi.)***	***I80***	***117***
GENERAL CIRCUITS INC Facility Id: 80001670 Status: Refer: EPA	***3549 J HAVEN AVENUE***	***W 1/8 - 1/4 (0.236 mi.)***	***98***	***131***
SEIBERT, J., MACHINE Facility Id: 41350016 Status: Refer: Other Agency	***119 INDEPENDENCE DR.***	***ESE 1/4 - 1/2 (0.257 mi.)***	***101***	***140***
ELECTRICAL WIRE PROD Facility Id: 60002163 Status: No Further Action	***150 JEFFERSON DR***	***ESE 1/2 - 1 (0.569 mi.)***	***123***	***181***
MENLO PARK SANITATIO Facility Id: 41490021 Status: No Further Action	***1700 MARSH ROAD EXTE***	***NNE 1/2 - 1 (0.625 mi.)***	***127***	***198***
REDWOOD CITY USD / T Facility Id: 60002535 Status: Active	***903 10TH AVE***	***WSW 1/2 - 1 (0.727 mi.)***	***128***	***200***

Lower Elevation	Address	Direction / Distance	Map ID	Page
MENLOTECH INC Facility Id: 71002456 Facility Id: 70000160 Status: Inactive - Needs Evaluation	***188 CONSTITUTION DR***	***ESE 1/2 - 1 (0.576 mi.)***	***124***	***187***
BROWNING-FERRIS INDU	END OF MARSH ROAD, E	NE 1/2 - 1 (0.603 mi.)	125	196

Facility Id: 41490048
Status: Refer: RWQCB

TYCO ELECTRONICS COR ***304 CONSTITUTION DR.*** ***ESE 1/2 - 1 (0.820 mi.)*** ***S129*** ***203***
Facility Id: 41280137
Facility Id: 80001600
Status: Refer: RCRA
Status: Certified / Operation & Maintenance

State and tribal leaking storage tank lists

CA LUST: Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CA LUST list, as provided by EDR, has revealed that there are 24 CA LUST sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BAY MATERIALS LLC	***3700 HAVEN***	***S 0 - 1/8 (0.008 mi.)***	***A17***	***22***
Database: LUST, Date of Government Version: 12/11/2017 Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017 Status: Completed - Case Closed Facility Id: 440033 Facility Status: 9- Case Closed Global Id: T0608100629 Global ID: T0608100629				
CT INTERNATIONAL SAL	***3645 HAVEN***	***NNW 0 - 1/8 (0.046 mi.)***	***42***	***61***
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017 Facility Id: 449077 Facility Status: 9- Case Closed Global ID: SL0608120935				
LEMMON'S SIGNS	***3636 HAVEN***	***W 0 - 1/8 (0.070 mi.)***	***C51***	***72***
Database: LUST REG 2, Date of Government Version: 09/30/2004 Database: LUST, Date of Government Version: 12/11/2017 Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017 Status: Completed - Case Closed Facility Status: Case Closed Facility Id: 330108 Facility Status: 9- Case Closed Global Id: T0608100150 Global ID: T0608100150 date9: 3/29/1996				
RB TRACTOR WORK	***3633 HAVEN***	***W 0 - 1/8 (0.073 mi.)***	***E54***	***77***
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017 Facility Id: 449080 Facility Status: 9- Case Closed Global ID: SL0608127363				
SHOOTER LANDSCAPING	***3605 HAVEN***	***WNW 1/8 - 1/4 (0.145 mi.)***	***F64***	***87***
Database: LUST REG 2, Date of Government Version: 09/30/2004 Database: LUST, Date of Government Version: 12/11/2017 Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017				

Status: Completed - Case Closed
Facility Status: Case Closed
Facility Id: 440058
Facility Status: 9- Case Closed
Global Id: T0608105455
Global ID: T0608105455
date9: 3/6/2002

REDWOOD MOTOR COURT 3706 ROLISON ROAD WSW 1/8 - 1/4 (0.179 mi.) H73 106
Database: LUST REG 2, Date of Government Version: 09/30/2004
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Status: Post remedial action monitoring
Facility Id: 330187
Facility Status: 9- Case Closed
Global Id: T0608114600
Global ID: T0608114600

PIERCE INGER TRUST, 3592 HAVEN W 1/8 - 1/4 (0.197 mi.) I78 111
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Id: 330208
Facility Status: 9- Case Closed
Global Id: T0608129088
Global ID: T0608129088

MARSH ROAD CHEVRON ***1110 MARSH*** ***SSW 1/4 - 1/2 (0.313 mi.)*** ***L105*** ***144***
Database: LUST REG 2, Date of Government Version: 09/30/2004
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Status: Post remedial action monitoring
Facility Id: 440018
Facility Status: 9- Case Closed
Global Id: T0608100334
Global ID: T0608100334

MIDLAND PACIFIC CORP ***3536 HAVEN*** ***W 1/4 - 1/2 (0.323 mi.)*** ***107*** ***150***
Database: LUST REG 2, Date of Government Version: 09/30/2004
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Status: Case Closed
Facility Id: 440031
Facility Status: 9- Case Closed
Global Id: T0608100330
Global ID: T0608100330
date9: 10/24/1995

HORIZON ***4060 CAMPBELL*** ***SSE 1/4 - 1/2 (0.338 mi.)*** ***M108*** ***151***
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Id: 440047
Facility Status: 9- Case Closed
Global Id: T0608100888

Global ID: T0608100888

AUTOMATIC RAIN CO. ***4060 CAMPBELL*** ***SSE 1/4 - 1/2 (0.338 mi.)*** ***M109*** ***153***
Database: LUST REG 2, Date of Government Version: 09/30/2004
Facility Status: Case Closed
date9: 8/12/1999

KNAPPKINS ***4055 BOHANNON*** ***SSE 1/4 - 1/2 (0.371 mi.)*** ***O112*** ***159***
Database: LUST REG 2, Date of Government Version: 09/30/2004
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Facility Status: Case Closed
Facility Id: 440032
Facility Status: 9- Case Closed
Global ID: T0608100295
date9: 6/30/1998

KNAPPKINS ***4055 BOHANNON*** ***SSE 1/4 - 1/2 (0.371 mi.)*** ***O113*** ***160***
Database: LUST, Date of Government Version: 12/11/2017
Status: Completed - Case Closed
Global Id: T0608100295

L3 COMMUNICATIONS RA ***1150 CHRYSLER DR*** ***ESE 1/4 - 1/2 (0.422 mi.)*** ***P115*** ***162***
Database: LUST REG 2, Date of Government Version: 09/30/2004
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Status: Case Closed
Facility Id: 440005
Facility Status: 9- Case Closed
Global Id: T0608100059
Global ID: T0608100059
date9: 4/10/1999

AMOROSO PROPERTY ***135 COMMONWEALTH DRI*** ***SE 1/4 - 1/2 (0.451 mi.)*** ***116*** ***168***
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Facility Id: 449083
Facility Status: 9- Case Closed
Global ID: SL0608132881

APRIA HEALTHCARE ***3905 BOHANNON*** ***SSE 1/4 - 1/2 (0.455 mi.)*** ***Q117*** ***168***
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Id: 449060
Facility Status: 9- Case Closed
Global Id: T0608162345
Global ID: T0608162345

PHARM CHEM LABS INC ***3925 BOHANNON DR*** ***SSE 1/4 - 1/2 (0.459 mi.)*** ***Q118*** ***171***
Database: LUST REG 2, Date of Government Version: 09/30/2004
Facility Id: 41S0045
Facility Status: Post remedial action monitoring

U.S. POSTAL SERVICE ***3875 BOHANNON*** ***S 1/4 - 1/2 (0.471 mi.)*** ***120*** ***175***
Database: LUST REG 2, Date of Government Version: 09/30/2004
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Status: Case Closed
Facility Id: 440039

Facility Status: 9- Case Closed
Global Id: T0608100327
Global ID: T0608100327
date9: 10/15/1999

CHEVRON 9-0754 ***3805 BOHANNON*** ***SSW 1/4 - 1/2 (0.473 mi.)*** ***R121*** ***177***
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Id: 440052
Facility Status: 9- Case Closed
Global Id: T0608100997
Global ID: T0608100997

CHEVRON 9-0754 3805 BOHANNON SSW 1/4 - 1/2 (0.479 mi.) R122 181
Database: LUST REG 2, Date of Government Version: 09/30/2004
Facility Status: Case Closed
date9: 6/15/2004

Lower Elevation	Address	Direction / Distance	Map ID	Page

CARL OLSON AND SONS ***3750 HAVEN AVE*** ***NE 0 - 1/8 (0.045 mi.)*** ***D39*** ***49***
Database: LUST REG 2, Date of Government Version: 09/30/2004
Database: LUST, Date of Government Version: 12/11/2017
Database: SAN MATEO CO. LUST, Date of Government Version: 12/12/2017
Status: Completed - Case Closed
Facility Status: Case Closed
Facility Id: 440017
Facility Status: 9- Case Closed
Global Id: T0608100104
Global ID: T0608100104
date9: 8/10/1995

115 CONSTITUTION DR 115 CONSTITUTION DR E 1/8 - 1/4 (0.218 mi.) J90 126
Database: LUST REG 2, Date of Government Version: 09/30/2004
Facility Id: 41-1145
Facility Status: Case Closed
date9: 4/1/1998

MOREING COMPANY 120 CONSTITUTION DR ESE 1/4 - 1/2 (0.260 mi.) J103 142
Database: LUST REG 2, Date of Government Version: 09/30/2004
Facility Id: 41-0729
Facility Status: Case Closed
date9: 4/8/1998

MOREING COMPANY ***120 CONSTITUTION*** ***ESE 1/4 - 1/2 (0.260 mi.)*** ***J104*** ***142***
Database: LUST, Date of Government Version: 12/11/2017
Status: Completed - Case Closed
Global Id: T0608100690

CA SLIC: Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

A review of the CA SLIC list, as provided by EDR, has revealed that there are 12 CA SLIC sites within

approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CT INTERNATIONAL SAL	***3645 HAVEN***	***NNW 0 - 1/8 (0.046 mi.)***	***42***	***61***
Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Completed - Case Closed Global Id: SL0608120935				
RB TRACTOR WORK	***3633 HAVEN***	***W 0 - 1/8 (0.073 mi.)***	***E54***	***77***
Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Completed - Case Closed Global Id: SL0608127363				
ANTON MENLO	3605-3639 HAVEN AVEN	W 1/8 - 1/4 (0.178 mi.)	F72	105
Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Completed - Case Closed Global Id: T10000004645				
STUDIO RED	***115 INDEPENDENCE***	***ESE 1/8 - 1/4 (0.223 mi.)***	***G94***	***129***
Database: SLIC REG 2, Date of Government Version: 09/30/2004 Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Open - Inactive Facility Id: SLT2O100106 Global Id: SLT2O100106				
FITNESS 101 AND FORM	4085 CAMPBELL AVENUE	S 1/8 - 1/4 (0.249 mi.)	K100	140
Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Completed - Case Closed Global Id: T10000003488				
WVP III	***4040 CAMPBELL***	***S 1/4 - 1/2 (0.368 mi.)***	***N110***	***154***
Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Completed - Case Closed Global Id: T0608126742				
KREBS ENGINEERS	***1205 CHRYSLER DR***	***ESE 1/4 - 1/2 (0.398 mi.)***	***P114***	***161***
Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Completed - Case Closed Global Id: T0608100940				
AMOROSO PROPERTY	***135 COMMONWEALTH DRI***	***SE 1/4 - 1/2 (0.451 mi.)***	***116***	***168***
Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Completed - Case Closed Global Id: SL0608132881				
PHARM CHEM LABS INC	***3925 BOHANNON DR***	***SSE 1/4 - 1/2 (0.459 mi.)***	***Q118***	***171***
Database: SLIC REG 2, Date of Government Version: 09/30/2004 Facility Id: SLT2O096102				
PHARM CHEM LABORATOR	***3925 BOHANNON DRIVE***	***SSE 1/4 - 1/2 (0.459 mi.)***	***Q119***	***172***
Database: SLIC, Date of Government Version: 12/11/2017 Facility Status: Completed - Case Closed Global Id: SLT2O096102				

Lower Elevation	Address	Direction / Distance	Map ID	Page
JA MOREING COMPANY	120 CONSTITUTION DR	ESE 1/4 - 1/2 (0.260 mi.)	J102	142
Database: SLIC REG 2, Date of Government Version: 09/30/2004 Facility Id: SLT2O098104				
MOREING COMPANY	***120 CONSTITUTION***	***ESE 1/4 - 1/2 (0.260 mi.)***	***J104***	***142***
Database: SLIC, Date of Government Version: 12/11/2017				

Facility Status: Completed - Case Closed
Global Id: SLT2O098104

State and tribal Brownfields sites

CA BROWNFIELDS: A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

A review of the CA BROWNFIELDS list, as provided by EDR, and dated 12/22/2017 has revealed that there is 1 CA BROWNFIELDS site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
WEST VALLEY PROP (WV	***4040 CAMPBELL AVENUE***	***S 1/4 - 1/2 (0.368 mi.)***	***N111***	***156***

ADDITIONAL ENVIRONMENTAL RECORDS

Local Lists of Registered Storage Tanks

CA SWEEPS UST: Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

A review of the CA SWEEPS UST list, as provided by EDR, and dated 06/01/1994 has revealed that there are 4 CA SWEEPS UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LEMMONS SIGNS	***3636 HAVEN AVENUE***	***W 0 - 1/8 (0.070 mi.)***	***C49***	***70***
Status: A				
Comp Number: 330193				
EL DORADO FORKLIFT C	***3607 HAVEN***	***WNW 1/8 - 1/4 (0.140 mi.)***	***F63***	***86***
Comp Number: 440080				
JOHN J SHOOTER INC	***3605 HAVEN AVE***	***WNW 1/8 - 1/4 (0.145 mi.)***	***F65***	***92***
Status: A				
Tank Status: A				
Comp Number: 440022				

Lower Elevation	Address	Direction / Distance	Map ID	Page
HUETTIG & SCHROMM, I	***3700 HAVEN CT.***	***SSE 0 - 1/8 (0.046 mi.)***	***41***	***59***
Status: A				
Tank Status: A				
Comp Number: 440058				

CA HIST UST: Historical UST Registered Database.

A review of the CA HIST UST list, as provided by EDR, and dated 10/15/1990 has revealed that there are 15 CA HIST UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
INDUSTRIAL GARDEN MA Facility Id: 00000011468	3700 HAVEN AVE	SW 0 - 1/8 (0.012 mi.)	A18	23
SILTEC CORPORATION (Facility Id: 00000001827	3698 HAVEN AVE	WSW 0 - 1/8 (0.015 mi.)	A26	44
DESIGNCO	***3641 HAVEN AVE***	***W 0 - 1/8 (0.053 mi.)***	***C45***	***66***
CORRELL PROPERTIES Facility Id: 00000038150	3641 HAVEN AVE	W 0 - 1/8 (0.053 mi.)	C46	68
PIERS DAIRY Facility Id: 00000037583	***3611 HAVEN AVE***	***W 1/8 - 1/4 (0.130 mi.)***	***F60***	***84***
SHOOTER LANDSCAPING Facility Id: 00000065329	***3605 HAVEN***	***WNW 1/8 - 1/4 (0.145 mi.)***	***F64***	***87***
JOHN J SHOOTER INC	***3605 HAVEN AVE***	***WNW 1/8 - 1/4 (0.145 mi.)***	***F65***	***92***
GENERAL CIRCUITS INC Facility Id: 00000000648	***3585 HAVEN AVENUE***	***WNW 1/8 - 1/4 (0.197 mi.)***	***I80***	***117***
CALIFORNIA CABINETS Facility Id: 00000012497	3559 HAVEN AVE	WNW 1/8 - 1/4 (0.216 mi.)	I89	125

Lower Elevation	Address	Direction / Distance	Map ID	Page
SILTEC CORPORATION (Facility Id: 00000001828	***3717 HAVEN AVE***	***0 - 1/8 (0.000 mi.)***	***B10***	***13***
ENGENICS, INC. Facility Id: 00000014650	***3760 HAVEN AVE***	***NE 0 - 1/8 (0.014 mi.)***	***B19***	***24***
NANOSYN	***3760 HAVEN AVE***	***NE 0 - 1/8 (0.014 mi.)***	***B21***	***27***
CARL OLSON AND SONS Facility Id: 00000001726	***3750 HAVEN AVE***	***NE 0 - 1/8 (0.045 mi.)***	***D39***	***49***
FEDERAL EXPRESS CORP	***3750 HAVEN AVE***	***NE 0 - 1/8 (0.045 mi.)***	***D40***	***56***
HUETTIG & SCHROMM, I	***3700 HAVEN CT.***	***SSE 0 - 1/8 (0.046 mi.)***	***41***	***59***

CA FID UST: The Facility Inventory Database contains active and inactive underground storage tank locations. The source is the State Water Resource Control Board.

A review of the CA FID UST list, as provided by EDR, and dated 10/31/1994 has revealed that there are 3 CA FID UST sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
LEMMONS SIGNS Facility Id: 41000319 Status: A	***3636 HAVEN AVENUE***	***W 0 - 1/8 (0.070 mi.)***	***C49***	***70***
JOHN J SHOOTER INC Facility Id: 41002864 Status: A	***3605 HAVEN AVE***	***WNW 1/8 - 1/4 (0.145 mi.)***	***F65***	***92***

Lower Elevation	Address	Direction / Distance	Map ID	Page
HUETTIG & SCHROMM, I	***3700 HAVEN CT.***	***SSE 0 - 1/8 (0.046 mi.)***	***41***	***59***

Facility Id: 41000607
Status: A

Local Land Records

CA DEED: The use of recorded land use restrictions is one of the methods the DTSC uses to protect the public from unsafe exposures to hazardous substances and wastes .

A review of the CA DEED list, as provided by EDR, and dated 02/08/2018 has revealed that there is 1 CA DEED site within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
CT INTERNATIONAL SAL	***3645 HAVEN***	***NNW 0 - 1/8 (0.046 mi.)***	***42***	***61***
Status: COMPLETED - CASE CLOSED Envirostor ID: SL0608120935				

Other Ascertainable Records

RCRA NonGen / NLR: RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

A review of the RCRA NonGen / NLR list, as provided by EDR, and dated 12/11/2017 has revealed that there are 2 RCRA NonGen / NLR sites within approximately 0.25 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
ENGENICS	3760 HAVEN AVE	NE 0 - 1/8 (0.014 mi.)	B20	26
NANOSYN INC	***3760 HAVEN AVE***	***NE 0 - 1/8 (0.014 mi.)***	***B22***	***29***

FINDS: The Facility Index System contains both facility information and "pointers" to other sources of information that contain more detail. These include: RCRIS; Permit Compliance System (PCS); Aerometric Information Retrieval System (AIRS); FATES (FIFRA [Federal Insecticide Fungicide Rodenticide Act] and TSCA Enforcement System, FTTS [FIFRA/TSCA Tracking System]; CERCLIS; DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes); Federal Underground Injection Control (FURS); Federal Reporting Data System (FRDS); Surface Impoundments (SIA); TSCA Chemicals in Commerce Information System (CICS); PADS; RCRA-J (medical waste transporters/disposers); TRIS; and TSCA. The source of this database is the U.S. EPA/NTIS.

A review of the FINDS list, as provided by EDR, and dated 07/23/2017 has revealed that there are 2 FINDS sites within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
SUMCO OREGON	3717 HAVEN AVE	0 - 1/8 (0.000 mi.)	B11	14
KOB AUTO INC	***3717 HAVEN AVENUE***	***0 - 1/8 (0.000 mi.)***	***B14***	***17***

EXECUTIVE SUMMARY

ECHO: ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

A review of the ECHO list, as provided by EDR, and dated 09/02/2017 has revealed that there is 1 ECHO site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
KOB AUTO INC	***3717 HAVEN AVENUE***	***0 - 1/8 (0.000 mi.)***	***B14***	***17***

Hazardous Materials Business Plan, Hazardous Waste Generator, Underground Storage tanks

A review of the CA San Mateo Co. BI list, as provided by EDR, and dated 12/12/2017 has revealed that there are 54 CA San Mateo Co. BI sites within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BAY MATERIALS LLC Facility Id: FA0031593	***3700 HAVEN***	***S 0 - 1/8 (0.008 mi.)***	***A17***	***22***
BAROSENSE INC Facility Id: FA0039009	3698 HAVEN	WSW 0 - 1/8 (0.024 mi.)	A27	45
ACHELOIS ONCOLOGY IN Facility Id: FA0060928	3698 HAVEN	WSW 0 - 1/8 (0.024 mi.)	A28	45
CARDIOKINETIX INC Facility Id: FA0029706	3698 HAVEN	WSW 0 - 1/8 (0.024 mi.)	A29	45
EOPLEX TECHNOLOGIES Facility Id: FA0029708	3698 HAVEN	WSW 0 - 1/8 (0.024 mi.)	A30	46
CHEMO CENTRYX Facility Id: FA0028278	3696 HAVEN	WSW 0 - 1/8 (0.028 mi.)	C31	46
ADVANCED POLYMER SYS Facility Id: FA0017463	3696 HAVEN	WSW 0 - 1/8 (0.028 mi.)	C32	46
KOVIO, INC Facility Id: FA0025915	3696 HAVEN	WSW 0 - 1/8 (0.028 mi.)	C33	47
UBIQUITOUS ENERGY Facility Id: FA0061020	3696 HAVEN	WSW 0 - 1/8 (0.028 mi.)	C34	47
ENVIVO PHARMACEUTICA Facility Id: FA0027179	3696C HAVEN	WSW 0 - 1/8 (0.028 mi.)	C35	48
NANOSTELLAR INC Facility Id: FA0029703	3696 HAVEN	WSW 0 - 1/8 (0.028 mi.)	C36	48
SYNTHEGO CORP Facility Id: FA0052607 Facility Id: FA0054063	3696 HAVEN	WSW 0 - 1/8 (0.028 mi.)	C37	48
ROOTES GROUP DEPOT Facility Id: FA0040769	3651 HAVEN	W 0 - 1/8 (0.039 mi.)	C38	49
CT INTERNATIONAL SAL Facility Id: FA0023995 Facility Id: FA0027110 Facility Id: FA0037250 Facility Id: FA0040930	***3645 HAVEN***	***NNW 0 - 1/8 (0.046 mi.)***	***42***	***61***
DESIGNCO	3641 HAVEN	W 0 - 1/8 (0.053 mi.)	C43	64

Facility Id: FA0026074				
CHEVRON SERVICE STAT	***3639 HAVEN***	***W 0 - 1/8 (0.058 mi.)***	***C47***	***69***
Facility Id: FA0014360				
DOUBLE D PAVING	3637 HAVEN	W 0 - 1/8 (0.063 mi.)	C48	70
Facility Id: FA0025951				
Facility Id: FA0025953				
CARLSEN MOTOR CARS,	3636 HAVEN	W 0 - 1/8 (0.070 mi.)	C50	71
Facility Id: FA0027372				
LEMMON SIGNS	3636 HAVEN	W 0 - 1/8 (0.070 mi.)	C52	74
Facility Id: FA0003522				
RB TRACTOR WORK	***3633 HAVEN***	***W 0 - 1/8 (0.073 mi.)***	***E54***	***77***
Facility Id: FA0022907				
Facility Id: FA0022908				
ANGIES POOL REPAIR	3624 HAVEN	W 0 - 1/8 (0.117 mi.)	E56	80
Facility Id: FA0015580				
A J EITNER REPAIRS	3624 HAVEN	W 0 - 1/8 (0.117 mi.)	E57	80
Facility Id: FA0002354				
C F ARCHIBALD PAVING	***3624 HAVEN AVE***	***W 0 - 1/8 (0.117 mi.)***	***E58***	***81***
Facility Id: FA0012927				
J D GIUSTI TRANSPORA	3615 HAVEN	W 0 - 1/8 (0.120 mi.)	E59	83
Facility Id: FA0016417				
Facility Id: FA0022624				
Facility Id: FA0022892				
Facility Id: FA0026855				
PIERS DAIRY	***3611 HAVEN AVE***	***W 1/8 - 1/4 (0.130 mi.)***	***F60***	***84***
Facility Id: FA0022580				
BLACK MOUNTAIN SPRIN	3609 HAVEN	W 1/8 - 1/4 (0.135 mi.)	F61	85
Facility Id: FA0005280				
GUYS ROOFING	3620 HAVEN	W 1/8 - 1/4 (0.136 mi.)	F62	85
Facility Id: FA0013089				
EL DORADO FORKLIFT C	***3607 HAVEN***	***WNW 1/8 - 1/4 (0.140 mi.)***	***F63***	***86***
Facility Id: FA0012506				
Facility Id: FA0017648				
SHOOTER LANDSCAPING	***3605 HAVEN***	***WNW 1/8 - 1/4 (0.145 mi.)***	***F64***	***87***
Facility Id: FA0017571				
Facility Id: FA0022912				
TELOMERE DIAGNOSTICS	3603 HAVEN	WNW 1/8 - 1/4 (0.151 mi.)	F66	93
Facility Id: FA0007383				
Facility Id: FA0026921				
Facility Id: FA0028326				
Facility Id: FA0030897				
Facility Id: FA0051258				
**Additional key fields are available in the Map Findings section*				
PROSETTA BIOSCIENCES	***3603 HAVEN***	***WNW 1/8 - 1/4 (0.151 mi.)***	***F68***	***97***
Facility Id: FA0060174				
AT & T WIRELESS	3600 HAVEN	W 1/8 - 1/4 (0.154 mi.)	F70	101
Facility Id: FA0028553				
Facility Id: FA0029297				
SCALE MODELS UNLIMIT	***111 INDEPENDENCE DR***	***ESE 1/8 - 1/4 (0.177 mi.)***	***G71***	***101***

Facility Id: FA0017615				
REDWOOD COURT MOTEL Facility Id: FA0021430	3706 ROLISON	WSW 1/8 - 1/4 (0.179 mi.)	H74	109
AT&T Facility Id: FA0057398	***1200 MARSH RD***	***S 1/8 - 1/4 (0.180 mi.)***	***75***	***109***
HAVEN OWNERS Facility Id: FA0028437	3592 HAVEN	W 1/8 - 1/4 (0.182 mi.)	I76	110
BENNETT HOPKINS CORP Facility Id: FA0004005	3592 HAVEN	W 1/8 - 1/4 (0.182 mi.)	I77	111
GENERAL CIRCUITS INC Facility Id: FA0022969 Facility Id: FA0027450	***3585 HAVEN AVENUE***	***WNW 1/8 - 1/4 (0.197 mi.)***	***I80***	***117***
ALS ROOFING SUPPLY Facility Id: FA0012934	3586 HAVEN	W 1/8 - 1/4 (0.199 mi.)	I81	119
B & D AUTOWORKS Facility Id: FA0022857	1253 ANNETTE	WSW 1/8 - 1/4 (0.210 mi.)	H82	120
EL DORADO FORKLIFT C Facility Id: FA0037676	3582 HAVEN	W 1/8 - 1/4 (0.211 mi.)	I84	121
T MOBILE WEST CORP S Facility Id: FA0046201	1251 ANNETTE	WSW 1/8 - 1/4 (0.212 mi.)	H85	122
VAZQUEZ GARAGE Facility Id: FA0016122	1251 ANNETTE	WSW 1/8 - 1/4 (0.212 mi.)	H86	122
WOLFS PRECISION WORK Facility Id: FA0013069 Facility Id: FA0023750 Facility Id: FA0025787 Facility Id: FA0023749 Facility Id: FA0027522	3549 HAVEN	WNW 1/8 - 1/4 (0.216 mi.)	I87	122
STUDIO RED Facility Id: FA0052107	***115 INDEPENDENCE***	***ESE 1/8 - 1/4 (0.223 mi.)***	***G94***	***129***
GRIFFIN PAINTING, IN Facility Id: FA0028325	3580 HAVEN	W 1/8 - 1/4 (0.231 mi.)	I95	130
ACTION SIGN SYSTEMS, Facility Id: FA0060529	3580 HAVEN	W 1/8 - 1/4 (0.231 mi.)	I96	130
GAS RECOVERY SYSTEMS Facility Id: FA0015155	1680 MARSH	SSW 1/8 - 1/4 (0.232 mi.)	97	131
CRITCHFIELD MECHANIC Facility Id: FA0013681	***4085 CAMPBELL***	***S 1/8 - 1/4 (0.249 mi.)***	***K99***	***138***

Lower Elevation	Address	Direction / Distance	Map ID	Page
SILTEC CORPORATION (Facility Id: FA0016566	***3717 HAVEN AVE***	***0 - 1/8 (0.000 mi.)***	***B10***	***13***
ENGENICS, INC. Facility Id: FA0006222 Facility Id: FA0027968 Facility Id: FA0029024 Facility Id: FA0050710	***3760 HAVEN AVE***	***NE 0 - 1/8 (0.014 mi.)***	***B19***	***24***
CARL OLSON AND SONS	***3750 HAVEN AVE***	***NE 0 - 1/8 (0.045 mi.)***	***D39***	***49***

Facility Id: FA0024201				
OPTIVIA BIOTECHNOLOG Facility Id: FA0047284	115 CONSTITUTION	E 1/8 - 1/4 (0.218 mi.)	J91	126
SPACESONICS INC Facility Id: FA0015919	110 CONSTITUTION	ESE 1/8 - 1/4 (0.223 mi.)	J93	128

CA EMI: Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies

A review of the CA EMI list, as provided by EDR, and dated 12/31/2015 has revealed that there is 1 CA EMI site within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
KOB AUTO INC Facility Id: 9026	3717 HAVEN AVENUE	0 - 1/8 (0.000 mi.)	B9	13

CA HAZNET: The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000-1,000,000 annually, representing approximately 350,000-500,000 shipments. Data from non-California manifests & continuation sheets are not included at the present time. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, & disposal method. The source is the Department of Toxic Substance Control is the agency. This database begins with calendar year 1993.

A review of the CA HAZNET list, as provided by EDR, and dated 12/31/2016 has revealed that there are 2 CA HAZNET sites within approximately 0.001 miles of the target property.

Lower Elevation	Address	Direction / Distance	Map ID	Page
KOB AUTO GEPAID: CAL000039020	3717 HAVEN AVENUE	0 - 1/8 (0.000 mi.)	B13	16
SUMCO OREGON GEPAID: CAD047388236	3717 HAVEN AVE	0 - 1/8 (0.000 mi.)	B16	20

CA HIST CORTESE: The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

A review of the CA HIST CORTESE list, as provided by EDR, and dated 04/01/2001 has revealed that there are 14 CA HIST CORTESE sites within approximately 0.5 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
BAY MATERIALS LLC Reg Id: 41-0661	***3700 HAVEN***	***S 0 - 1/8 (0.008 mi.)***	***A17***	***22***
CHEVRON SERVICE STAT Reg Id: 2831	***3639 HAVEN***	***W 0 - 1/8 (0.058 mi.)***	***C47***	***69***
LEMMON'S SIGNS Reg Id: 41-0158	***3636 HAVEN***	***W 0 - 1/8 (0.070 mi.)***	***C51***	***72***
BP OIL COMPANY SITE	***1110 MARSH RD***	***SSW 1/4 - 1/2 (0.313 mi.)***	***L106***	***148***

Reg Id: 41-0351

MIDLAND PACIFIC CORP	***3536 HAVEN***	***W 1/4 - 1/2 (0.323 mi.)***	***107***	***150***
Reg Id: 41-0345				
HORIZON	***4060 CAMPBELL***	***SSE 1/4 - 1/2 (0.338 mi.)***	***M108***	***151***
Reg Id: 41-0969				
WVP III	***4040 CAMPBELL***	***S 1/4 - 1/2 (0.368 mi.)***	***N110***	***154***
Reg Id: 41-1014				
KNAPPKINS	***4055 BOHANNON***	***SSE 1/4 - 1/2 (0.371 mi.)***	***O113***	***160***
Reg Id: 41-0310				
KREBS ENGINEERS	***1205 CHRYSLER DR***	***ESE 1/4 - 1/2 (0.398 mi.)***	***P114***	***161***
Reg Id: 41-1027				
L3 COMMUNICATIONS RA	***1150 CHRYSLER DR***	***ESE 1/4 - 1/2 (0.422 mi.)***	***P115***	***162***
Reg Id: 41-0063				
U.S. POSTAL SERVICE	***3875 BOHANNON***	***S 1/4 - 1/2 (0.471 mi.)***	***120***	***175***
Reg Id: 41-0342				
CHEVRON 9-0754	***3805 BOHANNON***	***SSW 1/4 - 1/2 (0.473 mi.)***	***R121***	***177***
Reg Id: 41-1086				

Lower Elevation	Address	Direction / Distance	Map ID	Page
CARL OLSON AND SONS	***3750 HAVEN AVE***	***NE 0 - 1/8 (0.045 mi.)***	***D39***	***49***
Reg Id: 41-0110				
MOREING COMPANY	***120 CONSTITUTION***	***ESE 1/4 - 1/2 (0.260 mi.)***	***J104***	***142***
Reg Id: 41-0729				

CA HWP: Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

A review of the CA HWP list, as provided by EDR, and dated 11/20/2017 has revealed that there are 3 CA HWP sites within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
GENERAL CIRCUITS INC	***3585 HAVEN AVENUE***	***WNW 1/8 - 1/4 (0.197 mi.)***	***I80***	***117***
EPA Id: CAD982462335				
Cleanup Status: PROTECTIVE FILER				
GENERAL CIRCUITS INC	***3549 J HAVEN AVENUE***	***W 1/8 - 1/4 (0.236 mi.)***	***98***	***131***
EPA Id: CAD074665704				
Cleanup Status: PROTECTIVE FILER				

Lower Elevation	Address	Direction / Distance	Map ID	Page
TE CONNECTIVITY LTD	***300 CONSTITUTION DR***	***ESE 1/2 - 1 (0.820 mi.)***	***S130***	***273***
EPA Id: CAD009125527				
Cleanup Status: UNDERGOING CLOSURE				

NY MANIFEST: Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

A review of the NY MANIFEST list, as provided by EDR, and dated 10/01/2017 has revealed that there is 1 NY MANIFEST site within approximately 0.25 miles of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
SUNESIS PHARMACEUTIC EPA ID: CAD981398563	***3696C HAVEN AVE***	***WSW 0 - 1/8 (0.015 mi.)***	***A24***	***37***

CA Notify 65: Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

A review of the CA Notify 65 list, as provided by EDR, and dated 12/14/2017 has revealed that there is 1 CA Notify 65 site within approximately 1 mile of the target property.

Equal/Higher Elevation	Address	Direction / Distance	Map ID	Page
FORMER GAS STATION	955 MARSH ROAD	SSW 1/2 - 1 (0.613 mi.)	126	198

EXECUTIVE SUMMARY

Due to poor or inadequate address information, the following sites were not mapped. Count: 4 records.

Site Name	Database(s)
BROWNING-FERRIS INDS	SEMS-ARCHIVE
MENLO PARK SAN DIST TRMT PLT	SEMS-ARCHIVE, RCRA NonGen / NLR
ANTON MENLO	CA LUST
HUETTIG & SCHROMM	CA LUST

OVERVIEW MAP - 5204371.2S

Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

National Priority List Sites

Dept. Defense Sites

0 1/4 1/2 1 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Upgradient Area

Areas of Concern

N

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	3705 and 3723 Haven Avenue	CLIENT:	Applied Water Resources Corporation
ADDRESS:	3705 Haven Avenue Redwood City CA 94063	CONTACT:	Janelle Amendola
		INQUIRY #:	5204371.2s
LAT/LONG:	37.485599 / 122.18225	DATE:	March 01, 2018 8:10 am

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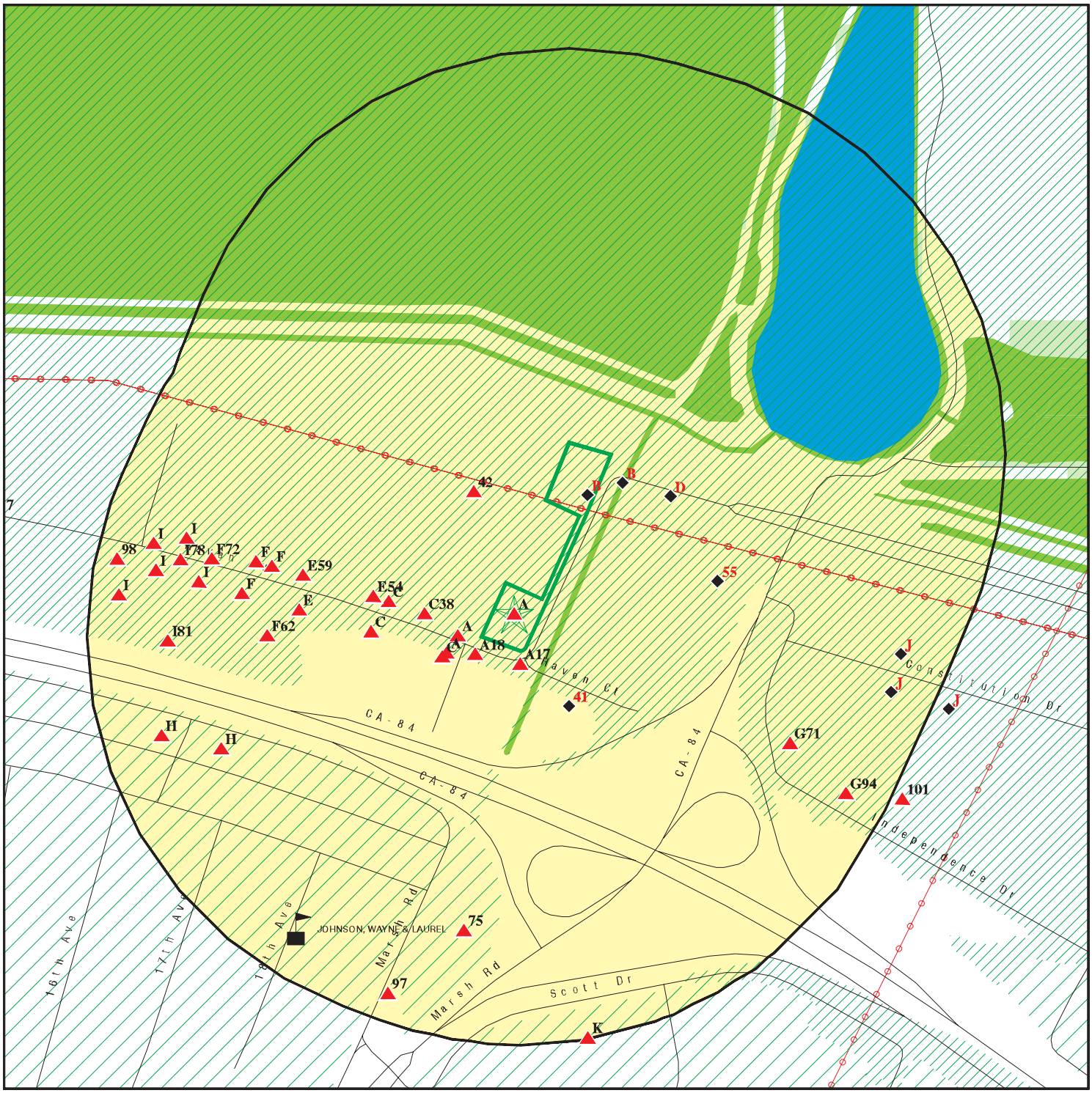
DETAIL MAP - 5204371.2S



Target Property

Sites at elevations higher than or equal to the target property

Sites at elevations lower than the target property

Manufactured Gas Plants

Sensitive Receptors

National Priority List Sites

Dept. Defense Sites

0 1/16 1/8 1/4 Miles

Indian Reservations BIA

Power transmission lines

100-year flood zone

500-year flood zone

National Wetland Inventory

State Wetlands

Areas of Concern

This report includes Interactive Map Layers to display and/or hide map information. The legend includes only those icons for the default map view.

SITE NAME:	3705 and 3723 Haven Avenue	CLIENT:	Applied Water Resources Corporation
ADDRESS:	3705 Haven Avenue Redwood City CA 94063	CONTACT:	Janelle Amendola
		INQUIRY #:	5204371.2s
LAT/LONG:	37.485599 / 122.18225	DATE:	March 01, 2018 8:11 am

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MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
STANDARD ENVIRONMENTAL RECORDS								
Federal NPL site list								
NPL	1.000		0	0	0	0	NR	0
Proposed NPL	1.000		0	0	0	0	NR	0
NPL LIENS	0.001		0	NR	NR	NR	NR	0
Federal Delisted NPL site list								
Delisted NPL	1.000		0	0	0	0	NR	0
Federal CERCLIS list								
FEDERAL FACILITY	0.500		0	0	0	NR	NR	0
SEMS	0.500		0	0	0	NR	NR	0
Federal CERCLIS NFRAP site list								
SEMS-ARCHIVE	0.500		0	2	0	NR	NR	2
Federal RCRA CORRACTS facilities list								
CORRACTS	1.000		0	2	0	1	NR	3
Federal RCRA non-CORRACTS TSD facilities list								
RCRA-TSDF	0.500		0	1	0	NR	NR	1
Federal RCRA generators list								
RCRA-LQG	0.250		1	0	NR	NR	NR	1
RCRA-SQG	0.250		8	8	NR	NR	NR	16
RCRA-CESQG	0.250		0	0	NR	NR	NR	0
Federal institutional controls / engineering controls registries								
LUCIS	0.500		0	0	0	NR	NR	0
US ENG CONTROLS	0.500		0	0	0	NR	NR	0
US INST CONTROL	0.500		0	0	0	NR	NR	0
Federal ERNS list								
ERNS	0.001		0	NR	NR	NR	NR	0
State- and tribal - equivalent NPL								
CA RESPONSE	1.000		0	0	0	0	NR	0
State- and tribal - equivalent CERCLIS								
CA ENVIROSTOR	1.000		0	2	1	6	NR	9
State and tribal landfill and/or solid waste disposal site lists								
CA SWF/LF	0.500		0	0	0	NR	NR	0
State and tribal leaking storage tank lists								
CA LUST	0.500	1	5	4	15	NR	NR	25

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
INDIAN LUST	0.500		0	0	0	NR	NR	0
CA SLIC	0.500	1	2	3	7	NR	NR	13
State and tribal registered storage tank lists								
FEMA UST	0.250		0	0	NR	NR	NR	0
CA UST	0.250		0	0	NR	NR	NR	0
CA AST	0.250		0	0	NR	NR	NR	0
INDIAN UST	0.250		0	0	NR	NR	NR	0
State and tribal voluntary cleanup sites								
CA VCP	0.500		0	0	0	NR	NR	0
INDIAN VCP	0.500		0	0	0	NR	NR	0
State and tribal Brownfields sites								
CA BROWNFIELDS	0.500		0	0	1	NR	NR	1
ADDITIONAL ENVIRONMENTAL RECORDS								
Local Brownfield lists								
US BROWNFIELDS	0.500		0	0	0	NR	NR	0
Local Lists of Landfill / Solid Waste Disposal Sites								
CA WMUDS/SWAT	0.500		0	0	0	NR	NR	0
CA SWRCY	0.500		0	0	0	NR	NR	0
CA HAULERS	0.001		0	NR	NR	NR	NR	0
INDIAN ODI	0.500		0	0	0	NR	NR	0
ODI	0.500		0	0	0	NR	NR	0
DEBRIS REGION 9	0.500		0	0	0	NR	NR	0
IHS OPEN DUMPS	0.500		0	0	0	NR	NR	0
Local Lists of Hazardous waste / Contaminated Sites								
US HIST CDL	0.001		0	NR	NR	NR	NR	0
CA HIST Cal-Sites	1.000		0	0	0	0	NR	0
CA SCH	0.250		0	0	NR	NR	NR	0
CA CDL	0.001		0	NR	NR	NR	NR	0
CA Toxic Pits	1.000		0	0	0	0	NR	0
US CDL	0.001		0	NR	NR	NR	NR	0
Local Lists of Registered Storage Tanks								
CA SWEEPS UST	0.250		2	2	NR	NR	NR	4
CA HIST UST	0.250		10	5	NR	NR	NR	15
CA FID UST	0.250		2	1	NR	NR	NR	3
Local Land Records								
CA LIENS	0.001		0	NR	NR	NR	NR	0
LIENS 2	0.001		0	NR	NR	NR	NR	0
CA DEED	0.500		1	0	0	NR	NR	1
Records of Emergency Release Reports								
HMIRS	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CA CHMIRS	0.001		0	NR	NR	NR	NR	0
CA LDS	0.001		0	NR	NR	NR	NR	0
CA MCS	0.001		0	NR	NR	NR	NR	0
CA SPILLS 90	0.001	1	0	NR	NR	NR	NR	1
Other Ascertainable Records								
RCRA NonGen / NLR	0.250		2	0	NR	NR	NR	2
FUDS	1.000		0	0	0	0	NR	0
DOD	1.000		0	0	0	0	NR	0
SCRD DRYCLEANERS	0.500		0	0	0	NR	NR	0
US FIN ASSUR	0.001		0	NR	NR	NR	NR	0
EPA WATCH LIST	0.001		0	NR	NR	NR	NR	0
2020 COR ACTION	0.250		0	0	NR	NR	NR	0
TSCA	0.001		0	NR	NR	NR	NR	0
TRIS	0.001		0	NR	NR	NR	NR	0
SSTS	0.001		0	NR	NR	NR	NR	0
ROD	1.000		0	0	0	0	NR	0
RMP	0.001		0	NR	NR	NR	NR	0
RAATS	0.001		0	NR	NR	NR	NR	0
PRP	0.001		0	NR	NR	NR	NR	0
PADS	0.001		0	NR	NR	NR	NR	0
ICIS	0.001		0	NR	NR	NR	NR	0
FTTS	0.001		0	NR	NR	NR	NR	0
MLTS	0.001		0	NR	NR	NR	NR	0
COAL ASH DOE	0.001		0	NR	NR	NR	NR	0
COAL ASH EPA	0.500		0	0	0	NR	NR	0
PCB TRANSFORMER	0.001		0	NR	NR	NR	NR	0
RADINFO	0.001		0	NR	NR	NR	NR	0
HIST FTTS	0.001		0	NR	NR	NR	NR	0
DOT OPS	0.001		0	NR	NR	NR	NR	0
CONSENT	1.000		0	0	0	0	NR	0
INDIAN RESERV	0.001		0	NR	NR	NR	NR	0
FUSRAP	1.000		0	0	0	0	NR	0
UMTRA	0.500		0	0	0	NR	NR	0
LEAD SMELTERS	0.001		0	NR	NR	NR	NR	0
US AIRS	0.001		0	NR	NR	NR	NR	0
US MINES	0.250		0	0	NR	NR	NR	0
ABANDONED MINES	0.001		0	NR	NR	NR	NR	0
FINDS	0.001	2	2	NR	NR	NR	NR	4
UXO	1.000		0	0	0	0	NR	0
DOCKET HWC	0.001		0	NR	NR	NR	NR	0
ECHO	0.001		1	NR	NR	NR	NR	1
FUELS PROGRAM	0.250		0	0	NR	NR	NR	0
CA BOND EXP. PLAN	1.000		0	0	0	0	NR	0
CA San Mateo Co. BI	0.250	1	27	27	NR	NR	NR	55
CA Cortese	0.500		0	0	0	NR	NR	0
CA CUPA Listings	0.250		0	0	NR	NR	NR	0
CA DRYCLEANERS	0.250		0	0	NR	NR	NR	0
CA EMI	0.001		1	NR	NR	NR	NR	1
CA ENF	0.001		0	NR	NR	NR	NR	0
CA Financial Assurance	0.001		0	NR	NR	NR	NR	0

MAP FINDINGS SUMMARY

Database	Search Distance (Miles)	Target Property	< 1/8	1/8 - 1/4	1/4 - 1/2	1/2 - 1	> 1	Total Plotted
CA HAZNET	0.001	1	2	NR	NR	NR	NR	3
CA ICE	0.001		0	NR	NR	NR	NR	0
CA HIST CORTESE	0.500	1	4	0	10	NR	NR	15
CA HWP	1.000		0	2	0	1	NR	3
CA HWT	0.250		0	0	NR	NR	NR	0
NY MANIFEST	0.250		1	0	NR	NR	NR	1
CA MINES	0.001		0	NR	NR	NR	NR	0
CA MWMP	0.250		0	0	NR	NR	NR	0
CA NPDES	0.001		0	NR	NR	NR	NR	0
CA PEST LIC	0.001		0	NR	NR	NR	NR	0
CA PROC	0.500		0	0	0	NR	NR	0
CA Notify 65	1.000		0	0	0	1	NR	1
CA UIC	0.001		0	NR	NR	NR	NR	0
CA WASTEWATER PITS	0.500		0	0	0	NR	NR	0
CA WDS	0.001		0	NR	NR	NR	NR	0
CA WIP	0.250		0	0	NR	NR	NR	0
EDR HIGH RISK HISTORICAL RECORDS								
EDR Exclusive Records								
EDR MGP	1.000		0	0	0	0	NR	0
EDR Hist Auto	0.125		0	NR	NR	NR	NR	0
EDR Hist Cleaner	0.125		0	NR	NR	NR	NR	0
EDR RECOVERED GOVERNMENT ARCHIVES								
Exclusive Recovered Govt. Archives								
CA RGA LF	0.001		0	NR	NR	NR	NR	0
CA RGA LUST	0.001	2	0	NR	NR	NR	NR	2
- Totals --		10	71	59	34	9	0	183

NOTES:

TP = Target Property

NR = Not Requested at this Search Distance

Sites may be listed in more than one database

A1 **SILTEC** **FINDS** **1023233274**
Target **3705-3723 HAVEN AVENUE** **N/A**
Property **MENLO PARK, CA 94025**

Site 1 of 17 in cluster A

Actual:
10 ft.

FINDS:

Registry ID: 110065206217

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A2 **SILTEC** **CA SLIC** **S102229845**
Target **3705-3723 HAVEN AVENUE** **N/A**
Property **MENLO PARK, CA 94025**

Site 2 of 17 in cluster A

Actual:
10 ft.

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	06/16/2014
Global Id:	SL18322742
Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number:	Not reported
Latitude:	37.486845
Longitude:	-122.17995
Case Type:	Cleanup Program Site
Case Worker:	UUU
Local Agency:	Not reported
RB Case Number:	41S0105
File Location:	Regional Board
Potential Media Affected:	Other Groundwater (uses other than drinking water), Soil
Potential Contaminants of Concern:	Other Chlorinated Hydrocarbons, Trichloroethylene (TCE), Vinyl chloride, * Volatile Organic Compounds (VOC)
Site History:	This case is closed in 2014 under the low-threat closure policy.

Click here to access the California GeoTracker records for this facility:

SLIC REG 2:

Region:	2
Facility ID:	SL18322742
Facility Status:	Post remedial action monitoring
Date Closed:	Not reported
Local Case #:	Not reported
How Discovered:	DVA
Leak Cause:	Not reported
Leak Source:	Not reported
Date Confirmed:	Not reported
Date Prelim Site Assmnt Workplan Submitted:	Not reported
Date Preliminary Site Assessment Began:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported

SILTEC (Continued) **S102229845**

Date Post Remedial Action Monitoring Began: Not reported

A3 **THYSEN MANAGEMENT COMPANY** **CA LUST** **S103892618**
Target **3705 HAVEN AVE** **CA San Mateo Co. BI** **N/A**
Property **MENLO PARK, CA 94025** **CA HIST CORTESE**

Site 3 of 17 in cluster A

Actual:
10 ft.

LUST:

Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100906
Global Id:	T0608100906
Latitude:	37.48542
Longitude:	-122.182074
Status:	Completed - Case Closed
Status Date:	07/30/1999
Case Worker:	Not reported
RB Case Number:	41-0991
Local Agency:	Not reported
File Location:	Not reported
Local Case Number:	449048
Potential Media Affect:	Under Investigation
Potential Contaminants of Concern:	* Solvents
Site History:	Not reported

LUST:

Global Id:	T0608100906
Action Type:	Other
Date:	08/06/1996
Action:	Leak Stopped

Global Id:	T0608100906
Action Type:	Other
Date:	08/06/1996
Action:	Leak Discovery

Global Id:	T0608100906
Action Type:	Other
Date:	08/06/1996
Action:	Leak Reported

LUST:

Global Id:	T0608100906
Status:	Open - Case Begin Date
Status Date:	08/06/1996

Global Id:	T0608100906
Status:	Open - Site Assessment
Status Date:	08/06/1996

Global Id:	T0608100906
Status:	Completed - Case Closed
Status Date:	07/30/1999

LUST REG 2:

THYSEN MANAGEMENT COMPANY (Continued) **S103892618**

Region: 2
Facility Id: 41-0991
Facility Status: Case Closed
Case Number: 449048
How Discovered: Tank Closure
Leak Cause: UNK
Leak Source: UNK
Date Leak Confirmed: 8/6/1996
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0022530
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0024769
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-0991

A4 **THYSEN MANAGEMENT COMPANY** **FINDS** **1023249731**
Target **3705 HAVEN AVE** **N/A**
Property **MENLO PARK, CA 94025**

Site 4 of 17 in cluster A

Actual: 10 ft.

FINDS:

Registry ID: 110065382311

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

A5 **SILTECH** **CA SPILLS 90** **S112286176**
Target **3705-3723 HAVEN AVE** **N/A**
Property **REDWOOD CITY, CA 94063**

Site 5 of 17 in cluster A

Actual:
10 ft.

Spills:

Status:	INACTIVE
Contact Name:	Not reported
Contact Phone:	Not reported
Site ID:	SLC241S0105
Secondary ID:	Not reported
Cross Street:	Not reported
County:	SAN MATEO
Longitude:	-122182129
Latitude:	37485217
Elevation:	10
Last Agency Update:	5/23/96
Staff:	RL
Status:	INACTIVE
Facility Description:	Not reported
Status:	INACTIVE
Comment:	Not reported
Npl Site:	Not reported
	Is This A Leaking Underground Tank
	NON TANK
Date Disclosed:	Not reported
Contamination Source:	Not reported
Sample Date:	Not reported
Lead:	Not reported
# Of Municipal Wells:	0
# Of Private Wells:	0
Agency Comments:	Not reported
Soil Remediation:	Not reported
	Date Soil Removal Or Containment Action Started
	Was Onsite Groundwater Extraction Or Containment Action Needed At Site
	Date On-Stie Gw Extraction Or Containment Action Was Started Or Is Due To Start
	Was Off-Site Groundwater Extraction Or Containment Action Needed
	Date Off-Site Gw Extraction Or Containment Action Was Started Or Is Due To Start
	Most Current Estimate In Gpm S Of The Rate Of Gw Extraction
	0
	Most Recent Date Gw Extraction Flow Rate Was Monitored
	Estimated % Of Contaminants Contained &
	Contamination Plume Length (In Feet)
	0
	Contamination Plume Depth (In Feet)
	0
	Contamination Level If Any Of The Nearest Drinking Water Well
	Wells Closed Due To Contamination From The Site
Date Of Well Closures:	Not reported
	Distance To Nearest Public Or Private Drinking Water Well To Site (In Feet)
	0
	Latitude & Longitude Provided By Facility
	00
	Date Site Name Under Preview By Lead Agency

A6 **THYSEN MANAGEMENT CO.** **CA RGA LUST** **S114703782**
Target **3705 HAVEN AVE** **N/A**
Property **MENLO PARK, CA**

Site 6 of 17 in cluster A

Actual:
10 ft.

RGA LUST:

1996	THYSEN MANAGEMENT CO.	3705 HAVEN AVE

A7 **THYSEN MANAGEMENT COMPANY** **CA RGA LUST** **S114703783**
Target **3705 HAVEN AVE** **N/A**
Property **MENLO PARK, CA**

Site 7 of 17 in cluster A

Actual:
10 ft.

RGA LUST:

2012	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2011	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2010	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2009	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2008	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2007	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2006	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2005	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2003	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2002	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2001	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
2000	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
1998	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE
1997	THYSEN MANAGEMENT COMPANY	3705 HAVEN AVE

A8 **B S G ASSOCIATES** **CA HAZNET** **S112866864**
Target **3705 HAVEN AVENUE** **N/A**
Property **MENLO PARK, CA 94025**

Site 8 of 17 in cluster A

Actual:
10 ft.

HAZNET:

envid:	S112866864
Year:	1995
GEPAID:	CAC001105104
Contact:	B S G ASSOCIATES
Telephone:	8005773840
Mailing Name:	Not reported
Mailing Address:	26062 EDEN LANDING ROAD
Mailing City,St,Zip:	HAYWARD, CA 945450000
Gen County:	Not reported
TSD EPA ID:	CAD009452657
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Recycler
Tons:	.0100
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

B9 **KOB AUTO INC** **CA EMI** **S102812154**
3717 HAVEN AVENUE **N/A**
< 1/8 **MENLO PARK, CA 94025**
1 ft.

Site 1 of 13 in cluster B

Relative:
Lower

Actual:
8 ft.

EMI:

Year:	1996
County Code:	41
Air Basin:	SF
Facility ID:	9026
Air District Name:	BA
SIC Code:	7532
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

B10 **SILTEC CORPORATION (BLDG2)** **CA HIST UST** **U001594213**
3717 HAVEN AVE **CA San Mateo Co. BI** **N/A**
< 1/8 **MENLO PARK, CA 94025**
1 ft.

Site 2 of 13 in cluster B

Relative:
Lower

Actual:
8 ft.

HIST UST:

File Number:	0002C2F9
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002C2F9.pdf
Region:	STATE
Facility ID:	00000001828
Facility Type:	Other
Other Type:	MANUFACTURE
Contact Name:	ART PEREIRA
Telephone:	4153658600
Owner Name:	SILTEC CORPORATION
Owner Address:	190 INDEPENDENCE DRIVE
Owner City,St,Zip:	MENLO PARK, CA 94025
Total Tanks:	0001
Tank Num:	001
Container Num:	02-001
Year Installed:	1984
Tank Capacity:	00000120
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	1/2
Leak Detection:	Visual

Click here for Geo Tracker PDF:

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0016566
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT

SILTEC CORPORATION (BLDG2) (Continued) **U001594213**

Record Id:	PR0024907
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE
Region:	SAN MATEO
Facility ID:	FA0016566
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0024908
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE

B11 **SUMCO OREGON** **FINDS** **1007738685**
3717 HAVEN AVE **N/A**
< 1/8 **MENLO PARK, CA 94025**
1 ft.

Site 3 of 13 in cluster B

Relative: Lower

Actual: 8 ft.

FINDS:

Registry ID: 110018987667

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

B12 **K O B AUTO** **RCRA-SQG** **1000103553**
3717 HAVEN AVE **CAD982324931**
< 1/8 **MENLO PARK, CA 94025**
1 ft.

Site 4 of 13 in cluster B

Relative: Lower

Actual: 8 ft.

RCRA-SQG:

Date form received by agency:	03/21/1990
Facility name:	K O B AUTO
Facility address:	3717 HAVEN AVE MENLO PARK, CA 94025
EPA ID:	CAD982324931
Mailing address:	HAVEN AVE MENLO PARK, CA 94025
Contact:	ENVIRONMENTAL MANAGER
Contact address:	3717 HAVEN AVE MENLO PARK, CA 94025
Contact country:	US
Contact telephone:	415-365-0277
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous

K O B AUTO (Continued) **1000103553**

waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	JAM SAUERBRY
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED
	NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

B13 **KOB AUTO** **CA HAZNET** **S113037187**
3717 HAVEN AVENUE **N/A**
< 1/8 **MENLO PARK, CA 94025**
1 ft.

Site 5 of 13 in cluster B

Relative:
Lower

Actual:
8 ft.

HAZNET:

envid:	S113037187
Year:	1996
GEPAID:	CAL000039020
Contact:	DOOLEY BILL
Telephone:	4159643185
Mailing Name:	Not reported
Mailing Address:	3717 HAVEN AVE
Mailing City,St,Zip:	MENLO PARK, CA 940251011
Gen County:	Not reported
TSD EPA ID:	CA0000084517
TSD County:	Not reported
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Transfer Station
Tons:	.1480
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113037187
Year:	1996
GEPAID:	CAL000039020
Contact:	DOOLEY BILL
Telephone:	4159643185
Mailing Name:	Not reported
Mailing Address:	3717 HAVEN AVE
Mailing City,St,Zip:	MENLO PARK, CA 940251011
Gen County:	Not reported
TSD EPA ID:	CAT000613950
TSD County:	Not reported
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Transfer Station
Tons:	.0740
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113037187
Year:	1995
GEPAID:	CAL000039020
Contact:	DOOLEY BILL
Telephone:	4159643185
Mailing Name:	Not reported
Mailing Address:	3717 HAVEN AVE
Mailing City,St,Zip:	MENLO PARK, CA 940251011
Gen County:	Not reported
TSD EPA ID:	CAT000613950
TSD County:	Not reported
Waste Category:	Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method:	Transfer Station
Tons:	.1080
Cat Decode:	Not reported
Method Decode:	Not reported

KOB AUTO (Continued) **S113037187**

Facility County: San Mateo

envid: S113037187
Year: 1994
GEPAID: CAL000039020
Contact: DOOLEY BILL
Telephone: 4159643185
Mailing Name: Not reported
Mailing Address: 3717 HAVEN AVE
Mailing City,St,Zip: MENLO PARK, CA 940251011
Gen County: Not reported
TSD EPA ID: CAT000613950
TSD County: Not reported
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Transfer Station
Tons: .0360
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: S113037187
Year: 1994
GEPAID: CAL000039020
Contact: DOOLEY BILL
Telephone: 4159643185
Mailing Name: Not reported
Mailing Address: 3717 HAVEN AVE
Mailing City,St,Zip: MENLO PARK, CA 940251011
Gen County: Not reported
TSD EPA ID: CAD009452657
TSD County: Not reported
Waste Category: Unspecified organic liquid mixture
Disposal Method: Not reported
Tons: .2293
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

Click this hyperlink while viewing on your computer to access
3 additional CA_HAZNET: record(s) in the EDR Site Report.

B14 **KOB AUTO INC** **FINDS 1016072130**
3717 HAVEN AVENUE **ECHO N/A**
< 1/8 **MENLO PARK, CA 94025**
1 ft.

Site 6 of 13 in cluster B

Relative: Lower

FINDS:

Registry ID: 110002412540

Actual: 8 ft.

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

KOB AUTO INC (Continued) **1016072130**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1016072130
Registry ID: 110002412540
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002412540

B15 **MITSUBISHI SILICON AMERICA** **RCRA-SQG** **1000397955**
3717 HAVEN AVE **CAD047388236**
< 1/8 **MENLO PARK, CA 94025**
1 ft.

Site 7 of 13 in cluster B

Relative: Lower

Actual: 8 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: MITSUBISHI SILICON AMERICA
Facility address: 3717 HAVEN AVE
MENLO PARK, CA 94025
EPA ID: CAD047388236
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Land type: Municipal
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: SILTEC CORPORATION
Owner/operator address: 3717 HAVEN AVE
CITY NOT REPORTED, CA 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-365-8600
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: BETTY THYSEN
Owner/operator address: 1777 BOREL PL STE 509
SAN MATEO, CA 94402
Owner/operator country: Not reported
Owner/operator telephone: 415-341-2933
Owner/operator email: Not reported
Owner/operator fax: Not reported

MITSUBISHI SILICON AMERICA (Continued) **1000397955**

Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 08/05/1996
Site name: MITSUBISHI SILICON AMERICA
Classification: Small Quantity Generator

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 09/26/1984
Date achieved compliance: 03/15/1985
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 09/26/1984
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 12/15/1983
Date achieved compliance: 01/01/1984
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 12/15/1983
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

MITSUBISHI SILICON AMERICA (Continued) **1000397955**

Evaluation Action Summary:
Evaluation date: 03/15/1985
Evaluation: COMPLIANCE SCHEDULE EVALUATION
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 09/26/1984
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 03/15/1985
Evaluation lead agency: State

Evaluation date: 12/15/1983
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Generators - General
Date achieved compliance: 01/01/1984
Evaluation lead agency: State

B16 **SUMCO OREGON** **CA HAZNET** **S113000717**
3717 HAVEN AVE **N/A**
< 1/8 **MENLO PARK, CA 94025**
1 ft.

Site 8 of 13 in cluster B

Relative: **Lower**

Actual: **8 ft.**

HAZNET:
envid: S113000717
Year: 2007
GEPAID: CAD047388236
Contact: ROBERT HEPKER-EHS DIRECTOR
Telephone: 6028284288
Mailing Name: Not reported
Mailing Address: 537 GRANDIN RD ENVTL DEPT SUMCO
Mailing City,St,Zip: MAINEVILLE, OH 450390000
Gen County: Not reported
TSD EPA ID: CAD009452657
TSD County: Not reported
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without Treatment)
Tons: 0.23
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: S113000717
Year: 2007
GEPAID: CAD047388236
Contact: ROBERT HEPKER-EHS DIRECTOR
Telephone: 6028284288
Mailing Name: Not reported
Mailing Address: 537 GRANDIN RD ENVTL DEPT SUMCO
Mailing City,St,Zip: MAINEVILLE, OH 450390000
Gen County: Not reported
TSD EPA ID: CAD009452657
TSD County: Not reported
Waste Category: Aqueous solution with total organic residues less than 10 percent
Disposal Method: Discharge To Sewer/Potw Or Npdes(With Prior Storage--With Or Without

SUMCO OREGON (Continued) **S113000717**

	Treatment)
Tons:	0.23
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo
envid:	S113000717
Year:	2006
GEPAID:	CAD047388236
Contact:	ROBERT HEPKER-EHS DIRECTOR
Telephone:	6028284288
Mailing Name:	Not reported
Mailing Address:	537 GRANDIN RD ENVTL DEPT SUMCO
Mailing City,St,Zip:	MAINEVILLE, OH 450390000
Gen County:	Not reported
TSD EPA ID:	CAD009452657
TSD County:	Not reported
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	0.22
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo
envid:	S113000717
Year:	2006
GEPAID:	CAD047388236
Contact:	ROBERT HEPKER-EHS DIRECTOR
Telephone:	6028284288
Mailing Name:	Not reported
Mailing Address:	537 GRANDIN RD ENVTL DEPT SUMCO
Mailing City,St,Zip:	MAINEVILLE, OH 450390000
Gen County:	Not reported
TSD EPA ID:	CAD009452657
TSD County:	Not reported
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	0.22
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo
envid:	S113000717
Year:	2005
GEPAID:	CAD047388236
Contact:	ROBERT HEPKER-EHS DIRECTOR
Telephone:	6028284288
Mailing Name:	Not reported
Mailing Address:	1351 TANDEM AVE NE
Mailing City,St,Zip:	SALEM, OR 973030139
Gen County:	Not reported
TSD EPA ID:	CAD009452657
TSD County:	Not reported
Waste Category:	Aqueous solution with total organic residues less than 10 percent
Disposal Method:	Recycler
Tons:	0.91
Cat Decode:	Not reported

SUMCO OREGON (Continued) **S113000717**

Method Decode: Not reported
Facility County: San Mateo

Click this hyperlink while viewing on your computer to access
35 additional CA_HAZNET: record(s) in the EDR Site Report.

A17 **BAY MATERIALS LLC** **CA LUST** **S104581201**
South **3700 HAVEN** **CA San Mateo Co. BI** **N/A**
< 1/8 **MENLO PARK, CA 94025** **CA HIST CORTESE**
0.008 mi.
42 ft. **Site 9 of 17 in cluster A**

Relative:
Higher

Actual:
11 ft.

LUST:
Lead Agency: SAN MATEO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100629
Global Id: T0608100629
Latitude: 37.4851674
Longitude: -122.1821504
Status: Completed - Case Closed
Status Date: 09/16/1994
Case Worker: Not reported
RB Case Number: 41-0661
Local Agency: Not reported
File Location: Local Agency
Local Case Number: 440033
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Gasoline
Site History: Not reported

LUST:
Global Id: T0608100629
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608100629
Action Type: Other
Date: 12/20/1990
Action: Leak Discovery

Global Id: T0608100629
Action Type: Other
Date: 12/20/1990
Action: Leak Reported

Global Id: T0608100629
Action Type: ENFORCEMENT
Date: 05/09/1991
Action: Notice of Responsibility - #1

LUST:

BAY MATERIALS LLC (Continued) **S104581201**

Global Id: T0608100629
Status: Open - Case Begin Date
Status Date: 12/20/1990

Global Id: T0608100629
Status: Completed - Case Closed
Status Date: 09/16/1994

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 440033
Facility Status: 9- Case Closed
Global ID: T0608100629
APN Number: 055232110
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0031593
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0051760
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0031593
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0051759
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-0661

A18 **INDUSTRIAL GARDEN MAINTENANCE** **CA HIST UST** **U001594197**
SW **3700 HAVEN AVE** **N/A**
< 1/8 **MENLO PARK, CA 94025**
0.012 mi.
61 ft. **Site 10 of 17 in cluster A**

Relative:
Higher

Actual:
11 ft.

HIST UST:
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000011468
Facility Type: Other
Other Type: LANDSCAPE CONST.
Contact Name: GERALD MARKLEIN
Telephone: 4153642454
Owner Name: HUETTIG & SCHROMM, INC.
Owner Address: 3700 HAVEN CT.

INDUSTRIAL GARDEN MAINTENANCE (Continued) **U001594197**

Owner City,St,Zip:	MENLO PARK, CA 94025
Total Tanks:	0003
Tank Num:	001
Container Num:	1,2,&3
Year Installed:	Not reported
Tank Capacity:	00001000
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	002
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00000000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	003
Container Num:	3
Year Installed:	Not reported
Tank Capacity:	00000000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

B19 **ENGENICS, INC.** **CA HIST UST** **U001594185**
NE **3760 HAVEN AVE** **CA San Mateo Co. BI** **N/A**
< 1/8 **MENLO PARK, CA 94025**
0.014 mi.
72 ft. **Site 9 of 13 in cluster B**

Relative:
Lower

Actual:
8 ft.

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000014650
Facility Type:	Other
Other Type:	RESEARCH CO.
Contact Name:	RALPH ITANEN
Telephone:	4153248600
Owner Name:	RONALD L. CAMPBELL
Owner Address:	168 ELEANOR DRIVE
Owner City,St,Zip:	WOODSIDE, CA 94062
Total Tanks:	0000
Tank Num:	001
Container Num:	01
Year Installed:	Not reported
Tank Capacity:	00002000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	None

ENGENICS, INC. (Continued) **U001594185**

Tank Num: 002
Container Num: 02
Year Installed: Not reported
Tank Capacity: 00002000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: None

Tank Num: 003
Container Num: 03
Year Installed: Not reported
Tank Capacity: 00002000
Tank Used for: PRODUCT
Type of Fuel: REGULAR
Container Construction Thickness: Not reported
Leak Detection: None

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0006222
Prog Element Code: GEN <1 TONS HAZ WASTE/YR
Record Id: PR0011494
Description: GEN <1 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0006222
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0004133
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0027968
Prog Element Code: GEN 6-25 TONS HAZ WASTE/YR
Record Id: PR0045966
Description: GEN 6-25 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0027968
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0045965
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0029024
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0049040
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0029024
Prog Element Code: STORES MV FUELS OR WASTE ONLY

ENGENICS, INC. (Continued) **U001594185**

Record Id: PR0049041
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0050710
Prog Element Code: UNDERGROUND TANK - GENERAL
Record Id: PR0070394
Description: UNDERGROUND TANK - GENERAL
Facility Status: INACTIVE

B20 **ENGENICS** **RCRA NonGen / NLR** **1000207933**
NE **3760 HAVEN AVE** **CAD013070974**
< 1/8 **MENLO PARK, CA 94025**
0.014 mi.
72 ft. **Site 10 of 13 in cluster B**

Relative:
Lower

Actual:
8 ft.

RCRA NonGen / NLR:
Date form received by agency: 09/02/1985
Facility name: ENGENICS
Facility address: 3760 HAVEN AVE
MENLO PARK, CA 94025
EPA ID: CAD013070974
Mailing address: HAVEN AVE
MENLO PARK, CA 94025
Contact: ENVIRONMENTAL MANAGER
Contact address: 3760 HAVEN AVE
MENLO PARK, CA 94025
Contact country: US
Contact telephone: 415-345-8222
Contact email: Not reported
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported

ENGENICS (Continued) **1000207933**

Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

B21 **NANOSYN** **CA HIST UST** **S113126288**
NE **3760 HAVEN AVE** **CA HAZNET** **N/A**
< 1/8 **MENLO PARK, CA 94025**
0.014 mi.
72 ft. **Site 11 of 13 in cluster B**

Relative:
Lower

Actual:
8 ft.

HIST UST:
File Number: 0002C203
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002C203.pdf
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

HAZNET:
envid: S113126288
Year: 2009

NANOSYN (Continued) **S113126288**

GEPAID:	CAL000269914
Contact:	D LAGASCA-MGR ANALYTICAL CHEMI
Telephone:	6508537037
Mailing Name:	Not reported
Mailing Address:	3760 HAVEN AVE
Mailing City,St,Zip:	MENLO PARK, CA 940250000
Gen County:	Not reported
TSD EPA ID:	CAD059494310
TSD County:	Not reported
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.68
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113126288
Year:	2009
GEPAID:	CAL000269914
Contact:	D LAGASCA-MGR ANALYTICAL CHEMI
Telephone:	6508537037
Mailing Name:	Not reported
Mailing Address:	3760 HAVEN AVE
Mailing City,St,Zip:	MENLO PARK, CA 940250000
Gen County:	Not reported
TSD EPA ID:	CAD059494310
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.2
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113126288
Year:	2008
GEPAID:	CAL000269914
Contact:	D LAGASCA-MGR ANALYTICAL CHEMI
Telephone:	6508537037
Mailing Name:	Not reported
Mailing Address:	3760 HAVEN AVE
Mailing City,St,Zip:	MENLO PARK, CA 940250000
Gen County:	Not reported
TSD EPA ID:	ARD981057870
TSD County:	Not reported
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	1.088
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113126288
Year:	2008
GEPAID:	CAL000269914

NANOSYN (Continued) **S113126288**

Contact:	D LAGASCA-MGR ANALYTICAL CHEMI
Telephone:	6508537037
Mailing Name:	Not reported
Mailing Address:	3760 HAVEN AVE
Mailing City,St,Zip:	MENLO PARK, CA 940250000
Gen County:	Not reported
TSD EPA ID:	ARD981057870
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	0.2
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113126288
Year:	2008
GEPAID:	CAL000269914
Contact:	D LAGASCA-MGR ANALYTICAL CHEMI
Telephone:	6508537037
Mailing Name:	Not reported
Mailing Address:	3760 HAVEN AVE
Mailing City,St,Zip:	MENLO PARK, CA 940250000
Gen County:	Not reported
TSD EPA ID:	ARD981057870
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Not reported
Tons:	0.25
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

Click this hyperlink while viewing on your computer to access
19 additional CA_HAZNET: record(s) in the EDR Site Report.

B22 **NANOSYN INC** **RCRA NonGen / NLR** **1000356969**
NE **3760 HAVEN AVE** **CA HAZNET** **CAD982343899**
< 1/8 **MENLO PARK, CA 94025**
0.014 mi.
72 ft. **Site 12 of 13 in cluster B**

Relative:
Lower

Actual:
8 ft.

RCRA NonGen / NLR:

Date form received by agency:	07/28/2011
Facility name:	NANOSYN INC
Facility address:	3760 HAVEN AVE MENLO PARK, CA 94025
EPA ID:	CAD982343899
Mailing address:	3100 CENTRAL EXPRESSWAY SANTA CLARA, CA 95051
Contact:	DENNIS T LAGASCA
Contact address:	3100 CENTRAL EXPRESSWAY SANTA CLARA, CA 95051
Contact country:	US
Contact telephone:	408-987-2000
Telephone ext.:	122
Contact email:	DLAGASCA@NANOSYN.COM
EPA Region:	09

NANOSYN INC (Continued) **1000356969**

Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: NANOSYN INC
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 06/01/2003
Owner/Op end date: Not reported

Owner/operator name: JEREMY AND LYNN SPIELMAN
Owner/operator address: LYNN WAY
WOODSIDE, CA 94062
Owner/operator country: US
Owner/operator telephone: 650-960-1111
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 06/01/1983
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 08/06/2010
Site name: NANOSYN
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D006

NANOSYN INC (Continued) **1000356969**

. Waste name: CADMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D011
. Waste name: SILVER

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D038
. Waste name: PYRIDINE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 06/30/2008
Site name: NANOSYN
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D011
. Waste name: SILVER

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D038
. Waste name: PYRIDINE

NANOSYN INC (Continued) **1000356969**

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 01/11/1988
Site name: NEUREX CORP
Classification: Small Quantity Generator

Violation Status: No violations found

HAZNET:

envid:	1000356969
Year:	2011
GEPAID:	CAD982343899
Contact:	DENNIS LAGASCA
Telephone:	6508537037
Mailing Name:	Not reported
Mailing Address:	3100 CENTRAL EXPY
Mailing City,St,Zip:	SANTA CLARA, CA 95051
Gen County:	Not reported
TSD EPA ID:	ARD981057870
TSD County:	Not reported
Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Fuel Blending Prior To Energy Recovery At Another Site
Tons:	5.134
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	1000356969
Year:	2011
GEPAID:	CAD982343899
Contact:	DENNIS LAGASCA
Telephone:	6508537037
Mailing Name:	Not reported
Mailing Address:	3100 CENTRAL EXPY
Mailing City,St,Zip:	SANTA CLARA, CA 95051
Gen County:	Not reported
TSD EPA ID:	CAD982444481
TSD County:	Not reported
Waste Category:	Other inorganic solid waste

NANOSYN INC (Continued) **1000356969**

Disposal Method: Other Treatment
Tons: 0.6
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000356969
Year: 2011
GEPAID: CAD982343899
Contact: DENNIS LAGASCA
Telephone: 6508537037
Mailing Name: Not reported
Mailing Address: 3100 CENTRAL EXPY
Mailing City,St,Zip: SANTA CLARA, CA 95051
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Unspecified aqueous solution
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.651
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000356969
Year: 2011
GEPAID: CAD982343899
Contact: DENNIS LAGASCA
Telephone: 6508537037
Mailing Name: Not reported
Mailing Address: 3100 CENTRAL EXPY
Mailing City,St,Zip: SANTA CLARA, CA 95051
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Unspecified aqueous solution
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.651
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000356969
Year: 2011
GEPAID: CAD982343899
Contact: DENNIS LAGASCA
Telephone: 6508537037
Mailing Name: Not reported
Mailing Address: 3100 CENTRAL EXPY
Mailing City,St,Zip: SANTA CLARA, CA 95051
Gen County: Not reported
TSD EPA ID: CAD982444481
TSD County: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: Other Treatment

NANOSYN INC (Continued) **1000356969**

Tons: 0.025
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

Click this hyperlink while viewing on your computer to access
115 additional CA_HAZNET: record(s) in the EDR Site Report.

B23 **NANOSYN** **RCRA-LQG** **1012175692**
NE **3760 HAVEN AVE.** **CAL000269914**
< 1/8 **MENLO PARK, CA 94025**
0.014 mi.
72 ft. **Site 13 of 13 in cluster B**

Relative:
Lower

Actual:
8 ft.

RCRA-LQG:
Date form received by agency: 08/11/2010
Facility name: NANOSYN
Facility address: 3760 HAVEN AVE.
MENLO PARK, CA 94025
EPA ID: CAL000269914
Mailing address: HAVEN AVE.
MENLO PARK, CA 94025
Contact: DENNIS LAGASCA
Contact address: HAVEN AVE.
MENLO PARK, CA 94025
Contact country: US
Contact telephone: 650-853-7030
Contact email: DLAGASCA@NANOSYN.COM
EPA Region: 09
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: NANOSYN
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 06/01/2003
Owner/Op end date: Not reported

NANOSYN (Continued) **1012175692**

Owner/operator name: JEREMY AND LYNN SPIELMAN
Owner/operator address: 150 LYNN WAY
WOODSIDE, CA 94062
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 06/01/1983
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 343
. Waste name: Unspecified organic liquid mixture

. Waste code: 352
. Waste name: Other organic solids

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D011
. Waste name: SILVER

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D038
. Waste name: PYRIDINE

NANOSYN (Continued) **1012175692**

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Historical Generators:
Date form received by agency: 02/28/2008
Site name: NANOSYN
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D011
. Waste name: SILVER

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D038
. Waste name: PYRIDINE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005

NANOSYN (Continued) **1012175692**

. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

A24 **SUNESIS PHARMACEUTICAL** **RCRA-SQG** **1000151475**
WSW **3696C HAVEN AVE** **NY MANIFEST** **CAD981398563**
< 1/8 **REDWOOD CITY, CA 94063**
0.015 mi.
79 ft. **Site 11 of 17 in cluster A**

Relative:
Higher

Actual:
10 ft.

RCRA-SQG:

Date form received by agency:	07/01/1998
Facility name:	SUNESIS PHARMACEUTICAL
Facility address:	3696C HAVEN AVE REDWOOD CITY, CA 94063-4695
EPA ID:	CAD981398563
Mailing address:	3696 HAVEN AVE STE C REDWOOD CITY, CA 94063-4695
Contact:	MATT PLUNKETT
Contact address:	3696 HAVEN AVE STE C REDWOOD CITY, CA 94063-4695
Contact country:	US
Contact telephone:	650-556-8800
Contact email:	Not reported
EPA Region:	09
Land type:	Private
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported
Owner/operator name:	SUNESIS PHARMACEUTICAL
Owner/operator address:	3696 HAVEN AVE STE C REDWOOD CITY, CA 94063
Owner/operator country:	Not reported
Owner/operator telephone:	650-556-8800

SUNESIS PHARMACEUTICAL (Continued) **1000151475**

Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D011
. Waste name: SILVER

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL

SUNESIS PHARMACEUTICAL (Continued) **1000151475**

ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Historical Generators:
Date form received by agency: 09/01/1996
Site name: SUNESIS PHARMACEUTICAL
Classification: Small Quantity Generator

Date form received by agency: 03/06/1992
Site name: ADVANCED POLYMER SYSTEMS, INC
Classification: Large Quantity Generator

Date form received by agency: 08/05/1991
Site name: ADVANCE POLYMER SYSTEMS, INC
Classification: Large Quantity Generator

Violation Status: No violations found

Evaluation Action Summary:
Evaluation date: 08/24/1993
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State Contractor/Grantee

NY MANIFEST:
Country: USA
EPA ID: CAD981398563
Facility Status: Not reported
Location Address 1: 3696 HAVEN AVENUE
Code: BP
Location Address 2: Not reported
Total Tanks: Not reported
Location City: REDWOOD CITY
Location State: CA
Location Zip: 94063
Location Zip 4: Not reported

NY MANIFEST:
EPAID: CAD981398563
Mailing Name: ADVANCED POLYMER SYSTEMS

SUNESIS PHARMACEUTICAL (Continued) **1000151475**

Mailing Contact:	ADVANCED POLYMER SYSTEMS
Mailing Address 1:	3696 HAVEN AVENUE
Mailing Address 2:	Not reported
Mailing City:	REDWOOD CITY
Mailing State:	CA
Mailing Zip:	94063
Mailing Zip 4:	Not reported
Mailing Country:	USA
Mailing Phone:	4153662626

NY MANIFEST:

Document ID:	NYB1509948
Manifest Status:	K
seq:	Not reported
Year:	1990
Trans1 State ID:	1021SPNY
Trans2 State ID:	Not reported
Generator Ship Date:	01/30/1990
Trans1 Recv Date:	01/30/1990
Trans2 Recv Date:	/ /
TSD Site Recv Date:	02/06/1990
Part A Recv Date:	04/02/1990
Part B Recv Date:	02/22/1990
Generator EPA ID:	CAD981398563
Trans1 EPA ID:	NYD980769947
Trans2 EPA ID:	Not reported
TSDF ID 1:	NYD048148175
TSDF ID 2:	Not reported
Manifest Tracking Number:	Not reported
Import Indicator:	Not reported
Export Indicator:	Not reported
Discr Quantity Indicator:	Not reported
Discr Type Indicator:	Not reported
Discr Residue Indicator:	Not reported
Discr Partial Reject Indicator:	Not reported
Discr Full Reject Indicator:	Not reported
Manifest Ref Number:	Not reported
Alt Facility RCRA ID:	Not reported
Alt Facility Sign Date:	Not reported
MGMT Method Type Code:	Not reported
Waste Code:	D009 - MERCURY 0.2 MG/L TCLP
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Waste Code:	Not reported
Quantity:	00010
Units:	G - Gallons (liquids only)* (8.3 pounds)
Number of Containers:	002
Container Type:	DM - Metal drums, barrels
Handling Method:	R Material recovery of more than 75 percent of the total material.
Specific Gravity:	100

Click this hyperlink while viewing on your computer to access additional NY_MANIFEST: detail in the EDR Site Report.

A25
WSW
< 1/8
0.015 mi.
79 ft.

CHEMOCENTRYX
3696 HAVEN AVE STE B
REDWOOD CITY, CA 94063

Site 12 of 17 in cluster A

Database(s): RCRA-SQG, CA HAZNET
EDR ID Number: 1007091386
EPA ID Number: CAR000148700

Relative:
Higher

Actual:
10 ft.

RCRA-SQG:

Date form received by agency:	08/26/2003
Facility name:	CHEMOCENTRYX
Facility address:	3696 HAVEN AVE STE B REDWOOD CITY, CA 94063
EPA ID:	CAR000148700
Mailing address:	1539 INDUSTRIAL RD SAN CARLOS, CA 94070
Contact:	DALE NEWLAND
Contact address:	1539 INDUSTRIAL RD SAN CARLOS, CA 94070
Contact country:	US
Contact telephone:	650-413-4831
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	CHEMOCENTRYX
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	09/15/2003
Owner/Op end date:	Not reported

Owner/operator name:	CHEMOCENTRYX
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	09/15/2003
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No

CHEMOCENTRYX (Continued) **1007091386**

Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D009
. Waste name: MERCURY

. Waste code: D011
. Waste name: SILVER

. Waste code: D019
. Waste name: CARBON TETRACHLORIDE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

CHEMOCENTRYX (Continued) **1007091386**

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

HAZNET:

envid: 1007091386
Year: 2004
GEPAID: CAR000148700
Contact: DALE NEWLAND
Telephone: 6504134831
Mailing Name: Not reported
Mailing Address: 850 MAUDE AVE
Mailing City,St,Zip: MOUNTAIN VIEW, CA 94043
Gen County: Not reported
TSD EPA ID: CAD044429835
TSD County: Not reported
Waste Category: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)
Disposal Method: Recycler
Tons: 0.29
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1007091386
Year: 2004
GEPAID: CAR000148700
Contact: DALE NEWLAND
Telephone: 6504134831
Mailing Name: Not reported
Mailing Address: 850 MAUDE AVE
Mailing City,St,Zip: MOUNTAIN VIEW, CA 94043
Gen County: Not reported
TSD EPA ID: CAD980884183
TSD County: Not reported
Waste Category: Laboratory waste chemicals
Disposal Method: Transfer Station
Tons: 0
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1007091386
Year: 2004
GEPAID: CAR000148700
Contact: DALE NEWLAND
Telephone: 6504134831
Mailing Name: Not reported
Mailing Address: 850 MAUDE AVE
Mailing City,St,Zip: MOUNTAIN VIEW, CA 94043
Gen County: Not reported
TSD EPA ID: CAD980884183

CHEMOCENTRYX (Continued) **1007091386**

TSD County: Not reported
Waste Category: Laboratory waste chemicals
Disposal Method: Not reported
Tons: 0
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

A26 **SILTEC CORPORATION (BLDG 5)** **CA HIST UST** **U001594606**
WSW **3698 HAVEN AVE** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.015 mi.
79 ft. **Site 13 of 17 in cluster A**

Relative:
Higher

Actual:
10 ft.

HIST UST:

File Number:	0002C2F7
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002C2F7.pdf
Region:	STATE
Facility ID:	00000001827
Facility Type:	Other
Other Type:	MANUFACTURE
Contact Name:	ART PEREIRA
Telephone:	4153658600
Owner Name:	SILTEC CORPORATION
Owner Address:	190 INDEPENDENCE DRIVE
Owner City,St,Zip:	MENLO PARK, CA 94025
Total Tanks:	0002
Tank Num:	001
Container Num:	05-001
Year Installed:	1983
Tank Capacity:	00001500
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	1/4
Leak Detection:	None
Tank Num:	002
Container Num:	05-002
Year Installed:	1978
Tank Capacity:	00000420
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	1/4
Leak Detection:	Visual

Click here for Geo Tracker PDF:

A27
WSW
< 1/8
0.024 mi.
128 ft.

BAROSENSE INC
3698 HAVEN
REDWOOD CITY, CA 94063

Site 14 of 17 in cluster A

CA San Mateo Co. BI

S113758486
N/A

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0039009
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0055266
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0039009
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0056608
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	INACTIVE

A28
WSW
< 1/8
0.024 mi.
128 ft.

ACHELOIS ONCOLOGY INC
3698 HAVEN
REDWOOD CITY, CA 94063

Site 15 of 17 in cluster A

CA San Mateo Co. BI

S119781821
N/A

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0060928
Prog Element Code:	GENERATES <27 GAL/YEAR
Record Id:	PR0083541
Description:	GENERATES <27 GAL/YEAR
Facility Status:	ACTIVE

Region:	SAN MATEO
Facility ID:	FA0060928
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0083610
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	ACTIVE

A29
WSW
< 1/8
0.024 mi.
128 ft.

CARDIOKINETIX INC
3698 HAVEN
REDWOOD CITY, CA 94063

Site 16 of 17 in cluster A

CA San Mateo Co. BI

S113758187
N/A

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0029706
Prog Element Code:	GENERATES <27 GAL/YEAR
Record Id:	PR0051105
Description:	GENERATES <27 GAL/YEAR
Facility Status:	INACTIVE

A30 **EOPLEX TECHNOLOGIES INC** **CA San Mateo Co. BI** **S113758189**
WSW **3698 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.024 mi.
128 ft. **Site 17 of 17 in cluster A**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0029708
Prog Element Code:	GENERATES <27 GAL/YEAR
Record Id:	PR0051112
Description:	GENERATES <27 GAL/YEAR
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0029708
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0068389
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE

C31 **CHEMO CENTRYX** **CA San Mateo Co. BI** **S113757960**
WSW **3696 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.028 mi.
146 ft. **Site 1 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0028278
Prog Element Code:	GEN <1 TONS HAZ WASTE/YR
Record Id:	PR0046810
Description:	GEN <1 TONS HAZ WASTE/YR
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0028278
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0046809
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE

C32 **ADVANCED POLYMER SYSTEMS INC** **CA San Mateo Co. BI** **S113756426**
WSW **3696 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.028 mi.
146 ft. **Site 2 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0017463
Prog Element Code:	GEN 1-5 TONS HAZ WASTE/YR
Record Id:	PR0011123
Description:	GEN 1-5 TONS HAZ WASTE/YR
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0017463

ADVANCED POLYMER SYSTEMS INC (Continued) **S113756426**

Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0003779
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

C33 **KOVIO, INC** **CA San Mateo Co. BI** **S113757412**
WSW **3696 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.028 mi.
146 ft. **Site 3 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0025915
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0036565
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0025915
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0036566
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

C34 **UBIQUITOUS ENERGY** **CA San Mateo Co. BI** **S119781839**
WSW **3696 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.028 mi.
146 ft. **Site 4 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0061020
Prog Element Code: GEN <1 TONS HAZ WASTE/YR
Record Id: PR0083656
Description: GEN <1 TONS HAZ WASTE/YR
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0061020
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0083657
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: ACTIVE

C35 **ENVIVO PHARMACEUTICALS** **CA San Mateo Co. BI** **S113757674**
WSW **3696C HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.028 mi.
146 ft. **Site 5 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0027179
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0042852
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

C36 **NANOSTELLAR INC** **CA San Mateo Co. BI** **S113758185**
WSW **3696 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.028 mi.
146 ft. **Site 6 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0029703
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0051096
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0029703
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0051095
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

C37 **SYNTHEGO CORP** **CA San Mateo Co. BI** **S113759096**
WSW **3696 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.028 mi.
146 ft. **Site 7 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0052607
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0072923
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0052607
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0072922
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0054063

SYNTHEGO CORP (Continued) **S113759096**

Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0074700
Description: GENERATES <27 GAL/YEAR
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0054063
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0074699
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: ACTIVE

C38 **ROOTES GROUP DEPOT** **CA San Mateo Co. BI** **S109521261**
West **3651 HAVEN** **N/A**
< 1/8 **MENLO PARK, CA 94025**
0.039 mi.
206 ft. **Site 8 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0040769
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0056592
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

D39 **CARL OLSON AND SONS** **RCRA-SQG** **1000274714**
NE **3750 HAVEN AVE** **CA LUST** **CAD982330359**
< 1/8 **MENLO PARK, CA 94025** **CA HIST UST**
0.045 mi. **FINDS**
238 ft. **Site 1 of 2 in cluster D** **ECHO**
CA San Mateo Co. BI

Relative:
Lower

CA HIST CORTESE
CA NPDES

Actual:
7 ft.

RCRA-SQG:
Date form received by agency: 12/21/1987
Facility name: CARL OLSON AND SONS
Facility address: 3750 HAVEN AVE
MENLO PARK, CA 94025
EPA ID: CAD982330359
Mailing address: PO BOX 82249
LINCOLN, NE 68501
Contact: ENVIRONMENTAL MANAGER
Contact address: 3750 HAVEN AVE
MENLO PARK, CA 94025
Contact country: US
Contact telephone: 402-435-3581
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

CARL OLSON AND SONS (Continued) **1000274714**

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: BOHANNON INVESTMENTS
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

LUST:
Lead Agency: SAN MATEO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100104
Global Id: T0608100104
Latitude: 37.4867922
Longitude: -122.1811544
Status: Completed - Case Closed
Status Date: 08/10/1995
Case Worker: Not reported
RB Case Number: 41-0110

CARL OLSON AND SONS (Continued) **1000274714**

Local Agency: Not reported
File Location: Local Agency
Local Case Number: 440017
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Gasoline
Site History: Not reported

LUST:
Global Id: T0608100104
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608100104
Action Type: ENFORCEMENT
Date: 11/19/1990
Action: Notice of Responsibility - #1

Global Id: T0608100104
Action Type: Other
Date: 07/29/1987
Action: Leak Reported

Global Id: T0608100104
Action Type: Other
Date: 07/29/1987
Action: Leak Discovery

LUST:
Global Id: T0608100104
Status: Open - Case Begin Date
Status Date: 07/29/1987

Global Id: T0608100104
Status: Completed - Case Closed
Status Date: 08/10/1995

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Case Closed
Case Number: 440017
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported

CARL OLSON AND SONS (Continued) **1000274714**

Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 440017
Facility Status: 9- Case Closed
Global ID: T0608100104
APN Number: 055231050
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

HIST UST:
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000001726
Facility Type: Other
Other Type: Not reported
Contact Name: Not reported
Telephone: 0000000000
Owner Name: CARL W. OLSON & SONS CO.
Owner Address: 3750 HAVEN AVE
Owner City,St,Zip: MENLO PARK, CA 94025
Total Tanks: 0002

Tank Num: 001
Container Num: 2
Year Installed: Not reported
Tank Capacity: 00005000
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: None

Tank Num: 002
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00006000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported
Leak Detection: Stock Inventor

FINDS:

Registry ID: 110055826771

Environmental Interest/Information System
STATE MASTER

Registry ID: 110002795431

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource

CARL OLSON AND SONS (Continued) **1000274714**

Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000274714
Registry ID:	110055826771
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110055826771
Envid:	1000274714
Registry ID:	110002795431
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002795431

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0024201
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0028679
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	ACTIVE
Region:	SAN MATEO
Facility ID:	FA0024201
Prog Element Code:	LESS THAN 500 TIRES
Record Id:	PR0045427
Description:	LESS THAN 500 TIRES
Facility Status:	ACTIVE
Region:	SAN MATEO
Facility ID:	FA0024201
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0028680
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	ACTIVE

HIST CORTESE:

Region:	CORTESE
Facility County Code:	41
Reg By:	LTNKA
Reg Id:	41-0110

NPDES:

Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	2
Regulatory Measure Id:	276979

CARL OLSON AND SONS (Continued) **1000274714**

Order No:	Not reported
Regulatory Measure Type:	Industrial
Place Id:	Not reported
WDID:	2 41I019747
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	05/09/2008
PROCESSED DATE:	08/22/2005
STATUS CODE NAME:	Active
STATUS DATE:	08/22/2005
PLACE SIZE:	5.4
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Larry Wingo
FACILITY CONTACT TITLE:	Senior Environmental Specialist
FACILITY CONTACT PHONE:	817-606-4516
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	lwwingo@fedex.com
OPERATOR NAME:	Federal Express Corp Pad
OPERATOR ADDRESS:	3750 Haven Ave
OPERATOR CITY:	Menlo Park
OPERATOR STATE:	California
OPERATOR ZIP:	94025
OPERATOR CONTACT NAME:	Larry Wingo
OPERATOR CONTACT TITLE:	Senior Environmental Specialist
OPERATOR CONTACT PHONE:	817-606-4516
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	lwwingo@fedex.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Tennessee
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported

CARL OLSON AND SONS (Continued) **1000274714**

CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	West Point Slough
CERTIFIER NAME:	Bill Gebhart
CERTIFIER TITLE:	Manager, EOS
CERTIFICATION DATE:	11-APR-17
PRIMARY SIC:	4215-Courier Services Except by Air
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported
Npdes Number:	CAS000001
Facility Status:	Active
Agency Id:	0
Region:	2
Regulatory Measure Id:	276979
Order No:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	2 41I019747
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	08/22/2005
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Federal Express Corp Pad
Discharge Address:	3750 Haven Ave
Discharge City:	Menlo Park
Discharge State:	California
Discharge Zip:	94025
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported

CARL OLSON AND SONS (Continued) **1000274714**

DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

D40 **FEDERAL EXPRESS CORPORATION** **CA HIST UST** **S113092279**
NE **3750 HAVEN AVE** **CA HAZNET** **N/A**
< 1/8 **MENLO PARK, CA 94025**
0.045 mi.
238 ft. **Site 2 of 2 in cluster D**

Relative:
Lower

Actual:
7 ft.

HIST UST:

File Number:	0002BC87
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002BC87.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported

FEDERAL EXPRESS CORPORATION (Continued) **S113092279**

Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

HAZNET:

envid: S113092279
Year: 2016
GEPAID: CAL000175218
Contact: LARRY WINGO
Telephone: 8176064516
Mailing Name: Not reported
Mailing Address: 3620 HACKS CROSS RD BLDG B 2ND FL
Mailing City,St,Zip: MEMPHIS, TN 381257113
Gen County: San Mateo
TSD EPA ID: CAL000330453
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.04
Cat Decode: Other organic solids
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Mateo

envid: S113092279
Year: 2016
GEPAID: CAL000175218
Contact: LARRY WINGO
Telephone: 8176064516
Mailing Name: Not reported
Mailing Address: 3620 HACKS CROSS RD BLDG B 2ND FL
Mailing City,St,Zip: MEMPHIS, TN 381257113
Gen County: San Mateo
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.14
Cat Decode: Other organic solids
Method Decode: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County: San Mateo

envid: S113092279
Year: 2016
GEPAID: CAL000175218
Contact: LARRY WINGO
Telephone: 8176064516
Mailing Name: Not reported
Mailing Address: 3620 HACKS CROSS RD BLDG B 2ND FL
Mailing City,St,Zip: MEMPHIS, TN 381257113
Gen County: San Mateo
TSD EPA ID: AZD081705402

FEDERAL EXPRESS CORPORATION (Continued) **S113092279**

TSD County:	99
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.095
Cat Decode:	Off-specification, aged or surplus organics
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Mateo

envid:	S113092279
Year:	2015
GEPAID:	CAL000175218
Contact:	TIM JACKSON
Telephone:	9014348468
Mailing Name:	Not reported
Mailing Address:	3620 HACKS CROSS RD BLDG B 2ND FL
Mailing City,St,Zip:	MEMPHIS, TN 381257113
Gen County:	San Mateo
TSD EPA ID:	CAD980675276
TSD County:	Kern
Waste Category:	Latex waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	0.0075
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113092279
Year:	2015
GEPAID:	CAL000175218
Contact:	TIM JACKSON
Telephone:	9014348468
Mailing Name:	Not reported
Mailing Address:	3620 HACKS CROSS RD BLDG B 2ND FL
Mailing City,St,Zip:	MEMPHIS, TN 381257113
Gen County:	San Mateo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Off-specification, aged or surplus organics
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.025
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

Click this hyperlink while viewing on your computer to access
106 additional CA_HAZNET: record(s) in the EDR Site Report.

41
SSE
< 1/8
0.046 mi.
242 ft.

HUETTIG & SCHROMM, INC.
3700 HAVEN CT.
MENLO PARK, CA 94025

CA SWEEPS UST **S101593803**
CA HIST UST **N/A**
CA FID UST
CA HAZNET

Relative:
Lower

Actual:
9 ft.

SWEEPS UST:

Status:	Active
Comp Number:	440058
Number:	1
Board Of Equalization:	Not reported
Referral Date:	11-01-93
Action Date:	11-01-93
Created Date:	10-13-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	41-000-440058-000001
Tank Status:	A
Capacity:	1000
Active Date:	05-15-91
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	3

Status:	Active
Comp Number:	440058
Number:	1
Board Of Equalization:	Not reported
Referral Date:	11-01-93
Action Date:	11-01-93
Created Date:	10-13-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	41-000-440058-000002
Tank Status:	A
Capacity:	1000
Active Date:	05-15-91
Tank Use:	M.V. FUEL
STG:	P
Content:	LEADED
Number Of Tanks:	Not reported

Status:	Active
Comp Number:	440058
Number:	1
Board Of Equalization:	Not reported
Referral Date:	11-01-93
Action Date:	11-01-93
Created Date:	10-13-88
Owner Tank Id:	Not reported
SWRCB Tank Id:	41-000-440058-000003
Tank Status:	A
Capacity:	1000
Active Date:	05-15-91
Tank Use:	M.V. FUEL
STG:	P
Content:	DIESEL
Number Of Tanks:	Not reported

HUETTIG & SCHROMM, INC. (Continued) **S101593803**

HIST UST:

File Number:	0002BF37
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002BF37.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

CA FID UST:

Facility ID:	41000607
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	4153642455
Mail To:	Not reported
Mailing Address:	3700 HAVEN CRT
Mailing Address 2:	Not reported
Mailing City,St,Zip:	MENLO PARK 94025
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

HAZNET:

envid:	S101593803
Year:	2016
GEPAID:	CAC002851330
Contact:	KEN PRICE
Telephone:	6503222121
Mailing Name:	Not reported
Mailing Address:	431 BURGESS DR STE 200
Mailing City,St,Zip:	MENLO PARK, CA 940253478
Gen County:	San Mateo
TSD EPA ID:	CAD981382732
TSD County:	Alameda

HUETTIG & SCHROMM, INC. (Continued) **S101593803**

Waste Category:	Asbestos containing waste
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	1.38
Cat Decode:	Asbestos containing waste
Method Decode:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Facility County:	San Mateo

42
NNW
< 1/8
0.046 mi.
243 ft.

Relative:
Higher

Actual:
10 ft.

CT INTERNATIONAL SALES
3645 HAVEN
MENLO PARK, CA 94025

CA LUST **S102445197**
CA SLIC **N/A**
CA DEED
CA San Mateo Co. BI
CA HAZNET

SAN MATEO CO. LUST:

Region:	SAN MATEO
Facility ID:	449077
Facility Status:	9- Case Closed
Global ID:	SL0608120935
APN Number:	055170220
Case Type:	SAN MATEO CO. LUST
EDR Link ID:	SAN MATEO CO. LUST

Region:	SAN MATEO
Facility ID:	449077
Facility Status:	9- Case Closed
Global ID:	SL0608120935
APN Number:	055170220
Case Type:	SAN MATEO CO. LUST
EDR Link ID:	SAN MATEO CO. LUST

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	01/21/2014
Global Id:	SL0608120935
Lead Agency:	SAN MATEO COUNTY LOP
Lead Agency Case Number:	449077
Latitude:	37.486917
Longitude:	-122.182041
Case Type:	Cleanup Program Site
Case Worker:	Not reported
Local Agency:	Not reported
RB Case Number:	Not reported
File Location:	Local Agency Warehouse
Potential Media Affected:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Extracted from Geologica's October 2, 2013 Supplemental Soil Sampling and Remedial Excavation Completion Report. San Mateo County does not take responsibility for the accuracy of the statements made or any professional interpretations made in the referenced report. In April 2013, GEOLOGICA completed a supplemental soil quality sampling investigation of the former CT International site at 3645 Haven Avenue in Menlo Park, CA. The investigation was conducted to evaluate soil quality conditions relative to the current Residential Environmental Screening Levels (ESLs) established by the San

CT INTERNATIONAL SALES (Continued) **S102445197**

Francisco Bay Regional Water Quality Control Board (RWQCB). Between June and August 2013, GEOLOGICA conducted a focused soil excavation program to remove soil containing petroleum hydrocarbons and/or lead at concentrations greater than the RWQCBs Residential ESLs. This scope of work was developed by GEOLOGICA based on discussion with Mr. Charles Ice of the San Mateo County Environmental Health System (SMCEHS). The purpose of the investigation and excavation was to remove the no-residential use deed restriction on the property.

Click here to access the California GeoTracker records for this facility:

DEED:
Envirostor ID: SL0608120935
Area: Not reported
Sub Area: Not reported
Site Type: SLIC
Status: COMPLETED - CASE CLOSED
Agency: SWRCB
Covenant Uploaded: Y
Deed Date(s): 02/03/2005
File Name: Geotracker Land Use/Deed Restrictions

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0023995
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0028229
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0023995
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0028230
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0027110
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0042667
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0037250
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0054112
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0040930
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0056817
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF

CT INTERNATIONAL SALES (Continued) **S102445197**

Facility Status: INACTIVE

HAZNET:

envid:	S102445197
Year:	2015
GEPAID:	CAC002832823
Contact:	ANDREW MORCOS
Telephone:	8474520200
Mailing Name:	Not reported
Mailing Address:	221 MAIN ST STE 1280
Mailing City,St,Zip:	SAN FRANCISCO, CA 941051935
Gen County:	San Mateo
TSD EPA ID:	CAD028409019
TSD County:	Los Angeles
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.1
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S102445197
Year:	2013
GEPAID:	CAC002729297
Contact:	DANIEL MATTHEWS
Telephone:	4155977885
Mailing Name:	Not reported
Mailing Address:	204 FRANKLIN ST
Mailing City,St,Zip:	REDWOOD CITY, CA 940631929
Gen County:	San Mateo
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	42.48
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Not reported

envid:	S102445197
Year:	2013
GEPAID:	CAC002740627
Contact:	WILLIAM BUTLER
Telephone:	6503611270
Mailing Name:	Not reported
Mailing Address:	204 FRANKLIN ST
Mailing City,St,Zip:	REDWOOD CITY, CA 94063
Gen County:	San Mateo
TSD EPA ID:	NVT330010000
TSD County:	99
Waste Category:	Not reported
Disposal Method:	Landfill Or Surface Impoundment That Will Be Closed As Landfill(To Include On-Site Treatment And/Or Stabilization)
Tons:	8.26
Cat Decode:	Not reported

CT INTERNATIONAL SALES (Continued) **S102445197**

Method Decode:	Not reported
Facility County:	Not reported
envid:	S102445197
Year:	2013
GEPAID:	CAC002729297
Contact:	DANIEL MATTHEWS
Telephone:	4155977885
Mailing Name:	Not reported
Mailing Address:	204 FRANKLIN ST
Mailing City,St,Zip:	REDWOOD CITY, CA 940631929
Gen County:	San Mateo
TSD EPA ID:	NV330010000
TSD County:	Not reported
Waste Category:	Not reported
Disposal Method:	Other Recovery Of Reclamation For Reuse Including Acid Regeneration, Organics Recovery Ect
Tons:	42.48
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Not reported

C43 **DESIGNCO** **CA San Mateo Co. BI** **S104972916**
West **3641 HAVEN** **N/A**
< 1/8 **MENLO PARK, CA 94025**
0.053 mi.
279 ft. **Site 9 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0026074
Prog Element Code:	GENERATES <27 GAL/YEAR
Record Id:	PR0037583
Description:	GENERATES <27 GAL/YEAR
Facility Status:	ACTIVE
Region:	SAN MATEO
Facility ID:	FA0026074
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0037582
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	ACTIVE

C44 **BARIENT INC** **RCRA-SQG** **1000249307**
West **3641 HAVEN AVE** **FINDS** **CAD980882690**
< 1/8 **MENLO PARK, CA 94025** **ECHO**
0.053 mi.
279 ft. **Site 10 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	BARIENT INC
Facility address:	3641 HAVEN AVE MENLO PARK, CA 94025
EPA ID:	CAD980882690
Mailing address:	HAVEN AVE

BARIENT INC (Continued) **1000249307**

MENLO PARK, CA 94025
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No

BARIENT INC (Continued) **1000249307**

Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002673483

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000249307
Registry ID: 110002673483
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002673483

C45 **DESIGNCO** **CA HIST UST** **S113118442**
West **3641 HAVEN AVE** **CA HAZNET** **N/A**
< 1/8 **MENLO PARK, CA 94025**
0.053 mi.
279 ft. **Site 11 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

HIST UST:
File Number: 0002BDB3
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002BDB3.pdf
Region: Not reported
Facility ID: Not reported
Facility Type: Not reported
Other Type: Not reported
Contact Name: Not reported
Telephone: Not reported
Owner Name: Not reported
Owner Address: Not reported
Owner City,St,Zip: Not reported
Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

DESIGNCO (Continued) **S113118442**

HAZNET:

envid:	S113118442
Year:	2016
GEPAID:	CAL000249462
Contact:	PAT SCARLETT
Telephone:	6503656505
Mailing Name:	Not reported
Mailing Address:	PO BOX 693
Mailing City,St,Zip:	REDWOOD CITY, CA 940640693
Gen County:	San Mateo
TSD EPA ID:	UTD981552177
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.05
Cat Decode:	Other organic solids
Method Decode:	Incineration--Thermal Destruction Other Than Use As A Fuel
Facility County:	San Mateo

envid:	S113118442
Year:	2015
GEPAID:	CAL000249462
Contact:	PAT SCARLETT
Telephone:	6503656505
Mailing Name:	Not reported
Mailing Address:	PO BOX 693
Mailing City,St,Zip:	REDWOOD CITY, CA 940640693
Gen County:	San Mateo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Aqueous solution with total organic residues 10 percent or more
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.2
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113118442
Year:	2015
GEPAID:	CAL000249462
Contact:	PAT SCARLETT
Telephone:	6503656505
Mailing Name:	Not reported
Mailing Address:	PO BOX 693
Mailing City,St,Zip:	REDWOOD CITY, CA 940640693
Gen County:	San Mateo
TSD EPA ID:	NED981723513
TSD County:	99
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.22935
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid: S113118442

DESIGNCO (Continued) **S113118442**

Year:	2015
GEPAID:	CAL000249462
Contact:	PAT SCARLETT
Telephone:	6503656505
Mailing Name:	Not reported
Mailing Address:	PO BOX 693
Mailing City,St,Zip:	REDWOOD CITY, CA 940640693
Gen County:	San Mateo
TSD EPA ID:	UTD981552177
TSD County:	99
Waste Category:	Other organic solids
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.0425
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113118442
Year:	2014
GEPAID:	CAL000249462
Contact:	PAT SCARLETT
Telephone:	6503656505
Mailing Name:	Not reported
Mailing Address:	PO BOX 693
Mailing City,St,Zip:	REDWOOD CITY, CA 940640000
Gen County:	San Mateo
TSD EPA ID:	NED981723513
TSD County:	99
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.2085
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

Click this hyperlink while viewing on your computer to access
5 additional CA_HAZNET: record(s) in the EDR Site Report.

C46 **CORRELL PROPERTIES** **CA HIST UST** **U001594181**
West **3641 HAVEN AVE** **N/A**
< 1/8 **MENLO PARK, CA 94025**
0.053 mi.
279 ft. **Site 12 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

HIST UST:

File Number:	Not reported
URL:	Not reported
Region:	STATE
Facility ID:	00000038150
Facility Type:	Gas Station
Other Type:	Not reported
Contact Name:	OWNERS
Telephone:	4153217595
Owner Name:	CORRELL PROPERTIES
Owner Address:	2 MAPLE AVENUE
Owner City,St,Zip:	ATHERTON, CA 94025
Total Tanks:	0002

CORRELL PROPERTIES (Continued) **U001594181**

Tank Num:	001
Container Num:	1
Year Installed:	1979
Tank Capacity:	00002000
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	1/4"
Leak Detection:	Stock Inventor

Tank Num:	002
Container Num:	2
Year Installed:	1979
Tank Capacity:	00002000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	1/2"
Leak Detection:	Stock Inventor

C47 **CHEVRON SERVICE STATION #** **CA San Mateo Co. BI** **S102268306**
West **3639 HAVEN** **CA HIST CORTESE** **N/A**
< 1/8 **MENLO PARK, CA 94025**
0.058 mi.
306 ft. **Site 13 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0014360
Prog Element Code:	GEN <1 TONS HAZ WASTE/YR
Record Id:	PR0023263
Description:	GEN <1 TONS HAZ WASTE/YR
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0014360
Prog Element Code:	LESS THAN 500 TIRES
Record Id:	PR0045426
Description:	LESS THAN 500 TIRES
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0014360
Prog Element Code:	STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id:	PR0023262
Description:	STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status:	INACTIVE

HIST CORTESE:

Region:	CORTESE
Facility County Code:	41
Reg By:	LTNKA
Reg Id:	2831

C48
West
< 1/8
0.063 mi.
333 ft.

DOUBLE D PAVING
3637 HAVEN
MENLO PARK, CA 94025

Site 14 of 19 in cluster C

CA San Mateo Co. BI

S106982071
N/A

Relative:
Higher

Actual:
10 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0025951
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0037357
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE
Region:	SAN MATEO
Facility ID:	FA0025951
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0037356
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE
Region:	SAN MATEO
Facility ID:	FA0025953
Prog Element Code:	GENERATES <27 GAL/YEAR
Record Id:	PR0037362
Description:	GENERATES <27 GAL/YEAR
Facility Status:	INACTIVE
Region:	SAN MATEO
Facility ID:	FA0025953
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0037363
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE

C49
West
< 1/8
0.070 mi.
370 ft.

LEMMONS SIGNS
3636 HAVEN AVENUE
REDWOOD CITY, CA 94063

Site 15 of 19 in cluster C

CA SWEEPS UST
CA FID UST

S101593731
N/A

Relative:
Higher

Actual:
11 ft.

SWEEPS UST:

Status:	Not reported
Comp Number:	330193
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	41-000-330193-000001
Tank Status:	Not reported
Capacity:	750
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	REG UNLEADED
Number Of Tanks:	1
Status:	Active

LEMMONS SIGNS (Continued) **S101593731**

Comp Number:	330193
Number:	9
Board Of Equalization:	Not reported
Referral Date:	02-02-94
Action Date:	02-02-94
Created Date:	07-08-92
Owner Tank Id:	Not reported
SWRCB Tank Id:	Not reported
Tank Status:	Not reported
Capacity:	Not reported
Active Date:	Not reported
Tank Use:	Not reported
STG:	Not reported
Content:	Not reported
Number Of Tanks:	Not reported

CA FID UST:

Facility ID:	41000319
Regulated By:	UTNKA
Regulated ID:	Not reported
Cortese Code:	Not reported
SIC Code:	Not reported
Facility Phone:	5108209171
Mail To:	Not reported
Mailing Address:	595 EVERETT DR
Mailing Address 2:	Not reported
Mailing City,St,Zip:	REDWOOD CITY 94063
Contact:	Not reported
Contact Phone:	Not reported
DUNs Number:	Not reported
NPDES Number:	Not reported
EPA ID:	Not reported
Comments:	Not reported
Status:	Active

C50 **CARLSEN MOTOR CARS, INC.** **CA San Mateo Co. BI** **S113757726**
West **3636 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.070 mi.
370 ft. **Site 16 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0027372
Prog Element Code:	2221
Record Id:	PR0043345
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT - LQG
Facility Status:	ACTIVE

Region:	SAN MATEO
Facility ID:	FA0027372
Prog Element Code:	LESS THAN 500 TIRES
Record Id:	PR0045688
Description:	LESS THAN 500 TIRES
Facility Status:	ACTIVE

Region: SAN MATEO

CARLSEN MOTOR CARS, INC. (Continued) **S113757726**

Facility ID: FA0027372
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0043346
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: ACTIVE

C51 **LEMMON'S SIGNS** **CA LUST S104494022**
West **3636 HAVEN** **CA HIST CORTESE N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.070 mi.
370 ft. **Site 17 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

LUST:
Lead Agency: SAN MATEO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100150
Global Id: T0608100150
Latitude: 37.485214
Longitude: -122.183992
Status: Completed - Case Closed
Status Date: 03/29/1996
Case Worker: DGM
RB Case Number: 41-0158
Local Agency: SAN MATEO COUNTY LOP
File Location: Local Agency
Local Case Number: 330108
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Gasoline
Site History: Not reported

LUST:
Global Id: T0608100150
Contact Type: Local Agency Caseworker
Contact Name: DENO MILANO
Organization Name: SAN MATEO COUNTY LOP
Address: 2000 ALAMEDA DE LAS PULGAS SUITE 100
City: SAN MATEO
Email: dmilano@smcgov.org
Phone Number: 6503726292

Global Id: T0608100150
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608100150
Action Type: REMEDIATION
Date: 11/22/1993
Action: Excavation

Global Id: T0608100150
Action Type: ENFORCEMENT
Date: 12/03/1992

LEMMON'S SIGNS (Continued) **S104494022**

Action: Notice of Responsibility - #1

Global Id: T0608100150
Action Type: Other
Date: 09/04/1992
Action: Leak Reported

Global Id: T0608100150
Action Type: Other
Date: 09/16/1992
Action: Leak Discovery

LUST:
Global Id: T0608100150
Status: Open - Case Begin Date
Status Date: 09/04/1992

Global Id: T0608100150
Status: Completed - Case Closed
Status Date: 03/29/1996

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Case Closed
Case Number: 330108
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 330108
Facility Status: 9- Case Closed
Global ID: T0608100150
APN Number: 055162360
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-0158

C52 **LEMMON SIGNS** **CA San Mateo Co. BI** **S113755257**
West **3636 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.070 mi.
370 ft. **Site 18 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0003522
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0011311
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE
Region:	SAN MATEO
Facility ID:	FA0003522
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0003700
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE
Region:	SAN MATEO
Facility ID:	FA0003522
Prog Element Code:	UNDERGROUND TANK - GENERAL
Record Id:	PR0025525
Description:	UNDERGROUND TANK - GENERAL
Facility Status:	INACTIVE

C53 **CARLSEN MOTOR CARS INC** **RCRA-SQG** **1005441141**
West **3636 HAVEN AVE** **FINDS** **CAR000115923**
< 1/8 **REDWOOD CITY, CA 94063** **ECHO**
0.070 mi.
370 ft. **Site 19 of 19 in cluster C**

Relative:
Higher

Actual:
11 ft.

RCRA-SQG:

Date form received by agency:	09/18/2016
Facility name:	CARLSEN PORSCHE
Facility address:	3636 HAVEN AVE REDWOOD CITY, CA 94063
EPA ID:	CAR000115923
Mailing address:	HAVEN AVE REDWOOD CITY, CA 94063
Contact:	TODD PARKINSON
Contact address:	3636 HAVEN AVE REDWOOD CITY, CA 94063
Contact country:	US
Contact telephone:	650-701-9200
Contact email:	TODD.PARKINSON@CARLSENPORSHE.COM
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	CARLSEN MOTOR CARS INC
Owner/operator address:	3636 HAVEN AVENUE

CARLSEN MOTOR CARS INC (Continued) **1005441141**

REDWOOD CITY, CA 94063
Owner/operator country: US
Owner/operator telephone: 650-701-9200
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 08/01/2002
Owner/Op end date: Not reported

Owner/operator name: CHARLES A. BURTON
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 08/01/2002
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 134
. Waste name: Aqueous solution with <10% total organic residues

. Waste code: 221
. Waste name: Waste oil and mixed oil

Historical Generators:
Date form received by agency: 05/08/2002
Site name: CARLSEN MOTOR CARS INC
Classification: Small Quantity Generator

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F001

CARLSEN MOTOR CARS INC (Continued) **1005441141**

. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

FINDS:

Registry ID: 110012546487

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1005441141
Registry ID: 110012546487
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110012546487

E54 **RB TRACTOR WORK** **CA LUST** **S106874797**
West **3633 HAVEN** **CA SLIC** **N/A**
< 1/8 **MENLO PARK, CA 94025** **CA San Mateo Co. BI**
0.073 mi.
387 ft. **Site 1 of 5 in cluster E**

Relative:
Higher

Actual:
10 ft.

SAN MATEO CO. LUST:

Region:	SAN MATEO
Facility ID:	449080
Facility Status:	9- Case Closed
Global ID:	SL0608127363
APN Number:	055170180/270
Case Type:	SAN MATEO CO. LUST
EDR Link ID:	SAN MATEO CO. LUST

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	04/10/2007
Global Id:	SL0608127363
Lead Agency:	SAN MATEO COUNTY LOP
Lead Agency Case Number:	449080
Latitude:	37.485823
Longitude:	-122.184648
Case Type:	Cleanup Program Site
Case Worker:	Not reported
Local Agency:	Not reported
RB Case Number:	Not reported
File Location:	Local Agency Warehouse
Potential Media Affected:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Polychlorinated biphenyls (PCBs)
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0022907
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0025784
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022907
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0025785
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022908
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0025786
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO

RB TRACTOR WORK (Continued) **S106874797**

Facility ID: FA0022908
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0025787
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

55
East
< 1/8
0.093 mi.
492 ft.

Relative:
Lower

Actual:
6 ft.

COMCAST OF CALIFORNIA IX INC **RCRA-SQG** **1019327183**
3760 HAVEN AVE **CAR000263855**
MENLO PARK, CA 94025

RCRA-SQG:
Date form received by agency: 06/02/2016
Facility name: COMCAST OF CALIFORNIA IX INC
Facility address: 3760 HAVEN AVE
MENLO PARK, CA 94025
EPA ID: CAR000263855
Mailing address: COMCAST PL
LIVERMORE, CA 94551
Contact: DEBRA EMERY
Contact address: COMCAST PL
LIVERMORE, CA 94551
Contact country: US
Contact telephone: 925-424-0286
Contact email: DEBRA_EMERY@CABLE.COMCAST.COM
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: JEREMY SPIELMAN ET AL
Owner/operator address: MARINA WAY STE 1220C
MOUNTAIN VIEW, CA 94043
Owner/operator country: US
Owner/operator telephone: 650-960-1111
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 07/31/2014
Owner/Op end date: Not reported

Owner/operator name: COMCAST OF CALIFORNIA IX INC
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private

COMCAST OF CALIFORNIA IX INC (Continued) **1019327183**

Owner/Operator Type: Operator
Owner/Op start date: 05/01/2012
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 134
. Waste name: Aqueous solution with <10% total organic residues

. Waste code: 135
. Waste name: Unspecified aqueous solution

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

. Waste code: 151
. Waste name: Asbestos-containing waste

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 221
. Waste name: Waste oil and mixed oil

. Waste code: 223
. Waste name: Unspecified oil-containing waste

. Waste code: 232
. Waste name: Pesticides and other waste associated with pesticide production

. Waste code: 291
. Waste name: Latex waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 551
. Waste name: Laboratory waste chemicals

COMCAST OF CALIFORNIA IX INC (Continued) **1019327183**

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Violation Status: No violations found

E56 **ANGIES POOL REPAIR** **CA San Mateo Co. BI** **S113756128**
West **3624 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.117 mi.
617 ft. **Site 2 of 5 in cluster E**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0015580
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0004012
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

E57 **A J EITNER REPAIRS** **CA San Mateo Co. BI** **S113755220**
West **3624 HAVEN** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.117 mi.
617 ft. **Site 3 of 5 in cluster E**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0002354
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0011179
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

A J EITNER REPAIRS (Continued) **S113755220**

Region: SAN MATEO
Facility ID: FA0002354
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0003955
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

E58 **C F ARCHIBALD PAVING INC** **CA San Mateo Co. BI** **S113755878**
West **3624 HAVEN AVE** **CA HAZNET** **N/A**
< 1/8 **REDWOOD CITY, CA 94063**
0.117 mi.
617 ft. **Site 4 of 5 in cluster E**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0012927
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0011313
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0012927
Prog Element Code: LESS THAN 500 TIRES
Record Id: PR0067600
Description: LESS THAN 500 TIRES
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0012927
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0003956
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

HAZNET:
envid: S113755878
Year: 2014
GEPAID: CAL000260738
Contact: PATRICK V. COLLINS, GEN MGR
Telephone: 6503643045
Mailing Name: Not reported
Mailing Address: PO BOX 37
Mailing City,St,Zip: REDWOOD CITY, CA 940640037
Gen County: San Mateo
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Other organic solids
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.16
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: S113755878
Year: 2013

C F ARCHIBALD PAVING INC (Continued) **S113755878**

GEPAID: CAL000260738
Contact: PATRICK V. COLLINS, GEN MGR
Telephone: 6503643045
Mailing Name: Not reported
Mailing Address: PO BOX 37
Mailing City,St,Zip: REDWOOD CITY, CA 940640037
Gen County: San Mateo
TSD EPA ID: CAD982444481
TSD County: San Bernardino
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.1251
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Not reported

envid: S113755878
Year: 2013
GEPAID: CAL000260738
Contact: PATRICK V. COLLINS, GEN MGR
Telephone: 6503643045
Mailing Name: Not reported
Mailing Address: PO BOX 37
Mailing City,St,Zip: REDWOOD CITY, CA 940640037
Gen County: San Mateo
TSD EPA ID: CAD008252405
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Fuel Blending Prior To Energy Recovery At Another Site
Tons: 0.17
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Not reported

envid: S113755878
Year: 2013
GEPAID: CAL000260738
Contact: PATRICK V. COLLINS, GEN MGR
Telephone: 6503643045
Mailing Name: Not reported
Mailing Address: PO BOX 37
Mailing City,St,Zip: REDWOOD CITY, CA 940640037
Gen County: San Mateo
TSD EPA ID: CAD097030993
TSD County: Los Angeles
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.2
Cat Decode: Not reported
Method Decode: Not reported
Facility County: Not reported

E59
West
< 1/8
0.120 mi.
632 ft.

J D GIUSTI TRANSPORATION
3615 HAVEN
MENLO PARK, CA 94025

Site 5 of 5 in cluster E

CA San Mateo Co. BI

S105428992
N/A

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0016417
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0011526
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0016417
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0004190
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022624
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0025050
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022892
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0025754
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022892
Prog Element Code:	LESS THAN 500 TIRES
Record Id:	PR0045425
Description:	LESS THAN 500 TIRES
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022892
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0025755
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0026855
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0039838
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

F60
West
1/8-1/4
0.130 mi.
687 ft.

PIERS DAIRY
3611 HAVEN AVE
MENLO PARK, CA 94025

Site 1 of 12 in cluster F

CA HIST UST **U001594208**
CA San Mateo Co. BI **N/A**

Relative:
Higher

Actual:
10 ft.

HIST UST:

File Number:	0002C391
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002C391.pdf
Region:	STATE
Facility ID:	00000037583
Facility Type:	Other
Other Type:	DAIRY
Contact Name:	EDSON PIERS
Telephone:	4153699200
Owner Name:	THREE SISTERS RANCH ENTERPRISE
Owner Address:	890 FAULSTICH COURT
Owner City,St,Zip:	SAN JOSE, CA 95112
Total Tanks:	0002
Tank Num:	001
Container Num:	1
Year Installed:	1980
Tank Capacity:	00008000
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Visual
Tank Num:	002
Container Num:	2
Year Installed:	Not reported
Tank Capacity:	00000500
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	None

Click here for Geo Tracker PDF:

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0022580
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0024922
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE
Region:	SAN MATEO
Facility ID:	FA0022580
Prog Element Code:	GENERATES <27 GAL/YEAR
Record Id:	PR0034678
Description:	GENERATES <27 GAL/YEAR
Facility Status:	INACTIVE
Region:	SAN MATEO
Facility ID:	FA0022580
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0024923

PIERS DAIRY (Continued) **U001594208**

Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

F61 **BLACK MOUNTAIN SPRING WATER IN** **CA San Mateo Co. BI** **S106981027**
West **3609 HAVEN** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.135 mi.
713 ft. **Site 2 of 12 in cluster F**

Relative:
Higher

Actual:
10 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0005280
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0011504
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0005280
Prog Element Code: LESS THAN 500 TIRES
Record Id: PR0045424
Description: LESS THAN 500 TIRES
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0005280
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0004123
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

F62 **GUYS ROOFING** **CA San Mateo Co. BI** **S113755902**
West **3620 HAVEN** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.136 mi.
717 ft. **Site 3 of 12 in cluster F**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0013089
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0011325
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0013089
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0003964
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

F63 **EL DORADO FORKLIFT COMPANY** **CA SWEEPS UST** **S102268291**
WNW **3607 HAVEN** **CA San Mateo Co. BI** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.140 mi.
740 ft. **Site 4 of 12 in cluster F**

Relative:
Higher

Actual:
10 ft.

SWEEPS UST:

Status:	Not reported
Comp Number:	440080
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	41-000-440080-000001
Tank Status:	Not reported
Capacity:	8000
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	OTHER
Number Of Tanks:	2

Status:	Not reported
Comp Number:	440080
Number:	Not reported
Board Of Equalization:	Not reported
Referral Date:	Not reported
Action Date:	Not reported
Created Date:	Not reported
Owner Tank Id:	Not reported
SWRCB Tank Id:	41-000-440080-000002
Tank Status:	Not reported
Capacity:	500
Active Date:	Not reported
Tank Use:	M.V. FUEL
STG:	PRODUCT
Content:	OTHER
Number Of Tanks:	Not reported

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0012506
Prog Element Code:	UNDERGROUND TANK - GENERAL
Record Id:	PR0022563
Description:	UNDERGROUND TANK - GENERAL
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0017648
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0011466
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0017648
Prog Element Code:	LESS THAN 500 TIRES

EL DORADO FORKLIFT COMPANY (Continued) **S102268291**

Record Id: PR0045423
Description: LESS THAN 500 TIRES
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017648
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0004153
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

F64 **SHOOTER LANDSCAPING** **CA LUST** **U001594199**
WNW **3605 HAVEN** **CA HIST UST** **N/A**
1/8-1/4 **MENLO PARK, CA 94025** **CA San Mateo Co. BI**
0.145 mi. **CA NPDES**
768 ft. **Site 5 of 12 in cluster F**

Relative: Higher

Actual: 11 ft.

LUST:
Lead Agency: SAN MATEO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608105455
Global Id: T0608105455
Latitude: 37.486672
Longitude: -122.18504
Status: Completed - Case Closed
Status Date: 03/06/2002
Case Worker: Not reported
RB Case Number: 41-4024
Local Agency: Not reported
File Location: Local Agency
Local Case Number: 440058
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Gasoline
Site History: Not reported

LUST:
Global Id: T0608105455
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608105455
Action Type: Other
Date: 03/12/1999
Action: Leak Reported

Global Id: T0608105455
Action Type: ENFORCEMENT
Date: 06/30/1999
Action: Notice of Responsibility - #1

LUST:

SHOOTER LANDSCAPING (Continued) **U001594199**

Global Id: T0608105455
Status: Open - Case Begin Date
Status Date: 03/12/1999

Global Id: T0608105455
Status: Completed - Case Closed
Status Date: 03/06/2002

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Case Closed
Case Number: 440058
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 440058
Facility Status: 9- Case Closed
Global ID: T0608105455
APN Number: 055170190
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

HIST UST:
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000065329
Facility Type: Other
Other Type: LANDSCAPE CONTRACTOR
Contact Name: DOUGLAS D. SNYDER
Telephone: 4153649720
Owner Name: THREE SISTERS RANCH
Owner Address: 890 FAULSTICH COURT
Owner City,St,Zip: SAN JOSE, CA 95112
Total Tanks: 0001

Tank Num: 001
Container Num: 1
Year Installed: Not reported
Tank Capacity: 00001000
Tank Used for: PRODUCT
Type of Fuel: UNLEADED
Container Construction Thickness: Not reported

SHOOTER LANDSCAPING (Continued) **U001594199**

Leak Detection: None

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0017571
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0011527
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0017571
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0004095
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0017571
Prog Element Code:	UNDERGROUND TANK - GENERAL
Record Id:	PR0025647
Description:	UNDERGROUND TANK - GENERAL
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022912
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0025792
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022912
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0025793
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	INACTIVE

NPDES:

Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	2
Regulatory Measure Id:	441720
Order No:	Not reported
Regulatory Measure Type:	Construction
Place Id:	Not reported
WDID:	2 41C368003
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported

SHOOTER LANDSCAPING (Continued) **U001594199**

Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	10/02/2013
PROCESSED DATE:	10/17/2013
STATUS CODE NAME:	Active
STATUS DATE:	10/17/2013
PLACE SIZE:	9.7
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Ardie Zahedani
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	916-400-2077
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	az@antonllc.com
OPERATOR NAME:	Anton Menlo LLC
OPERATOR ADDRESS:	1801 I Street
OPERATOR CITY:	Sacramento
OPERATOR STATE:	California
OPERATOR ZIP:	95811
OPERATOR CONTACT NAME:	Ardie Zahedani
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	916-400-2077
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	az@antonllc.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Anton Menlo LLC
DEVELOPER ADDRESS:	1801 I Street
DEVELOPER CITY:	Sacramento
DEVELOPER STATE:	California
DEVELOPER ZIP:	95811
DEVELOPER CONTACT NAME:	Ardie Zahedani
DEVELOPER CONTACT TITLE:	Vice President of Development
CONSTYPE LINEAR UTILITY IND:	N
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	N
CONSTYPE BELOW GROUND IND:	N
CONSTYPE CABLE LINE IND:	N
CONSTYPE COMM LINE IND:	N
CONSTYPE COMMERTIAL IND:	N
CONSTYPE ELECTRICAL LINE IND:	N
CONSTYPE GAS LINE IND:	N
CONSTYPE INDUSTRIAL IND:	N
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	N
CONSTYPE RECONS IND:	N
CONSTYPE RESIDENTIAL IND:	Y
CONSTYPE TRANSPORT IND:	N
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	N
CONSTYPE WATER SEWER IND:	N
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	Atherton Creek
CERTIFIER NAME:	Tony Patillo
CERTIFIER TITLE:	VP Construction
CERTIFICATION DATE:	16-OCT-17
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported

SHOOTER LANDSCAPING (Continued) **U001594199**

TERTIARY SIC:	Not reported
Npdes Number:	CAS000002
Facility Status:	Active
Agency Id:	0
Region:	2
Regulatory Measure Id:	441720
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	2 41C368003
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	10/17/2013
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Anton Menlo LLC
Discharge Address:	1801 I Street
Discharge City:	Sacramento
Discharge State:	California
Discharge Zip:	95811
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported

SHOOTER LANDSCAPING (Continued) **U001594199**

CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

F65 **JOHN J SHOOTER INC** **CA SWEEPS UST** **S101593923**
WNW **3605 HAVEN AVE** **CA HIST UST** **N/A**
1/8-1/4 **MENLO PARK, CA 94025** **CA FID UST**
0.145 mi.
768 ft. **Site 6 of 12 in cluster F**

Relative:
Higher

Actual:
11 ft.

SWEEPS UST:

Status:	Active
Comp Number:	440022
Number:	9
Board Of Equalization:	44-025354
Referral Date:	01-28-94
Action Date:	01-28-94
Created Date:	10-13-88
Owner Tank Id:	1
SWRCB Tank Id:	41-000-440022-000001
Tank Status:	A
Capacity:	1000
Active Date:	07-07-89
Tank Use:	M.V. FUEL
STG:	P
Content:	REG UNLEADED
Number Of Tanks:	1

HIST UST:

File Number:	0002C38F
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002C38F.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported

JOHN J SHOOTER INC (Continued) **S101593923**

Total Tanks: Not reported

Tank Num: Not reported
Container Num: Not reported
Year Installed: Not reported
Tank Capacity: Not reported
Tank Used for: Not reported
Type of Fuel: Not reported
Container Construction Thickness: Not reported
Leak Detection: Not reported

Click here for Geo Tracker PDF:

CA FID UST:
Facility ID: 41002864
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 3605 HAVEN AVE
Mailing Address 2: Not reported
Mailing City,St,Zip: MENLO PARK 94025
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

F66 **TELOMERE DIAGNOSTICS** **CA San Mateo Co. BI** **S105725999**
WNW **3603 HAVEN** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.151 mi.
795 ft. **Site 7 of 12 in cluster F**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0007383
Prog Element Code: GEN 1-5 TONS HAZ WASTE/YR
Record Id: PR0011488
Description: GEN 1-5 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0007383
Prog Element Code: STORES HAZ MAT <6999 GAL, 55999 LB, 2799FT^3
Record Id: PR0004140
Description: STORES HAZ MAT <6999 GAL, 55999 LB, 2799CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0026921
Prog Element Code: GEN <1 TONS HAZ WASTE/YR
Record Id: PR0040005

TELOMERE DIAGNOSTICS (Continued) **S105725999**

Description: GEN <1 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0026921
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0040004
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0028326
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0046909
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0028326
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0047238
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0030897
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0051597
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0051258
Prog Element Code: GEN <1 TONS HAZ WASTE/YR
Record Id: PR0071057
Description: GEN <1 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0051258
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0071056
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0052966
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0073327
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0052966
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0073326
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF

TELOMERE DIAGNOSTICS (Continued) **S105725999**

Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0055899
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0077033
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0055899
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0077034
Description: GENERATES <27 GAL/YEAR
Facility Status: ACTIVE

F67 **LANDEC CORPORATION** **RCRA-SQG** **1000818864**
WNW **3603 HAVEN AVE** **FINDS** **CAD983647926**
1/8-1/4 **MENLO PARK, CA 94025** **ECHO**
0.151 mi.
795 ft. **Site 8 of 12 in cluster F**

Relative:
Higher

Actual:
11 ft.

RCRA-SQG:
Date form received by agency: 10/12/2000
Facility name: SUNESIS PHARMACEUTICALS
Site name: LANDEC CORPORATION
Facility address: 3603 HAVEN AVE
MENLO PARK, CA 94025-1010
EPA ID: CAD983647926
Contact: SUSAN FREE
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: 650-261-3628
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No

LANDEC CORPORATION (Continued) **1000818864**

Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 10/10/2000
Site name: SUNESIS PHARMACEUTICALS
Classification: Small Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D005
. Waste name: BARIUM

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 03/04/1999
Site name: LANDEC CORPORATION
Classification: Large Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110000785473

Environmental Interest/Information System
TSCA SUBMITTER

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART)

LANDEC CORPORATION (Continued) **1000818864**

provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

HAZARDOUS AIR POLLUTANT MAJOR

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000818864
Registry ID:	110000785473
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110000785473

F68 **PROSETTA BIOSCIENCES INC** **CA San Mateo Co. BI** **S113158649**
WNW **3603 HAVEN** **CA HAZNET** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.151 mi.
795 ft. **Site 9 of 12 in cluster F**

Relative:
Higher

Actual:
11 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0060174
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0082667
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0060174
Prog Element Code:	GENERATES <27 GAL/YEAR
Record Id:	PR0082668
Description:	GENERATES <27 GAL/YEAR
Facility Status:	ACTIVE

HAZNET:

envid:	S113158649
Year:	2012
GEPAID:	CAL000352854
Contact:	GREG EASON
Telephone:	6503638776
Mailing Name:	Not reported
Mailing Address:	1505 ADAMS DR STE D
Mailing City,St,Zip:	MENLO PARK, CA 94025
Gen County:	San Mateo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara

PROSETTA BIOSCIENCES INC (Continued) **S113158649**

Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.05
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: S113158649
Year: 2012
GEPAID: CAL000352854
Contact: GREG EASON
Telephone: 6503638776
Mailing Name: Not reported
Mailing Address: 1505 ADAMS DR STE D
Mailing City,St,Zip: MENLO PARK, CA 94025
Gen County: San Mateo
TSD EPA ID: CAD980884183
TSD County: Sacramento
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0015
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: S113158649
Year: 2012
GEPAID: CAL000352854
Contact: GREG EASON
Telephone: 6503638776
Mailing Name: Not reported
Mailing Address: 1505 ADAMS DR STE D
Mailing City,St,Zip: MENLO PARK, CA 94025
Gen County: San Mateo
TSD EPA ID: CAD059494310
TSD County: Santa Clara
Waste Category: Not reported
Disposal Method: Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons: 0.0476
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: S113158649
Year: 2011
GEPAID: CAL000352854
Contact: GREG EASON
Telephone: 6503638776
Mailing Name: Not reported
Mailing Address: 1505 ADAMS DR STE D
Mailing City,St,Zip: MENLO PARK, CA 94025
Gen County: Not reported
TSD EPA ID: CAD059494310
TSD County: Not reported

PROSETTA BIOSCIENCES INC (Continued) **S113158649**

Waste Category:	Unspecified organic liquid mixture
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0068
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo
envid:	S113158649
Year:	2010
GEPAID:	CAL000352854
Contact:	GREG EASON
Telephone:	6503638776
Mailing Name:	Not reported
Mailing Address:	1505 ADAMS DR STE D
Mailing City,St,Zip:	MENLO PARK, CA 94025
Gen County:	Not reported
TSD EPA ID:	UTD981552177
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Incineration--Thermal Destruction Other Than Use As A Fuel
Tons:	0.004
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

Click this hyperlink while viewing on your computer to access
1 additional CA_HAZNET: record(s) in the EDR Site Report.

F69 **SPACE CONTROL CO** **RCRA-SQG** **1000168302**
West **3600 HAVEN AVE UNIT #5** **FINDS** **CAD981694052**
1/8-1/4 **REDWOOD CITY, CA 94063** **ECHO**
0.154 mi.
815 ft. **Site 10 of 12 in cluster F**

Relative:
Higher

Actual:
12 ft.

RCRA-SQG:

Date form received by agency:	01/08/1987
Facility name:	SPACE CONTROL CO
Facility address:	3600 HAVEN AVE UNIT #5 REDWOOD CITY, CA 94063
EPA ID:	CAD981694052
Contact:	ENVIRONMENTAL MANAGER
Contact address:	3600 HAVEN AVE UNIT #5 REDWOOD CITY, CA 94603
Contact country:	US
Contact telephone:	415-364-2797
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	RICHARD DELUCCHI

SPACE CONTROL CO (Continued) **1000168302**

Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110008272788

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

SPACE CONTROL CO (Continued) **1000168302**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000168302
Registry ID: 110008272788
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110008272788

F70 **AT & T WIRELESS** **CA San Mateo Co. BI** **S113758010**
West **3600 HAVEN** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.154 mi.
815 ft. **Site 11 of 12 in cluster F**

Relative: Higher

Actual: 12 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0028553
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0047520
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0029297
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0049716
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: ACTIVE

G71 **SCALE MODELS UNLIMITED** **RCRA-SQG** **1000279317**
ESE **111 INDEPENDENCE DR** **FINDS** **CAD981451404**
1/8-1/4 **MENLO PARK, CA 94025** **ECHO**
0.177 mi. **CA San Mateo Co. BI**
937 ft. **Site 1 of 2 in cluster G** **CA HAZNET**

Relative: Higher

Actual: 12 ft.

RCRA-SQG:
Date form received by agency: 03/05/1986
Facility name: SCALE MODELS UNLIMITED
Facility address: 111 INDEPENDENCE DR
MENLO PARK, CA 94025
EPA ID: CAD981451404
Mailing address: INDEPENDENCE DR
MENLO PARK, CA 94025
Contact: ENVIRONMENTAL MANAGER
Contact address: 111 INDEPENDENCE DR
MENLO PARK, CA 94025
Contact country: US
Contact telephone: 415-324-2515
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of

SCALE MODELS UNLIMITED (Continued) **1000279317**

hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: DONALD NUSBAUM
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002711691

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA

SCALE MODELS UNLIMITED (Continued) **1000279317**

program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000279317
Registry ID:	110002711691
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110002711691

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0017615
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0011446
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0017615
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0004084
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	INACTIVE

HAZNET:

envid:	1000279317
Year:	1999
GEPAID:	CAD981451404
Contact:	SCALE MODELS UNLIMITED
Telephone:	6503242515
Mailing Name:	Not reported
Mailing Address:	111 INDEPENDENCE DR
Mailing City,St,Zip:	MENLO PARK, CA 940251112
Gen County:	Not reported
TSD EPA ID:	CAD009452657
TSD County:	Not reported
Waste Category:	Other organic solids
Disposal Method:	Recycler
Tons:	.0150
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

envid:	1000279317
Year:	1999
GEPAID:	CAD981451404
Contact:	SCALE MODELS UNLIMITED
Telephone:	6503242515
Mailing Name:	Not reported
Mailing Address:	111 INDEPENDENCE DR
Mailing City,St,Zip:	MENLO PARK, CA 940251112
Gen County:	Not reported
TSD EPA ID:	CAD009452657

SCALE MODELS UNLIMITED (Continued) **1000279317**

TSD County: Not reported
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Recycler
Tons: 1.2717
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000279317
Year: 1998
GEPAID: CAD981451404
Contact: SCALE MODELS UNLIMITED
Telephone: 6503242515
Mailing Name: Not reported
Mailing Address: 111 INDEPENDENCE DR
Mailing City,St,Zip: MENLO PARK, CA 940251112
Gen County: Not reported
TSD EPA ID: CAD009452657
TSD County: Not reported
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Recycler
Tons: .9172
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000279317
Year: 1997
GEPAID: CAD981451404
Contact: SCALE MODELS UNLIMITED
Telephone: 6503242515
Mailing Name: Not reported
Mailing Address: 111 INDEPENDENCE DR
Mailing City,St,Zip: MENLO PARK, CA 940251112
Gen County: Not reported
TSD EPA ID: CAD009452657
TSD County: Not reported
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Not reported
Tons: .2919
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000279317
Year: 1997
GEPAID: CAD981451404
Contact: SCALE MODELS UNLIMITED
Telephone: 6503242515
Mailing Name: Not reported
Mailing Address: 111 INDEPENDENCE DR
Mailing City,St,Zip: MENLO PARK, CA 940251112
Gen County: Not reported
TSD EPA ID: CAD009452657
TSD County: Not reported
Waste Category: Liquids with halogenated organic compounds >= 1,000 Mg./L
Disposal Method: Recycler

SCALE MODELS UNLIMITED (Continued) **1000279317**

Tons: .8213
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

Click this hyperlink while viewing on your computer to access
7 additional CA_HAZNET: record(s) in the EDR Site Report.

F72 **ANTON MENLO** **CA SLIC** **S113186828**
West **3605-3639 HAVEN AVENUE** **N/A**
1/8-1/4 **MENLO PARK, CA 94403**
0.178 mi.
940 ft. **Site 12 of 12 in cluster F**

Relative:
Higher

Actual:
11 ft.

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	07/24/2014
Global Id:	T10000004645
Lead Agency:	SAN MATEO COUNTY LOP
Lead Agency Case Number:	449088
Latitude:	37.4865732879897
Longitude:	-122.184340953827
Case Type:	Cleanup Program Site
Case Worker:	BG
Local Agency:	SAN MATEO COUNTY LOP
RB Case Number:	Not reported
File Location:	Not reported
Potential Media Affected:	Contaminated Surface / Structure, Other Groundwater (uses other than drinking water), Soil
Potential Contaminants of Concern:	Other Chlorinated Hydrocarbons, Chlordane, DDD / DDE / DDT, Other Insecticides / Pesticide / Fumigants / Herbicides, Copper, Mercury (elemental), Other Metal, Diesel, Ethylbenzene, Gasoline, Naphthalene, Waste Oil / Motor / Hydraulic / Lubricating
Site History:	Extrated from AMEC's July 24, 2013 Site Management Plan. San Mateo County does not take responsibility for the accuracy of the statements made or any professional interpretations made in the referenced report. The site is located in an industrial portion of Menlo Park, San Mateo County, California, between Highway 101 and the San Francisco Bay (Figure 1). The overall site is bounded by Haven Avenue to the south, 3585 Haven Avenue to the west, 3645 Haven Avenue to the east, and 3641 Haven Avenue and salt ponds to the north. The site is relatively flat, sloping gently to the north toward San Francisco Bay. AMEC understands that SAP intends to develop the site for multi-unit rental housing. Figure 2 presents an initial proposed layout for the residential complex. In addition, AMEC understands that SAP intends to raise the site elevation by approximately 2.5 to 3 feet through the import of clean fill material to be compacted on site prior to development. In general, approximately 2 to 3 feet of fill is distributed across the site. The fill material is of varying quality and includes debris such as wood, rubber material, concrete, brick, and ceramics. The results of the Phase II ESA activities indicate that the general character of chemical impacts to the fill material are likely insignificant relative to residential human health screening criteria1, with the exception of the following locations: h At the northwestern portion of the site, impacted soil was identified at boring location SB-13 (Figure 3), which may be associated with the historical operation of an automotive salvage

ANTON MENLO (Continued) **S113186828**

facility. h At one boring location (SB-10) within an enclosed yard north of the 3611 Haven Avenue building, several pesticides were detected at concentrations exceeding their respective residential Environmental Screening Levels (ESLs) in the soil sample collected at 1 foot bgs. h One polychlorinated biphenyl (PCB) congener (PCB-1260) was detected above its residential ESL in the surface soil sample (SB-19-SUR) collected adjacent to a transformer located west of the 3611 Haven Avenue building. Concrete samples were collected from the pad around the transformer and the swale directly adjacent to the pad to evaluate whether the materials will require special handling during demolition activities. PCBs were not detected in any concrete samples, indicating that the concrete may be disposed of as part of the building demolition.

Click here to access the California GeoTracker records for this facility:

H73 **REDWOOD MOTOR COURT** **CA LUST** **S104973101**
WSW **3706 ROLISON ROAD** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.179 mi.
947 ft. **Site 1 of 5 in cluster H**

Relative:
Higher

Actual:
13 ft.

LUST:

Lead Agency:	SAN MATEO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608114600
Global Id:	T0608114600
Latitude:	37.484315
Longitude:	-122.185691
Status:	Completed - Case Closed
Status Date:	01/20/2012
Case Worker:	DGM
RB Case Number:	41-4021
Local Agency:	SAN MATEO COUNTY LOP
File Location:	Local Agency
Local Case Number:	330187
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Lead, Gasoline
Site History:	Can be extracted from most recent report in Geotracker or at San Mateo County offices if submitted prior to 2005, San Mateo County does not take responsibility for the accuracy of the statements made or any professional interpretations made in the referenced report.

LUST:

Global Id:	T0608114600
Contact Type:	Local Agency Caseworker
Contact Name:	DENO MILANO
Organization Name:	SAN MATEO COUNTY LOP
Address:	2000 ALAMEDA DE LAS PULGAS SUITE 100
City:	SAN MATEO
Email:	dmilano@smcgov.org
Phone Number:	6503726292

Global Id:	T0608114600
Contact Type:	Regional Board Caseworker
Contact Name:	Regional Water Board
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400

REDWOOD MOTOR COURT (Continued) **S104973101**

City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 01/28/2002
Action: Staff Letter - #20020128

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 08/13/2007
Action: Staff Letter - #20070813

Global Id: T0608114600
Action Type: RESPONSE
Date: 03/14/2002
Action: Other Report / Document

Global Id: T0608114600
Action Type: RESPONSE
Date: 12/12/2007
Action: Soil and Water Investigation Workplan

Global Id: T0608114600
Action Type: RESPONSE
Date: 12/31/2009
Action: Site Assessment Report

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 06/07/2001
Action: Notice of Responsibility - #20010607

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 05/22/2008
Action: Notice of Violation - #20080522

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 06/22/2009
Action: Staff Letter - #20090622

Global Id: T0608114600
Action Type: Other
Date: 07/17/2000
Action: Leak Reported

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 11/16/2010
Action: Notice of Violation - #20101116

Global Id: T0608114600
Action Type: ENFORCEMENT

REDWOOD MOTOR COURT (Continued) **S104973101**

Date: 12/13/2011
Action: File Review - Closure - #20111213

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 01/20/2012
Action: Closure/No Further Action Letter - #20120120

Global Id: T0608114600
Action Type: RESPONSE
Date: 11/27/2001
Action: Soil and Water Investigation Report

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 08/04/2009
Action: Staff Letter - #20090804

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 08/21/2008
Action: Notice of Violation - #20080821

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 07/31/2001
Action: Staff Letter - #20010731

Global Id: T0608114600
Action Type: ENFORCEMENT
Date: 08/31/2010
Action: Notice of Violation - #20100831

LUST:
Global Id: T0608114600
Status: Open - Case Begin Date
Status Date: 06/08/2000

Global Id: T0608114600
Status: Open - Site Assessment
Status Date: 06/08/2000

Global Id: T0608114600
Status: Completed - Case Closed
Status Date: 01/20/2012

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Post remedial action monitoring
Case Number: 330187
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported

REDWOOD MOTOR COURT (Continued) **S104973101**

Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: 1/1/1965

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 330187
Facility Status: 9- Case Closed
Global ID: T0608114600
APN Number: 055161350
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

H74 **REDWOOD COURT MOTEL** **CA San Mateo Co. BI** **S113756662**
WSW **3706 ROLISON** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.179 mi.
947 ft. **Site 2 of 5 in cluster H**

Relative:
Higher

Actual:
13 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0021430
Prog Element Code: UNDERGROUND TANK - GENERAL
Record Id: PR0037430
Description: UNDERGROUND TANK - GENERAL
Facility Status: INACTIVE

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75 **AT&T** **CA San Mateo Co. BI** **S113790527**
South **1200 MARSH RD** **CA HAZNET** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.180 mi.
953 ft.

Relative:
Higher

Actual:
16 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0057398
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0079655
Description: GENERATES <27 GAL/YEAR
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0057398
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0079654
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: ACTIVE

HAZNET:
envid: S113790527
Year: 2013

AT&T (Continued) **S113790527**

GEPAID:	CAC002718075
Contact:	LAURIE GREEN
Telephone:	9258676098
Mailing Name:	Not reported
Mailing Address:	1 ATT WAY
Mailing City,St,Zip:	BEDMINSTER, NJ 079212693
Gen County:	San Mateo
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.05336
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	Not reported

envid:	S113790527
Year:	2012
GEPAID:	CAC002708361
Contact:	LAURIE GREEN
Telephone:	9258676098
Mailing Name:	Not reported
Mailing Address:	1 ATT WAY
Mailing City,St,Zip:	BEDMINSTER, NJ 079212693
Gen County:	San Mateo
TSD EPA ID:	CAD980884183
TSD County:	Sacramento
Waste Category:	Not reported
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.01
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

I76 **HAVEN OWNERS** **CA San Mateo Co. BI** **S113757984**
West **3592 HAVEN** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.182 mi.
963 ft. **Site 1 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0028437
Prog Element Code:	UNDERGROUND TANK - GENERAL
Record Id:	PR0047239
Description:	UNDERGROUND TANK - GENERAL
Facility Status:	INACTIVE

I77 **BENNETT HOPKINS CORP** **CA San Mateo Co. BI** **S113755277**
West **3592 HAVEN** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.182 mi.
963 ft. **Site 2 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0004005
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0011193
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0004005
Prog Element Code:	STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id:	PR0003729
Description:	STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status:	INACTIVE

I78 **PIERCE INGER TRUST, ET. AL.** **CA LUST** **S100930676**
West **3592 HAVEN** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.197 mi.
1040 ft. **Site 3 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

LUST:

Lead Agency:	SAN MATEO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608129088
Global Id:	T0608129088
Latitude:	37.485669
Longitude:	-122.185997
Status:	Completed - Case Closed
Status Date:	03/27/2007
Case Worker:	DGM
RB Case Number:	Not reported
Local Agency:	SAN MATEO COUNTY LOP
File Location:	Local Agency Warehouse
Local Case Number:	330208
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0608129088
Contact Type:	Local Agency Caseworker
Contact Name:	DENO MILANO
Organization Name:	SAN MATEO COUNTY LOP
Address:	2000 ALAMEDA DE LAS PULGAS SUITE 100
City:	SAN MATEO
Email:	dmilano@smcgov.org
Phone Number:	6503726292

Global Id:	T0608129088
Contact Type:	Regional Board Caseworker
Contact Name:	Regional Water Board
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400

PIERCE INGER TRUST, ET. AL. (Continued) **S100930676**

City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608129088
Action Type: RESPONSE
Date: 11/02/2005
Action: Electronic Reporting Submittal Due

Global Id: T0608129088
Action Type: Other
Date: 06/24/2004
Action: Leak Stopped

Global Id: T0608129088
Action Type: REMEDIATION
Date: 06/24/2004
Action: Excavation

Global Id: T0608129088
Action Type: Other
Date: 09/30/2004
Action: Leak Reported

Global Id: T0608129088
Action Type: ENFORCEMENT
Date: 10/18/2004
Action: Notice of Responsibility - #20041018

Global Id: T0608129088
Action Type: ENFORCEMENT
Date: 01/23/2006
Action: Staff Letter - #20060123

Global Id: T0608129088
Action Type: ENFORCEMENT
Date: 03/27/2007
Action: Closure/No Further Action Letter - #20070327

Global Id: T0608129088
Action Type: ENFORCEMENT
Date: 07/27/2005
Action: Staff Letter - #20050727

Global Id: T0608129088
Action Type: ENFORCEMENT
Date: 10/14/2004
Action: Staff Letter - #20041014

Global Id: T0608129088
Action Type: ENFORCEMENT
Date: 09/26/2006
Action: Staff Letter - #20060926

Global Id: T0608129088
Action Type: ENFORCEMENT

PIERCE INGER TRUST, ET. AL. (Continued) **S100930676**

Date: 02/13/2007
Action: Staff Letter - #20070213

Global Id: T0608129088
Action Type: ENFORCEMENT
Date: 12/21/2006
Action: Staff Letter - #20061221

Global Id: T0608129088
Action Type: Other
Date: 06/24/2004
Action: Leak Discovery

Global Id: T0608129088
Action Type: RESPONSE
Date: 11/27/2006
Action: Electronic Reporting Submittal Due

Global Id: T0608129088
Action Type: RESPONSE
Date: 02/13/2007
Action: Electronic Reporting Submittal Due

Global Id: T0608129088
Action Type: RESPONSE
Date: 03/12/2007
Action: Other Report / Document

Global Id: T0608129088
Action Type: RESPONSE
Date: 01/12/2005
Action: Preliminary Site Assessment Workplan

Global Id: T0608129088
Action Type: RESPONSE
Date: 11/02/2005
Action: Soil and Water Investigation Report

Global Id: T0608129088
Action Type: RESPONSE
Date: 05/22/2006
Action: Soil and Water Investigation Report

Global Id: T0608129088
Action Type: RESPONSE
Date: 06/01/2006
Action: Electronic Reporting Submittal Due

LUST:
Global Id: T0608129088
Status: Open - Case Begin Date
Status Date: 06/24/2004

Global Id: T0608129088
Status: Open - Site Assessment
Status Date: 09/30/2004

PIERCE INGER TRUST, ET. AL. (Continued) **S100930676**

Global Id: T0608129088
Status: Completed - Case Closed
Status Date: 03/27/2007

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 330208
Facility Status: 9- Case Closed
Global ID: T0608129088
APN Number: 055122090
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

I79 **GENERAL CIRCUITS INC** **SEMS-ARCHIVE** **1000214026**
WNW **3585 HAVEN AVENUE** **CORRACTS** **CAD982462335**
1/8-1/4 **MENLO PARK, CA 94025** **RCRA-SQG**
0.197 mi. **CA HAZNET**
1041 ft. **Site 4 of 13 in cluster I**

Relative:
Higher

Actual:
11 ft.

SEMS Archive:
Site ID: 903257
EPA ID: CAD982462335
Cong District: 11
FIPS Code: 6081
FF: N
NPL: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:
Region: 9
Site ID: 903257
EPA ID: CAD982462335
Site Name: GENERAL CIRCUITS
NPL: N
FF: N
OU: 0
Action Code: VS
Action Name: ARCH SITE
SEQ: 1
Start Date: Not reported
Finish Date: 1996-01-23 00:00:00
Qual: Not reported
Current Action Lead: EPA Perf In-Hse

Region: 9
Site ID: 903257
EPA ID: CAD982462335
Site Name: GENERAL CIRCUITS
NPL: N
FF: N
OU: 0
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Date: 1990-10-18 00:00:00
Finish Date: 1990-10-18 00:00:00
Qual: Not reported

GENERAL CIRCUITS INC (Continued) **1000214026**

Current Action Lead: EPA Perf

Region: 9
Site ID: 903257
EPA ID: CAD982462335
Site Name: GENERAL CIRCUITS
NPL: N
FF: N
OU: 0
Action Code: PA
Action Name: PA
SEQ: 1
Start Date: Not reported
Finish Date: 1991-03-08 00:00:00
Qual: D
Current Action Lead: EPA Perf

CORRACTS:

EPA ID: CAD982462335
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19910308
Action: CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
NAICS Code(s): Not reported
Original schedule date: Not reported
Schedule end date: Not reported

RCRA-SQG:

Date form received by agency: 09/01/1996
Facility name: GENERAL CIRCUITS INC
Facility address: 3585 HAVEN AVENUE
MENLO PARK, CA 94025
EPA ID: CAD982462335
Mailing address: 3601 HAVEN AVENUE
MENLO PARK, CA 94025
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name: GENERAL CIRCUITS INC
Owner/operator address: NOT REQUIRED

GENERAL CIRCUITS INC (Continued) **1000214026**

NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 01/09/1989
Site name: GENERAL CIRCUITS INC
Classification: Large Quantity Generator

Corrective Action Summary:
Event date: 03/08/1991
Event: PA OR CERCLA INSPECTION

Event date: 03/08/1991
Event: CA PRIORITIZATION-LOW CA PRIORITY

Event date: 03/08/1991
Event: NCAPS RANKING/PRIORITY

GENERAL CIRCUITS INC (Continued) **1000214026**

Violation Status: No violations found

HAZNET:

envid:	1000214026
Year:	1993
GEPAID:	CAD982462335
Contact:	Not reported
Telephone:	0000000000
Mailing Name:	Not reported
Mailing Address:	3601 HAVEN AVENUE
Mailing City,St,Zip:	MENLO PARK, CA 940250000
Gen County:	Not reported
TSD EPA ID:	CAT000646117
TSD County:	Not reported
Waste Category:	Other inorganic solid waste
Disposal Method:	Disposal, Land Fill
Tons:	1
Cat Decode:	Not reported
Method Decode:	Not reported
Facility County:	San Mateo

I80 **GENERAL CIRCUITS INC** **CA ENVIROSTOR** **1000214038**
WNW **3585 HAVEN AVENUE** **CA HIST UST** **N/A**
1/8-1/4 **MENLO PARK, CA 94025** **CA San Mateo Co. BI**
0.197 mi. **CA HWP**
1041 ft. **Site 5 of 13 in cluster I**

Relative:
Higher

Actual:
11 ft.

ENVIROSTOR:

Facility ID:	80001497
Status:	Inactive - Needs Evaluation
Status Date:	06/29/2009
Site Code:	Not reported
Site Type:	Corrective Action
Site Type Detailed:	Corrective Action
Acres:	0
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Julie Pettijohn
Division Branch:	Cleanup Berkeley
Assembly:	24
Senate:	13
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	37.48605
Longitude:	-122.1864
APN:	055130240
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	055130240
Alias Type:	APN
Alias Name:	CAD982462335
Alias Type:	EPA Identification Number

GENERAL CIRCUITS INC (Continued) **1000214038**

Alias Name: 80001497
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 03/08/1991
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

HIST UST:
File Number: 0002BECC
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002BECC.pdf
Region: STATE
Facility ID: 00000000648
Facility Type: Other
Other Type: CIRCUIT MFC.
Contact Name: BOB GRAY
Telephone: 4153647717
Owner Name: GENERAL CIRCUITS, INCORPORATED
Owner Address: 3585 HAVEN AVENUE
Owner City,St,Zip: MENLO PARK, CA 94025
Total Tanks: 0001

Tank Num: 001
Container Num: 1
Year Installed: 1982
Tank Capacity: 00000115
Tank Used for: WASTE
Type of Fuel: Not reported
Container Construction Thickness: 3
Leak Detection: Visual

Click here for Geo Tracker PDF:

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0022969
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0025929
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0022969
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0025930

GENERAL CIRCUITS INC (Continued) **1000214038**

Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0027450
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0043624
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0027450
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0043623
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

HWP:
EPA Id: CAD982462335
Cleanup Status: PROTECTIVE FILER
Latitude: 37.48605
Longitude: -122.1864
Facility Type: Historical - Non-Operating
Facility Size: Not reported
Team: Not reported
Supervisor: Not reported
Site Code: Not reported
Assembly District: 22
Senate District: 13
Public Information Officer: Not reported
Public Information Officer: Not reported

Activities:
EPA Id: CAD982462335
Facility Type: Historical - Non-Operating
Unit Names: Unit1
Event Description: Protective Filer Status - PROTECTIVE FILER (APPROVED)
Actual Date: 11/07/1989

I81 **ALS ROOFING SUPPLY** **CA San Mateo Co. BI** **S113755879**
West **3586 HAVEN** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.199 mi.
1050 ft. **Site 6 of 13 in cluster I**

Relative:
Higher

Actual:
13 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0012934
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0003957
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

H82 **B & D AUTOWORKS** **CA San Mateo Co. BI** **S113756845**
WSW **1253 ANNETTE** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.210 mi.
1107 ft. **Site 3 of 5 in cluster H**

Relative:
Higher

Actual:
13 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0022857
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0025667
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

I83 **ELDORADO FORKLIFT CO** **RCRA-SQG** **1010562214**
West **3582 HAVEN AVE** **CAR000188318**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.211 mi.
1112 ft. **Site 7 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

RCRA-SQG:

Date form received by agency:	10/29/2007
Facility name:	ELDORADO FORKLIFT CO
Facility address:	3582 HAVEN AVE REDWOOD CITY, CA 94063
EPA ID:	CAR000188318
Contact:	MARK G PHILIPOPOULOS
Contact address:	3582 HAVEN AVE REDWOOD CITY, CA 94063
Contact country:	US
Contact telephone:	650-361-1666
Contact email:	ELDOFORK@SBCGLOBAL.NET
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	ELDORADO FORKLIFT
Owner/operator address:	Not reported Not reported
Owner/operator country:	Not reported
Owner/operator telephone:	Not reported
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	10/15/2007
Owner/Op end date:	Not reported
Owner/operator name:	LARS PIERCE
Owner/operator address:	3582 HAVEN AVE REDWOOD CITY, CA 94063
Owner/operator country:	US
Owner/operator telephone:	Not reported

ELDORADO FORKLIFT CO (Continued) **1010562214**

Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 05/01/1971
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: D001
. Waste name: IGNITABLE WASTE

Violation Status: No violations found

I84 **EL DORADO FORKLIFT CO** **CA San Mateo Co. BI** **S113758438**
West **3582 HAVEN** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.211 mi.
1112 ft. **Site 8 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0037676
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0054561
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0037676
Prog Element Code: LESS THAN 500 TIRES
Record Id: PR0054559
Description: LESS THAN 500 TIRES
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0037676
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0054560
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: ACTIVE

H85 **T MOBILE WEST CORP SFO3548A** **CA San Mateo Co. BI** **S113758817**
WSW **1251 ANNETTE** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.212 mi.
1120 ft. **Site 4 of 5 in cluster H**

Relative:
Higher

Actual:
13 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0046201
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0062022
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	INACTIVE

H86 **VAZQUEZ GARAGE** **CA San Mateo Co. BI** **S113756192**
WSW **1251 ANNETTE** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.212 mi.
1120 ft. **Site 5 of 5 in cluster H**

Relative:
Higher

Actual:
13 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0016122
Prog Element Code:	STORES MV FUELS OR WASTE ONLY
Record Id:	PR0011393
Description:	STORES MV FUELS OR WASTE ONLY
Facility Status:	INACTIVE

I87 **WOLFS PRECISION WORKS INC** **CA San Mateo Co. BI** **S106982052**
WNW **3549 HAVEN** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.216 mi.
1142 ft. **Site 9 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0013069
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0011512
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0013069
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0004171
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0023750
Prog Element Code:	STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id:	PR0027676
Description:	STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0025787

WOLFS PRECISION WORKS INC (Continued) **S106982052**

Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0035423
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0025787
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0035424
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0023749
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0027674
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0023749
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0027675
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0027522
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0043988
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0027522
Prog Element Code: LESS THAN 500 TIRES
Record Id: PR0048443
Description: LESS THAN 500 TIRES
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0027522
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0043987
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: ACTIVE

I88 **NORENPRODUCTS, INC** **RCRA-SQG** **1000206772**
WNW **3543 HAVEN AVE** **FINDS** **CAD981388663**
1/8-1/4 **MENLO PARK, CA 94025** **ECHO**
0.216 mi.
1142 ft. **Site 10 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: NOREN PRODUCTS, INC
Facility address: 3543 HAVEN AVE
MENLO PARK, CA 94025

NOREN PRODUCTS, INC (Continued) **1000206772**

EPA ID:	CAD981388663
Mailing address:	HAVEN AVE MENLO PARK, CA 94025
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	DON NOREN
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No
Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No

NOREN PRODUCTS, INC (Continued) **1000206772**

Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Violation Status: No violations found

FINDS:

Registry ID: 110002690534

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000206772
Registry ID: 110002690534
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002690534

I89 **CALIFORNIA CABINETS INC** **CA HIST UST** **U001594176**
WNW **3559 HAVEN AVE** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.216 mi.
1142 ft. **Site 11 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

HIST UST:
File Number: 0002BFEA
URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002BFEA.pdf
Region: STATE
Facility ID: 00000012497
Facility Type: Other
Other Type: MILLWORK
Contact Name: RICHARD SHIRLEY
Telephone: 4153691734
Owner Name: LAWRENCE NIERI
Owner Address: 3559 HAVEN AVE.
Owner City,St,Zip: MENLO PARK, CA 94025
Total Tanks: 0001

Tank Num: 001
Container Num: 1
Year Installed: 1978
Tank Capacity: 00001300
Tank Used for: PRODUCT
Type of Fuel: PREMIUM
Container Construction Thickness: Not reported
Leak Detection: None

CALIFORNIA CABINETS INC (Continued) **U001594176**

Click here for Geo Tracker PDF:

J90 **115 CONSTITUTION DR** **CA LUST** **S104493781**
East **115 CONSTITUTION DR** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.218 mi.
1152 ft. **Site 1 of 7 in cluster J**

Relative:
Lower

Actual:
8 ft.

LUST REG 2:

Region:	2
Facility Id:	41-1145
Facility Status:	Case Closed
Case Number:	RWQCB3
How Discovered:	Tank Closure
Leak Cause:	UNK
Leak Source:	UNK
Date Leak Confirmed:	7/15/1995
Oversight Program:	LUST
Prelim. Site Assesment Wokplan Submitted:	Not reported
Preliminary Site Assesment Began:	Not reported
Pollution Characterization Began:	Not reported
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

J91 **OPTIVIA BIOTECHNOLOGY** **CA San Mateo Co. BI** **S103953007**
East **115 CONSTITUTION** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.218 mi.
1152 ft. **Site 2 of 7 in cluster J**

Relative:
Lower

Actual:
8 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0047284
Prog Element Code:	GENERATES <27 GAL/YEAR
Record Id:	PR0081321
Description:	GENERATES <27 GAL/YEAR
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0047284
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0067844
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE

J92 **THERMAL TECHNOLOGY INC** **RCRA-SQG** **1000364810**
ESE **110 CONSTITUTION DR** **FINDS** **CAD030978225**
1/8-1/4 **MENLO PARK, CA 94025** **ECHO**
0.223 mi.
1175 ft. **Site 3 of 7 in cluster J**

Relative:
Lower

Actual:
9 ft.

RCRA-SQG:

Date form received by agency:	09/01/1996
Facility name:	THERMAL TECHNOLOGY INC
Facility address:	110 CONSTITUTION DR MENLO PARK, CA 94025
EPA ID:	CAD030978225
Mailing address:	CONSTITUTION DR MENLO PARK, CA 94025
Contact:	Not reported
Contact address:	Not reported Not reported
Contact country:	US
Contact telephone:	Not reported
Contact email:	Not reported
EPA Region:	09
Classification:	Small Small Quantity Generator
Description:	Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:

Owner/operator name:	RICHARD FEHL
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Owner
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Owner/operator name:	NOT REQUIRED
Owner/operator address:	NOT REQUIRED NOT REQUIRED, ME 99999
Owner/operator country:	Not reported
Owner/operator telephone:	415-555-1212
Owner/operator email:	Not reported
Owner/operator fax:	Not reported
Owner/operator extension:	Not reported
Legal status:	Private
Owner/Operator Type:	Operator
Owner/Op start date:	Not reported
Owner/Op end date:	Not reported

Handler Activities Summary:

U.S. importer of hazardous waste:	No
Mixed waste (haz. and radioactive):	No

THERMAL TECHNOLOGY INC (Continued) **1000364810**

Recycler of hazardous waste:	No
Transporter of hazardous waste:	No
Treater, storer or disposer of HW:	No
Underground injection activity:	No
On-site burner exemption:	No
Furnace exemption:	No
Used oil fuel burner:	No
Used oil processor:	No
User oil refiner:	No
Used oil fuel marketer to burner:	No
Used oil Specification marketer:	No
Used oil transfer facility:	No
Used oil transporter:	No

Violation Status: No violations found

FINDS:

Registry ID: 110009529849

Environmental Interest/Information System

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000364810
Registry ID:	110009529849
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110009529849

J93 **SPACESONICS INC** **CA San Mateo Co. BI** **S103952597**
ESE **110 CONSTITUTION** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.223 mi.
1175 ft. **Site 4 of 7 in cluster J**

Relative:
Lower

Actual:
9 ft.

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0015919
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0011520
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0015919
Prog Element Code:	STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id:	PR0004184
Description:	STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status:	INACTIVE

G94 **STUDIO RED** **CA SLIC** **S101007121**
ESE **115 INDEPENDENCE** **CA San Mateo Co. BI** **N/A**
1/8-1/4 **MENLO PARK, CA 94025** **CA EMI**
0.223 mi.
1176 ft. **Site 2 of 2 in cluster G**

Relative:
Higher

Actual:
12 ft.

SLIC:

Region:	STATE
Facility Status:	**Open - Inactive**
Status Date:	03/08/2002
Global Id:	SLT2O100106
Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number:	Not reported
Latitude:	37.484154
Longitude:	-122.17829605159
Case Type:	Cleanup Program Site
Case Worker:	UUU
Local Agency:	Not reported
RB Case Number:	41S0044
File Location:	Not reported
Potential Media Affected:	Not reported
Potential Contaminants of Concern:	Dichloroethene (DCE), Trichloroethylene (TCE), Vinyl chloride, Arsenic, Benzene, Diesel, Gasoline, Total Petroleum Hydrocarbons (TPH)
Site History:	The site is located in Bohannon Industrial Park Unit 3. The parcel area is 39,650 sf. Prior to construction of the building around 1966, the site was used for agriculture. The building was used for component manufacturing by Electro Nuclear Laboratories from 1974 to approx. 1975. The bldg. had been occupied by semiconductor manufacturing companies, including Raychem Corporation from 1983 to 1994. The 1989 Phase I &II Site Investigation results showed TCE up to 610 ug/l and above MCL concentrations of Cd, Cr, and Ag in GW sample from MW-2. No source of contamination confirmed on-site. Raychem also formerly occupied the adjoining property at 119 Independence GW sample from the MMW-1 in 1997contained up to 420 ug/l TCE, 35 ug/l DCE, and 35,000 ug/l chlorobenzene.

Click here to access the California GeoTracker records for this facility:

SLIC REG 2:

Region:	2
Facility ID:	SLT2O100106
Facility Status:	Leak being confirmed
Date Closed:	Not reported
Local Case #:	Not reported
How Discovered:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Date Confirmed:	Not reported
Date Prelim Site Assmnt Workplan Submitted:	Not reported
Date Preliminary Site Assessment Began:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0052107

STUDIO RED (Continued) **S101007121**

Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0072276
Description: GENERATES <27 GAL/YEAR
Facility Status: ACTIVE

EMI:

Year:	1990
County Code:	41
Air Basin:	SF
Facility ID:	662
Air District Name:	BA
SIC Code:	3433
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

I95 **GRIFFIN PAINTING, INC.** **CA San Mateo Co. BI** **S113757965**
West **3580 HAVEN** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.231 mi.
1222 ft. **Site 12 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0028325
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0046906
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0028325
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0046905
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: ACTIVE

I96 **ACTION SIGN SYSTEMS, INC.** **CA San Mateo Co. BI** **S119781760**
West **3580 HAVEN** **N/A**
1/8-1/4 **REDWOOD CITY, CA 94063**
0.231 mi.
1222 ft. **Site 13 of 13 in cluster I**

Relative:
Higher

Actual:
12 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0060529
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0083042
Description: STORES MV FUELS OR WASTE ONLY

ACTION SIGN SYSTEMS, INC. (Continued) **S119781760**

Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0060529
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0083043
Description: GENERATES <27 GAL/YEAR
Facility Status: ACTIVE

97
SSW
1/8-1/4
0.232 mi.
1226 ft.

GAS RECOVERY SYSTEMS
1680 MARSH
MENLO PARK, CA 94025

CA San Mateo Co. BI **S102268323**
N/A

Relative:
Higher

Actual:
15 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0015155
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0027000
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0015155
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0004176
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

98
West
1/8-1/4
0.236 mi.
1246 ft.

GENERAL CIRCUITS INC.
3549 J HAVEN AVENUE
MENLO PARK, CA 94025

SEMS-ARCHIVE **1000214027**
CORRACTS **CAD074665704**
RCRA-TSDF
RCRA-SQG
CA ENVIROSTOR
FINDS
ECHO
CA HWP

Relative:
Higher

Actual:
12 ft.

SEMS Archive:
Site ID: 903283
EPA ID: CAD074665704
Cong District: 11
FIPS Code: 6081
FF: N
NPL: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:
Region: 9
Site ID: 903283
EPA ID: CAD074665704
Site Name: GENERAL CIRCUITS INC
NPL: N
FF: N
OU: 0
Action Code: VS

GENERAL CIRCUITS INC. (Continued) **1000214027**

Action Name: ARCH SITE
SEQ: 1
Start Date: Not reported
Finish Date: 1996-01-23 00:00:00
Qual: Not reported
Current Action Lead: EPA Perf In-Hse

Region: 9
Site ID: 903283
EPA ID: CAD074665704
Site Name: GENERAL CIRCUITS INC
NPL: N
FF: N
OU: 0
Action Code: DS
Action Name: DISCVRY
SEQ: 1
Start Date: 1990-08-24 00:00:00
Finish Date: 1990-08-24 00:00:00
Qual: Not reported
Current Action Lead: EPA Perf

Region: 9
Site ID: 903283
EPA ID: CAD074665704
Site Name: GENERAL CIRCUITS INC
NPL: N
FF: N
OU: 0
Action Code: PA
Action Name: PA
SEQ: 1
Start Date: Not reported
Finish Date: 1991-03-28 00:00:00
Qual: D
Current Action Lead: EPA Perf

CORRACTS:

EPA ID: CAD074665704
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 19910328
Action: CA075LO - CA Prioritization, Facility or area was assigned a low corrective action priority
NAICS Code(s): 334419
Other Electronic Component Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

RCRA-TSDF:
Date form received by agency: 09/01/1996
Facility name: GENERAL CIRCUITS INC.
Facility address: 3549 J HAVEN AVENUE
MENLO PARK, CA 94025

GENERAL CIRCUITS INC. (Continued) **1000214027**

EPA ID: CAD074665704
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Land type: Facility is not located on Indian land. Additional information is not known.
Classification: TSDF
Description: Handler is engaged in the treatment, storage or disposal of hazardous waste

Owner/Operator Summary:
Owner/operator name: GENERAL CIRCUITS, INC.
Owner/operator address: 3549 J HAVEN AVENUE
CITY NOT REPORTED, CA 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-364-7717
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: HAVEN ASSOCIATES
Owner/operator address: 100 HARBOR BLVD
BELMONT, CA 94002
Owner/operator country: Not reported
Owner/operator telephone: 415-592-0933
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

GENERAL CIRCUITS INC. (Continued) **1000214027**

Historical Generators:
Date form received by agency: 11/17/1980
Site name: GENERAL CIRCUITS INC.
Classification: Large Quantity Generator

Corrective Action Summary:
Event date: 01/01/1990
Event: LEAD AGENCY DETERMINATION

Event date: 03/28/1991
Event: NCAPS RANKING/PRIORITY

Event date: 03/28/1991
Event: CA PRIORITIZATION-LOW CA PRIORITY

Event date: 03/28/1991
Event: PA OR CERCLA INSPECTION

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1989
Date achieved compliance: 07/22/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 06/08/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1989
Date achieved compliance: 07/22/1992
Violation lead agency: State
Enforcement action: FINAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 07/22/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1989
Date achieved compliance: 07/22/1992
Violation lead agency: State
Enforcement action: REFERRAL TO ATTORNEY GENERAL
Enforcement action date: 06/08/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

GENERAL CIRCUITS INC. (Continued) **1000214027**

Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/01/1989
Date achieved compliance: 07/22/1992
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 10/02/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/05/1987
Date achieved compliance: 07/22/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/18/1987
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 05/05/1987
Date achieved compliance: 07/22/1992
Violation lead agency: State
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 04/12/1984
Date achieved compliance: 07/22/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/12/1984
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State

GENERAL CIRCUITS INC. (Continued) **1000214027**

Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 05/16/1989
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/01/1989
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/22/1992
Evaluation lead agency: State

Evaluation date: 09/02/1987
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 05/05/1987
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/22/1992
Evaluation lead agency: State

Evaluation date: 04/12/1984
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 07/22/1992
Evaluation lead agency: State

ENVIROSTOR:
Facility ID: 80001670
Status: Refer: EPA
Status Date: 01/01/2008
Site Code: Not reported
Site Type: Corrective Action
Site Type Detailed: Corrective Action
Acres: 0
NPL: NO
Regulatory Agencies: US EPA
Lead Agency: S EP
Program Manager: Not reported
Supervisor: * Unknown
Division Branch: Cleanup Berkeley
Assembly: 24
Senate: 13
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.48596
Longitude: -122.1876

GENERAL CIRCUITS INC. (Continued) **1000214027**

APN: 055130310
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 055130310
Alias Type: APN
Alias Name: CAD074665704
Alias Type: EPA Identification Number
Alias Name: 110000609805
Alias Type: EPA (FRS #)
Alias Name: 80001670
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 03/28/1991
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

FINDS:

Registry ID: 110000609805

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000214027
Registry ID: 110000609805
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110000609805

HWP:
EPA Id: CAD074665704
Cleanup Status: PROTECTIVE FILER
Latitude: 37.48596

GENERAL CIRCUITS INC. (Continued) **1000214027**

Longitude: -122.1876
Facility Type: Historical - Non-Operating
Facility Size: Not reported
Team: Not reported
Supervisor: Not reported
Site Code: Not reported
Assembly District: 22
Senate District: 13
Public Information Officer: Not reported
Public Information Officer: Not reported

Activities:
EPA Id: CAD074665704
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKTRT1
Event Description: Protective Filer Status - PROTECTIVE FILER (APPROVED)
Actual Date: 11/07/1989

Alias:
EPA Id: CAD074665704
Facility Type: Historical - Non-Operating
Alias Type: FRS
Alias: 110000609805

K99 **CRITCHFIELD MECHANICAL INC** **CA San Mateo Co. BI** **S102268215**
South **4085 CAMPBELL** **CA NPDES** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.249 mi.
1313 ft. **Site 1 of 2 in cluster K**

Relative:
Higher

Actual:
16 ft.

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0013681
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0045891
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0013681
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0024900
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

NPDES:
Npdes Number: Not reported
Facility Status: Not reported
Agency Id: Not reported
Region: 2
Regulatory Measure Id: 429908
Order No: Not reported
Regulatory Measure Type: Construction
Place Id: Not reported
WDID: 2 41C364342
Program Type: Not reported

CRITCHFIELD MECHANICAL INC (Continued) **S102268215**

Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	09/05/2013
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	08/07/2012
PROCESSED DATE:	08/13/2012
STATUS CODE NAME:	Terminated
STATUS DATE:	10/21/2013
PLACE SIZE:	2.86
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Robert Dean
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	650-364-4933
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	rdean@harmonycm.com
OPERATOR NAME:	Campbell Menlo LLC
OPERATOR ADDRESS:	2055 Woodside Road
OPERATOR CITY:	Redwood City
OPERATOR STATE:	California
OPERATOR ZIP:	94061
OPERATOR CONTACT NAME:	Robert Dean
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	650-364-4933
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	rdean@harmonycm.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Campbell Menlo Development
DEVELOPER ADDRESS:	2055 Woodside Road
DEVELOPER CITY:	Redwood City
DEVELOPER STATE:	California
DEVELOPER ZIP:	94061
DEVELOPER CONTACT NAME:	Robert Dean
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	N
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Y
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported

CRITCHFIELD MECHANICAL INC (Continued) **S102268215**

DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Rob Dean
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	07-AUG-12
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

K100 **FITNESS 101 AND FORMER CRITCHFIELD MECHANICAL FACI** **CA SLIC** **S111417977**
South **4085 CAMPBELL AVENUE & 40 SCOTT DRIVE** **N/A**
1/8-1/4 **MENLO PARK, CA 94025**
0.249 mi.
1313 ft. **Site 2 of 2 in cluster K**

Relative:
Higher

Actual:
16 ft.

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	07/10/2015
Global Id:	T10000003488
Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number:	Not reported
Latitude:	37.481772
Longitude:	-122.181401
Case Type:	Cleanup Program Site
Case Worker:	UUU
Local Agency:	Not reported
RB Case Number:	41S0192
File Location:	All Files are on GeoTracker or in the Local Agency Database
Potential Media Affected:	Other Groundwater (uses other than drinking water), Soil
Potential Contaminants of Concern:	Tetrachloroethylene (PCE)
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

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101 **SEIBERT, J., MACHINE CORP** **CA ENVIROSTOR** **S101482217**
ESE **119 INDEPENDENCE DR.** **CA San Mateo Co. BI** **N/A**
1/4-1/2 **MENLO PARK, CA 94025**
0.257 mi.
1357 ft.

Relative:
Higher

Actual:
11 ft.

ENVIROSTOR:

Facility ID:	41350016
Status:	Refer: Other Agency
Status Date:	03/31/1995
Site Code:	Not reported
Site Type:	Historical
Site Type Detailed:	* Historical
Acres:	Not reported
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Referred - Not Assigned
Division Branch:	Cleanup Berkeley
Assembly:	24

SEIBERT, J., MACHINE CORP (Continued) **S101482217**

Senate: 13
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.48393
Longitude: -122.1777
APN: 055236180
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 055236180
Alias Type: APN
Alias Name: 41350016
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 06/01/1988
Comments: SITE SCREENING DONE NEED MORE INFO

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 08/01/1980
Comments: FACILITY IDENTIFIED INACTIVE SITE I.D.'D IN INITIAL RESEARCH

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0024825
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0030764
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0024825
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0030763
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

J102 **JA MOREING COMPANY** **CA SLIC** **S106235274**
ESE **120 CONSTITUTION DR** **N/A**
1/4-1/2 **MENLO PARK, CA 94025**
0.260 mi.
1374 ft. **Site 5 of 7 in cluster J**

Relative:
Lower

Actual:
9 ft.

SLIC REG 2:

Region:	2
Facility ID:	SLT2O098104
Facility Status:	Leak being confirmed
Date Closed:	Not reported
Local Case #:	Not reported
How Discovered:	Not reported
Leak Cause:	Not reported
Leak Source:	Not reported
Date Confirmed:	Not reported
Date Prelim Site Assmnt Workplan Submitted:	Not reported
Date Preliminary Site Assessment Began:	Not reported
Date Pollution Characterization Began:	Not reported
Date Remediation Plan Submitted:	Not reported
Date Remedial Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

J103 **MOREING COMPANY** **CA LUST** **S106610919**
ESE **120 CONSTITUTION DR** **N/A**
1/4-1/2 **MENLO PARK, CA 94025**
0.260 mi.
1374 ft. **Site 6 of 7 in cluster J**

Relative:
Lower

Actual:
9 ft.

LUST REG 2:

Region:	2
Facility Id:	41-0729
Facility Status:	Case Closed
Case Number:	440042
How Discovered:	Tank Closure
Leak Cause:	UNK
Leak Source:	Tank
Date Leak Confirmed:	2/1/1996
Oversight Program:	LUST
Prelim. Site Assesment Wokplan Submitted:	Not reported
Preliminary Site Assesment Began:	Not reported
Pollution Characterization Began:	Not reported
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

J104 **MOREING COMPANY** **CA LUST** **S110060721**
ESE **120 CONSTITUTION** **CA SLIC** **N/A**
1/4-1/2 **MENLO PARK, CA 94125** **CA HIST CORTESE**
0.260 mi.
1374 ft. **Site 7 of 7 in cluster J**

Relative:
Lower

Actual:
9 ft.

LUST:

Lead Agency:	SAN FRANCISCO BAY RWQCB (REGION 2)
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100690
Global Id:	T0608100690
Latitude:	37.484447

MOREING COMPANY (Continued) **S110060721**

Longitude: -122.177365
Status: Completed - Case Closed
Status Date: 04/08/1998
Case Worker: Not reported
RB Case Number: 41-0729
Local Agency: Not reported
File Location: Not reported
Local Case Number: 440042
Potential Media Affect: Under Investigation
Potential Contaminants of Concern: Gasoline
Site History: Not reported

LUST:
Global Id: T0608100690
Action Type: Other
Date: 04/01/1993
Action: Leak Stopped

Global Id: T0608100690
Action Type: Other
Date: 04/01/1993
Action: Leak Reported

Global Id: T0608100690
Action Type: Other
Date: 04/01/1993
Action: Leak Discovery

Global Id: T0608100690
Action Type: ENFORCEMENT
Date: 04/01/1993
Action: * Historical Enforcement

LUST:
Global Id: T0608100690
Status: Open - Case Begin Date
Status Date: 04/01/1993

Global Id: T0608100690
Status: Open - Site Assessment
Status Date: 02/01/1996

Global Id: T0608100690
Status: Completed - Case Closed
Status Date: 04/08/1998

SLIC:
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 01/01/1970
Global Id: SLT2O098104
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number: Not reported
Latitude: 37.485392
Longitude: -122.17799
Case Type: Cleanup Program Site

MOREING COMPANY (Continued) **S110060721**

Case Worker: UUU
Local Agency: Not reported
RB Case Number: SLT2O098104
File Location: Not reported
Potential Media Affected: Not reported
Potential Contaminants of Concern: * Volatile Organic Compounds (VOC)
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-0729

L105 **MARSH ROAD CHEVRON** **CA LUST** **S101593673**
SSW **1110 MARSH** **CA FID UST** **N/A**
1/4-1/2 **MENLO PARK, CA 94025** **CA San Mateo Co. BI**
0.313 mi.
1654 ft. **Site 1 of 2 in cluster L**

Relative:
Higher

Actual:
17 ft.

LUST:
Lead Agency: SAN MATEO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100334
Global Id: T0608100334
Latitude: 37.48
Longitude: -122.1831
Status: Completed - Case Closed
Status Date: 02/24/2010
Case Worker: BG
RB Case Number: 41-0351
Local Agency: SAN MATEO COUNTY LOP
File Location: Local Agency
Local Case Number: 440018
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T0608100334
Contact Type: Local Agency Caseworker
Contact Name: BRIAN GWINN
Organization Name: SAN MATEO COUNTY LOP
Address: 2000 Alameda de las Pulgas, Suite 100
City: SAN MATEO
Email: bgwinn@smcgov.org
Phone Number: 6502724590

Global Id: T0608100334
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

MARSH ROAD CHEVRON (Continued) **S101593673**

LUST:

Global Id:	T0608100334
Action Type:	RESPONSE
Date:	03/24/2009
Action:	Monitoring Report - Other
Global Id:	T0608100334
Action Type:	ENFORCEMENT
Date:	02/18/2010
Action:	Closure/No Further Action Letter - #20100218
Global Id:	T0608100334
Action Type:	ENFORCEMENT
Date:	07/14/2009
Action:	LOP Case Closure Summary to RB - #20090714
Global Id:	T0608100334
Action Type:	ENFORCEMENT
Date:	10/21/2008
Action:	Staff Letter - #20081021
Global Id:	T0608100334
Action Type:	RESPONSE
Date:	08/14/2010
Action:	Well Destruction Workplan
Global Id:	T0608100334
Action Type:	ENFORCEMENT
Date:	07/02/2009
Action:	Staff Letter - #20090702
Global Id:	T0608100334
Action Type:	ENFORCEMENT
Date:	01/31/1989
Action:	Notice of Responsibility - #1
Global Id:	T0608100334
Action Type:	Other
Date:	03/03/1986
Action:	Leak Reported
Global Id:	T0608100334
Action Type:	RESPONSE
Date:	09/23/2010
Action:	Well Destruction Report
Global Id:	T0608100334
Action Type:	ENFORCEMENT
Date:	08/14/2009
Action:	Staff Letter - #20090814
Global Id:	T0608100334
Action Type:	ENFORCEMENT
Date:	09/23/2009
Action:	Staff Letter - #20090923
Global Id:	T0608100334

MARSH ROAD CHEVRON (Continued) **S101593673**

Action Type: Other
Date: 03/03/1986
Action: Leak Discovery

Global Id: T0608100334
Action Type: RESPONSE
Date: 12/24/2008
Action: Other Workplan

LUST:
Global Id: T0608100334
Status: Open - Case Begin Date
Status Date: 03/03/1986

Global Id: T0608100334
Status: Open - Verification Monitoring
Status Date: 03/03/1986

Global Id: T0608100334
Status: Completed - Case Closed
Status Date: 02/24/2010

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Post remedial action monitoring
Case Number: 440018
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: 1/1/1965

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 440018
Facility Status: 9- Case Closed
Global ID: T0608100334
APN Number: 055251320
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

CA FID UST:
Facility ID: 41000111
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported

MARSH ROAD CHEVRON (Continued) **S101593673**

Facility Phone: 4150000000
Mail To: Not reported
Mailing Address: 2868 PROSPECT DR
Mailing Address 2: Not reported
Mailing City,St,Zip: MENLO PARK 94025
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0017572
Prog Element Code: LESS THAN 500 TIRES
Record Id: PR0045414
Description: LESS THAN 500 TIRES
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017572
Prog Element Code: RECYCLER
Record Id: PR0049356
Description: RECYCLER
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0024096
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0028432
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0024096
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0028433
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0038574
Prog Element Code: BUSINESS PLAN - GENERAL
Record Id: PR0065305
Description: BUSINESS PLAN - GENERAL
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0038574
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0080081
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO

MARSH ROAD CHEVRON (Continued) **S101593673**

Facility ID: FA0017572
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0024761
Description: GENERATES <27 GAL/YEAR
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0017572
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0004112
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0017572
Prog Element Code: UNDERGROUND TANK - GENERAL
Record Id: PR0022528
Description: UNDERGROUND TANK - GENERAL
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0038574
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0055029
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0038574
Prog Element Code: LESS THAN 500 TIRES
Record Id: PR0080080
Description: LESS THAN 500 TIRES
Facility Status: ACTIVE

L106 **BP OIL COMPANY SITE 11207** **CA SWEEPS UST** **S103892634**
SSW **1110 MARSH RD** **CA HIST CORTESE** **N/A**
1/4-1/2 **MENLO PARK, CA 94025**
0.313 mi.
1654 ft. **Site 2 of 2 in cluster L**

Relative:
Higher

Actual:
17 ft.

SWEEPS UST:
Status: Active
Comp Number: 440025
Number: 1
Board Of Equalization: Not reported
Referral Date: 05-13-94
Action Date: 05-13-94
Created Date: 10-13-88
Owner Tank Id: UNK
SWRCB Tank Id: 41-000-440025-000001
Tank Status: A
Capacity: 10000
Active Date: 04-05-94
Tank Use: M.V. FUEL
STG: P
Content: PLUS UNLEADED
Number Of Tanks: 4

BP OIL COMPANY SITE 11207 (Continued) **S103892634**

Status: Active
Comp Number: 440025
Number: 1
Board Of Equalization: Not reported
Referral Date: 05-13-94
Action Date: 05-13-94
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 41-000-440025-000002
Tank Status: A
Capacity: 12000
Active Date: 04-05-94
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 440025
Number: 1
Board Of Equalization: Not reported
Referral Date: 05-13-94
Action Date: 05-13-94
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 41-000-440025-000003
Tank Status: A
Capacity: 10000
Active Date: 04-05-94
Tank Use: M.V. FUEL
STG: P
Content: LEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 440025
Number: 1
Board Of Equalization: Not reported
Referral Date: 05-13-94
Action Date: 05-13-94
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 41-000-440025-000004
Tank Status: A
Capacity: 1000
Active Date: 04-05-94
Tank Use: OIL
STG: W
Content: WASTE OIL
Number Of Tanks: Not reported

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-0351

107
West
1/4-1/2
0.323 mi.
1706 ft.

MIDLAND PACIFIC CORP
3536 HAVEN
MENLO PARK, CA 94025

CA LUST **S101308622**
CA HIST CORTESE **N/A**

Relative:
Higher

Actual:
12 ft.

LUST:

Lead Agency:	SAN MATEO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100330
Global Id:	T0608100330
Latitude:	37.486
Longitude:	-122.1865
Status:	Completed - Case Closed
Status Date:	10/24/1995
Case Worker:	Not reported
RB Case Number:	41-0345
Local Agency:	Not reported
File Location:	Local Agency
Local Case Number:	440031
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0608100330
Contact Type:	Regional Board Caseworker
Contact Name:	Regional Water Board
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400
City:	OAKLAND
Email:	Not reported
Phone Number:	Not reported

LUST:

Global Id:	T0608100330
Action Type:	ENFORCEMENT
Date:	10/10/1990
Action:	Notice of Responsibility - #1
Global Id:	T0608100330
Action Type:	Other
Date:	08/08/1990
Action:	Leak Reported
Global Id:	T0608100330
Action Type:	Other
Date:	05/21/1992
Action:	Leak Discovery

LUST:

Global Id:	T0608100330
Status:	Open - Case Begin Date
Status Date:	08/08/1990
Global Id:	T0608100330
Status:	Completed - Case Closed
Status Date:	10/24/1995

MIDLAND PACIFIC CORP (Continued) **S101308622**

LUST REG 2:
- Region: 2
- Facility Id: Not reported
- Facility Status: Case Closed
- Case Number: 440031
- How Discovered: OM
- Leak Cause: Unknown
- Leak Source: Unknown
- Date Leak Confirmed: Not reported
- Oversight Program: LUST
- Prelim. Site Assesment Wokplan Submitted: Not reported
- Preliminary Site Assesment Began: Not reported
- Pollution Characterization Began: Not reported
- Pollution Remediation Plan Submitted: Not reported
- Date Remediation Action Underway: Not reported
- Date Post Remedial Action Monitoring Began: Not reported

SAN MATEO CO. LUST:
- Region: SAN MATEO
- Facility ID: 440031
- Facility Status: 9- Case Closed
- Global ID: T0608100330
- APN Number: 055122340
- Case Type: SAN MATEO CO. LUST
- EDR Link ID: SAN MATEO CO. LUST

HIST CORTESE:
- Region: CORTESE
- Facility County Code: 41
- Reg By: LTNKA
- Reg Id: 41-0345

M108 **HORIZON** **CA LUST** **S104972876**
SSE **4060 CAMPBELL** **CA SWEEPS UST** **N/A**
1/4-1/2 **MENLO PARK, CA 94025** **CA San Mateo Co. BI**
0.338 mi. **CA HIST CORTESE**
1785 ft. **Site 1 of 2 in cluster M**

Relative:
Higher

Actual:
17 ft.

LUST:
- Lead Agency: SAN MATEO COUNTY LOP
- Case Type: LUST Cleanup Site
- Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100888
- Global Id: T0608100888
- Latitude: 37.4804562399769
- Longitude: -122.180108428001
- Status: Completed - Case Closed
- Status Date: 08/12/1999
- Case Worker: Not reported
- RB Case Number: 41-0969
- Local Agency: Not reported
- File Location: Local Agency
- Local Case Number: 440047
- Potential Media Affect: Other Groundwater (uses other than drinking water)
- Potential Contaminants of Concern: Gasoline
- Site History: Not reported

HORIZON (Continued) **S104972876**

LUST:
Global Id: T0608100888
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608100888
Action Type: ENFORCEMENT
Date: 03/12/1996
Action: Notice of Responsibility - #1

Global Id: T0608100888
Action Type: Other
Date: 02/16/1996
Action: Leak Reported

LUST:
Global Id: T0608100888
Status: Open - Case Begin Date
Status Date: 02/16/1996

Global Id: T0608100888
Status: Completed - Case Closed
Status Date: 08/12/1999

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 440047
Facility Status: 9- Case Closed
Global ID: T0608100888
APN Number: 055253200
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

SWEEPS UST:
Status: Active
Comp Number: 440007
Number: 9
Board Of Equalization: 44-025352
Referral Date: 04-04-94
Action Date: 04-04-94
Created Date: 10-13-88
Owner Tank Id: 1
SWRCB Tank Id: 41-000-440007-000001
Tank Status: A
Capacity: 6000
Active Date: 04-04-94
Tank Use: M.V. FUEL
STG: P

HORIZON (Continued) **S104972876**

Content: REG UNLEADED
Number Of Tanks: 2

Status: Active
Comp Number: 440007
Number: 9
Board Of Equalization: 44-025352
Referral Date: 04-04-94
Action Date: 04-04-94
Created Date: 10-13-88
Owner Tank Id: 2
SWRCB Tank Id: 41-000-440007-000002
Tank Status: A
Capacity: 4000
Active Date: 04-04-94
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: Not reported

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0017561
Prog Element Code: UNDERGROUND TANK - GENERAL
Record Id: PR0022521
Description: UNDERGROUND TANK - GENERAL
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017561
Prog Element Code: STORES HAZ MAT <6999 GAL, 55999 LB, 2799FT^3
Record Id: PR0023474
Description: STORES HAZ MAT <6999 GAL, 55999 LB, 2799CF
Facility Status: ACTIVE

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-0969

M109 **AUTOMATIC RAIN CO.** **CA LUST** **S101594063**
SSE **4060 CAMPBELL** **CA FID UST** **N/A**
1/4-1/2 **MENLO PARK, CA 94025**
0.338 mi.
1785 ft. **Site 2 of 2 in cluster M**

Relative:
Higher

Actual:
17 ft.

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Case Closed
Case Number: 440047
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported
Oversight Program: LUST

AUTOMATIC RAIN CO. (Continued) **S101594063**

Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

CA FID UST:
Facility ID: 41004900
Regulated By: UTNKA
Regulated ID: Not reported
Cortese Code: Not reported
SIC Code: Not reported
Facility Phone: Not reported
Mail To: Not reported
Mailing Address: 4060 CAMPBELL AVE
Mailing Address 2: Not reported
Mailing City,St,Zip: MENLO PARK 94025
Contact: Not reported
Contact Phone: Not reported
DUNs Number: Not reported
NPDES Number: Not reported
EPA ID: Not reported
Comments: Not reported
Status: Active

N110 **WVP III** **CA SLIC** **S103171347**
South **4040 CAMPBELL** **CA San Mateo Co. BI** **N/A**
1/4-1/2 **MENLO PARK, CA 94025** **CA HIST CORTESE**
0.368 mi.
1943 ft. **Site 1 of 2 in cluster N**

Relative:
Higher

Actual:
18 ft.

SLIC:
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 10/16/2014
Global Id: T0608126742
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number: Not reported
Latitude: 37.480489805
Longitude: -122.18065518
Case Type: Cleanup Program Site
Case Worker: UUU
Local Agency: Not reported
RB Case Number: 41S0186
File Location: Not reported
Potential Media Affected: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Trichloroethylene (TCE)
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0015156
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0034307

WVP III (Continued) **S103171347**

Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0015156
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0034306
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0016379
Prog Element Code: COND EXEMPT - SQ TREATMENT
Record Id: PR0030099
Description: COND EXEMPT - SQ TREATMENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0016379
Prog Element Code: GEN <1 TONS HAZ WASTE/YR
Record Id: PR0011525
Description: GEN <1 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0016379
Prog Element Code: STORES RADIOACTIVE MATERIALS
Record Id: PR0004187
Description: STORES RADIOACTIVE MATERIALS
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0016380
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0011524
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0016380
Prog Element Code: STORES RADIOACTIVE MATERIALS
Record Id: PR0004186
Description: STORES RADIOACTIVE MATERIALS
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0022635
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0025074
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0022635
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0025978
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF

WVP III (Continued) **S103171347**

Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0026835
Prog Element Code: GEN <1 TONS HAZ WASTE/YR
Record Id: PR0039796
Description: GEN <1 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0026835
Prog Element Code: STORES RADIOACTIVE MATERIALS
Record Id: PR0039795
Description: STORES RADIOACTIVE MATERIALS
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0046946
Prog Element Code: GEN <1 TONS HAZ WASTE/YR
Record Id: PR0063956
Description: GEN <1 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0046946
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0063955
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-1014

N111 **WEST VALLEY PROP (WVP III)** **CA BROWNFIELDS** **S113171243**
South **4040 CAMPBELL AVENUE** **CA HAZNET** **N/A**
1/4-1/2 **MENLO PARK, CA 94025**
0.368 mi.
1943 ft. **Site 2 of 2 in cluster N**

Relative:
Higher

Actual:
18 ft.

BROWNFIELDS:
Global ID: T0608126742
Latitude: 37.480489805
Longitude: -122.18065518
Project Type: Cleanup Program Site
Status: Completed - Case Closed
Status Date: 10/16/2014
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Last Correspondence Date: 02/24/2015
Release Type: Not reported
Contaminant(s) of Concern: Trichloroethylene (TCE)
Media of Concern: Other Groundwater (uses other than drinking water)
Past Use(s) that Caused Contamination: Not reported
Human Health Exposure Controlled: INSUFFICIENT DATA
Human Health Exposure Controlled Date: 05/02/1997

WEST VALLEY PROP (WVP III) (Continued) **S113171243**

Groundwater Migration Controlled:	UNDETERMINED
Groundwater Migration Controlled Date:	05/02/1997
Primary Caseworker Name:	Regional Water Board
Primary Caseworker Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Primary Caseworker Phone Number:	510-622-3277
Primary Caseworker Address:	1515 CLAY ST SUITE 1400
Primary Caseworker Address:	OAKLAND
Primary Caseworker Address:	CA
Primary Caseworker Email:	Not reported

HAZNET:

envid:	S113171243
Year:	2016
GEPAID:	CAL000417804
Contact:	STACEY VARGAS
Telephone:	4089542129
Mailing Name:	Not reported
Mailing Address:	4040 CAMPBELL AVE
Mailing City,St,Zip:	MENLO PARK, CA 94025
Gen County:	San Mateo
TSD EPA ID:	CAD044429835
TSD County:	Los Angeles
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0125
Cat Decode:	Alkaline solution without metals pH >= 12.5
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Mateo

envid:	S113171243
Year:	2016
GEPAID:	CAL000417804
Contact:	STACEY VARGAS
Telephone:	4089542129
Mailing Name:	Not reported
Mailing Address:	4040 CAMPBELL AVE
Mailing City,St,Zip:	MENLO PARK, CA 94025
Gen County:	San Mateo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Alkaline solution without metals pH >= 12.5
Disposal Method:	H070
Tons:	0.01251
Cat Decode:	Alkaline solution without metals pH >= 12.5
Method Decode:	Not reported
Facility County:	San Mateo

envid:	S113171243
Year:	2016
GEPAID:	CAL000417804
Contact:	STACEY VARGAS
Telephone:	4089542129
Mailing Name:	Not reported
Mailing Address:	4040 CAMPBELL AVE
Mailing City,St,Zip:	MENLO PARK, CA 94025

WEST VALLEY PROP (WVP III) (Continued) **S113171243**

Gen County:	San Mateo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Unspecified solvent mixture
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.234
Cat Decode:	Unspecified solvent mixture
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Mateo
envid:	S113171243
Year:	2016
GEPAID:	CAL000417804
Contact:	STACEY VARGAS
Telephone:	4089542129
Mailing Name:	Not reported
Mailing Address:	4040 CAMPBELL AVE
Mailing City,St,Zip:	MENLO PARK, CA 94025
Gen County:	San Mateo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Other organic solids
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.0035
Cat Decode:	Other organic solids
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Mateo
envid:	S113171243
Year:	2016
GEPAID:	CAL000408790
Contact:	JULIE WILHELMY
Telephone:	8312360763
Mailing Name:	Not reported
Mailing Address:	4040 CAMPBELL AVE
Mailing City,St,Zip:	MENLO PARK, CA 94025
Gen County:	San Mateo
TSD EPA ID:	CAD059494310
TSD County:	Santa Clara
Waste Category:	Unspecified oil-containing waste
Disposal Method:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Tons:	0.02085
Cat Decode:	Unspecified oil-containing waste
Method Decode:	Storage, Bulking, And/Or Transfer Off Site--No Treatment/Reovery (H010-H129) Or (H131-H135)
Facility County:	San Mateo

Click this hyperlink while viewing on your computer to access
2 additional CA_HAZNET: record(s) in the EDR Site Report.

O112 **KNAPPKINS** **CA LUST** **S101303111**
SSE **4055 BOHANNON** **CA San Mateo Co. BI** **N/A**
1/4-1/2 **MENLO PARK, CA 94025**
0.371 mi.
1961 ft. **Site 1 of 2 in cluster O**

Relative:
Higher

Actual:
17 ft.

LUST REG 2:

Region:	2
Facility Id:	Not reported
Facility Status:	Case Closed
Case Number:	440032
How Discovered:	OM
Leak Cause:	Unknown
Leak Source:	Unknown
Date Leak Confirmed:	Not reported
Oversight Program:	LUST
Prelim. Site Assesment Wokplan Submitted:	Not reported
Preliminary Site Assesment Began:	Not reported
Pollution Characterization Began:	Not reported
Pollution Remediation Plan Submitted:	Not reported
Date Remediation Action Underway:	Not reported
Date Post Remedial Action Monitoring Began:	Not reported

SAN MATEO CO. LUST:

Region:	SAN MATEO
Facility ID:	440032
Facility Status:	9- Case Closed
Global ID:	T0608100295
APN Number:	055253030
Case Type:	SAN MATEO CO. LUST
EDR Link ID:	SAN MATEO CO. LUST

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0022909
Prog Element Code:	GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id:	PR0025788
Description:	GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022909
Prog Element Code:	STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id:	PR0028461
Description:	STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0022909
Prog Element Code:	UNDERGROUND TANK - GENERAL
Record Id:	PR0026274
Description:	UNDERGROUND TANK - GENERAL
Facility Status:	INACTIVE

O113 **KNAPPKINS** **CA LUST** **S103892574**
SSE **4055 BOHANNON** **CA HIST CORTESE** **N/A**
1/4-1/2 **MENLO PARK, CA 94026**
0.371 mi.
1961 ft. **Site 2 of 2 in cluster O**

Relative:
Higher

Actual:
17 ft.

LUST:

Lead Agency:	SAN MATEO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100295
Global Id:	T0608100295
Latitude:	37.480449
Longitude:	-122.17911
Status:	Completed - Case Closed
Status Date:	06/30/1998
Case Worker:	Not reported
RB Case Number:	41-0310
Local Agency:	Not reported
File Location:	Local Agency
Local Case Number:	440032
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0608100295
Contact Type:	Regional Board Caseworker
Contact Name:	Regional Water Board
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400
City:	OAKLAND
Email:	Not reported
Phone Number:	Not reported

LUST:

Global Id:	T0608100295
Action Type:	ENFORCEMENT
Date:	04/23/1991
Action:	Notice of Responsibility - #1
Global Id:	T0608100295
Action Type:	Other
Date:	04/18/1991
Action:	Leak Discovery
Global Id:	T0608100295
Action Type:	Other
Date:	09/05/1990
Action:	Leak Reported
Global Id:	T0608100295
Action Type:	REMEDIATION
Date:	01/20/1994
Action:	Pump & Treat (P&T) Groundwater
Global Id:	T0608100295
Action Type:	REMEDIATION
Date:	01/20/1994
Action:	Not reported

KNAPPKINS (Continued) **S103892574**

Global Id: T0608100295
Action Type: REMEDIATION
Date: 01/20/1994
Action: Other (Use Description Field)

LUST:
Global Id: T0608100295
Status: Open - Case Begin Date
Status Date: 09/05/1990

Global Id: T0608100295
Status: Completed - Case Closed
Status Date: 06/30/1998

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-0310

P114 **KREBS ENGINEERS** **CA SLIC** **1000164994**
ESE **1205 CHRYSLER DR** **CA San Mateo Co. BI** **N/A**
1/4-1/2 **MENLO PARK, CA 94025** **CA HIST CORTESE**
0.398 mi.
2100 ft. **Site 1 of 2 in cluster P**

Relative:
Higher

Actual:
11 ft.

SLIC:
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 06/02/2009
Global Id: T0608100940
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number: 449051
Latitude: 37.482641
Longitude: -122.175578
Case Type: Cleanup Program Site
Case Worker: UUU
Local Agency: Not reported
RB Case Number: 41S0157
File Location: Not reported
Potential Media Affected: Not reported
Potential Contaminants of Concern: Stoddard solvent / Mineral Spriits / Distillates
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0014357
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0024901
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO

KREBS ENGINEERS (Continued) **1000164994**

Facility ID: FA0014357
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0024902
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0024340
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0028949
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0024340
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0028950
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-1027

P115 **L3 COMMUNICATIONS RANDTRON ANTENNA SYSTEMS** **CA LUST** **S101308616**
ESE **1150 CHRYSLER DR** **CA San Mateo Co. BI** **N/A**
1/4-1/2 **MENLO PARK, CA 94025** **CA HIST CORTESE**
0.422 mi. **CA NPDES**
2229 ft. **Site 2 of 2 in cluster P** **CA WDS**

Relative:
Higher

Actual:
11 ft.

LUST:
Lead Agency: SAN MATEO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100059
Global Id: T0608100059
Latitude: 37.4827762649464
Longitude: -122.174985408783
Status: Completed - Case Closed
Status Date: 04/10/1999
Case Worker: Not reported
RB Case Number: 41-0063
Local Agency: Not reported
File Location: Local Agency
Local Case Number: 440005
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Gasoline
Site History: Not reported

LUST:
Global Id: T0608100059
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported

L3 COMMUNICATIONS RANDTRON ANTENNA SYSTEMS (Continued) **S101308616**

Phone Number: Not reported

LUST:
Global Id: T0608100059
Action Type: ENFORCEMENT
Date: 06/22/1992
Action: Notice of Responsibility - #1

Global Id: T0608100059
Action Type: Other
Date: 06/22/1985
Action: Leak Reported

Global Id: T0608100059
Action Type: Other
Date: 06/22/1985
Action: Leak Discovery

LUST:
Global Id: T0608100059
Status: Open - Case Begin Date
Status Date: 06/22/1985

Global Id: T0608100059
Status: Completed - Case Closed
Status Date: 04/10/1999

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Case Closed
Case Number: 440005
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 440005
Facility Status: 9- Case Closed
Global ID: T0608100059
APN Number: 055243010
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

L3 COMMUNICATIONS RANDTRON ANTENNA SYSTEMS (Continued) **S101308616**

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0005309
Prog Element Code:	GEN 1-5 TONS HAZ WASTE/YR
Record Id:	PR0004086
Description:	GEN 1-5 TONS HAZ WASTE/YR
Facility Status:	ACTIVE

Region:	SAN MATEO
Facility ID:	FA0005309
Prog Element Code:	STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id:	PR0004087
Description:	STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status:	ACTIVE

HIST CORTESE:

Region:	CORTESE
Facility County Code:	41
Reg By:	LTNKA
Reg Id:	41-0063

NPDES:

Npdes Number:	CAS000001
Facility Status:	Active
Agency Id:	0
Region:	2
Regulatory Measure Id:	182930
Order No:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	2 41NEC000047
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	07/07/1997
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	L3 Communications Corp
Discharge Address:	130 Constitution Dr
Discharge City:	Menlo Park
Discharge State:	California
Discharge Zip:	94025
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported

L3 COMMUNICATIONS RANDTRON ANTENNA SYSTEMS (Continued) **S101308616**

OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported
Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	2
Regulatory Measure Id:	182930
Order No:	Not reported
Regulatory Measure Type:	Industrial
Place Id:	Not reported
WDID:	2 41NEC000047
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported

L3 COMMUNICATIONS RANDTRON ANTENNA SYSTEMS (Continued) **S101308616**

Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	07/09/2015
PROCESSED DATE:	07/07/1997
STATUS CODE NAME:	Active
STATUS DATE:	07/09/2015
PLACE SIZE:	60443
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Randy C Perkins
FACILITY CONTACT TITLE:	EH&S / Facilities Manager
FACILITY CONTACT PHONE:	650-326-9500
FACILITY CONTACT PHONE EXT:	483
FACILITY CONTACT EMAIL:	randy.perkins@l-3com.com
OPERATOR NAME:	L3 Communications Corp
OPERATOR ADDRESS:	130 Constitution Dr
OPERATOR CITY:	Menlo Park
OPERATOR STATE:	California
OPERATOR ZIP:	94025
OPERATOR CONTACT NAME:	Randy Perkins
OPERATOR CONTACT TITLE:	EH&S / Facilities Manager
OPERATOR CONTACT PHONE:	650-326-9500
OPERATOR CONTACT PHONE EXT:	483
OPERATOR CONTACT EMAIL:	randy.perkins@L-3com.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	California
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	650-823-6179
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	Municipal storm water system
CERTIFIER NAME:	Randy Perkins
CERTIFIER TITLE:	EH&S / Facilities Manager
CERTIFICATION DATE:	26-SEP-17

L3 COMMUNICATIONS RANDTRON ANTENNA SYSTEMS (Continued) **S101308616**

PRIMARY SIC: 3812-Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems and Instruments
SECONDARY SIC: Not reported
TERTIARY SIC: Not reported

WDS:
Facility ID: San Francisco Bay 41I013248
Facility Type: Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status: Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number: CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion: 2
Facility Telephone: 6503269500
Facility Contact: HEATHER ZINN
Agency Name: L3 COMMUNICATIONS CORP
Agency Address: 130 Constitution Dr
Agency City,St,Zip: Menlo Park 940251141
Agency Contact: HEATHER ZINN
Agency Telephone: 6503269500
Agency Type: ?
SIC Code: 0
SIC Code 2: Not reported
Primary Waste Type: Not reported
Primary Waste: Not reported
Waste Type2: Not reported
Waste2: Not reported
Primary Waste Type: Not reported
Secondary Waste: Not reported
Secondary Waste Type: Not reported
Design Flow: 0
Baseline Flow: 0
Reclamation: Not reported
POTW: Not reported
Treat To Water: Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.
Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

116
SE
1/4-1/2
0.451 mi.
2380 ft.

AMOROSO PROPERTY
135 COMMONWEALTH DRIVE
MENLO PARK, CA 94025

CA LUST **S103950044**
CA SLIC **N/A**
CA San Mateo Co. BI

Relative:
Higher

Actual:
13 ft.

SAN MATEO CO. LUST:

Region:	SAN MATEO
Facility ID:	449083
Facility Status:	9- Case Closed
Global ID:	SL0608132881
APN Number:	055243260
Case Type:	SAN MATEO CO. LUST
EDR Link ID:	SAN MATEO CO. LUST

SLIC:

Region:	STATE
Facility Status:	**Completed - Case Closed**
Status Date:	12/08/2009
Global Id:	SL0608132881
Lead Agency:	SAN MATEO COUNTY LOP
Lead Agency Case Number:	449083
Latitude:	37.4816865007213
Longitude:	-122.175393104553
Case Type:	Cleanup Program Site
Case Worker:	Not reported
Local Agency:	Not reported
RB Case Number:	Not reported
File Location:	Local Agency Warehouse
Potential Media Affected:	Under Investigation
Potential Contaminants of Concern:	Benzene
Site History:	Not reported

Click here to access the California GeoTracker records for this facility:

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0004466
Prog Element Code:	GEN <1 TONS HAZ WASTE/YR
Record Id:	PR0011485
Description:	GEN <1 TONS HAZ WASTE/YR
Facility Status:	INACTIVE

Q117
SSE
1/4-1/2
0.455 mi.
2405 ft.

APRIA HEALTHCARE
3905 BOHANNON
MENLO PARK, CA 94025

CA LUST **S109285842**
CA San Mateo Co. BI **N/A**

Site 1 of 3 in cluster Q

Relative:
Higher

Actual:
21 ft.

LUST:

Lead Agency:	SAN MATEO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608162345
Global Id:	T0608162345
Latitude:	37.479163
Longitude:	-122.180127
Status:	Completed - Case Closed
Status Date:	11/30/2004
Case Worker:	Not reported

APRIA HEALTHCARE (Continued) **S109285842**

RB Case Number: Not reported
Local Agency: Not reported
File Location: Local Agency Warehouse
Local Case Number: 449060
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Diesel
Site History: Not reported

LUST:
Global Id: T0608162345
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608162345
Action Type: REMEDIATION
Date: 01/08/2001
Action: Pump & Treat (P&T) Groundwater

Global Id: T0608162345
Action Type: REMEDIATION
Date: 01/06/2003
Action: Pump & Treat (P&T) Groundwater

Global Id: T0608162345
Action Type: REMEDIATION
Date: 01/08/2001
Action: Excavation

Global Id: T0608162345
Action Type: REMEDIATION
Date: 12/22/1999
Action: Excavation

Global Id: T0608162345
Action Type: REMEDIATION
Date: 01/06/2003
Action: Excavation

Global Id: T0608162345
Action Type: RESPONSE
Date: 06/18/2003
Action: Final Remedial Action Report / Corrective Action Report

Global Id: T0608162345
Action Type: RESPONSE
Date: 11/17/2004
Action: Unknown

Global Id: T0608162345
Action Type: ENFORCEMENT
Date: 01/25/2000

APRIA HEALTHCARE (Continued) **S109285842**

Action: * Historical Enforcement - #1

Global Id: T0608162345
Action Type: ENFORCEMENT
Date: 11/30/2004
Action: Closure/No Further Action Letter - #20041130

Global Id: T0608162345
Action Type: ENFORCEMENT
Date: 08/27/2001
Action: Staff Letter - #20010827

Global Id: T0608162345
Action Type: ENFORCEMENT
Date: 12/18/2002
Action: Staff Letter - #20021218

Global Id: T0608162345
Action Type: ENFORCEMENT
Date: 05/17/2004
Action: Staff Letter - #20040517

Global Id: T0608162345
Action Type: Other
Date: 12/21/1999
Action: Leak Reported

Global Id: T0608162345
Action Type: RESPONSE
Date: 02/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0608162345
Action Type: RESPONSE
Date: 05/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0608162345
Action Type: RESPONSE
Date: 08/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0608162345
Action Type: RESPONSE
Date: 11/15/2003
Action: Monitoring Report - Quarterly

LUST:
Global Id: T0608162345
Status: Open - Case Begin Date
Status Date: 12/21/1999

Global Id: T0608162345
Status: Open - Remediation
Status Date: 12/21/1999

Global Id: T0608162345

APRIA HEALTHCARE (Continued) **S109285842**

Status: Open - Verification Monitoring
Status Date: 05/20/2003

Global Id: T0608162345
Status: Completed - Case Closed
Status Date: 11/30/2004

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 449060
Facility Status: 9- Case Closed
Global ID: T0608162345
APN Number: 055253140
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0023715
Prog Element Code: ABOVE GROUND TANK/SPCC
Record Id: PR0035379
Description: ABOVE GROUND TANK/SPCC
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0023715
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0027621
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0055076
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0075971
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: ACTIVE

Q118 **PHARM CHEM LABS INC** **CA LUST** **S102002478**
SSE **3925 BOHANNON DR** **CA SLIC** **N/A**
1/4-1/2 **MENLO PARK, CA 94025**
0.459 mi.
2424 ft. **Site 2 of 3 in cluster Q**

Relative:
Higher

Actual:
20 ft.

LUST REG 2:
Region: 2
Facility Id: 41S0045
Facility Status: Post remedial action monitoring
Case Number: Not reported
How Discovered: Tank Closure
Leak Cause: UNK
Leak Source: UNK
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported

PHARM CHEM LABS INC (Continued) **S102002478**

Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: 4/25/1991

SLIC REG 2:
Region: 2
Facility ID: SLT2O096102
Facility Status: Leak being confirmed
Date Closed: Not reported
Local Case #: Not reported
How Discovered: Not reported
Leak Cause: Not reported
Leak Source: Not reported
Date Confirmed: Not reported
Date Prelim Site Assmnt Workplan Submitted: Not reported
Date Preliminary Site Assessment Began: Not reported
Date Pollution Characterization Began: Not reported
Date Remediation Plan Submitted: Not reported
Date Remedial Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

Q119 **PHARM CHEM LABORATORIES** **RCRA-SQG** **1000364681**
SSE **3925 BOHANNON DRIVE** **CA SLIC** **CAD053996807**
1/4-1/2 **MENLO PARK, CA 94025** **FINDS**
0.459 mi. **ECHO**
2424 ft. **Site 3 of 3 in cluster Q** **CA San Mateo Co. BI**

Relative:
Higher

Actual:
20 ft.

RCRA-SQG:
Date form received by agency: 09/01/1996
Facility name: PHARM CHEM LABORATORIES
Facility address: 3925 BOHANNON DRIVE
MENLO PARK, CA 94025
EPA ID: CAD053996807
Mailing address: BOHANNON DRIVE
MENLO PARK, CA 94025
Contact: Not reported
Contact address: Not reported
Not reported
Contact country: US
Contact telephone: Not reported
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: JAMES A OSTENGA PHD
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported

PHARM CHEM LABORATORIES (Continued) **1000364681**

Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Owner/operator name: NOT REQUIRED
Owner/operator address: NOT REQUIRED
NOT REQUIRED, ME 99999
Owner/operator country: Not reported
Owner/operator telephone: 415-555-1212
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: Not reported
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 09/01/1996
Site name: PHARM CHEM LABORATORIES
Classification: Large Quantity Generator

Violation Status: No violations found

SLIC:
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 05/11/2009
Global Id: SLT2O096102
Lead Agency: SAN FRANCISCO BAY RWQCB (REGION 2)
Lead Agency Case Number: Not reported
Latitude: 37.4788743686313
Longitude: -122.179555387558
Case Type: Cleanup Program Site
Case Worker: UUU
Local Agency: Not reported
RB Case Number: 41S0045

PHARM CHEM LABORATORIES (Continued) **1000364681**

File Location: Not reported
Potential Media Affected: Not reported
Potential Contaminants of Concern: Not reported
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

FINDS:

Registry ID: 110009530766

Environmental Interest/Information System
RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000364681
Registry ID: 110009530766
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110009530766

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0022633
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0025064
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0022633
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0025063
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0025636
Prog Element Code: GEN 1-5 TONS HAZ WASTE/YR
Record Id: PR0034573
Description: GEN 1-5 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0025636
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0034572

PHARM CHEM LABORATORIES (Continued) **1000364681**

Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

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120 South 1/4-1/2 0.471 mi. 2489 ft.

U.S. POSTAL SERVICE
3875 BOHANNON
MENLO PARK, CA 94025

CA LUST **S101438312**
CA San Mateo Co. BI **N/A**
CA HIST CORTESE

Relative: Higher

Actual: 22 ft.

LUST:
Lead Agency: SAN MATEO COUNTY LOP
Case Type: LUST Cleanup Site
Geo Track: http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100327
Global Id: T0608100327
Latitude: 37.4787729
Longitude: -122.184012
Status: Completed - Case Closed
Status Date: 10/15/1999
Case Worker: Not reported
RB Case Number: 41-0342
Local Agency: Not reported
File Location: Local Agency
Local Case Number: 440039
Potential Media Affect: Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern: Gasoline
Site History: Not reported

LUST:
Global Id: T0608100327
Contact Type: Regional Board Caseworker
Contact Name: Regional Water Board
Organization Name: SAN FRANCISCO BAY RWQCB (REGION 2)
Address: 1515 CLAY ST SUITE 1400
City: OAKLAND
Email: Not reported
Phone Number: Not reported

LUST:
Global Id: T0608100327
Action Type: ENFORCEMENT
Date: 02/18/1992
Action: Notice of Responsibility - #1

Global Id: T0608100327
Action Type: Other
Date: 02/13/1992
Action: Leak Reported

Global Id: T0608100327
Action Type: Other
Date: 03/24/1992
Action: Leak Discovery

LUST:
Global Id: T0608100327
Status: Open - Case Begin Date
Status Date: 02/13/1992

U.S. POSTAL SERVICE (Continued) **S101438312**

Global Id: T0608100327
Status: Completed - Case Closed
Status Date: 10/15/1999

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Case Closed
Case Number: 440039
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: Not reported
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: Not reported

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 440039
Facility Status: 9- Case Closed
Global ID: T0608100327
APN Number: 055251120
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0017575
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0023469
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017575
Prog Element Code: UNDERGROUND TANK - GENERAL
Record Id: PR0022531
Description: UNDERGROUND TANK - GENERAL
Facility Status: INACTIVE

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-0342

R121 **CHEVRON 9-0754** **CA LUST** **S100622903**
SSW **3805 BOHANNON** **CA SWEEPS UST** **N/A**
1/4-1/2 **MENLO PARK, CA 94025** **CA San Mateo Co. BI**
0.473 mi. **CA HIST CORTESE**
2498 ft. **Site 1 of 2 in cluster R**

Relative:
Higher

Actual:
22 ft.

LUST:

Lead Agency:	SAN MATEO COUNTY LOP
Case Type:	LUST Cleanup Site
Geo Track:	http://geotracker.waterboards.ca.gov/profile_report.asp?global_id=T0608100997
Global Id:	T0608100997
Latitude:	37.4787563
Longitude:	-122.1854144
Status:	Completed - Case Closed
Status Date:	06/15/2004
Case Worker:	Not reported
RB Case Number:	41-1086
Local Agency:	Not reported
File Location:	Local Agency
Local Case Number:	440052
Potential Media Affect:	Other Groundwater (uses other than drinking water)
Potential Contaminants of Concern:	Gasoline
Site History:	Not reported

LUST:

Global Id:	T0608100997
Contact Type:	Regional Board Caseworker
Contact Name:	Regional Water Board
Organization Name:	SAN FRANCISCO BAY RWQCB (REGION 2)
Address:	1515 CLAY ST SUITE 1400
City:	OAKLAND
Email:	Not reported
Phone Number:	Not reported

LUST:

Global Id:	T0608100997
Action Type:	ENFORCEMENT
Date:	12/04/2002
Action:	Staff Letter - #20021204

Global Id:	T0608100997
Action Type:	ENFORCEMENT
Date:	06/15/2004
Action:	Closure/No Further Action Letter - #20040615

Global Id:	T0608100997
Action Type:	ENFORCEMENT
Date:	04/06/1998
Action:	Notice of Responsibility - #1

Global Id:	T0608100997
Action Type:	ENFORCEMENT
Date:	04/14/2004
Action:	Staff Letter - #20040414

Global Id:	T0608100997
Action Type:	ENFORCEMENT
Date:	10/02/2003
Action:	Staff Letter - #20031002

CHEVRON 9-0754 (Continued) **S100622903**

Global Id: T0608100997
Action Type: ENFORCEMENT
Date: 06/26/2001
Action: Staff Letter - #20010626

Global Id: T0608100997
Action Type: Other
Date: 03/31/1998
Action: Leak Reported

Global Id: T0608100997
Action Type: RESPONSE
Date: 05/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0608100997
Action Type: RESPONSE
Date: 11/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0608100997
Action Type: RESPONSE
Date: 05/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0608100997
Action Type: RESPONSE
Date: 08/15/2003
Action: Monitoring Report - Quarterly

Global Id: T0608100997
Action Type: RESPONSE
Date: 02/15/2004
Action: Monitoring Report - Quarterly

Global Id: T0608100997
Action Type: RESPONSE
Date: 12/15/2003
Action: Other Report / Document

Global Id: T0608100997
Action Type: RESPONSE
Date: 02/15/2004
Action: Soil and Water Investigation Report

Global Id: T0608100997
Action Type: RESPONSE
Date: 08/30/2004
Action: Unknown

LUST:
Global Id: T0608100997
Status: Open - Case Begin Date
Status Date: 03/31/1998

Global Id: T0608100997
Status: Open - Site Assessment

CHEVRON 9-0754 (Continued) **S100622903**

Status Date: 03/31/1998

Global Id: T0608100997
Status: Open - Verification Monitoring
Status Date: 02/19/2004

Global Id: T0608100997
Status: Completed - Case Closed
Status Date: 06/15/2004

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 440052
Facility Status: 9- Case Closed
Global ID: T0608100997
APN Number: 055251340, 055251280
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

SWEEPS UST:
Status: Active
Comp Number: 440019
Number: 1
Board Of Equalization: 44-025353
Referral Date: 01-28-94
Action Date: 01-28-94
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 41-000-440019-000001
Tank Status: A
Capacity: 10000
Active Date: 05-18-93
Tank Use: M.V. FUEL
STG: P
Content: REG UNLEADED
Number Of Tanks: 4

Status: Active
Comp Number: 440019
Number: 1
Board Of Equalization: 44-025353
Referral Date: 01-28-94
Action Date: 01-28-94
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 41-000-440019-000002
Tank Status: A
Capacity: 10000
Active Date: 05-18-93
Tank Use: M.V. FUEL
STG: P
Content: PRM UNLEADED
Number Of Tanks: Not reported

Status: Active

CHEVRON 9-0754 (Continued) **S100622903**

Comp Number: 440019
Number: 1
Board Of Equalization: 44-025353
Referral Date: 01-28-94
Action Date: 01-28-94
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 41-000-440019-000003
Tank Status: A
Capacity: 10000
Active Date: 05-18-93
Tank Use: M.V. FUEL
STG: P
Content: PLUS UNLEADED
Number Of Tanks: Not reported

Status: Active
Comp Number: 440019
Number: 1
Board Of Equalization: 44-025353
Referral Date: 01-28-94
Action Date: 01-28-94
Created Date: 10-13-88
Owner Tank Id: Not reported
SWRCB Tank Id: 41-000-440019-000004
Tank Status: A
Capacity: 10000
Active Date: 05-18-93
Tank Use: OIL
STG: W
Content: LEADED GASOL
Number Of Tanks: Not reported

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0014486
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0024903
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0014486
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0024904
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017570
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0028311
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017570

CHEVRON 9-0754 (Continued) **S100622903**

Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0004102
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017570
Prog Element Code: UNDERGROUND TANK - GENERAL
Record Id: PR0025278
Description: UNDERGROUND TANK - GENERAL
Facility Status: INACTIVE

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: LTNKA
Reg Id: 41-1086

R122
SSW
1/4-1/2
0.479 mi.
2527 ft.

Relative:
Higher

Actual:
22 ft.

CHEVRON 9-0754 **CA LUST** **S105030502**
3805 BOHANNON **N/A**
MENLO PARK, CA 94025

Site 2 of 2 in cluster R

LUST REG 2:
Region: 2
Facility Id: Not reported
Facility Status: Case Closed
Case Number: 440052
How Discovered: OM
Leak Cause: Unknown
Leak Source: Unknown
Date Leak Confirmed: Not reported
Oversight Program: LUST
Prelim. Site Assesment Wokplan Submitted: Not reported
Preliminary Site Assesment Began: Not reported
Pollution Characterization Began: 1/1/1965
Pollution Remediation Plan Submitted: Not reported
Date Remediation Action Underway: Not reported
Date Post Remedial Action Monitoring Began: 2/19/2004

123
ESE
1/2-1
0.569 mi.
3005 ft.

Relative:
Higher

Actual:
11 ft.

ELECTRICAL WIRE PROD BAY ASSOC **CA ENVIROSTOR** **1000857529**
150 JEFFERSON DR **CA SCH** **CAD983669664**
MENLO PARK, CA 94025 **RCRA NonGen / NLR**
FINDS
ECHO
CA San Mateo Co. BI

ENVIROSTOR:
Facility ID: 60002163
Status: No Further Action
Status Date: 06/13/2016
Site Code: 204273
Site Type: School Investigation
Site Type Detailed: School
Acres: 2

ELECTRICAL WIRE PROD BAY ASSOC (Continued) **1000857529**

NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Mellan Songco
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: 24
Senate: 13
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 37.48216
Longitude: -122.1738
APN: 055-243-030, 055242090
Past Use: MANUFACTURING - ELECTRONIC, RAILROAD RIGHT OF WAY
Potential COC: Benzene Naturally Occurring Asbestos (NOA Polynuclear aromatic hydrocarbons (PAHs
Confirmed COC: 30003-NO 30019-NO No Contaminants found 40002-NO
Potential Description: NMA, SOIL, SV
Alias Name: 150 Jefferson Drive
Alias Type: Alternate Name
Alias Name: Menlo Park Small High School Project
Alias Type: Alternate Name
Alias Name: New East Menlo Park Magnet High School
Alias Type: Alternate Name
Alias Name: 055-243-030
Alias Type: APN
Alias Name: 055242090
Alias Type: APN
Alias Name: 204273
Alias Type: Project Code (Site Code)
Alias Name: 60002163
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement
Completed Date: 10/29/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Cost Recovery Closeout Memo
Completed Date: 10/05/2017
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 04/21/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Workplan
Completed Date: 02/10/2016

ELECTRICAL WIRE PROD BAY ASSOC (Continued) **1000857529**

Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Environmental Oversight Agreement Application
Completed Date: 10/08/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 02/10/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 06/13/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 06/16/2015
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SCH:

Facility ID: 60002163
Site Type: School Investigation
Site Type Detail: School
Site Mgmt. Req.: NONE SPECIFIED
Acres: 2
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Mellan Songco
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Site Code: 204273
Assembly: 24
Senate: 13
Special Program Status: Not reported
Status: No Further Action
Status Date: 06/13/2016
Restricted Use: NO

ELECTRICAL WIRE PROD BAY ASSOC (Continued) **1000857529**

Funding:	School District
Latitude:	37.48216
Longitude:	-122.1738
APN:	055-243-030, 055242090
Past Use:	MANUFACTURING - ELECTRONIC, RAILROAD RIGHT OF WAY
Potential COC:	Benzene, Benzene, Naturally Occurring Asbestos (NOA, Polynuclear aromatic hydrocarbons (PAHs
Confirmed COC:	30003-NO, 30019-NO, No Contaminants found, 40002-NO
Potential Description:	NMA, SOIL, SV
Alias Name:	150 Jefferson Drive
Alias Type:	Alternate Name
Alias Name:	Menlo Park Small High School Project
Alias Type:	Alternate Name
Alias Name:	New East Menlo Park Magnet High School
Alias Type:	Alternate Name
Alias Name:	055-243-030
Alias Type:	APN
Alias Name:	055242090
Alias Type:	APN
Alias Name:	204273
Alias Type:	Project Code (Site Code)
Alias Name:	60002163
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement
Completed Date:	10/29/2015
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Cost Recovery Closeout Memo
Completed Date:	10/05/2017
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	04/21/2015
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Preliminary Endangerment Assessment Workplan
Completed Date:	02/10/2016
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Environmental Oversight Agreement Application
Completed Date:	10/08/2015
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Fieldwork

ELECTRICAL WIRE PROD BAY ASSOC (Continued) **1000857529**

Completed Date: 02/10/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 06/13/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Inspections/Visit (Non LUR)
Completed Date: 06/16/2015
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

RCRA NonGen / NLR:
Date form received by agency: 07/28/2008
Facility name: BAY ASSOCIATES WIRE TECH
Facility address: 150 JEFFERSON DR
MENLO PARK, CA 94025
EPA ID: CAD983669664
Contact: ROBERT N MCANIFF
Contact address: 150 JEFFERSON DR
MENLO PARK, CA 94025
Contact country: US
Contact telephone: 650-847-3926
Contact email: ROBERT.MCANIFF@BAYCABLE.COM
EPA Region: 09
Classification: Non-Generator
Description: Handler: Non-Generators do not presently generate hazardous waste

Owner/Operator Summary:
Owner/operator name: NEW ENGLAND WIRE TECH
Owner/operator address: 130 N MAIN ST
LISBON, NH 03585
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 07/21/2008
Owner/Op end date: Not reported

Owner/operator name: LAURENT MAYER

ELECTRICAL WIRE PROD BAY ASSOC (Continued) **1000857529**

Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 07/21/2008
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 06/14/1993
Site name: ELECTRICAL WIRE PROD BAY ASSOC
Classification: Small Quantity Generator

Violation Status: No violations found

FINDS:

Registry ID: 110002900139

Environmental Interest/Information System
California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

ELECTRICAL WIRE PROD BAY ASSOC (Continued) **1000857529**

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:
Envid: 1000857529
Registry ID: 110002900139
DFR URL: http://echo.epa.gov/detailed-facility-report?fid=110002900139

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0024407
Prog Element Code: GEN <1 TONS HAZ WASTE/YR
Record Id: PR0029065
Description: GEN <1 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0024407
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0029064
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0039399
Prog Element Code: GEN <1 TONS HAZ WASTE/YR
Record Id: PR0055463
Description: GEN <1 TONS HAZ WASTE/YR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0039399
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0055462
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

124
ESE
1/2-1
0.576 mi.
3043 ft.

Relative:
Lower

Actual:
9 ft.

MENLOTECH INC
188 CONSTITUTION DR
MENLO PARK, CA 94025

RCRA-SQG **1000111898**
CA ENVIROSTOR **CAD053243051**
CA LUST
CA SLIC
CA VCP
CA HIST UST
CA San Mateo Co. BI
CA HAZNET

RCRA-SQG:
Date form received by agency: 06/21/2004
Facility name: MENLOTECH INC
Facility address: 188 CONSTITUTION DR
MENLO PARK, CA 94025-1117
EPA ID: CAD053243051
Contact: RAY MAUBERRET
Contact address: 188 CONSTITUTION DR
MENLO PARK, CA 94025-1117
Contact country: US

MENLOTECH INC (Continued) **1000111898**

Contact telephone: 415-661-9775
Contact email: Not reported
EPA Region: 09
Classification: Small Small Quantity Generator
Description: Handler: generates more than 100 and less than 1000 kg of hazardous waste during any calendar month and accumulates less than 6000 kg of hazardous waste at any time; or generates 100 kg or less of hazardous waste during any calendar month, and accumulates more than 1000 kg of hazardous waste at any time

Owner/Operator Summary:
Owner/operator name: RAY MAUBERRETT
Owner/operator address: 188 CONSTITUTION DR
MENLO PARK, CA 94025
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 01/01/1960
Owner/Op end date: Not reported

Owner/operator name: RAY MAUBERRET
Owner/operator address: Not reported
Not reported
Owner/operator country: US
Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 06/02/2004
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

Historical Generators:
Date form received by agency: 06/21/2004

MENLOTECH INC (Continued) **1000111898**

Site name: MENLOTECH INC
Classification: Large Quantity Generator

. Waste code: D008
. Waste name: LEAD

Date form received by agency: 02/11/2004
Site name: MENLOTECH, INC
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: F006
. Waste name: WASTEWATER TREATMENT SLUDGES FROM ELECTROPLATING OPERATIONS, EXCEPT FROM THE FOLLOWING PROCESSES: (1) SULFURIC ACID ANODIZING OF ALUMINUM; (2) TIN PLATING ON CARBON STEEL; (3) ZINC PLATING (SEGREGATED BASIS) ON CARBON STEEL; (4) ALUMINUM OR ZINC-ALUMINUM PLATING ON CARBON STEEL; (5) CLEANING/STRIPPING ASSOCIATED WITH TIN, ZINC, AND ALUMINUM PLATING ON CARBON STEEL; AND (6) CHEMICAL ETCHING AND MILLING OF ALUMINUM.

Date form received by agency: 02/28/2002
Site name: MENLOTECH INC
Classification: Large Quantity Generator

Date form received by agency: 03/30/2000
Site name: MENLOTECH INC
Classification: Large Quantity Generator

Date form received by agency: 03/04/1999
Site name: MENLOTECH, INC.
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Site name: MENLOTECH INC
Classification: Small Quantity Generator

Date form received by agency: 02/29/1996
Site name: MENLOTECH, INC.
Classification: Large Quantity Generator

Date form received by agency: 01/31/1995
Site name: MENLOTECH INC
Classification: Large Quantity Generator

MENLOTECH INC (Continued) **1000111898**

Violation Status: No violations found

ENVIROSTOR:
Facility ID: 71002456
Status: Inactive - Needs Evaluation
Status Date: Not reported
Site Code: Not reported
Site Type: Tiered Permit
Site Type Detailed: Tiered Permit
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Not reported
Division Branch: Cleanup Berkeley
Assembly: 24
Senate: 13
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.48307
Longitude: -122.1716
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: CAD053243051
Alias Type: EPA Identification Number
Alias Name: 110000862022
Alias Type: EPA (FRS #)
Alias Name: 71002456
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: Not reported
Completed Sub Area Name: Not reported
Completed Document Type: Not reported
Completed Date: Not reported
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

Facility ID: 70000160
Status: Inactive - Needs Evaluation
Status Date: 05/24/2007
Site Code: 201640
Site Type: Voluntary Cleanup

MENLOTECH INC (Continued) **1000111898**

Site Type Detailed: Voluntary Cleanup
Acres: 0.8
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Not reported
Supervisor: Julie Pettijohn
Division Branch: Cleanup Berkeley
Assembly: 24
Senate: 13
Special Program: Voluntary Cleanup Program
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Responsible Party
Latitude: 37.48302
Longitude: -122.1717
APN: 055-242-040
Past Use: MANUFACTURING - ELECTRONIC
Potential COC: Total Chromium (1:6 ratio Cr VI:Cr III Lead Copper and compounds
Confirmed COC: 30156-NO 30005-NO 30013-NO
Potential Description: OTH, SOIL
Alias Name: 055-242-040
Alias Type: APN
Alias Name: 110000862022
Alias Type: EPA (FRS #)
Alias Name: SL0608198685
Alias Type: GeoTracker Global ID
Alias Name: 201640
Alias Type: Project Code (Site Code)
Alias Name: 70000160
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement
Completed Date: 04/11/2006
Comments: Final executed VCA signed by branch chief.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Characterization Report
Completed Date: 09/14/2006
Comments: Final data review letter sent to RP with branch chief signature.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Voluntary Cleanup Agreement Termination Notification
Completed Date: 04/13/2007
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 09/17/2006
Comments: Not reported

Future Area Name: Not reported

MENLOTECH INC (Continued) **1000111898**

Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SAN MATEO CO. LUST:
Region: SAN MATEO
Facility ID: 449078
Facility Status: 9- Case Closed
Global ID: SL0608198685
APN Number: 055242040
Case Type: SAN MATEO CO. LUST
EDR Link ID: SAN MATEO CO. LUST

SLIC:
Region: STATE
Facility Status: **Completed - Case Closed**
Status Date: 01/25/2005
Global Id: SL0608198685
Lead Agency: SAN MATEO COUNTY LOP
Lead Agency Case Number: 449078
Latitude: 37.483332
Longitude: -122.171363
Case Type: Cleanup Program Site
Case Worker: Not reported
Local Agency: Not reported
RB Case Number: Not reported
File Location: Local Agency Warehouse
Potential Media Affected: Soil
Potential Contaminants of Concern: Copper
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

VCP:
Facility ID: 70000160
Site Type: Voluntary Cleanup
Site Type Detail: Voluntary Cleanup
Site Mgmt. Req.: NONE SPECIFIED
Acres: 0.8
National Priorities List: NO
Cleanup Oversight Agencies: SMBRP
Lead Agency: SMBRP
Lead Agency Description: DTSC - Site Cleanup Program
Project Manager: Not reported
Supervisor: Julie Pettijohn
Division Branch: Cleanup Berkeley
Site Code: 201640
Assembly: 24
Senate: 13
Special Programs Code: Voluntary Cleanup Program
Status: Inactive - Needs Evaluation

MENLOTECH INC (Continued) **1000111898**

Status Date:	05/24/2007
Restricted Use:	NO
Funding:	Responsible Party
Lat/Long:	37.48302 / -122.1717
APN:	055-242-040
Past Use:	MANUFACTURING - ELECTRONIC
Potential COC:	30005, 30013, 30156
Confirmed COC:	30156-NO,30005-NO,30013-NO
Potential Description:	OTH, SOIL
Alias Name:	055-242-040
Alias Type:	APN
Alias Name:	110000862022
Alias Type:	EPA (FRS #)
Alias Name:	SL0608198685
Alias Type:	GeoTracker Global ID
Alias Name:	201640
Alias Type:	Project Code (Site Code)
Alias Name:	70000160
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement
Completed Date:	04/11/2006
Comments:	Final executed VCA signed by branch chief.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Site Characterization Report
Completed Date:	09/14/2006
Comments:	Final data review letter sent to RP with branch chief signature.
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Voluntary Cleanup Agreement Termination Notification
Completed Date:	04/13/2007
Comments:	Not reported
Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Amendment - Order/Agreement
Completed Date:	09/17/2006
Comments:	Not reported
Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

HIST UST:

File Number:	0002BF59

MENLOTECH INC (Continued) **1000111898**

URL: http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002BF59.pdf
Region: STATE
Facility ID: 00000047990
Facility Type: Other
Other Type: ELECTRONIC MANUF.
Contact Name: JOHN SCHULTZ
Telephone: 4153283746
Owner Name: J.P.R. ELECTRONICS
Owner Address: 188 CONSTITUTION
Owner City,St,Zip: MENLO PARK, CA 94025
Total Tanks: 0001

Tank Num: 001
Container Num: 001
Year Installed: 1984
Tank Capacity: 00000120
Tank Used for: WASTE
Type of Fuel: Not reported
Container Construction Thickness: 3/8
Leak Detection: Visual

Click here for Geo Tracker PDF:

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0044041
Prog Element Code: RISK MANAGEMENT AND PREVENTION PLAN - GENERAL
Record Id: PR0071989
Description: CALARP - GENERAL
Facility Status: INACTIVE

HAZNET:
envid: 1000111898
Year: 2004
GEPAID: CAD053243051
Contact: RAY MANBERRET
Telephone: 4156619775
Mailing Name: Not reported
Mailing Address: 188 CONSTITUTION DR
Mailing City,St,Zip: MENLO PARK, CA 940251117
Gen County: Not reported
TSD EPA ID: CAT000646117
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Land Fill
Tons: 166.87
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000111898
Year: 2003
GEPAID: CAD053243051
Contact: RAY MANBERRET
Telephone: 4156619775
Mailing Name: Not reported

MENLOTECH INC (Continued) **1000111898**

Mailing Address: 188 CONSTITUTION DR
Mailing City,St,Zip: MENLO PARK, CA 940251117
Gen County: Not reported
TSD EPA ID: CAD009452657
TSD County: Not reported
Waste Category: Liquids with pH <= 2
Disposal Method: Recycler
Tons: 0.37
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000111898
Year: 2003
GEPAID: CAD053243051
Contact: RAY MANBERRET
Telephone: 4156619775
Mailing Name: Not reported
Mailing Address: 188 CONSTITUTION DR
Mailing City,St,Zip: MENLO PARK, CA 940251117
Gen County: Not reported
TSD EPA ID: IND000646943
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Disposal, Other
Tons: 0.45
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000111898
Year: 2003
GEPAID: CAD053243051
Contact: RAY MANBERRET
Telephone: 4156619775
Mailing Name: Not reported
Mailing Address: 188 CONSTITUTION DR
Mailing City,St,Zip: MENLO PARK, CA 940251117
Gen County: Not reported
TSD EPA ID: CAT080013352
TSD County: Not reported
Waste Category: Waste oil and mixed oil
Disposal Method: Recycler
Tons: 0.22
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: 1000111898
Year: 2003
GEPAID: CAD053243051
Contact: RAY MANBERRET
Telephone: 4156619775
Mailing Name: Not reported
Mailing Address: 188 CONSTITUTION DR
Mailing City,St,Zip: MENLO PARK, CA 940251117
Gen County: Not reported

MENLOTECH INC (Continued) **1000111898**

TSD EPA ID: CAT000646117
TSD County: Not reported
Waste Category: Other inorganic solid waste
Disposal Method: Disposal, Other
Tons: Not reported
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

Click this hyperlink while viewing on your computer to access
66 additional CA_HAZNET: record(s) in the EDR Site Report.

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125 NE 1/2-1 0.603 mi. 3186 ft. **BROWNING-FERRIS INDUSTRIES** **CA ENVIROSTOR S100538945**
END OF MARSH ROAD, EAST OF HIGHWAY 101 **N/A**
MENLO PARK, CA 94025

Relative: Lower

Actual: 5 ft.

ENVIROSTOR:
Facility ID: 41490048
Status: Refer: RWQCB
Status Date: 04/01/1985
Site Code: Not reported
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Berkeley
Assembly: Not reported
Senate: Not reported
Special Program: * Site Char & Assess Grant (CERCLA 104)
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.49276
Longitude: -122.1728
APN: NONE SPECIFIED
Past Use: NONE SPECIFIED
Potential COC: * HOUSEHOLD WASTES * HYDROCARBON SOLVENTS * OTHER STILL BOTTOM WASTE * OXYGENATED SOLVENTS * CONTAMINATED SOIL * ACID SOLUTION 2>PH WITH METALS Asbestos Containing Materials (ACM * BIOLOGICAL WASTE OTHER THAN SEWAGE SLUDGE * Sludge - Paint * Sludge - Sewage * UNSPECIFIED AQUEOUS SOLUTION * UNSPECIFIED SLUDGE WASTE * UNSPECIFIED SOLVENT MIXTURES * WASTE OIL & MIXED OIL * SULFUR SLUDGE
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: BAYSIDE OIL CORPORATION
Alias Type: Alternate Name
Alias Name: KELLY-PICKERING CORPORATION
Alias Type: Alternate Name
Alias Name: MARSH ROAD SOLID WASTE DISPOSAL
Alias Type: Alternate Name
Alias Name: RAY CHEM
Alias Type: Alternate Name

BROWNING-FERRIS INDUSTRIES (Continued) **S100538945**

Alias Name: RAYCHEM CORPORATION
Alias Type: Alternate Name
Alias Name: SAN MATEO DISPOSAL, SUB OF BROWNING-FERR
Alias Type: Alternate Name
Alias Name: STANFORD RESEARCH INSTITUTE
Alias Type: Alternate Name
Alias Name: CAD980636963
Alias Type: EPA Identification Number
Alias Name: CAD980636963
Alias Type: HWTS Identification Code
Alias Name: 41490048
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 04/01/1985
Comments: OTHER OPER: SAN MATEO DISP CO,225 SHORE- WAY,SAN CARLOS,CA 94070,415-726-1819 BROWING SAYS SMALL AMOUNTS OF HZD WASTES DISP, BUT CO ENVR SAYS LARGE AMOUNTS OF INDUST WASTE. CITY CONTRACT W/ EMCON ASSOC & HAS SELF-MONITORING PROGRAM SUBMIT TO EPA PRELIM ASSESS DONE CERCLA 104

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 12/02/1987
Comments: SITE SCREENING DONE SWAT LIST: RANK #2

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 10/12/1983
Comments: FACILITY IDENTIFIED ID FROM ERRIS

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 08/01/1980
Comments: FACILITY IDENTIFIED ON DRIVE-BY

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

126
SSW
1/2-1
0.613 mi.
3237 ft.

FORMER GAS STATION
955 MARSH ROAD
REDWOOD CITY, CA 92257

CA Notify 65 **S100178996**
N/A

Relative:
Higher

Actual:
24 ft.

NOTIFY 65:

Date Reported:	Not reported
Staff Initials:	Not reported
Board File Number:	Not reported
Facility Type:	Not reported
Discharge Date:	Not reported
Issue Date:	Not reported
Incident Description:	Not reported

127
NNE
1/2-1
0.625 mi.
3300 ft.

MENLO PARK SANITATION
1700 MARSH ROAD EXTENTION
MENLO PARK, CA 94025

CA ENVIROSTOR **S105024930**
CA San Mateo Co. BI **N/A**
CA HIST CORTESE

Relative:
Higher

Actual:
12 ft.

ENVIROSTOR:

Facility ID:	41490021
Status:	No Further Action
Status Date:	09/01/1985
Site Code:	Not reported
Site Type:	Evaluation
Site Type Detailed:	Evaluation
Acres:	0
NPL:	NO
Regulatory Agencies:	NONE SPECIFIED
Lead Agency:	NONE SPECIFIED
Program Manager:	Not reported
Supervisor:	Denise Tsuji
Division Branch:	Cleanup Berkeley
Assembly:	24
Senate:	13
Special Program:	Not reported
Restricted Use:	NO
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	37.4878
Longitude:	-122.1774
APN:	NONE SPECIFIED
Past Use:	NONE SPECIFIED
Potential COC:	* HALOGENATED ORGANIC COMPOUNDS * Sludge - Sewage * STILL BOTTOMS WITH HALOGENATED ORGANICS * UNSPECIFIED ACID SOLUTION * UNSPECIFIED SLUDGE WASTE Arsenic Lead Cadmium and compounds Chromium VI
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	MARSH ROAD DUMP
Alias Type:	Alternate Name
Alias Name:	MENLO PARK SANITARY DISTRICT TRMT PLANT
Alias Type:	Alternate Name
Alias Name:	WEST BAY SANITARY DISTRICT
Alias Type:	Alternate Name
Alias Name:	CAD089184840
Alias Type:	EPA Identification Number
Alias Name:	110018958733
Alias Type:	EPA (FRS #)

MENLO PARK SANITATION (Continued) **S105024930**

Alias Name: 41490021
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 10/12/1983
Comments: Site Discovery. Facility identified from ERRIS.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 08/01/1980
Comments: Site Discovery. Facility identified as an active site during drive-by.
Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 05/22/1987
Comments: Completed Site Screening. Ponds excavated and disposed to landfill (Browning Ferris).

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

San Mateo Co. BI:
Region: SAN MATEO
Facility ID: FA0025751
Prog Element Code: GENERATES <27 GAL/YEAR
Record Id: PR0035155
Description: GENERATES <27 GAL/YEAR
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0025751
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0035154
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0025752
Prog Element Code: GENERATES and RECYCLES WASTE OIL/SOLVENT
Record Id: PR0035157
Description: GENERATES & RECYCLES WASTE OIL/SOLVENT
Facility Status: INACTIVE

Region: SAN MATEO

MENLO PARK SANITATION (Continued) **S105024930**

Facility ID: FA0025752
Prog Element Code: STORES MV FUELS OR WASTE ONLY
Record Id: PR0035156
Description: STORES MV FUELS OR WASTE ONLY
Facility Status: INACTIVE

HIST CORTESE:
Region: CORTESE
Facility County Code: 41
Reg By: CALSI
Reg Id: 41490021

128
WSW
1/2-1
0.727 mi.
3840 ft.

REDWOOD CITY USD / TAFT ELEMENTARY **CA ENVIROSTOR** **S112916128**
903 10TH AVE **CA SCH** **N/A**
REDWOOD CITY, CA 94063 **CA HAZNET**

Relative:
Higher

Actual:
17 ft.

ENVIROSTOR:
Facility ID: 60002535
Status: Active
Status Date: 08/31/2017
Site Code: 204296
Site Type: School Investigation
Site Type Detailed: School
Acres: 7.56
NPL: NO
Regulatory Agencies: SMBRP
Lead Agency: SMBRP
Program Manager: Mellan Songco
Supervisor: Jose Salcedo
Division Branch: Northern California Schools & Santa Susana
Assembly: , 22
Senate: , 13
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: School District
Latitude: 37.48069
Longitude: -122.1938
APN: 055-063-130
Past Use: NONE SPECIFIED
Potential COC: NONE SPECIFIED
Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: 055-063-130
Alias Type: APN
Alias Name: 204296
Alias Type: Project Code (Site Code)
Alias Name: 60002535
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Phase 1
Completed Date: 09/27/2017
Comments: Not reported

REDWOOD CITY USD / TAFT ELEMENTARY (Continued) **S112916128**

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported
Schedule Area Name:	Not reported
Schedule Sub Area Name:	Not reported
Schedule Document Type:	Not reported
Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported

SCH:

Facility ID:	60002535
Site Type:	School Investigation
Site Type Detail:	School
Site Mgmt. Req.:	NONE SPECIFIED
Acres:	7.56
National Priorities List:	NO
Cleanup Oversight Agencies:	SMBRP
Lead Agency:	SMBRP
Lead Agency Description:	DTSC - Site Cleanup Program
Project Manager:	Mellan Songco
Supervisor:	Jose Salcedo
Division Branch:	Northern California Schools & Santa Susana
Site Code:	204296
Assembly:	, 22
Senate:	, 13
Special Program Status:	Not reported
Status:	Active
Status Date:	08/31/2017
Restricted Use:	NO
Funding:	School District
Latitude:	37.48069
Longitude:	-122.1938
APN:	055-063-130
Past Use:	NONE SPECIFIED
Potential COC:	NONE SPECIFIED
Confirmed COC:	NONE SPECIFIED
Potential Description:	NONE SPECIFIED
Alias Name:	055-063-130
Alias Type:	APN
Alias Name:	204296
Alias Type:	Project Code (Site Code)
Alias Name:	60002535
Alias Type:	Envirostor ID Number

Completed Info:

Completed Area Name:	PROJECT WIDE
Completed Sub Area Name:	Not reported
Completed Document Type:	Phase 1
Completed Date:	09/27/2017
Comments:	Not reported

Future Area Name:	Not reported
Future Sub Area Name:	Not reported
Future Document Type:	Not reported
Future Due Date:	Not reported

REDWOOD CITY USD / TAFT ELEMENTARY (Continued) **S112916128**

Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

HAZNET:
envid: S112916128
Year: 2001
GEPAID: CAC002367511
Contact: LENORA DESMAS
Telephone: 6504232240
Mailing Name: Not reported
Mailing Address: 750 BRADFORD ST
Mailing City,St,Zip: REDWOOD CITY, CA 940630000
Gen County: Not reported
TSD EPA ID: CAD981382732
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Disposal, Land Fill
Tons: 33.71
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: S112916128
Year: 2001
GEPAID: CAC002367511
Contact: LENORA DESMAS
Telephone: 6504232240
Mailing Name: Not reported
Mailing Address: 750 BRADFORD ST
Mailing City,St,Zip: REDWOOD CITY, CA 940630000
Gen County: Not reported
TSD EPA ID: CAD981382732
TSD County: Not reported
Waste Category: Asbestos containing waste
Disposal Method: Not reported
Tons: 16.85
Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

envid: S112916128
Year: 2001
GEPAID: CAC002367511
Contact: LENORA DESMAS
Telephone: 6504232240
Mailing Name: Not reported
Mailing Address: 750 BRADFORD ST
Mailing City,St,Zip: REDWOOD CITY, CA 940630000
Gen County: Not reported
TSD EPA ID: CAD028409019
TSD County: Not reported
Waste Category: Other organic solids
Disposal Method: Transfer Station
Tons: 1.26

REDWOOD CITY USD / TAFT ELEMENTARY (Continued) **S112916128**

Cat Decode: Not reported
Method Decode: Not reported
Facility County: San Mateo

S129
ESE
1/2-1
0.820 mi.
4331 ft.

Site 1 of 2 in cluster S

Relative:
Lower

Actual:
8 ft.

TYCO ELECTRONICS CORPORATION
304 CONSTITUTION DR.
MENLO PARK, CA 94025

SEMS-ARCHIVE **1000170323**
CORRACTS **CAD009125527**
RCRA-TSDF
RCRA-LQG
US INST CONTROL
CA ENVIROSTOR
CA SLIC
CA HIST UST
CA DEED
CA CHMIRS
US FIN ASSUR
2020 COR ACTION
PADS
FINDS
ECHO
CA San Mateo Co. BI
CA EMI
CA HIST CORTESE
CA NPDES
CA WDS

SEMS Archive:
Site ID: 901154
EPA ID: CAD009125527
Cong District: 12
FIPS Code: 6081
FF: N
NPL: Not on the NPL
Non NPL Status: NFRAP-Site does not qualify for the NPL based on existing information

SEMS Archive Detail:
Region: 9
Site ID: 901154
EPA ID: CAD009125527
Site Name: RAYCHEM CORP
NPL: N
FF: N
OU: 0
Action Code: VS
Action Name: ARCH SITE
SEQ: 1
Start Date: Not reported
Finish Date: 1991-10-11 00:00:00
Qual: Not reported
Current Action Lead: EPA Perf In-Hse

Region: 9
Site ID: 901154
EPA ID: CAD009125527
Site Name: RAYCHEM CORP
NPL: N
FF: N
OU: 0
Action Code: SI

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Action Name:	SI
SEQ:	2
Start Date:	1986-05-01 00:00:00
Finish Date:	1986-08-01 00:00:00
Qual:	H
Current Action Lead:	EPA Perf
Region:	9
Site ID:	901154
EPA ID:	CAD009125527
Site Name:	RAYCHEM CORP
NPL:	N
FF:	N
OU:	0
Action Code:	SI
Action Name:	SI
SEQ:	1
Start Date:	Not reported
Finish Date:	1991-10-11 00:00:00
Qual:	N
Current Action Lead:	EPA Perf
Region:	9
Site ID:	901154
EPA ID:	CAD009125527
Site Name:	RAYCHEM CORP
NPL:	N
FF:	N
OU:	0
Action Code:	PA
Action Name:	PA
SEQ:	1
Start Date:	Not reported
Finish Date:	1986-05-01 00:00:00
Qual:	L
Current Action Lead:	EPA Perf
Region:	9
Site ID:	901154
EPA ID:	CAD009125527
Site Name:	RAYCHEM CORP
NPL:	N
FF:	N
OU:	0
Action Code:	DS
Action Name:	DISCVRY
SEQ:	1
Start Date:	1981-06-01 00:00:00
Finish Date:	1981-06-01 00:00:00
Qual:	Not reported
Current Action Lead:	EPA Perf

CORRACTS:

EPA ID: CAD009125527

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20070202
Action: CA600SR - Stabilization Measures Implemented, Primary measure is source removal and/or treatment
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20070228
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: OFFSITE SOIL
Actual Date: 20040604
Action: CA150 - RFI Workplan Approved
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: OFFSITE SOIL
Actual Date: 20041004
Action: CA200 - RFI Approved
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20030915
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20040305
Action: CA200 - RFI Approved
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20031224
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20120806
Action: CA772PR
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20120731
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20070906
Action: CA550RC
NAICS Code(s): 326299
All Other Rubber Product Manufacturing

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Original schedule date: 20070906
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: EAST AND OFFSITE OF THE FACILITY
Actual Date: 20021007
Action: CA200 - RFI Approved
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20020315
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: EAST AND OFFSITE OF THE FACILITY
Actual Date: 20021007
Action: CA150 - RFI Workplan Approved
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20060710
Action: CA350 - CMS Approved
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20021010
Action: CA500 - CMI Workplan Approved
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20070418
Action: CA650SR
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20070414
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20070119

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Action: CA772GC
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20070119
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: OFFSITE SOIL
Actual Date: 20050426
Action: CA225NR - Stabilization Measures Evaluation, This facility is, not amenable to stabilization activity at the, present time for reasons other than (1) it appears to be technically, infeasible or inappropriate (NF) or (2) there is a lack of technical, information (IN). Reasons for this conclusion may be the status of, closure at the facility, the degree of risk, timing considerations, the status of corrective action work at the facility, or other, administrative considerations
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20050426
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20160427
Action: CA750YE - Migration of Contaminated Groundwater under Control, Yes, Migration of Contaminated Groundwater Under Control has been verified
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20160330
Schedule end date: 20160427

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20060727
Action: CA380 - Date For Public Notice On Proposed Remedy
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20150130
Action: CA180 - RFI Supplemental Implementation Begun
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: Not reported
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Actual Date: 20110330
Action: CA725YE - Current Human Exposures Under Control, Yes, Current Human Exposures Under Control has been verified
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20110330
Schedule end date: Not reported

EPA ID: CAD009125527
EPA Region: 09
Area Name: ENTIRE FACILITY
Actual Date: 20061130
Action: CA400 - Date For Remedy Selection (CM Imposed)
NAICS Code(s): 326299
All Other Rubber Product Manufacturing
Original schedule date: 20061130
Schedule end date: Not reported

RCRA-TSDF:
Date form received by agency: 02/25/2016
Facility name: TYCO ELECTRONICS CORPORATION
Facility address: 304 CONSTITUTION DR.
MENLO PARK, CA 94025
EPA ID: CAD009125527
Mailing address: CONSTITUTION DR.
MENLO PARK, CA 94025
Contact: STEPHEN DOUGLAS
Contact address: CONSTITUTION DR.
MENLO PARK, CA 94025
Contact country: US
Contact telephone: 650-361-3022
Contact email: SDOUGLAS@TE.COM
EPA Region: 09
Land type: Private
Classification: TSDF
Description: Handler is engaged in the treatment, storage or disposal of hazardous waste
Classification: Large Quantity Generator
Description: Handler: generates 1,000 kg or more of hazardous waste during any calendar month; or generates more than 1 kg of acutely hazardous waste during any calendar month; or generates more than 100 kg of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month; or generates 1 kg or less of acutely hazardous waste during any calendar month, and accumulates more than 1 kg of acutely hazardous waste at any time; or generates 100 kg or less of any residue or contaminated soil, waste or other debris resulting from the cleanup of a spill, into or on any land or water, of acutely hazardous waste during any calendar month, and accumulates more than 100 kg of that material at any time

Owner/Operator Summary:
Owner/operator name: TYCO ELECTRONICS CORP.
Owner/operator address: Not reported
Not reported
Owner/operator country: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Owner/operator telephone: Not reported
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Operator
Owner/Op start date: 10/01/1999
Owner/Op end date: Not reported

Owner/operator name: TYCO ELECTRONICS CORP.
Owner/operator address: CONSTITUTION DR.
MENLO PARK, CA 94025
Owner/operator country: US
Owner/operator telephone: 650-361-3022
Owner/operator email: Not reported
Owner/operator fax: Not reported
Owner/operator extension: Not reported
Legal status: Private
Owner/Operator Type: Owner
Owner/Op start date: 10/01/1999
Owner/Op end date: Not reported

Handler Activities Summary:
U.S. importer of hazardous waste: No
Mixed waste (haz. and radioactive): No
Recycler of hazardous waste: No
Transporter of hazardous waste: No
Treater, storer or disposer of HW: No
Underground injection activity: No
On-site burner exemption: No
Furnace exemption: No
Used oil fuel burner: No
Used oil processor: No
User oil refiner: No
Used oil fuel marketer to burner: No
Used oil Specification marketer: No
Used oil transfer facility: No
Used oil transporter: No

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 212
. Waste name: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 551
. Waste name: Laboratory waste chemicals

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste code: 591
. Waste name: Baghouse waste

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D011
. Waste name: SILVER

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: LABP
. Waste name: LAB PACK

. Waste code: P003
. Waste name: 2-PROPENAL (OR) ACROLEIN

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste code: P005
. Waste name: 2-PROPEN-1-OL (OR) ALLYL ALCOHOL

Historical Generators:
Date form received by agency: 09/17/2014
Site name: TYCO ELECTRONICS CORP
Classification: Large Quantity Generator

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 213
. Waste name: Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 252
. Waste name: Other still bottom waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 551
. Waste name: Laboratory waste chemicals

. Waste code: 591
. Waste name: Baghouse waste

. Waste code: 724
. Waste name: Liquids with lead > 500 mg/l

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D011
. Waste name: SILVER

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 03/01/2014
Site name: TYCO ELECTRONICS CORP.
Classification: Large Quantity Generator

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 213
. Waste name: Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)

. Waste code: 214

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste name: Unspecified solvent mixture

. Waste code: 252
. Waste name: Other still bottom waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 551
. Waste name: Laboratory waste chemicals

. Waste code: 591
. Waste name: Baghouse waste

. Waste code: 724
. Waste name: Liquids with lead > 500 mg/l

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D011
. Waste name: SILVER

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U133
. Waste name: HYDRAZINE (R,T)

Date form received by agency: 03/16/2012
Site name: TYCO ELECTRONICS
Classification: Large Quantity Generator

. Waste code: 132
. Waste name: Aqueous solution w/metals (< restricted levels and see waste code 121 for a list of metals)

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 252
. Waste name: Other still bottom waste

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 551
. Waste name: Laboratory waste chemicals

. Waste code: 591
. Waste name: Baghouse waste

. Waste code: 724
. Waste name: Liquids with lead > 500 mg/l

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D004
. Waste name: ARSENIC

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D011
. Waste name: SILVER

. Waste code: D026
. Waste name: CRESOL

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste code: LABP
. Waste name: LAB PACK

. Waste code: P015
. Waste name: BERYLLIUM

. Waste code: P029
. Waste name: COPPER CYANIDE (OR) COPPER CYANIDE CU(CN)

. Waste code: P030
. Waste name: CYANIDES (SOLUBLE CYANIDE SALTS), NOT OTHERWISE SPECIFIED

. Waste code: P087
. Waste name: OSMIUM OXIDE OSO4, (T-4)- (OR) OSMIUM TETROXIDE

. Waste code: P098
. Waste name: POTASSIUM CYANIDE (OR) POTASSIUM CYANIDE K(CN)

. Waste code: P099
. Waste name: ARGENTATE (1-), BIS(CYANO-C)-, POTASSIUM (OR) POTASSIUM SILVER CYANIDE

. Waste code: U080
. Waste name: METHANE, DICHLORO- (OR) METHYLENE CHLORIDE

. Waste code: U134
. Waste name: HYDROFLUORIC ACID (C,T) (OR) HYDROGEN FLUORIDE (C,T)

. Waste code: U160
. Waste name: 2-BUTANONE, PEROXIDE (R,T) (OR) METHYL ETHYL KETONE PEROXIDE (R,T)

Date form received by agency: 09/29/2010
Site name: TYCO ELECTRONICS
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D011
. Waste name: SILVER

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D038
. Waste name: PYRIDINE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U012
. Waste name: ANILINE (I,T) (OR) BENZENAMINE (I,T)

. Waste code: U082
. Waste name: 2,6-DICHLOROPHENOL (OR) PHENOL, 2,6-DICHLORO-

. Waste code: U201
. Waste name: 1,3-BENZENEDIOL (OR) RESORCINOL

. Waste code: U202
. Waste name: 1,2-BENZISOTHIAZOL-3(2H)-ONE, 1,1-DIOXIDE, & SALTS (OR) SACCHARIN, & SALTS

. Waste code: U208
. Waste name: 1,1,1,2-TETRACHLOROETHANE (OR) ETHANE, 1,1,1,2-TETRACHLORO-

. Waste code: U209
. Waste name: 1,1,2,2-TETRACHLOROETHANE (OR) ETHANE, 1,1,2,2-TETRACHLORO-

. Waste code: U220
. Waste name: BENZENE, METHYL- (OR) TOLUENE

. Waste code: U239
. Waste name: BENZENE, DIMETHYL- (I,T) (OR) XYLENE (I)

. Waste code: U244
. Waste name: THIOPEROXYDICARBONIC DIAMIDE [(H2N)C(S)]2S2, TETRAMETHYL- (OR) THIRAM

. Waste code: U404
. Waste name: ETHANAMINE, N,N-DIETHYL- (OR) TRIETHYLAMINE

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Date form received by agency: 02/27/2008
Site name: TYCO ELECTRONICS
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: U220
. Waste name: BENZENE, METHYL- (OR) TOLUENE

. Waste code: U239
. Waste name: BENZENE, DIMETHYL- (I,T) (OR) XYLENE (I)

Date form received by agency: 02/27/2006
Site name: TYCO ELECTRONICS
Classification: Large Quantity Generator

. Waste code: D001

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D005
. Waste name: BARIUM

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 02/25/2004
Site name: TYCO ELECTRONICS
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D005
. Waste name: BARIUM

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D010
. Waste name: SELENIUM

. Waste code: D011
. Waste name: SILVER

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: F001
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS USED IN DEGREASING: TETRACHLOROETHYLENE, TRICHLORETHYLENE, METHYLENE CHLORIDE, 1,1,1-TRICHLOROETHANE, CARBON TETRACHLORIDE AND CHLORINATED FLUOROCARBONS; ALL SPENT SOLVENT MIXTURES/BLENDS USED IN DEGREASING CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste code: F004
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: CRESOLS, CRESYLIC ACID, AND NITROBENZENE; AND THE STILL BOTTOMS FROM THE RECOVERY OF THESE SOLVENTS; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

Date form received by agency: 01/27/2003
Site name: TYCO ELECTRONICS CORPORATION
Classification: Large Quantity Generator

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002
. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D011
. Waste name: SILVER

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: P098
. Waste name: POTASSIUM CYANIDE (OR) POTASSIUM CYANIDE K(CN)

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

. Waste code: U044
. Waste name: CHLOROFORM (OR) METHANE, TRICHLORO-

. Waste code: U057
. Waste name: CYCLOHEXANONE (I)

. Waste code: U069
. Waste name: 1,2-BENZENEDICARBOXYLIC ACID, DIBUTYL ESTER (OR) DIBUTYL PHTHALATE

. Waste code: U147
. Waste name: 2,5-FURANDIONE (OR) MALEIC ANHYDRIDE

Date form received by agency: 02/26/2002
Site name: RAYCHEM CORPORATION (TYCO ELECTRONICS)
Classification: Large Quantity Generator

. Waste code: 121
. Waste name: Alkaline solution (pH >12.5) with metals (antimony, arsenic, barium, beryllium, cadmium, chromium, cobalt, copper, lead, mercury,

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

molybdenum, nickel, selenium, silver, thallium, vanadium, and zinc)

. Waste code: 122
. Waste name: Alkaline solution without metals (pH > 12.5)

. Waste code: 141
. Waste name: Off-specification, aged, or surplus inorganics

. Waste code: 181
. Waste name: Other inorganic solid waste

. Waste code: 212
. Waste name: Oxygenated solvents (acetone, butanol, ethyl acetate, etc.)

. Waste code: 213
. Waste name: Hydrocarbon solvents (benzene, hexane, Stoddard, etc.)

. Waste code: 214
. Waste name: Unspecified solvent mixture

. Waste code: 252
. Waste name: Other still bottom waste

. Waste code: 331
. Waste name: Off-specification, aged, or surplus organics

. Waste code: 341
. Waste name: Organic liquids (nonsolvents) with halogens

. Waste code: 352
. Waste name: Other organic solids

. Waste code: 461
. Waste name: Degreasing sludge

. Waste code: 551
. Waste name: Laboratory waste chemicals

. Waste code: 591
. Waste name: Baghouse waste

. Waste code: 724
. Waste name: Liquids with lead > 500 mg/l

. Waste code: 725
. Waste name: Liquids with mercury > 20 mg/l

. Waste code: 791
. Waste name: Liquids with pH < 2

. Waste code: 792
. Waste name: Liquids with pH < 2 with metals

. Waste code: D001
. Waste name: IGNITABLE WASTE

. Waste code: D002

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

. Waste name: CORROSIVE WASTE

. Waste code: D003
. Waste name: REACTIVE WASTE

. Waste code: D006
. Waste name: CADMIUM

. Waste code: D007
. Waste name: CHROMIUM

. Waste code: D008
. Waste name: LEAD

. Waste code: D009
. Waste name: MERCURY

. Waste code: D011
. Waste name: SILVER

. Waste code: D018
. Waste name: BENZENE

. Waste code: D022
. Waste name: CHLOROFORM

. Waste code: D035
. Waste name: METHYL ETHYL KETONE

. Waste code: D039
. Waste name: TETRACHLOROETHYLENE

. Waste code: F002
. Waste name: THE FOLLOWING SPENT HALOGENATED SOLVENTS: TETRACHLOROETHYLENE, METHYLENE CHLORIDE, TRICHLOROETHYLENE, 1,1,1-TRICHLOROETHANE, CHLOROBENZENE, 1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE, ORTHO-DICHLOROBENZENE, TRICHLOROFLUOROMETHANE, AND 1,1,2, TRICHLOROETHANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F003
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NONHALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS, AND A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: F005
. Waste name: THE FOLLOWING SPENT NONHALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NONHALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

. Waste code: P098
. Waste name: POTASSIUM CYANIDE (OR) POTASSIUM CYANIDE K(CN)

. Waste code: U002
. Waste name: 2-PROPANONE (I) (OR) ACETONE (I)

. Waste code: U044
. Waste name: CHLOROFORM (OR) METHANE, TRICHLORO-

. Waste code: U057
. Waste name: CYCLOHEXANONE (I)

. Waste code: U069
. Waste name: 1,2-BENZENEDICARBOXYLIC ACID, DIBUTYL ESTER (OR) DIBUTYL PHTHALATE

. Waste code: U147
. Waste name: 2,5-FURANDIONE (OR) MALEIC ANHYDRIDE

Date form received by agency: 10/12/2000
Site name: RAYCHEM CORPORATION
Classification: Large Quantity Generator

Date form received by agency: 03/04/1999
Site name: RAYCHEM CORPORATION-MAIN SITE
Classification: Large Quantity Generator

Date form received by agency: 09/01/1996
Site name: RAYCHEM CORP
Classification: Large Quantity Generator

Date form received by agency: 03/11/1996
Site name: RAYCHEM CORPORATION-MAIN SITE
Classification: Large Quantity Generator

Date form received by agency: 04/20/1994
Site name: RAYCHEM CORP
Classification: Large Quantity Generator

Date form received by agency: 02/21/1992
Site name: RAYCHEM - MAIN SITE
Classification: Large Quantity Generator

Date form received by agency: 04/30/1990
Site name: RAYCHEM CORP
Classification: Large Quantity Generator

Date form received by agency: 08/14/1980
Site name: RAYCHEM CORP
Classification: Large Quantity Generator

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Biennial Reports:

Last Biennial Reporting Year: 2017

Annual Waste Handled:

Waste code:	D001
Waste name:	IGNITABLE HAZARDOUS WASTES ARE THOSE WASTES WHICH HAVE A FLASHPOINT OF LESS THAN 140 DEGREES FAHRENHEIT AS DETERMINED BY A PENSKY-MARTENS CLOSED CUP FLASH POINT TESTER. ANOTHER METHOD OF DETERMINING THE FLASH POINT OF A WASTE IS TO REVIEW THE MATERIAL SAFETY DATA SHEET, WHICH CAN BE OBTAINED FROM THE MANUFACTURER OR DISTRIBUTOR OF THE MATERIAL. LACQUER THINNER IS AN EXAMPLE OF A COMMONLY USED SOLVENT WHICH WOULD BE CONSIDERED AS IGNITABLE HAZARDOUS WASTE.
Amount (Lbs):	10272
Waste code:	D002
Waste name:	A WASTE WHICH HAS A PH OF LESS THAN 2 OR GREATER THAN 12.5 IS CONSIDERED TO BE A CORROSIVE HAZARDOUS WASTE. SODIUM HYDROXIDE, A CAUSTIC SOLUTION WITH A HIGH PH, IS OFTEN USED BY INDUSTRIES TO CLEAN OR DEGREASE PARTS. HYDROCHLORIC ACID, A SOLUTION WITH A LOW PH, IS USED BY MANY INDUSTRIES TO CLEAN METAL PARTS PRIOR TO PAINTING. WHEN THESE CAUSTIC OR ACID SOLUTIONS BECOME CONTAMINATED AND MUST BE DISPOSED, THE WASTE WOULD BE A CORROSIVE HAZARDOUS WASTE.
Amount (Lbs):	700
Waste code:	D005
Waste name:	BARIUM
Amount (Lbs):	6079
Waste code:	D006
Waste name:	CADMIUM
Amount (Lbs):	89
Waste code:	D007
Waste name:	CHROMIUM
Amount (Lbs):	10354
Waste code:	D008
Waste name:	LEAD
Amount (Lbs):	15325
Waste code:	D009
Waste name:	MERCURY
Amount (Lbs):	28
Waste code:	D011
Waste name:	SILVER
Amount (Lbs):	263
Waste code:	D035
Waste name:	METHYL ETHYL KETONE
Amount (Lbs):	10180
Waste code:	F003
Waste name:	THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

NON-HALOGENATED SOLVENTS; AND ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS, AND, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THOSE SOLVENTS LISTED IN F001, F002, F004, AND F005, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 10180

Waste code: F005
Waste name: THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLVENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.
Amount (Lbs): 10180

Waste code: LABP
Waste name: LAB PACK
Amount (Lbs): 6969

Waste code: P003
Waste name: ACROLEIN
Amount (Lbs): 7

Waste code: P005
Waste name: ALLYL ALCOHOL
Amount (Lbs): 7

Corrective Action Summary:

Event date: 05/01/1986
Event: NCAPS RANKING/PRIORITY

Event date: 05/01/1986
Event: LEAD AGENCY DETERMINATION

Event date: 05/01/1986
Event: PA OR CERCLA INSPECTION

Event date: 08/01/1986
Event: PA OR CERCLA INSPECTION

Event date: 10/02/1989
Event: RFA COMPLETED

Event date: 04/11/1994
Event: STABILIZATION MEASURES EVALUATION-FACILITY IS AMENABLE TO STABILIZATION

Event date: 04/11/1994
Event: CA PRIORITIZATION-MEDIUM CA PRIORITY

Event date: 06/26/1996
Event: INVESTIGATION IMPOSITION

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Event date:	06/26/1996
Event:	3004(U) C/A UNDER PERMIT
Event date:	10/07/2002
Event:	INVESTIGATION WORKPLAN APPROVED
Event date:	10/07/2002
Event:	INVESTIGATION COMPLETE
Event date:	10/10/2002
Event:	CMI WORKPLAN APPROVED
Event date:	03/05/2004
Event:	INVESTIGATION COMPLETE
Event date:	06/04/2004
Event:	INVESTIGATION WORKPLAN APPROVED
Event date:	10/04/2004
Event:	INVESTIGATION COMPLETE
Event date:	04/26/2005
Event:	STABILIZATION MEASURES EVALUATION-FACILITY NOT AMENABLE TO STABILIZATION
Event date:	07/10/2006
Event:	CMS COMPLETE
Event date:	07/27/2006
Event:	DATE FOR PUBLIC NOTICE ON PROPOSED REMEDY
Event date:	11/30/2006
Event:	REMEDY DECISION
Event date:	11/30/2006
Event:	REMEDY DECISION
Event date:	01/19/2007
Event:	INSTITUTIONAL CONTROLS ESTABLISHED-GOVERNMENTAL CONTROL
Event date:	02/02/2007
Event:	STABILIZATION/INTERIM MEASURES DECISION-PRIMARY MEAS IS SOURCE REMOVL &/OR TRT
Event date:	04/18/2007
Event:	STABILIZATION CONSTRUCTION COMPLETED - PRIMARY MEAS SOURCE REMOVAL AND-OR TRTMT
Event date:	07/27/2007
Event:	INSTITUTIONAL CONTROLS ESTABLISHED-GOVERNMENTAL CONTROL
Event date:	09/06/2007
Event:	REMEDY CONSTRUCTION
Event date:	09/06/2007
Event:	REMEDY CONSTRUCTION-REMEDY CONSTRUCTED

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Event date: 02/01/2008
Event: CA805

Event date: 03/30/2011
Event: HUMAN EXPOSURES CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE

Event date: 03/30/2011
Event: HUMAN EXPOSURES CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE

Event date: 08/06/2012
Event: INSTITUTIONAL CONTROLS ESTABLISHED-PROPRIETARY CONTROL

Event date: 01/30/2015
Event: INVESTIGATION IMPLEMENTATION BEGUN

Event date: 04/27/2016
Event: RELEASE TO GW CONTROLLED DETERMINATION-YES, APPLICABLE AS OF THIS DATE

Event date: Not reported
Event: RFA NEED BY ANOTHER AGCY

Facility Has Received Notices of Violations:
Regulation violated: Not reported
Area of violation: Generators - General
Date violation determined: 02/24/2004
Date achieved compliance: 04/04/2004
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 03/02/2004
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 08/20/1992
Date achieved compliance: 01/01/1993
Violation lead agency: EPA
Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 11/20/1991
Date achieved compliance: 01/01/1992
Violation lead agency: EPA

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Enforcement action: Not reported
Enforcement action date: Not reported
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: Not reported
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: REFERRAL TO ATTORNEY GENERAL
Enforcement action date: 12/10/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.40-43.D
Area of violation: Generators - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: REFERRAL TO ATTORNEY GENERAL
Enforcement action date: 12/10/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.40-43.D
Area of violation: Generators - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: FINAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/11/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 425000
Paid penalty amount: Not reported

Regulation violated: FR - 262.50-60
Area of violation: Generators - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: REFERRAL TO ATTORNEY GENERAL

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Enforcement action date: 12/10/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/06/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/12/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.50-60
Area of violation: Generators - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/06/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.40-43.D
Area of violation: Generators - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/12/1991

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 262.50-60
Area of violation: Generators - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 11/12/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: FINAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/11/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 425000
Paid penalty amount: Not reported

Regulation violated: FR - 262.50-60
Area of violation: Generators - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: FINAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/11/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 425000
Paid penalty amount: Not reported

Regulation violated: FR - 262.40-43.D
Area of violation: Generators - General
Date violation determined: 11/08/1991
Date achieved compliance: 01/03/1992
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/06/1992
Enf. disposition status: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 05/08/1990
Date achieved compliance: 09/30/1990
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/06/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 05/08/1990
Date achieved compliance: 09/30/1990
Violation lead agency: State
Enforcement action: FINAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/11/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 425000
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 05/08/1990
Date achieved compliance: 09/30/1990
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 05/04/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 05/08/1990
Date achieved compliance: 09/30/1990
Violation lead agency: State
Enforcement action: REFERRAL TO ATTORNEY GENERAL
Enforcement action date: 12/10/1991
Enf. disposition status: Not reported
Enf. disp. status date: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: REFERRAL TO ATTORNEY GENERAL
Enforcement action date: 04/27/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: REFERRAL TO ATTORNEY GENERAL
Enforcement action date: 04/27/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/06/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/06/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: FINAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/11/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 425000
Paid penalty amount: Not reported

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: FINAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/11/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 425000
Paid penalty amount: Not reported

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/06/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: REFERRAL TO ATTORNEY GENERAL
Enforcement action date: 04/27/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/06/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: FINAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/11/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 425000
Paid penalty amount: Not reported

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/06/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268 ALL
Area of violation: LDR - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: REFERRAL TO ATTORNEY GENERAL
Enforcement action date: 04/27/1990
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Paid penalty amount: Not reported

Regulation violated: FR - 264.70-77.E
Area of violation: TSD - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: FINAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/11/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: 425000
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/06/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 268.7
Area of violation: LDR - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/06/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 270
Area of violation: TSD - General
Date violation determined: 08/30/1988
Date achieved compliance: 04/21/1989
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 01/06/1989
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Regulation violated: FR - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 08/02/1988
Date achieved compliance: 08/19/1988
Violation lead agency: State
Enforcement action: INITIAL CIVIL JUDICIAL ACTION FOR COMPLIANCE AND/OR MONETARY PENALTY
Enforcement action date: 05/06/1992
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 08/02/1988
Date achieved compliance: 08/19/1988
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 08/16/1988
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Regulation violated: FR - 264.140-150.H
Area of violation: TSD - Financial Requirements
Date violation determined: 07/07/1986
Date achieved compliance: 07/17/1986
Violation lead agency: State
Enforcement action: WRITTEN INFORMAL
Enforcement action date: 04/24/1986
Enf. disposition status: Not reported
Enf. disp. status date: Not reported
Enforcement lead agency: State
Proposed penalty amount: Not reported
Final penalty amount: Not reported
Paid penalty amount: Not reported

Evaluation Action Summary:
Evaluation date: 02/24/2004
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 04/04/2004
Evaluation lead agency: State Contractor/Grantee

Evaluation date: 06/03/1999
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: EPA

Evaluation date: 03/26/1998
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 03/31/1997
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 06/13/1996
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 08/20/1992
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 01/01/1993
Evaluation lead agency: EPA Contractor/Grantee

Evaluation date: 06/24/1992
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

Evaluation date: 11/20/1991
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 01/01/1992
Evaluation lead agency: EPA Contractor/Grantee

Evaluation date: 09/30/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 01/03/1992
Evaluation lead agency: State

Evaluation date: 09/30/1991
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: Generators - General
Date achieved compliance: 01/03/1992
Evaluation lead agency: State

Evaluation date: 03/23/1990
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 09/30/1990
Evaluation lead agency: State

Evaluation date: 03/13/1990
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: Not reported
Date achieved compliance: Not reported
Evaluation lead agency: State

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Evaluation date: 08/30/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: LDR - General
Date achieved compliance: 04/21/1989
Evaluation lead agency: State

Evaluation date: 08/30/1988
Evaluation: COMPLIANCE EVALUATION INSPECTION ON-SITE
Area of violation: TSD - General
Date achieved compliance: 04/21/1989
Evaluation lead agency: State

Evaluation date: 08/02/1988
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 08/19/1988
Evaluation lead agency: State

Evaluation date: 07/07/1986
Evaluation: FINANCIAL RECORD REVIEW
Area of violation: TSD - Financial Requirements
Date achieved compliance: 07/17/1986
Evaluation lead agency: State

US INST CONTROL:
EPA ID: CAD009125527
Site ID: Not reported
Name: TYCO ELECTRONICS CORPORATION
Action Name: Not reported
Address: 304 CONSTITUTION DR.
MENLO PARK, CA 94025
EPA Region: 9
County: SAN MATEO
Event Code: CA772GC
Inst. Control: Not reported
Actual Date: 01/19/2007
Complet. Date: 01/01/1900
Operable Unit: Not reported
Contaminated Media : Not reported
Contact Name : STEPHEN DOUGLAS
Contact Phone and Ext : 650-361-3022
Event Code Description: INSTITUTIONAL CONTROLS ESTABLISHED-GOVERNMENTAL CONTROL

EPA ID: CAD009125527
Site ID: Not reported
Name: TYCO ELECTRONICS CORPORATION
Action Name: Not reported
Address: 304 CONSTITUTION DR.
MENLO PARK, CA 94025
EPA Region: 9
County: SAN MATEO
Event Code: CA772GC
Inst. Control: Not reported
Actual Date: 07/27/2007
Complet. Date: 01/01/1900
Operable Unit: Not reported
Contaminated Media : Not reported
Contact Name : STEPHEN DOUGLAS

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Contact Phone and Ext : 650-361-3022
Event Code Description: INSTITUTIONAL CONTROLS ESTABLISHED-GOVERNMENTAL CONTROL

EPA ID: CAD009125527
Site ID: Not reported
Name: TYCO ELECTRONICS CORPORATION
Action Name: Not reported
Address: 304 CONSTITUTION DR.
MENLO PARK, CA 94025
EPA Region: 9
County: SAN MATEO
Event Code: CA772PR
Inst. Control: Not reported
Actual Date: 08/06/2012
Complet. Date: 01/01/1900
Operable Unit: Not reported
Contaminated Media : Not reported
Contact Name : STEPHEN DOUGLAS
Contact Phone and Ext : 650-361-3022
Event Code Description: INSTITUTIONAL CONTROLS ESTABLISHED-PROPRIETARY CONTROL

ENVIROSTOR:
Facility ID: 41280137
Status: Refer: RCRA
Status Date: 08/01/1994
Site Code: Not reported
Site Type: Historical
Site Type Detailed: * Historical
Acres: Not reported
NPL: NO
Regulatory Agencies: NONE SPECIFIED
Lead Agency: NONE SPECIFIED
Program Manager: Not reported
Supervisor: Referred - Not Assigned
Division Branch: Cleanup Berkeley
Assembly: 24
Senate: 13
Special Program: Not reported
Restricted Use: NO
Site Mgmt Req: NONE SPECIFIED
Funding: Not reported
Latitude: 37.48056
Longitude: -122.1669
APN: 055244010
Past Use: NONE SPECIFIED
Potential COC: * HALOGENATED ORGANIC COMPOUNDS * HALOGENATED SOLVENTS * HYDROCARBON SOLVENTS * Laboratory Waste Chemicals * Metals - Other Inorganic Solid Waste * Metals - Sludge * OIL/WATER SEPARATION SLUDGE * OTHER STILL BOTTOM WASTE * OXYGENATED SOLVENTS * CONTAMINATED SOIL * ACID SOLUTION 2>PH WITH METALS * Sludge - Paint * STILL BOTTOMS WITH HALOGENATED ORGANICS * TANK BOTTOM WASTES * UNSPECIFIED ACID SOLUTION * UNSPECIFIED OIL CONTAINING WASTE * UNSPECIFIED SLUDGE WASTE * UNSPECIFIED SOLVENT MIXTURES * WASTE OIL & MIXED OIL * ADHESIVES * EMPTY CONTAINERS, LESS THAN 30 GALLONS * OTHER PESTICIDE CONTAINERS, 30 GALLONS OR MORE Arsenic Lead Polychlorinated biphenyls (PCBs Cadmium and compounds Cyanide (free Mercury and compounds Nickel Thallium and compounds

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Confirmed COC: NONE SPECIFIED
Potential Description: NONE SPECIFIED
Alias Name: TYCO ELECTRONICS CORPORATION
Alias Type: Alternate Name
Alias Name: 055244010
Alias Type: APN
Alias Name: CAD009125527
Alias Type: EPA Identification Number
Alias Name: 110000482399
Alias Type: EPA (FRS #)
Alias Name: SLT2O099105
Alias Type: GeoTracker Global ID
Alias Name: P23049
Alias Type: PCode
Alias Name: 41280137
Alias Type: Envirostor ID Number
Alias Name: 80001600
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Endangerment Assessment Report
Completed Date: 06/20/1991
Comments: Raychem Corporation submitted a PEA to the Dept on 5/17/91. Results of the PEA indicate PCB in soil above extremely hazardous ttlc. Contaminated GW under site. A residential neighborhood and a school are located less than 200' to the South of site. A tidal slough and sensitive wetland are adjacent to the north boundary of the site. High-tech chemical, plastics and materials manufacturer operated at site since 1965. PEA submitted in May 1991 indicates that nickel and cadmium may be present in soils above their respective TTLC and/or STLC. Elevated levels of solvents found in GW under the site. PCB found in soils at levels above the extremely hazardous waste TTLC. PCB has also migrated off-site via surface runoff. Draft ISE determination and RAO sent to TLO for review on June 11, 1991.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Site Screening
Completed Date: 01/13/1988
Comments: Site screening done: Site is an active TSD. SI done 8/86. Subsurface PCB contamination. DCE, CD and Pb in groundwater. > drinking. Pending action by RCRA.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Discovery
Completed Date: 08/01/1980
Comments: Facility identified: active site identified independent of driveby.

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Schedule Due Date:	Not reported
Schedule Revised Date:	Not reported
Facility ID:	80001600
Status:	Certified / Operation & Maintenance
Status Date:	09/26/2012
Site Code:	520017
Site Type:	Corrective Action
Site Type Detailed:	Corrective Action
Acres:	80
NPL:	NO
Regulatory Agencies:	SMBRP
Lead Agency:	WM
Program Manager:	George Chow
Supervisor:	Julie Pettijohn
Division Branch:	Cleanup Berkeley
Assembly:	24
Senate:	13
Special Program:	Not reported
Restricted Use:	YES
Site Mgmt Req:	NONE SPECIFIED
Funding:	Not reported
Latitude:	37.48206
Longitude:	-122.1675
APN:	055244010, 055260080, 055260190, 055260200, 055260210, 055260220
Past Use:	MANUFACTURING - CHEMICALS, MANUFACTURING - ELECTRONIC
Potential COC:	Polychlorinated biphenyls (PCBs
Confirmed COC:	Polychlorinated biphenyls (PCBs
Potential Description:	SOIL
Alias Name:	Facebook West Campus
Alias Type:	Alternate Name
Alias Name:	Menlo Park West Campus
Alias Type:	Alternate Name
Alias Name:	RAYCHEM CORPORATION
Alias Type:	Alternate Name
Alias Name:	055244010
Alias Type:	APN
Alias Name:	055260080
Alias Type:	APN
Alias Name:	055260190
Alias Type:	APN
Alias Name:	055260200
Alias Type:	APN
Alias Name:	055260210
Alias Type:	APN
Alias Name:	055260220
Alias Type:	APN
Alias Name:	CAD009125527
Alias Type:	EPA Identification Number
Alias Name:	110000482399
Alias Type:	EPA (FRS #)
Alias Name:	200226
Alias Type:	Site Code - Historical
Alias Name:	520017
Alias Type:	Project Code (Site Code)
Alias Name:	41280137
Alias Type:	Envirostor ID Number

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Alias Name: 80001600
Alias Type: Envirostor ID Number

Completed Info:
Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 11/06/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/21/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 08/03/2009
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 09/06/2007
Comments: Not reported

Completed Area Name: Sites With No Operable Unit
Completed Sub Area Name: East and Offsite of the facility
Completed Document Type: RFI Report
Completed Date: 10/07/2002
Comments: RFI East End Area 6 approval letter 10-7-2002

Completed Area Name: Sites With No Operable Unit
Completed Sub Area Name: East and Offsite of the facility
Completed Document Type: RFI Workplan
Completed Date: 10/07/2002
Comments: East side offsite groundwater

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Corrective Measure Implementation Workplan
Completed Date: 10/10/2002
Comments: West side Area #1

Completed Area Name: Sites With No Operable Unit
Completed Sub Area Name: Offsite Soil
Completed Document Type: RFI Report
Completed Date: 10/04/2004
Comments: RFI Report and Approval

Completed Area Name: Sites With No Operable Unit
Completed Sub Area Name: Offsite Soil
Completed Document Type: RFI Workplan
Completed Date: 06/04/2004
Comments: RFI Workplan Approval - Offsite Soil

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Public Notice
Completed Date: 07/27/2006
Comments: Fact Sheet for Remedy Selection

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Corrective Measures Study Report
Completed Date: 07/10/2006
Comments: CMS technical completeness letter

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedy Constructed: Operating Properly & Successfully
Completed Date: 09/06/2007
Comments: Corrective Action -Corrective Measures Implementation Approved

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 08/01/1986
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: RFI Report
Completed Date: 03/05/2004
Comments: west end soil, sitewide GW, HHRA, ERA

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Preliminary Assessment Report
Completed Date: 05/01/1986
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Monitoring Report
Completed Date: 02/01/2008
Comments: Groundwater Monitoring Report and Approval

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 05/20/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Workplan
Completed Date: 02/02/2007
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Implementation Report

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Date: 04/18/2007
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 01/25/2007
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Financial Assurance Documentation
Completed Date: 03/21/2007
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 01/19/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 02/23/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 04/06/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 07/03/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 03/12/2014
Comments: the annual inspection report documents site conditions as related to restrictions set forth in the Land Use Covenant (LUC), and compliance with the LUC.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 02/20/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 05/24/2017

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Comments: The Revised Ground-water Sampling Report, September 2016 documents the groundwater monitoring activities and results for the semi-annual groundwater monitoring onsite. DTSC has reviewed the February 2017 revision and has no comments.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 08/12/2010
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Risk Assessment Report
Completed Date: 07/10/2005
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Risk Assessment Report
Completed Date: 04/27/2005
Comments: In file

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 03/30/2011
Comments: Signed HHEI.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 09/18/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 06/10/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Soils Management Plan
Completed Date: 04/22/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 07/31/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 01/21/2015

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Comments: Completed

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 02/08/2016
Comments: This document reports the groundwater monitoring results from September 2015.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction Monitoring Report
Completed Date: 12/15/2015
Comments: This Annual Site Inspection report complies with the annual site inspection requirements of Section 4.6 the Land Use Covenant for the property.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 08/05/2016
Comments: The semi-annual groundwater monitoring report documents the groundwater monitoring performed in accordance with Operation and Maintenance requirements at the site.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Monitoring Plan
Completed Date: 04/14/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 09/26/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 08/30/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Long Term Monitoring Report
Completed Date: 09/16/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Financial Assurance Documentation
Completed Date: 04/24/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Document Type: Other Report
Completed Date: 06/05/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 01/09/2015
Comments: No action required

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 01/09/2015
Comments: No action required

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 01/27/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 01/30/2015
Comments: Field work

Completed Area Name: Building 21
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 03/16/2015
Comments: Not reported

Completed Area Name: Building 21
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 03/30/2015
Comments: Fieldwork - 66 soil borings were advanced, 151 soil samples were collected.

Completed Area Name: Building 23
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 03/27/2015
Comments: Not reported

Completed Area Name: Building 23
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 04/06/2015
Comments: Fieldwork - 18 Soil Borings were advanced, 54 soil samples were collected.

Completed Area Name: Building 21
Completed Sub Area Name: Not reported
Completed Document Type: RFI Report

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Date: 07/23/2015
Comments: Not reported

Completed Area Name: Building 21
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 08/21/2016
Comments: Soil management and demolition activities were completed at MPK 21 per the November 6, 2015 Soil Management Plan.

Completed Area Name: Building 21
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 05/20/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Operations and Maintenance Report
Completed Date: 09/24/2015
Comments: Not reported

Completed Area Name: Building 21
Completed Sub Area Name: Not reported
Completed Document Type: Soils Management Plan
Completed Date: 11/17/2015
Comments: The MPK21 Soil Management Plan describes soil management activities associated with the development of Building 21 at 307, 308, and 309 Constitution Drive.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 09/21/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Soils Management Plan
Completed Date: 01/30/2017
Comments: The Pile Type Variance Request proposes 8 augercast pressure-grouted piles in locations where limited access precludes the previously approved augercast pressure grouted displacement piles. DTSC has reviewed the proposal and approves the variance.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 04/17/2017
Comments: The Work Plan for Additional Soil Vapor Monitoring, Proposed Building MPK 22 proposes additional soil vapor monitoring in the general area of the proposed MPK 22 building. The March 24, 2017 Work Plan has adequately addressed previous comments from the Department of Toxic Substances Control (DTSC). DTSC approves the Work Plan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Document Type: Technical Report
Completed Date: 06/09/2017
Comments: DTSC reviewed the Indoor Air Sampling Reports for Building 305B and 305C from 2014 and 2015. In response to DTSC comments, another indoor air sampling event will be conducted and reported to DTSC. This addresses DTSC's comments.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 05/23/2017
Comments: The Work Plan to Decommission 5 Groundwater Monitoring Wells, April 2017, proposes removal of 5 onsite groundwater wells due to the ongoing construction to redevelop the site. After construction is complete, Tyco will work with DTSC to replace the wells in-kind.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Soils Management Plan
Completed Date: 05/11/2017
Comments: The Work Plan for Soil Removal Activities, Park/Open Space at MPK 21 propose soil removal activities to be conducted as part of construction of Building MPK21 and in accordance with the DTSC-approved MPK 21 Soil Management Plan. DTSC has reviewed the Work Plan and approves it.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 08/08/2017
Comments: The indoor air sampling work plan proposes indoor air sampling at Building 305. DTSC has reviewed the work plan and approves the document.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Remedy Selected
Completed Date: 11/30/2006
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Human Exposure Controlled
Completed Date: 03/30/2011
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/29/2017
Comments: The Annual Oversight Cost Estimate provides an estimate for DTSC's oversight costs for the period starting July 1, 2017 and ending June 30, 2018.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction - Site Inspection/Visit

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Date: 04/17/2017
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/29/2016
Comments: This letter transmits DTSC's estimate of oversight costs for the site for the time period July 1, 2016 - June 30, 2017.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Agreement
Completed Date: 09/14/2000
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction
Completed Date: 01/19/2007
Comments: Land Use Covenant

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Questionnaire
Completed Date: 01/04/2002
Comments: Interim Remedial Measures Addendum #4 Implementation Summary Area 6 (Chem Plant)

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: RCRA Facility Assessment Report
Completed Date: 10/02/1989
Comments: RCRA Facility Assessment Completed, RFA report dated 9/1989, site formerly known as Raychem

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Questionnaire
Completed Date: 02/19/2001
Comments: Interim Measures Implementation and bldgs. P and Y Demolition Report Area 6 (Chem Plant)

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Questionnaire
Completed Date: 05/07/2003
Comments: Interim Removal Reports

Completed Area Name: Sites With No Operable Unit
Completed Sub Area Name: Offsite Soil
Completed Document Type: Interim Measures Questionnaire
Completed Date: 04/26/2005
Comments: No further action on the "offsite soil" area. However, the "onsite" will go to CMS process. The facility called "Closure Report - Soil Removal/Disposal" Dated Dec 2004 instead of IM report.

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Interim Measures Questionnaire
Completed Date: 04/11/1994
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Groundwater Migration Controlled
Completed Date: 04/27/2016
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 09/17/2014
Comments: correspondence received

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedy Selection and Statement of Basis
Completed Date: 11/30/2006
Comments: Final Notice of Remedy Selection cover letter to Tyco

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction - Site Inspection/Visit
Completed Date: 06/25/2009
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/11/2013
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction
Completed Date: 08/06/2012
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: * Land Use Restriction Monitoring Report
Completed Date: 02/12/2009
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 04/27/2007
Comments: Provided county a summary of cleanup activities

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Land Use Restriction - Site Inspection/Visit

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Date: 02/07/2007
Comments: SCS Engineer annual LUC certification

Completed Area Name: Building 22
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 02/17/2016
Comments: The Work Plan for Phase II Investigation, MPK 22 proposes additional environmental investigation in the vicinity of the planned future Building MPK22. Investigation activities will include soil sampling, grab groundwater sampling, and the installation of soil vapor wells.

Completed Area Name: Building 23
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 03/27/2015
Comments: DTSC has reviewed and approved the use of the Soil Management Plan for the West Campus (Building 20) for the Building 23 area.

Completed Area Name: Building 23
Completed Sub Area Name: Not reported
Completed Document Type: Other Report
Completed Date: 09/08/2015
Comments: Not reported

Completed Area Name: Building 22
Completed Sub Area Name: Not reported
Completed Document Type: Fieldwork
Completed Date: 06/30/2016
Comments: The soil investigation was completed in accordance with the MPK 22 Soil Investigation Work Plan.

Completed Area Name: Building 22
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 07/22/2016
Comments: This soil management plan documents soil management protocols to take place during redevelopment activities at Building 22.

Completed Area Name: Building 22
Completed Sub Area Name: Not reported
Completed Document Type: Soils Management Plan
Completed Date: 07/22/2016
Comments: The MPK 22 Soil Management Plan describes soil management procedures to be followed in the area to be redeveloped into Building 22.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Workplan
Completed Date: 11/18/2015
Comments: The Work Plan to Profile Soil for Off Site Disposal supplements the prior Soil Quality Investigation (Cornerstone, July 2015) and proposes additional sampling to further characterize onsite soils for offsite disposal.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Document Type: Soils Management Plan
Completed Date: 12/06/2016
Comments: DTSC has reviewed and approved a variance for the pile type to be used for the Caltrans bridge in the MPK 21 Soil Management Plan Area.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Soils Management Plan
Completed Date: 12/15/2016
Comments: The Soil Management Plan for Utility Line Installation MPK 21 22 23 describes soil management protocols for the utility installation planned for December 2016.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Technical Report
Completed Date: 05/03/2017
Comments: The Revised Phase II Investigation Report, dated October 2016, revised and submitted May 2017, describes the results from the investigation activities at 301-306 Constitution Drive. DTSC's comments have been addressed.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Soils Management Plan
Completed Date: 12/15/2016
Comments: The revised Soil Management Plan for Utility Corridor MPK 21, 22, and 23 describes soil management protocols proposed for the utility installation planned for December 2016. DTSC's comments on previous drafts of the report have been adequately addressed, and DTSC approves the Soil Management Plan.

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 09/22/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Amendment - Order/Agreement
Completed Date: 12/31/2001
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Correspondence
Completed Date: 11/30/2006
Comments: Appendix G - Operation & Maintenance Plan from Remedy Selection and Statement of Basis

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Consent Order
Completed Date: 06/26/1996
Comments: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 10/30/2014
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Annual Oversight Cost Estimate
Completed Date: 09/24/2015
Comments: Not reported

Completed Area Name: PROJECT WIDE
Completed Sub Area Name: Not reported
Completed Document Type: Remedy Constructed
Completed Date: 09/06/2007
Comments: Not reported

Future Area Name: Not reported
Future Sub Area Name: Not reported
Future Document Type: Not reported
Future Due Date: Not reported
Schedule Area Name: Not reported
Schedule Sub Area Name: Not reported
Schedule Document Type: Not reported
Schedule Due Date: Not reported
Schedule Revised Date: Not reported

SLIC:
Region: STATE
Facility Status: **Open - Site Assessment**
Status Date: 03/08/2001
Global Id: SLT2O099105
Lead Agency: DEPARTMENT OF TOXIC SUBSTANCES CONTROL
Lead Agency Case Number: 41280137
Latitude: 37.481632
Longitude: -122.164963
Case Type: Cleanup Program Site
Case Worker: Not reported
Local Agency: Not reported
RB Case Number: Not reported
File Location: Not reported
Potential Media Affected: Not reported
Potential Contaminants of Concern: Not reported
Site History: Not reported

Click here to access the California GeoTracker records for this facility:

HIST UST:
File Number: Not reported
URL: Not reported
Region: STATE
Facility ID: 00000014125
Facility Type: Other
Other Type: Not reported
Contact Name: MARK GREEN

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Telephone:	4153615519
Owner Name:	RAYCHEM CORPORATION
Owner Address:	300 CONSTITUTION DRIVE
Owner City,St,Zip:	MENLO PARK, CA 94025
Total Tanks:	0005
Tank Num:	001
Container Num:	5
Year Installed:	1968
Tank Capacity:	00000168
Tank Used for:	PRODUCT
Type of Fuel:	DIESEL
Container Construction Thickness:	Not reported
Leak Detection:	Visual
Tank Num:	002
Container Num:	4
Year Installed:	1971
Tank Capacity:	00000200
Tank Used for:	WASTE
Type of Fuel:	Not reported
Container Construction Thickness:	16
Leak Detection:	None
Tank Num:	003
Container Num:	3
Year Installed:	1980
Tank Capacity:	00008000
Tank Used for:	PRODUCT
Type of Fuel:	06
Container Construction Thickness:	Not reported
Leak Detection:	None
Tank Num:	004
Container Num:	1
Year Installed:	1974
Tank Capacity:	00010429
Tank Used for:	PRODUCT
Type of Fuel:	REGULAR
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor
Tank Num:	005
Container Num:	2
Year Installed:	1974
Tank Capacity:	00010429
Tank Used for:	PRODUCT
Type of Fuel:	UNLEADED
Container Construction Thickness:	Not reported
Leak Detection:	Stock Inventor

DEED:

Envirostor ID:	80001600
Area:	PROJECT WIDE
Sub Area:	Not reported
Site Type:	CORRECTIVE ACTION
Status:	CERTIFIED / OPERATION & MAINTENANCE

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): 08/06/2012
File Name: Envirostor Land Use Restrictions

Envirostor ID: 80001600
Area: PROJECT WIDE
Sub Area: Not reported
Site Type: CORRECTIVE ACTION
Status: CERTIFIED / OPERATION & MAINTENANCE
Agency: Not reported
Covenant Uploaded: Not reported
Deed Date(s): 01/19/2007
File Name: Envirostor Land Use Restrictions

CHMIRS:

OES Incident Number:	10-0073
OES notification:	01/05/2010
OES Date:	Not reported
OES Time:	Not reported
Date Completed:	**Not reported**
Property Use:	Not reported
Agency Id Number:	Not reported
Agency Incident Number:	Not reported
Time Notified:	Not reported
Time Completed:	Not reported
Surrounding Area:	Not reported
Estimated Temperature:	Not reported
Property Management:	Not reported
More Than Two Substances Involved?:	Not reported
Resp Agncy Personel # Of Decontaminated:	Not reported
Responding Agency Personel # Of Injuries:	Not reported
Responding Agency Personel # Of Fatalities:	Not reported
Others Number Of Decontaminated:	Not reported
Others Number Of Injuries:	Not reported
Others Number Of Fatalities:	Not reported
Vehicle Make/year:	Not reported
Vehicle License Number:	Not reported
Vehicle State:	Not reported
Vehicle Id Number:	Not reported
CA DOT PUC/ICC Number:	Not reported
Company Name:	Not reported
Reporting Officer Name/ID:	Not reported
Report Date:	Not reported
Facility Telephone:	Not reported
Waterway Involved:	No
Waterway:	Not reported
Spill Site:	Industrial Plant
Cleanup By:	Reporting Party
Containment:	Not reported
What Happened:	Not reported
Type:	Not reported
Measure:	Gal(s)
Other:	Not reported
Date/Time:	1445
Year:	2010
Agency:	Tyco Electronics Corp

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Incident Date:	12/21/2009
Admin Agency:	San Mateo County Environmental Health
Amount:	Not reported
Contained:	Yes
Site Type:	Not reported
E Date:	Not reported
Substance:	Diesel Fuel
Quantity Released:	40673
Unknown:	Not reported
Substance #2:	Not reported
Substance #3:	Not reported
Evacuations:	Not reported
Number of Injuries:	Not reported
Number of Fatalities:	Not reported
#1 Pipeline:	Not reported
#2 Pipeline:	Not reported
#3 Pipeline:	Not reported
#1 Vessel >= 300 Tons:	Not reported
#2 Vessel >= 300 Tons:	Not reported
#3 Vessel >= 300 Tons:	Not reported
Evacs:	Not reported
Injuries:	Not reported
Fatals:	Not reported
Comments:	Not reported
Description:	**Historical Spill***Per caller, a damaged saddle tank caused the release of fuel to an area adjacent to a storm drain. Clean-up was completed by the Fire Department.

US FIN ASSUR:

EPA ID:	CAD009125527
Provider:	DEUTSCHE BANK TRUST COMPANY AMERICAS
EPA region:	9
County:	Not reported
Mechanism type:	STANDBY TRUST
Mechanism ID:	N/A
Cost estimate:	994000
Face value:	0
Effective date:	2007-01-18 00:00:00

EPA ID:	CAD009125527
Provider:	DEUTSCHE BANK
EPA region:	9
County:	Not reported
Mechanism type:	LETTER OF CREDIT
Mechanism ID:	839BGC0700016
Cost estimate:	994000
Face value:	994000
Effective date:	2007-01-16 00:00:00

2020 COR ACTION:

EPA ID:	CAD009125527
Region:	9
Action:	Remedy Constructed

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

PADS:

EPAID:	CAD009125527
Facility name:	TYCO ELECTRONICS
Facility Address:	OFF-SITE STORMWATER SWALE AREA, RAI MENLO PARK, CA 94025
Facility country:	US
Generator:	Yes
Storer:	No
Transporter:	No
Disposer:	No
Research facility:	No
Smelter:	No
Facility owner name:	TYCO ELECTRONICS
Contact title:	Not reported
Contact name:	ROGER RILEY
Contact tel:	(650)361-3210
Contact extension:	Not reported
Mailing address:	TYCO ELECTRONICS, 304 CONSTITUTION MENLO PARK, CA 94025
Mailing country:	US
Cert. title:	Not reported
Cert. name:	Not reported
Cert. date:	07/26/2000
Date received:	08/17/2000

FINDS:

Registry ID: 110000482399

Environmental Interest/Information System

AFS (Aerometric Information Retrieval System (AIRS) Facility Subsystem) replaces the former Compliance Data System (CDS), the National Emission Data System (NEDS), and the Storage and Retrieval of Aerometric Data (SAROAD). AIRS is the national repository for information concerning airborne pollution in the United States. AFS is used to track emissions and compliance data from industrial plants. AFS data are utilized by states to prepare State Implementation Plans to comply with regulatory programs and by EPA as an input for the estimation of total national emissions. AFS is undergoing a major redesign to support facility operating permits required under Title V of the Clean Air Act.

NCDB (National Compliance Data Base) supports implementation of the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) and the Toxic Substances Control Act (TSCA). The system tracks inspections in regions and states with cooperative agreements, enforcement actions, and settlements.

AIR SYNTHETIC MINOR

TSCA SUBMITTER

AIR EMISSIONS CLASSIFICATION UNKNOWN

US EPA TRIS (Toxics Release Inventory System) contains information from facilities on the amounts of over 300 listed toxic chemicals that

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

these facilities release directly to air, water, land, or that are transported off-site.

California Hazardous Waste Tracking System - Datamart (HWTS-DATAMART) provides California with information on hazardous waste shipments for generators, transporters, and treatment, storage, and disposal facilities.

HAZARDOUS AIR POLLUTANT MAJOR

RCRAInfo is a national information system that supports the Resource Conservation and Recovery Act (RCRA) program through the tracking of events and activities related to facilities that generate, transport, and treat, store, or dispose of hazardous waste. RCRAInfo allows RCRA program staff to track the notification, permit, compliance, and corrective action activities required under RCRA.

STATE MASTER

HAZARDOUS WASTE BIENNIAL REPORTER

Registry ID: 110055790390

Environmental Interest/Information System
STATE MASTER

Click this hyperlink while viewing on your computer to access additional FINDS: detail in the EDR Site Report.

ECHO:

Envid:	1000170323
Registry ID:	110070087516
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110070087516

Envid:	1000170323
Registry ID:	110000482399
DFR URL:	http://echo.epa.gov/detailed-facility-report?fid=110000482399

San Mateo Co. BI:

Region:	SAN MATEO
Facility ID:	FA0017605
Prog Element Code:	ABOVE GROUND TANK/SPCC
Record Id:	PR0063130
Description:	ABOVE GROUND TANK/SPCC
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0017605
Prog Element Code:	COND EXEMPT - SQ TREATMENT
Record Id:	PR0029985
Description:	COND EXEMPT - SQ TREATMENT
Facility Status:	INACTIVE

Region:	SAN MATEO
Facility ID:	FA0017605

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Prog Element Code: Not reported
Record Id: PR0029986
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029987
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029988
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029989
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029990
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029991
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029992
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029993
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Record Id: PR0029994
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029995
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029996
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: Not reported
Record Id: PR0029997
Description: Not reported
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0027108
Prog Element Code: STORES HAZ MAT <1,199GAL,9,999LB,4,799FT3
Record Id: PR0042661
Description: STORES HAZ MAT <1,199GAL,9,999LB,4,799CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0040936
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0056835
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: INACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: GEN 51-250 TONS HAZ WASTE/YR
Record Id: PR0011455
Description: GEN 51-250 TONS HAZ WASTE/YR
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: LESS THAN 500 TIRES
Record Id: PR0068103
Description: LESS THAN 500 TIRES
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: RECYCLER
Record Id: PR0038668

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Description: RECYCLER
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: STORES HAZ MAT >32000GAL, 240001LB, 112000FT3
Record Id: PR0004101
Description: STORES HAZ MAT >32000GAL, 224000LB, 112000CF
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0017605
Prog Element Code: 2352
Record Id: PR0067569
Description: TIER I: TANK STOR CAP =>1,320 & <5,000 GAL
Facility Status: ACTIVE

Region: SAN MATEO
Facility ID: FA0037000
Prog Element Code: STORES HAZ MAT <219GAL,1,999LB, 879FT3
Record Id: PR0053960
Description: STORES HAZ MAT <219GAL,1,999LB, 879CF
Facility Status: ACTIVE

EMI:
Year: 1987
County Code: 41
Air Basin: SF
Facility ID: 272
Air District Name: BA
SIC Code: 3079
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 48
Reactive Organic Gases Tons/Yr: 36
Carbon Monoxide Emissions Tons/Yr: 1
NOX - Oxides of Nitrogen Tons/Yr: 5
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 27
Part. Matter 10 Micrometers and Smllr Tons/Yr: 24

Year: 1990
County Code: 41
Air Basin: SF
Facility ID: 272
Air District Name: BA
SIC Code: 3089
Air District Name: BAY AREA AQMD
Community Health Air Pollution Info System: Not reported
Consolidated Emission Reporting Rule: Not reported
Total Organic Hydrocarbon Gases Tons/Yr: 98
Reactive Organic Gases Tons/Yr: 75
Carbon Monoxide Emissions Tons/Yr: 2
NOX - Oxides of Nitrogen Tons/Yr: 8
SOX - Oxides of Sulphur Tons/Yr: 0
Particulate Matter Tons/Yr: 19

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Part. Matter 10 Micrometers and Smllr Tons/Yr:17

Year:	1995
County Code:	41
Air Basin:	SF
Facility ID:	272
Air District Name:	BA
SIC Code:	3089
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	55
Reactive Organic Gases Tons/Yr:	49
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	5
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	25
Part. Matter 10 Micrometers and Smllr Tons/Yr:	22

Year:	1996
County Code:	41
Air Basin:	SF
Facility ID:	272
Air District Name:	BA
SIC Code:	3079
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	52
Reactive Organic Gases Tons/Yr:	45
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	7
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	20
Part. Matter 10 Micrometers and Smllr Tons/Yr:	18

Year:	1997
County Code:	41
Air Basin:	SF
Facility ID:	272
Air District Name:	BA
SIC Code:	3089
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	35
Reactive Organic Gases Tons/Yr:	30
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	7
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	19
Part. Matter 10 Micrometers and Smllr Tons/Yr:	17

Year:	1998
County Code:	41
Air Basin:	SF
Facility ID:	272

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Air District Name:	BA
SIC Code:	3089
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	22
Reactive Organic Gases Tons/Yr:	16
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	4
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	9
Part. Matter 10 Micrometers and Smllr Tons/Yr:	8

Year:	1999
County Code:	41
Air Basin:	SF
Facility ID:	272
Air District Name:	BA
SIC Code:	8731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	9
Reactive Organic Gases Tons/Yr:	7
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	9
Part. Matter 10 Micrometers and Smllr Tons/Yr:	8

Year:	2000
County Code:	41
Air Basin:	SF
Facility ID:	272
Air District Name:	BA
SIC Code:	8731
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	9
Reactive Organic Gases Tons/Yr:	7
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	1
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	9
Part. Matter 10 Micrometers and Smllr Tons/Yr:	8

HIST CORTESE:

Region:	CORTESE
Facility County Code:	41
Reg By:	CALSI
Reg Id:	41280137

NPDES:

Npdes Number:	Not reported
Facility Status:	Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Agency Id:	Not reported
Region:	2
Regulatory Measure Id:	182954
Order No:	Not reported
Regulatory Measure Type:	Industrial
Place Id:	Not reported
WDID:	2 41I016702
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	05/09/2008
PROCESSED DATE:	08/07/2001
STATUS CODE NAME:	Active
STATUS DATE:	08/07/2001
PLACE SIZE:	46
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Stephen Douglas
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	650-361-3022
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	sdouglas@te.com
OPERATOR NAME:	Tyco Electronics Corp
OPERATOR ADDRESS:	305 Constitution Dr
OPERATOR CITY:	Menlo Park
OPERATOR STATE:	California
OPERATOR ZIP:	94025
OPERATOR CONTACT NAME:	Stephen Douglas
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	650-361-3022
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	sdouglas@te.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	California
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	650-361-3022
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	San Francisco Bay
CERTIFIER NAME:	JAMES OTOOLE
CERTIFIER TITLE:	SEGMENT PRESIDENT
CERTIFICATION DATE:	18-JUN-15
PRIMARY SIC:	3089-Plastics Products, NEC
SECONDARY SIC:	3082-Unsupported Plastics Profile Shapes
TERTIARY SIC:	2821-Plastics Material and Synthetic Resins, and Nonvulcanizable Elastomers
Npdes Number:	CAS000001
Facility Status:	Active
Agency Id:	0
Region:	2
Regulatory Measure Id:	182954
Order No:	97-03-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	2 41I016702
Program Type:	Industrial
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	08/07/2001
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	Not reported
Discharge Name:	Tyco Electronics Corp
Discharge Address:	305 Constitution Dr
Discharge City:	Menlo Park
Discharge State:	California
Discharge Zip:	94025
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported
Npdes Number:	Not reported
Facility Status:	Not reported
Agency Id:	Not reported
Region:	2
Regulatory Measure Id:	454848
Order No:	Not reported
Regulatory Measure Type:	Construction
Place Id:	Not reported
WDID:	2 41C373001
Program Type:	Not reported
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	Not reported
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	08/09/2016
Discharge Name:	Not reported
Discharge Address:	Not reported
Discharge City:	Not reported
Discharge State:	Not reported
Discharge Zip:	Not reported
RECEIVED DATE:	05/09/2015
PROCESSED DATE:	05/22/2015

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

STATUS CODE NAME:	Terminated
STATUS DATE:	08/12/2016
PLACE SIZE:	7.71
PLACE SIZE UNIT:	Acres
FACILITY CONTACT NAME:	Joe Francini
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	650-222-5991
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	jfrancini@level10gc.com
OPERATOR NAME:	Hibiscus Properties
OPERATOR ADDRESS:	1 Hacker Way
OPERATOR CITY:	Menlo Park
OPERATOR STATE:	California
OPERATOR ZIP:	94025
OPERATOR CONTACT NAME:	Juergen Decker
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	415-290-6255
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	juergen@fb.com
OPERATOR TYPE:	Private Business
DEVELOPER NAME:	Hibiscus Properties
DEVELOPER ADDRESS:	1 Hacker Way
DEVELOPER CITY:	Menlo Park
DEVELOPER STATE:	California
DEVELOPER ZIP:	94025
DEVELOPER CONTACT NAME:	Juergen Decker
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	N
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	N
CONSTYPE BELOW GROUND IND:	N
CONSTYPE CABLE LINE IND:	N
CONSTYPE COMM LINE IND:	N
CONSTYPE COMMERTIAL IND:	Y
CONSTYPE ELECTRICAL LINE IND:	N
CONSTYPE GAS LINE IND:	N
CONSTYPE INDUSTRIAL IND:	N
CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	N
CONSTYPE RECONS IND:	N
CONSTYPE RESIDENTIAL IND:	N
CONSTYPE TRANSPORT IND:	N
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	N
CONSTYPE WATER SEWER IND:	N
DIR DISCHARGE USWATER IND:	N
RECEIVING WATER NAME:	San Francisco Bay
CERTIFIER NAME:	Juergen Decker
CERTIFIER TITLE:	Project Manager
CERTIFICATION DATE:	09-MAY-15
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported
Npdes Number:	CAS000002
Facility Status:	Terminated

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Agency Id:	0
Region:	2
Regulatory Measure Id:	454848
Order No:	2009-0009-DWQ
Regulatory Measure Type:	Enrollee
Place Id:	Not reported
WDID:	2 41C373001
Program Type:	Construction
Adoption Date Of Regulatory Measure:	Not reported
Effective Date Of Regulatory Measure:	05/22/2015
Expiration Date Of Regulatory Measure:	Not reported
Termination Date Of Regulatory Measure:	08/09/2016
Discharge Name:	Hibiscus Properties
Discharge Address:	1 Hacker Way
Discharge City:	Menlo Park
Discharge State:	California
Discharge Zip:	94025
RECEIVED DATE:	Not reported
PROCESSED DATE:	Not reported
STATUS CODE NAME:	Not reported
STATUS DATE:	Not reported
PLACE SIZE:	Not reported
PLACE SIZE UNIT:	Not reported
FACILITY CONTACT NAME:	Not reported
FACILITY CONTACT TITLE:	Not reported
FACILITY CONTACT PHONE:	Not reported
FACILITY CONTACT PHONE EXT:	Not reported
FACILITY CONTACT EMAIL:	Not reported
OPERATOR NAME:	Not reported
OPERATOR ADDRESS:	Not reported
OPERATOR CITY:	Not reported
OPERATOR STATE:	Not reported
OPERATOR ZIP:	Not reported
OPERATOR CONTACT NAME:	Not reported
OPERATOR CONTACT TITLE:	Not reported
OPERATOR CONTACT PHONE:	Not reported
OPERATOR CONTACT PHONE EXT:	Not reported
OPERATOR CONTACT EMAIL:	Not reported
OPERATOR TYPE:	Not reported
DEVELOPER NAME:	Not reported
DEVELOPER ADDRESS:	Not reported
DEVELOPER CITY:	Not reported
DEVELOPER STATE:	Not reported
DEVELOPER ZIP:	Not reported
DEVELOPER CONTACT NAME:	Not reported
DEVELOPER CONTACT TITLE:	Not reported
CONSTYPE LINEAR UTILITY IND:	Not reported
EMERGENCY PHONE NO:	Not reported
EMERGENCY PHONE EXT:	Not reported
CONSTYPE ABOVE GROUND IND:	Not reported
CONSTYPE BELOW GROUND IND:	Not reported
CONSTYPE CABLE LINE IND:	Not reported
CONSTYPE COMM LINE IND:	Not reported
CONSTYPE COMMERTIAL IND:	Not reported
CONSTYPE ELECTRICAL LINE IND:	Not reported
CONSTYPE GAS LINE IND:	Not reported
CONSTYPE INDUSTRIAL IND:	Not reported

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

CONSTYPE OTHER DESRIPTION:	Not reported
CONSTYPE OTHER IND:	Not reported
CONSTYPE RECONS IND:	Not reported
CONSTYPE RESIDENTIAL IND:	Not reported
CONSTYPE TRANSPORT IND:	Not reported
CONSTYPE UTILITY DESCRIPTION:	Not reported
CONSTYPE UTILITY IND:	Not reported
CONSTYPE WATER SEWER IND:	Not reported
DIR DISCHARGE USWATER IND:	Not reported
RECEIVING WATER NAME:	Not reported
CERTIFIER NAME:	Not reported
CERTIFIER TITLE:	Not reported
CERTIFICATION DATE:	Not reported
PRIMARY SIC:	Not reported
SECONDARY SIC:	Not reported
TERTIARY SIC:	Not reported

WDS:

Facility ID:	San Francisco Bay 41I016702
Facility Type:	Industrial - Facility that treats and/or disposes of liquid or semisolid wastes from any servicing, producing, manufacturing or processing operation of whatever nature, including mining, gravel washing, geothermal operations, air conditioning, ship building and repairing, oil production, storage and disposal operations, water pumping.
Facility Status:	Active - Any facility with a continuous or seasonal discharge that is under Waste Discharge Requirements.
NPDES Number:	CAS000001 The 1st 2 characters designate the state. The remaining 7 are assigned by the Regional Board
Subregion:	2
Facility Telephone:	6503613022
Facility Contact:	ADAIR ROBIN
Agency Name:	TYCO ELECTRONICS CORP
Agency Address:	304 Constitution Dr
Agency City,St,Zip:	Menlo Park 940251111
Agency Contact:	ADAIR ROBIN
Agency Telephone:	6503613022
Agency Type:	Private
SIC Code:	0
SIC Code 2:	Not reported
Primary Waste Type:	Not reported
Primary Waste:	Not reported
Waste Type2:	Not reported
Waste2:	Not reported
Primary Waste Type:	Not reported
Secondary Waste:	Not reported
Secondary Waste Type:	Not reported
Design Flow:	0
Baseline Flow:	0
Reclamation:	Not reported
POTW:	Not reported
Treat To Water:	Minor Threat to Water Quality. A violation of a regional board order should cause a relatively minor impairment of beneficial uses compared to a major or minor threat. Not: All nurds without a TTWQ will be considered a minor threat to water quality unless coded at a higher Level. A Zero (0) may be used to code those NURDS that are found to represent no threat to water quality.

TYCO ELECTRONICS CORPORATION (Continued) **1000170323**

Complexity: Category C - Facilities having no waste treatment systems, such as cooling water dischargers or thosewho must comply through best management practices, facilities with passive waste treatment and disposal systems, such as septic systems with subsurface disposal, or dischargers having waste storage systems with land disposal such as dairy waste ponds.

S130 **TE CONNECTIVITY LTD** **CA HIST UST** **S106838049**
ESE **300 CONSTITUTION DR** **CA DEED** **N/A**
1/2-1 **MENLO PARK, CA 94025** **CA EMI**
0.820 mi. **CA HWP**
4331 ft. **Site 2 of 2 in cluster S**

Relative:
Lower

Actual:
8 ft.

HIST UST:

File Number:	0002C1BA
URL:	http://geotracker.waterboards.ca.gov/ustpdfs/pdf/0002C1BA.pdf
Region:	Not reported
Facility ID:	Not reported
Facility Type:	Not reported
Other Type:	Not reported
Contact Name:	Not reported
Telephone:	Not reported
Owner Name:	Not reported
Owner Address:	Not reported
Owner City,St,Zip:	Not reported
Total Tanks:	Not reported
Tank Num:	Not reported
Container Num:	Not reported
Year Installed:	Not reported
Tank Capacity:	Not reported
Tank Used for:	Not reported
Type of Fuel:	Not reported
Container Construction Thickness:	Not reported
Leak Detection:	Not reported

Click here for Geo Tracker PDF:

DEED:

Envirostor ID:	CAD009125527
Area:	Not reported
Sub Area:	Not reported
Site Type:	UNDERGOING CLOSURE
Status:	UNDERGOING CLOSURE
Agency:	Not reported
Covenant Uploaded:	Not reported
Deed Date(s):	01/19/2007
File Name:	Envirostor Land Use Restrictions
Envirostor ID:	Not reported
Area:	Not reported
Sub Area:	Not reported
Site Type:	Land Use Restrictions
Status:	Not reported
Agency:	Not reported
Covenant Uploaded:	Not reported
Deed Date(s):	Not reported

TE CONNECTIVITY LTD (Continued) **S106838049**

File Name: HWMP Restrictions

EMI:

Year:	1987
County Code:	41
Air Basin:	SF
Facility ID:	656
Air District Name:	BA
SIC Code:	2821
Air District Name:	BAY AREA AQMD
Community Health Air Pollution Info System:	Not reported
Consolidated Emission Reporting Rule:	Not reported
Total Organic Hydrocarbon Gases Tons/Yr:	0
Reactive Organic Gases Tons/Yr:	0
Carbon Monoxide Emissions Tons/Yr:	0
NOX - Oxides of Nitrogen Tons/Yr:	0
SOX - Oxides of Sulphur Tons/Yr:	0
Particulate Matter Tons/Yr:	0
Part. Matter 10 Micrometers and Smllr Tons/Yr:	0

HWP:

EPA Id:	CAD009125527
Cleanup Status:	UNDERGOING CLOSURE
Latitude:	37.48206
Longitude:	-122.1675
Facility Type:	Historical - Non-Operating
Facility Size:	Not reported
Team:	Not reported
Supervisor:	Not reported
Site Code:	200207, 520017
Assembly District:	24
Senate District:	13
Public Information Officer:	Not reported
Public Information Officer:	Not reported

Activities:

EPA Id:	CAD009125527
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKSTR1
Event Description:	New Operating Permit - TECHNICAL COMPLETE LETTER
Actual Date:	05/05/1983

EPA Id:	CAD009125527
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKSTR1
Event Description:	New Operating Permit - APPLICATION PART B RECEIVED
Actual Date:	11/10/1981

EPA Id:	CAD009125527
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKSTR1
Event Description:	New Operating Permit - PERMIT TERMINATED - TERMINATION APPROVED
Actual Date:	03/20/1990

EPA Id:	CAD009125527
Facility Type:	Historical - Non-Operating
Unit Names:	CONTAIN1, TANKSTR1

TE CONNECTIVITY LTD (Continued) **S106838049**

Event Description: New Operating Permit - FINAL PERMIT
Actual Date: 07/20/1983

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: New Operating Permit - CALL-IN LETTER ISSUED
Actual Date: 09/23/1980

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: New Operating Permit - FINAL PERMIT (EXPIRES)
Actual Date: 07/20/1988

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: New Operating Permit - PUBLIC COMMENT (BEGIN)
Actual Date: 04/08/1983

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: New Operating Permit - APPLICATION PART A RECEIVED
Actual Date: 11/18/1980

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: New Operating Permit - PERMIT TERMINATED - TERMINATION RECEIVED
Actual Date: 12/15/1989

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: New Operating Permit - DRAFT PERMIT
Actual Date: 04/08/1983

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: New Operating Permit - FINAL PERMIT (EFFECTIVE)
Actual Date: 07/20/1983

Closure:
EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: Closure - CLOSURE PLAN RECEIVED
Actual Date: 12/15/1989

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: Referred for closure to other agency - REFERRED FOR CLOSURE TO OTHER AGENCY
Actual Date: 03/21/1990

TE CONNECTIVITY LTD (Continued) **S106838049**

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Unit Names: CONTAIN1, TANKSTR1
Event Description: Closure - CLOSURE PLAN APPROVED
Actual Date: 03/20/1990

Alias:
EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Alias Type: FRS
Alias: 110000482399

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Alias Type: Project Code (Site Code)
Alias: 200207

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Alias Type: Envirostor ID Number
Alias: 41280137

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Alias Type: Project Code (Site Code)
Alias: 520017

EPA Id: CAD009125527
Facility Type: Historical - Non-Operating
Alias Type: Alternate Name
Alias: RAYCHEM CORPORATION

Maintenance:
EPA Id: CAD009125527
Title: LUC for the Tyoc Electronics Corp. facility dated 1/19/2007.
Document Type: Deed Restriction / LUC Issued
Received Date: 01/19/2007

Count: 4 records. ORPHAN SUMMARY

City	EDR ID	Site Name	Site Address	Zip	Database(s)
MENLO PARK	1003878514	BROWNING-FERRIS INDS	END OF MARSH RD	94025	SEMS-ARCHIVE
MENLO PARK	S113186755	ANTON MENLO	3605- 3639 HAVEN AVE		CA LUST
MENLO PARK	S103472755	HUETTIG & SCHROMM	3700 HAVEN	94025	CA LUST
MENLO PARK	1015732804	MENLO PARK SAN DIST TRMT PLT	1700 MARSH RD EXTN 1	94025	SEMS-ARCHIVE, RCRA NonGen / NL

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

To maintain currency of the following federal and state databases, EDR contacts the appropriate governmental agency on a monthly or quarterly basis, as required.

Number of Days to Update: Provides confirmation that EDR is reporting records that have been updated within 90 days from the date the government agency made the information available to the public.

STANDARD ENVIRONMENTAL RECORDS

Federal NPL site list

NPL: National Priority List

National Priorities List (Superfund). The NPL is a subset of CERCLIS and identifies over 1,200 sites for priority cleanup under the Superfund Program. NPL sites may encompass relatively large areas. As such, EDR provides polygon coverage for over 1,000 NPL site boundaries produced by EPA's Environmental Photographic Interpretation Center (EPIC) and regional EPA offices.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

NPL Site Boundaries

Sources:

EPA's Environmental Photographic Interpretation Center (EPIC)
Telephone: 202-564-7333

EPA Region 1
Telephone 617-918-1143

EPA Region 6
Telephone: 214-655-6659

EPA Region 3
Telephone 215-814-5418

EPA Region 7
Telephone: 913-551-7247

EPA Region 4
Telephone 404-562-8033

EPA Region 8
Telephone: 303-312-6774

EPA Region 5
Telephone 312-886-6686

EPA Region 9
Telephone: 415-947-4246

EPA Region 10
Telephone 206-553-8665

Proposed NPL: Proposed National Priority List Sites

A site that has been proposed for listing on the National Priorities List through the issuance of a proposed rule in the Federal Register. EPA then accepts public comments on the site, responds to the comments, and places on the NPL those sites that continue to meet the requirements for listing.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

NPL LIENS: Federal Superfund Liens

Federal Superfund Liens. Under the authority granted the USEPA by CERCLA of 1980, the USEPA has the authority to file liens against real property in order to recover remedial action expenditures or when the property owner received notification of potential liability. USEPA compiles a listing of filed notices of Superfund Liens.

Date of Government Version: 10/15/1991
Date Data Arrived at EDR: 02/02/1994
Date Made Active in Reports: 03/30/1994
Number of Days to Update: 56

Source: EPA
Telephone: 202-564-4267
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Federal Delisted NPL site list

Delisted NPL: National Priority List Deletions

The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) establishes the criteria that the EPA uses to delete sites from the NPL. In accordance with 40 CFR 300.425.(e), sites may be deleted from the NPL where no further response is appropriate.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 14

Source: EPA
Telephone: N/A
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

Federal CERCLIS list

FEDERAL FACILITY: Federal Facility Site Information listing

A listing of National Priority List (NPL) and Base Realignment and Closure (BRAC) sites found in the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS) Database where EPA Federal Facilities Restoration and Reuse Office is involved in cleanup activities.

Date of Government Version: 11/07/2016
Date Data Arrived at EDR: 01/05/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 92

Source: Environmental Protection Agency
Telephone: 703-603-8704
Last EDR Contact: 01/05/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Varies

SEMS: Superfund Enterprise Management System

SEMS (Superfund Enterprise Management System) tracks hazardous waste sites, potentially hazardous waste sites, and remedial activities performed in support of EPA's Superfund Program across the United States. The list was formerly know as CERCLIS, renamed to SEMS by the EPA in 2015. The list contains data on potentially hazardous waste sites that have been reported to the USEPA by states, municipalities, private companies and private persons, pursuant to Section 103 of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This dataset also contains sites which are either proposed to or on the National Priorities List (NPL) and the sites which are in the screening and assessment phase for possible inclusion on the NPL.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Quarterly

Federal CERCLIS NFRAP site list

SEMS-ARCHIVE: Superfund Enterprise Management System Archive

SEMS-ARCHIVE (Superfund Enterprise Management System Archive) tracks sites that have no further interest under the Federal Superfund Program based on available information. The list was formerly known as the CERCLIS-NFRAP, renamed to SEMS ARCHIVE by the EPA in 2015. EPA may perform a minimal level of assessment work at a site while it is archived if site conditions change and/or new information becomes available. Archived sites have been removed and archived from the inventory of SEMS sites. Archived status indicates that, to the best of EPA's knowledge, assessment at a site has been completed and that EPA has determined no further steps will be taken to list the site on the National Priorities List (NPL), unless information indicates this decision was not appropriate or other considerations require a recommendation for listing at a later time. The decision does not necessarily mean that there is no hazard associated with a given site; it only means that. based upon available information, the location is not judged to be potential NPL site.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Quarterly

Federal RCRA CORRACTS facilities list

CORRACTS: Corrective Action Report

CORRACTS identifies hazardous waste handlers with RCRA corrective action activity.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: EPA
Telephone: 800-424-9346
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal RCRA non-CORRACTS TSD facilities list

RCRA-TSDF: RCRA - Treatment, Storage and Disposal

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Transporters are individuals or entities that move hazardous waste from the generator offsite to a facility that can recycle, treat, store, or dispose of the waste. TSDFs treat, store, or dispose of the waste.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal RCRA generators list

RCRA-LQG: RCRA - Large Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Large quantity generators (LQGs) generate over 1,000 kilograms (kg) of hazardous waste, or over 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

RCRA-SQG: RCRA - Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Small quantity generators (SQGs) generate between 100 kg and 1,000 kg of hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

RCRA-CESQG: RCRA - Conditionally Exempt Small Quantity Generators

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Conditionally exempt small quantity generators (CESQGs) generate less than 100 kg of hazardous waste, or less than 1 kg of acutely hazardous waste per month.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

Federal institutional controls / engineering controls registries

LUCIS: Land Use Control Information System

LUCIS contains records of land use control information pertaining to the former Navy Base Realignment and Closure properties.

Date of Government Version: 05/22/2017
Date Data Arrived at EDR: 06/13/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 94

Source: Department of the Navy
Telephone: 843-820-7326
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

US ENG CONTROLS: Engineering Controls Sites List

A listing of sites with engineering controls in place. Engineering controls include various forms of caps, building foundations, liners, and treatment methods to create pathway elimination for regulated substances to enter environmental media or effect human health.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

US INST CONTROL: Sites with Institutional Controls

A listing of sites with institutional controls in place. Institutional controls include administrative measures, such as groundwater use restrictions, construction restrictions, property use restrictions, and post remediation care requirements intended to prevent exposure to contaminants remaining on site. Deed restrictions are generally required as part of the institutional controls.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 74

Source: Environmental Protection Agency
Telephone: 703-603-0695
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

Federal ERNS list

ERNS: Emergency Response Notification System

Emergency Response Notification System. ERNS records and stores information on reported releases of oil and hazardous substances.

Date of Government Version: 09/18/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: National Response Center, United States Coast Guard
Telephone: 202-267-2180
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent NPL

RESPONSE: State Response Sites

Identifies confirmed release sites where DTSC is involved in remediation, either in a lead or oversight capacity. These confirmed release sites are generally high-priority and high potential risk.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State- and tribal - equivalent CERCLIS

ENVIROSTOR: EnviroStor Database

The Department of Toxic Substances Control's (DTSC's) Site Mitigation and Brownfields Reuse Program's (SMBRP's) EnviroStor database identifes sites that have known contamination or sites for which there may be reasons to investigate further. The database includes the following site types: Federal Superfund sites (National Priorities List (NPL)); State Response, including Military Facilities and State Superfund; Voluntary Cleanup; and School sites. EnviroStor provides similar information to the information that was available in CalSites, and provides additional site information, including, but not limited to, identification of formerly-contaminated properties that have been released for reuse, properties where environmental deed restrictions have been recorded to prevent inappropriate land uses, and risk characterization information that is used to assess potential impacts to public health and the environment at contaminated sites.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State and tribal landfill and/or solid waste disposal site lists

SWF/LF (SWIS): Solid Waste Information System

Active, Closed and Inactive Landfills. SWF/LF records typically contain an inve ntory of solid waste disposal facilities or landfills. These may be active or i nactive facilities or open dumps that failed to meet RCRA Section 4004 criteria for solid waste landfills or disposal sites.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 23

Source: Department of Resources Recycling and Recovery
Telephone: 916-341-6320
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

State and tribal leaking storage tank lists

LUST REG 6L: Leaking Underground Storage Tank Case Listing
For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/09/2003
Date Data Arrived at EDR: 09/10/2003
Date Made Active in Reports: 10/07/2003
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Lahontan Region (6)
Telephone: 530-542-5572
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 9: Leaking Underground Storage Tank Report
Orange, Riverside, San Diego counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 03/01/2001
Date Data Arrived at EDR: 04/23/2001
Date Made Active in Reports: 05/21/2001
Number of Days to Update: 28

Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-637-5595
Last EDR Contact: 09/26/2011
Next Scheduled EDR Contact: 01/09/2012
Data Release Frequency: No Update Planned

LUST: Leaking Underground Fuel Tank Report (GEOTRACKER)
Leaking Underground Storage Tank (LUST) Sites included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 30

Source: State Water Resources Control Board
Telephone: see region list
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

LUST REG 7: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Imperial, Riverside, San Diego, Santa Barbara counties.

Date of Government Version: 02/26/2004
Date Data Arrived at EDR: 02/26/2004
Date Made Active in Reports: 03/24/2004
Number of Days to Update: 27

Source: California Regional Water Quality Control Board Colorado River Basin Region (7)
Telephone: 760-776-8943
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

LUST REG 6V: Leaking Underground Storage Tank Case Listing
Leaking Underground Storage Tank locations. Inyo, Kern, Los Angeles, Mono, San Bernardino counties.

Date of Government Version: 06/07/2005
Date Data Arrived at EDR: 06/07/2005
Date Made Active in Reports: 06/29/2005
Number of Days to Update: 22

Source: California Regional Water Quality Control Board Victorville Branch Office (6)
Telephone: 760-241-7365
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: No Update Planned

LUST REG 8: Leaking Underground Storage Tanks
California Regional Water Quality Control Board Santa Ana Region (8). For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/14/2005
Date Data Arrived at EDR: 02/15/2005
Date Made Active in Reports: 03/28/2005
Number of Days to Update: 41

Source: California Regional Water Quality Control Board Santa Ana Region (8)
Telephone: 909-782-4496
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Varies

LUST REG 5: Leaking Underground Storage Tank Database
Leaking Underground Storage Tank locations. Alameda, Alpine, Amador, Butte, Colusa, Contra Costa, Calveras, El Dorado, Fresno, Glenn, Kern, Kings, Lake, Lassen, Madera, Mariposa, Merced, Modoc, Napa, Nevada, Placer, Plumas, Sacramento, San Joaquin, Shasta, Solano, Stanislaus, Sutter, Tehama, Tulare, Tuolumne, Yolo, Yuba counties.

Date of Government Version: 07/01/2008
Date Data Arrived at EDR: 07/22/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 9

Source: California Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-4834
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: No Update Planned

LUST REG 4: Underground Storage Tank Leak List

Los Angeles, Ventura counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35

Source: California Regional Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6710
Last EDR Contact: 09/06/2011
Next Scheduled EDR Contact: 12/19/2011
Data Release Frequency: No Update Planned

LUST REG 3: Leaking Underground Storage Tank Database

Leaking Underground Storage Tank locations. Monterey, San Benito, San Luis Obispo, Santa Barbara, Santa Cruz counties.

Date of Government Version: 05/19/2003
Date Data Arrived at EDR: 05/19/2003
Date Made Active in Reports: 06/02/2003
Number of Days to Update: 14

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-542-4786
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: No Update Planned

LUST REG 2: Fuel Leak List

Leaking Underground Storage Tank locations. Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, Sonoma counties.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: California Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-622-2433
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

LUST REG 1: Active Toxic Site Investigation

Del Norte, Humboldt, Lake, Mendocino, Modoc, Siskiyou, Sonoma, Trinity counties. For more current information, please refer to the State Water Resources Control Board's LUST database.

Date of Government Version: 02/01/2001
Date Data Arrived at EDR: 02/28/2001
Date Made Active in Reports: 03/29/2001
Number of Days to Update: 29

Source: California Regional Water Quality Control Board North Coast (1)
Telephone: 707-570-3769
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

INDIAN LUST R1: Leaking Underground Storage Tanks on Indian Land

A listing of leaking underground storage tank locations on Indian Land.

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R7: Leaking Underground Storage Tanks on Indian Land

LUSTs on Indian land in Iowa, Kansas, and Nebraska

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71

Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R8: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Colorado, Montana, North Dakota, South Dakota, Utah and Wyoming.

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78
Source: EPA Region 8
Telephone: 303-312-6271
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R9: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Arizona, California, New Mexico and Nevada

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78
Source: Environmental Protection Agency
Telephone: 415-972-3372
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R10: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Alaska, Idaho, Oregon and Washington.

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 31
Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R5: Leaking Underground Storage Tanks on Indian Land
Leaking underground storage tanks located on Indian Land in Michigan, Minnesota and Wisconsin.

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78
Source: EPA, Region 5
Telephone: 312-886-7439
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN LUST R4: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in Florida, Mississippi and North Carolina.

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98
Source: EPA Region 4
Telephone: 404-562-8677
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Semi-Annually

INDIAN LUST R6: Leaking Underground Storage Tanks on Indian Land
LUSTs on Indian land in New Mexico and Oklahoma.

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 6
Telephone: 214-665-6597
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

SLIC: Statewide SLIC Cases (GEOTRACKER)
Cleanup Program Sites (CPS; also known as Site Cleanups [SC] and formerly known as Spills, Leaks, Investigations, and Cleanups [SLIC] sites) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31
Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Varies

SLIC REG 1: Active Toxic Site Investigations

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2003
Date Data Arrived at EDR: 04/07/2003
Date Made Active in Reports: 04/25/2003
Number of Days to Update: 18

Source: California Regional Water Quality Control Board, North Coast Region (1)
Telephone: 707-576-2220
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 2: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/30/2004
Date Data Arrived at EDR: 10/20/2004
Date Made Active in Reports: 11/19/2004
Number of Days to Update: 30

Source: Regional Water Quality Control Board San Francisco Bay Region (2)
Telephone: 510-286-0457
Last EDR Contact: 09/19/2011
Next Scheduled EDR Contact: 01/02/2012
Data Release Frequency: Quarterly

SLIC REG 3: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/18/2006
Date Data Arrived at EDR: 05/18/2006
Date Made Active in Reports: 06/15/2006
Number of Days to Update: 28

Source: California Regional Water Quality Control Board Central Coast Region (3)
Telephone: 805-549-3147
Last EDR Contact: 07/18/2011
Next Scheduled EDR Contact: 10/31/2011
Data Release Frequency: Semi-Annually

SLIC REG 4: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/17/2004
Date Data Arrived at EDR: 11/18/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 47

Source: Region Water Quality Control Board Los Angeles Region (4)
Telephone: 213-576-6600
Last EDR Contact: 07/01/2011
Next Scheduled EDR Contact: 10/17/2011
Data Release Frequency: Varies

SLIC REG 5: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/01/2005
Date Data Arrived at EDR: 04/05/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 16

Source: Regional Water Quality Control Board Central Valley Region (5)
Telephone: 916-464-3291
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 6V: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing

The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 05/24/2005
Date Data Arrived at EDR: 05/25/2005
Date Made Active in Reports: 06/16/2005
Number of Days to Update: 22

Source: Regional Water Quality Control Board, Victorville Branch
Telephone: 619-241-6583
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: Semi-Annually

SLIC REG 6L: SLIC Sites
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/07/2004
Date Data Arrived at EDR: 09/07/2004
Date Made Active in Reports: 10/12/2004
Number of Days to Update: 35
Source: California Regional Water Quality Control Board, Lahontan Region
Telephone: 530-542-5574
Last EDR Contact: 08/15/2011
Next Scheduled EDR Contact: 11/28/2011
Data Release Frequency: No Update Planned

SLIC REG 7: SLIC List
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 11/24/2004
Date Data Arrived at EDR: 11/29/2004
Date Made Active in Reports: 01/04/2005
Number of Days to Update: 36
Source: California Regional Quality Control Board, Colorado River Basin Region
Telephone: 760-346-7491
Last EDR Contact: 08/01/2011
Next Scheduled EDR Contact: 11/14/2011
Data Release Frequency: No Update Planned

SLIC REG 8: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 04/03/2008
Date Data Arrived at EDR: 04/03/2008
Date Made Active in Reports: 04/14/2008
Number of Days to Update: 11
Source: California Region Water Quality Control Board Santa Ana Region (8)
Telephone: 951-782-3298
Last EDR Contact: 09/12/2011
Next Scheduled EDR Contact: 12/26/2011
Data Release Frequency: Semi-Annually

SLIC REG 9: Spills, Leaks, Investigation & Cleanup Cost Recovery Listing
The SLIC (Spills, Leaks, Investigations and Cleanup) program is designed to protect and restore water quality from spills, leaks, and similar discharges.

Date of Government Version: 09/10/2007
Date Data Arrived at EDR: 09/11/2007
Date Made Active in Reports: 09/28/2007
Number of Days to Update: 17
Source: California Regional Water Quality Control Board San Diego Region (9)
Telephone: 858-467-2980
Last EDR Contact: 08/08/2011
Next Scheduled EDR Contact: 11/21/2011
Data Release Frequency: Annually

State and tribal registered storage tank lists

FEMA UST: Underground Storage Tank Listing
A listing of all FEMA owned underground storage tanks.

Date of Government Version: 05/15/2017
Date Data Arrived at EDR: 05/30/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 136
Source: FEMA
Telephone: 202-646-5797
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

UST: Active UST Facilities
Active UST facilities gathered from the local regulatory agencies

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36
Source: SWRCB
Telephone: 916-341-5851
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Semi-Annually

AST: Aboveground Petroleum Storage Tank Facilities
A listing of aboveground storage tank petroleum storage tank locations.

Date of Government Version: 07/06/2016
Date Data Arrived at EDR: 07/12/2016
Date Made Active in Reports: 09/19/2016
Number of Days to Update: 69
Source: California Environmental Protection Agency
Telephone: 916-327-5092
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

INDIAN UST R1: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 1 (Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont and ten Tribal Nations).

Date of Government Version: 04/14/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA, Region 1
Telephone: 617-918-1313
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R6: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 6 (Louisiana, Arkansas, Oklahoma, New Mexico, Texas and 65 Tribes).

Date of Government Version: 04/24/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 134
Source: EPA Region 6
Telephone: 214-665-7591
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R7: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 7 (Iowa, Kansas, Missouri, Nebraska, and 9 Tribal Nations).

Date of Government Version: 05/02/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 7
Telephone: 913-551-7003
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R4: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 4 (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, Tennessee and Tribal Nations)

Date of Government Version: 10/14/2016
Date Data Arrived at EDR: 01/27/2017
Date Made Active in Reports: 05/05/2017
Number of Days to Update: 98
Source: EPA Region 4
Telephone: 404-562-9424
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Semi-Annually

INDIAN UST R5: Underground Storage Tanks on Indian Land
The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 5 (Michigan, Minnesota and Wisconsin and Tribal Nations).

Date of Government Version: 04/26/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/06/2017
Number of Days to Update: 71
Source: EPA Region 5
Telephone: 312-886-6136
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R9: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 9 (Arizona, California, Hawaii, Nevada, the Pacific Islands, and Tribal Nations).

Date of Government Version: 04/13/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 9
Telephone: 415-972-3368
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R10: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 10 (Alaska, Idaho, Oregon, Washington, and Tribal Nations).

Date of Government Version: 04/25/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 10
Telephone: 206-553-2857
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INDIAN UST R8: Underground Storage Tanks on Indian Land

The Indian Underground Storage Tank (UST) database provides information about underground storage tanks on Indian land in EPA Region 8 (Colorado, Montana, North Dakota, South Dakota, Utah, Wyoming and 27 Tribal Nations).

Date of Government Version: 05/01/2017
Date Data Arrived at EDR: 07/27/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 78

Source: EPA Region 8
Telephone: 303-312-6137
Last EDR Contact: 01/23/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

State and tribal voluntary cleanup sites

INDIAN VCP R7: Voluntary Cleanup Priority Lisitng

A listing of voluntary cleanup priority sites located on Indian Land located in Region 7.

Date of Government Version: 03/20/2008
Date Data Arrived at EDR: 04/22/2008
Date Made Active in Reports: 05/19/2008
Number of Days to Update: 27

Source: EPA, Region 7
Telephone: 913-551-7365
Last EDR Contact: 04/20/2009
Next Scheduled EDR Contact: 07/20/2009
Data Release Frequency: Varies

INDIAN VCP R1: Voluntary Cleanup Priority Listing

A listing of voluntary cleanup priority sites located on Indian Land located in Region 1.

Date of Government Version: 07/27/2015
Date Data Arrived at EDR: 09/29/2015
Date Made Active in Reports: 02/18/2016
Number of Days to Update: 142

Source: EPA, Region 1
Telephone: 617-918-1102
Last EDR Contact: 12/20/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

VCP: Voluntary Cleanup Program Properties

Contains low threat level properties with either confirmed or unconfirmed releases and the project proponents have request that DTSC oversee investigation and/or cleanup activities and have agreed to provide coverage for DTSC's costs.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

State and tribal Brownfields sites

BROWNFIELDS: Considered Brownfieds Sites Listing
A listing of sites the SWRCB considers to be Brownfields since these are sites have come to them through the MOA Process.

Date of Government Version: 12/22/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 36
Source: State Water Resources Control Board
Telephone: 916-323-7905
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

ADDITIONAL ENVIRONMENTAL RECORDS

Local Brownfield lists

US BROWNFIELDS: A Listing of Brownfields Sites
Brownfields are real property, the expansion, redevelopment, or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant. Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. Assessment, Cleanup and Redevelopment Exchange System (ACRES) stores information reported by EPA Brownfields grant recipients on brownfields properties assessed or cleaned up with grant funding as well as information on Targeted Brownfields Assessments performed by EPA Regions. A listing of ACRES Brownfield sites is obtained from Cleanups in My Community. Cleanups in My Community provides information on Brownfields properties for which information is reported back to EPA, as well as areas served by Brownfields grant programs.

Date of Government Version: 01/19/2018
Date Data Arrived at EDR: 01/19/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 21
Source: Environmental Protection Agency
Telephone: 202-566-2777
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Semi-Annually

Local Lists of Landfill / Solid Waste Disposal Sites

WMUDS/SWAT: Waste Management Unit Database
Waste Management Unit Database System. WMUDS is used by the State Water Resources Control Board staff and the Regional Water Quality Control Boards for program tracking and inventory of waste management units. WMUDS is composed of the following databases: Facility Information, Scheduled Inspections Information, Waste Management Unit Information, SWAT Program Information, SWAT Report Summary Information, SWAT Report Summary Data, Chapter 15 (formerly Subchapter 15) Information, Chapter 15 Monitoring Parameters, TPCA Program Information, RCRA Program Information, Closure Information, and Interested Parties Information.

Date of Government Version: 04/01/2000
Date Data Arrived at EDR: 04/10/2000
Date Made Active in Reports: 05/10/2000
Number of Days to Update: 30
Source: State Water Resources Control Board
Telephone: 916-227-4448
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: No Update Planned

SWRCY: Recycler Database
A listing of recycling facilities in California.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

HAULERS: Registered Waste Tire Haulers Listing
A listing of registered waste tire haulers.

Date of Government Version: 05/30/2017
Date Data Arrived at EDR: 05/31/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 76

Source: Integrated Waste Management Board
Telephone: 916-341-6422
Last EDR Contact: 02/09/2018
Next Scheduled EDR Contact: 02/26/2018
Data Release Frequency: Varies

INDIAN ODI: Report on the Status of Open Dumps on Indian Lands

Location of open dumps on Indian land.

Date of Government Version: 12/31/1998
Date Data Arrived at EDR: 12/03/2007
Date Made Active in Reports: 01/24/2008
Number of Days to Update: 52

Source: Environmental Protection Agency
Telephone: 703-308-8245
Last EDR Contact: 01/30/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

ODI: Open Dump Inventory

An open dump is defined as a disposal facility that does not comply with one or more of the Part 257 or Part 258 Subtitle D Criteria.

Date of Government Version: 06/30/1985
Date Data Arrived at EDR: 08/09/2004
Date Made Active in Reports: 09/17/2004
Number of Days to Update: 39

Source: Environmental Protection Agency
Telephone: 800-424-9346
Last EDR Contact: 06/09/2004
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

DEBRIS REGION 9: Torres Martinez Reservation Illegal Dump Site Locations

A listing of illegal dump sites location on the Torres Martinez Indian Reservation located in eastern Riverside County and northern Imperial County, California.

Date of Government Version: 01/12/2009
Date Data Arrived at EDR: 05/07/2009
Date Made Active in Reports: 09/21/2009
Number of Days to Update: 137

Source: EPA, Region 9
Telephone: 415-947-4219
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: No Update Planned

IHS OPEN DUMPS: Open Dumps on Indian Land

A listing of all open dumps located on Indian Land in the United States.

Date of Government Version: 04/01/2014
Date Data Arrived at EDR: 08/06/2014
Date Made Active in Reports: 01/29/2015
Number of Days to Update: 176

Source: Department of Health & Human Serivces, Indian Health Service
Telephone: 301-443-1452
Last EDR Contact: 02/02/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

Local Lists of Hazardous waste / Contaminated Sites

US HIST CDL: National Clandestine Laboratory Register

A listing of clandestine drug lab locations that have been removed from the DEAs National Clandestine Laboratory Register.

Date of Government Version: 01/19/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

HIST CAL-SITES: Calsites Database

The Calsites database contains potential or confirmed hazardous substance release properties. In 1996, California EPA reevaluated and significantly reduced the number of sites in the Calsites database. No longer updated by the state agency. It has been replaced by ENVIROSTOR.

Date of Government Version: 08/08/2005
Date Data Arrived at EDR: 08/03/2006
Date Made Active in Reports: 08/24/2006
Number of Days to Update: 21

Source: Department of Toxic Substance Control
Telephone: 916-323-3400
Last EDR Contact: 02/23/2009
Next Scheduled EDR Contact: 05/25/2009
Data Release Frequency: No Update Planned

SCH: School Property Evaluation Program

This category contains proposed and existing school sites that are being evaluated by DTSC for possible hazardous materials contamination. In some cases, these properties may be listed in the CalSites category depending on the level of threat to public health and safety or the environment they pose.

Date of Government Version: 10/30/2017
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 45

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

CDL: Clandestine Drug Labs

A listing of drug lab locations. Listing of a location in this database does not indicate that any illegal drug lab materials were or were not present there, and does not constitute a determination that the location either requires or does not require additional cleanup work.

Date of Government Version: 06/30/2017
Date Data Arrived at EDR: 08/18/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 34

Source: Department of Toxic Substances Control
Telephone: 916-255-6504
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

TOXIC PITS: Toxic Pits Cleanup Act Sites

Toxic PITS Cleanup Act Sites. TOXIC PITS identifies sites suspected of containing hazardous substances where cleanup has not yet been completed.

Date of Government Version: 07/01/1995
Date Data Arrived at EDR: 08/30/1995
Date Made Active in Reports: 09/26/1995
Number of Days to Update: 27

Source: State Water Resources Control Board
Telephone: 916-227-4364
Last EDR Contact: 01/26/2009
Next Scheduled EDR Contact: 04/27/2009
Data Release Frequency: No Update Planned

US CDL: Clandestine Drug Labs

A listing of clandestine drug lab locations. The U.S. Department of Justice ("the Department") provides this web site as a public service. It contains addresses of some locations where law enforcement agencies reported they found chemicals or other items that indicated the presence of either clandestine drug laboratories or dumpsites. In most cases, the source of the entries is not the Department, and the Department has not verified the entry and does not guarantee its accuracy. Members of the public must verify the accuracy of all entries by, for example, contacting local law enforcement and local health departments.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/24/2018
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 16

Source: Drug Enforcement Administration
Telephone: 202-307-1000
Last EDR Contact: 02/27/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Quarterly

Local Lists of Registered Storage Tanks

SWEEPS UST: SWEEPS UST Listing

Statewide Environmental Evaluation and Planning System. This underground storage tank listing was updated and maintained by a company contacted by the SWRCB in the early 1990's. The listing is no longer updated or maintained. The local agency is the contact for more information on a site on the SWEEPS list.

Date of Government Version: 06/01/1994
Date Data Arrived at EDR: 07/07/2005
Date Made Active in Reports: 08/11/2005
Number of Days to Update: 35

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/03/2005
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

UST MENDOCINO: Mendocino County UST Database
A listing of underground storage tank locations in Mendocino County.

Date of Government Version: 11/27/2017
Date Data Arrived at EDR: 11/29/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 19

Source: Department of Public Health
Telephone: 707-463-4466
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

HIST UST: Hazardous Substance Storage Container Database
The Hazardous Substance Storage Container Database is a historical listing of UST sites. Refer to local/county source for current data.

Date of Government Version: 10/15/1990
Date Data Arrived at EDR: 01/25/1991
Date Made Active in Reports: 02/12/1991
Number of Days to Update: 18

Source: State Water Resources Control Board
Telephone: 916-341-5851
Last EDR Contact: 07/26/2001
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CA FID UST: Facility Inventory Database
The Facility Inventory Database (FID) contains a historical listing of active and inactive underground storage tank locations from the State Water Resource Control Board. Refer to local/county source for current data.

Date of Government Version: 10/31/1994
Date Data Arrived at EDR: 09/05/1995
Date Made Active in Reports: 09/29/1995
Number of Days to Update: 24

Source: California Environmental Protection Agency
Telephone: 916-341-5851
Last EDR Contact: 12/28/1998
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Local Land Records

LIENS: Environmental Liens Listing
A listing of property locations with environmental liens for California where DTSC is a lien holder.

Date of Government Version: 11/30/2017
Date Data Arrived at EDR: 12/01/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 41

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

LIENS 2: CERCLA Lien Information
A Federal CERCLA ('Superfund') lien can exist by operation of law at any site or property at which EPA has spent Superfund monies. These monies are spent to investigate and address releases and threatened releases of contamination. CERCLIS provides information as to the identity of these sites and properties.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-6023
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Semi-Annually

DEED: Deed Restriction Listing

Site Mitigation and Brownfields Reuse Program Facility Sites with Deed Restrictions & Hazardous Waste Management Program Facility Sites with Deed / Land Use Restriction. The DTSC Site Mitigation and Brownfields Reuse Program (SMBRP) list includes sites cleaned up under the program's oversight and generally does not include current or former hazardous waste facilities that required a hazardous waste facility permit. The list represents deed restrictions that are active. Some sites have multiple deed restrictions. The DTSC Hazardous Waste Management Program (HWMP) has developed a list of current or former hazardous waste facilities that have a recorded land use restriction at the local county recorder's office. The land use restrictions on this list were required by the DTSC HWMP as a result of the presence of hazardous substances that remain on site after the facility (or part of the facility) has been closed or cleaned up. The types of land use restriction include deed notice, deed restriction, or a land use restriction that binds current and future owners.

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0

Source: DTSC and SWRCB
Telephone: 916-323-3400
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Semi-Annually

Records of Emergency Release Reports

HMIRS: Hazardous Materials Information Reporting System

Hazardous Materials Incident Report System. HMIRS contains hazardous material spill incidents reported to DOT.

Date of Government Version: 09/21/2017
Date Data Arrived at EDR: 09/21/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 22

Source: U.S. Department of Transportation
Telephone: 202-366-4555
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

CHMIRS: California Hazardous Material Incident Report System

California Hazardous Material Incident Reporting System. CHMIRS contains information on reported hazardous material incidents (accidental releases or spills).

Date of Government Version: 05/09/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 09/21/2017
Number of Days to Update: 57

Source: Office of Emergency Services
Telephone: 916-845-8400
Last EDR Contact: 02/20/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

LDS: Land Disposal Sites Listing (GEOTRACKER)

Land Disposal sites (Landfills) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 30

Source: State Water Qualilty Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

MCS: Military Cleanup Sites Listing (GEOTRACKER)

Military sites (consisting of: Military UST sites; Military Privatized sites; and Military Cleanup sites [formerly known as DoD non UST]) included in GeoTracker. GeoTracker is the Water Boards data management system for sites that impact, or have the potential to impact, water quality in California, with emphasis on groundwater.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31

Source: State Water Resources Control Board
Telephone: 866-480-1028
Last EDR Contact: 12/12/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

SPILLS 90: SPILLS90 data from FirstSearch

Spills 90 includes those spill and release records available exclusively from FirstSearch databases. Typically, they may include chemical, oil and/or hazardous substance spills recorded after 1990. Duplicate records that are already included in EDR incident and release records are not included in Spills 90.

Date of Government Version: 06/06/2012
Date Data Arrived at EDR: 01/03/2013
Date Made Active in Reports: 02/22/2013
Number of Days to Update: 50

Source: FirstSearch
Telephone: N/A
Last EDR Contact: 01/03/2013
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

Other Ascertainable Records

RCRA NonGen / NLR: RCRA - Non Generators / No Longer Regulated

RCRAInfo is EPA's comprehensive information system, providing access to data supporting the Resource Conservation and Recovery Act (RCRA) of 1976 and the Hazardous and Solid Waste Amendments (HSWA) of 1984. The database includes selective information on sites which generate, transport, store, treat and/or dispose of hazardous waste as defined by the Resource Conservation and Recovery Act (RCRA). Non-Generators do not presently generate hazardous waste.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/26/2017
Date Made Active in Reports: 02/09/2018
Number of Days to Update: 45

Source: Environmental Protection Agency
Telephone: (415) 495-8895
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

FUDS: Formerly Used Defense Sites

The listing includes locations of Formerly Used Defense Sites properties where the US Army Corps of Engineers is actively working or will take necessary cleanup actions.

Date of Government Version: 01/31/2015
Date Data Arrived at EDR: 07/08/2015
Date Made Active in Reports: 10/13/2015
Number of Days to Update: 97

Source: U.S. Army Corps of Engineers
Telephone: 202-528-4285
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

DOD: Department of Defense Sites

This data set consists of federally owned or administered lands, administered by the Department of Defense, that have any area equal to or greater than 640 acres of the United States, Puerto Rico, and the U.S. Virgin Islands.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 11/10/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 62

Source: USGS
Telephone: 888-275-8747
Last EDR Contact: 10/13/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: Semi-Annually

FEDLAND: Federal and Indian Lands

Federally and Indian administrated lands of the United States. Lands included are administrated by: Army Corps of Engineers, Bureau of Reclamation, National Wild and Scenic River, National Wildlife Refuge, Public Domain Land, Wilderness, Wilderness Study Area, Wildlife Management Area, Bureau of Indian Affairs, Bureau of Land Management, Department of Justice, Forest Service, Fish and Wildlife Service, National Park Service.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 02/06/2006
Date Made Active in Reports: 01/11/2007
Number of Days to Update: 339

Source: U.S. Geological Survey
Telephone: 888-275-8747
Last EDR Contact: 10/11/2017
Next Scheduled EDR Contact: 01/22/2018
Data Release Frequency: N/A

SCRD DRYCLEANERS: State Coalition for Remediation of Drycleaners Listing

The State Coalition for Remediation of Drycleaners was established in 1998, with support from the U.S. EPA Office of Superfund Remediation and Technology Innovation. It is comprised of representatives of states with established drycleaner remediation programs. Currently the member states are Alabama, Connecticut, Florida, Illinois, Kansas, Minnesota, Missouri, North Carolina, Oregon, South Carolina, Tennessee, Texas, and Wisconsin.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 02/03/2017
Date Made Active in Reports: 04/07/2017
Number of Days to Update: 63
Source: Environmental Protection Agency
Telephone: 615-532-8599
Last EDR Contact: 02/16/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

US FIN ASSUR: Financial Assurance Information

All owners and operators of facilities that treat, store, or dispose of hazardous waste are required to provide proof that they will have sufficient funds to pay for the clean up, closure, and post-closure care of their facilities.

Date of Government Version: 10/17/2017
Date Data Arrived at EDR: 11/01/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 37
Source: Environmental Protection Agency
Telephone: 202-566-1917
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

EPA WATCH LIST: EPA WATCH LIST

EPA maintains a "Watch List" to facilitate dialogue between EPA, state and local environmental agencies on enforcement matters relating to facilities with alleged violations identified as either significant or high priority. Being on the Watch List does not mean that the facility has actually violated the law only that an investigation by EPA or a state or local environmental agency has led those organizations to allege that an unproven violation has in fact occurred. Being on the Watch List does not represent a higher level of concern regarding the alleged violations that were detected, but instead indicates cases requiring additional dialogue between EPA, state and local agencies - primarily because of the length of time the alleged violation has gone unaddressed or unresolved.

Date of Government Version: 08/30/2013
Date Data Arrived at EDR: 03/21/2014
Date Made Active in Reports: 06/17/2014
Number of Days to Update: 88
Source: Environmental Protection Agency
Telephone: 617-520-3000
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

2020 COR ACTION: 2020 Corrective Action Program List

The EPA has set ambitious goals for the RCRA Corrective Action program by creating the 2020 Corrective Action Universe. This RCRA cleanup baseline includes facilities expected to need corrective action. The 2020 universe contains a wide variety of sites. Some properties are heavily contaminated while others were contaminated but have since been cleaned up. Still others have not been fully investigated yet, and may require little or no remediation. Inclusion in the 2020 Universe does not necessarily imply failure on the part of a facility to meet its RCRA obligations.

Date of Government Version: 04/22/2013
Date Data Arrived at EDR: 03/03/2015
Date Made Active in Reports: 03/09/2015
Number of Days to Update: 6
Source: Environmental Protection Agency
Telephone: 703-308-4044
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TSCA: Toxic Substances Control Act

Toxic Substances Control Act. TSCA identifies manufacturers and importers of chemical substances included on the TSCA Chemical Substance Inventory list. It includes data on the production volume of these substances by plant site.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 06/21/2017
Date Made Active in Reports: 01/05/2018
Number of Days to Update: 198
Source: EPA
Telephone: 202-260-5521
Last EDR Contact: 12/22/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Every 4 Years

TRIS: Toxic Chemical Release Inventory System

Toxic Release Inventory System. TRIS identifies facilities which release toxic chemicals to the air, water and land in reportable quantities under SARA Title III Section 313.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 01/10/2018
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 2

Source: EPA
Telephone: 202-566-0250
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Annually

SSTS: Section 7 Tracking Systems

Section 7 of the Federal Insecticide, Fungicide and Rodenticide Act, as amended (92 Stat. 829) requires all registered pesticide-producing establishments to submit a report to the Environmental Protection Agency by March 1st each year. Each establishment must report the types and amounts of pesticides, active ingredients and devices being produced, and those having been produced and sold or distributed in the past year.

Date of Government Version: 12/31/2009
Date Data Arrived at EDR: 12/10/2010
Date Made Active in Reports: 02/25/2011
Number of Days to Update: 77

Source: EPA
Telephone: 202-564-4203
Last EDR Contact: 01/25/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Annually

ROD: Records Of Decision

Record of Decision. ROD documents mandate a permanent remedy at an NPL (Superfund) site containing technical and health information to aid in the cleanup.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/22/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 21

Source: EPA
Telephone: 703-416-0223
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Annually

RMP: Risk Management Plans

When Congress passed the Clean Air Act Amendments of 1990, it required EPA to publish regulations and guidance for chemical accident prevention at facilities using extremely hazardous substances. The Risk Management Program Rule (RMP Rule) was written to implement Section 112(r) of these amendments. The rule, which built upon existing industry codes and standards, requires companies of all sizes that use certain flammable and toxic substances to develop a Risk Management Program, which includes a(n): Hazard assessment that details the potential effects of an accidental release, an accident history of the last five years, and an evaluation of worst-case and alternative accidental releases; Prevention program that includes safety precautions and maintenance, monitoring, and employee training measures; and Emergency response program that spells out emergency health care, employee training measures and procedures for informing the public and response agencies (e.g the fire department) should an accident occur.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/08/2017
Number of Days to Update: 21

Source: Environmental Protection Agency
Telephone: 202-564-8600
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RAATS: RCRA Administrative Action Tracking System

RCRA Administration Action Tracking System. RAATS contains records based on enforcement actions issued under RCRA pertaining to major violators and includes administrative and civil actions brought by the EPA. For administration actions after September 30, 1995, data entry in the RAATS database was discontinued. EPA will retain a copy of the database for historical records. It was necessary to terminate RAATS because a decrease in agency resources made it impossible to continue to update the information contained in the database.

Date of Government Version: 04/17/1995
Date Data Arrived at EDR: 07/03/1995
Date Made Active in Reports: 08/07/1995
Number of Days to Update: 35

Source: EPA
Telephone: 202-564-4104
Last EDR Contact: 06/02/2008
Next Scheduled EDR Contact: 09/01/2008
Data Release Frequency: No Update Planned

PRP: Potentially Responsible Parties
A listing of verified Potentially Responsible Parties

Date of Government Version: 10/25/2013
Date Data Arrived at EDR: 10/17/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 3
Source: EPA
Telephone: 202-564-6023
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

PADS: PCB Activity Database System
PCB Activity Database. PADS Identifies generators, transporters, commercial storers and/or brokers and disposers of PCB's who are required to notify the EPA of such activities.

Date of Government Version: 06/01/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 126
Source: EPA
Telephone: 202-566-0500
Last EDR Contact: 01/12/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

ICIS: Integrated Compliance Information System
The Integrated Compliance Information System (ICIS) supports the information needs of the national enforcement and compliance program as well as the unique needs of the National Pollutant Discharge Elimination System (NPDES) program.

Date of Government Version: 11/18/2016
Date Data Arrived at EDR: 11/23/2016
Date Made Active in Reports: 02/10/2017
Number of Days to Update: 79
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Quarterly

FTTS: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
FTTS tracks administrative cases and pesticide enforcement actions and compliance activities related to FIFRA, TSCA and EPCRA (Emergency Planning and Community Right-to-Know Act). To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA/Office of Prevention, Pesticides and Toxic Substances
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

FTTS INSP: FIFRA/ TSCA Tracking System - FIFRA (Federal Insecticide, Fungicide, & Rodenticide Act)/TSCA (Toxic Substances Control Act)
A listing of FIFRA/TSCA Tracking System (FTTS) inspections and enforcements.

Date of Government Version: 04/09/2009
Date Data Arrived at EDR: 04/16/2009
Date Made Active in Reports: 05/11/2009
Number of Days to Update: 25
Source: EPA
Telephone: 202-566-1667
Last EDR Contact: 08/18/2017
Next Scheduled EDR Contact: 12/04/2017
Data Release Frequency: Quarterly

MLTS: Material Licensing Tracking System
MLTS is maintained by the Nuclear Regulatory Commission and contains a list of approximately 8,100 sites which possess or use radioactive materials and which are subject to NRC licensing requirements. To maintain currency, EDR contacts the Agency on a quarterly basis.

Date of Government Version: 08/30/2016
Date Data Arrived at EDR: 09/08/2016
Date Made Active in Reports: 10/21/2016
Number of Days to Update: 43
Source: Nuclear Regulatory Commission
Telephone: 301-415-7169
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

COAL ASH DOE: Steam-Electric Plant Operation Data
A listing of power plants that store ash in surface ponds.

Date of Government Version: 12/31/2005
Date Data Arrived at EDR: 08/07/2009
Date Made Active in Reports: 10/22/2009
Number of Days to Update: 76
Source: Department of Energy
Telephone: 202-586-8719
Last EDR Contact: 12/05/2017
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Varies

COAL ASH EPA: Coal Combustion Residues Surface Impoundments List
A listing of coal combustion residues surface impoundments with high hazard potential ratings.

Date of Government Version: 07/01/2014
Date Data Arrived at EDR: 09/10/2014
Date Made Active in Reports: 10/20/2014
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: N/A
Last EDR Contact: 12/08/2017
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Varies

PCB TRANSFORMER: PCB Transformer Registration Database
The database of PCB transformer registrations that includes all PCB registration submittals.

Date of Government Version: 05/24/2017
Date Data Arrived at EDR: 11/30/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 15
Source: Environmental Protection Agency
Telephone: 202-566-0517
Last EDR Contact: 01/26/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RADINFO: Radiation Information Database
The Radiation Information Database (RADINFO) contains information about facilities that are regulated by U.S. Environmental Protection Agency (EPA) regulations for radiation and radioactivity.

Date of Government Version: 10/02/2017
Date Data Arrived at EDR: 10/05/2017
Date Made Active in Reports: 10/13/2017
Number of Days to Update: 8
Source: Environmental Protection Agency
Telephone: 202-343-9775
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

HIST FTTS: FIFRA/TSCA Tracking System Administrative Case Listing
A complete administrative case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40
Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2007
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

HIST FTTS INSP: FIFRA/TSCA Tracking System Inspection & Enforcement Case Listing
A complete inspection and enforcement case listing from the FIFRA/TSCA Tracking System (FTTS) for all ten EPA regions. The information was obtained from the National Compliance Database (NCDB). NCDB supports the implementation of FIFRA (Federal Insecticide, Fungicide, and Rodenticide Act) and TSCA (Toxic Substances Control Act). Some EPA regions are now closing out records. Because of that, and the fact that some EPA regions are not providing EPA Headquarters with updated records, it was decided to create a HIST FTTS database. It included records that may not be included in the newer FTTS database updates. This database is no longer updated.

Date of Government Version: 10/19/2006
Date Data Arrived at EDR: 03/01/2007
Date Made Active in Reports: 04/10/2007
Number of Days to Update: 40

Source: Environmental Protection Agency
Telephone: 202-564-2501
Last EDR Contact: 12/17/2008
Next Scheduled EDR Contact: 03/17/2008
Data Release Frequency: No Update Planned

DOT OPS: Incident and Accident Data

Department of Transporation, Office of Pipeline Safety Incident and Accident data.

Date of Government Version: 07/31/2012
Date Data Arrived at EDR: 08/07/2012
Date Made Active in Reports: 09/18/2012
Number of Days to Update: 42

Source: Department of Transporation, Office of Pipeline Safety
Telephone: 202-366-4595
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

CONSENT: Superfund (CERCLA) Consent Decrees

Major legal settlements that establish responsibility and standards for cleanup at NPL (Superfund) sites. Released periodically by United States District Courts after settlement by parties to litigation matters.

Date of Government Version: 09/30/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 63

Source: Department of Justice, Consent Decree Library
Telephone: Varies
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Varies

BRS: Biennial Reporting System

The Biennial Reporting System is a national system administered by the EPA that collects data on the generation and management of hazardous waste. BRS captures detailed data from two groups: Large Quantity Generators (LQG) and Treatment, Storage, and Disposal Facilities.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 09/28/2017
Number of Days to Update: 218

Source: EPA/NTIS
Telephone: 800-424-9346
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Biennially

INDIAN RESERV: Indian Reservations

This map layer portrays Indian administered lands of the United States that have any area equal to or greater than 640 acres.

Date of Government Version: 12/31/2014
Date Data Arrived at EDR: 07/14/2015
Date Made Active in Reports: 01/10/2017
Number of Days to Update: 546

Source: USGS
Telephone: 202-208-3710
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

FUSRAP: Formerly Utilized Sites Remedial Action Program

DOE established the Formerly Utilized Sites Remedial Action Program (FUSRAP) in 1974 to remediate sites where radioactive contamination remained from Manhattan Project and early U.S. Atomic Energy Commission (AEC) operations.

Date of Government Version: 12/23/2016
Date Data Arrived at EDR: 12/27/2016
Date Made Active in Reports: 02/17/2017
Number of Days to Update: 52

Source: Department of Energy
Telephone: 202-586-3559
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

UMTRA: Uranium Mill Tailings Sites

Uranium ore was mined by private companies for federal government use in national defense programs. When the mills shut down, large piles of the sand-like material (mill tailings) remain after uranium has been extracted from the ore. Levels of human exposure to radioactive materials from the piles are low; however, in some cases tailings were used as construction materials before the potential health hazards of the tailings were recognized.

Date of Government Version: 06/23/2017
Date Data Arrived at EDR: 10/11/2017
Date Made Active in Reports: 11/03/2017
Number of Days to Update: 23

Source: Department of Energy
Telephone: 505-845-0011
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LEAD SMELTER 1: Lead Smelter Sites

A listing of former lead smelter site locations.

Date of Government Version: 10/10/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 42

Source: Environmental Protection Agency
Telephone: 703-603-8787
Last EDR Contact: 02/06/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

LEAD SMELTER 2: Lead Smelter Sites

A list of several hundred sites in the U.S. where secondary lead smelting was done from 1931and 1964. These sites may pose a threat to public health through ingestion or inhalation of contaminated soil or dust

Date of Government Version: 04/05/2001
Date Data Arrived at EDR: 10/27/2010
Date Made Active in Reports: 12/02/2010
Number of Days to Update: 36

Source: American Journal of Public Health
Telephone: 703-305-6451
Last EDR Contact: 12/02/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

US AIRS (AFS): Aerometric Information Retrieval System Facility Subsystem (AFS)

The database is a sub-system of Aerometric Information Retrieval System (AIRS). AFS contains compliance data on air pollution point sources regulated by the U.S. EPA and/or state and local air regulatory agencies. This information comes from source reports by various stationary sources of air pollution, such as electric power plants, steel mills, factories, and universities, and provides information about the air pollutants they produce. Action, air program, air program pollutant, and general level plant data. It is used to track emissions and compliance data from industrial plants.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US AIRS MINOR: Air Facility System Data

A listing of minor source facilities.

Date of Government Version: 10/12/2016
Date Data Arrived at EDR: 10/26/2016
Date Made Active in Reports: 02/03/2017
Number of Days to Update: 100

Source: EPA
Telephone: 202-564-2496
Last EDR Contact: 09/26/2017
Next Scheduled EDR Contact: 01/08/2018
Data Release Frequency: Annually

US MINES: Mines Master Index File

Contains all mine identification numbers issued for mines active or opened since 1971. The data also includes violation information.

Date of Government Version: 10/29/2017
Date Data Arrived at EDR: 11/28/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 45

Source: Department of Labor, Mine Safety and Health Administration
Telephone: 303-231-5959
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Semi-Annually

US MINES 2: Ferrous and Nonferrous Metal Mines Database Listing

This map layer includes ferrous (ferrous metal mines are facilities that extract ferrous metals, such as iron ore or molybdenum) and nonferrous (Nonferrous metal mines are facilities that extract nonferrous metals, such as gold, silver, copper, zinc, and lead) metal mines in the United States.

Date of Government Version: 12/05/2005
Date Data Arrived at EDR: 02/29/2008
Date Made Active in Reports: 04/18/2008
Number of Days to Update: 49

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 12/01/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Varies

US MINES 3: Active Mines & Mineral Plants Database Listing

Active Mines and Mineral Processing Plant operations for commodities monitored by the Minerals Information Team of the USGS.

Date of Government Version: 04/14/2011
Date Data Arrived at EDR: 06/08/2011
Date Made Active in Reports: 09/13/2011
Number of Days to Update: 97

Source: USGS
Telephone: 703-648-7709
Last EDR Contact: 12/01/2017
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Varies

ABANDONED MINES: Abandoned Mines

An inventory of land and water impacted by past mining (primarily coal mining) is maintained by OSMRE to provide information needed to implement the Surface Mining Control and Reclamation Act of 1977 (SMCRA). The inventory contains information on the location, type, and extent of AML impacts, as well as, information on the cost associated with the reclamation of those problems. The inventory is based upon field surveys by State, Tribal, and OSMRE program officials. It is dynamic to the extent that it is modified as new problems are identified and existing problems are reclaimed.

Date of Government Version: 09/25/2017
Date Data Arrived at EDR: 09/26/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 24

Source: Department of Interior
Telephone: 202-208-2609
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

FINDS: Facility Index System/Facility Registry System

Facility Index System. FINDS contains both facility information and 'pointers' to other sources that contain more detail. EDR includes the following FINDS databases in this report: PCS (Permit Compliance System), AIRS (Aerometric Information Retrieval System), DOCKET (Enforcement Docket used to manage and track information on civil judicial enforcement cases for all environmental statutes), FURS (Federal Underground Injection Control), C-DOCKET (Criminal Docket System used to track criminal enforcement actions for all environmental statutes), FFIS (Federal Facilities Information System), STATE (State Environmental Laws and Statutes), and PADS (PCB Activity Data System).

Date of Government Version: 07/23/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 09/15/2017
Number of Days to Update: 9

Source: EPA
Telephone: (415) 947-8000
Last EDR Contact: 02/23/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

ECHO: Enforcement & Compliance History Information

ECHO provides integrated compliance and enforcement information for about 800,000 regulated facilities nationwide.

Date of Government Version: 09/02/2017
Date Data Arrived at EDR: 09/06/2017
Date Made Active in Reports: 10/20/2017
Number of Days to Update: 44

Source: Environmental Protection Agency
Telephone: 202-564-2280
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Quarterly

UXO: Unexploded Ordnance Sites

A listing of unexploded ordnance site locations

Date of Government Version: 09/30/2016
Date Data Arrived at EDR: 10/31/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 73

Source: Department of Defense
Telephone: 703-704-1564
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

DOCKET HWC: Hazardous Waste Compliance Docket Listing
A complete list of the Federal Agency Hazardous Waste Compliance Docket Facilities.

Date of Government Version: 06/27/2017
Date Data Arrived at EDR: 11/21/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 52
Source: Environmental Protection Agency
Telephone: 202-564-0527
Last EDR Contact: 01/19/2018
Next Scheduled EDR Contact: 03/12/2018
Data Release Frequency: Varies

FUELS PROGRAM: EPA Fuels Program Registered Listing
This listing includes facilities that are registered under the Part 80 (Code of Federal Regulations) EPA Fuels Programs. All companies now are required to submit new and updated registrations.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 53
Source: EPA
Telephone: 800-385-6164
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

CA BOND EXP. PLAN: Bond Expenditure Plan
Department of Health Services developed a site-specific expenditure plan as the basis for an appropriation of Hazardous Substance Cleanup Bond Act funds. It is not updated.

Date of Government Version: 01/01/1989
Date Data Arrived at EDR: 07/27/1994
Date Made Active in Reports: 08/02/1994
Number of Days to Update: 6
Source: Department of Health Services
Telephone: 916-255-2118
Last EDR Contact: 05/31/1994
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

CORTESE: "Cortese" Hazardous Waste & Substances Sites List
The sites for the list are designated by the State Water Resource Control Board (LUST), the Integrated Waste Board (SWF/LS), and the Department of Toxic Substances Control (Cal-Sites).

Date of Government Version: 02/08/2018
Date Data Arrived at EDR: 02/08/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 0
Source: CAL EPA/Office of Emergency Information
Telephone: 916-323-3400
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

DRYCLEANERS: Cleaner Facilities
A list of drycleaner related facilities that have EPA ID numbers. These are facilities with certain SIC codes: power laundries, family and commercial; garment pressing and cleaner's agents; linen supply; coin-operated laundries and cleaning; drycleaning plants, except rugs; carpet and upholster cleaning; industrial launderers; laundry and garment services.

Date of Government Version: 08/02/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69
Source: Department of Toxic Substance Control
Telephone: 916-327-4498
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Annually

EMI: Emissions Inventory Data
Toxics and criteria pollutant emissions data collected by the ARB and local air pollution agencies.

Date of Government Version: 12/31/2015
Date Data Arrived at EDR: 03/21/2017
Date Made Active in Reports: 08/15/2017
Number of Days to Update: 147
Source: California Air Resources Board
Telephone: 916-322-2990
Last EDR Contact: 12/22/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Varies

ENF: Enforcement Action Listing

A listing of Water Board Enforcement Actions. Formal is everything except Oral/Verbal Communication, Notice of Violation, Expedited Payment Letter, and Staff Enforcement Letter.

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 34

Source: State Water Resoruces Control Board
Telephone: 916-445-9379
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Financial Assurance 1: Financial Assurance Information Listing

Financial Assurance information

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 52

Source: Department of Toxic Substances Control
Telephone: 916-255-3628
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Financial Assurance 2: Financial Assurance Information Listing

A listing of financial assurance information for solid waste facilities. Financial assurance is intended to ensure that resources are available to pay for the cost of closure, post-closure care, and corrective measures if the owner or operator of a regulated facility is unable or unwilling to pay.

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: California Integrated Waste Management Board
Telephone: 916-341-6066
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Varies

HAZNET: Facility and Manifest Data

Facility and Manifest Data. The data is extracted from the copies of hazardous waste manifests received each year by the DTSC. The annual volume of manifests is typically 700,000 - 1,000,000 annually, representing approximately 350,000 - 500,000 shipments. Data are from the manifests submitted without correction, and therefore many contain some invalid values for data elements such as generator ID, TSD ID, waste category, and disposal method. This database begins with calendar year 1993.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 97

Source: California Environmental Protection Agency
Telephone: 916-255-1136
Last EDR Contact: 01/08/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

ICE: ICE

Contains data pertaining to the Permitted Facilities with Inspections / Enforcements sites tracked in Envirostor.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 37

Source: Department of Toxic Subsances Control
Telephone: 877-786-9427
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

HIST CORTESE: Hazardous Waste & Substance Site List

The sites for the list are designated by the State Water Resource Control Board [LUST], the Integrated Waste Board [SWF/LS], and the Department of Toxic Substances Control [CALSITES]. This listing is no longer updated by the state agency.

Date of Government Version: 04/01/2001
Date Data Arrived at EDR: 01/22/2009
Date Made Active in Reports: 04/08/2009
Number of Days to Update: 76

Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 01/22/2009
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

HWP: EnviroStor Permitted Facilities Listing
Detailed information on permitted hazardous waste facilities and corrective action ("cleanups") tracked in EnviroStor.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/20/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 37
Source: Department of Toxic Substances Control
Telephone: 916-323-3400
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

HWT: Registered Hazardous Waste Transporter Database
A listing of hazardous waste transporters. In California, unless specifically exempted, it is unlawful for any person to transport hazardous wastes unless the person holds a valid registration issued by DTSC. A hazardous waste transporter registration is valid for one year and is assigned a unique registration number.

Date of Government Version: 01/08/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28
Source: Department of Toxic Substances Control
Telephone: 916-440-7145
Last EDR Contact: 01/09/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Quarterly

MINES: Mines Site Location Listing
A listing of mine site locations from the Office of Mine Reclamation.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 31
Source: Department of Conservation
Telephone: 916-322-1080
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

MWMP: Medical Waste Management Program Listing
The Medical Waste Management Program (MWMP) ensures the proper handling and disposal of medical waste by permitting and inspecting medical waste Offsite Treatment Facilities (PDF) and Transfer Stations (PDF) throughout the state. MWMP also oversees all Medical Waste Transporters.

Date of Government Version: 11/29/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 42
Source: Department of Public Health
Telephone: 916-558-1784
Last EDR Contact: 12/05/2017
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Varies

NPDES: NPDES Permits Listing
A listing of NPDES permits, including stormwater.

Date of Government Version: 11/13/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 23
Source: State Water Resources Control Board
Telephone: 916-445-9379
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

PEST LIC: Pesticide Regulation Licenses Listing
A listing of licenses and certificates issued by the Department of Pesticide Regulation. The DPR issues licenses and/or certificates to: Persons and businesses that apply or sell pesticides; Pest control dealers and brokers; Persons who advise on agricultural pesticide applications.

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 42
Source: Department of Pesticide Regulation
Telephone: 916-445-4038
Last EDR Contact: 12/05/2017
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Quarterly

PROC: Certified Processors Database
A listing of certified processors.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 35
Source: Department of Conservation
Telephone: 916-323-3836
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

NOTIFY 65: Proposition 65 Records
Listings of all Proposition 65 incidents reported to counties by the State Water Resources Control Board and the Regional Water Quality Control Board. This database is no longer updated by the reporting agency.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 32
Source: State Water Resources Control Board
Telephone: 916-445-3846
Last EDR Contact: 12/13/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: No Update Planned

UIC: UIC Listing
A listing of wells identified as underground injection wells, in the California Oil and Gas Wells database.

Date of Government Version: 12/11/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 36
Source: Deaprtment of Conservation
Telephone: 916-445-2408
Last EDR Contact: 12/12/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Varies

WASTEWATER PITS: Oil Wastewater Pits Listing
Water officials discovered that oil producers have been dumping chemical-laden wastewater into hundreds of unlined pits that are operating without proper permits. Inspections completed by the Central Valley Regional Water Quality Control Board revealed the existence of previously unidentified waste sites. The water board?s review found that more than one-third of the region?s active disposal pits are operating without permission.

Date of Government Version: 04/15/2015
Date Data Arrived at EDR: 04/17/2015
Date Made Active in Reports: 06/23/2015
Number of Days to Update: 67
Source: RWQCB, Central Valley Region
Telephone: 559-445-5577
Last EDR Contact: 01/12/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Varies

WDS: Waste Discharge System
Sites which have been issued waste discharge requirements.

Date of Government Version: 06/19/2007
Date Data Arrived at EDR: 06/20/2007
Date Made Active in Reports: 06/29/2007
Number of Days to Update: 9
Source: State Water Resources Control Board
Telephone: 916-341-5227
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Quarterly

WIP: Well Investigation Program Case List
Well Investigation Program case in the San Gabriel and San Fernando Valley area.

Date of Government Version: 07/03/2009
Date Data Arrived at EDR: 07/21/2009
Date Made Active in Reports: 08/03/2009
Number of Days to Update: 13
Source: Los Angeles Water Quality Control Board
Telephone: 213-576-6726
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

EDR HIGH RISK HISTORICAL RECORDS

EDR Exclusive Records

EDR MGP: EDR Proprietary Manufactured Gas Plants

The EDR Proprietary Manufactured Gas Plant Database includes records of coal gas plants (manufactured gas plants) compiled by EDR's researchers. Manufactured gas sites were used in the United States from the 1800's to 1950's to produce a gas that could be distributed and used as fuel. These plants used whale oil, rosin, coal, or a mixture of coal, oil, and water that also produced a significant amount of waste. Many of the byproducts of the gas production, such as coal tar (oily waste containing volatile and non-volatile chemicals), sludges, oils and other compounds are potentially hazardous to human health and the environment. The byproduct from this process was frequently disposed of directly at the plant site and can remain or spread slowly, serving as a continuous source of soil and groundwater contamination.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: No Update Planned

EDR Hist Auto: EDR Exclusive Historical Auto Stations

EDR has searched selected national collections of business directories and has collected listings of potential gas station/filling station/service station sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include gas station/filling station/service station establishments. The categories reviewed included, but were not limited to gas, gas station, gasoline station, filling station, auto, automobile repair, auto service station, service station, etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR Hist Cleaner: EDR Exclusive Historical Cleaners

EDR has searched selected national collections of business directories and has collected listings of potential dry cleaner sites that were available to EDR researchers. EDR's review was limited to those categories of sources that might, in EDR's opinion, include dry cleaning establishments. The categories reviewed included, but were not limited to dry cleaners, cleaners, laundry, laundromat, cleaning/laundry, wash & dry etc. This database falls within a category of information EDR classifies as "High Risk Historical Records", or HRHR. EDR's HRHR effort presents unique and sometimes proprietary data about past sites and operations that typically create environmental concerns, but may not show up in current government records searches.

Date of Government Version: N/A
Date Data Arrived at EDR: N/A
Date Made Active in Reports: N/A
Number of Days to Update: N/A

Source: EDR, Inc.
Telephone: N/A
Last EDR Contact: N/A
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

EDR RECOVERED GOVERNMENT ARCHIVES

Exclusive Recovered Govt. Archives

RGA LF: Recovered Government Archive Solid Waste Facilities List

The EDR Recovered Government Archive Landfill database provides a list of landfills derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the Department of Resources Recycling and Recovery in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 01/13/2014
Number of Days to Update: 196

Source: Department of Resources Recycling and Recovery
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

RGA LUST: Recovered Government Archive Leaking Underground Storage Tank

The EDR Recovered Government Archive Leaking Underground Storage Tank database provides a list of LUST incidents derived from historical databases and includes many records that no longer appear in current government lists. Compiled from Records formerly available from the State Water Resources Control Board in California.

Date of Government Version: N/A
Date Data Arrived at EDR: 07/01/2013
Date Made Active in Reports: 12/30/2013
Number of Days to Update: 182

Source: State Water Resources Control Board
Telephone: N/A
Last EDR Contact: 06/01/2012
Next Scheduled EDR Contact: N/A
Data Release Frequency: Varies

COUNTY RECORDS

ALAMEDA COUNTY:

Contaminated Sites

A listing of contaminated sites overseen by the Toxic Release Program (oil and groundwater contamination from chemical releases and spills) and the Leaking Underground Storage Tank Program (soil and ground water contamination from leaking petroleum USTs).

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/11/2018
Date Made Active in Reports: 02/22/2018
Number of Days to Update: 42

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

Underground Tanks

Underground storage tank sites located in Alameda county.

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27

Source: Alameda County Environmental Health Services
Telephone: 510-567-6700
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 04/24/2047
Data Release Frequency: Semi-Annually

AMADOR COUNTY:

CUPA Facility List

Cupa Facility List

Date of Government Version: 12/08/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 15

Source: Amador County Environmental Health
Telephone: 209-223-6439
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Varies

BUTTE COUNTY:

CUPA Facility Listing

Cupa facility list.

Date of Government Version: 04/21/2017
Date Data Arrived at EDR: 04/25/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 106

Source: Public Health Department
Telephone: 530-538-7149
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: No Update Planned

CALVERAS COUNTY:

CUPA Facility Listing
Cupa Facility Listing

Date of Government Version: 08/31/2017
Date Data Arrived at EDR: 09/05/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 64

Source: Calveras County Environmental Health
Telephone: 209-754-6399
Last EDR Contact: 12/20/2017
Next Scheduled EDR Contact: 10/09/2017
Data Release Frequency: Quarterly

COLUSA COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 08/07/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69

Source: Health & Human Services
Telephone: 530-458-0396
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Semi-Annually

CONTRA COSTA COUNTY:

Site List
List includes sites from the underground tank, hazardous waste generator and business plan/2185 programs.

Date of Government Version: 11/20/2017
Date Data Arrived at EDR: 11/29/2017
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 51

Source: Contra Costa Health Services Department
Telephone: 925-646-2286
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Semi-Annually

DEL NORTE COUNTY:

CUPA Facility List
Cupa Facility list

Date of Government Version: 10/31/2017
Date Data Arrived at EDR: 11/01/2017
Date Made Active in Reports: 11/14/2017
Number of Days to Update: 13

Source: Del Norte County Environmental Health Division
Telephone: 707-465-0426
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

EL DORADO COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/06/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 21

Source: El Dorado County Environmental Management Department
Telephone: 530-621-6623
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

FRESNO COUNTY:

CUPA Resources List

Certified Unified Program Agency. CUPA's are responsible for implementing a unified hazardous materials and hazardous waste management regulatory program. The agency provides oversight of businesses that deal with hazardous materials, operate underground storage tanks or aboveground storage tanks.

Date of Government Version: 10/03/2017
Date Data Arrived at EDR: 10/06/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 40

Source: Dept. of Community Health
Telephone: 559-445-3271
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Semi-Annually

GLENN COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 10/25/2017
Date Data Arrived at EDR: 10/27/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 19

Source: Glenn County Air Pollution Control District
Telephone: 830-934-6500
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

HUMBOLDT COUNTY:

CUPA Facility List

CUPA facility list.

Date of Government Version: 08/03/2017
Date Data Arrived at EDR: 08/08/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 69

Source: Humboldt County Environmental Health
Telephone: N/A
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Semi-Annually

IMPERIAL COUNTY:

CUPA Facility List

Cupa facility list.

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 22

Source: San Diego Border Field Office
Telephone: 760-339-2777
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

INYO COUNTY:

CUPA Facility List
Cupa facility list.

Date of Government Version: 06/08/2017
Date Data Arrived at EDR: 06/09/2017
Date Made Active in Reports: 08/04/2017
Number of Days to Update: 56

Source: Inyo County Environmental Health Services
Telephone: 760-878-0238
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

KERN COUNTY:

Underground Storage Tank Sites & Tank Listing
Kern County Sites and Tanks Listing.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/20/2017
Number of Days to Update: 43

Source: Kern County Environment Health Services Department
Telephone: 661-862-8700
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

KINGS COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 28

Source: Kings County Department of Public Health
Telephone: 559-584-1411
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

LAKE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 11/09/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 5

Source: Lake County Environmental Health
Telephone: 707-263-1164
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

LASSEN COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 07/24/2017
Date Data Arrived at EDR: 07/26/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 82

Source: Lassen County Environmental Health
Telephone: 530-251-8528
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

LOS ANGELES COUNTY:

San Gabriel Valley Areas of Concern
San Gabriel Valley areas where VOC contamination is at or above the MCL as designated by region 9 EPA office.

Date of Government Version: 03/30/2009
Date Data Arrived at EDR: 03/31/2009
Date Made Active in Reports: 10/23/2009
Number of Days to Update: 206
Source: EPA Region 9
Telephone: 415-972-3178
Last EDR Contact: 12/13/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: No Update Planned

HMS: Street Number List
Industrial Waste and Underground Storage Tank Sites.

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 10/17/2017
Number of Days to Update: 5
Source: Department of Public Works
Telephone: 626-458-3517
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

List of Solid Waste Facilities
Solid Waste Facilities in Los Angeles County.

Date of Government Version: 01/16/2018
Date Data Arrived at EDR: 01/16/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 29
Source: La County Department of Public Works
Telephone: 818-458-5185
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

City of Los Angeles Landfills
Landfills owned and maintained by the City of Los Angeles.

Date of Government Version: 01/01/2017
Date Data Arrived at EDR: 04/21/2017
Date Made Active in Reports: 10/09/2017
Number of Days to Update: 171
Source: Engineering & Construction Division
Telephone: 213-473-7869
Last EDR Contact: 01/10/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

Site Mitigation List
Industrial sites that have had some sort of spill or complaint.

Date of Government Version: 01/01/2018
Date Data Arrived at EDR: 01/17/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 28
Source: Community Health Services
Telephone: 323-890-7806
Last EDR Contact: 01/17/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Annually

City of El Segundo Underground Storage Tank
Underground storage tank sites located in El Segundo city.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 04/19/2017
Date Made Active in Reports: 05/10/2017
Number of Days to Update: 21
Source: City of El Segundo Fire Department
Telephone: 310-524-2236
Last EDR Contact: 01/10/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Semi-Annually

City of Long Beach Underground Storage Tank
Underground storage tank sites located in the city of Long Beach.

Date of Government Version: 03/09/2017
Date Data Arrived at EDR: 03/10/2017
Date Made Active in Reports: 05/03/2017
Number of Days to Update: 54
Source: City of Long Beach Fire Department
Telephone: 562-570-2563
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Annually

City of Torrance Underground Storage Tank
Underground storage tank sites located in the city of Torrance.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 13

Source: City of Torrance Fire Department
Telephone: 310-618-2973
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Semi-Annually

MADERA COUNTY:

CUPA Facility List
A listing of sites included in the county's Certified Unified Program Agency database. California's Secretary for Environmental Protection established the unified hazardous materials and hazardous waste regulatory program as required by chapter 6.11 of the California Health and Safety Code. The Unified Program consolidates the administration, permits, inspections, and enforcement activities.

Date of Government Version: 10/26/2017
Date Data Arrived at EDR: 10/27/2017
Date Made Active in Reports: 11/06/2017
Number of Days to Update: 10

Source: Madera County Environmental Health
Telephone: 559-675-7823
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MARIN COUNTY:

Underground Storage Tank Sites
Currently permitted USTs in Marin County.

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 01/05/2018
Date Made Active in Reports: 01/17/2018
Number of Days to Update: 12

Source: Public Works Department Waste Management
Telephone: 415-473-6647
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Semi-Annually

MERCED COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 01/11/2018
Date Data Arrived at EDR: 01/12/2018
Date Made Active in Reports: 02/08/2018
Number of Days to Update: 27

Source: Merced County Environmental Health
Telephone: 209-381-1094
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

MONO COUNTY:

CUPA Facility List
CUPA Facility List

Date of Government Version: 11/21/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 12/27/2017
Number of Days to Update: 30

Source: Mono County Health Department
Telephone: 760-932-5580
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Varies

MONTEREY COUNTY:

CUPA Facility Listing
CUPA Program listing from the Environmental Health Division.

Date of Government Version: 01/09/2018
Date Data Arrived at EDR: 01/11/2018
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 20

Source: Monterey County Health Department
Telephone: 831-796-1297
Last EDR Contact: 02/20/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

NAPA COUNTY:

Sites With Reported Contamination
A listing of leaking underground storage tank sites located in Napa county.

Date of Government Version: 01/09/2017
Date Data Arrived at EDR: 01/11/2017
Date Made Active in Reports: 03/02/2017
Number of Days to Update: 50

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

Closed and Operating Underground Storage Tank Sites
Underground storage tank sites located in Napa county.

Date of Government Version: 11/22/2017
Date Data Arrived at EDR: 11/27/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 22

Source: Napa County Department of Environmental Management
Telephone: 707-253-4269
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: No Update Planned

NEVADA COUNTY:

CUPA Facility List
CUPA facility list.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 8

Source: Community Development Agency
Telephone: 530-265-1467
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

ORANGE COUNTY:

List of Industrial Site Cleanups
Petroleum and non-petroleum spills.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/09/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 28

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Annually

List of Underground Storage Tank Cleanups
Orange County Underground Storage Tank Cleanups (LUST).

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/09/2017
Date Made Active in Reports: 12/15/2017
Number of Days to Update: 36

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

List of Underground Storage Tank Facilities
Orange County Underground Storage Tank Facilities (UST).

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42

Source: Health Care Agency
Telephone: 714-834-3446
Last EDR Contact: 02/07/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

PLACER COUNTY:

Master List of Facilities
List includes aboveground tanks, underground tanks and cleanup sites.

Date of Government Version: 12/08/2017
Date Data Arrived at EDR: 12/12/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 50

Source: Placer County Health and Human Services
Telephone: 530-745-2363
Last EDR Contact: 11/30/2017
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Semi-Annually

PLUMAS COUNTY:

CUPA Facility List
Plumas County CUPA Program facilities.

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/15/2017
Number of Days to Update: 12

Source: Plumas County Environmental Health
Telephone: 530-283-6355
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

RIVERSIDE COUNTY:

Listing of Underground Tank Cleanup Sites
Riverside County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 10/11/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/09/2017
Number of Days to Update: 28

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/15/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Quarterly

Underground Storage Tank Tank List
Underground storage tank sites located in Riverside county.

Date of Government Version: 10/12/2017
Date Data Arrived at EDR: 10/12/2017
Date Made Active in Reports: 11/08/2017
Number of Days to Update: 27

Source: Department of Environmental Health
Telephone: 951-358-5055
Last EDR Contact: 12/15/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Quarterly

SACRAMENTO COUNTY:

Toxic Site Clean-Up List
List of sites where unauthorized releases of potentially hazardous materials have occurred.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/05/2018
Number of Days to Update: 33

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/03/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

Master Hazardous Materials Facility List

Any business that has hazardous materials on site - hazardous material storage sites, underground storage tanks, waste generators.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 01/03/2018
Date Made Active in Reports: 02/14/2018
Number of Days to Update: 42

Source: Sacramento County Environmental Management
Telephone: 916-875-8406
Last EDR Contact: 01/03/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Quarterly

SAN BENITO COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 11/17/2017
Number of Days to Update: 14

Source: San Benito County Environmental Health
Telephone: N/A
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

SAN BERNARDINO COUNTY:

Hazardous Material Permits

This listing includes underground storage tanks, medical waste handlers/generators, hazardous materials handlers, hazardous waste generators, and waste oil generators/handlers.

Date of Government Version: 11/30/2017
Date Data Arrived at EDR: 12/01/2017
Date Made Active in Reports: 01/16/2018
Number of Days to Update: 46

Source: San Bernardino County Fire Department Hazardous Materials Division
Telephone: 909-387-3041
Last EDR Contact: 02/05/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

SAN DIEGO COUNTY:

Hazardous Materials Management Division Database

The database includes: HE58 - This report contains the business name, site address, business phone number, establishment 'H' permit number, type of permit, and the business status. HE17 - In addition to providing the same information provided in the HE58 listing, HE17 provides inspection dates, violations received by the establishment, hazardous waste generated, the quantity, method of storage, treatment/disposal of waste and the hauler, and information on underground storage tanks. Unauthorized Release List - Includes a summary of environmental contamination cases in San Diego County (underground tank cases, non-tank cases, groundwater contamination, and soil contamination are included.)

Date of Government Version: 12/04/2017
Date Data Arrived at EDR: 12/05/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 37

Source: Hazardous Materials Management Division
Telephone: 619-338-2268
Last EDR Contact: 12/05/2017
Next Scheduled EDR Contact: 03/19/2018
Data Release Frequency: Quarterly

Solid Waste Facilities
San Diego County Solid Waste Facilities.

Date of Government Version: 10/31/2015
Date Data Arrived at EDR: 11/07/2015
Date Made Active in Reports: 01/04/2016
Number of Days to Update: 58
Source: Department of Health Services
Telephone: 619-338-2209
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

Environmental Case Listing
The listing contains all underground tank release cases and projects pertaining to properties contaminated with hazardous substances that are actively under review by the Site Assessment and Mitigation Program.

Date of Government Version: 03/23/2010
Date Data Arrived at EDR: 06/15/2010
Date Made Active in Reports: 07/09/2010
Number of Days to Update: 24
Source: San Diego County Department of Environmental Health
Telephone: 619-338-2371
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: No Update Planned

SAN FRANCISCO COUNTY:

Local Oversite Facilities
A listing of leaking underground storage tank sites located in San Francisco county.

Date of Government Version: 09/19/2008
Date Data Arrived at EDR: 09/19/2008
Date Made Active in Reports: 09/29/2008
Number of Days to Update: 10
Source: Department Of Public Health San Francisco County
Telephone: 415-252-3920
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

Underground Storage Tank Information
Underground storage tank sites located in San Francisco county.

Date of Government Version: 11/02/2017
Date Data Arrived at EDR: 11/07/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 42
Source: Department of Public Health
Telephone: 415-252-3920
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Quarterly

SAN JOAQUIN COUNTY:

San Joaquin Co. UST
A listing of underground storage tank locations in San Joaquin county.

Date of Government Version: 12/20/2017
Date Data Arrived at EDR: 12/21/2017
Date Made Active in Reports: 02/01/2018
Number of Days to Update: 42
Source: Environmental Health Department
Telephone: N/A
Last EDR Contact: 12/13/2017
Next Scheduled EDR Contact: 04/02/2018
Data Release Frequency: Semi-Annually

SAN LUIS OBISPO COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31
Source: San Luis Obispo County Public Health Department
Telephone: 805-781-5596
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SAN MATEO COUNTY:

Business Inventory
List includes Hazardous Materials Business Plan, hazardous waste generators, and underground storage tanks.

Date of Government Version: 12/12/2017
Date Data Arrived at EDR: 12/14/2017
Date Made Active in Reports: 01/11/2018
Number of Days to Update: 28
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 12/06/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Annually

Fuel Leak List
A listing of leaking underground storage tank sites located in San Mateo county.

Date of Government Version: 12/12/2017
Date Data Arrived at EDR: 12/14/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 29
Source: San Mateo County Environmental Health Services Division
Telephone: 650-363-1921
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Semi-Annually

SANTA BARBARA COUNTY:

CUPA Facility Listing
CUPA Program Listing from the Environmental Health Services division.

Date of Government Version: 09/08/2011
Date Data Arrived at EDR: 09/09/2011
Date Made Active in Reports: 10/07/2011
Number of Days to Update: 28
Source: Santa Barbara County Public Health Department
Telephone: 805-686-8167
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SANTA CLARA COUNTY:

Cupa Facility List
Cupa facility list

Date of Government Version: 11/14/2017
Date Data Arrived at EDR: 11/16/2017
Date Made Active in Reports: 01/04/2018
Number of Days to Update: 49
Source: Department of Environmental Health
Telephone: 408-918-1973
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

HIST LUST - Fuel Leak Site Activity Report
A listing of open and closed leaking underground storage tanks. This listing is no longer updated by the county. Leaking underground storage tanks are now handled by the Department of Environmental Health.

Date of Government Version: 03/29/2005
Date Data Arrived at EDR: 03/30/2005
Date Made Active in Reports: 04/21/2005
Number of Days to Update: 22
Source: Santa Clara Valley Water District
Telephone: 408-265-2600
Last EDR Contact: 03/23/2009
Next Scheduled EDR Contact: 06/22/2009
Data Release Frequency: No Update Planned

LOP Listing
A listing of leaking underground storage tanks located in Santa Clara county.

Date of Government Version: 03/03/2014
Date Data Arrived at EDR: 03/05/2014
Date Made Active in Reports: 03/18/2014
Number of Days to Update: 13
Source: Department of Environmental Health
Telephone: 408-918-3417
Last EDR Contact: 02/22/2018
Next Scheduled EDR Contact: 06/11/2018
Data Release Frequency: Annually

Hazardous Material Facilities
Hazardous material facilities, including underground storage tank sites.

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/03/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 34

Source: City of San Jose Fire Department
Telephone: 408-535-7694
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Annually

SANTA CRUZ COUNTY:

CUPA Facility List
CUPA facility listing.

Date of Government Version: 01/21/2017
Date Data Arrived at EDR: 02/22/2017
Date Made Active in Reports: 05/23/2017
Number of Days to Update: 90

Source: Santa Cruz County Environmental Health
Telephone: 831-464-2761
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SHASTA COUNTY:

CUPA Facility List
Cupa Facility List.

Date of Government Version: 06/15/2017
Date Data Arrived at EDR: 06/19/2017
Date Made Active in Reports: 08/09/2017
Number of Days to Update: 51

Source: Shasta County Department of Resource Management
Telephone: 530-225-5789
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Varies

SOLANO COUNTY:

Leaking Underground Storage Tanks
A listing of leaking underground storage tank sites located in Solano county.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/12/2018
Number of Days to Update: 28

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

Underground Storage Tanks
Underground storage tank sites located in Solano county.

Date of Government Version: 12/14/2017
Date Data Arrived at EDR: 12/15/2017
Date Made Active in Reports: 01/18/2018
Number of Days to Update: 34

Source: Solano County Department of Environmental Management
Telephone: 707-784-6770
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Quarterly

SONOMA COUNTY:

Cupa Facility List
Cupa Facility list

Date of Government Version: 12/20/2017
Date Data Arrived at EDR: 12/21/2017
Date Made Active in Reports: 01/31/2018
Number of Days to Update: 41

Source: County of Sonoma Fire & Emergency Services Department
Telephone: 707-565-1174
Last EDR Contact: 12/19/2017
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Varies

Leaking Underground Storage Tank Sites

A listing of leaking underground storage tank sites located in Sonoma county.

Date of Government Version: 01/04/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 02/06/2018
Number of Days to Update: 28

Source: Department of Health Services
Telephone: 707-565-6565
Last EDR Contact: 01/04/2018
Next Scheduled EDR Contact: 04/09/2018
Data Release Frequency: Quarterly

STANISLAUS COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 11/01/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 6

Source: Stanislaus County Department of Ennvironmental Protection
Telephone: 209-525-6751
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Varies

SUTTER COUNTY:

Underground Storage Tanks

Underground storage tank sites located in Sutter county.

Date of Government Version: 12/01/2017
Date Data Arrived at EDR: 12/04/2017
Date Made Active in Reports: 12/19/2017
Number of Days to Update: 15

Source: Sutter County Department of Agriculture
Telephone: 530-822-7500
Last EDR Contact: 02/28/2018
Next Scheduled EDR Contact: 06/18/2018
Data Release Frequency: Semi-Annually

TEHAMA COUNTY:

CUPA Facility List

Cupa facilities

Date of Government Version: 11/16/2017
Date Data Arrived at EDR: 11/17/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 31

Source: Tehama County Department of Environmental Health
Telephone: 530-527-8020
Last EDR Contact: 02/01/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TRINITY COUNTY:

CUPA Facility List

Cupa facility list

Date of Government Version: 10/23/2017
Date Data Arrived at EDR: 10/24/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 23

Source: Department of Toxic Substances Control
Telephone: 760-352-0381
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

TULARE COUNTY:

CUPA Facility List
Cupa program facilities

Date of Government Version: 09/27/2017
Date Data Arrived at EDR: 09/28/2017
Date Made Active in Reports: 10/16/2017
Number of Days to Update: 18

Source: Tulare County Environmental Health Services Division
Telephone: 559-624-7400
Last EDR Contact: 02/15/2018
Next Scheduled EDR Contact: 05/21/2018
Data Release Frequency: Varies

TUOLUMNE COUNTY:

CUPA Facility List
Cupa facility list

Date of Government Version: 10/24/2017
Date Data Arrived at EDR: 10/25/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 22

Source: Divison of Environmental Health
Telephone: 209-533-5633
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Varies

VENTURA COUNTY:

Business Plan, Hazardous Waste Producers, and Operating Underground Tanks
The BWT list indicates by site address whether the Environmental Health Division has Business Plan (B), Waste Producer (W), and/or Underground Tank (T) information.

Date of Government Version: 09/26/2017
Date Data Arrived at EDR: 10/25/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 43

Source: Ventura County Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Quarterly

Inventory of Illegal Abandoned and Inactive Sites
Ventura County Inventory of Closed, Illegal Abandoned, and Inactive Sites.

Date of Government Version: 12/01/2011
Date Data Arrived at EDR: 12/01/2011
Date Made Active in Reports: 01/19/2012
Number of Days to Update: 49

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/26/2017
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Annually

Listing of Underground Tank Cleanup Sites
Ventura County Underground Storage Tank Cleanup Sites (LUST).

Date of Government Version: 05/29/2008
Date Data Arrived at EDR: 06/24/2008
Date Made Active in Reports: 07/31/2008
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 02/08/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: Quarterly

Medical Waste Program List
To protect public health and safety and the environment from potential exposure to disease causing agents, the Environmental Health Division Medical Waste Program regulates the generation, handling, storage, treatment and disposal of medical waste throughout the County.

Date of Government Version: 09/26/2017
Date Data Arrived at EDR: 10/25/2017
Date Made Active in Reports: 12/07/2017
Number of Days to Update: 43

Source: Ventura County Resource Management Agency
Telephone: 805-654-2813
Last EDR Contact: 01/22/2018
Next Scheduled EDR Contact: 05/07/2018
Data Release Frequency: Quarterly

Underground Tank Closed Sites List
Ventura County Operating Underground Storage Tank Sites (UST)/Underground Tank Closed Sites List.

Date of Government Version: 11/27/2017
Date Data Arrived at EDR: 12/13/2017
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 37

Source: Environmental Health Division
Telephone: 805-654-2813
Last EDR Contact: 12/11/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Quarterly

YOLO COUNTY:

Underground Storage Tank Comprehensive Facility Report
Underground storage tank sites located in Yolo county.

Date of Government Version: 01/02/2018
Date Data Arrived at EDR: 01/09/2018
Date Made Active in Reports: 01/19/2018
Number of Days to Update: 10

Source: Yolo County Department of Health
Telephone: 530-666-8646
Last EDR Contact: 01/02/2018
Next Scheduled EDR Contact: 04/16/2018
Data Release Frequency: Annually

YUBA COUNTY:

CUPA Facility List
CUPA facility listing for Yuba County.

Date of Government Version: 11/08/2017
Date Data Arrived at EDR: 11/10/2017
Date Made Active in Reports: 11/16/2017
Number of Days to Update: 6

Source: Yuba County Environmental Health Department
Telephone: 530-749-7523
Last EDR Contact: 01/29/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Varies

OTHER DATABASE(S)

Depending on the geographic area covered by this report, the data provided in these specialty databases may or may not be complete. For example, the existence of wetlands information data in a specific report does not mean that all wetlands in the area covered by the report are included. Moreover, the absence of any reported wetlands information does not necessarily mean that wetlands do not exist in the area covered by the report.

CT MANIFEST: Hazardous Waste Manifest Data
Facility and manifest data. Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a tsd facility.

Date of Government Version: 11/11/2017
Date Data Arrived at EDR: 11/14/2017
Date Made Active in Reports: 12/18/2017
Number of Days to Update: 34

Source: Department of Energy & Environmental Protection
Telephone: 860-424-3375
Last EDR Contact: 02/14/2018
Next Scheduled EDR Contact: 05/28/2018
Data Release Frequency: No Update Planned

NJ MANIFEST: Manifest Information
Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/11/2017
Date Made Active in Reports: 07/27/2017
Number of Days to Update: 107

Source: Department of Environmental Protection
Telephone: N/A
Last EDR Contact: 01/05/2018
Next Scheduled EDR Contact: 04/23/2018
Data Release Frequency: Annually

NY MANIFEST: Facility and Manifest Data

Manifest is a document that lists and tracks hazardous waste from the generator through transporters to a TSD facility.

Date of Government Version: 10/01/2017
Date Data Arrived at EDR: 11/01/2017
Date Made Active in Reports: 11/13/2017
Number of Days to Update: 12

Source: Department of Environmental Conservation
Telephone: 518-402-8651
Last EDR Contact: 01/31/2018
Next Scheduled EDR Contact: 05/14/2018
Data Release Frequency: Quarterly

PA MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 07/25/2017
Date Made Active in Reports: 09/25/2017
Number of Days to Update: 62

Source: Department of Environmental Protection
Telephone: 717-783-8990
Last EDR Contact: 01/16/2018
Next Scheduled EDR Contact: 04/30/2018
Data Release Frequency: Annually

RI MANIFEST: Manifest information

Hazardous waste manifest information

Date of Government Version: 12/31/2013
Date Data Arrived at EDR: 06/19/2015
Date Made Active in Reports: 07/15/2015
Number of Days to Update: 26

Source: Department of Environmental Management
Telephone: 401-222-2797
Last EDR Contact: 02/21/2018
Next Scheduled EDR Contact: 06/04/2018
Data Release Frequency: Annually

WI MANIFEST: Manifest Information

Hazardous waste manifest information.

Date of Government Version: 12/31/2016
Date Data Arrived at EDR: 04/13/2017
Date Made Active in Reports: 07/14/2017
Number of Days to Update: 92

Source: Department of Natural Resources
Telephone: N/A
Last EDR Contact: 12/11/2017
Next Scheduled EDR Contact: 03/26/2018
Data Release Frequency: Annually

Oil/Gas Pipelines

Source: PennWell Corporation

Petroleum Bundle (Crude Oil, Refined Products, Petrochemicals, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)) N = Natural Gas Bundle (Natural Gas, Gas Liquids (LPG/NGL), and Specialty Gases (Miscellaneous)). This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Electric Power Transmission Line Data

Source: PennWell Corporation

This map includes information copyrighted by PennWell Corporation. This information is provided on a best effort basis and PennWell Corporation does not guarantee its accuracy nor warrant its fitness for any particular purpose. Such information has been reprinted with the permission of PennWell.

Sensitive Receptors: There are individuals deemed sensitive receptors due to their fragile immune systems and special sensitivity to environmental discharges. These sensitive receptors typically include the elderly, the sick, and children. While the location of all sensitive receptors cannot be determined, EDR indicates those buildings and facilities - schools, daycares, hospitals, medical centers, and nursing homes - where individuals who are sensitive receptors are likely to be located.

AHA Hospitals:

Source: American Hospital Association, Inc.
Telephone: 312-280-5991
The database includes a listing of hospitals based on the American Hospital Association's annual survey of hospitals.

Medical Centers: Provider of Services Listing

Source: Centers for Medicare & Medicaid Services
Telephone: 410-786-3000
A listing of hospitals with Medicare provider number, produced by Centers of Medicare & Medicaid Services, a federal agency within the U.S. Department of Health and Human Services.

GOVERNMENT RECORDS SEARCHED / DATA CURRENCY TRACKING

Nursing Homes
Source: National Institutes of Health
Telephone: 301-594-6248
Information on Medicare and Medicaid certified nursing homes in the United States.
Public Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on elementary and secondary public education in the United States. It is a comprehensive, annual, national statistical database of all public elementary and secondary schools and school districts, which contains data that are comparable across all states.
Private Schools
Source: National Center for Education Statistics
Telephone: 202-502-7300
The National Center for Education Statistics' primary database on private school locations in the United States.
Daycare Centers: Licensed Facilities
Source: Department of Social Services
Telephone: 916-657-4041

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

STREET AND ADDRESS INFORMATION

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GEOCHECK ®- PHYSICAL SETTING SOURCE ADDENDUM

TARGET PROPERTY ADDRESS

3705 AND 3723 HAVEN AVENUE
3705 HAVEN AVENUE
REDWOOD CITY, CA 94063

TARGET PROPERTY COORDINATES

Latitude (North):	37.485599 - 37° 29' 8.16''
Longitude (West):	122.18225 - 122° 10' 56.10''
Universal Tranverse Mercator:	Zone 10
UTM X (Meters):	572297.3
UTM Y (Meters):	4148853.2
Elevation:	10 ft. above sea level

USGS TOPOGRAPHIC MAP

Target Property Map:	5640620 PALO ALTO, CA
Version Date:	2012
North Map:	5640622 REDWOOD POINT, CA
Version Date:	2012

EDR's GeoCheck Physical Setting Source Addendum is provided to assist the environmental professional in forming an opinion about the impact of potential contaminant migration.

Assessment of the impact of contaminant migration generally has two principal investigative components:

1. Groundwater flow direction, and
2. Groundwater flow velocity.

Groundwater flow direction may be impacted by surface topography, hydrology, hydrogeology, characteristics of the soil, and nearby wells. Groundwater flow velocity is generally impacted by the nature of the geologic strata.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW DIRECTION INFORMATION

Groundwater flow direction for a particular site is best determined by a qualified environmental professional using site-specific well data. If such data is not reasonably ascertainable, it may be necessary to rely on other sources of information, such as surface topographic information, hydrologic information, hydrogeologic data collected on nearby properties, and regional groundwater flow information (from deep aquifers).

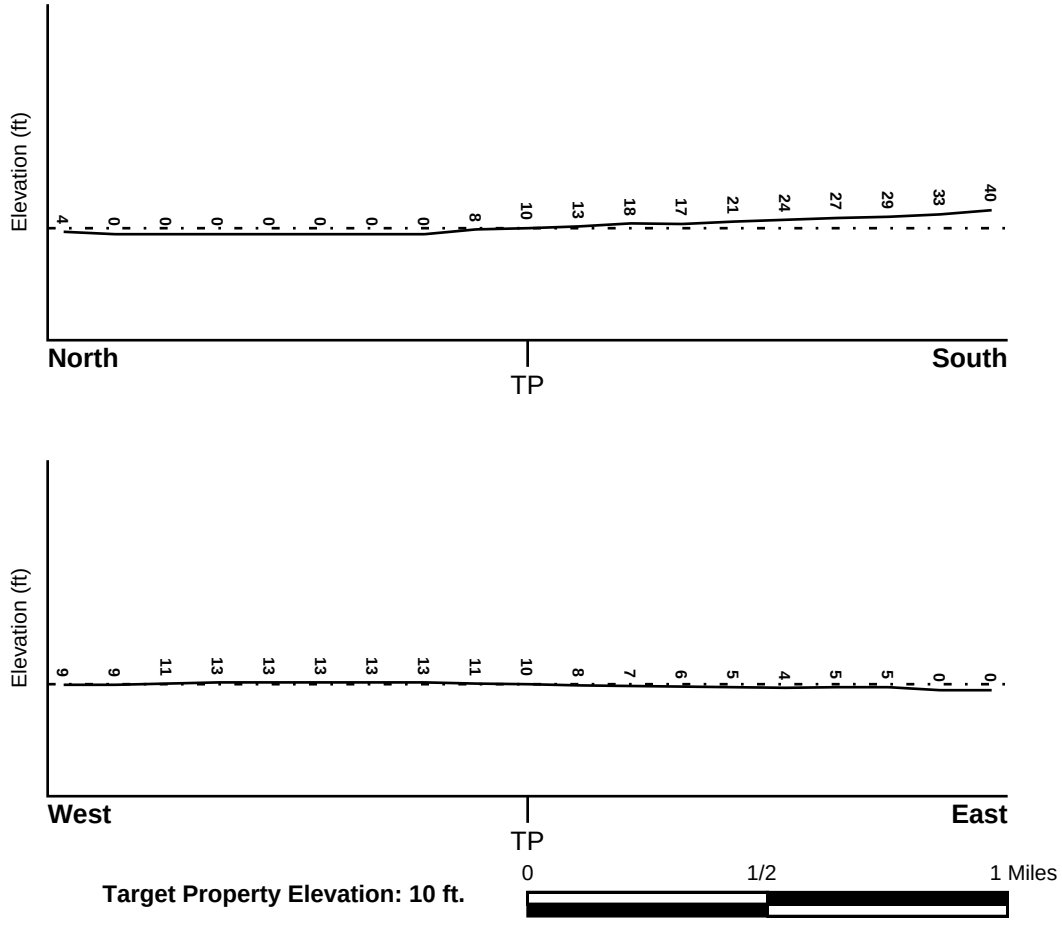
TOPOGRAPHIC INFORMATION

Surface topography may be indicative of the direction of surficial groundwater flow. This information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

TARGET PROPERTY TOPOGRAPHY

General Topographic Gradient: General NNE

SURROUNDING TOPOGRAPHY: ELEVATION PROFILES



Source: Topography has been determined from the USGS 7.5' Digital Elevation Model and should be evaluated on a relative (not an absolute) basis. Relative elevation information between sites of close proximity should be field verified.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

HYDROLOGIC INFORMATION

Surface water can act as a hydrologic barrier to groundwater flow. Such hydrologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Refer to the Physical Setting Source Map following this summary for hydrologic information (major waterways and bodies of water).

FEMA FLOOD ZONE

Flood Plain Panel at Target Property	FEMA Source Type
06081C0306E	FEMA FIRM Flood data

Additional Panels in search area:	FEMA Source Type
06081C0195E	FEMA FIRM Flood data
06081C0302E	FEMA FIRM Flood data

NATIONAL WETLAND INVENTORY

NWI Quad at Target Property	NWI Electronic Data Coverage
PALO ALTO	YES - refer to the Overview Map and Detail Map

HYDROGEOLOGIC INFORMATION

Hydrogeologic information obtained by installation of wells on a specific site can often be an indicator of groundwater flow direction in the immediate area. Such hydrogeologic information can be used to assist the environmental professional in forming an opinion about the impact of nearby contaminated properties or, should contamination exist on the target property, what downgradient sites might be impacted.

Site-Specific Hydrogeological Data*:

Search Radius:	1.25 miles
Status:	Not found

AQUIFLOW®

Search Radius: 1.000 Mile.

EDR has developed the AQUIFLOW Information System to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted by environmental professionals to regulatory authorities at select sites and has extracted the date of the report, groundwater flow direction as determined hydrogeologically, and the depth to water table.

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
1	0 - 1/8 Mile ESE	NNW
2	1/8 - 1/4 Mile West	Not Reported
3	1/4 - 1/2 Mile East	NNW
4	1/4 - 1/2 Mile West	Not Reported
5	1/4 - 1/2 Mile SSE	Not Reported
6	1/4 - 1/2 Mile SSE	NE
A7	1/4 - 1/2 Mile SSW	N

* ©1996 Site−specific hydrogeological data gathered by CERCLIS Alerts, Inc., Bainbridge Island, WA. All rights reserved. All of the information and opinions presented are those of the cited EPA report(s), which were completed under a Comprehensive Environmental Response Compensation and Liability Information System (CERCLIS) investigation.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

MAP ID	LOCATION FROM TP	GENERAL DIRECTION GROUNDWATER FLOW
A8	1/4 - 1/2 Mile SSW	NE
A9	1/4 - 1/2 Mile SSW	NE
10	1/4 - 1/2 Mile SE	NE, Flat
11	1/4 - 1/2 Mile South	Not Reported
12	1/2 - 1 Mile SE	WSW
15	1/2 - 1 Mile SSW	N
B17	1/2 - 1 Mile West	NW
C18	1/2 - 1 Mile SSW	NNE
B20	1/2 - 1 Mile West	NW
C21	1/2 - 1 Mile SSW	Not Reported
C22	1/2 - 1 Mile SSW	Not Reported
D23	1/2 - 1 Mile SSW	Not Reported
D24	1/2 - 1 Mile SSW	Not Reported
25	1/2 - 1 Mile WSW	Not Reported
26	1/2 - 1 Mile West	W
1G	1/2 - 1 Mile West	W
2G	1/2 - 1 Mile West	NW
3G	1/2 - 1 Mile West	NW
4G	1/4 - 1/2 Mile West	Not Reported
5G	1/8 - 1/4 Mile West	Not Reported
6G	0 - 1/8 Mile ESE	NNW
7G	1/4 - 1/2 Mile East	NNW
8G	1/4 - 1/2 Mile SE	NE, Flat
9G	1/2 - 1 Mile SE	WSW
10G	1/4 - 1/2 Mile SSE	NE
11G	1/2 - 1 Mile WSW	Not Reported
12G	1/4 - 1/2 Mile SSE	Not Reported
13G	1/4 - 1/2 Mile SSW	N
14G	1/4 - 1/2 Mile SSW	NE
15G	1/4 - 1/2 Mile SSW	NE
16G	1/4 - 1/2 Mile South	Not Reported
17G	1/2 - 1 Mile SSW	N
18G	1/2 - 1 Mile SSW	Not Reported
19G	1/2 - 1 Mile SSW	Not Reported
20G	1/2 - 1 Mile SSW	NNE
21G	1/2 - 1 Mile SSW	Not Reported
22G	1/2 - 1 Mile SSW	Not Reported

For additional site information, refer to Physical Setting Source Map Findings.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

GROUNDWATER FLOW VELOCITY INFORMATION

Groundwater flow velocity information for a particular site is best determined by a qualified environmental professional using site specific geologic and soil strata data. If such data are not reasonably ascertainable, it may be necessary to rely on other sources of information, including geologic age identification, rock stratigraphic unit and soil characteristics data collected on nearby properties and regional soil information. In general, contaminant plumes move more quickly through sandy-gravelly types of soils than silty-clayey types of soils.

GEOLOGIC INFORMATION IN GENERAL AREA OF TARGET PROPERTY

Geologic information can be used by the environmental professional in forming an opinion about the relative speed at which contaminant migration may be occurring.

ROCK STRATIGRAPHIC UNIT

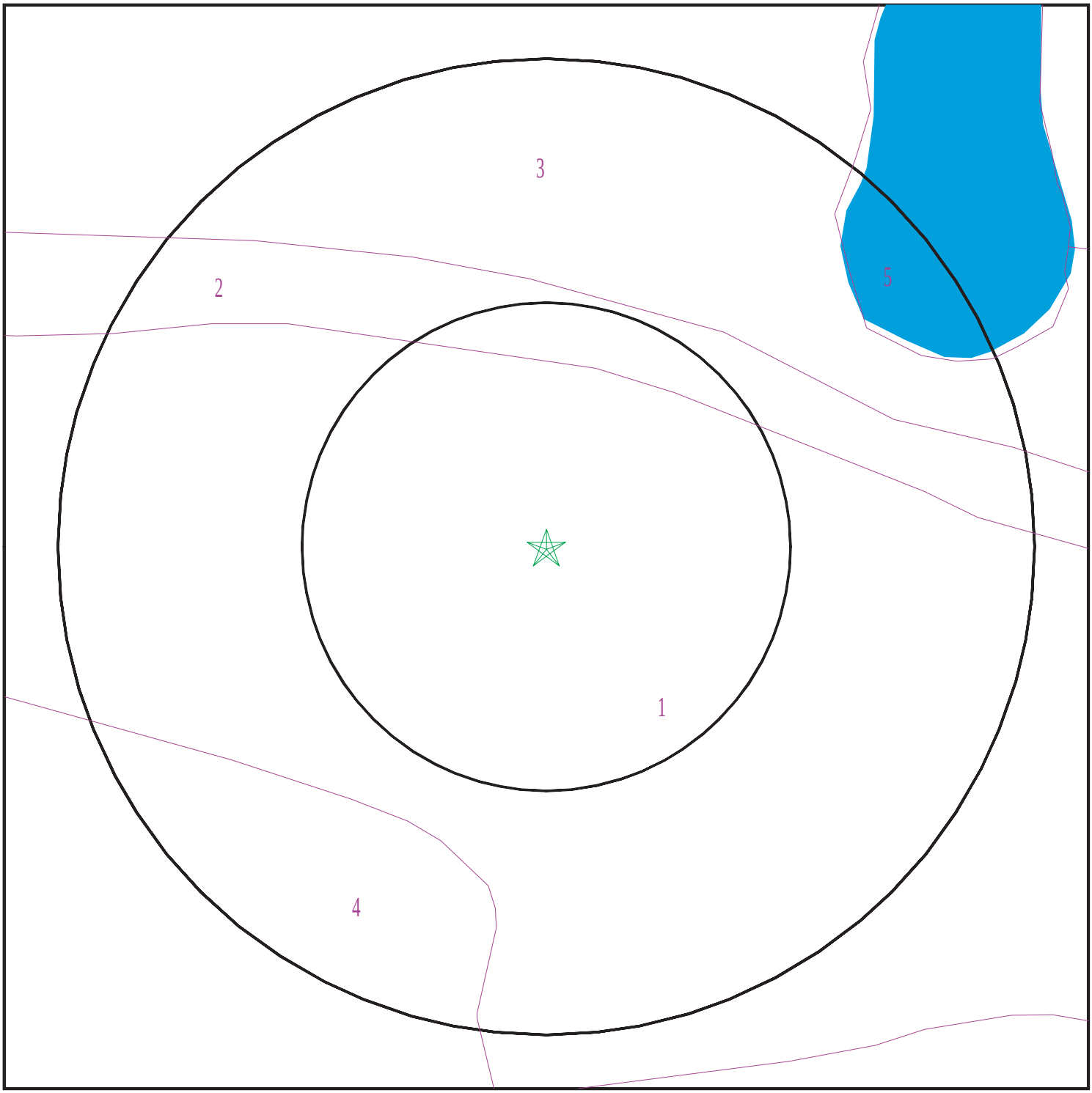
Era:	Cenozoic
System:	Quaternary
Series:	Quaternary
Code:	Q *(decoded above as Era, System & Series)*

GEOLOGIC AGE IDENTIFICATION

Category: Stratifed Sequence

Geologic Age and Rock Stratigraphic Unit Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - a digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

SSURGO SOIL MAP - 5204371.2s



Target Property
SSURGO Soil
Water

0 1/16 1/8 1/4 Miles

N

SITE NAME:	3705 and 3723 Haven Avenue	CLIENT:	Applied Water Resources Corporation
ADDRESS:	3705 Haven Avenue Redwood City CA 94063	CONTACT:	Janelle Amendola
LAT/LONG:	37.485599 / 122.18225	INQUIRY #:	5204371.2s
		DATE:	March 01, 2018 8:12 am

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GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

DOMINANT SOIL COMPOSITION IN GENERAL AREA OF TARGET PROPERTY

The U.S. Department of Agriculture's (USDA) Soil Conservation Service (SCS) leads the National Cooperative Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. The following information is based on Soil Conservation Service SSURGO data.

Soil Map ID: 1

Soil Component Name: Urban land

Soil Surface Texture:
Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches		Not reported	Not reported	Max: 0.01 Min: 0	Max: Min:

Soil Map ID: 2

Soil Component Name: Novato

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Very poorly drained

Hydric Status: All hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	clay	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 9 Min: 7.9
2	16 inches	59 inches	clay	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 9 Min: 7.9

Soil Map ID: 3

Soil Component Name: Novato

Soil Surface Texture: clay

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class: Very poorly drained

Hydric Status: Partially hydric

Corrosion Potential - Uncoated Steel: High

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	16 inches	clay	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 9 Min: 7.9
2	16 inches	59 inches	clay	Not reported	Not reported	Max: 1.4 Min: 0.42	Max: 9 Min: 7.9

Soil Map ID: 4

Soil Component Name: Urban land

Soil Surface Texture:

Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

Soil Layer Information							
	Boundary			Classification		Saturated hydraulic conductivity micro m/sec	Soil Reaction (pH)
Layer	Upper	Lower	Soil Texture Class	AASHTO Group	Unified Soil		
1	0 inches	5 inches		Not reported	Not reported	Max: 0.01 Min: 0	Max: Min:

Soil Map ID: 5

Soil Component Name: Water

Soil Surface Texture:
Hydrologic Group: Class D - Very slow infiltration rates. Soils are clayey, have a high water table, or are shallow to an impervious layer.

Soil Drainage Class:
Hydric Status: Not hydric

Corrosion Potential - Uncoated Steel: Not Reported

Depth to Bedrock Min: > 0 inches

Depth to Watertable Min: > 0 inches

No Layer Information available.

LOCAL / REGIONAL WATER AGENCY RECORDS

EDR Local/Regional Water Agency records provide water well information to assist the environmental professional in assessing sources that may impact ground water flow direction, and in forming an opinion about the impact of contaminant migration on nearby drinking water wells.

GEOCHECK® - PHYSICAL SETTING SOURCE SUMMARY

WELL SEARCH DISTANCE INFORMATION

DATABASE	SEARCH DISTANCE (miles)
Federal USGS	1.000
Federal FRDS PWS	Nearest PWS within 0.001 miles
State Database	1.000

FEDERAL USGS WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
13	USGS40000183433	1/2 - 1 Mile West
14	USGS40000183400	1/2 - 1 Mile South
16	USGS40000183434	1/2 - 1 Mile West
19	USGS40000183394	1/2 - 1 Mile SSE

FEDERAL FRDS PUBLIC WATER SUPPLY SYSTEM INFORMATION

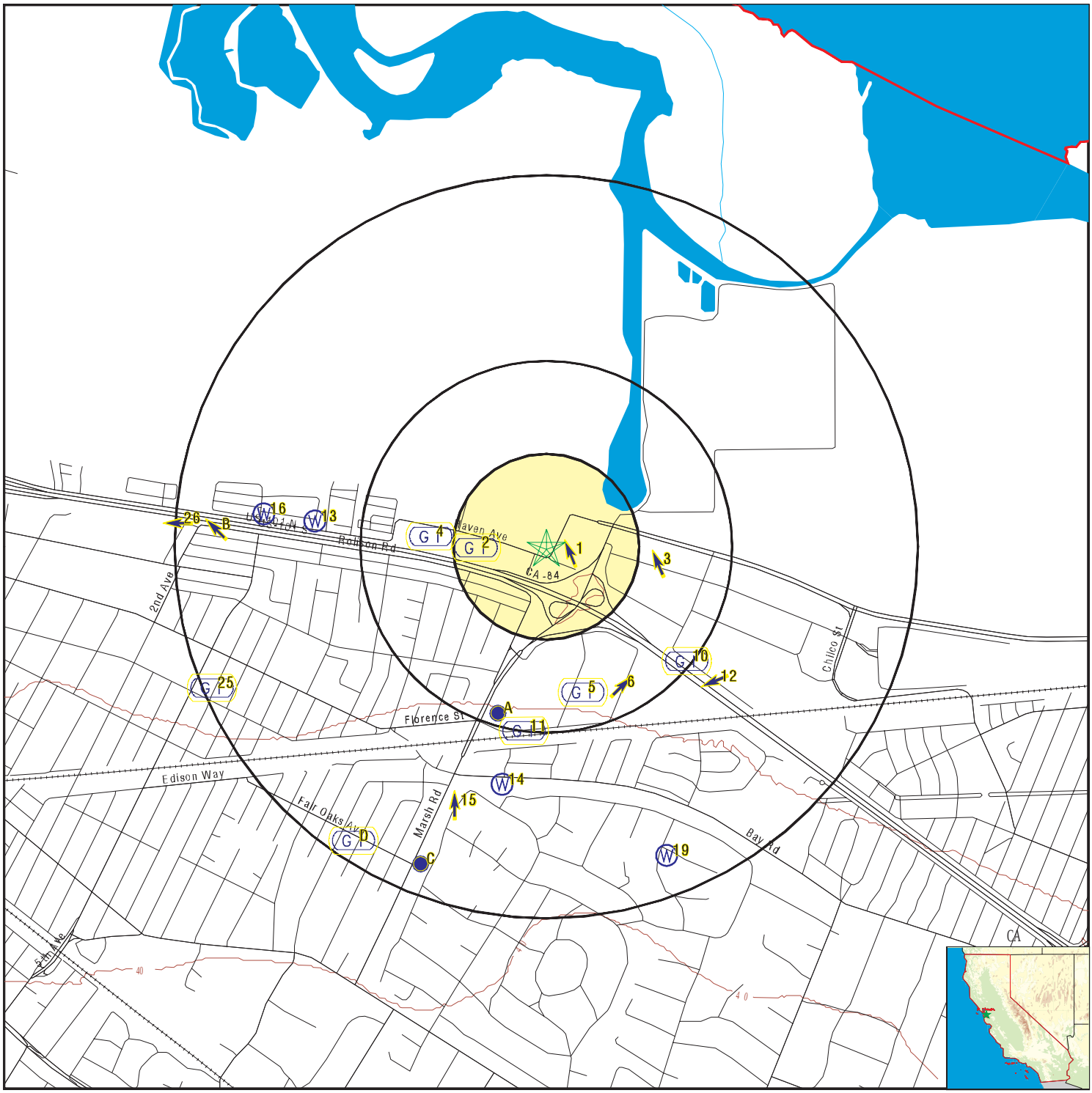
MAP ID	WELL ID	LOCATION FROM TP
No PWS System Found		

Note: PWS System location is not always the same as well location.

STATE DATABASE WELL INFORMATION

MAP ID	WELL ID	LOCATION FROM TP
No Wells Found		

PHYSICAL SETTING SOURCE MAP - 5204371.2s



- County Boundary
- Major Roads
- Contour Lines
- Earthquake Fault Lines
- Earthquake epicenter, Richter 5 or greater
- Water Wells
- Public Water Supply Wells
- Cluster of Multiple Icons
- Groundwater Flow Direction
- Indeterminate Groundwater Flow at Location
- Groundwater Flow Varies at Location
- Closest Hydrogeological Data
- Oil, gas or related wells

SITE NAME:	3705 and 3723 Haven Avenue	CLIENT:	Applied Water Resources Corporation
ADDRESS:	3705 Haven Avenue Redwood City CA 94063	CONTACT:	Janelle Amendola
		INQUIRY #:	5204371.2s
LAT/LONG:	37.485599 / 122.18225	DATE:	March 01, 2018 8:12 am

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GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
1 **ESE** **0 - 1/8 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0110 NNW 5.0 7.0 Not Reported 03/31/1995	**AQUIFLOW**	**64401**
2 **West** **1/8 - 1/4 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0158 Not Reported Not Reported Not Reported 6a 06/08/1992	**AQUIFLOW**	**67035**
3 **East** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440042 NNW 3.78 4.72 Not Reported 04/22/1994	**AQUIFLOW**	**64465**
4 **West** **1/4 - 1/2 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440031 Not Reported 4.5 5.0 Not Reported 11/26/1990	**AQUIFLOW**	**64422**
5 **SSE** **1/4 - 1/2 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440047 Not Reported Not Reported Not Reported 9 03/04/1996	**AQUIFLOW**	**64378**
6 **SSE** **1/4 - 1/2 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440032 NE 6.45 8.95 Not Reported 09/05/1995	**AQUIFLOW**	**64384**
A7 **SSW** **1/4 - 1/2 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0195 N 11.85 13' Not Reported 07/25/1996	**AQUIFLOW**	**67110**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
A8 **SSW** **1/4 - 1/2 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440034 NE Not Reported Not Reported 17.39 09/10/1991	**AQUIFLOW**	**64355**
A9 **SSW** **1/4 - 1/2 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440018 NE 7.79 11.89 Not Reported 09/07/1994	**AQUIFLOW**	**64481**
10 **SE** **1/4 - 1/2 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440035 NE, Flat 5.5 9.0 Not Reported 10/10/1991	**AQUIFLOW**	**64477**
11 **South** **1/4 - 1/2 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440039 Not Reported Not Reported Not Reported 12 07/13/1992	**AQUIFLOW**	**64392**
12 **SE** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440006 WSW Not Reported Not Reported 12.5 09/01/1998	**AQUIFLOW**	**64430**

13
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000183433**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-372912122113301		
Monloc name:	005S003W21G002M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18050004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.4866043
Longitude:	-122.1935762	Sourcemap scale:	24000

Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	15.00
Vert measure units:	feet	Vertacc measure val:	001
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 4

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel

1980-11-24
Note: The site was flowing, but the head could not be measured without additional equipment.
1980-05-08
Note: The site was flowing, but the head could not be measured without additional equipment.
1979-10-02
Note: The site was flowing, but the head could not be measured without additional equipment.
1979-04-11
Note: The site was flowing, but the head could not be measured without additional equipment.

14
South
1/2 - 1 Mile
Higher

FED USGS **USGS40000183400**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-372835122110001		
Monloc name:	005S003W22N001M		
Monloc type:	Well		
Monloc desc:	ATHERTON GW STUDY SITE		
Huc code:	18050004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.4763269
Longitude:	-122.1844093	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	23
Vert measure units:	feet	Vertacc measure val:	2.5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	Not Reported	Welldepth:	Not Reported
Welldepth units:	Not Reported	Wellholedepth:	Not Reported
Wellholedepth units:	Not Reported		

Ground-water levels, Number of Measurements: 46

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1995-12-14	15.24		1995-11-16	15.21	
1995-10-19	15.14		1995-09-14	15.10	
1995-08-31	15.10		1995-08-17	15.05	
1995-08-03	15.06				
1995-07-20	15.10				
Note: The site had been pumped recently.					
1995-07-06	15.13		1995-06-22	15.20	
1995-06-08	15.30		1995-05-11	15.51	
1995-04-27	15.67		1995-04-13	15.87	
1995-03-30	16.06		1995-03-16	16.29	
1995-03-07	16.35		1995-03-02	16.36	
1995-02-16	16.45		1995-02-02	16.62	
1995-01-19	16.75		1994-12-15	16.82	
1994-11-22	16.86		1994-11-11	16.76	
1994-10-20	16.65		1994-10-06	16.56	
1994-09-22	16.50		1994-08-18	16.20	
1994-08-04	16.12		1994-07-21	16.07	
1994-07-07	16.07		1994-06-23	15.97	
1994-06-09	15.96		1994-05-26	15.98	
1994-05-11	16.07		1994-04-28	16.09	
1994-04-13	16.14		1994-03-31	16.23	
1994-03-16	16.27		1994-03-03	16.39	
1994-02-17	16.46		1994-02-02	16.53	
1994-01-20	16.55		1993-10-19	16.55	
1993-08-11	16.35		1993-04-05	17.18	

15
SSW
1/2 - 1 Mile
Higher

Site ID:	440048
Groundwater Flow:	N
Shallow Water Depth:	10.41
Deep Water Depth:	10.69
Average Water Depth:	Not Reported
Date:	01/26/1999

AQUIFLOW **51130**

16
West
1/2 - 1 Mile
Higher

FED USGS **USGS40000183434**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-372913122114201		
Monloc name:	005S003W21G001M		
Monloc type:	Well		
Monloc desc:	Not Reported		
Huc code:	18050004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.4868821
Longitude:	-122.1960762	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	15.00
Vert measure units:	feet	Vertacc measure val:	001
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		

Aquifer type:	Not Reported		
Construction date:	19620201	Welldepth:	367
Welldepth units:	ft	Wellholedepth:	380
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 2

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1982-10-07					
Note: The site was flowing, but the head could not be measured without additional equipment.					
1974-05-02	3.60				

B17
West
1/2 - 1 Mile
Higher

		AQUIFLOW	**65526**
Site ID:	41-0719		
Groundwater Flow:	NW		
Shallow Water Depth:	6.71		
Deep Water Depth:	7.42		
Average Water Depth:	Not Reported		
Date:	02/13/1991		

C18
SSW
1/2 - 1 Mile
Higher

		AQUIFLOW	**64368**
Site ID:	440002		
Groundwater Flow:	NNE		
Shallow Water Depth:	11.77		
Deep Water Depth:	13.28		
Average Water Depth:	Not Reported		
Date:	07/03/1996		

19
SSE
1/2 - 1 Mile
Higher

FED USGS **USGS40000183394**

Org. Identifier:	USGS-CA		
Formal name:	USGS California Water Science Center		
Monloc Identifier:	USGS-372825122103101		
Monloc name:	005S003W27B002M		
Monloc type:	Well		
Monloc desc:	ATHERTON GW STUDY SITE		
Huc code:	18050004	Drainagearea value:	Not Reported
Drainagearea Units:	Not Reported	Contrib drainagearea:	Not Reported
Contrib drainagearea units:	Not Reported	Latitude:	37.4735492
Longitude:	-122.1763536	Sourcemap scale:	24000
Horiz Acc measure:	1	Horiz Acc measure units:	seconds
Horiz Collection method:	Interpolated from map		
Horiz coord refsys:	NAD83	Vert measure val:	27.5
Vert measure units:	feet	Vertacc measure val:	2.5
Vert accmeasure units:	feet		
Vertcollection method:	Interpolated from topographic map		
Vert coord refsys:	NGVD29	Countrycode:	US
Aquifername:	California Coastal Basin aquifers		
Formation type:	Not Reported		
Aquifer type:	Not Reported		
Construction date:	19901127	Welldepth:	110
Welldepth units:	ft	Wellholedepth:	130
Wellholedepth units:	ft		

Ground-water levels, Number of Measurements: 17

Date	Feet below Surface	Feet to Sealevel	Date	Feet below Surface	Feet to Sealevel
1995-09-14	21.14		1995-07-20	20.53	
1995-06-22	20.24				
Note: The site had been pumped recently.					
1995-03-30	18.58				
1994-12-15	23.49				
Note: The site had been pumped recently.					
1994-10-06	23.54		1994-09-08	23.61	
1994-08-03	23.00		1994-07-06	22.82	
1994-06-09	22.52				
Note: The site had been pumped recently.					
1994-05-12	21.35		1994-04-14	21.32	
1994-03-17	21.86		1994-01-20	22.05	
1993-10-05	23.59		1993-08-11	22.65	
1993-07-08	22.52				

B20
West
1/2 - 1 Mile
Higher

Site ID:	330063
Groundwater Flow:	NW
Shallow Water Depth:	6.71
Deep Water Depth:	7.42
Average Water Depth:	Not Reported
Date:	02/13/1991

AQUIFLOW **65525**

C21
SSW
1/2 - 1 Mile
Higher

Site ID:	41-0223
Groundwater Flow:	Not Reported
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	19
Date:	11/07/1988

AQUIFLOW **64375**

C22
SSW
1/2 - 1 Mile
Higher

Site ID:	440025
Groundwater Flow:	Not Reported
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	19
Date:	11/07/1988

AQUIFLOW **64376**

D23
SSW
1/2 - 1 Mile
Higher

Site ID:	330155
Groundwater Flow:	Not Reported
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	8’
Date:	04/07/1998

AQUIFLOW **67036**

D24
SSW
1/2 - 1 Mile
Higher

Site ID:	41-1091
Groundwater Flow:	Not Reported
Shallow Water Depth:	Not Reported
Deep Water Depth:	Not Reported
Average Water Depth:	8’
Date:	04/07/1998

AQUIFLOW **67037**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
25 **WSW** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0619 Not Reported 8.6 11.03 Not Reported 09/1991	**AQUIFLOW**	**66022**
26 **West** **1/2 - 1 Mile** **Higher**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	330147 W 3.0 7.6 Not Reported 04/07/1997	**AQUIFLOW**	**65976**
1G **West** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	330147 W 3.0 7.6 Not Reported 04/07/1997	**AQUIFLOW**	**65976**
2G **West** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	330063 NW 6.71 7.42 Not Reported 02/13/1991	**AQUIFLOW**	**65525**
3G **West** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0719 NW 6.71 7.42 Not Reported 02/13/1991	**AQUIFLOW**	**65526**
4G **West** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440031 Not Reported 4.5 5.0 Not Reported 11/26/1990	**AQUIFLOW**	**64422**
5G **West** **1/8 - 1/4 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0158 Not Reported Not Reported Not Reported 6a 06/08/1992	**AQUIFLOW**	**67035**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
6G **ESE** **0 - 1/8 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0110 NNW 5.0 7.0 Not Reported 03/31/1995	**AQUIFLOW**	**64401**
7G **East** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440042 NNW 3.78 4.72 Not Reported 04/22/1994	**AQUIFLOW**	**64465**
8G **SE** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440035 NE, Flat 5.5 9.0 Not Reported 10/10/1991	**AQUIFLOW**	**64477**
9G **SE** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440006 WSW Not Reported Not Reported 12.5 09/01/1998	**AQUIFLOW**	**64430**
10G **SSE** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440032 NE 6.45 8.95 Not Reported 09/05/1995	**AQUIFLOW**	**64384**
11G **WSW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0619 Not Reported 8.6 11.03 Not Reported 09/1991	**AQUIFLOW**	**66022**
12G **SSE** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440047 Not Reported Not Reported Not Reported 9 03/04/1996	**AQUIFLOW**	**64378**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
13G **SSW** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0195 N 11.85 13’ Not Reported 07/25/1996	**AQUIFLOW**	**67110**
14G **SSW** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440034 NE Not Reported Not Reported 17.39 09/10/1991	**AQUIFLOW**	**64355**
15G **SSW** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440018 NE 7.79 11.89 Not Reported 09/07/1994	**AQUIFLOW**	**64481**
16G **South** **1/4 - 1/2 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440039 Not Reported Not Reported Not Reported 12 07/13/1992	**AQUIFLOW**	**64392**
17G **SSW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440048 N 10.41 10.69 Not Reported 01/26/1999	**AQUIFLOW**	**51130**
18G **SSW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	330155 Not Reported Not Reported Not Reported 8’ 04/07/1998	**AQUIFLOW**	**67036**
19G **SSW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-1091 Not Reported Not Reported Not Reported 8’ 04/07/1998	**AQUIFLOW**	**67037**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS

Map ID Direction Distance Elevation			Database	EDR ID Number
20G **SSW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440002 NNE 11.77 13.28 Not Reported 07/03/1996	**AQUIFLOW**	**64368**
21G **SSW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	41-0223 Not Reported Not Reported Not Reported 19 11/07/1988	**AQUIFLOW**	**64375**
22G **SSW** **1/2 - 1 Mile** **Lower**	Site ID: Groundwater Flow: Shallow Water Depth: Deep Water Depth: Average Water Depth: Date:	440025 Not Reported Not Reported Not Reported 19 11/07/1988	**AQUIFLOW**	**64376**

GEOCHECK® - PHYSICAL SETTING SOURCE MAP FINDINGS
RADON

AREA RADON INFORMATION

State Database: CA Radon

Radon Test Results

Zipcode	Num Tests	> 4 pCi/L
94063	19	2

Federal EPA Radon Zone for SAN MATEO County: 2

Note: Zone 1 indoor average level > 4 pCi/L.
: Zone 2 indoor average level >= 2 pCi/L and <= 4 pCi/L.
: Zone 3 indoor average level < 2 pCi/L.

Federal Area Radon Information for Zip Code: 94063

Number of sites tested: 1

Area	Average Activity	% <4 pCi/L	% 4-20 pCi/L	% >20 pCi/L
Living Area - 1st Floor	0.300 pCi/L	100%	0%	0%
Living Area - 2nd Floor	Not Reported	Not Reported	Not Reported	Not Reported
Basement	Not Reported	Not Reported	Not Reported	Not Reported

PHYSICAL SETTING SOURCE RECORDS SEARCHED

TOPOGRAPHIC INFORMATION

USGS 7.5' Digital Elevation Model (DEM)
Source: United States Geologic Survey
EDR acquired the USGS 7.5' Digital Elevation Model in 2002 and updated it in 2006. The 7.5 minute DEM corresponds to the USGS 1:24,000- and 1:25,000-scale topographic quadrangle maps. The DEM provides elevation data with consistent elevation units and projection.

Current USGS 7.5 Minute Topographic Map
Source: U.S. Geological Survey

HYDROLOGIC INFORMATION

Flood Zone Data: This data was obtained from the Federal Emergency Management Agency (FEMA). It depicts 100-year and 500-year flood zones as defined by FEMA. It includes the National Flood Hazard Layer (NFHL) which incorporates Flood Insurance Rate Map (FIRM) data and Q3 data from FEMA in areas not covered by NFHL.
Source: FEMA
Telephone: 877-336-2627
Date of Government Version: 2003, 2015

NWI: National Wetlands Inventory. This data, available in select counties across the country, was obtained by EDR in 2002, 2005 and 2010 from the U.S. Fish and Wildlife Service.

State Wetlands Data: Wetland Inventory
Source: Department of Fish & Game
Telephone: 916-445-0411

HYDROGEOLOGIC INFORMATION

AQUIFLOW^{R} Information System
Source: EDR proprietary database of groundwater flow information
EDR has developed the AQUIFLOW Information System (AIS) to provide data on the general direction of groundwater flow at specific points. EDR has reviewed reports submitted to regulatory authorities at select sites and has extracted the date of the report, hydrogeologically determined groundwater flow direction and depth to water table information.

GEOLOGIC INFORMATION

Geologic Age and Rock Stratigraphic Unit
Source: P.G. Schruben, R.E. Arndt and W.J. Bawiec, Geology of the Conterminous U.S. at 1:2,500,000 Scale - A digital representation of the 1974 P.B. King and H.M. Beikman Map, USGS Digital Data Series DDS - 11 (1994).

STATSGO: State Soil Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
The U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) leads the national Conservation Soil Survey (NCSS) and is responsible for collecting, storing, maintaining and distributing soil survey information for privately owned lands in the United States. A soil map in a soil survey is a representation of soil patterns in a landscape. Soil maps for STATSGO are compiled by generalizing more detailed (SSURGO) soil survey maps.

SSURGO: Soil Survey Geographic Database
Source: Department of Agriculture, Natural Resources Conservation Service (NRCS)
Telephone: 800-672-5559
SSURGO is the most detailed level of mapping done by the Natural Resources Conservation Service, mapping scales generally range from 1:12,000 to 1:63,360. Field mapping methods using national standards are used to construct the soil maps in the Soil Survey Geographic (SSURGO) database. SSURGO digitizing duplicates the original soil survey maps. This level of mapping is designed for use by landowners, townships and county natural resource planning and management.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

LOCAL / REGIONAL WATER AGENCY RECORDS

FEDERAL WATER WELLS

PWS: Public Water Systems
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Public Water System data from the Federal Reporting Data System. A PWS is any water system which provides water to at least 25 people for at least 60 days annually. PWSs provide water from wells, rivers and other sources.

PWS ENF: Public Water Systems Violation and Enforcement Data
Source: EPA/Office of Drinking Water
Telephone: 202-564-3750
Violation and Enforcement data for Public Water Systems from the Safe Drinking Water Information System (SDWIS) after August 1995. Prior to August 1995, the data came from the Federal Reporting Data System (FRDS).

USGS Water Wells: USGS National Water Inventory System (NWIS)
This database contains descriptive information on sites where the USGS collects or has collected data on surface water and/or groundwater. The groundwater data includes information on wells, springs, and other sources of groundwater.

STATE RECORDS

Water Well Database
Source: Department of Water Resources
Telephone: 916-651-9648

California Drinking Water Quality Database
Source: Department of Public Health
Telephone: 916-324-2319
The database includes all drinking water compliance and special studies monitoring for the state of California since 1984. It consists of over 3,200,000 individual analyses along with well and water system information.

OTHER STATE DATABASE INFORMATION

California Oil and Gas Well Locations
Source: Department of Conservation
Telephone: 916-323-1779
Oil and Gas well locations in the state.

RADON

State Database: CA Radon
Source: Department of Health Services
Telephone: 916-324-2208
Radon Database for California

Area Radon Information
Source: USGS
Telephone: 703-356-4020
The National Radon Database has been developed by the U.S. Environmental Protection Agency (USEPA) and is a compilation of the EPA/State Residential Radon Survey and the National Residential Radon Survey. The study covers the years 1986 - 1992. Where necessary data has been supplemented by information collected at private sources such as universities and research institutions.

EPA Radon Zones
Source: EPA
Telephone: 703-356-4020
Sections 307 & 309 of IRAA directed EPA to list and identify areas of U.S. with the potential for elevated indoor radon levels.

PHYSICAL SETTING SOURCE RECORDS SEARCHED

OTHER

Airport Landing Facilities: Private and public use landing facilities
Source: Federal Aviation Administration, 800-457-6656

Epicenters: World earthquake epicenters, Richter 5 or greater
Source: Department of Commerce, National Oceanic and Atmospheric Administration

California Earthquake Fault Lines: The fault lines displayed on EDR's Topographic map are digitized quaternary fault lines, prepared in 1975 by the United State Geological Survey. Additional information (also from 1975) regarding activity at specific fault lines comes from California's Preliminary Fault Activity Map prepared by the California Division of Mines and Geology.

STREET AND ADDRESS INFORMATION

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Appendix D

Resumes

1046 West Taylor Street, Suite 105, San Jose, CA
408.402-2238

Janelle Amendola
Project Manager

Ms. Amendola has more than 20 years of diverse environmental and engineering consulting experience, and extensive skills conducting and managing numerous concurrent and varied projects for diverse public and private sector clients. Ms. Amendola's specific areas of expertise and experience include Phase I Environmental Site Assessments, Phase II Environmental Site Assessments, soil and ground water contamination investigation and remediation, soil gas and vapor intrusion investigations, environmental regulatory compliance, storm water pollution prevention planning and sampling, hazardous materials compliance, air emissions permitting, underground storage tank removals, NEPA and state-equivalent programs, SPCC plan preparation, annual and biennial reporting, industrial wastewater permitting and monitoring programs, NPDES permits, hazardous materials business plans, environmental due diligence, property condition assessments, soil and ground water contamination investigation, geotechnical engineering, construction inspections, brownfields redevelopment, and project management/coordination.

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SELECTED PHASE I AND PHASE II PROJECT EXPERIENCE

City of San Carlos, San Carlos, CA

Ms. Amendola conducted a Phase I Environmental Site Assessment on behalf of the City of San Carlos for three adjacent formerly industrial parcels in preparation of property acquisition and resale for commercial redevelopment. A chlorinated solvent release was previously investigated and closed at the site, but our assessment showed the concentrations of chlorinated solvents remaining at the site significantly exceeded current health standards for potential vapor intrusion. Ms. Amendola conducted multiple stages of Phase II investigations to define the nature and extent of the soil, soil vapor, and groundwater contamination. All work was performed under the guidance of the San Mateo County Department of Environmental Health (DEH). Upon completion of the investigations a remedial action plan (RAP) using enhanced bioremediation was submitted to the County and approved. The RAP was implemented and groundwater monitoring is currently being performed to document the effectiveness of the RAP.

Bradford Manufacturing, Santa Clara, CA

Ms. Amendola conducted a Phase I Environmental Site Assessment on five contiguous industrial parcels at which numerous releases were known to have occurred and varying amount of previous investigation had been conducted. AWR conducted multiple stages of Phase II investigations at the site under the direction and approval of the Department of Toxic Substance Control (DTSC) to define the nature and extent of the impacts, evaluate groundwater impacts, and prepare a remedial action plan that was approved by the DTSC. Ms. Amendola oversaw the removal of impacted soil and groundwater monitoring, culminating in the receipt of a no further action letter from the DTSC.

City of Osseo, Osseo, MN

Ms. Amendola conducted a Phase I and Phase II Environmental Site Assessment of a former salvage yard in Osseo, Minnesota, successfully prepared financial grant applications funding the majority of the investigation and remediation costs for the site, developed and implemented a remediation plan, worked closely with state and local agencies throughout the remediation, conducted a geotechnical investigation, and oversaw the construction testing for the construction of a new office building at the site.

Suncap Property Group, Redwood City, CA

Ms. Amendola conducted a Phase I Environmental Site Assessment for the previous owner of a formerly industrial property. Ms. Amendola then worked with the prospective property purchaser to implement multiple stages of Phase II investigations to evaluate environmental issues identified in the Phase I ESA under the direction and approval of the San Francisco Bay Regional Water Quality Control Board (RWQCB). The investigation led to Ms. Amendola preparing and overseeing the implementation of the remedial action workplan (RAW), culminating in receiving case closure from the RWQCB and the successful redevelopment of the site.

Santa Cruz County Department of Public Works, Santa Cruz, CA

Ms. Amendola conducted site investigation and remediation to evaluate and remediate a clarifier release at the Department of Public Works storage yard that impacted surface soils and also entered the onsite storm water management system and subsequently discharged elsewhere on the same property.

San Jose Unified School District, San Jose, CA

The site action was additional evaluation for the property owner to further evaluate the extent of a release and obtain formal closure for a known historical release that had only been informally investigated and remediated with no agency involvement or approvals. The specific work included Phase II investigations under the direction of the Santa Clara County DEH to define the extent of soil contamination, groundwater sampling and evaluation. The DEH issued a no further action letter and the case was closed. Ms. Amendola also prepared a Phase I ESA at this site for a subsequent property transfer.

EMPLOYMENT HISTORY

Applied Water Resources, Corporation/Environmental Risk Specialties, San Jose/Santa Clara, California – Project Manager, 2009-present
O'Brien & Gere Engineers, Inc., Santa Clara, California, - Sr. Project Scientist, 2005-2009
ATC Associates, Monterey, California- Sr. Scientist, 2002-2005
Pinnacle Engineering, Maple Grove, Minnesota – Project Engineer, 1995-2002-

EDUCATION and CERTIFICATION:

University of Minnesota, Institute of Technology, BSCE
Professional Engineer, MN 41645
Registered Environmental Assessor, CA, No. 07647
Hazardous Material 40 Hour Training
Competent Person Excavation Training
Licensed Nuclear Density Gauge Operator

1046 West Taylor Street, Suite 105, San Jose, CA
408.220.4876

Kendall W. Price, CEG, REA
Principal Consultant/Regional Manager

Mr. Price has more than 40 years of professional experience. As a Senior Managing Scientist with O'Brien & Gere and consulting for United Soil Engineering, Inc., and President of E2C, Inc. he established technical criteria, provided technical guidance, and directed the activities of large or unique project teams including regional office groups. He is responsible for preparing project authorizations, establishing budget costs and schedules for each project under supervision, maintaining and updating all CIS system reports, and periodically reviewing the fiscal status and schedule of projects. Mr. Price assumes a project management role in leading major multi-disciplinary project teams of staff members from other sections and/or offices within the Firm, and offers significant contributions in the areas of technical development and quality improvement. He also provides continuous follow-up on client relations by maintaining personal contact with the client throughout the duration of a project and following project completion. Mr. Price also performs Phase I environmental site assessments and works with developers and their lenders to evaluate the environmental quality of redevelopment projects for higher better use.

Mr. Price has been responsible for the business development of the San Jose office. Client relations and project development has allowed the office to be recognized as a significant leader within the developer community as the go to consultant for both environmental as well as geotechnical/geological services. His client leadership has sustained the office from its opening in July 2009 to the present.

SELECTED PROJECT EXPERIENCE

Phase I Environmental Site Assessments, - Hayward, CA

Prepared Phase I Environmental Site Assessments, working with lenders and their specific environmental requirements. Studies included investigation of leaking underground fuel tanks and completion of the associated reports. Performed field studies on sanitary landfill to investigate leachate migration. Performed studies and quarterly monitoring events to comply with the owner's reporting requirements to the State of California.

EMC Planning Group, Inc. - King City, CA

Mr. Price provided the expertise for the formulation of a site investigation plan for a 70-acre agricultural site for development as a single-family residential subdivision. The investigation included an initial sampling plan to identify areas that were impacted by the past use of agricultural chemicals. Subsequent to that investigation an in-depth geotechnical investigation was performed to provide the recommendations for initial site development. Mr. Price was the primary technical interface between the various technical consultants.

California Bavarian Corp., - Sunnyvale, CA

Project included the closure of a chemical manufacturing facility through the local fire department, demolition of the building, excavation and disposal of contaminated soils. After the site was demolished, an in-depth geotechnical investigation was performed to provide design criteria for the development of the proposed mid-rise office building. Mr. Price was the primary contact during the site construction and interfaced with all other site development professionals. Responsible for Consultant Fees of $125,000.

Montera & Tehama, - Monterey, CA:

Mr. Price manages the geotechnical and geological investigations for this 6,000 acre residential development. He reviews the field investigation tasks, assists in evaluating the field and laboratory data, and outlines the various construction recommendations to be implemented during the various phases of site development. In addition Mr. Price also manages the technical inspection staff and interfaces with the grading contractor. ($10M site development)

Cypress Marina, Marina, CA

Mr. Price provided the geotechnical oversight with respect to the redevelopment of 115 acres of former Fort Ord property. The investigation included an evaluation of the dune sands that would be the foundation soils for the proposed single family residences. Site development with respect to grading within the dune sands proved to be a challenge. Moisture loss in the wind blown sands and proper compaction were an ongoing concern. Mr. Price worked with the grading contractor to maximize compaction effort during site grading and minimizing the need to regrade areas that had met prior compaction. Individual lot development has been slowed as a result of the current economic conditions.

Suncap Property Group, Redwood City, CA

Project consisted of a Phase I investigation and multiple stages of Phase II investigations to define the area of soil impact. The project was over seen by the RWQCB. Mr. Price designed the remedial action plan that was approved by the RWQCB. That plan was implemented and successfully received case closure from the RWQCB.

Curt Lanning, Mt. View, CA

Remedial Action to remove impacted soil from a former UST site. Mr. Price worked with Santa Clara County DEH regarding the remediation of a former UST site. The work included the excavation of impacted soil and removal of groundwater under DEH oversight. The project was issued a no further action letter from the County DEH. The tank was initially removed in the 1980s but did not receive and remedial action at that time. The issue surfaced as the result of the pending sale of the project.

City of San Carlos, San Carlos, CA

Phase I investigation for property acquisition and redevelopment. Upon completion of the Phase I work Mr. Price designed multiple Phase II investigations to define the fate and transport of the soil and groundwater contamination. All work was performed under the guidance of the San Mateo County DEH. Upon completion of the investigations a remedial action plan (RAP) was submitted to the County and

approved. The RAP was implemented and groundwater monitoring is currently being performed to monitor the efficacy of the RAP. Vapor intrusion is the principal contaminant of concern.

Bradford Manufacturing, Santa Clara, CA

Redevelopment of a former forge and flange manufacturing property in operation since the 1940s. A Phase I and multiple Phase II investigations were performed at the site under the direction and approval of the Department of Toxic Substance Control (DTSC). Upon defining the fate and transport of the site contaminants, Mr. Price prepared a remedial action plan that was approved by the DTSC. It was implemented and the and soil was remediated and groundwater monitored. This project took over 3 years to complete and receive a no further action letter from the DTSC.

Tron Do, San Jose, CA

This project consisted of multiple Phase II investigations to define soil/groundwater contamination from multiple USTs at the site. Mr. Price worked with the client and the Santa Clara County DEH regarding the various investigations and the remedial action to be implemented at the site. A remedial action plan was submitted and approved. Upon completing the implementation of the approved plan and subsequent groundwater monitoring the site was granted no further action status. This project took over 2 years to complete.

San Jose Unified School District, San Jose, CA

The site action resulted from a discharge from a UST. Mr. Price prepared multiple Phase II investigations under the direction of the Santa Clara County DEH to define the extent of soil contamination. The investigations were of sufficient detail to conclude that the discharge would not impact groundwater at the site. Therefore, the DEH issued a no further action letter and the case was closed.

Dollinger Properties, Fremont, CA

A Phase I investigation was performed with additional Phase II studies to define the extent of an oil discharge from a transformer at the site. All of the work was over seen by the Alameda County Water District (ACWD). The soil contamination was defined and a removal action plan was presented to the ACWD and approved. The impacted soil was removed from the site and the site was granted case closure by the ACWD.

EMPLOYMENT HISTORY

Applied Water Resources, Corporation - Regional Manager, San Jose Office

O'Brien & Gere Engineers, Inc., Sr. Managing Scientist

E2C, Inc., Santa Clara, CA, President; United Soil Engineering, Inc., Santa Clara, CA, Vice President; International Engineering Co., Inc., San Francisco, CA, Associate Engineering Geologist.

W.A. Wahler & Associates, Palo Alto, CA, Staff Geologist –

EDUCATION and CERTIFICATION:

San Jose State University; B.S. (Geology)
Registered Geologist, CA, No. 3787; OR, No. 261
Certified Engineering Geologist, CA, No. 1188; OR, No. 261
Registered Environmental Assessor, CA, No. 456
National Water Well Association
Association of Engineering Geologists
Hazardous Material 40 Hour & Supervisor Training
Competent Person Excavation Training

Appendix E

Topographic Maps

3705 and 3723 Haven Avenue

3705 Haven Avenue

Redwood City, CA 94063

Inquiry Number: 5204371.4

February 28, 2018

EDR Historical Topo Map Report

with QuadMatch™

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Historical Topo Map Report

02/28/18

Site Name:

3705 and 3723 Haven Avenue
3705 Haven Avenue
Redwood City, CA 94063
EDR Inquiry # 5204371.4

Client Name:

Applied Water Resources Corporation
1046 W. Taylor Street
San Jose, CA 95126
Contact: Janelle Amendola

EDR Topographic Map Library has been searched by EDR and maps covering the target property location as provided by Applied Water Resources Corporation were identified for the years listed below. EDR's Historical Topo Map Report is designed to assist professionals in evaluating potential liability on a target property resulting from past activities. EDRs Historical Topo Map Report includes a search of a collection of public and private color historical topographic maps, dating back to the late 1800s.

Search Results:

P.O.# NA

Project: 3705 and 3723 Haven

Coordinates:

Latitude:	37.485599 37° 29' 8" North
Longitude:	-122.18225 -122° 10' 56" West
UTM Zone:	Zone 10 North
UTM X Meters:	572295.51
UTM Y Meters:	4149057.64
Elevation:	10.00' above sea level

Maps Provided:

2012	1943
1999	1902
1994, 1996	1899
1973	1897
1968	
1959, 1961	
1948, 1953	
1947, 1948	

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Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

2012 Source Sheets

Palo Alto
2012
7.5-minute, 24000

Redwood Point
2012
7.5-minute, 24000

1999 Source Sheets

Palo Alto
1999
7.5-minute, 24000
Aerial Photo Revised 1999

1994, 1996 Source Sheets

Palo Alto
1994
7.5-minute, 24000
Aerial Photo Revised 1991

Redwood Point
1996
7.5-minute, 24000
Aerial Photo Revised 1993

1973 Source Sheets

Redwood Point
1973
7.5-minute, 24000
Aerial Photo Revised 1973

Palo Alto
1973
7.5-minute, 24000
Aerial Photo Revised 1973

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1968 Source Sheets

Redwood Point
1968
7.5-minute, 24000
Aerial Photo Revised 1968

Palo Alto
1968
7.5-minute, 24000
Aerial Photo Revised 1968

1959, 1961 Source Sheets

Redwood Point
1959
7.5-minute, 24000
Aerial Photo Revised 1958

Palo Alto
1961
7.5-minute, 24000
Aerial Photo Revised 1960

1948, 1953 Source Sheets

Redwood Point
1948
7.5-minute, 24000

Palo Alto
1953
7.5-minute, 24000
Aerial Photo Revised 1948

1947, 1948 Source Sheets

PALO ALTO
1947
15-minute, 50000

HAYWARD
1948
15-minute, 50000

Topo Sheet Key

This EDR Topo Map Report is based upon the following USGS topographic map sheets.

1943 Source Sheets

Palo Alto
1943
15-minute, 62500
Aerial Photo Revised 1940

1902 Source Sheets

Santa Cruz
1902
30-minute, 125000

1899 Source Sheets

Palo Alto
1899
15-minute, 62500

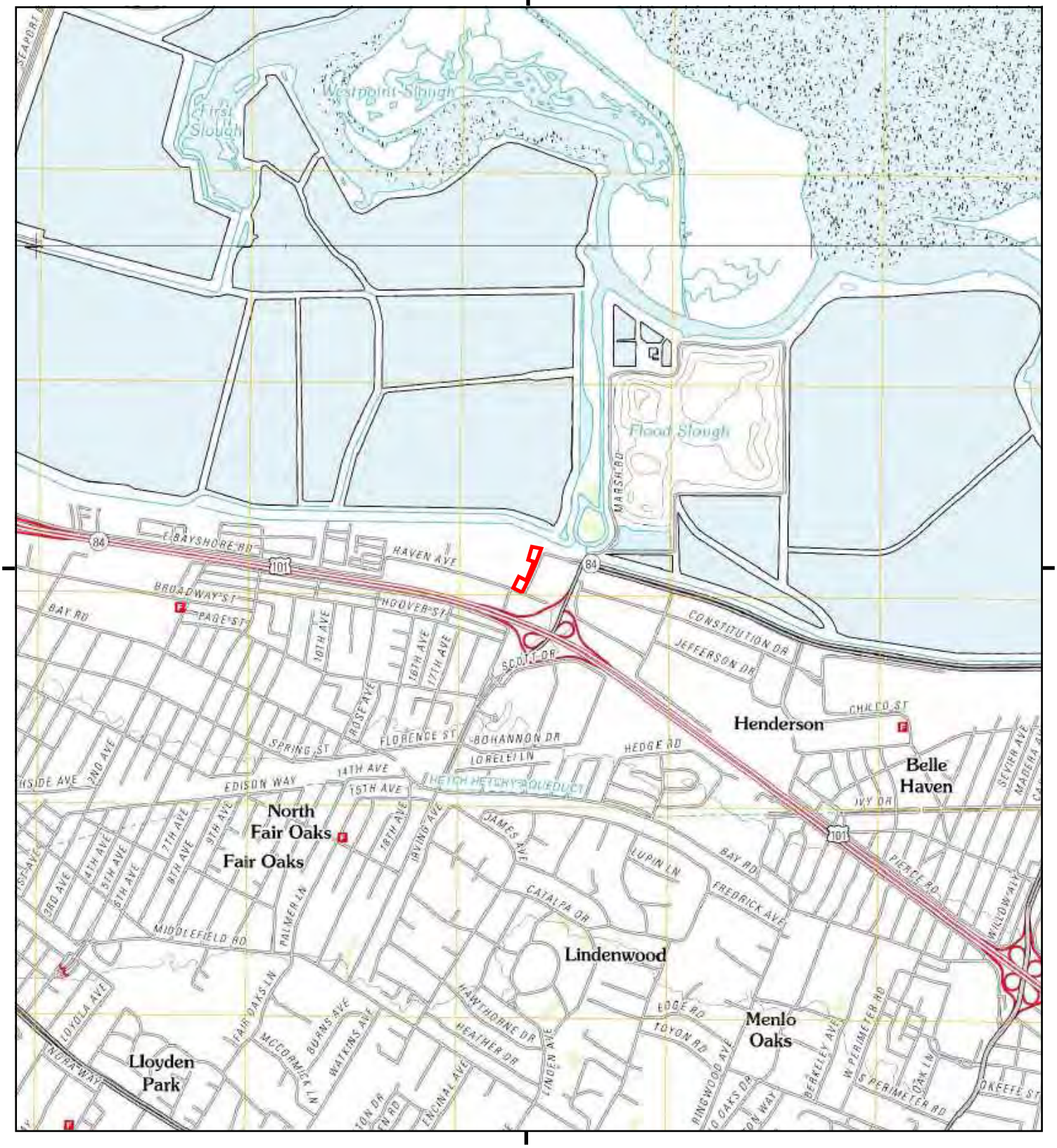
Haywards
1899
15-minute, 62500

1897 Source Sheets

Palo Alto
1897
15-minute, 62500

Historical Topo Map

2012



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

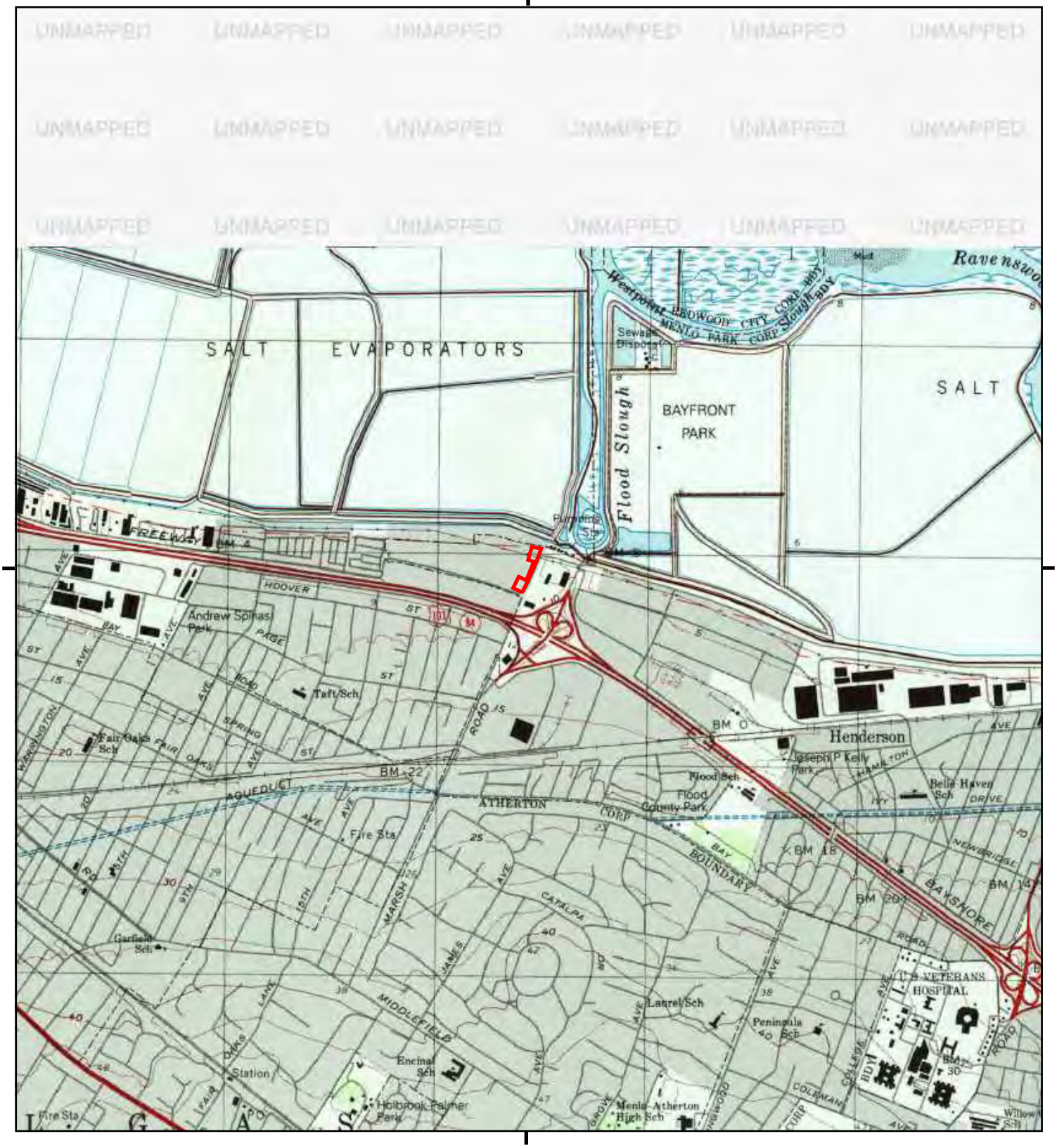
TP, Palo Alto, 2012, 7.5-minute
N, Redwood Point, 2012, 7.5-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N

Historical Topo Map

1999



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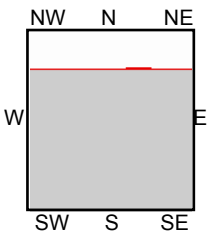


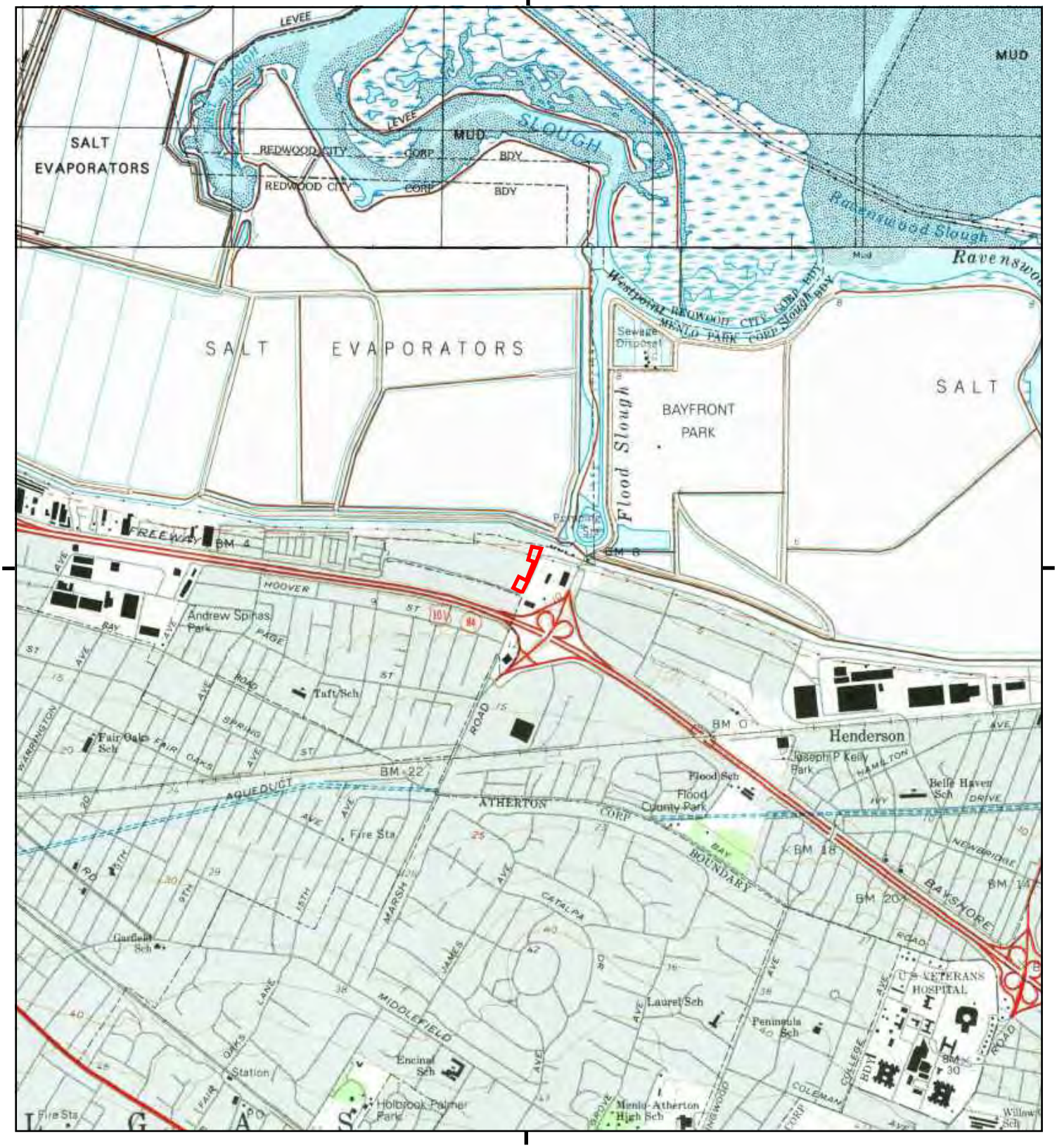
TP, Palo Alto, 1999, 7.5-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N

Historical Topo Map

1994, 1996



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W E
SW S SE

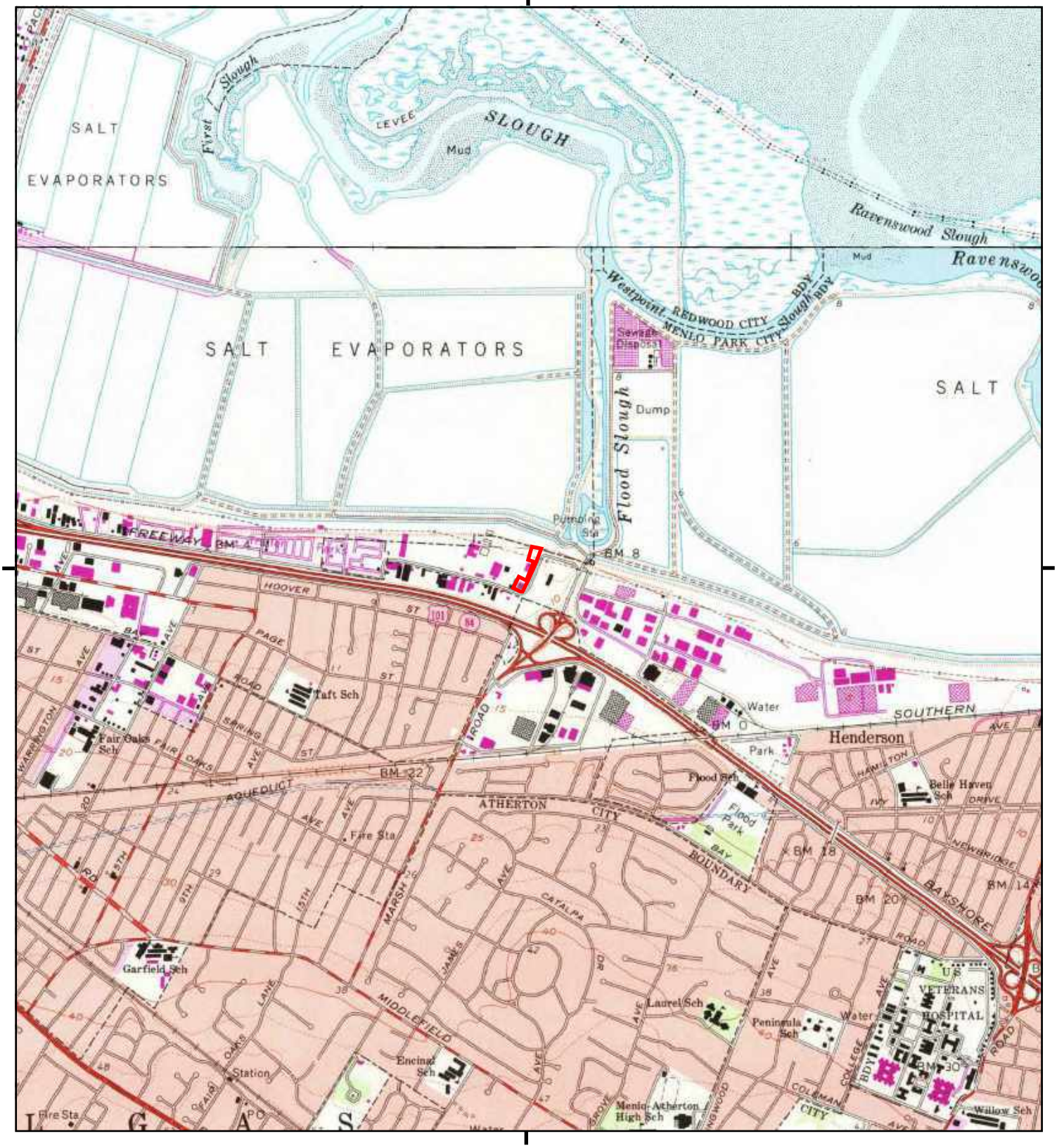
TP, Palo Alto, 1994, 7.5-minute
N, Redwood Point, 1996, 7.5-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N

Historical Topo Map

1973



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

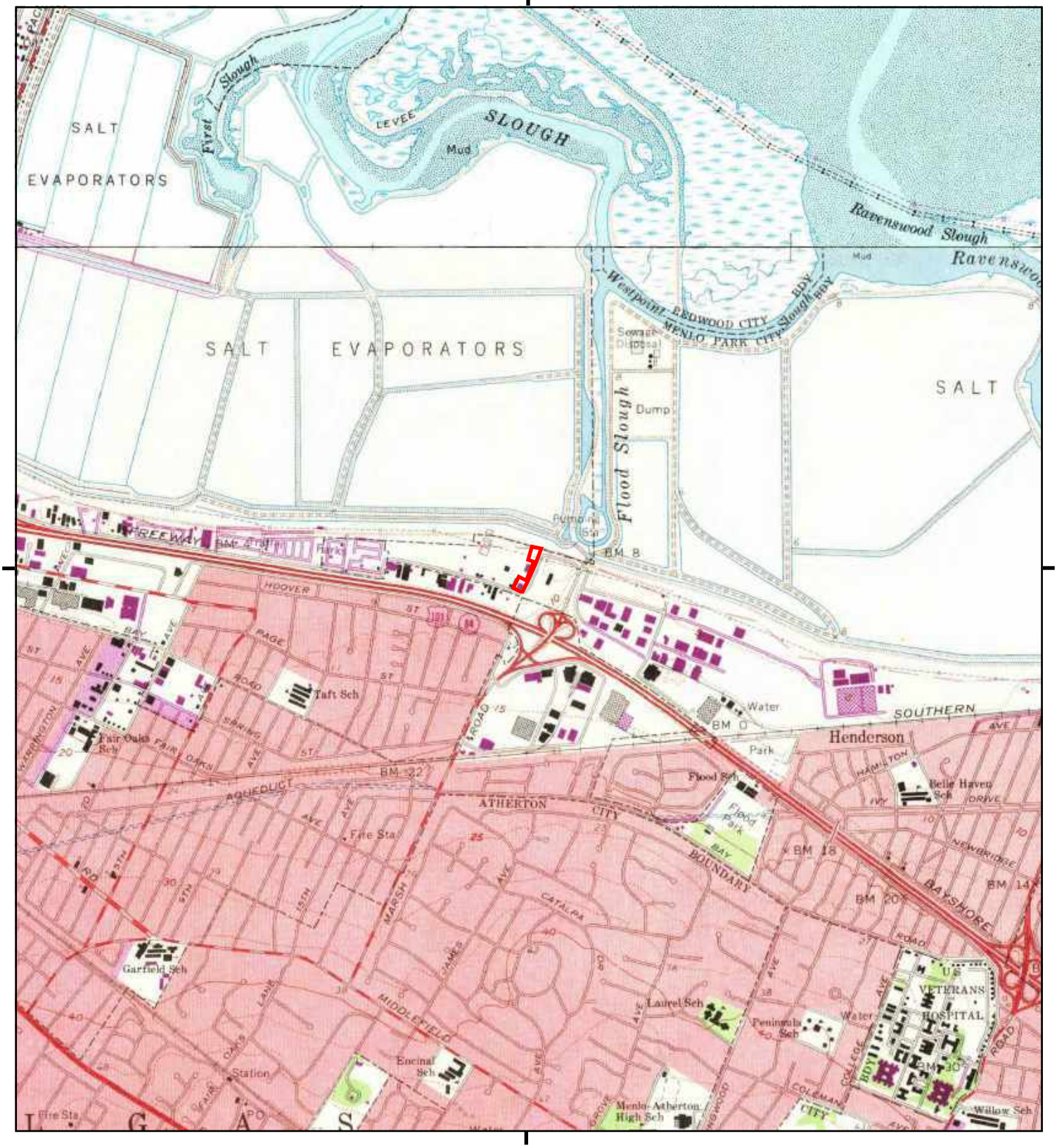
TP, Palo Alto, 1973, 7.5-minute
N, Redwood Point, 1973, 7.5-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N

Historical Topo Map

1968



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0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

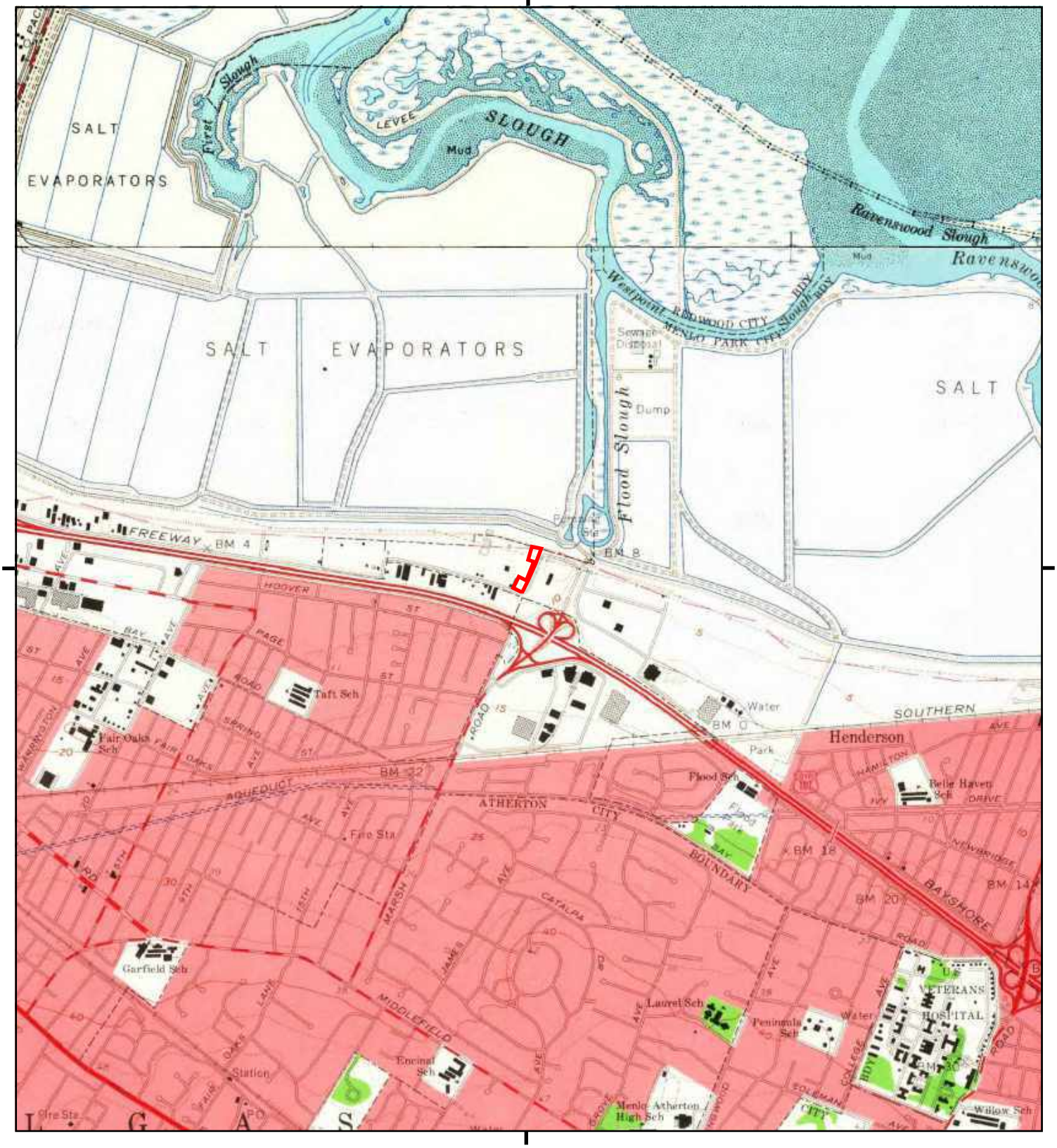
TP, Palo Alto, 1968, 7.5-minute
N, Redwood Point, 1968, 7.5-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N

Historical Topo Map

1959, 1961



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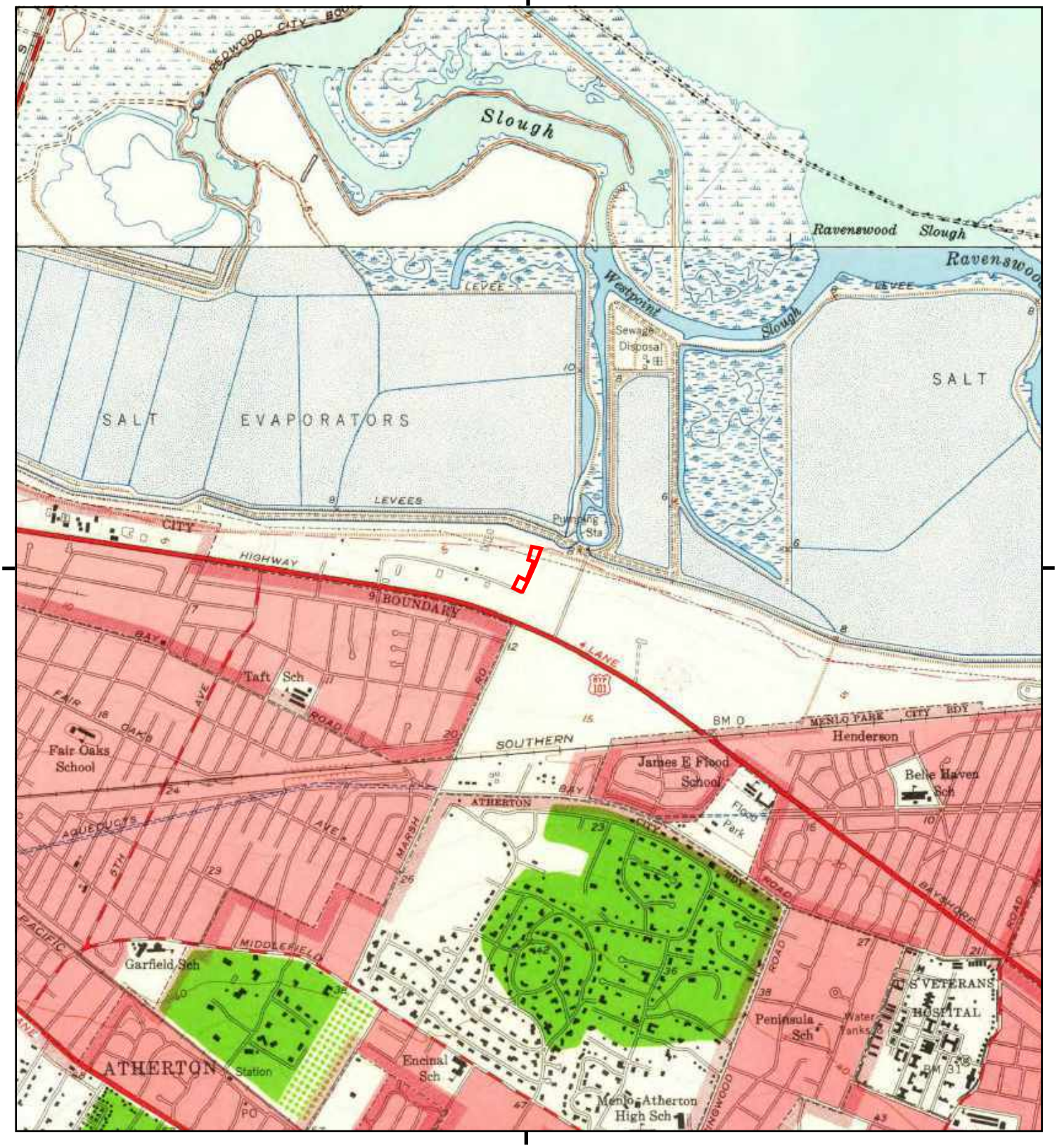
W E
SW S SE

TP, Palo Alto, 1961, 7.5-minute
N, Redwood Point, 1959, 7.5-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N



This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

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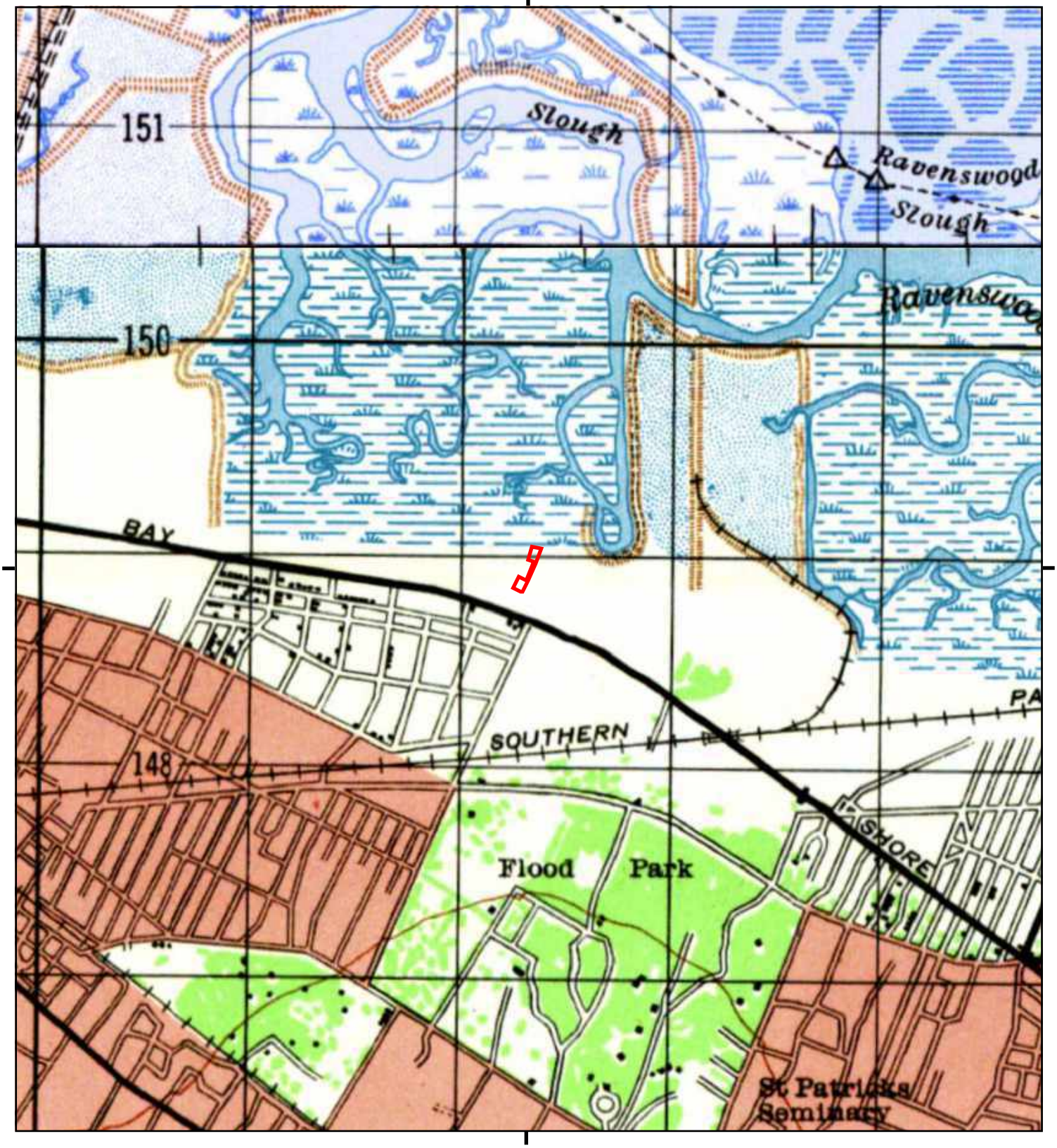
W E
SW S SE

TP, Palo Alto, 1953, 7.5-minute
N, Redwood Point, 1948, 7.5-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N



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0 Miles 0.25 0.5 1 1.5

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W E
SW S SE

TP, PALO ALTO, 1947, 15-minute
N, HAYWARD, 1948, 15-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N

This report includes information from the following map sheet(s).

0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Palo Alto, 1943, 15-minute

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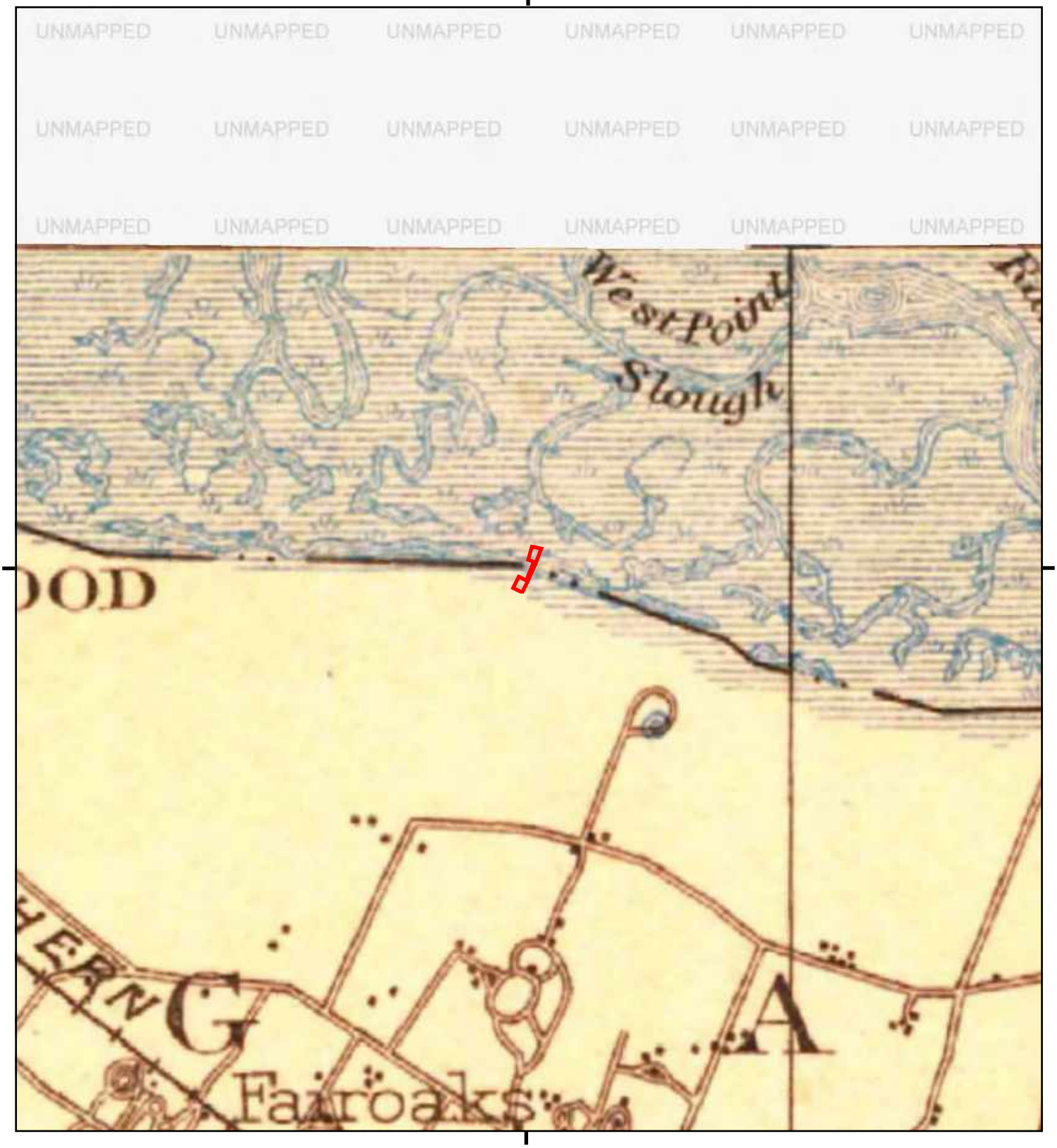
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N



This report includes information from the following map sheet(s).

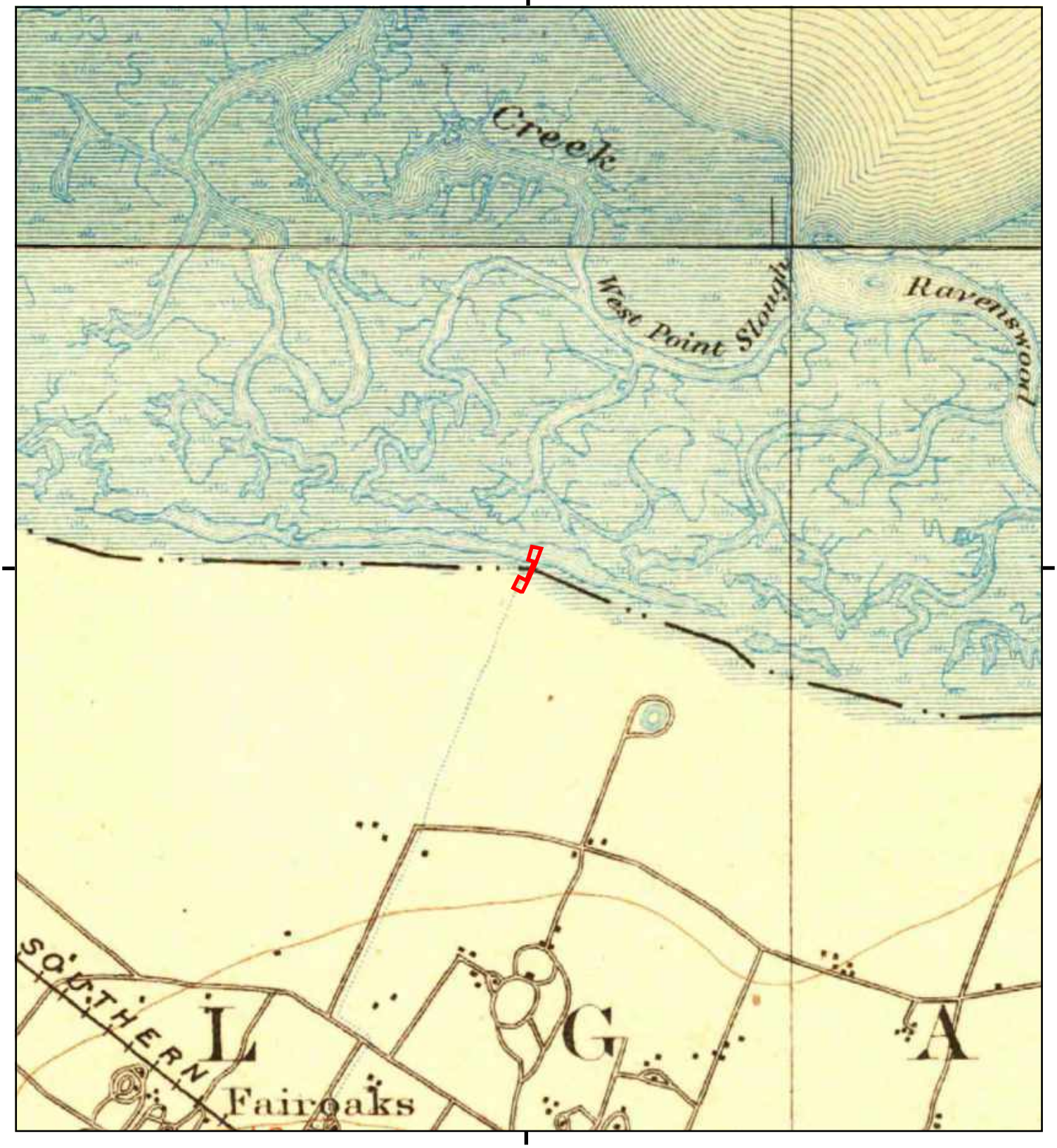
0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Santa Cruz, 1902, 30-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N



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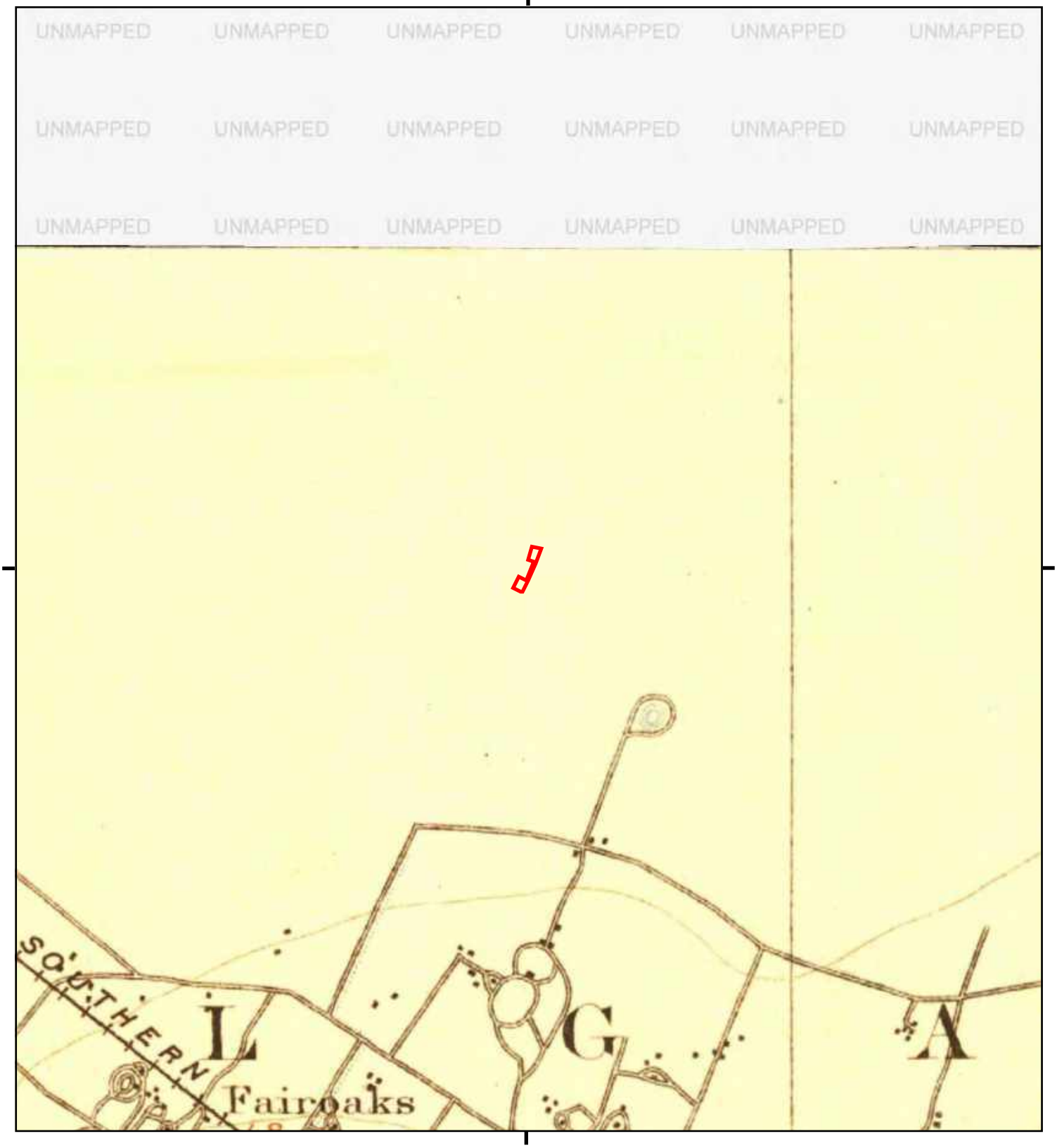
W E
SW S SE

TP, Palo Alto, 1899, 15-minute
N, Haywards, 1899, 15-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N



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0 Miles 0.25 0.5 1 1.5

NW N NE
W E
SW S SE

TP, Palo Alto, 1897, 15-minute

SITE NAME: 3705 and 3723 Haven Avenue
ADDRESS: 3705 Haven Avenue
Redwood City, CA 94063
CLIENT: Applied Water Resources Corporation

N

Appendix F

Aerial Photographs

3705 and 3723 Haven Avenue

3705 Haven Avenue

Redwood City, CA 94063

Inquiry Number: 5204371.12

March 01, 2018

The EDR Aerial Photo Decade Package

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

EDR Aerial Photo Decade Package

03/01/18

Site Name:

3705 and 3723 Haven Avenue
3705 Haven Avenue
Redwood City, CA 94063
EDR Inquiry # 5204371.12

Client Name:

Applied Water Resources Corporation
1046 W. Taylor Street
San Jose, CA 95126
Contact: Janelle Amendola

Environmental Data Resources, Inc. (EDR) Aerial Photo Decade Package is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's professional researchers provide digitally reproduced historical aerial photographs, and when available, provide one photo per decade.

Search Results:

Year	Scale	Details	Source
2014	1"=500'	Flight Year: 2014	USDA/NAIP
2010	1"=500'	Flight Year: 2010	USDA/NAIP
2005	1"=500'	Flight Year: 2005	USDA/NAIP
1998	1"=500'	Flight Date: August 27, 1998	USDA
1991	1"=500'	Acquisition Date: October 30, 1991	USGS/DOQQ
1982	1"=500'	Flight Date: July 05, 1982	USDA
1974	1"=500'	Flight Date: June 26, 1974	USGS
1968	1"=500'	Flight Date: June 14, 1968	USGS
1963	1"=500'	Flight Date: June 23, 1963	USGS
1958	1"=500'	Flight Date: July 21, 1958	USGS
1950	1"=500'	Flight Date: April 03, 1950	USDA
1948	1"=500'	Flight Date: September 26, 1948	USDA
1943	1"=500'	Flight Date: October 05, 1943	USDA

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INQUIRY #: 5204371.12
YEAR: 2014
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 2010
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 2005
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 1998
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 1991
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 1982
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 1974
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 1968
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 1963
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 1958
= 500'
N
EDR

INQUIRY #: 5204371.12

YEAR: 1950

= 500'

N

EDR

INQUIRY #: 5204371.12
YEAR: 1948
= 500'
N
EDR

INQUIRY #: 5204371.12
YEAR: 1943
= 500'
N
EDR

Appendix G

Sanborn Fire Insurance Maps

3705 and 3723 Haven Avenue

3705 Haven Avenue

Redwood City, CA 94063

Inquiry Number: 5204371.3

February 28, 2018

Certified Sanborn® Map Report

6 Armstrong Road, 4th floor
Shelton, CT 06484
Toll Free: 800.352.0050
www.edrnet.com

Certified Sanborn® Map Report

02/28/18

Site Name:

3705 and 3723 Haven Avenue
3705 Haven Avenue
Redwood City, CA 94063
EDR Inquiry # 5204371.3

Client Name:

Applied Water Resources Corporation
1046 W. Taylor Street
San Jose, CA 95126
Contact: Janelle Amendola

The Sanborn Library has been searched by EDR and maps covering the target property location as provided by Applied Water Resources Corporation were identified for the years listed below. The Sanborn Library is the largest, most complete collection of fire insurance maps. The collection includes maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow, and others. Only Environmental Data Resources Inc. (EDR) is authorized to grant rights for commercial reproduction of maps by the Sanborn Library LLC, the copyright holder for the collection. Results can be authenticated by visiting www.edrnet.com/sanborn.

The Sanborn Library is continually enhanced with newly identified map archives. This report accesses all maps in the collection as of the day this report was generated.

Certified Sanborn Results:

Certification # FA20-4E44-9E4B

PO # NA

Project 3705 and 3723 Haven

UNMAPPED PROPERTY

This report certifies that the complete holdings of the Sanborn Library, LLC collection have been searched based on client supplied target property information, and fire insurance maps covering the target property were not found.

Sanborn® Library search results

Certification #: FA20-4E44-9E4B

The Sanborn Library includes more than 1.2 million fire insurance maps from Sanborn, Bromley, Perris & Browne, Hopkins, Barlow and others which track historical property usage in approximately 12,000 American cities and towns. Collections searched:

- ☑ Library of Congress
- ☑ University Publications of America
- ☑ EDR Private Collection

The Sanborn Library LLC Since 1866™

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Appendix H

City Directories

3705 and 3723 Haven Avenue
3705 Haven Avenue
Redwood City, CA 94063

Inquiry Number: 5204371.5
March 01, 2018

The EDR-City Directory Image Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

TABLE OF CONTENTS

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Executive Summary

Findings

City Directory Images

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

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This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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EXECUTIVE SUMMARY

DESCRIPTION

Environmental Data Resources, Inc.'s (EDR) City Directory Report is a screening tool designed to assist environmental professionals in evaluating potential liability on a target property resulting from past activities. EDR's City Directory Report includes a search of available city directory data at 5 year intervals.

RECORD SOURCES

EDR's Digital Archive combines historical directory listings from sources such as Cole Information and Dun & Bradstreet. These standard sources of property information complement and enhance each other to provide a more comprehensive report.

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RESEARCH SUMMARY

The following research sources were consulted in the preparation of this report. A check mark indicates where information was identified in the source and provided in this report.

Year	Target Street	Cross Street	Source
2014	☑	☐	EDR Digital Archive
2010	☑	☐	EDR Digital Archive
2005	☑	☐	EDR Digital Archive
2000	☑	☐	EDR Digital Archive
1995	☑	☐	EDR Digital Archive
1992	☑	☐	EDR Digital Archive
1987	☑	☐	EDR Digital Archive
1980	☑	☐	Haines Criss-Cross Directory
1977	☑	☐	Haines Criss-Cross Directory
1973	☑	☐	Polk's City Directory
1969	☑	☐	Polk's City Directory
1965	☑	☐	Polk's City Directory
1959	☐	☐	Polk's City Directory

FINDINGS

TARGET PROPERTY STREET

3705 Haven Avenue
Redwood City, CA 94063

Year	CD Image	Source	
HAVEN AVE			
2014	pg A2	EDR Digital Archive	
2010	pg A4	EDR Digital Archive	
2005	pg A6	EDR Digital Archive	
2000	pg A8	EDR Digital Archive	
1995	pg A9	EDR Digital Archive	
1992	pg A10	EDR Digital Archive	
1987	pg A11	EDR Digital Archive	
1980	pg A12	Haines Criss-Cross Directory	
1980	pg A13	Haines Criss-Cross Directory	
1977	pg A14	Haines Criss-Cross Directory	
1977	pg A15	Haines Criss-Cross Directory	
1973	pg A16	Polk's City Directory	
1973	pg A17	Polk's City Directory	
1969	pg A18	Polk's City Directory	
1965	pg A19	Polk's City Directory	
1959	-	Polk's City Directory	Target and Adjoining not listed in Source

FINDINGS

CROSS STREETS

No Cross Streets Identified

City Directory Images

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HAVEN AVE 2014

3641	CALIFORNIA ASSISTED DEV LLC
	DESIGNCO
	NORCAL VOCATIONAL INC
	ROYAL MOVING SERVICES INC
3645	BURNETT LANDSCAPE & DEVELOPMEN
3651	BUTLER REALTY LLC
3665	A1 MATERIALS
3696	ALDEA PHARMACEUTICALS INC
	DABROWSKI PAUL J
	ORATEC INTERVENTIONS INC
	SYNTHEGO
3698	AUTONOMIC TECHNOLOGIES INC
	CERVEL NEUROTECH INC
3705	AGETAK INC
	AUKUM MANAGEMENT LLC
	BI GUI YUAN RE USA LLC
	BRANDON HYMES
	CALIFORNIA PACIFIC ADVISORS
	FOXFAM LLC
	IRON PORTAL INC
	LAW OFFICE OF BRIAN RAFT
	PARTOE INC
	TELECOM MEDIA AND FIN ASSOC
	UNIVERSAL HOSPITAL SYSTEMS INC
3715	870 INDUSTRIAL ROAD LLC
	BIANCHI JOINT VENTURE LP
	CAPUTO LISA I
	CASHIN COMPANY INC
	CEDAR ASSOCIATES LLC
	DEERFIELD CAMPBELL LLC
	DEERFIELD HAVEN LLC
	DEERFIELD KING STREET LLC
	DEERFIELD REALTY CORPORATION
	DEERFIELD SAN GERONIMO LLC
	DEERFIELD SOUTH PARK LLC
	DEERFIELD TASMAN LLC
	DEERFIELD-WEBSTER LLC
	GERMINO AND MACKAY PC
	NORTH MARY LLC
	TYCO FEDERAL CREDIT UNION
	TYZX INC
3723	ABOS LABS INC
	ACA DERM INC
	CALIFORNIAS DRIVER SCHOOL
	COMPUTERS FOR EVERYONE
	CONTINUUM DIGITAL
	CORE SOLUTIONS INC
	FUTURE TODAY INC
	HEALTHONOMY CORPORATION
	INTERIS MLLNIUM JINT VENTR LLC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HAVEN AVE 2014 (Cont'd)

3723	MINFON INC
	PROSPECT PARTNERS
	RIGHT PATH
	SOLAR COMPONENTS LLC
	SPARTAN SYSTEMS INC
	SUBUTHI OVERSEAS INC
	UNIQUE CARE
3735	MENLO BARK HOTEL
	WITMER TYSON IMPORTS INC
3750	FEDEX OFFICE & PRINT SVCS INC
3757	MENLO ANTHERTON STORAGE
	WARREN, JIM M
3760	COMCAST
	TOCCATA THERAPEUTICS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HAVEN AVE 2010

3639	GOODMAN BALL INC
3641	DESIGNCO
	HNF METALS INC
	NORCAL VOCATIONAL INC
3642	ROD TS TRAILER SALES
3645	BURNETT LANDSCAPE & DEVELOPMEN
	HAVEN ENTERPRISES
3651	ROOTES GROUP DEPOT
3665	A1 MATERIALS
3696	LUNERA LIGHTING INC
	NANOSTELLAR INC
	ORATEC INTERVENTIONS INC
3698	BAROSENSE INC
	ELPEX TECHNOLOGIES INC
	EOPLEX TECHNOLOGIES INC
3705	2020 VENTURE PARTERS LLC
	ALLOCADE INC
	AWAKEN SOLUTIONS
	BLUE RIDGE MASONRY
	BRANDON HYMES
	FLEXCOR INC
	FLIPTRACK
	FOXFAM LLC
	HUMAN SERVICE MANAGEMENT CORP
	MENLO PARTNERS STAFFING INC
	NONPROFIT KNOWLEDGE NETWORK
	PHILANTHROPEDIA
	TELECOM MEDIA AND FIN ASSOC
3715	870 INDUSTRIAL ROAD LLC
	AERIS INC
	BIANCHI JOINT VENTURE LP
	CAPUTO LISA I
	DEERFIELD CAMPBELL LLC
	DEERFIELD HAVEN LLC
	DEERFIELD KING STREET LLC
	DEERFIELD-WEBSTER LLC
	NORTH MARY LLC
	TYCO FEDERAL CREDIT UNION
	TYZX INC
3723	ACA DERM INC
	AQUA VISTA ENTERPRISES INC
	BABA EDUCATIONAL SERVICES
	CALISOLAR INC
	CONIFER NETWORKS LLC
	CORE SOLUTIONS INC
	EMIFINANCIAL INC
	GLOBAL CONVERGENCE TECHNOLOGY
	HEALTH FREEDOM NETWORK
	HIGHMONT INVESTMENTS LLC
	IBEX TECHNOLOGY GROUP

HAVEN AVE 2010 (Cont'd)

3723	IEC
	INTERIS MLLNIUM JINT VENTR LLC
	LAB IT SOLUTIONS LLC
	LATEST MEDICAL
	ONLINE REPUTATION MGT ASSN
	PRINT THAT
	PROSPECT PARTNERS
	SPARTAN SYSTEMS INC
	STRATGIC SCHOLARLY INSIGHT INC
	SUBUTHI OVERSEAS INC
	TRANSCNTNENTAL CAPITL PARTNERS
	TRIAL AND TECHNOLOGY LAW GROUP
	UNIQUE CARE
	VALUEBROS INC
	WINE MARKET ASSISTANTS LLC
	WORLD INFO INC
	XCARTA CORP
3735	WITMER TYSON IMPORTS INC
3757	MENLO ANTHERTON STORAGE
	WARREN, JOE
3760	NANOSCALE COM

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HAVEN AVE 2005

3639	GOODMAN BALL INC
3641	DESIGNCO INC
	NORCAL VOCATIONAL INC
	YOUTH ENTERPRISES RECYCLING
3645	BURNETT LANDSCAPE & DEVELOPMEN
	HAVEN ENTERPRISES
3651	A S R C CO
	WOLF VAN BERGEN
3665	TRI ANCHOR MARINE INC
3696	ADVANCED POLYMER SYSTEMS INC
	ISCIENCE SURGICAL CORPORATION
	WHITE PROPERTIES
3698	CARDIOKINETIX INC
	CHAIT ARTHUR L
	EOPLEX TECHNOLOGIES INC
	SEPTUS INC
3700	DYNATYPE GRAPHICS
	ONE NORTH FIRST ST JOINT VENTR
3705	BLUE RIDGE MASONRY
	FATIMA FUNDING SOLUTIONS
	FLEXCOR INC
	FRIENDLY ISLE HOME CARE HMC
	INVESTWEST CAPITOL
	IPLAYMUSIC
	MS BROKERAGE INC
	REDDY SOFTWARE
	TELECOM MEDIA & FIN ASSOC INC
3723	3723 HAVEN ASSOCIATES LLC
	ACA DERM INC
	AGORICS INC
	ATHERTON MENLO EXECUTIVE SUITE
	EMIFINANCIAL CORPORATION
	EMIFINANCIAL INC
	FODOJO CORP
	GLOBAL CONVERGENCE TECHNOLOGY
	HARRIS KENNETH
	HELP U SELL TRI COUNTY
	LAB IT SOLUTIONS LLC
	LINKORE LLC
	MENLO HOME SALES
	MINFON INC
	PRINTHAT
	PROSPECT PARTNERS
	SECOND FOUNDATION INCORPORATED
	SILICON VALLEY RECRUITERS
	SPARTAN SYSTEMS INC
	SUBUTHI OVERSEAS INC
	TITANIUM TECHNOLOGY
	VIPMOBILE
	WHITE FIELD INC

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HAVEN AVE 2005 (Cont'd)

3723 WORLD INFO INC
XCARTA CORP
3735 WITMER TYSON IMPORTS INC
3757 HQ SYSTEMS
MENLO ANTHERTON STORAGE
3760 ISSAKOVA OLGA
NANOSCALE CMBNTORIAL SYSTHESIS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HAVEN AVE 2000

3639	GOODMAN BALL INC
3641	DESIGNCO
3642	ROD TS TRAILER SALES
3651	A S R C CO
	GEORGE LUNDBERG
3665	TRI ANCHOR MARINE INC
3696	SUNESIS PHARMACEUTICALS INC
3698	HALO ELECTRONICS INC
	HEATON JAMES S CO INC
	NORTHWEST PROTECTIVE SERVICE
	SIGNATURE WIRELESS GROUP
3700	ORATEC INTERVENTIONS INC
3705	INVESTOOLS INC
3723	ATHERTON MENLO EXECUTIVE SUITE
	SECOND FOUNDATION INCORPORATED
	SILICON VALLEY RECRUITERS
	SUBUTHI OVERSEAS CORPORATION
3735	TIESO, TONY
3757	HQ SYSTEMS
	MENLO ANTHERTON STORAGE
3760	ELAN PHARMACEUTICALS

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HAVEN AVE 1995

3639	GOODMAN BALL INC
3640	PERATA, GEORGE
3641	ENTERPRISES RECYCLING
	HNF METALS INC
	KOPFMANN CONSTRUCTION INC
	MID-PENINSULA YOUTH CMNTY SVCS
	REMEDIATION TESTING AND DESIGN
3645	HAVEN ENTERPRISES
3651	TIMELY DESIGNS
3696	ADVANCED POLYMER SYSTEMS INC
3698	CONRAD, WEI
	HALO ELECTRONICS INC
	HEATON JAMES S CO INC
3700	QUADRI GROUP INC
3705	B S G ASSOCIATES INC
3717	KOB AUTO INC
3723	THYSEN MANAGEMENT CO
3735	MUCHMORE-TYSON INC
3750	MENLO PARK SCHUTZHUND CLUB
3757	MENLO ANTHERTON STORAGE
3760	NEUREX CORPORATION

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HAVEN AVE 1992

3624 EITNER, ARTHUR J
3639 GOODMAN BALL INC
3641 HNF METALS INC
KOPFMANN CONSTRUCTION INC
MID-PENINSULA YOUTH CMNTY SVCS
OPCODE SYSTEMS INC
YOUTH ENTERPRISES RECYLING
3651 TIMELY DESIGNS
3665 DONRICK CORP
3696 ADVANCED POLYMER SYSTEMS INC
3698 HALO ELECTRONICS INC
HEATON JAMES S CO INC
MLB INC
TRANS COM CORPORATION
3700 INDUSTRIAL GARDEN MAINTENANCE
WORLD WIDE ENVIRONMENTAL TECH
3705 B S G ASSOCIATES INC
3717 KOB AUTO INC
PHAETONS & FINS
3723 URBAN UNDERGROUND PRODUCTIONS
3735 MUCHMORE-TYSON INC
TYSON SPORTING GOODS
3757 MENLO ANTHERTON STORAGE
WALLER, ELENA
3760 NEUREX CORPORATION

Target Street	Cross Street	Source
✓	-	EDR Digital Archive

HAVEN AVE 1987

3639	GOODMAN BALL INC
3641	BARLOW MARINE USA INC
	DUBOIS BOB ENTERPRISES
	HNF METALS
	KOPFMANN CONSTRUCTION INC
	MITCO PETROLEUM INC
	ONLY FROM ITALY INC
3642	PENINSULA AUTO REPR TRCK REPR
3645	TURNER ENTERPRISE
3665	DONRICK CORP
3696	HEATON JAMES S CO INC
3717	GREENWOOD ENTERPRISES INC
	SILTEC CORPORATION
3719	GREENWOOD ENTERPRISES INC
3723	CLEARVIEW TELEVISION SYS CAL*
3750	OLSON CARL W & SONS*
3760	ENGENICS INC

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

HAVEN AVE 1980

3600	★	B&B MOLDS AND MFG	364-1637 5
	★	BURKE JAMES B CO	366-4444 7
	★	CONTRACT METAL PRDS	364-6811 8
	★	DELTA COMMUNICATION	364-7220+0
	★	DELTA IND COMMNCTN	323-6161 4
		FRENCH MARVIN E	365-5717 9
		MCMAHON BILL	367-1220+0
	★	PAC CST REBUILD CTR	365-7614 9
	★	TECHNE ELECTRONICS	367-8646+0
	★	TRANSPORTATN TECH	364-4550+0
3620	★	FIBER CYCLE	367-9090+0
	★	SHAY R C CO INC	368-9667+0
3624	★	LEWIES TRACK SERV	369-3453
3636	★	LEMMONS SIGNS	365-1747 6
	★	THERMO SOLAR SYSTMS	367-8124+0
3638	★	ROYAL DISTRIBUTORS	365-3040 5
3642	★	EVAN ALAN INC	368-8443
3645		XXXX	00
3696	★	ATLAS SALES INC	367-8700 8
	★	H&K SALES INC	367-1400 8
	★	HEATON JAMES S CO	367-9000 8

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

HAVEN AVE 1980

3605★	SHOOTER ARTHUR INC	365-5010	4
3611★	LABELIT INC	367-1442+0	
3615★	FINE BROS	368-5455	
3633	XXXX	00	
3635★	ALEXANDERS BOATWRKS	368-2361	9
★	BOAT YARD THE	365-9927	
★	WEST VALLEY CONSTR	364-9464	8
3637★	TRUSTY ROOFING CO	366-0788	
3641★	WESTATES TRUCK EQPT	364-4500	4
★	WESTSTATES TRCK EQP	364-4500	3
3643	XXXX	00	
3645★	HAVEN ENTRPRS STRGE	365-2871	6
A★	FERRIS BUD	365-6665	6
A★	FERRIS HOIST&REPAIR	365-6665	6
3665	AVERELL MICHAEL S	369-3853	6
★	DIESEL ELECTRIC SLS	364-0734	
3696	XXXX	00	
3700★	HUETTIG&SCHROMM INC	364-2454	4
★	INDSTRL GARDN MNTNC	364-2454	4
3717★	SILTEC CORP	365-8600	
3721	XXXX	00	
3735★	TYCOMP BUSINESS SV	364-3153	7
★	TYSON KENNELS	364-3151	4
3750★	OLSON CARL W&SONS	323-1851	3
3760★	COLE JOHN M CO	328-2653	6

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

HAVEN AVE 1977

3600	*B&B MOLDS AND MFG	364-1637	5
	*BURKE JAMES B CO	366-4444	+7
	*DELTA INDUS CMMCTNS	323-6161	4
	*H E P MFG	365-4080	+7
	*LUKE EDWARD G	366-2010	2
	*PARK PRECISN MACHNG	364-4953	6
	*Q C INTERNATL INC	364-2911	+7
	*WOODLETS INC	366-2100	+7
	*ZAPATA MACHNRY&EQP	364-5977	+7
3620	*MULLIS ROOFING CO	365-5070	4
3624	*LEWIES TRACK SERV	369-3453	
3636	*LEMMONS SIGNS	365-1747	6
3638	*ROYAL DISTRIBUTORS	365-3040	5
3642	*EVAN ALAN INC	368-8443	
3645	XXXX	00	
3696	*ATLAS SALES INC	368-2986	6
	*H&K SALES INC	369-6244	6
	*HEATON JAMES S CO	369-4671	6

Target Street	Cross Street	Source
✓	-	Haines Criss-Cross Directory

HAVEN AVE 1977

3605	*SHOOTER ARTHUR INC	365-5010	4
3611	*CAP SNAP SEAL INC	364-3377	5
	*RUTHERFORD ENTPRS	364-0177	5
3615	*FINE BROS	368-5455	
	*FINE JACK	368-5455	
3633	XXXX	OO	
3635	*BOAT YARD THE	365-9927	
	*BOATBUILDERS SUPPLY	365-7874	+7
3637	*TOUCHATT TRUCKING	365-9355	+7
	*TRUSTY ROOFING CO	366-0788	
3641	*WESTATES TRUCK EQPT	364-4500	4
	*WESTSTATES TRCK EQP	364-4500	3
3643	*CARIA&SONS ENTERPRS	364-2151	+7
3645	*HAVEN ENTRPRS STRGE	365-2871	6
	*TURNER ENTERPRISE	365-2871	6
	A*FERRIS BUD	365-6665	6
	A*FERRIS HOIST&REPAIR	365-6665	6
3665	AVERELL MICHAEL S	369-3853	6
	*DIESEL ELECTRIC SLS	364-0734	
3696	XXXX	OO	
3700	*HUETTIG&SCHROMM INC	364-2454	4
	*INDSTRL GARDN MNTNC	364-2454	4
3705	*R O ASSOCIATES	322-5321	6
3717	*SILTEC CORP	365-8600	
3721	*PERMAG SIERRA CORP	369-0303	
3735	*TYCOMP BUSINESS SV	364-3153	+7
	*TYSON KENNELS	364-3151	4
3750	*OLSON CARL W&SONS	323-1851	3
3760	*COLE JOHN M CO	328-2653	6

Target Street	Cross Street	Source
✓	-	Polk's City Directory

HAVEN AVE 1973

HAVEN AV —FROM NORTHWEST CITY LIMITS SOUTHEAST AND NORTH NORTH TO BAYSHORE HWY

ZIP CODE 94025

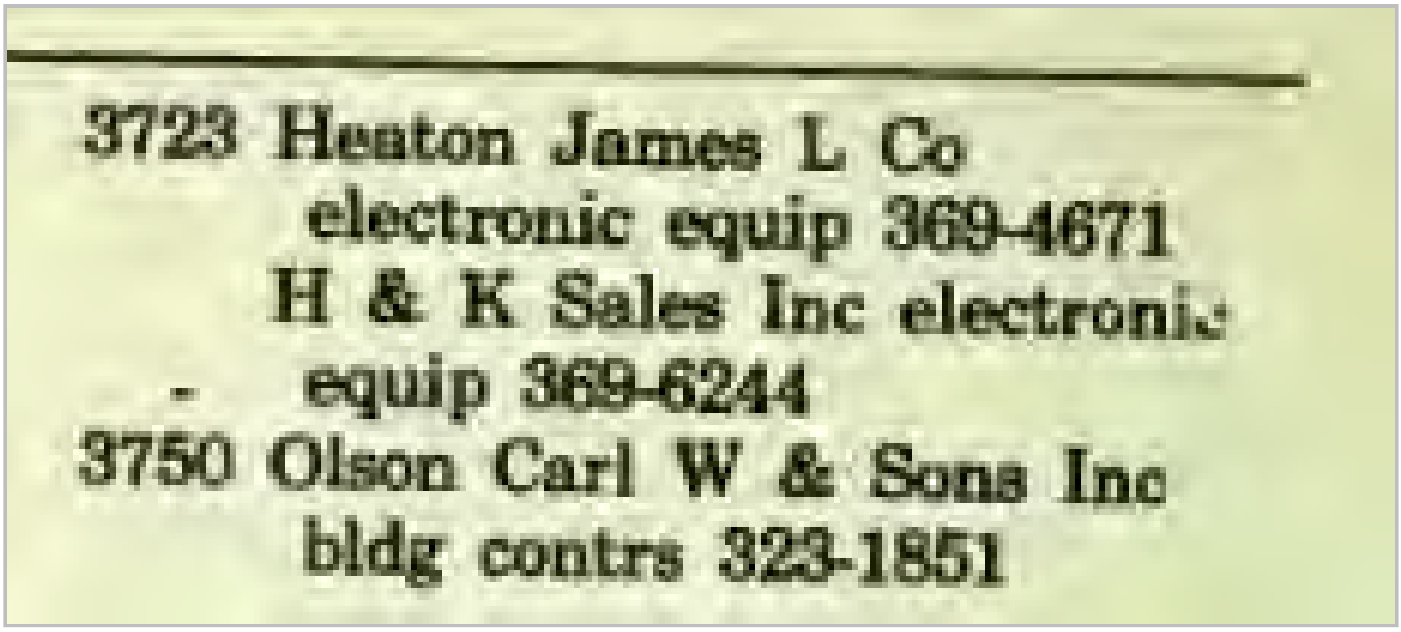
3501 Bernard Associates distrs-importers 365-8585
3503 A-A Printers litho 365-1919
3505 Advanced Wheelchair Co
3507 Larwood Mark Co (Whse)
3509 Polytec machihne shop 365-8648
3511 Noren Products Inc 365-0632
3517 Just Plain Smith Co The woodcraft products 364-3031
3519 Vacant (3519-3523)
3525 Long Life Products Inc 364-6515
3527 Vacant
3529 Electro Technology
3533 I W Enterprises
3535 Vacant (3535-45)
3605 Shooter Arthur A Inc landscape archt contr 365-5010
3611 Cap Snap Seal Inc (Whse)
3615 A-Auto Salvage 342-4812
Fine Bros Auto Wreckers bldg materials 368-5455
3633 Peterson Roofing Co 365-0803
Ferguson Oscar Termite Control 365-0226
3635 Brown Tom boat works
3637 Trusty Roofing Co 366-0788
3641 West States Truck Equipment Co 364-4500
3645 Middlefield Supply auto wreckers 369-2941
3651 Trucks Wholesale Inc 365-7000
3665 Vacant
3695 Siltec Corp ofcs

HAVEN COURT BEGINS

3705 R O Associates Inc electronic power supplies 322-5321
3717 Siltec Corp silicon crystal mfrs 365-8600
3721 Permag Sierra Corp fabricators magnetic materials 369-0303

Target Street	Cross Street	Source
✓	-	Polk's City Directory

HAVEN AVE 1973


3723 Heaton James L Co
electronic equip 369-4671
H & K Sales Inc electronic
equip 369-6244
3750 Olson Carl W & Sons Inc
bldg contrs 323-1851

Target Street	Cross Street	Source
✓	-	Polk's City Directory

HAVEN AVE 1969

HAVEN AV —FROM NORTHWEST CITY LIMITS SOUTHEAST AND NORTH, NORTH TO BAYSHORE HWY

ZIP CODE 94025

3501 Bernard Associates mfr agts 365-8585
3513 Vacant
3615 Fine Bros bldg materials 368-5455
3633 Bauman John F grading contr 366-4621
3637 Trusty Roofing Co 366-0788
3645 Middlefield Supply auto wreckers 369-2941
3665 La Marr Industries Inc steel lab 368-1372
3695 Atlas Sales Co electronic equip 368-2986
Heaton James L Co electronic equip 369-4671
H & K Sales Inc electronic equip 369-6244
3705 Heuttig & Schromm Inc landscape gdnrs 325-3205
Industrial Garden Maintenance 325-3205
3717 Siltec Corp silicon crystal mfrs 365-8600
3719 Assembly Technology Corp lead die bonding 365-8555
3745 Middlefield Sup (Stge)
3750 Holmes Oscar C Co constn engs 322-5393

Target Street	Cross Street	Source
✓	-	Polk's City Directory

HAVEN AVE 1965

3504 Vacant
3506 Vacant
3524 Oil Marketing Equip Co
368-0752
3536 Sequoia Mill cabt mkrs
368-3864
3550 Eitner A J contr road
369-9188
3562 No Return
3570 Bergie Plmb Co
368-9494
3580 Colonia Bakeries Inc
368-5947
3582 Regal Sls Co (garage)
3586 Regal Sls Co drugs
distr 369-3776
3592 Bennett Hopkins Corp
machy 369-3781
3594 Auto-Man Enterprises
Inc food & vending
3596 Garrett & Associates
jwlry 369-8229
3598 Saunders Robt & Co whol
florists 369-3303
3600 Coast Insulation Co contrs
368-2953
3620 Patt Jas Plastering
369-0353
3624 Lewies Track Serv repr
& sls 369-3453
3636 Berges Steel Erector
368-0431
Signs by Glen Collins
pntr 365-1747
3638 Royal Distributing Co gro
368-2881
3642 Tree Products Co mfrs
368-8443
3696 Nelson Trailer Sls Co
365-2871
Truck Lease Corp
365-3715
Edwards Wood Products
Inc 365-0940

Appendix I

EDR Property Tax Map

3705 and 3723 Haven Avenue
3705 Haven Avenue
Redwood City, CA 94063

Inquiry Number: 5204371.6
February 28, 2018

The EDR Property Tax Map Report

EDR® Environmental Data Resources Inc

6 Armstrong Road
Shelton, CT 06484
800.352.0050
www.edrnet.com

EDR Property Tax Map Report

Environmental Data Resources, Inc.'s EDR Property Tax Map Report is designed to assist environmental professionals in evaluating potential environmental conditions on a target property by understanding property boundaries and other characteristics. The report includes a search of available property tax maps, which include information on boundaries for the target property and neighboring properties, addresses, parcel identification numbers, as well as other data typically used in property location and identification.

Thank you for your business.
Please contact EDR at 1-800-352-0050
with any questions or comments.

Disclaimer - Copyright and Trademark Notice

This Report contains certain information obtained from a variety of public and other sources reasonably available to Environmental Data Resources, Inc. It cannot be concluded from this Report that coverage information for the target and surrounding properties does not exist from other sources. **NO WARRANTY EXPRESSED OR IMPLIED, IS MADE WHATSOEVER IN CONNECTION WITH THIS REPORT. ENVIRONMENTAL DATA RESOURCES, INC. SPECIFICALLY DISCLAIMS THE MAKING OF ANY SUCH WARRANTIES, INCLUDING WITHOUT LIMITATION, MERCHANTABILITY OR FITNESS FOR A PARTICULAR USE OR PURPOSE. ALL RISK IS ASSUMED BY THE USER. IN NO EVENT SHALL ENVIRONMENTAL DATA RESOURCES, INC. BE LIABLE TO ANYONE, WHETHER ARISING OUT OF ERRORS OR OMISSIONS, NEGLIGENCE, ACCIDENT OR ANY OTHER CAUSE, FOR ANY LOSS OR DAMAGE, INCLUDING, WITHOUT LIMITATION, SPECIAL, INCIDENTAL, CONSEQUENTIAL, OR EXEMPLARY DAMAGES. ANY LIABILITY ON THE PART OF ENVIRONMENTAL DATA RESOURCES, INC. IS STRICTLY LIMITED TO A REFUND OF THE AMOUNT PAID FOR THIS REPORT.** Purchaser accepts this Report "AS IS". Any analyses, estimates, ratings, environmental risk levels or risk codes provided in this Report are provided for illustrative purposes only, and are not intended to provide, nor should they be interpreted as providing any facts regarding, or prediction orforecast of, any environmental risk for any property. Only a Phase I Environmental Site Assessment performed by an environmental professional can provide information regarding the environmental risk for any property. Additionally, the information provided in this Report is not to be construed as legal advice.

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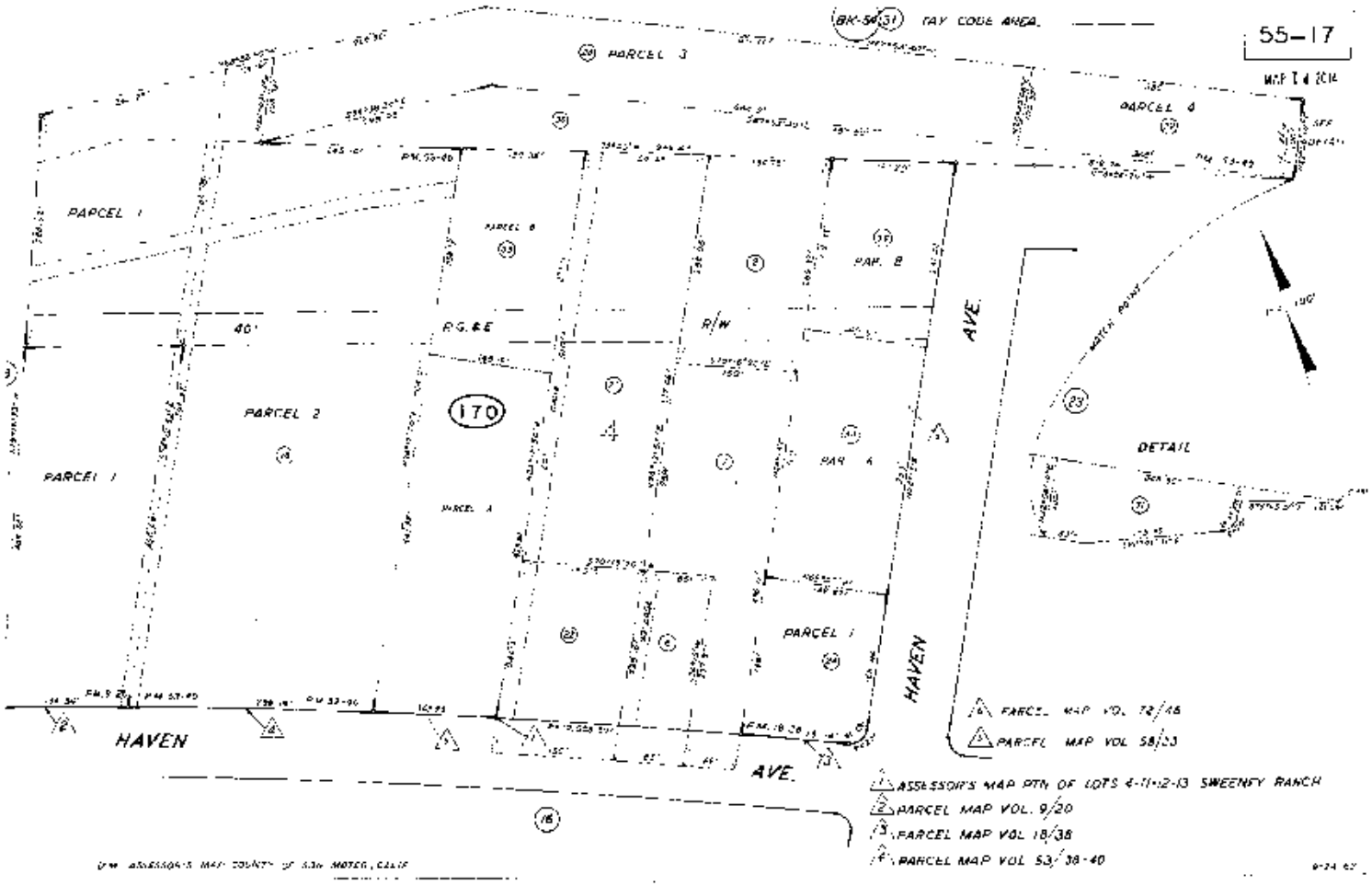
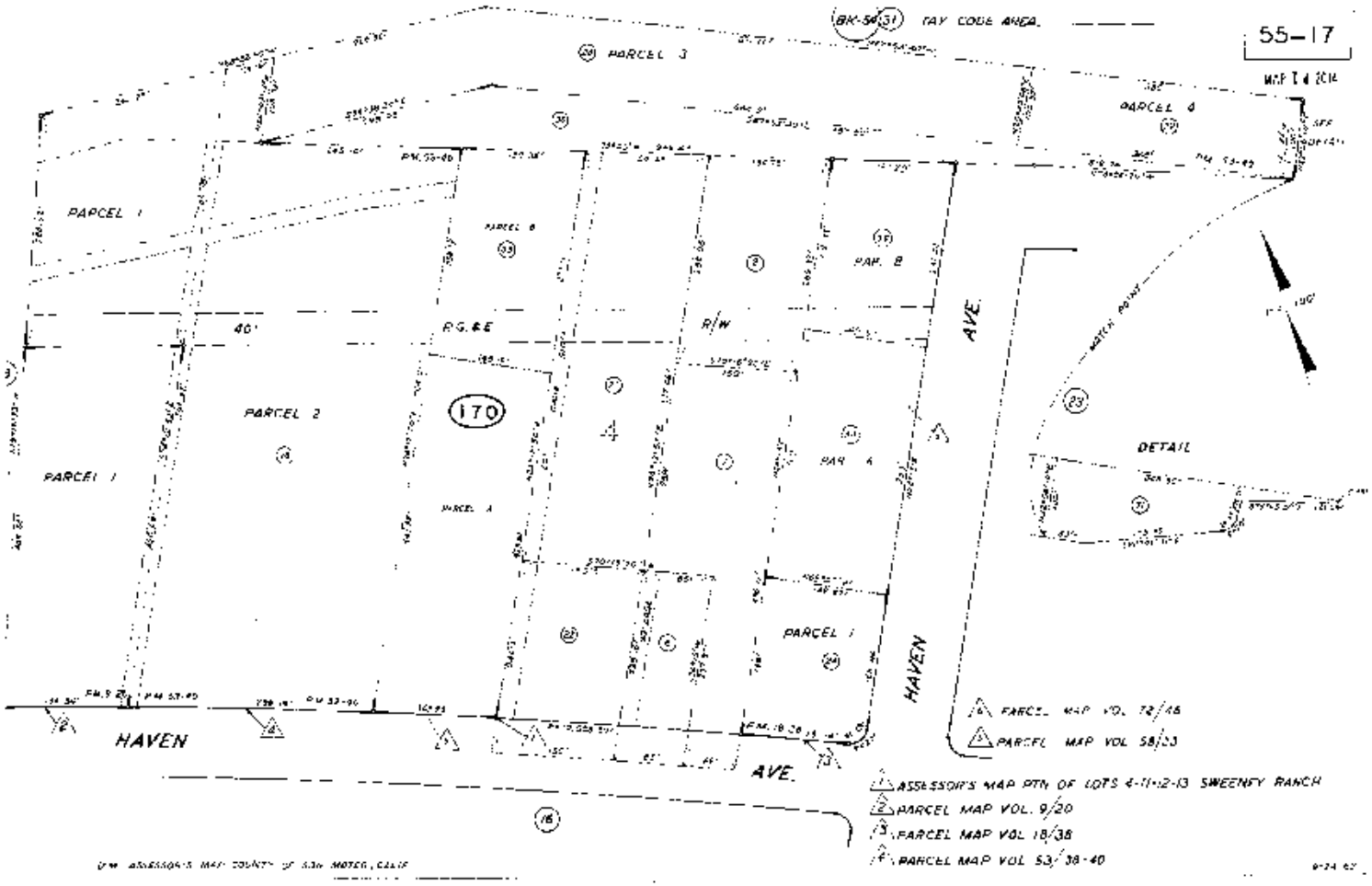

55-17
TAX CODE AREA
PARCEL 3
PARCEL 4
PARCEL 1
PARCEL 2
PARCEL 1
PARCEL B
PAR. B
PAR. A
PARCEL A
P.G.&E.
R/W
40'
170
DETAIL
PARCEL 1
HAVEN
AVE.
HAVEN
AVE.
PARCEL MAP VOL. 72/46
PARCEL MAP VOL 58/33
ASSESSOR'S MAP PTN OF LOTS 4-11-12-13 SWEENEY RANCH
PARCEL MAP VOL. 9/20
PARCEL MAP VOL 18/38
PARCEL MAP VOL 53/38-40


55-17
TAX CODE AREA
PARCEL 3
PARCEL 4
PARCEL 1
PARCEL 2
PARCEL 1
PARCEL 1
PAR. B
PAR. A
PARCEL 1
R.G.&E
R/W
170
40'
DETAIL
HAVEN
AVE.
HAVEN
AVE.
PARCEL MAP VOL. 72/46
PARCEL MAP VOL 58/23
ASSESSOR'S MAP PTN OF LOTS 4-11-12-13 SWEENEY RANCH
PARCEL MAP VOL. 9/20
PARCEL MAP VOL 18/38
PARCEL MAP VOL 53/38-40

Appendix J

Deed Restriction Package

DOC # 1999-135815
08/09/1999 03:24P DR Fee:493.00
Page 1 of 153
Recorded in Official Records
County of San Mateo
Warren Slocum
Assessor-County Clerk-Recorder
Recorded By CHICAGO TITLE INSURANCE COMPANY

Recording Requested By:

Integris/Millenium Joint Venture LLC,
A California Limited Liability Company

When Recorded, Mail To:
Loretta K. Barsamian, Executive Officer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, California 94612

COVENANT AND ENVIRONMENTAL RESTRICTION ON PROPERTY

3695-3723 Haven Avenue
Menlo Park, California

This Covenant and Environmental Restriction on Property (this "Covenant") is made as of the 9th day of Aug., 1999 by Integris/Millenium Joint Venture LLC ("Covenantor") who is the Owner of record of that certain property situated at 3695-3723 Haven Avenue, in the City of Menlo Park, County of San Mateo, State of California, which is more particularly described in Exhibit A attached hereto and incorporated herein by this reference (such portion hereinafter referred to as the "Burdened Property"), for the benefit of the California Regional Water Quality Control Board for the San Francisco Bay Region (the "Board"), with reference to the following facts:

A. The Burdened Property and groundwater underlying the property contain hazardous materials.

B. Contamination of the Burdened Property. It is believed that certain industrial operations caused soil and groundwater at the Burdened Property to be contaminated with halogenated volatile organic compounds, including trichloroethene and vinyl chloride, which constitute hazardous materials as that term is defined in Health & Safety Code section 25260. To mitigate potential exposure to such chemicals, soil excavation, in-situ chemical oxidation, if feasible, and institutional controls, including this Covenant, are to be implemented.

C. Exposure Pathways. The contaminants addressed in this Covenant are present in soil and groundwater on the Burdened Property. Without the mitigation measures described above, exposure to these contaminants could take place via direct contact, resulting in dermal exposure, inhalation, or ingestion by humans. The risk of public exposure to the contaminants has been and will be substantially lessened by the remediation and controls described herein.

D. Adjacent Land Uses and Population Potentially Affected. The Burdened Property is currently vacant but has been used for industrial and commercial uses, and is adjacent to industrial and commercial land uses.

3229 V01

E. Full and voluntary disclosure to the Board of the presence of hazardous materials on the Burdened Property has been made and extensive sampling of the Burdened Property has been conducted.

F. Covenantor desires and intends that in order to benefit the Board, and to protect the present and future public health and safety, the Burdened Property shall be used in such a manner as to avoid potential harm to persons or property that may result from hazardous materials that may have been deposited on portions of the Burdened Property.

ARTICLE I

GENERAL PROVISIONS

1.1 Provisions to Run with the Land. This Covenant sets forth protective provisions, covenants, conditions and restrictions (collectively referred to as "Restrictions") upon and subject to which the Burdened Property and every portion thereof shall be improved, held, used, occupied, leased, sold, hypothecated, encumbered, and/or conveyed. The restrictions set forth in Article III are reasonably necessary to protect present and future human health and safety or the environment as a result of the presence on the land of hazardous materials. Each and all of the Restrictions shall run with the land, and pass with each and every portion of the Burdened Property, and shall apply to, insure to the benefit of, and bind the respective successors in interest thereof, for the benefit of the Board and all Owners and Occupants. Each and all of the Restrictions are imposed upon the entire Burdened Property unless expressly stated in the Risk Management Plan, see below, as applicable to a specific portion of the Burdened Property. Each and all of the Restrictions run with the land pursuant to section 1471 of the Civil Code. Each and all of the Restrictions are enforceable by the Board.

1.2 Concurrence of Owners and Lessees Presumed. All purchasers, lessees, or possessors of any portion of the Burdened Property shall be deemed by their purchase, leasing, or possession of such Burdened Property, to be in accord with the foregoing and to agree for and among themselves, their heirs, successors, and assignees, and the agents, employees, and lessees of such owners, heirs, successors, and assignees, that the Restrictions as herein established must be adhered to for the benefit of the Board and the Owners and Occupants of the Burdened Property and that the interest of the Owners and Occupants of the Burdened Property shall be subject to the Restrictions contained herein.

1.3 Apportionment of Burden Among Multiple Owners. Where ownership of the Burdened Property is held by multiple persons, holding by several titles, the burdens imposed by this Covenant shall be apportioned between them proportionate to the value of the property held by each owner, if such value can be ascertained, and if not, then according to their respective interests in point of quantity. (Cal. Civ. Code § 1467.)

1.4 Incorporation into Deeds and Leases. Covenantor desires and covenants that the Restrictions set out herein shall be incorporated in and attached to each and all deeds and leases of any portion of the Burdened Property. Recordation of this Covenant shall be deemed binding on all successors, assigns, and lessees, regardless of whether a copy of this Covenant and Agreement has been attached to or incorporated into any given deed or lease.

1.5 Purpose. It is the purpose of this instrument to convey to the Board real property rights, which will run with the land, to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials.

ARTICLE II

DEFINITIONS

2.1 Board. "Board" shall mean the California Regional Water Quality Control Board for the San Francisco Bay Region and shall include its successor agencies, if any.

2.2 Improvements. "Improvements" shall mean all buildings, roads, driveways, regradings, and paved parking areas, constructed or placed upon any portion of the Burdened Property.

2.3 Occupants. "Occupants" shall mean Owners and those persons entitled by ownership, leasehold, or other legal relationship to the exclusive right to occupy any portion of the Burdened Property.

2.4 Owner or Owners. "Owner" or "Owners" shall mean the Covenantor and/or its successors in interest, who hold title to all or any portion of the Burdened Property.

2.5 Risk Management Plan. "Risk Management Plan" (also referred to herein as "RMP") shall mean that certain Plan concerning the Burdened Property, prepared by Erler & Kalinowski, Inc. and dated March 12, 1999, and any and all subsequent addenda thereto, on file with the California Regional Water Quality Control Board, San Francisco Bay Region; the San Mateo County Division of Environmental Health and the City of Menlo Park Building Department. Covenantor shall cause the RMP to be filed with the aforementioned three agencies. Owner, at the time of any addenda to the RMP, shall cause the addenda to be filed with the aforementioned three agencies. The RMP is attached hereto and incorporated herein by this reference as Exhibit B.

ARTICLE III

DEVELOPMENT, USE AND CONVEYANCE OF THE BURDENED PROPERTY

3.1 Restrictions on Development and Use. Covenantor promises to restrict the use of the Burdened Property as follows:

a. Development of the Burdened Property shall be restricted to industrial, commercial or office space;

b. No residence for human habitation shall be permitted on the Burdened Property;

c. No hospitals shall be permitted on the Burdened Property;

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d. No schools for persons under 21 years of age shall be permitted on the Burdened Property;

e. No day care centers for children or day care centers for Senior Citizens shall be permitted on the Burdened Property;

f. No Owners or Occupants of the Burdened Property or any portion thereof shall conduct any excavation work on the Burdened Property, except in strict compliance with the RMP or unless expressly permitted in writing by the Board. Any contaminated soils brought to the surface by grading, excavation, trenching, or backfilling shall be managed by Covenantor or his agent in accordance with all applicable provisions of local, state and federal law;

g. All uses and development of the Burdened Property shall be consistent with the Risk Management Plan or any applicable Board Order, each of which is hereby incorporated by reference including future amendments thereto. All uses and development shall preserve the integrity of any cap, any remedial measures taken or remedial equipment installed, and any groundwater monitoring system installed on the Burdened Property pursuant to the requirements of the Board, unless otherwise expressly permitted in writing by the Board;

h. No Owners or Occupants of the Property or any portion thereof shall drill, bore, otherwise construct, or use a well for the purpose of extracting water for any use, including but not limited to, domestic, potable, or industrial uses, unless expressly permitted in writing by the Board;

i. The Owner shall notify the Board of each of the following: (1) The type, cause, location and date of any disturbance to any cap, any remedial measures taken or remedial equipment installed, and of the groundwater monitoring system installed on the Burdened Property pursuant to the requirements of the Board, which could affect the ability of such cap or remedial measures, remedial equipment, or monitoring system to perform their respective functions and (2) the type and date of repair of such disturbance. Notification to the Board shall be made by registered mail within ten (10) working days of both the discovery of such disturbance and the completion of repairs;

j. The Covenantor agrees that the Board, and/or any persons acting pursuant to Board orders, shall have reasonable access to the Burdened Property for the purposes of inspection, surveillance, maintenance, or monitoring, as provided for in Division 7 of the Water Code,

k. No Owner or Occupant of the Burdened Property shall act in any manner that will aggravate or contribute to the existing environmental conditions of the Burdened Property. All use and development of the Burdened Property shall preserve the integrity of any capped areas;

3.2 Enforcement. Failure of an Owner or Occupant to comply with any of the restrictions, as set forth in paragraph 3.1, shall be grounds for the Board, by reason of this Covenant, to have the authority to require that the Owner modify or remove any Improvements constructed in violation of that paragraph. Violation of the Covenant shall be grounds for the Board to file civil actions against the Owner as provided by law.

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3.3 Notice in Agreements. After the date of Recordation hereof, all Owners and Occupants shall execute a written instrument which shall accompany all purchase agreements or leases relating to the property. Any such instrument shall contain the following statement:

> This statement is not a declaration that a hazard exists. The land described herein contains hazardous materials in soils and in the groundwater under the property, and is subject to a deed restriction dated as of July _____, 1999, and recorded on July _____, 1999, in the Official Records of San Mateo County, California, as Document No. _____, which Covenant and Restriction imposes certain covenants, conditions, and restrictions on usage of the property described herein.

ARTICLE IV

VARIANCE AND TERMINATION

4.1 Variance Any Owner or, with the Owner's consent, any Occupant of the Burdened Property or any portion thereof may apply to the Board for a written variance from the provisions of this Covenant.

4.2 Termination Any Owner or, with the Owner's consent, any Occupant of the Burdened Property or a portion thereof may apply to the Board for a termination of the Restrictions as they apply to all or any portion of the Burdened Property.

4.3 Term. Unless terminated in accordance with paragraph 4 2 above, by law or otherwise, this Covenant shall continue in effect in perpetuity.

ARTICLE V

MISCELLANEOUS

5.1 No Dedication Intended. Nothing set forth herein shall be construed to be a gift or dedication, or offer of a gift or dedication of the Burdened Property or any portion thereof to the general public.

5 2 Notices. Whenever any person gives or serves any notice, demand, or other communication with respect to this Covenant, each such notice, demand, or other communication shall be in writing and shall be deemed effective (1) when delivered, if personally delivered to the person being served or official of a government agency being served, or (2) three (3) business days after deposit in the mail if mailed by United States mail, postage paid certified, return receipt requested:

If To: "Covenantor"

Integris/Millenium Joint Venture LLC
Attention: Mr Loren Baxter
16 Pulido Court

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08/08/1999 03:24P
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Danville, California 94526
and

BCMW LLC
Attention: Mr. Blair Walker
597 Daffodil Drive
Benicia, California 94510

If To: "Board"

Regional Water Quality Control Board
San Francisco Bay Region
Attention: Executive Officer
1515 Clay Street, Suite 1400
Oakland, California 94512

5.3 Partial Invalidity. If any portion of the Restrictions or terms set forth herein is determined to be invalid for any reason, the remaining portion shall remain in full force and effect as if such portion had not been included.

5.4 Article Headings. Headings at the beginning of each numbered article of this Covenant are solely for the convenience of the parties and are not a part of the Covenant.

5.5 Recordation. This instrument shall be executed by the Covenantor and by the Executive Officer of the Board. This instrument shall be recorded by the Covenantor in the County of San Mateo within ten (10) days of the date of execution.

5.6 References. All references to Code sections include successor provisions

5.7 Construction. Any general rule of construction to the contrary notwithstanding, this instrument shall be liberally construed in favor of the Covenant to effect the purpose of this instrument and the policy and purpose of the Water Code. If any provision of this instrument is found to be ambiguous, an interpretation consistent with the purpose of this instrument that would render the provision invalid shall be favored over any interpretation that would render it invalid.

5.8 Effective Date. This Covenant, its terms and conditions, and the burdens imposed and the benefits derived therefrom, shall become effective upon Recordation of this Covenant.

IN WITNESS WHEREOF, the parties execute this Covenant as of the date set forth above.

Covenantor:

INTEGRIS/MILLENIUM JOINT VENTURE LLC,
A California Limited Liability Company

BY: _____
GARY WILLIAMS, MEMBER

DATE: 8/9/99

BY: _____
GARY WILLIAMS, MEMBER

DATE: 7/6/99

BCMW, LLC, A California Limited Liability Company

BY: _____
BLAIR WALKER, MEMBER, BCMW, LLC

DATE: 7/2/99

Agency:

STATE OF CALIFORNIA
REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

BY: _____
Acting LAWRENCE P KOLB
TITLE: Executive Officer

DATE: 7/6/99

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08/06/1999 02:24P
OR Page: 7 of 153

STATE OF CALIFORNIA)
) SS.
COUNTY OF ALAMEDA)

On July 6, 1999 before me, Suzanne Muniz

a Notary Public in and for said County and State, personally appeared LAWRENCE P. Kolb

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Suzanne Muniz
Signature of Notary

SUZANNE MUNIZ
COMM. NO. 1182516
NOTARY PUBLIC - CALIFORNIA
ALAMEDA COUNTY
My comm. expires May 03, 2002

STATE OF)
) SS.
COUNTY OF)

On before me,

a Notary Public in and for said County and State, personally appeared

personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

Signature of Notary

EXTNOT1 -09/25/98bk

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06/09/1999 03:24P
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CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California
County of Marin } ss.

On JULY 2, 1999 (Date), before me, RAFAEL CONSING JR (Name and Title of Officer (e.g., "Jane Doe, Notary Public"))

personally appeared BLAIR WALKER (Name(s) of Signer(s))

X personally known to me
☐ proved to me on the basis of satisfactory evidence

to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

RAFAEL CONSING JR.
Commission # 1187674
Notary Public - California
Marin County
My Comm. Expires Jun 20, 2002

Place Notary Seal Above

Rafael Consing Jr.
Signature of Notary Public

OPTIONAL

Though the information below is not required by law, it may prove valuable to persons relying on the document and could prevent fraudulent removal and reattachment of this form to another document.

Description of Attached Document

Title or Type of Document: Covenant, Environment - Restriction on Property

Document Date: 7/2/99 Number of Pages:

Signer(s) Other Than Named Above:

Capacity(ies) Claimed by Signer

Signer's Name:

☐ Individual
☐ Corporate Officer — Title(s):
☐ Partner — ☐ Limited ☐ General
☐ Attorney in Fact
☐ Trustee
☐ Guardian or Conservator
☐ Other:

RIGHT THUMBPRINT OF SIGNER
Top of thumb here

Signer Is Representing:

© 1997 National Notary Association • 9350 De Soto Ave., P.O. Box 2402 • Chatsworth, CA 91313-2402 Prod. No. 5907 Reorder: Cal Toll-Free 1-800-876-6827

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08/08/1999 03:24P
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Order No. 8760436 - AD

EXHIBIT "A"

LEGAL DESCRIPTION

EXHIBIT "A"

CITY OF MENLO PARK

PARCELS 1 AND 2, AS SHOWN ON THAT CERTAIN MAP ENTITLED "PARCEL MAP BEING A RESUBDIVISION OF RECORD OF SURVEY RECORDED IN VOLUME 5, PAGE 89 OF LICENSED LAND SURVEYORS MAPS, BEING A PORTION OF LOT 4 SWEENEY RANCH", WHICH MAP WAS RECORDED DECEMBER 15, 1972, IN BOOK 18 OF PARCEL MAPS, AT PAGE 38, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT A CONCRETE MONUMENT MARKING THE NORTHWESTERLY CORNER OF LOT 4 AS SAID LOT IS SHOWN ON THE MAP ENTITLED, "SWEENEY RANCH SUBDIVISION", FILED IN THE OFFICE OF THE RECORDER OF THE COUNTY OF SAN MATEO ON JUNE 24, 1898, IN BOOK "C" OF MAPS, AT PAGE 36; THENCE FROM SAID POINT OF BEGINNING, SOUTH 88° 56' 15" EAST, A DISTANCE OF 2049.31 FEET; NORTH 89° 41' 15" EAST, A DISTANCE OF 1944.05 FEET; AND SOUTH 73° 03' 30" EAST, A DISTANCE OF 871.52 FEET TO THE TRUE POINT OF BEGINNING; THENCE FROM SAID TRUE POINT OF BEGINNING AND ALONG THE NORTHWESTERLY LINE OF THE LANDS CONVEYED TO HOWARD J. WHITE, III, ET AL, BY DEED RECORDED DECEMBER 17, 1968, IN BOOK 5573, AT PAGE 309, OFFICIAL RECORDS, AND ALONG THE NORTHWESTERLY LINE OF THE LANDS CONVEYED TO HOWARD J. WHITE, III, ET AL, BY DEED RECORDED FEBRUARY 17, 1969, IN BOOK 5599, AT PAGE 525, OFFICIAL RECORDS, AND THE NORTHWESTERLY LINE OF THE LANDS CONVEYED TO HUETTIG & SCHROMM INC., A CALIFORNIA CORPORATION, ET AL, BY DEED RECORDED OCTOBER 20, 1967, IN BOOK 5380, AT PAGE 521, OFFICIAL RECORDS, SOUTH 24° 13' WEST, 719.33 FEET TO THE NORTHEASTERLY LINE OF THE LANDS CONVEYED TO THE CITY OF MENLO PARK BY DEED RECORDED JUNE 28, 1963, IN BOOK 4491, AT PAGE 68, OFFICIAL RECORDS; THENCE ALONG THE LANDS SO CONVEYED TO THE CITY, EASTERLY ALONG THE ARC OF A CURVE TO THE RIGHT HAVING A RADIUS OF 10,508.50 FEET, A CENTRAL ANGLE OF 0° 42' 54", AN ARC DISTANCE OF 131.14 FEET; THENCE EASTERLY AND NORTHERLY ALONG THE ARC OF A CURVE TO THE LEFT, SAID CURVE HAVING A RADIUS OF 20 FEET, THROUGH A CENTRAL ANGLE OF 86° 36' 05", AN ARC DISTANCE OF 30.23 FEET TO THE WESTERLY LINE OF THE LANDS CONVEYED TO THE CITY OF MENLO PARK BY DEED RECORDED JUNE 28, 1963, IN BOOK 4491, AT PAGE 65, OFFICIAL RECORDS; THENCE ALONG SAID WESTERLY LINE, NORTH 24° 13' EAST, 709.88 FEET TO THE NORTHERLY LINE OF THE AFORESAID LANDS CONVEYED TO HOWARD J. WHITE, III, ET AL, BY DEED RECORDED DECEMBER 17, 1968, IN BOOK 5573, AT PAGE 309, OFFICIAL RECORDS; THENCE NORTH 73° 03' 30" WEST ALONG SAID NORTHERLY LINE, 150.89 FEET TO THE TRUE POINT OF BEGINNING.

ASSESSOR'S PARCEL NOS. 055-170-240
055-170-250

JOINT PLANT NOS. 055-017-170-24.00A
055-017-170-25.00A

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1989-135415
09/09/1989 03:24P
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EXHIBIT "B"

APPENDIX C

RISK MANAGEMENT PLAN

3695 - 3723 HAVEN AVENUE
MENLO PARK, CALIFORNIA

Prepared by:

Erler & Kalinowski, Inc.
1730 South Amphlett Blvd., Suite 320
San Mateo, CA 94402

12 March 1999
EKI 960007.07

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08/09/1999 03:24P
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RISK MANAGEMENT PLAN

3695 - 3723 Haven Avenue
Menlo Park, California

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RISK MANAGEMENT PLAN

3695 - 3723 Haven Avenue
Menlo Park, California

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RISK MANAGEMENT PLAN

3695 - 3723 Haven Avenue
Menlo Park, California

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LIST OF ATTACHMENTS

A. Human Health Risk Assessment (Appendix A from Feasibility Study/Remedial Action Plan, dated 12 March 1999)

1. INTRODUCTION

This Risk Management Plan is intended to address residual concentrations of chemicals of concern in environmental media at the 3695-3673 Haven Avenue property located in Menlo Park, California (the "Site"; Figure 1). The term Site, as used in this Risk Management Plan, refers to the entire property at the address 3695 -3723 Haven Avenue, Menlo Park, California and any parcels or subdivided parcels that may result from sale of portions of the current property to other owners. Mitsubishi Silicon America ("MSA"), the present owner, has made the property available for sale in whole or in part. Because current zoning of the Site is industrial, the Risk Management Plan contemplates redevelopment of the Site for a variety of industrial/commercial purposes.

The Risk Management Plan provides a decision framework to manage residual chemicals [(i.e., halogenated volatile organic compounds ("VOCs")] in soil and groundwater at the Site in a manner that is: (1) satisfactory to the RWQCB, as lead agency, and other involved regulatory agencies with oversight authority, as required, (2) protective of human health and the environment, and (3) consistent with planned land uses. This Risk Management Plan contains the following:

- description of the Site background, including a brief history of Site usage, discussion of environmental investigations and remedial actions performed at the Site, and a summary of identified remaining environmental conditions;
- summary of the risk assessment that was conducted to evaluate potential human health impacts at the Site;
- short-term risk management plan to be implemented during construction at the Site, which includes worker health and safety planning requirements and construction impact mitigation measures; and,
- non-construction risk management plan for mitigation of potential long-term risks to human health and the environment, which includes a provision to ensure long-term compliance with this Risk Management Plan.

1.1 Representations

This Risk Management Plan is based on a current understanding of environmental conditions at the Site as well as current environmental policies, laws, and regulations. If environmental conditions are found to differ from those described herein or in the environmental reports referenced in Section 2.3.1, or if environmental policies, laws, and regulations change, then the Risk Management Plan may have to be modified to accommodate those differing conditions. No representation is made by any present or future owner or developer of the Site or their consultants, agents, and contractors as to the

applicability of this Risk Management Plan with respect to future environmental policies, laws, and regulations.

1.2 Owner Responsibilities

All owners, developers, and any other entities with responsibility for Site activities shall have a continuing obligation to:

- determine the adequacy of this Risk Management Plan in light of the conditions actually encountered and the intended land use;
- comply with policies, laws, and regulations applicable at the time; and,
- establish a notification procedure and protocols for future sub-surface activity to ensure long-term compliance with the Risk Management Plan.

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2. SITE BACKGROUND

This section describes the Site background, including the previous Site uses and the geology and hydrology at the Site.

2.1 Site Setting

The Site is located in an industrial section of east Menlo Park, adjacent to San Francisco Bay (Figures 1 and 2). Directly to the east of the Site is a channelized creek that runs to the Bay via Flood and Westpoint Sloughs. A public storage facility, salt evaporators, and Bayfront Park (the former Menlo Park landfill) are located north of the Site. West of the Site is a yard that contains used equipment and materials, and to the south, across Haven Avenue, are two-story buildings that are occupied by light industrial and commercial tenants. Figure 2 is an aerial photograph taken during early October 1998 of the Site and vicinity, prior to demolition of "Building 2".

2.2 Site History

The Site, as defined in Chapter 1, refers to the entire property at the address 3695 -3723 Haven Avenue, Menlo Park, California. Currently, the MSA Property is occupied by two vacant buildings ("Building 1" and "Building 3" in Figure 2) and covered by asphalt or concrete pavement with narrow planted areas along Haven Avenue.

Based on a review of historical aerial photographs performed by EKI, the MSA Property was formerly bare land with a few scattered buildings and cars prior to its development in 1969. In the 1969 aerial photograph, the MSA Property was developed with three buildings, two of which are standing as of this writing.

Based on a review of file information from the San Mateo County Department of Health Services and files provided by MSA, uses of the MSA Property have included:

- the fabrication and manufacturing of magnetic materials and electronic devices;
- manufacturing and fabrication of electronic components;
- manufacturing of polished silicon wafers;
- distribution of electronic equipment;
- warehousing and installation of automobile wheels and automotive accessories; and,
- a musical recording studio.

One of the prior tenants of the MSA Property was Siltec Corporation, a corporate predecessor to MSA. From 1970 through 1989, Siltec Corporation used the MSA

Property as manufacturing facility for polished silicon wafers, and as office space. Other more recent tenants of the MSA Property have included KOB Auto Inc., Nor Cal Tire and Wheel, Multiplex Studios, Huettig & Schromm Landscape Contractors, and BSG Associates, Inc.

During October 1998, the middle of the three buildings originally built at the Site during 1969 was demolished. The purpose of demolishing this building (Building 2) was to allow excavation of Site soils with elevated concentrations of halogenated VOCs.

2.3 Summary of Site Investigations and Remedial Actions

This section summarizes:

- the reports submitted to the RWQCB regarding investigative work, risk assessments, treatability studies, and work plans describing future work to be performed at the Site;
- the subsurface geology at the Site;
- the local hydrology;
- the chemicals detected in both soil and groundwater at the Site; and,
- the remedial actions performed or planned for the Site.

2.3.1 Documents Summary

The following documents describe the results of previous investigations and remedial, treatability, and risk assessments performed at the Site:

- *Feasibility Study and Remedial Action Plan, 3695 - 3723 Haven Avenue, Menlo Park, California*, Erler & Kalinwoski, Inc., 10 March 1999 (EKI 1999a)
- *In Situ Chemical Oxidation Bench-Scale Treatability Test Results, 3695-3723 Haven Avenue, Menlo Park, Californi*- Erler & Kalinowski, Inc., 8 January 1999 (EKI 1999b)
- *Revised Risk Calculations and Cleanup Goals for Source Area Soil Excavation, 3695-3723 Haven Avenue, Menlo Park, California*, Erler & Kalinowski, Inc., 12 February 1999 (EKI 1999c)
- *Results of Sampling and Analysis, 3645 and 3665 Haven Avenue, Menlo Park, California*, Erler & Kalinowski, Inc., 30 June 1998 (EKI 1998a)
- *Results of Sampling and Analysis, Vicinity of 3695-3723 Haven Avenue, Menlo Park, California*, Erler & Kalinowski, Inc., 28 October 1998 (EKI 1998b)

Directly underlying the A-zone are sediments that are generally coarser grained, consisting of sand and gravel. For the purposes of this report, these sediments that occur between approximately 15 and 38 feet bgs are referred to as the "B-zone".

2.3.3 Hydrology

During the on-Site and off-Site investigations, selected groundwater samples from borings and monitoring wells were measured for density, total dissolved solids, and chloride. The purpose of collecting such data for groundwater was to allow generalized mapping of the various water bodies that are present along the bay margin: fresh water, salt water associated with the Bay, and brines associated with the evaporation ponds. The available data indicate that brines have apparently leaked from salt evaporation ponds and have intruded primarily into the B-zone. Landward incursion of brines is pronounced beneath the Site as well as at the adjacent Fedex Facility to the east. It appears that the presence of brines in the subsurface has served as a barrier, limiting off-Site migration of chemicals of concern (see Section 2.3.4).

During drilling at the Site, groundwater has been encountered in the subsurface at depths of approximately 8 to 11 feet bgs in fine-grained sediments of the A-zone (EKI 1997a). During October 1998, the piezometric surface for the A-zone occurred at elevations of approximately 0.8 to 1.2 feet relative to the National Geodetic Vertical Datum 1929 (EKI 1999a). The groundwater gradient was to the southeast with a magnitude of approximately 0.003 ft/ft (EKI 1999a). During October 1998, the piezometric surface for the B-zone, corrected for variable density, occurred at elevations of 1.3 to 1.9 feet, relative to the National Geodetic Vertical Datum 1929. The groundwater gradient for the B-zone was generally to the north with a magnitude of approximately 0.003 ft/ft (EKI 1997a). These data indicate that there is a relative upward groundwater gradient at the Site. It should be noted that the local groundwater gradient is strongly affected by density variations. Thus, changes in operation of the nearby salt evaporation ponds could result in changed groundwater gradients.

2.3.4 Chemicals of Concern Detected in Soil and Groundwater

The primary chemicals of concern ("COCs") at the Site, based on prevalence in soil and groundwater at the Site and the results from the risk assessment, are halogenated VOCs. The VOCs that contribute most to the estimated risks at the Site are trichloroethene ("TCE") and vinyl chloride ("VC"). Tables 1 and 2 list all the VOCs that have been detected in soil or groundwater samples collected from the Site. The VOCs that have been detected in more than ten groundwater samples collected at the Site include, in order of decreasing frequency of detection:

- TCE;
- cis-1,2-dichloroethene ("cis-1,2-DCE");
- chloroform;
- 1,1,2-trichloro-1,2,2-trifluoro ethane ("CFC-113");
- carbon tetrachloride; and
- VC.

TCE and CFC-113 are believed to have been used historically at the Site. Further, the cis-1,2-DCE and VC found at the Site are presumed to be daughter products of naturally occurring reductive dechlorination of TCE in the soil and groundwater.

TCE is present in groundwater samples collected from the Site in the vicinity of former Building 2 at concentrations that suggest the presence of separate-phase dense non-aqueous phase liquid ("DNAPL"). The presence of separate-phase DNAPL can result in the long-term persistence of VOCs in groundwater. Furthermore, DNAPL liquids can, in some instances, migrate to deeper depths if remedial activities or other subgrade activities penetrate confining media or alter the hydrologic conditions.

Carbon tetrachloride has been detected at significantly higher concentrations in groundwater samples collected from the adjacent property to the west. The source of carbon tetrachloride is unknown but appears to be up-gradient of the Site. The chloroform found in groundwater samples collected on-Site may be a product of the naturally occurring degradation of the carbon tetrachloride.

2.3.5 Soil Remedial Actions

As discussed in the FS/RAP, source area soil near the northwestern corner of the former Building 2 will be excavated to a depth of approximately 6 feet during 1999. The extent of planned excavation is shown on Figure 3 (EKI 1998c). The remedial excavation will remove soil known to contain concentrations of COCs above the risk-based action levels listed in Table 3. Results of the remedial excavation will be documented in the Remedial Action Completion Report anticipated to be submitted to the RWQCB as described in Section 2.5.1.

After source area soil is excavated, clean backfill will be placed in the excavation. A high-density polyethylene ("HDPE") liner will be installed as a vapor barrier in the backfill at approximately 4 feet bgs. The vapor barrier will reduce the potential for the clean backfill to be contaminated by VOC vapors emanating from the underlying groundwater. The vapor barrier will also reduce the potential for migration of VOC vapors from groundwater into any buildings that may be constructed in that location in the future, thereby further reducing the potential future risks at the Site.

As discussed below, future owners of the property will be required to protect the integrity of the vapor barrier by not penetrating through the barrier during construction or maintenance activity at the Site unless (a) damage to the barrier can be effectively repaired, or (b) the underlying groundwater no longer contains VOCs above risk-based action levels.

2.3.6 Groundwater Remedial Actions

As discussed in the FS/RAP, a pilot test is planned to evaluate the efficacy of ICO by injecting potassium permanganate ("Oxidant") into saturated zone soils and groundwater

near the northwestern corner of the former Building 2 (EKI 1998d). The oxidant is intended to oxidize halogenated VOCs in soil and groundwater to less toxic daughter products. If the pilot test is successful, full-scale ICO treatment will be performed as described in the FS/RAP.

2.4 Remaining Environmental Conditions

This Section describes the available information regarding the residual concentrations of VOCs in soil, groundwater, and soil gas beneath concrete slabs. For the purposes of this document, it is assumed that soil excavation activities, including removal of the concrete slab and installation of a vapor barrier, as proposed in EKI (1998e) will have been executed.

2.4.1 Residual Concentrations of Halogenated VOCs in Soil

Figure 3 shows the locations of soil borings drilled in and around the source area at the northwestern corner of the former Building 2 as well as the proposed extent of the remedial soil excavation. Table 1 summarizes the data for soil samples collected from the area outside the remedial excavation area and represents the available data regarding residual concentrations of VOCs in Site soils post-excavation. The concentrations of TCE and VC in post-excavation Site soils are shown on Figures 4 and 5, respectively.

For the purposes of this Risk Management Plan, it has been assumed that there may exist on the Site areas of contamination undetected by previous investigations. Therefore, risk management for all future activities involving disturbance of soil at the Site will be performed under the assumption that VOCs may be present in soil, as discussed further in Chapter 4.

2.4.2 Residual Concentrations of Halogenated VOCs in Groundwater

Figures 6, 7, and 8 show the extents of TCE, VC, and carbon tetrachloride, respectively, in groundwater at the Site. Table 2 summarizes data for groundwater samples collected from the Site.

Elevated concentrations of VOCs have been detected in groundwater in the vicinity of the northern portion of former Building 2. The area of groundwater containing VOCs in excess of the risk-based action levels for groundwater is shown on Figure 9. For the purposes of this Risk Management Plan, this area is defined as the Groundwater Risk Area.

2.4.3 Possible Presence of Chlorinated VOCs Under Concrete Slabs

The VOCs detected in soil gas during the remedial investigation include trichloroethene, cis-1,2-dichloroethene, CFC-113, chloroform, and benzene (EKI 1997a). Trichloroethene, cis-1,2-dichloroethene, and CFC-113 are the three chemicals detected at highest concentrations (EKI 1997a). Elevated concentrations of these chemicals were

detected in soil gas from the vicinity of the northwestern corner of the former Building 2, both inside and outside of the former building.

It should be noted that some of the soil gas samples from locations within the former building were collected within the gravel base beneath the building slab. It is possible that the concentrations of chemicals detected in these samples reflect some relatively increased lateral migration because of the permeable gravel base. It is possible that, in the future, without proper engineering controls, VOCs could migrate from groundwater into permeable subgrade material beneath new structures. Chapter 5 discusses the use of engineering controls to prevent this type of VOC migration.

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3. SUMMARY OF HUMAN HEALTH RISK ASSESSMENT

A human health risk assessment was undertaken to:

- Evaluate potential impacts to human health by chemicals of concern ("COCs") present in soil and groundwater at the Site; and
- Develop risk-based action levels for soil and groundwater at the Site.

The risk assessment is included in Attachment A.

Note that baseline risks at the Site were calculated previously for development of risk-based action levels for soil excavation using data collected prior to April 1998 (EKI 1998c; EKI 1999b). However, some additional groundwater data were collected for the Site after April 1998. Therefore, the data set used herein and in Appendix A to calculate the baseline risk at the Site has been updated to include the soil and groundwater data for the Site available as of February 1999. Also, the proposed risk-based action levels have now been developed to consider VOCs in both soil and groundwater, and one of the physical assumptions (soil saturated porosity) for the Site has been modified.

The risk assessment was conducted assuming hypothetical exposure scenarios for future occupants of the Site. Occupants were subdivided into several receptor populations based on their expected locations and activities. Each group was assumed to be subjected to different concentrations of chemicals for different amounts of time. All assumptions used in the risk assessment are quantified in the text and tables included in Attachment A.

Baseline risks were calculated for the following three hypothetical receptor populations at the Haven Avenue Site:

- Future commercial/industrial building occupants, who will work indoors on-Site over a long period of time ("Indoor Workers");
- Workers involved in the construction of new buildings or subsurface utilities on-Site, who will occupy the Site for much more limited periods ("Construction Workers"); and,
- Future maintenance personnel such as groundskeepers, who will labor primarily outdoors over a long period of time ("Maintenance Workers").

3.1 Risk Calculations

As discussed in the risk assessment (Attachment A), summation of Hazard Indices over all pathways and chemicals gives the non-carcinogenic effects Hazard Index for each hypothetical receptor population. A total Hazard Index less than or equal to one indicates

that the population will not be exposed to the chemical beyond a dosage considered safe for non-carcinogenic adverse health affects.

Summation of the estimated incremental carcinogenic risk from all carcinogenic chemicals over all pathways valid for a particular receptor population gives an estimated overall incremental excess carcinogenic risk ("Cancer Risk") for the hypothetical receptor population (Appendix A). The National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR §300) mandates an acceptable range of Cancer Risk between 10^{-4} (1 in 10,000) and 10^{-6} (1 in 1,000,000). California law requires notification of on-Site workers if the Cancer Risk is estimated to exceed 10^{-5} (1 in 100,000) (California Code of Regulations ("CCR") Title 22, Section 12703). The targeted maximum Cancer Risk of 10^{-5}, used in the risk assessment for the Site, satisfies both sets of regulations.

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3.2 Estimated Baseline Risks

The estimated baseline risks for the three hypothetical future populations at the Site are summarized below based on the results of the risk assessment in Attachment A. Several references are made below to tables in Attachment A (e.g., "Table A-19").

Estimated baseline Hazard Indices and Cancer Risk for Indoor Workers are listed in Table A-19. Non-carcinogenic hazard for this population is calculated to have a Hazard Index equal to 0.08, less than the maximum target value of 1. The estimated Cancer Risk is 1.9×10^{-5}, above the maximum target level of 10^{-5}. The most significant chemical/pathway combination for Indoor Workers, in terms of the estimated Cancer Risk, is inhalation of TCE and VC evaporating from groundwater.

Estimated baseline Hazard Indices and Cancer Risks for Maintenance Workers through all pathways are listed in Table A-20. Non-carcinogenic hazard for this population is calculated to be 0.03, less than the maximum target level of 1. The estimated Cancer Risk is 4.5×10^{-6}, below the maximum target level of 1.0×10^{-5}. The most significant chemical/pathway combination for the Maintenance Worker receptor population is inhalation of VC evaporating from soil.

Estimated baseline risk and Hazard Indices and Cancer Risk for all Construction Worker exposure pathways are listed in Table A-21. The estimated Cancer Risk is 1.0×10^{-7}, less than the target level of 10^{-5}. Non-carcinogenic hazard for this population is calculated to be 0.01, less than the target level of 1. The most significant chemical/pathway combination, both in terms of Cancer Risk and non-carcinogenic health hazard for the Construction Worker receptor population is inhalation of VC evaporating from soil.

3.3 Calculation of Risk-Based Action Levels for Soil and Groundwater

Using the baseline risks calculated for the hypothetical receptor populations at the Site, risk-based action levels for soil and groundwater have been calculated, as discussed below. Risk-based action levels have been calculated considering potential exposures to the future hypothetical receptor populations, i.e., Maintenance Workers, Construction Workers, and Indoor Workers.

Risk-based action levels (cleanup goals) for soil and groundwater were calculated to apportion post-remediation risk such that Cancer Risk to the Indoor Worker, Construction Worker, and Maintenance Worker populations are each at or below 10^{-5}, and Hazard Indices are at or below 1.0. The method used for apportioning risk was to allocate most of the risk to the more hazardous chemicals and those more commonly found at the Site. This approach minimizes the volume of material to be remediated, while keeping future hypothetical populations' exposure to hazardous chemicals below the target maximum risk levels.

Tables 3 and 4 (and Tables A-22 and A-23 in Attachment A) list the calculated risk-based action levels for soil and groundwater, respectively. For soil, the risk-based action levels for TCE and VC are 3.2 mg/kg and 0.075 mg/kg, respectively. For groundwater, the risk-based action levels for TCE and VC are 8,000 ug/L and 500 ug/L, respectively, and carbon tetrachloride and chloroform have action levels of 2,600 ug/L and 2,000 ug/L, respectively.

Tables A-24, A-25, and A-26 show the estimated Hazard Indices and Cancer Risks for the receptor populations, i.e., Indoor Workers, Maintenance Workers and Construction Workers, assuming VOCs are present in soil and groundwater at the risk-based action level concentrations. For each population, the estimated total Hazard Index is less than 1 and the estimated cumulative Cancer Risk is less than or equal to 10^{-5}. Therefore, the risk-based action levels result in an acceptable level of risk for the future potentially exposed populations.

Future collection and analysis of soil or groundwater samples from the Site could potentially indicate the presence of chemical concentrations different from the current dataset. In this case, risk-based action levels for the Site may be recalculated to reflect the improved understanding of the distribution and concentrations of chemicals in Site soil or groundwater.

4. RISK MANAGEMENT DURING CONSTRUCTION

Risk management during construction activities at the Site involves precautions that will be taken by the property owner to mitigate risks to human health and the environment from possible exposure to chemicals of concern during various activities that involve disturbing soil at the Site. As discussed in Section 2.4.1, it is assumed for the purposes of this Risk Management Plan that residual VOCs may be present in soils located anywhere on-Site. Therefore, construction-related risk management procedures should be evaluated and implemented by the property owner, its contractors, agents, and consultants any time work will be performed that involves disturbing soil at the Site.

When establishing the procedures and precautions to be implemented, the evaluation should include, but not necessarily be limited to, the following:

- Establishing a notification procedure and protocols for future sub-surface activity to ensure long-term compliance with this Risk Management Plan;
- Establishment of health and safety training, worker protection procedures, and worker notification procedures for workers who may be exposed to VOC-containing soil or groundwater during any subsurface works;
- Use of construction methods that ensure that conduits to deeper groundwater zones are not created; and,
- Establishment of soil and groundwater management procedures to:
  (1) appropriately manage soil and groundwater encountered during construction;
  (2) characterize soil and groundwater that have indicators of VOC contamination;
  (3) manage potential VOC vapors that could emanate from excavated soils or groundwater;
  (4) properly store and dispose of soil and groundwater; and
  (5) control or prevent storm water from contacting stored soils.

4.1 Site-Specific Health And Safety Worker Planning Requirements

Considering that VOCs may remain in soil, groundwater, and soil gas at the Site following completion of the remedial actions, preparation and implementation of health and safety plans ("HSPs") will be required for activities at the Site during which workers may encounter VOCs in soil, groundwater, or soil gas during subgrade work. Separate HSPs may be prepared for different types of work, i.e., depending on the nature of the work and the estimated potential for exposure to VOCs based on the available data. It will be the responsibility of the property owner to evaluate work activities at the Site and identify those activities that require preparation of a HSP, subject to the constraints described below.

It will be assumed for the preparation of HSPs that VOCs may be present in soil throughout the Site. Therefore, subgrade work activities requiring a HSP include, but are not limited to, (a) excavation and grading during demolition or construction activity, (b) subgrade utility installation or repair, (c) entrance into subgrade confined spaces, such as utility vaults or manholes, and (d) landscaping work that disturbs native soil, including but not limited to activities such as tree and shrub planting, sprinkler installation, and soil relocation.

A HSP is not required by this RMP for activities where no more than the upper 12 inches of soil will be disturbed if the work is in an area where clean fill soil has been imported during 1999 or later (e.g., new topsoil in landscaped areas, backfill installed in the source area soil excavation). For those activities, however, a HSP should still be prepared if required by applicable laws or regulations or if determined appropriate by the responsible party.

A HSP is not required by this RMP for workers who will perform activities at the Site without disturbing soil (e.g., carpenters, painters, carpet installers). When constructed, buildings and cover materials such as roads and walk-ways will prevent exposure to VOC-containing soil. It remains the responsibility of the property owner to determine if a health and safety plan is required for compliance with other federal, state, and local requirements.

4.2 Site-Specific Health And Safety Plans

Each HSP prepared pursuant to the requirements of this RMP will be required to address potential worker exposures to VOCs that could result from the work if VOCs are encountered in soil, groundwater, or soil gas during the work. To the extent required by applicable law, each HSP will be prepared in accordance with Federal and California Occupational Safety and Health Administration ("OSHA") standards for hazardous waste operations (29 CFR 1910.120 and 8 CCR 5192), or applicable regulations promulgated in the future. The HSP should also include but not be limited to a description of health and safety training requirements for the affected workers, a description of the level of personal protective equipment to be used, if any, air quality monitoring plans if necessary, and any other applicable precautions to reduce potential exposure to VOCs to acceptable levels.

4.3 Construction Impact Mitigation Measures

This section outlines measures that should be considered to mitigate potential impacts to human health and the environment during construction at the Site. The need to implement any active measures should be identified in a Construction Impact Mitigation Plan to be prepared by the property owner or its agent. Identified mitigation measures should be implemented during construction. At a minimum, measures to be considered for implementation should include:

- Management of soil;

- Management of groundwater (e.g., during excavation dewatering);
- Preventing creation of migration pathways for contamination to deeper aquifer zones;
- Protection of the vapor barrier installed by MSA in the source area soil excavation backfill (see Section 2.3.5); and
- Protection of groundwater monitoring wells at the Site.

4.3.1 Soil Management Plan

The Construction Impact Mitigation Plan should include a section that establishes procedures for safely managing excavated soil. The soil management plan should consider, at a minimum, the following:

- Methods for the safe excavation and on-Site storage of removed soil;
- Methods for screening excavated soil for the presence of VOCs, as discussed in Section 4.3.1.1;
- Methods for preventing exposure to VOC vapors that may emanate from excavated soil;
- Methods for controlling storm water runoff such that contact with excavated soils is eliminated; and
- Procedures for characterizing and properly disposing excavated soil.

4.3.1.1 Soil Screening Methodology During Construction

During future excavation of soil, an appropriate field instrument should be used during the excavation to help determine if VOCs are present in the soil. VOC screening measurements should be taken periodically as soil is excavated at the Site. A soil screening plan also should be developed as part of the Site-specific health and safety plan generally described in Section 4.2. The soil screening plan should describe procedures for screening soil for the presence of VOCs and action levels for terminating work activities or upgrading worker personal protective equipment. Elevated VOC screening readings may be an indication of VOC contamination in soil.

4.3.1.2 Management of Soil with Indications of VOC Contamination

Contingency protocols should be included in the Construction Impact Management Plan for management of soils should VOC screening indicate the presence of VOC contamination. These contingency protocols should include methods for safely stockpiling soil until the actual concentrations of VOCs in soil are identified and, based

on regulations governing management of excavated soil, an appropriate management method is determined. Excavated soil should be stored in a manner so as to limit access to and contact by unauthorized personnel and to minimize contact with storm water.

4.3.2 Groundwater Management Plan

If construction at the Site is performed such that groundwater will be removed, a groundwater management plan should be included in the Construction Impact Mitigation Plan. The groundwater management plan should, at a minimum, consider implementing methods in accordance with applicable regulations to perform the following:

- safely remove and store groundwater during construction;
- limit exposure to VOC vapors that may emanate from groundwater; and
- characterize and properly dispose of stored groundwater.

4.3.3 Use Of Construction Methods that Minimize the Potential for Creating Vertical Conduits

As discussed in Section 2.6.2, residual concentrations of VOCs currently exist in shallow groundwater at concentrations that suggest the presence of separate-phase DNAPL. The top of this shallow groundwater zone is typically encountered at a depth of approximately 6 to 8 feet bgs (EKI 1997a). DNAPLs can, in some instances, migrate to deeper depths if conduits are created in confining media or hydrologic conditions are altered.

If in the future chemical concentrations in groundwater suggest the presence of DNAPL, construction activities should be conducted such that the potential for DNAPL migration is limited. For example, penetrations through the bottom of the B-zone at the Site into deeper aquifers could potentially provide a conduit for the migration of groundwater containing elevated concentrations of VOCs to deeper aquifers that are currently not impacted. A specific example of a penetration to a deeper aquifer is the installation of pilings for the foundation of new construction.

Penetrations to below the B-zone will not be allowed in areas where VOCs are present in groundwater above California Maximum Contaminant Levels ("MCLs") for drinking water, unless (a) sufficient precautions are taken to prevent migration of impacted groundwater to deeper groundwater zones, and (b) RWQCB concurs that the design is adequate to prevent impacts to deeper groundwater.

4.3.4 Protection of Vapor Barrier

A vapor barrier will be installed at approximately 4 feet bgs in the backfill for the source area soil excavation. The barrier is designed to prevent possible migration of VOC vapors from underlying groundwater into the clean backfill. The barrier would also reduce the rate at which VOCs from groundwater could migrate into any overlying

structures. Owners of the property are required to protect the integrity of the vapor barrier by not penetrating through the barrier during construction or maintenance activity at the Site unless (a) damage to the barrier can be effectively repaired, or (b) the underlying groundwater no longer contains VOCs above risk-based action levels.

4.3.5 Protection of Monitoring Wells

It is anticipated that selected existing groundwater monitoring wells at the Site will be required for future groundwater monitoring. Existing monitoring wells at the Site include monitoring wells MW-1, MW-2, MW-3, MW-4, MW-5B, MW-6B, and MW-7B. Of these, monitoring wells MW-2, MW-5B, MW-6B, and MW-7B are planned for a future groundwater monitoring program. In addition two additional on-Site wells, MW-8 and MW-9 are planned for installation and monitoring. Existing and proposed on-Site monitoring wells are shown on Figure 10.

As long as groundwater monitoring is required by the RWQCB or other regulatory agency, construction procedures should be implemented to prevent accidental damage to the required groundwater monitoring wells. With the approval of the RWQCB, groundwater monitoring wells may be abandoned and replaced with new groundwater monitoring wells at a different locations.

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5. DESIGN CONSIDERATIONS FOR NEW CONSTRUCTION

Based on the results of the human health risk assessment (Chapter 3), the highest identified risk to indoor workers at the Site is exposure to VOCs migrating into enclosed spaces. No buildings currently exist over the Groundwater Risk Area, discussed in Section 2.4.2. Unless it is demonstrated that VOC concentrations in groundwater are less than risk-based action levels, any new buildings should be designed so that migration of VOCs into new buildings is limited. Materials and methods (e.g., liners, sub-slab aeration, low permeability concrete, crack sealants) are available to restrict vapor intrusion through building floors. At the time of building design, a professional engineer experienced in this type of work should be consulted to design appropriate barriers to prevent the potential migration of VOCs into new buildings.

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6. NON-CONSTRUCTION RISK MANAGEMENT

This risk management plan also addresses precautions that should be implemented to mitigate long-term risks to human health and the environment related to exposure to COCs during periods of normal, non-construction activity. Any construction that will disturb the soil, building foundations, or pavement should be completed in a manner that is consistent with Chapters 4 and 5 and applicable environmental policies, laws, and regulations.

Components of the risk management plan for non-construction activities are as follows:

- Ensuring that future land uses are consistent with the commercial/industrial uses assumed under this Risk Management Plan;
- Monitoring groundwater at the perimeter of the Groundwater Risk Area to monitor for possible future expansion of the Groundwater Risk Area, unless VOC concentrations in groundwater samples collected in all on-Site wells are less than risk-based action levels;
- Prohibiting the use of groundwater at the Site, unless VOC concentrations in groundwater are less than MCLs;
- Establishing a notification procedure and protocols for future sub-surface activity to ensure long-term compliance with this Risk Management Plan; and
- Inspecting the Site as necessary to verify that risk management controls are being implemented and that they are effective in limiting potential exposure to VOCs at the Site.

6.1 Property Manager and Tenant Notification

The property owner shall provide notification of the known environmental conditions at the Site and of the requirements of this RMP to (a) the property manager, and (b) tenants and other entities leasing or otherwise exercising control over space at the Site.

6.2 Maintaining Commercial/Industrial Land Use

The Site is restricted to commercial/industrial use, except that uses for day-care or primary education are explicitly not allowed. If other uses are proposed, the owner may make a proposal to the RWQCB or other appropriate agency, supported by analysis, that the provisions of this RMP should be changed.

6.3 Monitoring of Existing Buildings

As discussed in Section 2.4.2, groundwater with VOC concentrations above the risk-based action levels has not been detected outside the Groundwater Risk Area shown on Figure 7. However, over time, it is possible that the groundwater flow regime at the Site

7. REFERENCES

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Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
B101	2.0-2.5	4-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
B102	2.0-2.5	4-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
C-1	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	0.65	<0.025	<0.025	0.11	-[b]	<0.05
C-1	5.5-6.0	19-Jun-97	<0.05	<0.05	<0.05	<0.05	1.5	<0.05	<0.05	<0.05	-	<0.1
C-2	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.14	-	<0.05
C-2	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.067	<0.025	<0.025	0.52	-	<0.05
C-3	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-4	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-5	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-6	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-7	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-1	14-14.5	10-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-2	12.5-13	7-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-3	12.5-13	10-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-4	12.5-13	7-Oct-96	<0.005	<0.005	<0.005	<0.005	0.035	<0.005	<0.005	0.061	-	<0.01
EC-5	12-12.5	11-Oct-96	<0.005	<0.005	<0.005	<0.005	0.014	<0.005	<0.005	[illegible]	-	<0.01
EC-6	12-12.5	11-Oct-96	0.021	<0.02	0.021	<0.02	<0.02	<0.02	<0.02	[illegible]	-	<0.04
EC-7	15-15.5	9-Oct-96	<0.01	0.011	<0.01	<0.01	0.11	<0.01	<0.01	[illegible]	-	<0.02
EC-8	14.5-15	9-Oct-96	<0.1	<0.1	<0.1	<0.1	0.29	[illegible]	[illegible]	[illegible]	-	<0.2
EC-9	15-15.5	8-Oct-96	<0.005	0.016	<0.005	<0.005	<0.005	<0.005	<0.005	0.024	-	<0.01
EC-10	14.5-15	8-Oct-96	<0.005	0.0056	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-12	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.073	-	<0.05
EC-12	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.027	<0.025	<0.025	0.048	-	<0.05
EC-13	1.5-2.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.08	<0.025	<0.025	0.073	-	<0.05

Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-13	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.1	-	<0.05
EC-14	2.0-2.5	19-Jun-97	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	-	<0.1
EC-14	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.097	<0.025	<0.025	0.18	-	<0.05
EC-15-A	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.35	<0.025	<0.025	0.49	-	<0.05
EC-15-A	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.91	<0.025	<0.025	0.086	-	<0.05
EC-16	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.039	<0.025	<0.025	0.056	-	<0.05
EC-16	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.048	<0.025	<0.025	<0.025	-	<0.05
EC-17	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	[illegible]	<0.05
EC-17	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-18	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-19	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-19	5.5-6.0	19-Jun-97	<0.05	<0.05	<0.05	0.38	[illegible]	[illegible]	<0.05	[illegible]	[illegible]	[illegible]
EC-20	2.0-2.5	19-Jun-97	<0.5	<0.5	<0.5	<0.5	[illegible]	[illegible]	<0.5	[illegible]	[illegible]	[illegible]
EC-20	5.5-6.0	19-Jun-97	<0.25	<0.25	<0.25	<0.25	[illegible]	<0.25	<0.25	[illegible]	[illegible]	<0.5
EC-21	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-21	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.027	<0.05	<0.05
EC-22	3.0-3.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.039	<0.05	<0.05
EC-22	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-23	3.0-3.5	10-Sep-97	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	6.9	<0.5	<0.5
EC-23	5.0-5.5	10-Sep-97	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	<1	<1
EC-24	3.5-4.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.51	<0.025	<0.025	[illegible]	<0.05	<0.05
EC-24	5.0-5.5	10-Sep-97	<2	<2	<2	<2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-25	3.5-4.0	10-Sep-97	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	[illegible]	[illegible]	[illegible]
EC-25	5.0-5.5	10-Sep-97	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	[illegible]	<1	<1

Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
[illegible]	<0.5	<0.5
[illegible]	[illegible]	[illegible]
0.089	<0.05	<0.05
0.23	<0.05	<0.05
<0.025	<0.05	<0.05
0.061	<0.05	<0.05
[illegible]	[illegible]	<0.05
[illegible]	0.67	0.19
[illegible]	<0.05	<0.05
0.07	0.083	<0.05
0.29	<0.05	<0.05

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Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)					
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene
EC-26	3.5-4.0	11-Sep-97	<0.25	<0.25	<0.25	<0.25	0.27	<0.25
EC-26	5.0-5.5	11-Sep-97	<0.25	<0.25	<0.25	<0.25	5.4	<0.25
EC-27	3.0-3.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-27	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-28	1.0-1.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-28	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-29	2.5-3.0	11-Sep-97	<0.2	<0.2	<0.2	<0.2	0.76	<0.2
EC-29	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]
EC-30	1.5-2.0	11-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]
EC-30	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]
EC-31	3.0-3.5	10-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]
EC-31	5.0-5.5	10-Sep-97	<0.25	<0.25	<0.25	<0.25	[illegible]	[illegible]
EC-32	2.5-3.0	10-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]
EC-32	5.0-5.5	10-Sep-97	<1	<1	<1	<1	[illegible]	[illegible]
EC-33	2.5-3.0	10-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]
EC-33	5.0-5.5	10-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]
EC-34	3.0-3.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]
EC-34	5.0-5.5	10-Sep-97	<0.2	<0.2	<0.2	<0.2	[illegible]	[illegible]
EC-35	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	[illegible]	[illegible]
EC-35	5.0-5.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]
EC-36	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
EC-36	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.21	<0.025
EC-37	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.28	<0.025

Table 1
Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property
Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-37	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.39	<0.025	<0.025	0.39	0.7	0.08
EC-38	3.0-3.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-38	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.17	<0.025	<0.025	<0.025	0.079	<0.05
EC-39	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-39	5.0-5.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	0.85	<0.05	<0.05	0.18	1.5	<0.1
EC-40	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.16	<0.025	<0.025	0.4	0.93	<0.05
EC-41	2.0-2.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-41	5.0-5.5	11-Sep-97	<0.05	<0.05	<0.05	<0.05	0.28	<0.05	<0.05	0.68	0.87	<0.1
EC-42	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.051	<0.025	<0.025	0.038	0.084	<0.05
EC-42	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]	[illegible]	[illegible]	0.91	[illegible]
EC-43	3.0-3.5	11-Sep-97	<0.05	<0.05	<0.05	<0.05	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-43	5.0-5.5	11-Sep-97	<1	<1	<1	<1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-44	3.5-4.0	11-Sep-97	<0.05	<0.05	<0.05	<0.05	0.13	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
EC-44	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	[illegible]	[illegible]	[illegible]	[illegible]	0.4	[illegible]
EC-45	2.5-3.0	11-Sep-97	<0.2	<0.2	<0.2	<0.2	0.52	[illegible]	[illegible]	[illegible]	<0.4	[illegible]
EC-45	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.57	0.11	<0.025	0.084	<0.05	<0.05
EC-46	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.047	<0.05	<0.05
EC-46	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-47	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.15	<0.05	<0.05
EC-47	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	2.9	<0.2	<0.2	0.44	<0.4	<0.4
EC-48	2.0-2.5	15-Sep-97	<0.1	<0.1	<0.1	<0.1	1.1	<0.1	<0.1	0.28	<0.2	<0.2
EC-48	5.0-5.5	15-Sep-97	<1	<1	<1	<1	10	<1	<1	1.8	<2	<2
EC-49	1.5-2.0	12-Sep-97	<0.1	<0.1	<0.1	<0.1	1.6	<0.1	<0.1	0.68	0.43	<0.2
EC-49	5.0-5.5	12-Sep-97	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	5.2	1.2	<1

Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-50	1.5-2.0	12-Sep-97	<0.25	<0.25	<0.25	<0.25	3.5	<0.25	<0.25	1	<0.5	<0.5
EC-50	5.0-5.5	12-Sep-97	<2	<2	<2	<2	9.2	[illegible]	<2	40	7.6	<4
EC-51	2.0-2.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.68	<0.05	<0.05	0.35	0.12	<0.1
EC-51	5.0-5.5	12-Sep-97	<1	<1	<1	<1	10	<1	<1	2.7	3	<2
EC-52	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.061	<0.025	<0.025	<0.025	0.12	<0.05
EC-52	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	1.2	<0.2	<0.2	1.1	5.3	<0.4
EC-53	2.0-2.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	1.8	<0.2	<0.2	0.37	<0.4	<0.4
EC-53	5.0-5.5	12-Sep-97	<1	<1	<1	<1	22	<1	<1	5.5	11	<2
EC-54	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.12	<0.025	<0.025	<0.025	0.22	<0.05
EC-54	5.0-5.5	12-Sep-97	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	5.6	<1
EC-55	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.079	<0.025	<0.025	0.058	0.12	<0.05
EC-55	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.06	<0.025	<0.025	<0.025	0.16	<0.05
EC-56	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.087	<0.025	<0.025	0.081	<0.05	<0.05
EC-56	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.66	<0.05	<0.05	0.36	0.65	<0.1
EC-57	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.032	<0.025	<0.025	<0.025	<0.05	0.19
EC-57	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	2.3	<0.2	<0.2	0.16	2.1	<0.4
EC-58	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.049	<0.025	<0.025	<0.025	0.059	<0.05
EC-58	5.0-5.5	12-Sep-97	<0.25	<0.25	<0.25	<0.25	6.4	<0.25	<0.25	0.75	2.7	<0.5
EC-59	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.053	<0.025	<0.025	<0.025	<0.05	<0.05
EC-59	5.0-5.5	12-Sep-97	<0.1	<0.1	<0.1	<0.1	2.8	<0.1	<0.1	0.51	1.6	<0.2
EC-60	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.073	<0.025	<0.025	<0.025	<0.05	<0.05
EC-60	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.78	<0.05	<0.05	<0.05	0.48	<0.1
EC-61	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.046	<0.025	<0.025	0.083	<0.05	<0.05
EC-61	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.41	<0.025	<0.025	<0.025	0.17	0.072

Erler & Kalinowski, Inc.
10 March 1999

Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-62	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.27	<0.05	<0.05
EC-62	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-63	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-63	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.078	<0.05	<0.05
EC-64	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.21	<0.05	<0.05
EC-64	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.15	<0.025	<0.025	0.21	0.12	<0.05
EC-65	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-65	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.25	<0.025	<0.025	0.33	0.24	<0.05
EC-66	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-66	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.34	<0.05	<0.05	0.42	0.22	<0.1
EC-67	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.11	<0.05
EC-67	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.19	<0.025	<0.025	0.088	0.081	<0.05
EC-68	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-68	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.29	<0.025	<0.025	0.23	0.17	<0.05
EC-69	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-69	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.072	<0.025	<0.025	0.098	0.17	<0.05
EC-70	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-70	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.053	<0.025	<0.025	0.22	<0.05	<0.05
EC-71	1.5-2.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-71	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.049	<0.025	<0.025	0.19	<0.05	<0.05
EC-72	2.0-2.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.049	<0.05	<0.05
EC-72	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.063	<0.05	<0.05
EC-73	2.0-2.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-73	6.0-6.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05

Erler & Kalinowski, Inc.

10 March 1999

Table 1

Analytical Results for Volatile Organic Compounds in Soil

3695-3723 Haven Avenue Property

Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-73	14.0-14.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	2.0-2.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	5.0-5.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	11.5-12.0	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-75	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-75	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.37	<0.05	<0.05
EC-76	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-76	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.065	<0.025	<0.025	0.25	<0.05	<0.05
MW-7B	4.0-4.5	23-Oct-96	<2	<2	<2	<2	51	<2	<2	11	-	<4
S2-3	3.0-3.5	4-Sep-97	<0.1	<0.1	<0.1	<0.1	1	<0.1	<0.1	<0.1	-	<0.1
TR-1	2.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.41	<0.05	<0.05

Notes:

(a) Sample depth range in feet below ground surface (ft bgs).

(b) A hyphen (-) indicates that the sample was not analyzed for the chemical.

(c) Shaded rows indicate samples collected from soil to be removed as part of the remedial soil excavation.

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Table 2
Analytical Results for Volatile Organic Compounds in Groundwater

3695-3723 Haven Avenue Property
Menlo Park, California

Sample Location	Screened Interval Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane[b]	Trichlorofluoromethane[c]	Vinyl Chloride
B1	10-15	4-Oct-94	8240	<100[d]	<5.0	230	280	<5.0	[d]	<5.0	5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2000	-	(f)	<10
GP-1	10-15	29-Dec-94	8240	<20	4.7	26	100	<4.0	-	10	280	<4.0	<10	<4.0	<4.0	<4.0	170	-	(f)	<4.0
GP-2	10-15	29-Dec-94	8240	<63	<13	<13	<13	<13	-	53	180	<13	<32	<13	<13	14	840	-	(f)	22
GP-3	10-15	29-Dec-94	8240	<77	<16	22	320	<16	-	<16	96	<16	<38	<16	<16	<16	1200	-	(f)	<16
GP-4	10-15	29-Dec-94	8240	<1200	<230	<230	<230	<230	-	<230	3600	<230	<560	<230	<230	<230	2300	-	(f)	<230
GP-5	10-15	29-Dec-94	8240	<2000	<400	<400	<400	<400	-	<400	25000	<400	<1000	<400	<400	<400	35000	-	(f)	1300
GP-6	10-15	29-Dec-94	8240	<25	<5.0	330	420	<5.0	-	<5.0	<5.0	<5.0	<12	<5.0	<5.0	<5.0	18	-	(f)	<5.0
GP-7	10-15	29-Dec-94	8240	<840	<170	<170	1000	<170	-	<170	3000	<170	<420	<170	<170	<170	11000	-	(f)	<170
GP-7Dup(g)	10-15	29-Dec-94	8240	(f)	<100	<100	1,100	(f)	(f)	<100	3000	(f)	(f)	(f)	(f)	<100	2000	(f)	(f)	<100
S-5B	38-46	6-Jul-95	8010	-	-	<0.5	1.6	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	3.8	-	(f)	<1.0
CPT1-33	28-33	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT1-44	41-44	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-28	25-28	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-44	40-44	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-58	53-58	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-B(g)	53-58	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT3-33	30-33	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT3-44	40-44	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT4-22	18-22	31-Jul-96	8240	<10	<5.0	13	230	<5.0	-	1.5 (h)	230	1.6 (h)	<5.0	<5.0	<5.0	<5.0	580	220	<5.0	8.1
CPT4-28	25-28	31-Jul-96	8240	30	<5.0	<5.0	5.1	<5.0	-	<5.0	5.7	<5.0	<5.0	<5.0	<5.0	<5.0	9.7	<5.0	<5.0	<5.0
CPT4-34	30-34	31-Jul-96	8240	13	<5.0	<5.0	41	<5.0	-	<5.0	56	<5.0	<5.0	<5.0	<5.0	<5.0	150	10	<5.0	1.1 (h)

Table 2
Analytical Results for Volatile Organic Compounds in Groundwater

3695-3723 Haven Avenue Property
Menlo Park, California

Sample Location	Screened Interval Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																	
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane [b]	Trichlorofluoromethane [c]	Vinyl Chloride
EC3-45	42-45	10-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
EC4-15	5-15	9-Oct-96	8010	-	-	<100	<100	140	-	270	3300	<100	<1000	<100	-	<100	2100	-	<100	<200
EC4-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
EC4-43	40-43	7-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	0.57	-	<0.5	<1.0
EC5-15	5-15	9-Oct-96	8010	-	-	<25	94	<25	-	35	470	<25	<250	<25	-	27	1000	-	<2.5	<50
EC5-30	25-30	14-Oct-96	8010	-	-	<0.5	0.83	<0.5	-	<0.5	0.85	<0.5	<5.0	<0.5	-	<0.5	3.1	-	<0.5	<1.0
EC-5-A (g)	25-30	14-Oct-96	8010	-	-	<0.5	0.88	<0.5	-	<0.5	0.88	<0.5	<5.0	<0.5	-	<0.5	3.4	-	<0.5	<1.0
EC5-45	42-45	11-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	1.9	-	<0.5	<1.0
EC6-15	5-15	7-Oct-96	8010	-	-	75	120	<10	-	<10	63	<10	<100	<10	-	<10	530	-	<10	<20
EC6-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	0.97	<0.5	<0.5	<5.0	<0.5	-	1.2	<0.5	-	<0.5	<1.0
EC6-45	42-45	11-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	1.7	-	<0.5	<1.0
EC7-15	5-15	9-Oct-96	8010	-	-	<250	380	<250	-	<250	6500	<250	<2500	<250	-	<250	12000	-	<250	<500
EC7-30	25-30	15-Oct-96	8010	-	-	<0.5	1.4	<0.5	-	<0.5	17	<0.5	<5.0	<0.5	-	<0.5	2.5	-	<0.5	<1.0
EC7-45	42-45	9-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
EC8-15	5-15	9-Oct-96	8010	-	-	<500	660	<500	-	<500	8600	<500	<5000	<500	-	<500	33000	-	<2.5	<1000
EC8-25	23-25	15-Oct-96	8010	-	-	<5.0	10	<5.0	-	<5.0	34	<5.0	<50	<5.0	-	<5.0	220	-	<5	<10
EC8-35	33-35	15-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	0.62	<0.5	<5.0	<0.5	-	<0.5	3	-	<0.5	1.7
EC8-45	42-45	9-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	1.7	<0.5	<5.0	<0.5	-	<0.5	14	-	<0.5	<1.0
EC9-15	5-15	9-Oct-96	8010	-	-	250	530	<25	-	<25	80	<25	<250	<25	-	<25	1340	-	<25	<50
EC-DUP1 (g)	5-15	9-Oct-96	8010	-	-	260	510	<25	-	<25	76	<25	<250	<25	-	<25	1300	-	<25	<50
EC9-25	23-25	15-Oct-96	8010	-	-	<1.2	9.2	<1.2	-	<1.2	2.5	<1.2	<12	<1.2	-	<1.2	77	-	<1.2	<2.5
EC9-34	32-34	15-Oct-96	8010	-	-	<0.5	0.6	<0.5	-	<0.5	1.7	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
EC9-45	40-45	8-Oct-96	8010	-	-	<0.5	0.53	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	2.7	-	<0.5	<1.0
EC10-15	5-15	10-Oct-96	8010	-	-	<2.5	160	<2.5	-	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	<2.5	-	<2.5	<5.0
EC10-25	23-25	9-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0

Erler & Kalinowski, Inc.
10 March 1999

Table 2
Analytical Results for Volatile Organic Compounds in Groundwater

3695-3723 Haven Avenue Property
Menlo Park, California

Sample Location	Screened Interval Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane [b]	Trichlorofluoromethane [c]	Vinyl Chloride
BC10-37	35-37	9-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
BC10-45	42-45	8-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
BC11-18	15-18	14-Oct-96	8010	-	-	<5.0	110	<5.0	-	<5.0	280	<5.0	<50	<5.0	-	<5.0	<5.0	-	<5	19
BC11-35	30-35	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	7.8	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	2.6
BC11-45	39-45	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<0.5	<1.0
BC-77	5-15	23-Apr-98	8010	-	-	<500	<500	<500	<500	<500	11000	<500	<5000	<500	-	<500	11000	-	<500	<1000
BC-79	21-25	23-Apr-98	8010	-	-	<500	<250	<250	<250	<250	<250	<250	<2500	<250	-	<250	9900	-	<250	<500
BC-81	10	8-Sep-98	8010	-	-	2300	<500	<500	<500	<500	<500	<500	<5000	<500	-	<500	19000	-	<250	<1000
BC-81	20	8-Sep-98	8010	-	-	<5000	<5000	<5000	<5000	<5000	<5000	<5000	<50000	<5000	-	<5000	260000	-	<5000	<10000
MW-1	5.5-15.5	4-Oct-94	8240	-	460	250	310	<5.0	5	<5.0	350	<5.0	<5.0	<5.0	-	<5.0	280	-	<5.0	<10
MW-1	5.5-15.5	8-Aug-96	8010	-	-	380	310	<5.0	<5.0	<5.0	260	<5.0	<50	<5.0	-	<5.0	318	-	<5.0	<10
MW-1	5.5-15.5	17-Sep-97	8010	-	-	460	250	<12	<12	<12	220	<12	<125	<12	-	<12	290	65	<12	<25
MW-1	5.5-15.5	17-Apr-98	8010	-	-	150	100	<5.0	<5.0	<5.0	98	<5.0	<50	<5.0	-	<5.0	130	-	<5	<10
MW-2	5.5-15.5	4-Oct-94	8240	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	23000	<5.0	<5.0	<5.0	-	<5.0	140000	-	<5.0	<10
MW-2	5.5-15.5	8-Aug-96	8010	-	-	<2500	<2500	<2500	<2500	<2500	11000	<2500	<25000	<2500	-	<2500	91000	-	<2500	<5000
MW-2	5.5-15.5	18-Sep-97	8010	-	-	<500	<500	<500	<500	<500	8400	<500	<5000	<500	-	<500	26000	<1000	<500	<1000
MW-2	5.5-15.5	17-Apr-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	5000	<2500	<25000	<2500	-	<2500	140000	-	<2500	<5000
MW-2	5.5-15.5	8-Sep-98	8010	-	-	<1250	<1250	<1250	<1250	<1250	7100	<1250	<12500	<1250	-	<1250	29000	-	<1250	<2500
MW-3	5.5-15.5	4-Oct-94	8240	-	<5.0	90	110	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	9	-	<5.0	<10
MW-3	5.5-15.5	8-Aug-96	8010	-	-	<2.5	6.9	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	130	-	<2.5	<5.0
MW-3	5.5-15.5	17-Sep-97	8010	-	-	100	110	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	8.5	6.6	<2.5	<5.0
MW-3	5.5-15.5	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	3	-	<0.5	<1.0
MW-4	6-16	8-Aug-96	8010	-	-	77	140	<10	<10	<10	14	<10	<100	<10	-	<10	750	-	<10	<20
MW-4D (g)	6-16	8-Aug-96	8010	-	-	82	140	<10	<10	<10	15	<10	<100	<10	-	<10	740	-	<10	<20
MW-4	6-16	1-Nov-96	8010	-	-	75	100	<12	<12	<12	15	<12	<125	<12	-	<12	710	-	<12	<25

Table 2
Analytical Results for Volatile Organic Compounds in Groundwater

3695-3723 Haven Avenue Property
Menlo Park, California

Sample Location	Screened Interval Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane (b)	Trichlorofluoromethane (c)	Vinyl Chloride
MW-4	6-16	18-Sep-97	8010	-	-	82	110	<10	<10	<10	14	<10	<300	<10	-	<10	430	200	<10	<20
MW-4	6-16	17-Apr-98	8010	-	-	39	90	<12	<12	<12	16	<12	<125	<12	-	<12	590	-	<12	<25
MW-5D	24-34	1-Nov-96	8010	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	-	0.73	3.1	-	<0.5	<1.0
MW-5D	24-34	18-Sep-97	8010	-	-	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<5.0	<0.5	-	1	8.7	5.9	<0.5	<1.0
MW-5D	24-34	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	2.6	<0.5	<0.5	<5.0	<0.5	-	6.8	16	-	<0.5	<1.0
MW-5D (g)	24-34	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<5.0	<0.5	-	5.4	17	-	<0.5	<1.0
MW-6B	21-31	1-Nov-96	8010	-	-	<100	<100	<100	<100	<100	250	<100	<1000	<100	-	<100	4500	-	<100	<200
MW-6B	21-31	17-Sep-97	8010	-	-	<50	60	<50	<50	<50	180	<50	<50	<50	-	<50	2600	2200	<50	<100
MW-6D	21-31	17-Apr-98	8010	-	-	<25	<25	<25	<25	<25	38	<25	<250	<25	-	<25	1200	-	<25	<50
MW-6B	21-31	8-Sep-98	8010	-	-	<100	<100	<100	<100	<100	120	<100	<1000	<100	-	<100	3500	-	<100	<200
MW-7D	18-28	1-Nov-96	8010	-	-	1000	<1000	<1000	<1000	<1000	<1000	<1000	<10000	<1000	-	<1000	37000	-	<1000	<2000
MW-7B (g)	18-28	1-Nov-96	8010	-	-	1000	<1000	<1000	<1000	<1000	<1000	<1000	<10000	<1000	-	<1000	3800	-	<1000	<2000
MW-7B	18-28	18-Sep-97	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	31000	<5000	<2500	<5000
MW-7BD (g)	18-28	18-Sep-97	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	30000	<5000	<2500	<5000
MW-7B	18-28	17-Apr-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	51000	-	<2500	<5000
MW-7B	18-28	8-Sep-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	49000	-	<2500	<2500

Notes
(a) Depth of groundwater interval sampled in feet below ground surface ("ft bgs").
(b) 1,1,2-Trichloro-1,2,2-Trifluoroethane = Freon 113
(c) Trichlorofluoromethane = Freon 11
(d) Less than symbol ("<") denotes that analyte was not present above the laboratory detection limit indicated.
(e) A hyphen (-) indicates that no analysis was performed for the chemical.
(f) Sample collected by Geomatrix, 1995; value unknown.
(g) Duplicate sample.
(h) Laboratory indicates this result is an estimated value.

Table 3
Risk-Based Action Levels for Soil

3695-3723 Haven Avenue Property
Menlo Park, California

Chemical	Risk-Based Action Level for Soil (mg/kg)
Acetone	1000
Benzene	0.50
Carbon Tetrachloride	0.50
Chloroform	0.50
1,2-Dichlorobenzene	50
1,1-Dichloroethane	5.0
1,2-Dichloroethane	0.50
1,1-Dichloroethene	5.0
cis-1,2-Dichloroethene	500
trans-1,2-Dichloroethene	50
Methylene Chloride	0.50
Tetrachloroethene	0.50
Toluene	5.0
1,1,1-Trichloroethane	5.0
Trichloroethene	3.2 (b)
1,1,2-Trichloro-1,2,2-Trifluoroethane	1000
Vinyl Chloride	0.075 (b)

Note:
(a) Risk-based action level concentrations rounded to two significant digits.
(b) These volatile organic compounds have been detected in Site soil at concentrations greater than the risk-based action level.

Table 4

Risk-Based Action Levels for Groundwater

3695-3723 Haven Avenue Property

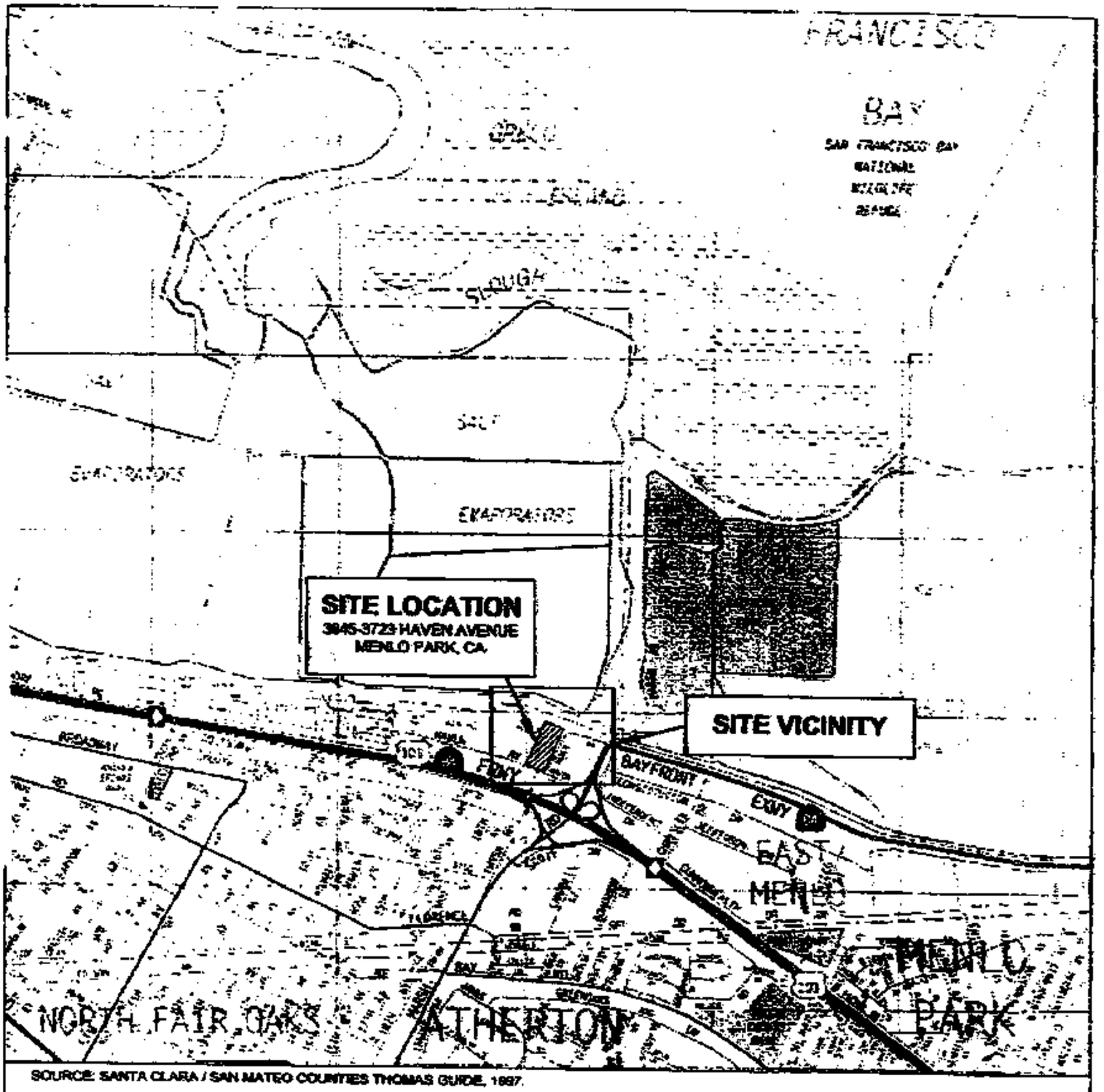
Menlo Park, California

Chemical	Risk-Based Action Level for Groundwater (ug/L)
Acetone	500
Benzene	1,000
Carbon Tetrachloride	2,600
Chloroform	2,000
1,2-Dichlorobenzene	500
1,1-Dichloroethane	510
1,2-Dichloroethane	500
1,1-Dichloroethene	520
cis-1,2-Dichloroethene	50,000
trans-1,2-Dichloroethene	510
Methylene Chloride	500
Tetrachloroethene	510
Toluene	510
1,1,1-Trichloroethane	510
Trichloroethene	8,000 (b)
1,1,2-Trichloro-1,2,2-Trifluoroethane	29,000
Vinyl Chloride	500 (b)

Notes

(a) Risk-based action level concentrations rounded to two significant digits.

(b) These volatile organic compounds have been detected in Site groundwater at concentrations greater than the risk-based action level.



SOURCE: SANTA CLARA / SAN MATEO COUNTIES THOMAS GUIDE, 1997.

N

0 2400 4800

(Approximate Scale in Feet)

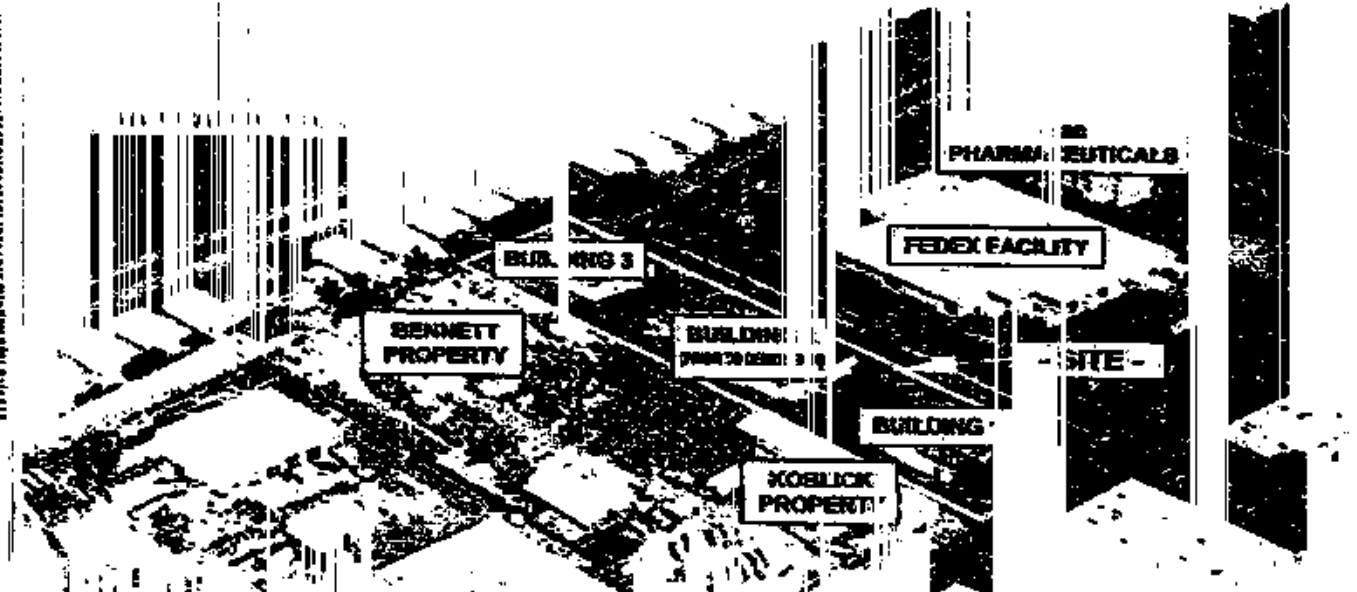
Erler & Kalinowski, Inc.

Site Location

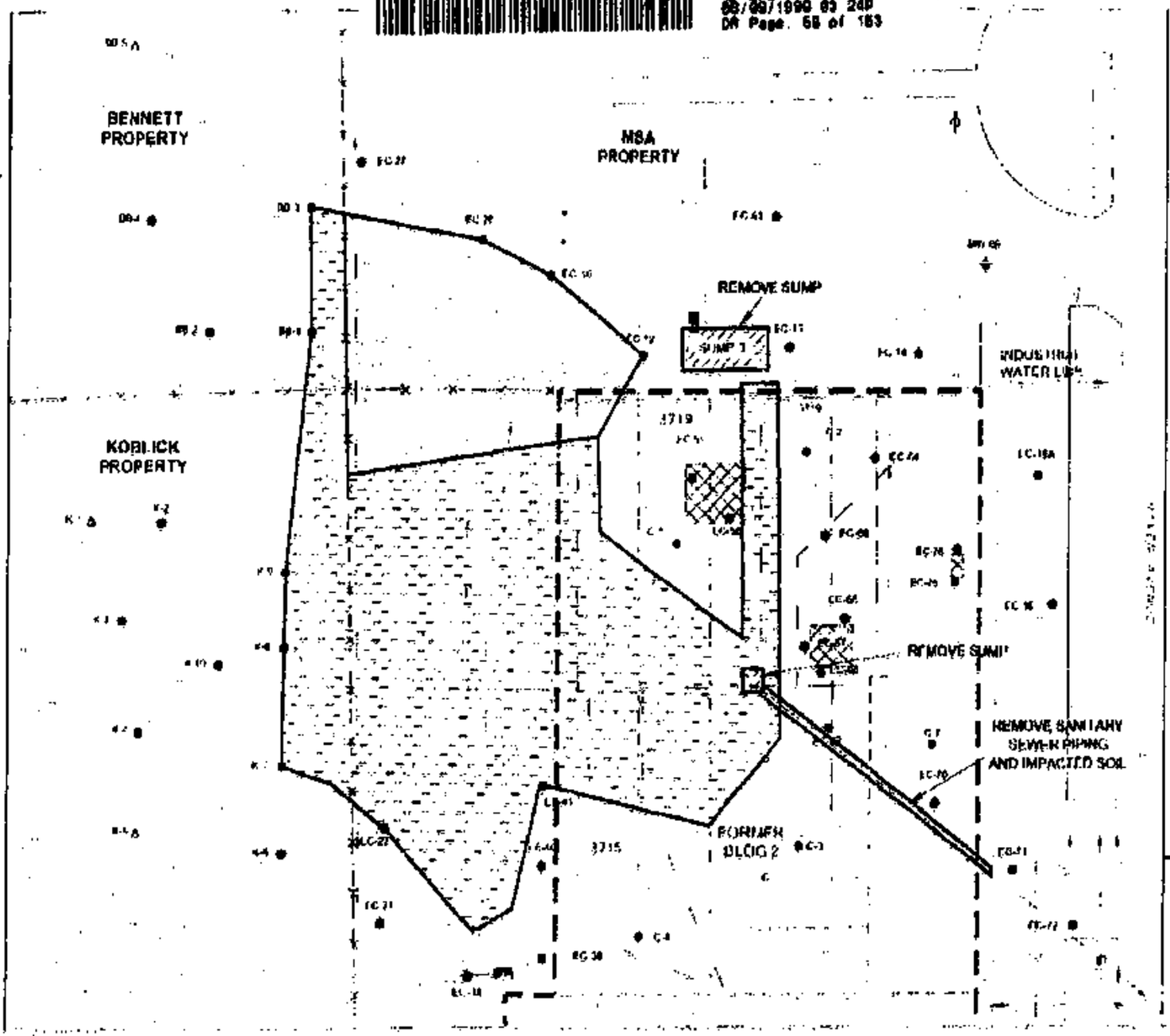
3645–3723 Haven Avenue
Menlo Park, CA
March 1999
EKI 960007.07

Figure 1

FORMER MENLO
PARK LANDFILL


FEDEX FACILITY
SITE
BENNETT PROPERTY
BUILDING
KOBLICK PROPERTY

1999-135815
09/09/1999 03 24P
DR Page 68 of 183



N

0 20 40

(Approximate Scale in Feet)

LEGEND

- Groundwater Monitoring Well Screened in the A-Zone (ESE, 1994; TRI, August 1998)
- Groundwater Monitoring Well Screened in the B-Zone (October, 1998)
- Envirо-Core Borehole with Soil Sample (October 1998; April 1999)
- Hand-Auger Soil Sample (May and June 1997)
- Incantation in Asphalt
- Pole
- Drain
- Manhole Cover or Drain
- Overhead Line
- Power Pole
- Underground Pipe
- Elevation
- Underground Electronic Line
- Possible Near Drain Location
- Sump Location
- Possible Former Degreaser Location
- Extent of Soil to Be Excavated to Approximately 6 Feet Below Existing Grade
- Extent of Soil to Be Excavated to Approximately 4 Feet Below Existing Grade

Notes:

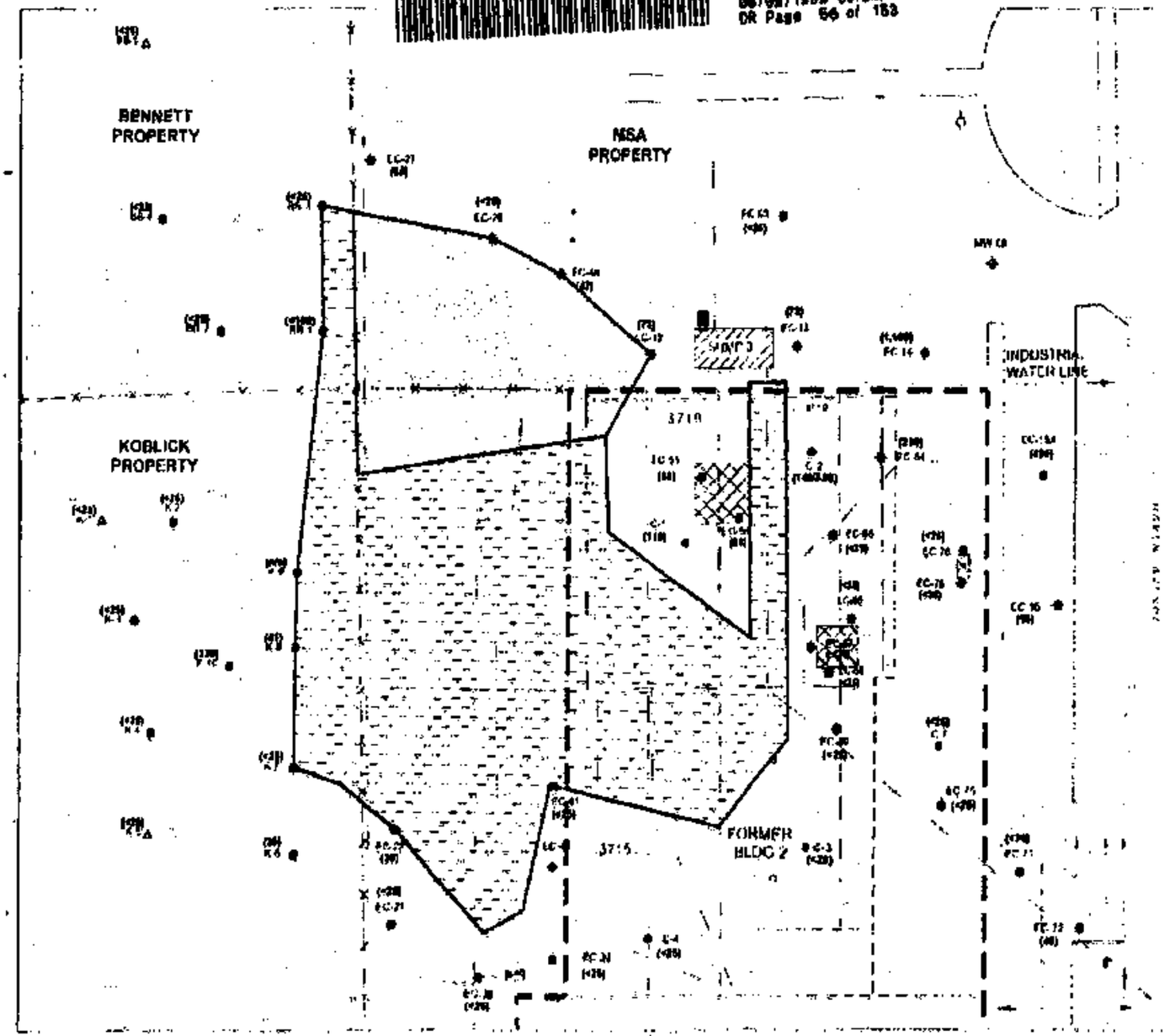
1. All locations are approximate.
2. Exceedance of soil samples collected as part of Remedial Investigations from within the excavation area are not shown on this figure.
3. Locations of subsurface utilities, pumps, conduits, etc. from "Geophysical Investigation at 3645-3723 Haven Avenue, Menlo Park, California" by JP Associates, dated 24 June 1997.

Erler & Kalinowski, Inc.

Estimated Extent of Soil Excavation

3645-3723 Haven Avenue and Vicinity
Menlo Park, CA
March 1999
EKI 96C067.07
Figure 5

1999-138815
08/09/1999 03:24P
DR Page 56 of 153

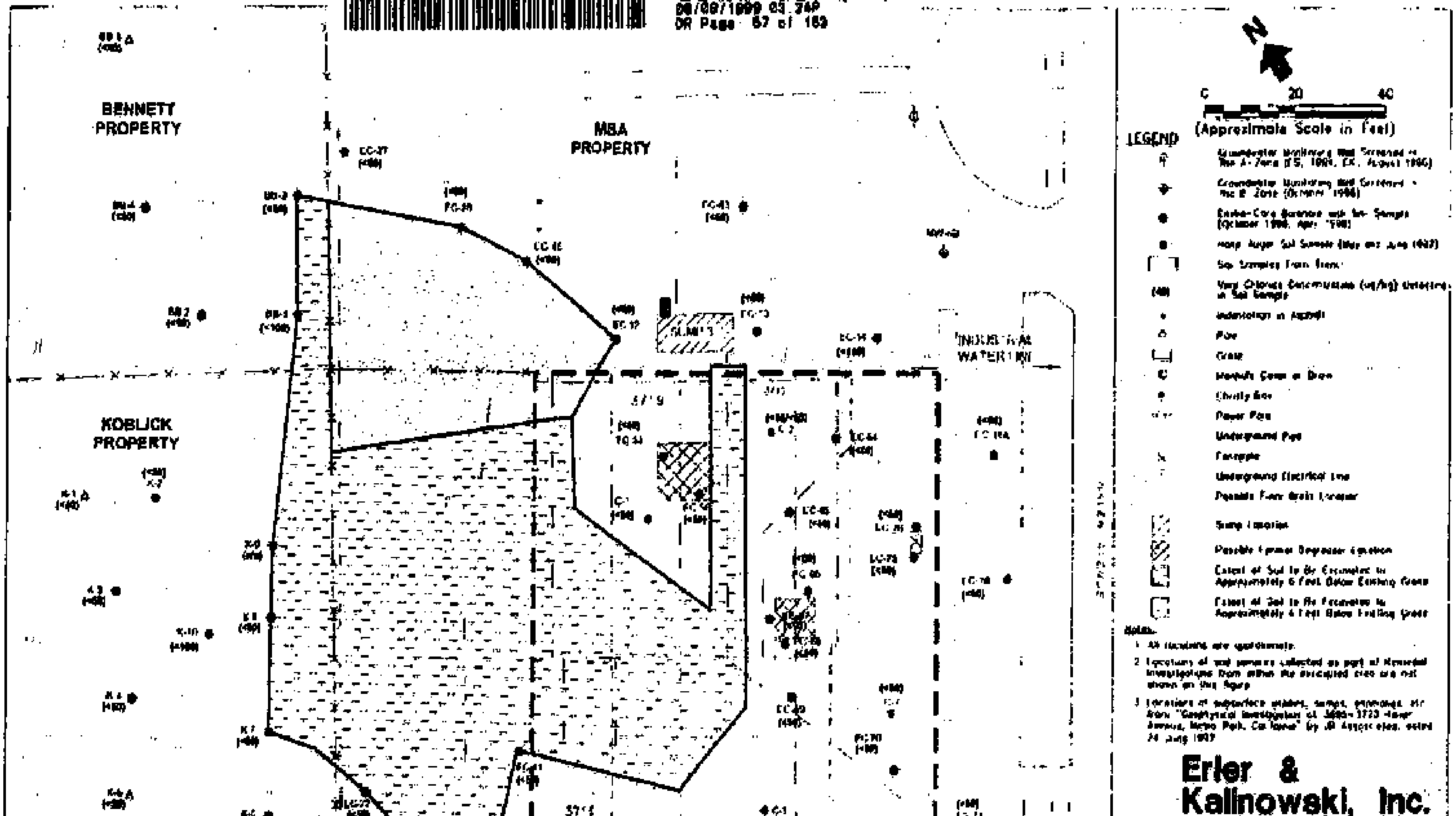


Erler & Kalinowski, Inc.

Residual TCE Concentrations (ug/kg) Detected in Soils Between 1 and 4 Foot Depths

3685, 3723 Haven Avenue and Vicinity
Menlo Park, CA
March 1999
EKI 960007.01
Figure 4

1999-135615
08/09/1999 03 24P
DR Page 57 of 183



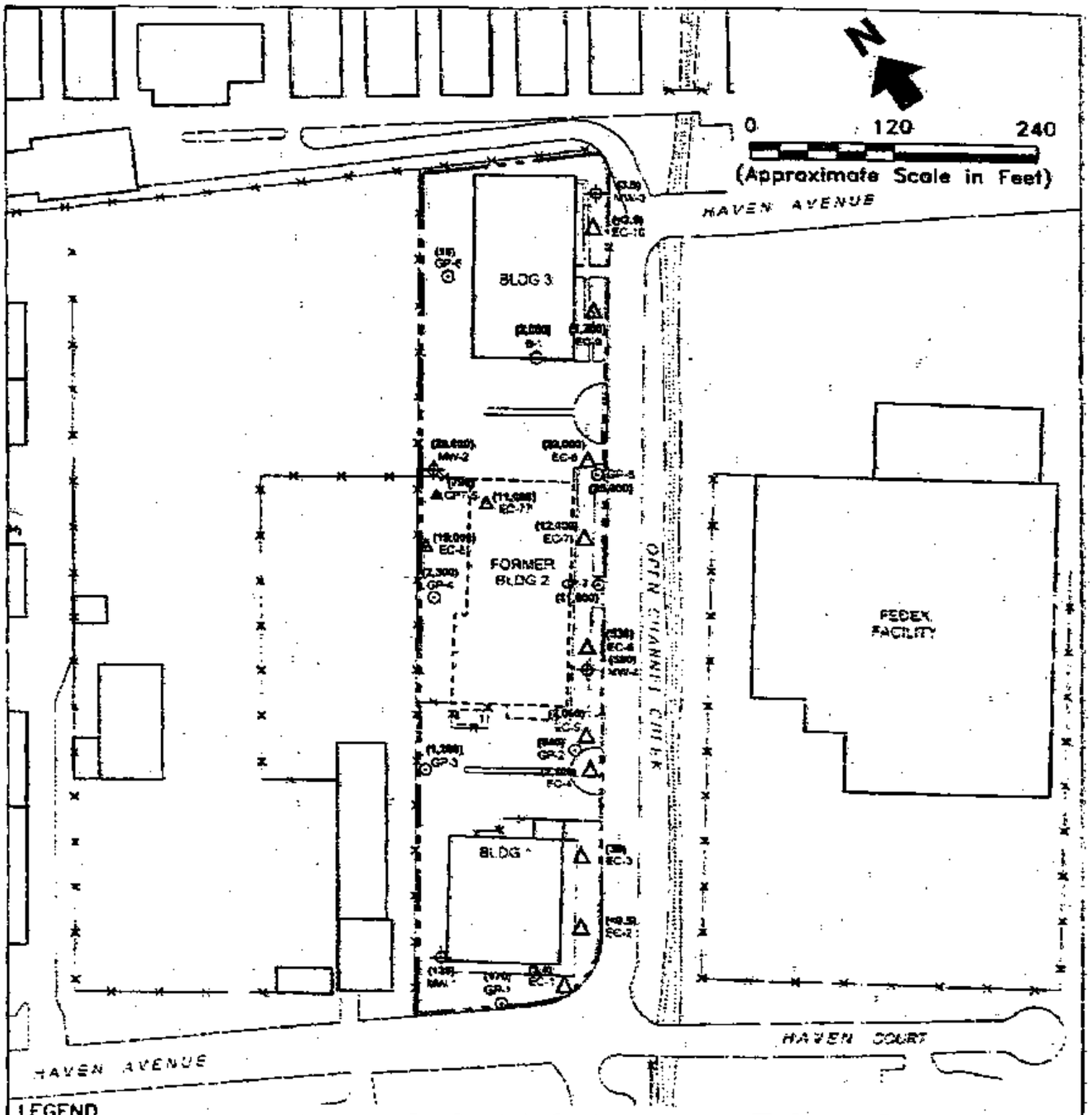
Erler & Kalinowski, Inc.

Residual Vinyl Chloride Concentrations (ug/kg) Detected in Soils Between 1 and 4 Foot Depths

3645–3723 Haven Avenue and Vicinity
Menlo Park, CA

March 1999
EKI 960007.07

Figure 5



LEGEND

- Groundwater Monitoring Well Screened In The A-Zone (ESI, 1994, EKI, August 1996)
- Grab Groundwater Sample (ESI, 1994)
- Geoprobe Sample From 10-15 feet bgs (Geomatrix, 1995)
- CPT/PIPP Sample (July and August, 1996)
- Grab Groundwater Sample (October 1996)
- Grab Groundwater Sample (April and September 1998)
- (TCE) TCE Concentration (ug/L) Detected in Groundwater Sample

Notes:

1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-38 feet bgs.
4. bgs = below ground surface.
5. CPT/PIPP = Cone Penetrometer Test/Push in PVC Piezometer.
6. TCE = Trichloroethene

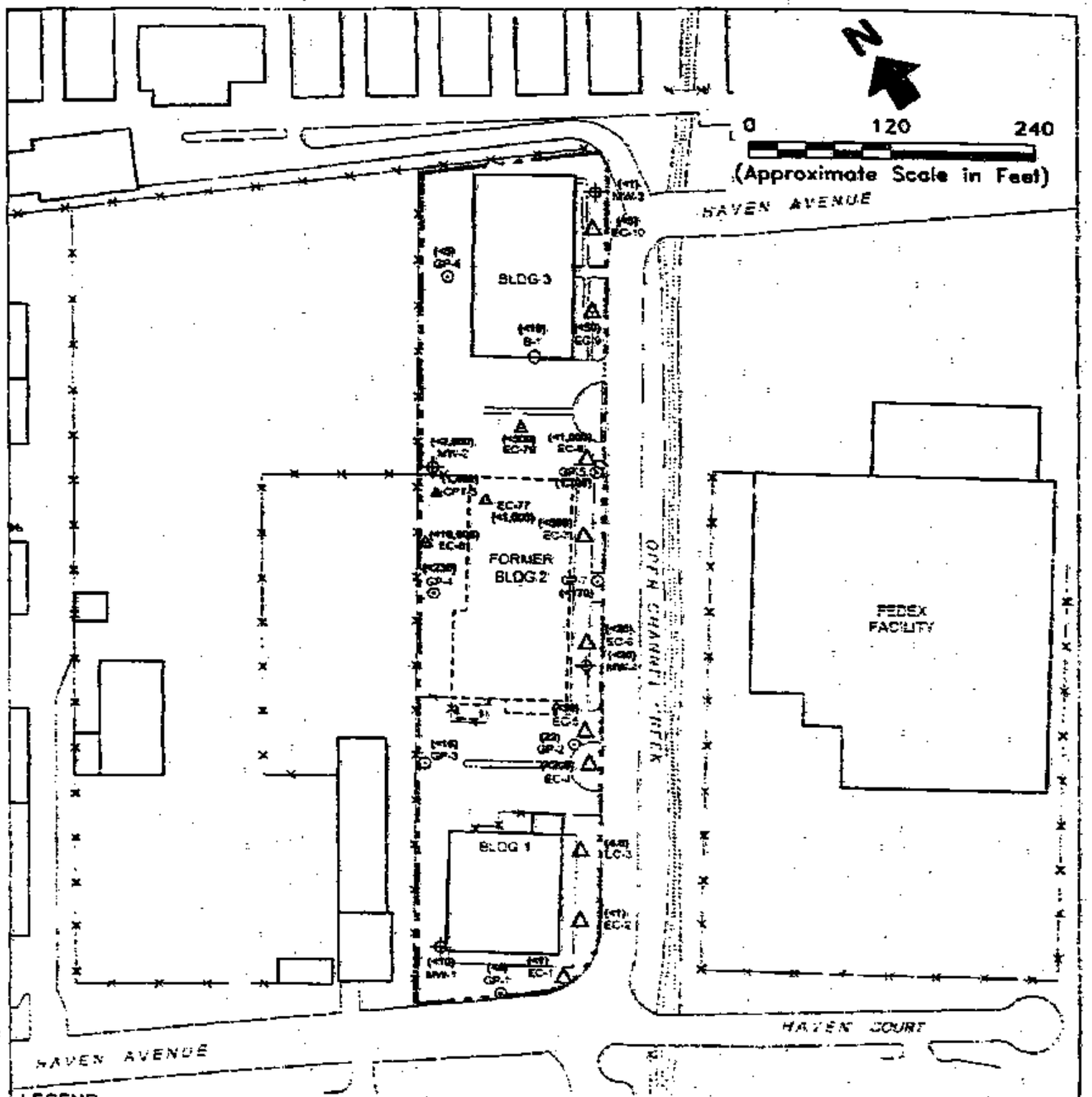
Erler & Kalinowski, Inc.

Concentrations of TCE (ug/L) Detected in Groundwater Samples Collected From the A-Zone

3645-3723 Haven Avenue and Vicinity
Menlo Park, CA

March 1999
EKI 960007.07

Figure 6



LEGEND

- Groundwater Monitoring Well Screened In The A-Zone (ESI, 1994; EKI, August 1996)
- Grab Groundwater Sample (ESI, 1994)
- Geoprobe Sample From 10-15 feet bgs (Geomatrix, 1995)
- CPT/PIPP Sample (July and August 1996)
- Grab Groundwater Sample (October 1996)
- Grab Groundwater Sample (April and September 1998)
- (170) Vinyl Chloride Concentration (ug/L) Detected in Groundwater Sample

Notes:

1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-38 feet bgs
4. bgs = below ground surface.
5. CPT/PIPP = Cone Penetrometer Test/Push In PVC Piezometer.

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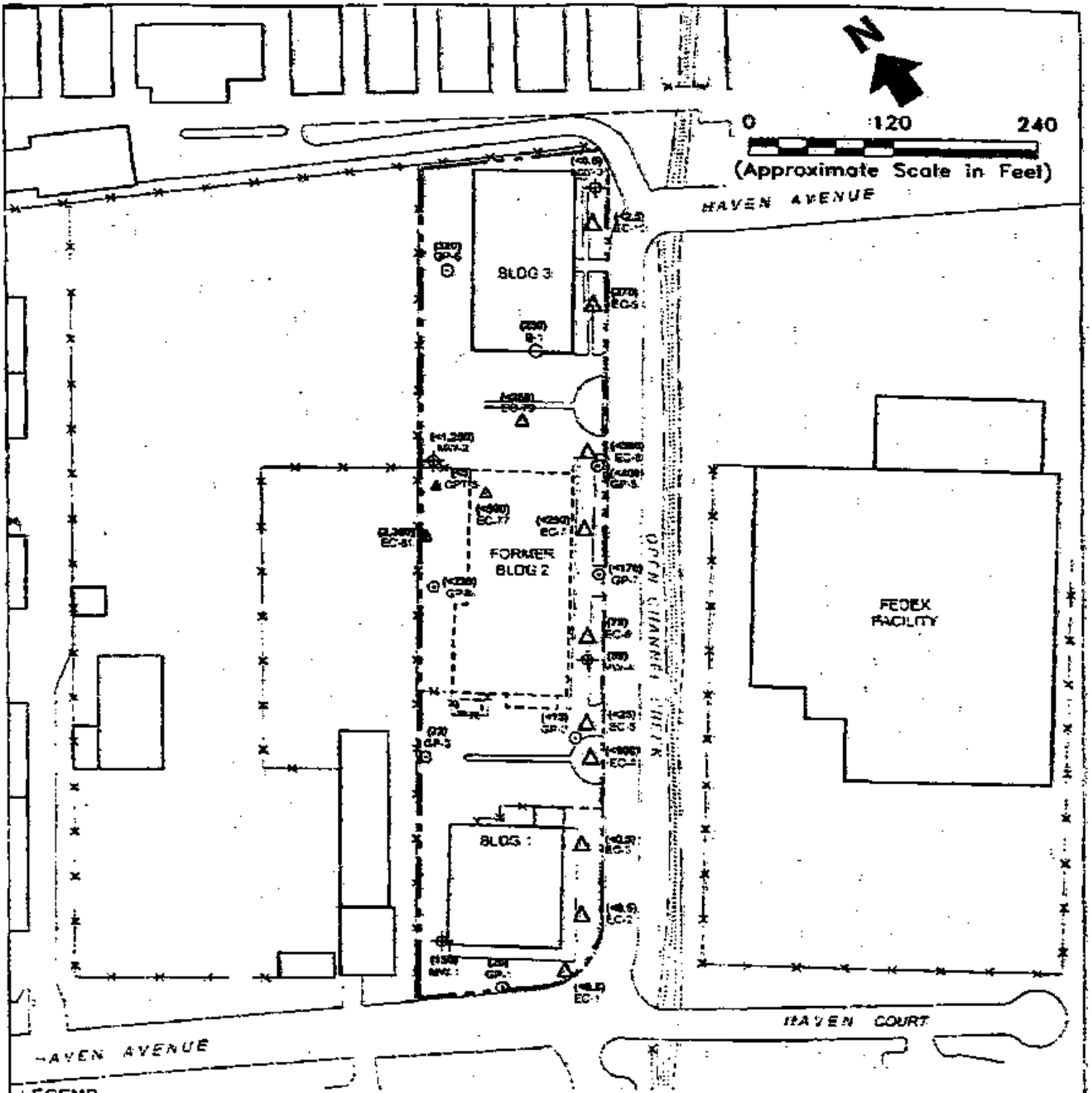
Concentrations of Vinyl Chloride (ug/L) Detected in Groundwater Samples Collected From the A-Zone

3645-3723 Haven Avenue and Vicinity
Menlo Park, CA

March 1999
EKI 960007.07

Figure 7



LEGEND

- Groundwater Monitoring Well Screened In The A-Zone (ESI, 1994; EKI, August 1996)
- Grab Groundwater Sample (ESI, 1994)
- Geoprobe Sample From 10-15 feet bgs (Geomatrix, 1995)
- CPT/PiPP Sample (July and August 1996)
- Grab Groundwater Sample (October 1996)
- Grab Groundwater Sample (April and September 1998)
- (170) Carbon Tetrachloride Concentration (ug/L) Detected in Groundwater Sample

Notes:

1. All locations are approximate
2. The A-Zone extends from 0 to approximately 15 feet bgs
3. The B-Zone extends from approximately 15-35 feet bgs
4. bgs = below ground surface
5. CPT/PiPP = Cone Penetrometer Test/Push In PVC Piezometer
6. TCE = Trichloroethene

Erler & Kalinowski, Inc.

Concentrations of Carbon Tetrachloride (ug/L) Detected in Groundwater Samples Collected From the A-Zone
3645-3723 Haven Avenue and Vicinity
Menlo Park, CA

March 1999
EKI S60007.07

Figure 8

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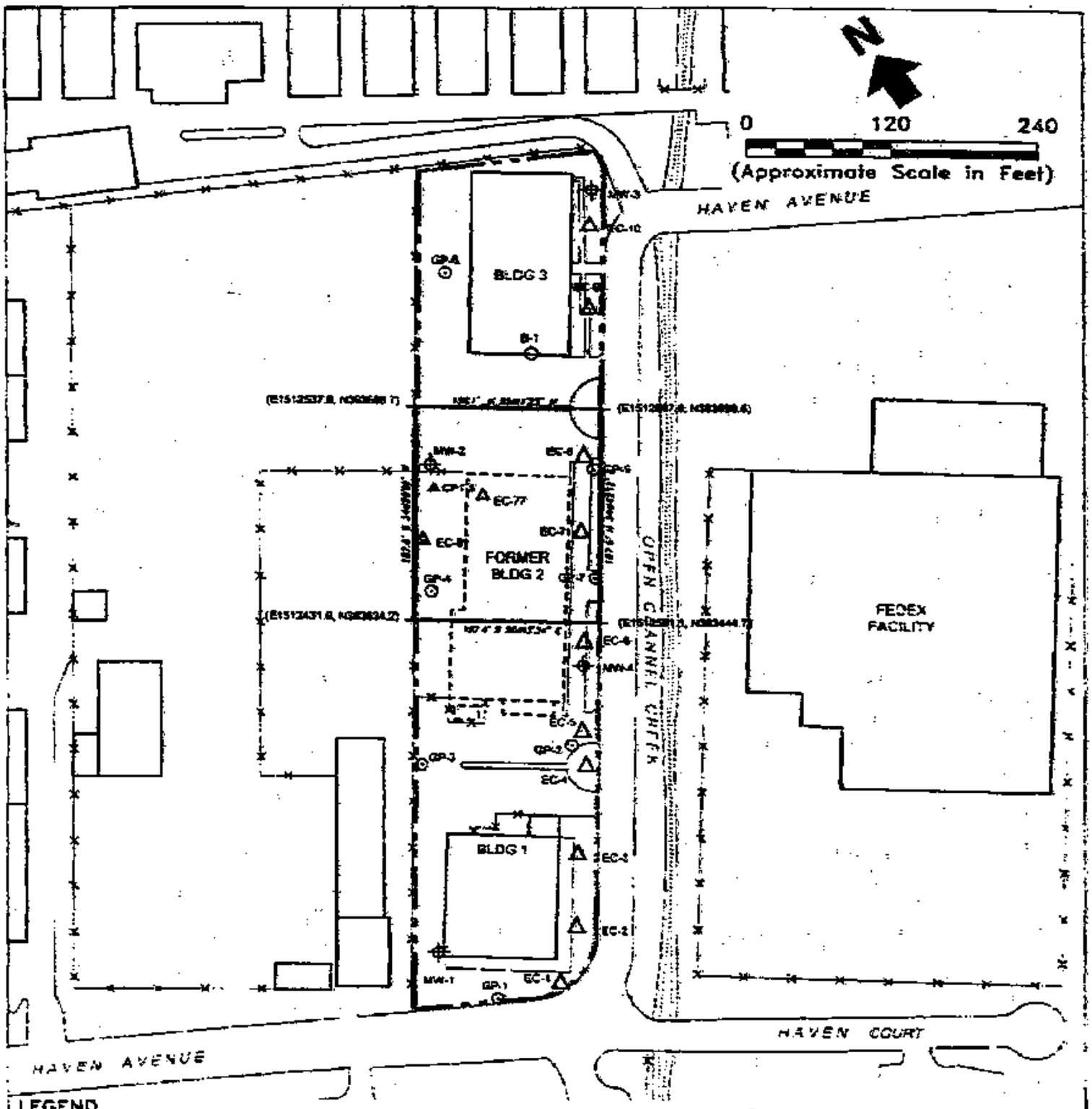

LEGEND

- Groundwater Monitoring Well Screened in The A-Zone (ESI, 1994; EKI, August 1996)
- Grab Groundwater Sample (ESI, 1994)
- Geoprobe Sample From 10-15 feet bgs (Geomatrix, 1995)
- CPT/PIPP Sample (July and August 1996)
- Grab Groundwater Sample (October 1996)
- Grab Groundwater Sample (April and September 1998)
- Lateral Extent of A-Zone Groundwater Exceeding Risk-Based Action Levels
- N3834288 Northing Coordinate
- E1512597.1 Easting Coordinate

Notes:

1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-38 feet bgs.
4. bgs = below ground surface.
5. CPT/PIPP = Cone Penetrometer Test/Push in PVC Piezometer.

Erler & Kalinowski, Inc.

A-Zone Groundwater Exceeding Risk-Based Action Levels

3645-3723 Haven Avenue and Vicinity
Menlo Park, CA
March 1999
EKI 960007.07
Figure 9

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ATTACHMENT A

(Appendix A of Feasibility Study/ Remedial Action Plan, dated 12 March 1999)

HUMAN HEALTH RISK ASSESSMENT

3695 - 3723 HAVEN AVENUE
MENLO PARK, CALIFORNIA

Prepared by:

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12 March 1999
EKI 960007.07

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APPENDIX A

HUMAN HEALTH RISK ASSESSMENT

3695-3723 Haven Avenue Property
Menlo Park, California
(EKI 960807.07)

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EXECUTIVE SUMMARY

This human health risk assessment was performed to:

- Evaluate potential impacts to human health by chemicals of concern ("COCs") present in soil and groundwater at the commercial/industrial property located at 3695-3723 Haven Avenue, Menlo Park, California (the "Site"); and,
- Develop risk-based action levels for soil and groundwater at the Site.

An analysis of risk was conducted assuming hypothetical exposure scenarios for potential future occupants of the Site. Occupants were subdivided into three hypothetical receptor populations based on their expected locations and activities. Each hypothetical population is described herein with a unique set of environmental and physiological assumptions, and was thus assumed to be exposed to different concentrations of chemicals for different amounts of time. All assumptions used in the risk assessment are quantified in the attached tables.

Baseline risks were calculated for the following three hypothetical receptor populations at the Site:

- Future commercial/industrial building occupants, who will work indoors on-Site over a long period of time ("Indoor Workers");
- Future maintenance personnel such as groundskeepers, who will labor primarily outdoors over a long period of time ("Maintenance Workers").
- Workers involved in the construction of new buildings or subsurface utilities on-Site, who will occupy the Site for much more limited periods ("Construction Workers"); and

A summary table of calculated baseline risks to each of the hypothetical future populations is shown below (Table A-I). These values represent the estimated total (a) Hazard Index for non-carcinogenic adverse health affects, and (b) incremental excess carcinogenic risk ("Cancer Risk"), to the hypothetical populations due to current Site conditions. In general, potential exposure pathways considered in the calculation of these baseline risks include exposure through incidental ingestion of soil, dermal contact with soil, inhalation of vapors from soil, and inhalation of vapors from groundwater.

One of the assumptions regarding the future Indoor Worker receptor population is that, unlike future Maintenance and Construction Workers, its members never work directly with soil. Thus, incidental ingestion and dermal contact with contaminated soil are not considered exposure pathways for this population. Inhalation of volatile organic

compounds evaporating from soil and groundwater were considered as complete pathways for all hypothetical populations.

Hypothetical Population	Baseline Hazard Index	Baseline Cancer Risk
Future Indoor Workers	0.08	1.9×10^{-5}
Future Maintenance Workers	0.03	4.5×10^{-6}
Construction Workers	0.01	1.0×10^{-7}

Table A-I. Summary of Baseline Risks to Hypothetical Future Site Populations.

A more complete summary of estimated Hazard Index and Cancer Risk for the above populations may be found in Tables A-19, A-20, and A-21. Risk calculations are further documented in Tables A-9 through A-18.

Risk Calculations

Table A-19 is a summary of estimated baseline risks for Indoor Workers. The most significant chemical/pathway combination for Indoor Workers, in terms of Cancer Risk, is inhalation of TCE evaporating from groundwater. The non-carcinogenic Hazard Index for this population is dominated by inhalation of vinyl chloride, trichloroethene ("TCE"), and *cis*-1,2-dichloroethene ("*cis*-1,2-DCE") from groundwater.

Baseline estimated Hazard Indices and Cancer Risk for Maintenance Workers through all pathways are listed in Table A-20. The most significant chemical/pathway combination for the Maintenance Worker receptor population is inhalation of vinyl chloride volatilizing from soil.

Baseline estimated Hazard Indices and Cancer Risk for all Construction Worker exposure pathways are listed in Table A-21. The most significant chemical/pathway combination, both in terms of Cancer Risk and the non-carcinogenic Hazard Index for the Construction Worker receptor population is inhalation of vinyl chloride volatilizing from soil.

Calculation of Risk-Based Action Levels

Using the baseline risks calculated for the hypothetical receptor populations at the Site, risk-based action levels for soil and groundwater have been calculated, as discussed below.

Risk-based action levels for soil and groundwater were calculated to apportion post-remediation risk such that overall Cancer Risk to the Indoor Worker, Maintenance Worker, and Construction Worker are each at or below 1.0×10^{-5}, and overall Hazard Index is at or below 1.0.

Table A-II is a listing of the risk-based action levels for those chemicals found in Site soil at concentrations exceeding the risk-based action levels. These include vinyl chloride and TCE. A more complete listing of risk-based action levels in soil for all chemicals of concern is provided in Table A-22.

VOLATILE ORGANIC COMPOUND	RISK-BASED ACTION LEVEL IN SOIL (ug/kg)
vinyl chloride	75
trichloroethene	3,200

Table A-II. Risk-Based Action Levels for VOCs in Soil

Table A-III is a summary of risk-based action levels for chemicals with maximum concentrations found in Site groundwater exceeding the risk-based action levels, i.e. TCE and vinyl chloride. Table A-23 is a more detailed enumeration of the calculated groundwater risk-based action levels.

VOLATILE ORGANIC COMPOUND	RISK-BASED ACTION LEVEL IN GROUNDWATER (ug/L)
vinyl chloride	500
trichloroethene	8,000

Table A-III. Risk-Based Action Levels for VOCs in Groundwater.

The method used for apportioning risk was to allocate most of the "available" risk to the more hazardous chemicals and those more commonly found at the Site. This approach minimizes the volume of soil and groundwater potentially requiring remediation, while keeping future hypothetical populations' estimated risks below target levels. Concentrations of vinyl chloride and TCE have been encountered in soil and groundwater samples from the Site in exceedence of their risk-based action levels. Other chemicals of concern have been discovered at concentrations consistently below the action levels.

Tables A-24, A-25, and A-26 are summaries of Hazard Index and Cancer Risk to each of the three hypothetical future worker populations at the calculated risk-based action levels

for soil and groundwater. Cumulative Hazard Indices and Cancer Risks are equal to or below 1.0 and 1.0×10^{-5}, respectively, in each case. Therefore, the risk-based action levels for soil and groundwater presented in Tables A-II and A-III result in an acceptable level of risk for future potentially exposed populations.

Future installation of monitoring wells (or other on-Site environmental work) may involve the collection of soil or groundwater samples for chemical analysis. Such analyses could potentially indicate the presence of chemical concentrations different from the current dataset. In this case, risk-based action levels for the Site may be recalculated to reflect the improved understanding of the distribution and concentrations of chemicals in Site soil or groundwater.

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1. INTRODUCTION

This appendix presents a human health risk assessment that was performed to:

- evaluate potential impacts to human health by chemicals of concern ("COCs") present in soil and groundwater at the commercial/industrial property located at 3705-3723 Haven Avenue, Menlo Park, California (the "Site"), and
- develop risk-based action levels for soil and groundwater at the Site.

Note that baseline risks at the Site were calculated previously for development of risk-based action levels for soil excavation using data collected prior to April 1998 (EKI 1998c; EKI 1999b). The methods and assumptions used in the risk calculations described herein are consistent with the previous risk calculations, with the following exceptions. The previous risk assessment used the most conservative measured values of vadose and capillary zone saturated porosities for Site soil. The calculated risks presented herein have instead assumed Site-average values for each parameter. Some additional groundwater data were collected for the Site after April 1998. Therefore, the data set used herein to calculate the baseline risk at the Site has been updated to include all the soil and groundwater data for the Site available as of February 1999. Also, the proposed risk-based action levels have now been developed to consider VOCs in both soil and groundwater.

The risk assessment was conducted assuming hypothetical exposure scenarios for future occupants of the Site. Occupants are subdivided into several receptor populations based on their expected locations and activities. Each group was assumed to be subjected to different concentrations of chemicals for different amounts of time. All assumptions used in the risk assessment are quantified in the attached tables.

This report is divided into three major sections. The first discusses criteria used to define each of the future occupant populations, outlines the chemicals present at the Site and their representative concentrations, and explains the toxicity criteria used in calculations. The second section presents and discusses the calculation of risk-based cleanup goals at the Site, and the third section discusses conservative assumptions used and uncertainty involved in the calculations.

This risk assessment was performed using guidelines published by the U.S. Environmental Protection Agency ("USEPA"), the California Environmental Protection Agency ("Cal-EPA"), and the American Society for Testing and Materials ("ASTM"), in the following documents:

- USEPA. December 1989, *Risk Assessment Guidance for Superfund. Volume 1. Human Health Evaluation Manual.*

- Cal-EPA, July 1992, *Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities.*

- ASTM, September 1995, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites ("RBCA").*

Although all three documents are used for guidance in the risk assessment calculations, RBCA was the source of transport models used to calculate indoor and outdoor air exposure point concentrations for the assessment.

Chemicals of concern at the Site include halogenated volatile organic compounds ("VOCs"), acetone, and the aromatics benzene and toluene. Ordered by frequency of detection, the most common contaminants in soil and groundwater are trichloroethene ("TCE"), *cis*-1,2-dichloroethene ("cis-1,2-DCE"), and 1,1,2-trichloro-1,2,2-trifluoroethane ("CFC-113"). In groundwater, chloroform is also a common constituent. Based on the current set of samples, more chemicals appear to be present at detectable levels in groundwater than in soil.

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2. ASSESSMENT OF BASELINE HUMAN HEALTH RISKS

The objective of a risk assessment for a particular location is to calculate the potential for adverse health effects, caused by chemicals present at the Site, to hypothetical current and future populations that may use the Site. The Site is currently unoccupied. Therefore, risk calculations in this report concern only hypothetical future populations. This section presents a discussion of the following topics:

- Potentially exposed receptor populations and relevant exposure pathways,
- Chemicals of concern present in soil and groundwater,
- Toxicity criteria for the chemicals of concern used in risk calculations,
- Assumptions used to calculate representative and exposure-point contaminant concentrations, and
- Results of the risk calculations.

2.1 Identification of Potentially Exposed Receptor Populations and Relevant Exposure Pathways

The Site is a commercial/industrial property, previously used for the manufacture of polished silicon wafers. It is located in a low-elevation, industrial/commercial area, approximately one hundred feet south of the salt evaporation ponds at the margin of San Francisco Bay. Two buildings are located on the Site; both are currently vacant. Populations at risk of potential exposure to chemicals of concern at the Site are therefore limited to hypothetical future populations of workers, which for the purpose of this study are grouped into three categories:

- Future commercial/industrial building occupants, who will work indoors on-Site over a long period of time ("Indoor Workers");
- Future maintenance personnel such as groundskeepers, who will labor primarily outdoors over a long period of time ("Maintenance Workers"); and
- Workers involved in the construction of new buildings or subsurface utilities on-Site, who will occupy the Site for much more limited periods ("Construction Workers").

Based on current land use and zoning, no residential, health-care, or educational facilities are expected to be built on-Site. Thus, all potentially exposed receptor populations in the risk assessment are assumed to be adults. Each potentially exposed future population at the Site has a set of possible exposure mechanisms, or pathways, through which it may come in contact with various chemicals of concern. These exposure pathways are dependent upon the type of activity or tasks expected from the population.

Oral ingestion of groundwater is a potential exposure pathway that was considered and rejected. Analytical results for samples of groundwater from the Site range from 8,600 mg/L to 154,200 mg/L total dissolved solids ("TDS") [EKI, 1999a], which classifies the water as brackish to saline [Drever, 1988]. The groundwater beneath the Site cannot be considered a potential source of drinking water because these values exceed the California state TDS guideline of 3,000 mg/L for drinking water sources (CRWQCB, 1995).

Dermal contact with groundwater was also rejected. Historic depth to groundwater at the Site is six to eight feet below ground surface ("bgs") [EKI, 1997a]. Expected depth of excavation for future construction utility installation or repair is estimated to be less than six to eight feet, so direct dermal exposure to groundwater is not treated as a valid exposure pathway for any of the hypothetical future Site receptor populations.

For the purpose of calculating baseline risk, parameters assumed in this study for each of the receptor populations are the following:

- INDOOR WORKERS
  - Exposure Pathways:
    - Inhalation of volatiles from groundwater
    - Inhalation of volatiles from soil
  - Exposure Parameters:
    - Frequency: 250 working days per year, none doing excavation work; all days spent working indoors
    - Duration: 25 years
- MAINTENANCE WORKERS
  - Exposure Pathways:
    - Inhalation of volatiles from soil
    - Inhalation of volatiles from groundwater
    - Dermal contact with soil
    - Incidental ingestion of soil
  - Exposure Parameters:
    - Frequency: 250 working days per year; 5 days of excavation work, 245 days of non-excavation work; all working days spent outside
    - Duration: 25 years

- CONSTRUCTION WORKERS

- Exposure Pathways:
  - Inhalation of volatiles from soil
  - Inhalation of volatiles from groundwater
  - Dermal contact with soil
  - Incidental ingestion of soil

- Exposure Parameters:
  - Frequency: 250 working days per year, 87 spent doing excavation work
    - Duration: 4 months

Unlike the Indoor Worker population, Maintenance and Construction Workers are assumed to have contact with Site soil in the course of their jobs during excavation work. Thus, dermal contact and incidental ingestion pathways are considered for these populations. Although the hypothetical Maintenance and Construction Worker populations share the same potential exposure pathways, the two groups differ in exposure duration. Maintenance Workers, being permanent employees, are assumed to undergo exposure through activities at the Site for 25 years [USEPA, 1991]. Construction Workers are assumed to have a much shorter per-individual exposure of one year, a span of time assumed to encompass the earthwork stage of a construction project. An additional difference between the two outdoor receptor populations is the assumption that Maintenance Workers engage in excavation-type activities for an average of 5 days per year of 250 days, whereas Construction Workers perform excavation 87 days (four months) of their work year. This is significant in that excavation work is modeled with a higher soil ingestion rate than non-excavation activity.

The Site is almost completely covered by asphalt or concrete. Due to this cover, mobilization of chemicals through inhalation of particulate matter from surficial soils is not considered as a viable exposure pathway. The assumption was made that the Site will retain a similar type of cover, such as asphalt, concrete, or clean landscaping fill, in the future. Volatilization of chemicals from surficial soils to ambient air is similarly precluded, as almost none of the soil at the Site exists at the surface. For modeling purposes, all contaminated soil is treated as subsurface soil.

Mobilization and diffusion of vapor-phase chemicals (volatilized from soil or groundwater) from the subsurface to the surface is driven by a concentration gradient between the subsurface source of the vapors and the local atmosphere. Many chemicals at the Site are present in both soil and groundwater, and are conservatively assumed, in the baseline risk calculations, to volatilize and diffuse from both soil and groundwater into the atmosphere.

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1992a; Cal-EPA, 1992]. The conservative assumption is made whereby analyses that did not detect a particular chemical of concern are treated as though the chemical had been detected at a concentration of one half the detection limit [USEPA, 1989]. Representative concentrations for all chemicals of concern at the Site are shown in Table A-3.

2.3 Toxicity Criteria

Accumulated data from various laboratory toxicity studies have been compiled and interpreted by a number of Federal and State agencies, among them the U.S. Environmental Protection Agency and the California Environmental Protection Agency. Results from human and, more commonly, animal trials are summarized into reference doses ("RfDs") for non-carcinogenic chemicals and risk slope factors ("SFs") for carcinogens. Toxicity values used in this risk assessment are taken from a hierarchy of several sources. If the needed value was not available in the preferred source, the next most reviewed source was consulted, and so on.

Non-carcinogen RfDs are preferentially obtained from the U.S. EPA Integrated Risk Information System ("IRIS") [USEPA, 1996], an on-line database of peer-reviewed toxicity information. The next most desirable RfD sources, in order of preference, are the U.S. EPA Health Effects Summary Tables ("HEAST") [USEPA, 1997], the U.S. EPA National Center for Environmental Assessment ("NCEA") Risk Assessment Issue Papers, and the Cal-EPA Office of Environmental Health Hazard Assessment Technical Support Document for the Determination of Non-Cancer Chronic Reference Exposure Levels ("OEHHA") [Cal-EPA, 1997].

Carcinogen SFs are preferentially culled from the Cal-EPA Memorandum Concerning Cancer Potency Factors: Update [Cal-EPA, 1996]. Values unavailable in that document are obtained from one of the above references for RfDs, in the same order of preference.

2.3.1 Non-Carcinogenic Toxicity Criteria

Toxicity of non-carcinogenic chemicals is expressed through reference doses, or RfDs, in units of milligrams per kilogram of body weight per day (mg/kg-day). The RfD for a particular chemical of concern is the hypothetical dose which will cause no adverse effects in human populations. An oral or ingestion reference dose ("RfDo") for a chemical is calculated from a different set of experiments than is an inhalation reference dose ("RfDi"). When one quantity or the other is unavailable, a "route-to-route extrapolation," or substitution, is sometimes used in the above data sources to estimate the missing value. As most toxicity studies are performed on laboratory animals, direct quantitative data for human toxicity of a particular chemical are uncommon. Published RfDs therefore generally contain safety factors of one or two orders of magnitude, to account for cross-species uncertainty, uncertainty from experimental procedures, and other effects. RfDs may be interpreted as representing the maximum "safe" dosage of a non-carcinogenic chemical. A low RfD indicates a low threshold dose, and therefore a

more toxic chemical; a high RfD denotes a substance with less toxicity. Reference doses for each chemical of concern at the Site are listed in Table A-4, together with a summary of demonstrated health effects and sources of the toxicological data.

2.3.2 Carcinogenic Toxicity Criteria

Toxicity for carcinogens is expressed as a risk slope factor, or "SF". Units of an SF are inverse exposure units, or $(mg/kg\text{-}day)^{-1}$. When multiplied by a dose, the inverse dosage units cancel, resulting in a dimensionless value that represents the risk associated with that dose. Slope factors are therefore the "plausible upper-bound estimates of the probability of a carcinogenic response per unit of chemical intake over a lifetime" [USEPA, 1989]. As opposed to RfDs, chemicals with low SFs are less carcinogenic than those with high SFs. Slope factors for chemicals of concern at the Site are summarized in Table A-5, along with carcinogenic effects and SF data sources for each chemical.

2.4 Calculation of Exposure Point Concentrations and Chronic Daily Intakes

Based on the calculated representative concentrations for the chemicals of concern at the Site, estimates can be calculated for the concentration each potentially exposed receptor population might experience through a particular set of exposure pathways. Called exposure point concentrations ("EPCs"), these values, along with parameters describing the potentially exposed populations, allow determination of a Chronic Daily Intake ("CDI") for each chemical, population, and pathway. CDIs are expressed as dosages, in units of milligram of chemical per kilogram of body weight per day (mg/kg-day). Carcinogenic CDIs are calculated differently from non-carcinogenic CDIs. Averaging time is assumed to be 25 years for non-carcinogens but a full lifetime of 70 years for carcinogens. Assumed values for all parameters, along with the sources of the assumptions, are summarized in Table A-6.

2.4.1 Ingestion and Dermal Contact Exposure Pathways

For the cases of soil ingestion and dermal contact, exposure point concentrations are identical to representative concentrations. CDIs for the two potential future receptor populations assumed to have the greatest likelihood of contact with Site soil, Maintenance Workers and Construction Workers, are calculated according to equations [1] and [2]:

Ingestion:

$$CDI_i = \frac{C_s \times IR_s \times EF \times ED \times 10^{-6}\,\frac{kg}{mg}}{BW \times AT} \qquad [1]$$

where

CDI_i = Chronic daily intake through ingestion (mg/kg-day)

C_s = Representative Concentration = Concentration in soil (mg/kg)

IR_s = Ingestion rate of soil (mg/day)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
BW = Body weight (kg)
AT = Averaging time (days)

Dermal Contact:

$$CDI_{dc} = \frac{C_s \times SA_s \times ABS \times AF \times EF \times ED \times 10^{-6} \frac{kg}{mg}}{BW \times AT} \quad [2]$$

where
CDI_{dc} = Chronic daily intake through dermal contact (mg/kg-day)
C_s = Representative Concentration = Concentration in soil (mg/kg)
SA_s = Surface area of skin exposed to soil contact (cm^2/event)
ABS = Soil-dermal absorption fraction (unitless)
AF = Soil adherence factor (mg/cm^2)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
BW = Body weight (kg)
AT = Averaging time (days)

The Maintenance and Construction Worker scenarios differ with regard to incidental ingestion of soil. A Maintenance Worker is assumed to excavate soil for a total of 5 days during a work year of 250 days. In contrast, a Construction Worker is assumed to engage in excavation labor for four months (approximately 87 days) throughout the 250-day work year. Soil ingestion is assumed to occur at a rate of 480 mg/day during excavation activity and 50 mg/day during routine maintenance activities [USEPA, 1991; Cal-EPA, 1992]. See Table A-6 for more details of human exposure assumptions.

2.4.2 Inhalation Exposure Pathways

Chemicals of concern can volatilize from the subsurface into the air, posing a potential hazard to on-Site workers breathing in the vicinity. Different algorithms are used to calculate Exposure Point Concentrations ("EPCs") for indoor and outdoor air. When chemicals evaporate from soil and groundwater, the rate of transfer, based on each chemical's volatility, must first be determined before air EPCs can be calculated. Volatilization is modeled as a linear transfer function of the chemical's concentration in soil or groundwater [ASTM, 1995]. Expressed as a volatilization factor ("VF"), the transfer function is based, in part, on a chemical's Henry's Law constant, diffusion coefficients in air and water, and organic carbon partition coefficient. Exposure point concentrations in air due to volatilization of chemicals present in soil and groundwater are calculated for all future worker receptor populations through equations [3] and [4]:

$$C_a = VFx \times RC \times AgF \quad [3]$$

for excavation work, and

$$C_a = VFx \times RC \quad [4]$$

for non-excavation work, where

C_a = Concentration in air, or EPC (mg/m³)
RC = Representative concentration of the chemical (mg/kg or mg/L)
AgF = Agitation factor to model enhanced evaporation from excavation (unitless)

and the general term VFx refers to one of the following pathway and chemical-specific Volatilization Factors ("VFs"):

VFs_{amb} = Soil-to-outdoor air (ambient) pathway (kg soil/m³ air):

$$VFs_{amb} = \frac{H \times \rho_S \times 10^3 \frac{cm^3 kg}{m^3 g}}{\left[\theta_{WS} + (k_{OC} \times f_{OC} \times \rho_S) + (H \times \theta_{AS})\right] \times \left(1 + \frac{U_{AIR} \times \delta_{AIR} \times L_S}{D_S^{eff} \times W}\right)} \quad [5]$$

VFw_{amb} = Groundwater-to-outdoor air (ambient) pathway (L H_2O/m³ air):

$$VFw_{amb} = \frac{H \times 10^3 \frac{L}{m^3}}{\left(1 + \frac{U_{AIR} \times \delta_{AIR} \times L_{GW}}{D_{WS}^{eff} \times W}\right)} \quad [6]$$

VFs_{enp} = Soil-to-indoor air (enclosed space) pathway (kg soil/m³ air):

$$VFs_{enp} = \frac{\left[\theta_{WS} + (k_{OC} \times f_{OC} \times \rho_S) + (H \times \theta_{AS})\right] \times \left[\frac{H \times \rho_S}{\frac{D_S^{eff}}{L_S \times ER \times L_B}}\right] \times 10^3 \frac{cm^3 kg}{m^3 g}}{1 + \left[\frac{D_S^{eff}}{L_S \times ER \times L_B}\right] + \left[\frac{D_S^{eff} \times L_{CRACK}}{L_S \times D_{CRACK}^{eff} \times \eta}\right]} \quad [7]$$

VFw_{enp}= Groundwater-to-indoor air (enclosed space) pathway (L H_2O/m^3 air):

$$VFw_{enp} = \frac{H \times \left[\frac{D^{eff}_{WS}}{L_{GW} \times ER \times L_B}\right] \times 10^3 \frac{L}{m^3}}{1 + \left[\frac{D^{eff}_{WS}}{L_{GW} \times ER \times L_B}\right] + \left[\frac{D^{eff}_{WS} \times L_{CRACK}}{L_{GW} \times D^{eff}_{CRACK} \times \eta}\right]} \quad [8]$$

VFs are based, in part, upon effective diffusion coefficients for each chemical, calculated as follows:

D^{eff}_S = Effective diffusion coefficient in soil based on vapor concentration (cm^2 / s):

$$D^{eff}_S = \left[D^{air} \times \frac{(\theta_{AS})^{3.3}}{(\theta_T)^2}\right] + \left[D^{water} \times \frac{(\theta_{WS})^{3.3}}{H \times (\theta_T)^2}\right] \quad [9]$$

D^{eff}_{CAP} = Effective diffusion coefficient through capillary fringe (cm^2 / s):

$$D^{eff}_{CAP} = \left[D^{air} \times \frac{(\theta_{ACAP})^{3.3}}{(\theta_T)^2}\right] + \left[D^{water} \times \frac{(\theta_{WCAP})^{3.3}}{H \times (\theta_T)^2}\right] \quad [10]$$

D^{eff}_{WS} = Effective diffusion coefficient between groundwater and surface (cm^2 / s):

$$D^{eff}_{WS} = \frac{(h_{CAP} + h_V)}{\left[\frac{h_{CAP}}{D^{eff}_{CAP}} + \frac{h_V}{D^{eff}_S}\right]} \quad [11]$$

D^{eff}_{CRACK} = Effective diffusion coefficient through floor or wall cracks (cm^2 / s)

$$D^{eff}_{CRACK} = \left[D^{air} \times \frac{(\theta_{ACRACK})^{3.3}}{(\theta_T)^2}\right] + \left[D^{water} \times \frac{(\theta_{WCRACK})^{3.3}}{H \times (\theta_T)^2}\right] \quad [12]$$

Where:

D^{air} = Diffusion coefficient of the chemical in air (cm^2 / s)

D^{water} = Diffusion coefficient of the chemical in water (cm^2 / s)

ER = Enclosed-space air exchange rate (L / sec)
f_{OC} = Fraction of organic carbon in soil (g C / g soil)
H = Henry's Law constant (cm³ H_2O / cm³ air)
h_{cap} = Thickness of capillary fringe (cm)
h_v = Thickness of vadose zone (cm)
k_{OC} = Organic carbon-water sorption coefficient (cm³ H_2O / g C)
L_B = Enclosed-space volume / infiltration area ratio (cm)
L_{CRACK} = Enclosed-space floor or wall thickness (cm)
L_{GW} = Depth to groundwater, i.e. $h_{cap} + h_v$ (cm)
L_S = Depth to subsurface soil sources (cm)
U_{AIR} = Wind speed above ground surface in ambient mixing zone (cm / sec)
W = Width of source area parallel to wind or groundwater flow direction (cm)
δ_{AIR} = Ambient air mixing zone height (cm)
δ_{GW} = Groundwater mixing zone thickness (cm)
η = Areal fraction of cracks in floor or wall (cm² cracks / cm² total area)
θ_{ACAP} = Volumetric air content in capillary fringe soil (cm³ air / cm³ soil)
θ_{ACRACK} = Volumetric air content in floor or wall cracks (cm³ air / cm³ crack vol.)
θ_{AS} = Volumetric air content in vadose zone soil (cm³ air / cm³ soil)
θ_T = Total soil porosity (cm³ / cm³ soil)
θ_{WCAP} = Volumetric water content in capillary fringe soil (cm³ water / cm³ soil)
θ_{WCRACK} = Volumetric water content in floor or wall cracks (cm³ water / cm³ crack vol.)
θ_{WS} = Volumetric water content in vadose zone soil (cm³ water / cm³ soil)
ρ_S = Soil bulk density (g soil / cm³ soil)

Volatilization Factors are calculated according to the method described in the ASTM RBCA guidance [ASTM, 1995]. Air diffusion coefficients ("D_{air}") for chemicals of concern at the Site are estimated using the FSG method [Lyman, et al., 1990; USEPA, 1988]. Water diffusion coefficients ("D_{water}") are calculated through the method of Hayduk and Laudie [Lyman, et al., 1990]. Ambient-air VFs are used for calculations regarding Construction and Maintenance Workers, while enclosed-space air VFs are used for Indoor Worker EPC calculations. Specific physical parameter assumptions used in the above VF equations can be found in Table A-7; the quantities are Site-specific and noted as such where available, and otherwise are default values from the ASTM RBCA guidance [ASTM, 1995]. Table A-8 lists the resulting VFs and other data for each chemical of concern and volatilization pathway.

Construction Workers are modeled herein as performing excavation for their four month on-Site tenure of 87 working days (USEPA, 1991; Cal-EPA, 1992), consequently equation [3] is applied throughout. Maintenance Workers, however, are assumed to only labor five days per year in excavation tasks; AgF is only factored in through the use of equation [3] for those five days annually. The rest of the time, Maintenance Worker air EPCs are calculated using equation [4]. Indoor Workers are assumed to never perform excavation tasks, thus air EPCs are calculated with equation [4].

Chronic Daily Intakes in air due to volatilization of chemicals present in soil are calculated for all future worker receptor populations through equation [13]:

$$CDI_{air} = \frac{C_a \times IR_a \times EF \times ED}{BW \times AT} \qquad [13]$$

where

CDI_{air} = Chronic daily intake through inhalation (mg/kg-day)
C_a = Concentration in air, or EPC (mg/m^3)
IR_a = Inhalation rate of air (m^3/day)
EF = Exposure frequency (days/year)
ED = Exposure duration (years)
BW = Body weight (kg)
AT = Averaging time (days)

Chronic daily intakes of chemicals of concern for each valid population/pathway combination are summarized in Table A-9 through Table A-18.

2.5 Baseline Risk Characterization

For the purpose of risk assessment at the Site, effects from chemicals of concern are split into two broad categories, Cancer Risk and non-carcinogenic Hazard Index. Each of these types of risk is calculated differently, although many contaminants at the Site have both effects, and are assigned both classifications. The separation is driven by the toxicity data for the two chemical effect categories. Non-carcinogens are assigned a Reference Dose ("RfD") in mg/kg-day, and carcinogens are assigned a Slope Factor ("SF"), having inverse dosage units of (mg/kg-day)$^{-1}$. This section outlines assumptions used to calculate quantitative, Site-specific estimates of potential health hazards from non-carcinogens and of incremental lifetime Cancer Risk from carcinogens occurring at the Site.

Note that baseline risks are calculated assuming receptor populations are unprotected from exposure to hazardous chemicals (i.e. no engineering controls or personal protection equipment used).

As discussed in Section 1.3, non-carcinogenic RfDs are generally based on the highest no-adverse-effects chronic dosages from several studies. The hazard of a chemical of concern through a particular exposure pathway is calculated as the Chronic Daily Intake ("CDI") divided by the RfD for that pathway. This quantity is called the Hazard Index ("HI"). It is unique to the site, chemical, exposure pathway, and receptor population:

$$HI_a = \frac{CDI_a}{RfD_a} \qquad [14]$$

where

HI_n = Hazard Index for the nth combination of population, exposure pathway, and chemical of concern (dimensionless)

CDI_n = Chronic Daily Intake for the nth combination of population, exposure pathway, and chemical of concern (mg/kg-day)

RfD_n = Reference Dose for the nth combination of exposure pathway and chemical of concern (mg/kg-day)

For an explanation of CDI calculation for each population / pathway combination, please see footnotes to Tables A-9 through A-18, as appropriate.

Summation of Hazard Indices over all pathways and chemicals gives the Hazard Index for each population, which is targeted to remain at or below a value of one. A total HI less than or equal to one indicates that the population will not be exposed to the chemical beyond a dosage considered safe.

Carcinogenic chemicals are assigned, based on experimental evidence and mathematical modeling, a published Slope Factor for each exposure pathway. When multiplied by the CDI for that pathway, a unitless quantity results which represents the incremental risk of developing cancer from exposure to that chemical, through that exposure pathway, over a lifetime of 70 years [USEPA, 1989].

$$CR_n = CDI_n \times SF_n \qquad [15]$$

where

CR_n = Estimated incremental excess Cancer Risk for the nth combination of population, exposure pathway, and chemical of concern (dimensionless)

CDI_n = Chronic Daily Intake for the nth combination of population, exposure pathway, and chemical of concern (mg/kg-day)

SF_n = Slope Factor for the nth combination of exposure pathway and chemical of concern $(mg/kg\text{-}day)^{-1}$

As with the non-cancer Hazard Index, summation of risk from all chemicals over all pathways valid for a particular receptor population gives an overall Cancer Risk for the population at the Site. This value is targeted to remain at or below 10^{-5}. The National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR §300) mandates an acceptable range of maximum incremental carcinogenic risk between 10^{-4} and 10^{-6}. California law requires notification of on-Site workers if Cancer Risk is estimated to exceed 10^{-5} (California Code of Regulations ("CCR") Title 22, Section 12703). The targeted maximum carcinogenic risk of 10^{-5} satisfies both sets of regulations.

All potentially exposed populations are assumed to be unprotected in the baseline risk calculations.

2.5.1 Future Indoor Workers

One of the assumptions regarding the future Indoor Worker receptor population is that its members never work with soil, thus, incidental ingestion and dermal contact with contaminated soil are not considered exposure pathways for this population. Inhalation of volatile organic compounds evaporating from soil, however, is valid and is presented in Table A-9. The same data for inhalation of VOCs from groundwater is shown in Table A-10.

A summary of baseline hazard and risk for Indoor Workers may be found in Table A-19. The most significant chemical/pathway combination for Indoor Workers, in terms of Cancer Risk, is inhalation of TCE evaporating from groundwater. The non-carcinogenic Hazard Index for this population is dominated by inhalation of vinyl chloride, TCE, and cis-1,2-DCE from groundwater.

2.5.2 Future Maintenance Workers

Baseline risk characterization data for Maintenance Workers is compiled in several tables. Table A-11 summarizes the soil ingestion exposure pathway, and Table A-12 displays similar data for the soil dermal contact exposure pathway. Table A-13 displays Hazard Index and Cancer Risk for the inhalation pathway through volatilization of organic compounds from soil. The same calculations for inhalation of VOCs from groundwater are shown in Table A-14.

Hazard and risk for Maintenance Workers through all pathways is summarized in Table A-20. The most significant chemical/pathway combination for the Maintenance Worker receptor population is inhalation of vinyl chloride volatilizing from soil. Note that under existing Site conditions, potential risks experienced by the hypothetical Maintenance Worker population are within acceptable limits.

2.5.3 Construction Workers

Baseline Hazard Indices and Cancer Risks for each chemical of concern at the Site are organized in the same way as for Maintenance Workers. Table A-15 lists the soil ingestion exposure pathway, and Table A-16 lists similar data for the soil dermal contact pathway. Table A-17 lists Hazard Index and Cancer Risk for the inhalation pathway of volatile organic compounds evaporating from soil; groundwater VOC volatilization is detailed in Table A-18. A summary of baseline Cancer Risks and Hazard Indices for all Construction Worker exposure pathways is listed in Table A-21. The most significant chemical/pathway combination, both in terms of potential carcinogenic risk and non-carcinogenic health hazard for the Construction Worker receptor population, is inhalation of vinyl chloride volatilizing from soil. Dermal contact with vinyl chloride is also a significant pathway in terms of generation of carcinogenic risk for Construction Workers. Note that under current conditions, potential risks experienced by the hypothetical Construction Worker population are less than the acceptable maximum values.

3. CALCULATION OF RISK-BASED ACTION LEVELS FOR SOIL AND GROUNDWATER

Using the baseline risks calculated for the hypothetical receptor populations at the Site, risk-based action levels for soil and groundwater have been calculated, as discussed below. Risk-based action levels have been calculated considering potential exposures to future hypothetical receptor populations, i.e., Indoor Workers, Maintenance Workers, and Construction Workers.

Risk-based action levels for soil and groundwater were calculated to apportion post-remediation risk such that overall Cancer Risk to all hypothetical worker populations is at or below 1.0×10^{-5}, and overall Hazard Index is at or below 1.0. The method used for apportioning risk was to allocate most of the risk to the more hazardous chemicals and those more commonly found at the Site. This approach minimizes the volume of soil and groundwater potentially requiring remediation, while keeping future hypothetical populations' estimated risks below target levels.

Table A-22 lists risk-based action levels for soil, and Table A-23 lists risk-based action levels for groundwater. Current representative concentrations of chemicals within soil and groundwater are also shown on Tables A-22 and A-23 for comparison. TCE and vinyl chloride have been detected in Site soil and groundwater at concentrations greater than their respective risk-based action levels.

Estimates of future estimated Hazard Indices and Cancer Risks for each of the hypothetical populations are listed in Tables A-24, A-25, and A-26. These risks represent estimates of what would result from cleanup of both soil and groundwater at the Site to the respective risk-based action levels. Estimated cumulative Hazard Indices and Cancer Risks for each hypothetical population are equal to or below 1.0 and 1.0×10^{-5}, respectively. Therefore, the risk-based action levels for soil and groundwater listed in Tables A-22 and A-23 would result in an acceptable level of risk for future potentially exposed populations.

If, in the future, chemicals are measured in soil or groundwater samples that differ significantly from the current dataset, risk-based action levels may be recalculated to more accurately reflect the distribution and concentrations of the chemicals.

4. CONSERVATIVE ASSUMPTIONS IN THE RISK ASSESSMENT

The estimated baseline risks and the risk-based action levels presented in the attached tables are upper-bound, health conservative estimates of baseline risks and risk-based action levels for reasonable maximum exposure scenarios. Actual risks may be lower. This section discusses the conservative nature of some of the assumptions in the risk assessment.

Major conservative assumptions include:

- the method used to calculate representative concentrations for chemicals in soil and groundwater;
- the use of all chemicals detected on-Site for risk calculation, even if the frequency of detection was very low;
- the use of conservative exposure frequency assumptions (in days of exposure per year) for hypothetical future worker populations;
- "double counting" of certain calculated risks caused by summing the risks due to volatilization of VOCs from soil and from groundwater; and
- apportionment of risk to each chemical of concern in both soil and groundwater, even when the chemical was actually detected in only one medium.

4.1 Calculation of Representative Concentrations

Representative concentrations of chemicals used to calculate baseline risks are assumed to be the lesser of the maximum detected concentration or the 95% upper confidence limit of the mean concentration ("95% UCL"), based on a lognormal model. When calculating the 95% UCL, samples without detectable concentrations were conservatively assumed to contain chemicals at concentrations equal to half the detection limit for the analyses. Potentially exposed populations may actually be exposed to a lesser concentration than either the maximum or the 95% UCL, as the distribution of chemicals at the Site is not homogeneous.

4.2 Frequency of Detection

Chemicals detected in Site soil and groundwater are dominated by TCE and cis-1,2-DCE. As a conservative approach, however, all detected chemical species were used in calculation of baseline risks, regardless of each chemical's frequency of detection. Table A-3 shows frequencies of detection for all chemicals detected on-Site.

Given the overall conservative nature of the risk assessment, actual non-carcinogenic and carcinogenic risks to potentially exposed populations are likely to be significantly lower than reported herein. The calculated health risk-based action levels are founded on the same conservative assumptions as the baseline risk calculations. Consequently, chemicals present in soil and groundwater at their human health risk-based action level concentrations should not pose an adverse risk to occupants at the Site.

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Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
B101	2.0-2.5	04-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
B102	2.0-2.5	04-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
C-1	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	0.65	<0.025	<0.025	0.11	[b]	<0.05
C-1	5.5-6.0	19-Jun-97	<0.05	<0.05	<0.05	<0.05	1.5	<0.05	<0.05	<0.05	-	<0.1
C-2	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.14	-	<0.05
C-2	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.867	<0.025	<0.025	0.52	-	<0.05
C-3	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-4	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-5	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-6	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
C-7	1.0-1.5	28-May-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-1	14-14.5	10-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-2	12.5-13	07-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-3	12.5-13	10-Oct-96	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-4	12.5-13	07-Oct-96	<0.005	<0.005	<0.005	<0.005	0.035	<0.005	<0.005	0.061	-	<0.01
EC-5	12-12.5	11-Oct-96	<0.005	<0.005	<0.005	<0.005	0.014	<0.005	<0.005	0.064	-	<0.01
EC-6	12-12.5	11-Oct-96	0.021	<0.02	0.021	<0.02	<0.02	<0.02	<0.02	0.34	-	<0.04
EC-7	15-15.5	09-Oct-96	<0.01	0.011	<0.01	<0.01	0.11	<0.01	<0.01	0.25	-	<0.02
EC-8	14.5-15	09-Oct-96	<0.1	<0.1	<0.1	<0.1	0.29	<0.1	<0.1	1.5	-	<0.2
EC-9	15-15.5	08-Oct-96	<0.005	0.016	<0.005	<0.005	<0.005	<0.005	<0.005	0.024	-	<0.01
EC-10	14.5-15	08-Oct-96	<0.005	0.0056	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	<0.01
EC-12	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.073	-	<0.05
EC-12	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.027	<0.025	<0.025	0.048	-	<0.05
EC-13	1.5-2.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.08	<0.025	<0.025	0.073	-	<0.05
EC-13	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.1	-	<0.05

Table A-1
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			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-14	2.0-2.5	19-Jun-97	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	1.1	-	<0.1
EC-14	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.097	<0.025	<0.025	0.18	-	<0.05
EC-15-A	3.5-4.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.35	<0.025	<0.025	0.49	-	<0.05
EC-15-A	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.91	<0.025	<0.025	0.086	-	<0.05
EC-16	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.039	<0.025	<0.025	0.056	-	<0.05
EC-16	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	0.048	<0.025	<0.025	<0.025	-	<0.05
EC-17	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-17	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-18	5.5-6.0	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-19	2.0-2.5	19-Jun-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	-	<0.05
EC-19	5.5-6.0	19-Jun-97	<0.05	<0.05	<0.05	0.38	0.55	<0.05	<0.05	0.19	-	<0.05
EC-20	2.0-2.5	19-Jun-97	<0.5	<0.5	<0.5	<0.5	7.6	<0.5	<0.5	15	-	<1
EC-20	5.5-6.0	19-Jun-97	<0.25	<0.25	<0.25	<0.25	8.5	<0.25	<0.25	0.99	-	<0.5
EC-21	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-21	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.017	<0.05	<0.05
EC-22	3.0-3.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.039	<0.05	<0.05
EC-22	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-23	3.0-3.5	10-Sep-97	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	6.9	<0.5	<0.5
EC-23	5.0-5.5	10-Sep-97	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	15	<1	<1
EC-24	3.5-4.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.51	<0.025	<0.025	0.68	<0.05	<0.05
EC-24	5.0-5.5	10-Sep-97	<2	<2	<2	<2	36	<2	<2	<2	<4	<4
EC-25	3.5-4.0	10-Sep-97	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	4.2	<0.5	<0.5
EC-25	5.0-5.5	10-Sep-97	<0.5	<0.5	1.5	<0.5	<0.5	<0.5	<0.5	13	<1	<1
EC-26	3.5-4.0	11-Sep-97	<0.25	<0.25	<0.25	<0.25	0.27	<0.25	<0.25	3.6	<0.5	<0.5
EC-26	5.0-5.5	11-Sep-97	<0.25	<0.25	<0.25	<0.25	5.4	<0.25	<0.25	0.77	<0.5	<0.5

Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-27	3.0-3.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.089	<0.05	<0.05
EC-27	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.23	<0.05	<0.05
EC-28	1.0-1.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-28	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.061	<0.05	<0.05
EC-29	2.5-3.0	11-Sep-97	<0.2	<0.2	<0.2	<0.2	0.26	<0.2	<0.2	3.4	<0.4	<0.4
EC-29	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-30	1.5-2.0	11-Sep-97	<0.1	<0.1	<0.1	<0.1	0.19	<0.1	<0.1	1.3	<0.2	<0.2
EC-30	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	1.8	<0.1	<0.1	0.21	<0.2	<0.2
EC-31	3.0-3.5	10-Sep-97	<0.1	<0.1	<0.1	<0.1	0.84	<0.1	<0.1	2.1	<0.2	<0.2
EC-31	5.0-5.5	10-Sep-97	<0.25	<0.25	<0.25	<0.25	4.6	<0.25	<0.25	0.92	<0.5	<0.5
EC-32	2.5-3.0	10-Sep-97	<0.05	<0.05	<0.05	<0.05	0.44	<0.05	0.073	1.0	<0.1	<0.1
EC-32	5.0-5.5	10-Sep-97	<1	<1	<1	<1	23	<1	<1	1.1	<2	<2
EC-33	2.5-3.0	10-Sep-97	<0.05	<0.05	<0.05	<0.05	1.1	<0.05	<0.05	1.0	<0.1	<0.1
EC-33	5.0-5.5	10-Sep-97	<0.1	<0.1	<0.1	<0.1	2.6	<0.1	<0.1	<0.1	<0.2	0.41
EC-34	3.0-3.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	0.71	<0.05	<0.05	1.3	0.11	<0.1
EC-34	5.0-5.5	10-Sep-97	<0.2	<0.2	<0.2	<0.2	4.9	<0.2	<0.2	<0.2	<0.4	<0.4
EC-35	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.031	<0.025	<0.025	0.12	0.18	<0.05
EC-35	5.0-5.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	1.2	<0.05	<0.05	1.1	0.67	0.19
EC-36	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.1	<0.05	<0.05
EC-36	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.21	<0.025	<0.025	0.07	0.083	<0.05
EC-37	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.28	<0.025	<0.025	0.29	<0.05	<0.05
EC-37	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.39	<0.025	<0.025	0.39	0.7	0.08
EC-38	3.0-3.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-38	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.17	<0.025	<0.025	<0.025	0.079	<0.05
EC-39	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05

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Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-39	5.0-5.5	10-Sep-97	<0.05	<0.05	<0.05	<0.05	0.85	<0.05	<0.05	0.18	1.5	<0.1
EC-40	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.16	<0.025	<0.025	0.4	0.93	<0.05
EC-41	2.0-2.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-41	5.0-5.5	11-Sep-97	<0.05	<0.05	<0.05	<0.05	0.28	<0.05	<0.05	0.68	0.87	<0.1
EC-42	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.051	<0.025	<0.025	0.038	0.084	<0.05
EC-42	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	1.6	<0.1	<0.1	2.7	0.91	<0.2
EC-43	3.0-3.5	11-Sep-97	<0.05	<0.05	<0.05	<0.05	1.0	<0.05	<0.05	0.84	<0.1	<0.1
EC-43	5.0-5.5	11-Sep-97	<1	<1	<1	<1	23	<1	<1	<1	<2	<2
EC-44	3.5-4.0	11-Sep-97	<0.05	<0.05	<0.05	<0.05	0.13	<0.05	<0.05	0.89	<0.1	<0.1
EC-44	5.0-5.5	11-Sep-97	<0.1	<0.1	<0.1	<0.1	2.5	<0.1	<0.1	<0.1	0.4	0.56
EC-45	2.5-3.0	11-Sep-97	<0.2	<0.2	<0.2	<0.2	0.52	<0.2	<0.2	4.1	<0.4	<0.4
EC-45	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.57	0.11	<0.025	0.084	<0.05	<0.05
EC-46	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.047	<0.05	<0.05
EC-46	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-47	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.15	<0.05	<0.05
EC-47	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	2.9	<0.2	<0.2	0.44	<0.4	<0.4
EC-48	2.0-2.5	15-Sep-97	<0.1	<0.1	<0.1	<0.1	1.1	<0.1	<0.1	0.28	<0.2	<0.2
EC-48	5.0-5.5	15-Sep-97	<1	<1	<1	<1	10	<1	<1	1.8	<2	<2
EC-49	1.5-2.0	12-Sep-97	<0.1	<0.1	<0.1	<0.1	1.6	<0.1	<0.1	0.68	0.43	<0.2
EC-49	5.0-5.5	12-Sep-97	<0.5	<0.5	<0.5	<0.5	13	<0.5	<0.5	5.2	1.2	<1
EC-50	1.5-2.0	12-Sep-97	<0.25	<0.25	<0.25	<0.25	3.3	<0.25	<0.25	1	<0.5	<0.5
EC-50	5.0-5.5	12-Sep-97	<2	<2	<2	<2	9.2	<2	<2	40	7.6	<4
EC-51	2.0-2.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.68	<0.05	<0.05	0.35	0.12	<0.1
EC-51	5.0-5.5	12-Sep-97	<1	<1	<1	<1	10	<1	<1	2.7	3	<2
EC-52	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.061	<0.025	<0.025	<0.025	0.12	<0.05

Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-52	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	1.2	<0.2	<0.2	1.1	5.3	<0.4
EC-53	2.0-2.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	1.8	<0.2	<0.2	0.37	<0.4	<0.4
EC-53	5.0-5.5	12-Sep-97	<1	<1	<1	<1	22	<1	<1	5.5	11	<2
EC-54	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.12	<0.025	<0.025	<0.025	0.22	<0.05
EC-54	5.0-5.5	12-Sep-97	<0.5	<0.5	<0.5	<0.5	2.7	<0.5	<0.5	<0.5	5.6	<1
EC-55	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.079	<0.025	<0.025	0.058	0.12	<0.05
EC-55	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.06	<0.025	<0.025	<0.025	0.16	<0.05
EC-56	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.087	<0.025	<0.025	0.081	<0.05	<0.05
EC-56	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.66	<0.05	<0.05	0.36	0.65	<0.1
EC-57	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.032	<0.025	<0.025	<0.025	<0.05	0.19
EC-57	5.0-5.5	12-Sep-97	<0.2	<0.2	<0.2	<0.2	2.3	<0.2	<0.2	0.16	2.1	<0.4
EC-58	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.049	<0.025	<0.025	<0.025	0.059	<0.05
EC-58	5.0-5.5	12-Sep-97	<0.25	<0.25	<0.25	<0.25	6.4	<0.25	<0.25	0.75	2.7	<0.5
EC-59	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.053	<0.025	<0.025	<0.025	<0.05	<0.05
EC-59	5.0-5.5	12-Sep-97	<0.1	<0.1	<0.1	<0.1	2.8	<0.1	<0.1	0.51	1.6	<0.2
EC-60	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.073	<0.025	<0.025	<0.025	<0.05	<0.05
EC-60	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.78	<0.05	<0.05	<0.05	0.48	<0.1
EC-61	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.046	<0.025	<0.025	0.083	<0.05	<0.05
EC-61	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.41	<0.025	<0.025	<0.025	0.17	0.072
EC-62	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.27	<0.05	<0.05
EC-62	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-63	2.5-3.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-63	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.078	<0.05	<0.05
EC-64	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.21	<0.05	<0.05
EC-64	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.15	<0.025	<0.025	0.21	0.12	<0.05

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Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-65	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-65	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.25	<0.025	<0.025	0.33	0.24	<0.05
EC-66	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-66	5.0-5.5	12-Sep-97	<0.05	<0.05	<0.05	<0.05	0.34	<0.05	<0.05	0.42	0.22	<0.1
EC-67	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.11	<0.05
EC-67	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.19	<0.025	<0.025	0.088	0.081	<0.05
EC-68	2.5-3.0	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-68	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.39	<0.025	<0.025	0.23	0.17	<0.05
EC-69	2.0-2.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-69	5.0-5.5	12-Sep-97	<0.025	<0.025	<0.025	<0.025	0.072	<0.025	<0.025	0.098	0.17	<0.05
EC-70	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-70	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.053	<0.025	<0.025	0.22	<0.05	<0.05
EC-71	1.5-2.0	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-71	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	0.049	<0.025	<0.025	0.19	<0.05	<0.05
EC-72	2.0-2.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.049	<0.05	<0.05
EC-72	5.0-5.5	11-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.063	<0.05	<0.05
EC-73	2.0-2.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-73	6.0-6.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-73	14.0-14.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	2.0-2.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	5.0-5.5	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-74	11.5-12.0	15-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-75	2.5-3.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05
EC-75	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.13	<0.025	<0.025	0.37	<0.05	<0.05
EC-76	2.0-2.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.05	<0.05

Table A-1
Summary of Chemical Analytical Data for Soil Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Depth Range (ft bgs)[a]	Sample Collection Date	Concentration in Soil (mg/kg)									
			Carbon Tetrachloride	Chloroform	1,2-Dichlorobenzene	1,1-Dichloroethane	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Tetrachloroethene	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
EC-76	5.0-5.5	10-Sep-97	<0.025	<0.025	<0.025	<0.025	0.065	<0.025	<0.025	0.25	<0.05	<0.05
MW-7B	4.0-4.5	23-Oct-96	<2	<2	<2	<2	51	<2	<2	11	-	<4
S2-3	3.0-3.5	04-Sep-97	<0.1	<0.1	<0.1	<0.1	1.0	<0.1	<0.1	<0.1	-	<0.1
TR-1	2.0	10-Sep-97	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	0.41	<0.05	<0.05
Summary of Concentrations (mg/kg)												
Number of Samples Analyzed			154	154	154	154	154	154	154	154	117	154
Number of Analyte Detections			1	3	2	1	92	1	1	95	39	6
Frequency of Detection (%)			1%	2%	1%	1%	60%	1%	1%	62%	33%	4%
Minimum Concentration			0.021	0.0056	0.021	0.38	0.014	0.11	0.073	0.024	0.059	0.072
Maximum Concentration			0.021	0.016	1.5	0.38	51	0.11	0.073	40	11	0.56
95% Upper Confidence Limit[c]			0.062	0.061	0.066	0.065	3.950	0.063	0.063	1.811	0.575	0.137
Representative Concentration in mg/kg[d]			**0.021**	**0.016**	**0.066**	**0.065**	**4.0**	**0.063**	**0.063**	**1.8**	**0.57**	**0.14**

Notes:

(a) Sample depth range in feet below ground surface (ft bgs).

(b) A hyphen (-) indicates that the sample was not analyzed for the chemical.

(c) The 95% upper confidence limit of the mean concentration was calculated assuming a log-normal data distribution. One-half the detection limit value was used for samples in which the analyte concentration was reported as below the detection limit.

(d) The representative concentration was selected as the lesser of either the 95% upper confidence limit or the maximum detected concentration.

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Table A-2
Summary of Chemical Analytical Data for Groundwater Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Collection Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)															
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
B1	10-15	04-Oct-94	8240	<100	<5.0	230	280	<5.0	[b]	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	2000	-	<10
GP-1	10-15	29-Dec-94	8240	<20	5	20	100	<4.0	-	10	280	<4.0	<10	<4.0	<4.0	<4.0	170	-	<4.0
GP-2	10-15	29-Dec-94	8240	<63	<13	<13	<13	<13	-	53	180	<13	<32	<13	<13	14	840	-	22
GP-3	10-15	29-Dec-94	8240	<77	<16	72	320	<16	-	<16	96	<16	<38	<16	<16	<16	1200	-	<16
GP-4	10-15	29-Dec-94	8240	<1200	<230	<230	<230	<230	-	<230	3600	<230	<560	<230	<230	<230	2300	-	<230
GP-5	10-15	29-Dec-94	8240	<2000	<400	<400	<400	<400	-	<400	25000	<400	<1000	<400	<400	<400	35000	-	1300
GP-6	10-15	29-Dec-94	8240	<25	<5.0	320	420	<5.0	-	<5.0	<5.0	<5.0	<12	<5.0	<5.0	<5.0	18	-	<5.0
GP-7	10-15	29-Dec-94	8240	<840	<170	<170	1000	<170	-	<170	3000	<170	<420	<170	<170	<170	11000	-	<170
S-5B	38-46	06-Jul-95	8010	-	-	<0.5	2	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	<0.5	<0.5	4	-	<1.0
CPT1-33	28-33	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT1-44	41-44	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-28	25-28	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-44	40-44	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT2-58	53-58	30-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT3-33	30-33	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT3-44	40-44	29-Jul-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT4-22	18-22	31-Jul-96	8240	<10	<5.0	13	230	<5.0	-	2	230	1.6	<5.0	<5.0	<5.0	<5.0	580	220	8
CPT4-28	25-28	31-Jul-96	8240	30	<5.0	<5.0	5	<5.0	-	<5.0	6	<5.0	<5.0	<5.0	<5.0	<5.0	10	<5.0	<5.0
CPT4-34	30-34	31-Jul-96	8240	13	<5.0	<5.0	41	<5.0	-	<5.0	56	<5.0	<5.0	<5.0	<5.0	<5.0	180	10	1
CPT5-16	12-16	31-Jul-96	8240	<10	<5.0	<5.0	190	<5.0	-	<5.0	13000	<5.0	<5.0	<5.0	<5.0	<5.0	790	<5.0	1400
CPT5-36	31-36	01-Aug-96	8240	<10	<5.0	18	20	<5.0	-	<5.0	600	<5.0	32	46	6.6	<5.0	1900	12000	56
CPT6-24	20-24	31-Jul-96	8240	<10	<5.0	6	67	<5.0	-	<5.0	130	<5.0	<5.0	<5.0	<5.0	<5.0	310	120	10
CPT6-34	31-34	31-Jul-96	8240	17	<5.0	<5.0	9	<5.0	-	<5.0	50	<5.0	<5.0	<5.0	<5.0	<5.0	80	6	2
CPT7-22	17-22	01-Aug-96	8240	<10	<5.0	70	<5.0	<5.0	-	<5.0	16	<5.0	<5.0	<5.0	<5.0	<5.0	1800	130	<5.0
CPT7-28	23-28	01-Aug-96	8240	<10	<5.0	<5.0	13	<5.0	-	<5.0	21	<5.0	<5.0	<5.0	<5.0	<5.0	320	30	<5.0
CPT7-34	31-34	01-Aug-96	8240	<10	<5.0	<5.0	6	<5.0	-	<5.0	14	<5.0	<5.0	<5.0	<5.0	<5.0	24	9	<5.0
CPT7-44	40-44	01-Aug-96	8240	<10	<5.0	<5.0	18	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	73	12	<5.0

Table A-2
Summary of Chemical Analytical Data for Groundwater Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Collection Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)																
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
CPT8-24	19-24	01-Aug-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT8-32	23-32	01-Aug-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT9-27	22-27	02-Aug-96	8240	<10	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT9-35	32-35	02-Aug-96	8240	37	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT9-48	44-48	02-Aug-96	8240	25	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
CPT9-54	54-59	02-Aug-96	8240	11	<5.0	<5.0	<5.0	<5.0	-	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
EC1-15	5-15	07-Oct-96	8010	-	-	<0.5	1	2	-	<0.5	1	<0.5	<5.0	<0.5	-	1	3	-	<1.0
EC1-28	23-28	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC1-45	42-45	10-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC2-15	5-15	07-Oct-96	8010	-	-	<0.5	<0.5	2	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC2-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC2-46	44-46	07-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC3-15	5-15	07-Oct-96	8010	-	-	<0.5	1	4	-	3	33	1.6	<5.0	<0.5	-	<0.5	39	-	5
EC3-30	28-30	10-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC3-45	42-45	10-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC4-15	5-15	09-Oct-96	8010	-	-	<100	<100	140	-	270	3300	<100	<1000	<100	-	<100	2100	-	<200
EC4-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0
EC4-43	40-43	07-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	1	-	<1.0
EC5-15	5-15	09-Oct-96	8010	-	-	<25	94	<25	-	25	470	<25	<250	<25	-	27	2000	-	<50
EC5-30	25-30	14-Oct-96	8010	-	-	<0.5	1	<0.5	-	<0.5	1	<0.5	<5.0	<0.5	-	<0.5	3	-	<1.0
EC5-45	42-45	11-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	2	-	<1.0
EC6-15	5-15	07-Oct-96	8010	-	-	75	120	<10	-	<10	63	<10	<100	<10	-	<10	530	-	<20
EC6-30	25-30	14-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	1	<0.5	<0.5	<5.0	<0.5	-	1	<0.5	-	<1.0
EC6-45	42-45	11-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	2	-	<1.0
EC7-15	5-15	09-Oct-96	8010	-	-	<250	380	<250	-	<250	6500	<250	<2500	<250	-	<250	12000	-	<500
EC7-30	25-30	15-Oct-96	8010	-	-	<0.5	1	<0.5	-	<0.5	17	<0.5	<5.0	<0.5	-	<0.5	3	-	<1.0
EC7-45	42-45	09-Oct-96	8010	-	-	<0.5	<0.5	<0.5	-	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	<0.5	-	<1.0

Table A-2
Summary of Chemical Analytical Data for Groundwater Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Collection Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)															
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
MW-2	5.5-15.5	08-Sep-98	8010	-	-	<1250	<1250	<1250	<1250	<1250	7100	<1250	<12500	<1250	-	<1250	29000	-	<2500
MW-3	5.5-15.5	04-Oct-94	8240	-	<5.0	90	110	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0	-	<5.0	9	-	<10
MW-3	5.5-15.5	08-Aug-96	8010	-	-	<2.5	7	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	130	-	<5.0
MW-3	5.5-15.5	17-Sep-97	8010	-	-	100	110	<2.5	<2.5	<2.5	<2.5	<2.5	<25	<2.5	-	<2.5	9	7	<5.0
MW-3	5.5-15.5	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	-	<0.5	3	-	<1.0
MW-4	6-16	08-Aug-96	8010	-	-	77	140	<10	<10	<10	14	<10	<100	<10	-	<10	750	-	<20
MW-4	6-16	01-Nov-96	8010	-	-	75	100	<12	<12	<12	15	<12	<125	<12	-	<12	710	<12	<25
MW-4	6-16	18-Sep-97	8010	-	-	82	110	<10	<10	<10	14	<10	<300	<10	-	<10	430	200	<20
MW-4	6-16	17-Apr-98	8010	-	-	39	90	<12	<12	<12	16	<12	<125	<12	-	<12	590	-	<25
MW-5B	24-34	01-Nov-96	8010	-	-	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5.0	<0.5	-	1	3	-	<1.0
MW-5B	24-34	18-Sep-97	8010	-	-	<0.5	<0.5	<0.5	<0.5	1	<0.5	<0.5	<5.0	<0.5	-	2	9	6	<1.0
MW-5B	24-34	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	2.6	<0.5	<0.5	<5.0	<0.5	-	6.5	16	-	<1.0
MW-5D	24-34	17-Apr-98	8010	-	-	<0.5	<0.5	<0.5	<0.5	2.3	<0.5	<0.5	<5.0	<0.5	-	5.4	17	-	<1.0
MW-6B	21-31	01-Nov-96	8010	-	-	<100	<100	<100	<100	<100	250	<100	<1000	<100	-	<100	4500	-	<200
MW-6B	21-31	17-Sep-97	8010	-	-	<50	60	<50	<50	<50	180	<50	<50	<50	-	<50	2600	2200	<100
MW-6B	21-31	17-Apr-98	8010	-	-	<25	<25	<25	<25	<25	35	<25	<250	<25	-	<25	1200	-	<50
MW-6B	21-31	08-Sep-98	8010	-	-	<100	<100	<100	<100	<100	120	<100	<1000	<100	-	<100	3500	-	<200
MW-7B	18-28	01-Nov-96	8010	-	-	1000	<1000	<1000	<1000	<1000	<1000	<1000	<10000	<1000	-	<1000	37000	-	<2000
MW-7B	18-28	18-Sep-97	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	31000	<5000	<5000
MW-7B	18-28	17-Apr-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	52000	-	<5000
MW-7B	18-28	08-Sep-98	8010	-	-	<2500	<2500	<2500	<2500	<2500	<2500	<2500	<25000	<2500	-	<2500	49000	-	<2500

Table A-2
Summary of Chemical Analytical Data for Groundwater Samples
3695-3723 Haven Avenue Property, Menlo Park, California

Sample	Sample Collection Depth (ft bgs)[a]	Sample Collection Date	EPA Analysis Method	Concentration in Groundwater (ug/L)															
				Acetone	Benzene	Carbon Tetrachloride	Chloroform	1,1-Dichloroethane	1,2-Dichloroethane	1,1-Dichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	Methylene Chloride	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	1,1,2-Trichloro-1,2,2-Trifluoroethane	Vinyl Chloride
Summary of Concentrations (ug/L)																			
Number of Samples Analyzed				32	35	102	102	102	34	102	102	102	102	102	33	102	102	32	102
Number of Analyte Detections				6	2	22	43	4	2	10	51	2	1	1	1	8	71	14	12
Frequency of Detection (%)				19%	6%	22%	42%	4%	6%	10%	50%	2%	1%	1%	3%	8%	70%	44%	12%
Minimum Concentration				11	4.7	6.1	0.5	1.9	5	0.9	0.62	1.6	32	46	6.6	0.73	0.57	5.9	1.1
Maximum Concentration				37	460	2300	1000	140	5	270	25000	1.6	32	46	6.6	27	260000	12000	1400
95% Upper Confidence Limit[c]				88	23	2014	3308	262	31941	288	52099	259	2621	284	14	247	3130151	2221	651
Representative Concentration (ug/L)[d]				37	23	2,000	1,000	140	5.0	270	25,000	2.0	32	46	7.0	27	260,000	2,200	650

Notes:

(a) Depth of groundwater interval sampled in feet below ground surface ("ft bgs").

(b) A hyphen (-) indicates that no analysis was performed for the chemical.

(c) The 95% upper confidence limit of the mean concentration was calculated assuming a log-normal data distribution. One-half the detection limit value was used for samples in which the analyte concentration was reported as below the detection limit.

(d) The representative concentration was selected as the lesser of either the 95% upper confidence limit concentration or the maximum detected concentration.

Table A-3
Representative Concentrations of Chemicals in Soil and Groundwater
3695-3723 Haven Avenue Property, Menlo Park, California

Chemical	Soil		Groundwater	
	Frequency of Detection	Representative Concentration[a] (mg/kg)	Frequency of Detection	Representative Concentration[a] (ug/L)
Acetone	-[b]	-	19%	37
Benzene	-	-	6%	23
Carbon Tetrachloride	1%	0.021	22%	2000
Chloroform	2%	0.016	42%	1000
1,2-Dichlorobenzene	1%	0.066	-	-
1,1-Dichloroethane	1%	0.065	4%	140
1,2-Dichloroethane	-	-	6%	5.0
1,1-Dichloroethene	-	-	10%	270
cis-1,2-Dichloroethene	60%	4.0	50%	25000
trans-1,2-Dichloroethene	1%	0.063	2%	2
Methylene Chloride	-	-	1%	32
Tetrachloroethene	1%	0.063	1%	46
Toluene	-	-	3%	7
1,1,1-Trichloroethane	-	-	8%	27
Trichloroethene	62%	1.8	70%	260000
1,1,2-Trichloro-1,2,2-Trifluoroethane	33%	0.57	44%	2200
Vinyl Chloride	4%	0.14	12%	650

Notes:

(a) Representative Concentrations ("RCs") were calculated as the lesser of the maximum concentration or the 95% Upper Confidence Limit of the mean concentration ("UCL95"), assuming a lognormal distribution.

(b) A hyphen (-) means the chemical was not detected.

Table A-4
Oral and Inhalation Non-Carcinogenic Toxicity Information for Chemicals of Concern
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Oral Reference Dose (mg/kg-day)	Inhalation Reference Dose (mg/kg-day)	Non-Carcinogenic Effects	Source[a]
Acetone	0.1	0.1[b]	Liver toxicity in mice, liver and kidney weight gain in rats.	IRIS
Benzene	0.003	0.0017	Neoplasia in rats and mice.	NCEA
Carbon Tetrachloride	0.0007	0.011	Liver lesions in rats.	IRIS (o), OEHHA (i)
Chloroform	0.01	0.086	Liver cyst formation in dogs.	IRIS (o), OEHHA (i)
1,2-Dichlorobenzene	0.09	0.057	Liver necrosis and lymphocyte depletion in rats and mice.	IRIS (o), HEAST (i)
1,1-Dichloroethane	0.1	0.14	Under review	HEAST
1,2-Dichloroethane	-[c]	-	-	-
1,1-Dichloroethene	0.009	0.0057	Hepatic lesions in rats, alimentary system effects.	IRIS (o), HEAST (i)
cis-1,2-Dichloroethene	0.01	0.01[b]	Decreased hematocrit and hemoglobin in rats.	HEAST
trans-1,2-Dichloroethene	0.02	0.02[b]	Changes in serum chemistry, decreased thymus gland weight in rats.	IRIS
Methylene Chloride	0.06	0.086	Liver toxicity in rats.	IRIS (o), OEHHA (i)
Tetrachloroethene	0.01	0.011	Liver toxicity in mice, liver and kidney weight gain in rats.	IRIS (o), OEHHA (i)
Toluene	0.2	0.11	Neurotoxicity in humans when inhaled; change in liver, kidney weights in rats.	IRIS (o), OEHHA & IRIS (i)
1,1,1-Trichloroethane	0.035	0.29	Central nervous system depression, psychomotor effects in humans.	NCEA
Trichloroethene	0.17[d]	0.17	Under review.	OEHHA
1,1,2-Trichloro-1,2,2-Trifluoroethane	30	26	Psychomotor impairment in occupationally exposed humans.	IRIS (o), OEHHA (i)
Vinyl Chloride	0.0014[d]	0.0014	Under review.	OEHHA

Table A-4
Oral and Inhalation Non-Carcinogenic Toxicity Information for Chemicals of Concern
3695-3723 Haven Avenue Property, Menlo Park, California

Notes:

(a) Reference doses ("RfDs") were obtained from the California EPA Office of Environmental Health Hazard Assessment, 1997 Technical Support Document for the Determination of Noncancer Chronic Reference Exposure Levels ("OEHHA"); the U.S. Environmental Protection Agency Integrated Risk Information System ("IRIS"); the U.S. EPA 1997 Health Effects Assessment Summary Tables ("HEAST"); or the U.S. EPA National Center for Environmental Assessment Risk Assessment Issue Papers ("NCEA"); in order of precedence. Notation: (o) = oral reference dose, (i) = inhalation reference dose.

(b) An inhalation RfD is not defined in the listed sources, so the corresponding oral RfD (i.e. route-to-route extrapolation) is shown.

(c) A hyphen (-) indicates that no data for the indicated parameter was available from the listed sources.

(d) An oral RfD is not defined in the listed sources, so the corresponding inhalation RfD (i.e. route-to-route extrapolation) is shown.

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Table A-5
Oral and Inhalation Carcinogenic Toxicity Information for Chemicals of Concern
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Weight of Evidence Classification[a]	Oral Slope Factor $(mg/kg\text{-}d)^{-1}$	Inhalation Slope Factor $(mg/kg\text{-}d)^{-1}$	Carcinogenic Effects	Source[b]
Acetone	D	-[c]	-	-	IRIS
Benzene	A	0.1	0.1	Non-lymphocytic leukemia from occupational exposure of humans.	Memo
Carbon Tetrachloride	B2	0.15	0.15	Liver cell carcinomas in rats, mice, hampsters.	Memo
Chloroform	B2	0.031	0.019	Several tumor types formed in rats and mice.	Memo
1,2-Dichlorobenzene	D	-	-	-	IRIS
1,1-Dichloroethane	C	0.0057	0.0057	Mammary gland carcinomas, liver cell carcinomas, benign uterine polyps in female rats and mice.	Memo
1,2-Dichloroethane	B2	0.07	0.07	Several tumor types in rats. Lung papillomas in mice.	Memo
1,1-Dichloroethene	C	-	-	-[d]	IRIS
cis-1,2-Dichloroethene	D	-	-	-	IRIS
trans-1,2-Dichloroethene	-	-	-	-	-
Methylene Chloride	B2	0.014	0.0035	Liver cell and lung neoplasms in mice. Salivary gland sarcomas, benign mammary tumors in rats.	Memo
Tetrachloroethene	B2	0.051	0.021	-	Memo
Toluene	D	-	-	-	IRIS
1,1,1-Trichloroethane	D	-	-	-	IRIS
Trichloroethene	B2	0.015	0.01	-	Memo
1,1,2-Trichloro-1,2,2-Trifluoroethane	-	-	-	-	-
Vinyl Chloride	A	0.27	0.27	Liver, lung tumors in rats.	Memo

Table A-5
Oral and Inhalation Carcinogenic Toxicity Information for Chemicals of Concern
3695-3723 Haven Avenue Property, Menlo Park, California

Notes:

(a) U.S. EPA weight-of-evidence classification is as follows:

A = Human Carcinogen

B1 or B2 = Probable Human Carcinogen; B1 indicates that limited human data are available; B2 indicates that there is sufficient evidence in animals and inadequate or no evidence in humans.

C = Possible Human Carcinogen

D = Not Classifiable as to Human Carcinogenicity

E = Evidence of Non-Carcinogenicity for Humans

Weight-of-evidence information obtained from the U.S. Environmental Protection Agency Integrated Risk Information System database ("IRIS"); the July 1997 U.S. EPA Health Effects Assessment Summary Tables ("HEAST"); or the U.S. EPA National Center for Environmental Assessment Risk Assessment Issue Papers ("NCEA"); in order of precedence.

(b) Slope factors were obtained from the California Environmental Protection Agency, 1996 Memorandum of Cancer Potency Factors Update ("Memo", see below); the U.S. EPA IRIS database; the 1997 U.S. EPA HEAST; or the U.S. EPA NCEA, in order of precedence.

(c) A hyphen (-) indicates that no data for the indicated field was available in the listed sources.

(d) 1,1-Dichloroethene is not recognized as a human carcinogen by the State of California (source: California EPA, 1996, *California Cancer Potency Factors*, California Environmental Protection Agency, Office of Environmental Health Hazard Assessment, Sacramento, California, 1 April 1996)

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Table A-6
Human Exposure Assumptions
3695-3723 Haven Avenue Property, Menlo Park, California

Parameter	Variable	Value	Reference [a]
Air Inhalation Rate (m^3/day)	IRa		
All Adult Workers		20	USEPA (1991), Cal-EPA (1992)
Averaging Time (days)	AT		
Non-Carcinogens			
Maintenance Worker (25 yrs)		9125	USEPA (1991), Cal-EPA (1992)
Construction Worker (1 yr)		365	USEPA (1991), Cal-EPA (1992)
Indoor Worker (25 yrs)		9125	USEPA (1991), Cal-EPA (1992)
Carcinogens			
All Workers (70 yrs)		25550	USEPA (1991), Cal-EPA (1992)
Body Weight (kg)	BW		
All Adult Workers		70	USEPA (1991), Cal-EPA (1992)
Exposure Duration (years)	ED		
Maintenance Worker		25	USEPA (1991), Cal-EPA (1992)
Construction Worker		1	Best Professional Judgement
Indoor Worker		25	USEPA (1991), Cal-EPA (1992)
Exposure Frequency (days/year or events/year)	EF		
Maintenance Worker - excavation		5	Best Professional Judgement
Maintenance Worker - nonexcavation		245	Best Professional Judgement
Construction Worker		87	USEPA (1991), Cal-EPA (1992)
Indoor Worker		250	USEPA (1991), Cal-EPA (1992)
Skin Surface Area (cm^2/event)	SAs		
All Adult Workers		3160	Based on U.S. EPA (1989a)
Soil Adherence Factor (mg/cm^2)	AF		
All Outdoor Workers - Excavation		0.5	ASTM (1995)
All Outdoor Workers - Nonexcavation		0.5	ASTM (1995)
Soil Agitation Factor for Volatilization During Excavation (dimensionless)	AgF	1	U.S. EPA (1989b)
Soil Ingestion Rate (mg/day)	IRs		
Maintenance Worker - excavation		480	USEPA (1991)
Maintenance Worker - nonexcavation		50	USEPA (1991), Cal-EPA (1992)
Construction Worker		480	USEPA (1991)
Soil-Dermal Absorbtion Fraction (dimensionless)	ABS		Cal-EPA (1994)
VOCs		0.1	

Table A-6
Human Exposure Assumptions
3695-3723 Haven Avenue Property, Menlo Park, California

Notes:

(a) References for exposure assumptions:

ASTM, 1995, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*. American Society for Testing and Materials, Designation E 1739-95, 10 September 1995.

Cal-EPA, 1992, *Supplemental Guidance for Human Health Multimedia Risk Assessments of Hazardous Waste Sites and Permitted Facilities*. California Environmental Protection Agency, Department of Toxic Substances Control, Sacramento, California, July 1992.

Cal-EPA, 1994, *Preliminary Endangerment Assessment Guidance Manual*. California Environmental Protection Agency, Department of Toxic Substances Control, Sacramento, California, January 1994.

USEPA, 1989a, *Risk Assessment Guidance for Superfund ("RAGS"), Volume 1, Human Health Evaluation Manual (Part A)*. EPA/540/1-89/002, U.S. Environmental Protection Agency, Office of Emergency and Remedial Response ("OERR"), December 1989.

USEPA, 1989b, *Air Superfund National Technical Guidance Series, Volume III*. U.S. Environmental Protection Agency, Office of Air Quality Planning and Standards, Research Triangle Park, NC, EPA/450/1-89/002-004.

USEPA, 1991, *RAGS, Volume 1 - Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors*. Interim Final, OSWER Directive 9285.6-03, U.S. Environmental Protection Agency, Office of Solid Waste and Emergency Response, March 1991.

Table A-7
Site Physical Parameter Assumptions
3695-3723 Haven Avenue Property, Menlo Park, California

Symbol	Value	Variable	Source
h_{cap}	15	Thickness of capillary fringe (cm)	EKI, 1997b [a]
h_v	175	Thickness of vadose zone (cm)	EKI, 1997b
θ_{as}	0.083	Volumetric air content in vadose zone soil (cm^3 air / cm^3 soil)	EKI, 1997b
θ_{ws}	0.331	Volumetric water content in vadose zone soil (cm^3 water / cm^3 soil)	EKI, 1997b
θ_{acap}	0.018	Volumetric air content in capillary fringe soil (cm^3 air / cm^3 soil)	EKI, 1997b
θ_{wcap}	0.396	Volumetric water content in capillary fringe soil (cm^3 water / cm^3 soil)	EKI, 1997b
θ_{acrack}	0.083	Volumetric air content in foundation or wall cracks (cm^3 air / cm^3 crack vol.)	ASTM, 1995 [b]
θ_{wcrack}	0.331	Volumetric water content in foundation or wall cracks (cm^3 water / cm^3 crack vol.)	ASTM, 1995
θ_T	0.414	Total soil porosity (cm^3 / cm^3 soil)	EKI, 1997b
η	0.001	Areal fraction of cracks in foundation or wall (cm^2 cracks / cm^2 total area)	Daugherty, 1992 [c]
ρ_s	1.57	Soil bulk density (g soil / cm^3 soil)	EKI, 1997b
Θ_m	0.225	Soil moisture content by mass (kg water / kg dry soil)	EKI, 1997b
L_B	244	Enclosed-space volume / infiltration area ratio (cm)	EKI [d]
L_{crack}	11	Enclosed-space foundation or wall thickness (cm)	EKI, 1997b
L_{gw}	190	Depth to groundwater, i.e. $h_{cap} + h_v$ (cm)	EKI, 1997b
L_s	30	Depth to subsurface soil sources (cm)	EKI, 1997b
ER	0.00023	Enclosed-space air exchange rate (L / sec)	ASTM, 1995
U_{air}	410	Wind speed above ground surface in ambient mixing zone (cm / sec)	WRRC, 1998 [e]
δ_{air}	200	Ambient air mixing zone height (cm)	ASTM, 1995
W	5100	Width of source area parallel to wind or groundwater flow direction (cm)	EKI, 1997a
foc	0.0061	Fraction of organic carbon in soil (g C / g soil)	EKI, 1997b

Notes:

(a) Parameter values were derived or estimated from physical properties measured onsite and documented in one of the following:

EKI, 1997a, *Remedial Investigation Report, 3695-3723 Haven Avenue and Vicinity, Menlo Park, California.* Erler & Kalinowski, Inc., 21 April 1997.

EKI, 1997b, *Results of Additional Investigations and Testing, 3695-3723 Haven Avenue and Vicinity, Menlo Park, California.* Erler & Kalinowski, Inc., 30 December 1997.

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Table A-7
Site Physical Parameter Assumptions
3695-3723 Haven Avenue Property, Menlo Park, California

(b) Parameter values were defaults taken from the ASTM RBCA guide:

ASTM, 1995, *Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites*. American Society for Testing and Materials, Designation E 1739-95, 10 September 1995.

Volumetric air and water content of foundation and wall cracks assumed to be identical to air and water content of vadose zone soil, as in RBCA.

(c) Taken from:

Daugherty, S.J., 1992, *Regulatory Approaches to Hydrocarbon Contamination from Underground Storage Tanks*. in Kostecki, P.T, and E.J. Calabrese, eds., Hydrocarbon Contaminated Soils and Groundwater: Analysis, Fate, Environmental and Public Health Effects, Remediation. Vol. 1. Lewis Publishers.

(d) Best professional judgement by EKI personnel.

(e) Western Regional Climate Center data for Moffett Field, Mountain View, CA.

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Table A-8

Chemical Parameters of Compounds Present in Site Soil or Groundwater
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Solubility[a] (mg/L)	C_{sat}[b] (mg/kg)	C_{max}[c] (mg/kg)	H' (unitless)	D^{air} (cm^2/s)	D^{water} (cm^2/s)	K_{oc} ($cm^3 H_2O/g soil$)	VFw_{esp} (L H_2O/m^3 air)	VFs_{esp} (kg soil/m^3 air)	VFw_{amb} (L H_2O/m^3 air)	VFs_{amb} (kg soil/m^3 air)
Acetone	1.0E+06	47,925	-	0.0017	0.10	1.0E-05	0.37	2.8E-06	1.4E-05	6.0E-07	1.7E-05
Benzene	1700	267	-	0.23	0.087	9.0E-06	78	4.8E-05	7.1E-05	5.4E-06	9.1E-05
Carbon Tetrachloride	850	452	0.021	0.96	0.079	8.2E-06	344	1.7E-04	7.9E-05	9.3E-06	1.0E-04
Chloroform	8200	1,380	0.016	0.11	0.088	9.2E-06	87	2.6E-05	3.5E-05	3.8E-06	4.6E-05
1,2-Dichlorobenzene	130	75	1.5	0.076	0.071	7.3E-06	385	1.4E-05	5.7E-06	2.3E-06	7.4E-06
1,1-Dichloroethane	5200	473	0.38	0.18	0.089	9.1E-06	30	3.9E-05	1.0E-04	4.9E-06	1.3E-04
1,2-Dichloroethane	8400	592	-	0.045	0.089	9.1E-06	16	1.2E-05	3.7E-05	2.1E-06	4.8E-05
1,1-Dichloroethene	2500	366	-	0.86	0.091	9.6E-06	65	1.8E-04	2.9E-04	1.0E-05	3.8E-04
cis-1,2-Dichloroethene	600	78	51	0.12	0.091	9.6E-06	59	2.8E-05	5.0E-05	4.1E-06	6.5E-05
trans-1,2-Dichloroethene	4900	646	0.11	0.30	0.091	9.6E-06	59	6.6E-05	1.2E-04	6.6E-06	1.5E-04
Methylene Chloride	16000	963	-	0.0709	0.10	1.1E-05	8.7	2.0E-05	7.5E-05	3.2E-06	9.6E-05
Tetrachloroethene	590	252	0.073	0.54	0.074	7.6E-06	272	9.4E-05	5.2E-05	6.8E-06	6.7E-05
Toluene	540	125	-	0.28	0.078	8.0E-06	132	5.3E-05	5.3E-05	5.3E-06	6.8E-05
1,1,1-Trichloroethane	1500	339	-	0.55	0.079	8.1E-06	125	1.0E-04	1.1E-04	7.3E-06	1.4E-04
Trichloroethene	1100	200	40	0.30	0.081	8.4E-06	95	5.8E-05	7.4E-05	5.8E-06	9.5E-05

Table A-8
Chemical Parameters of Compounds Present in Site Soil or Groundwater
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Solubility[a] (mg/L)	C_{sat}[b] (mg/kg)	C_{max}[c] (mg/kg)	H' (unitless)	D^{air} (cm^2/s)	D^{water} (cm^2/s)	K_{oc} ($cm^3H_2O/gsoil$)	VFw_{esp} ($L\ H_2O/m^3\ air$)	VFs_{esp} (kg soil/m^3 air)	VFw_{amb} ($L\ H_2O/m^3$ air)	VFs_{amb} (kg soil/m^3 air)
1,1,2-Trichloro-1,2,2-Trifluoroethane	200	149	11	13.85	0.061	7.5E-06	389	1.7E-03	6.2E-04	3.8E-05	7.9E-04
Vinyl Chloride	4300	265	0.56	0.90	0.11	1.1E-05	2.5	2.2E-04	8.6E-04	1.2E-05	1.1E-03

Notes:

(a) Solubility values from Montgomery, J.H. and L.M. Welkom, 1991, *Groundwater Chemicals Desk Reference*. Lewis Pub. Co., Chelsea, Mich.

(b) Saturation soil concentration ("Csat") calculated through the equation:

$C_{sat} = (S \times \Theta m / \rho_s) \times (Koc \times foc \times \rho_s + \theta_{ws} + H' \times \theta_{as})$

(Parameters and values used in the above equation are shown in Table A-7 and Table A-8.)

(c) Definition of terms (for an explanation of calculations, see section 2.4 of the text):

- S = Solubility
- C_{sat} = Saturation concentration
- C_{max} = Maximum analysed concentration in soil samples
- H' = Dimensionless Henry's Law constant
- D_{air} = Diffusivity in air
- D_{water} = Diffusivity in water
- K_{oc} = Organic carbon partition coefficient
- VFw_{esp} = Volatilization factor for the groundwater to enclosed space air pathway
- VFs_{esp} = Volatilization factor for the soil to enclosed space air pathway
- VFw_{amb} = Volatilization factor for the groundwater to ambient air pathway
- VFs_{amb} = Volatilization factor for the soil to ambient air pathway

Table A-9
Characterization of Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Indoor Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VFs_{sup} [b] (kg soil/m^3 air)	Indoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	-	1.4E-05	-	-	-	0.1	-	-	-
Benzene	-	7.1E-05	-	-	-	0.0017	0.1	-	-
Carbon Tetrachloride	0.021	7.9E-05	1.7E-06	3.3E-07	1.2E-07	0.011	0.15	3.0E-05	1.7E-08
Chloroform	0.016	3.5E-05	5.7E-07	1.1E-07	4.0E-08	0.086	0.019	1.3E-06	7.5E-10
1,2-Dichlorobenzene	0.066	5.7E-06	3.8E-07	7.4E-08	-	0.057	-	1.3E-06	-
1,1-Dichloroethane	0.065	1.0E-04	6.5E-06	1.3E-06	4.5E-07	0.14	0.0057	9.1E-06	2.6E-09
1,2-Dichloroethane	-	3.7E-05	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	2.9E-04	-	-	-	0.0057	-	-	-
cis-1,2-Dichloroethene	3.950	5.0E-05	2.0E-04	3.9E-05	-	0.01	-	3.9E-03	-
trans-1,2-Dichloroethene	0.063	1.2E-04	7.4E-06	1.4E-06	-	0.02	-	7.2E-05	-
Methylene Chloride	-	7.5E-05	-	-	-	0.086	0.0035	-	-
Tetrachloroethene	0.063	5.2E-05	3.3E-06	6.4E-07	2.3E-07	0.011	0.021	5.8E-05	4.8E-09

Table A-9
Characterization of Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Indoor Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VF_{esp} [b] (kg soil/m^3 air)	Indoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDI) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	-	5.3E-05	-	-	-	0.11	-	-	-
1,1,1-Trichloroethane	-	1.1E-04	-	-	-	0.29	-	-	-
Trichloroethene	1.811	7.4E-05	1.3E-04	2.6E-05	9.4E-06	0.17	0.01	1.5E-04	9.4E-08
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	6.2E-04	3.6E-04	6.9E-05	-	26	-	2.7E-06	-
Vinyl Chloride	0.137	8.6E-04	1.2E-04	2.3E-05	8.2E-06	0.0014	0.27	1.6E-02	2.2E-06
Total Estimated Risk due to Inhalation of COCs Volatilized from Soil to Indoor Air:								0.02	2.35E-06

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from soil to enclosed-space air ("VFesp") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Ca * IRa * EF * ED}{BW * AT}$$

Table A-9

Characterization of Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Indoor Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)
Ca = Exposure Point Air Concentration (mg/m^3) = VFssp * RC
IRa = Air Inhalation Rate (m^3/day)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-10

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Indoor Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{esp} [b] (L H_2O / m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [e] (mg/kg-day)	Carcinogenic Chronic Daily Intake [e] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	37	2.8E-06	1.0E-07	2.1E-08	-	0.1	-	2.1E-07	-
Benzene	23	4.8E-05	1.1E-06	2.2E-07	7.7E-08	0.0017	0.1	1.3E-04	7.7E-09
Carbon Tetrachloride	2000	1.7E-04	3.5E-04	6.8E-05	2.4E-05	0.011	0.15	6.2E-03	3.7E-06
Chloroform	1000	2.6E-05	2.6E-05	5.1E-06	1.8E-06	0.086	0.019	5.9E-05	3.4E-08
1,2-Dichlorobenzene	-	1.4E-05	-	-	-	0.057	-	-	-
1,1-Dichloroethane	140	3.9E-05	5.5E-06	1.1E-06	3.8E-07	0.14	0.0057	7.7E-06	2.2E-09
1,2-Dichloroethane	5.0	1.2E-05	5.8E-08	-	4.0E-09	-	0.07	-	2.8E-10
1,1-Dichloroethene	270	1.8E-04	4.8E-05	9.5E-06	-	0.0057	-	1.7E-03	-
cis-1,2-Dichloroethene	25000	2.8E-05	7.1E-04	1.4E-04	-	0.01	-	1.4E-02	-
trans-1,2-Dichloroethene	2.0	6.6E-05	1.3E-07	2.6E-08	-	0.02	-	1.3E-06	-
Methylene Chloride	32	2.0E-05	6.3E-07	1.2E-07	4.4E-08	0.086	0.0035	1.4E-06	1.5E-10
Tetrachloroethene	46	9.4E-05	4.3E-06	8.5E-07	3.0E-07	0.011	0.021	7.7E-05	6.4E-09

Table A-10

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Indoor Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{esp} [b] ($L H_2O / m^3 air$)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	7.0	5.3E-05	3.7E-07	7.2E-08	-	0.11	-	6.6E-07	-
1,1,1-Trichloroethane	27	1.0E-04	2.8E-06	5.4E-07	-	0.29	-	1.9E-06	-
Trichloroethene	260000	5.8E-05	1.5E-02	2.9E-03	1.1E-03	0.17	0.01	1.7E-02	1.1E-05
1,1,2-Trichloro-1,2,2 Trifluoroethane	2200	1.7E-03	3.8E-03	7.4E-04	-	26	-	2.9E-05	-
Vinyl Chloride	650	2.2E-04	1.4E-04	2.8E-05	1.0E-05	0.0014	0.27	2.0E-02	2.7E-06
Total Estimated Risk due to Inhalation of COCs Volatilized from Groundwater to Outdoor Air:								0.06	1.7E-05

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from groundwater to enclosed-space air ("VFwesp") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Ca * IRa * EF * ED}{BW * AT}$$

Table A-10

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Indoor Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)

Ca = Exposure Point Air Concentration (mg/m^3) * VFwamb * RC

IRa = Air Inhalation Rate (m^3/day)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-11
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index	Estimated Lifetime Incremental Cancer Risk[f]
Acetone	-	-	-	0.1	-	-	-
Benzene	-	-	-	0.003	0.1	-	-
Carbon Tetrachloride	0.021	1.2E-08	4.3E-09	0.0007	0.13	1.7E-05	6.5E-10
Chloroform	0.016	9.2E-09	3.3E-09	0.01	0.031	9.2E-07	1.0E-10
1,2-Dichlorobenzene	0.066	3.8E-08	-	0.09	-	4.2E-07	-
1,1-Dichloroethane	0.065	3.7E-08	1.3E-08	0.1	0.0057	3.7E-07	7.6E-11
1,2-Dichloroethane	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	-	-	0.009	-	-	-
cis-1,2-Dichloroethene	3.950	2.3E-06	-	0.01	-	2.3E-04	-
trans-1,2-Dichloroethene	0.063	3.6E-08	-	0.02	-	1.8E-06	-
Methylene Chloride	-	-	-	0.06	0.014	-	-
Tetrachloroethene	0.063	3.6E-08	1.3E-08	0.01	0.051	3.6E-06	6.5E-10

Table A-11
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg\text{-}d)^{-1}$	Non-Carcinogenic Hazard Index	Estimated Lifetime Incremental Cancer Risk[f]
Toluene	-	-	-	0.2	-	-	-
1,1,1-Trichloroethane	-	-	-	0.035	-	-	-
Trichloroethene	1.811	1.0E-06	3.7E-07	0.17	0.015	6.1E-06	5.6E-09
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	3.3E-07	-	30	-	1.1E-08	-
Vinyl Chloride	0.137	7.8E-08	2.8E-08	0.0014	0.27	5.6E-05	7.6E-09
Total Estimated Risk due to Ingestion of Soil Containing COCs:						3.1E-04	1.5E-08

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations.

(b) Chronic daily intakes (CDIs) were estimated using methods recommended by U.S. EPA or Cal-EPA, as follows:
(Note that different soil ingestion rates were assumed for excavation and non-excavation work. See Table A-6 for details.)

$$CDI_{(ingestion)} = \frac{Cs*IRs*EF*ED*10^{-6}\ kg/mg}{BW*AT}$$

where:

$CDI_{(ingestion)}$ = Chronic daily intake (mg/kg-day)

Cs = Concentration in soil (mg/kg)

IRs = Ingestion Rate of soil (mg/day)

Table A-11
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

EP = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)
and assuming Cs = RCsoj]

(c) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(d) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(e) Non-carcinogenic hazard index (HI) for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(f) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-12

Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Future Maintenance Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg\text{-}d)^{-1}$	Non-Carcinogenic Hazard Index[e]	Estimated Lifetime Incremental Cancer Risk[f]
Acetone	-	-	-	0.1	-	-	-
Benzene	-	-	-	0.003	0.1	-	-
Carbon Tetrachloride	0.021	3.2E-08	1.2E-08	0.0007	0.15	4.6E-05	1.7E-09
Chloroform	0.016	2.5E-08	8.8E-09	0.01	0.031	2.5E-06	2.7E-10
1,2-Dichlorobenzene	0.066	1.0E-07	-	0.09	-	1.1E-06	-
1,1-Dichloroethane	0.065	1.0E-07	3.6E-08	0.1	0.0057	1.0E-06	2.0E-10
1,2-Dichloroethane	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	-	-	0.009	-	-	-
cis-1,2-Dichloroethene	3.950	6.1E-06	-	0.01	-	6.1E-04	-
trans-1,2-Dichloroethene	0.063	9.8E-08	-	0.02	-	4.9E-06	-
Methylene Chloride	-	-	-	0.06	0.014	-	-
Tetrachloroethene	0.063	9.7E-08	3.5E-08	0.01	0.051	9.7E-06	1.8E-09

Table A-12

Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Future Maintenance Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg\text{-}d)^{-1}$	Non-Carcinogenic Hazard Index[e]	Estimated Lifetime Incremental Cancer Risk[f]
Toluene	-	-	-	0.2	-	-	-
1,1,1-Trichloroethane	-	-	-	0.035	-	-	-
Trichloroethene	1.811	2.8E-06	1.0E-06	0.17	0.015	1.6E-05	1.5E-08
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	8.9E-07	-	30	-	3.0E-08	-
Vinyl Chloride	0.137	2.1E-07	7.6E-08	0.0014	0.27	1.5E-04	2.0E-08
Total Estimated Risk due to Dermal Contact with Soil Containing COCs:						**8.4E-04**	**3.9E-08**

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations.

(b) Chronic daily intakes (CDIs) were estimated using methods recommended by U.S. EPA or Cal-EPA, as follows:

$$CDI_{(dermal\ contact)} = \frac{Cs * SAs * ABS * AF * EF * ED * 10^{-6}\ kg/mg}{BW * AT}$$

Table A-13
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VFs_{amb} [b] (kg soil /m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	-	1.7E-05	-	-	-	0.1	-	-	-
Benzene	-	9.1E-05	-	-	-	0.0017	0.1	-	-
Carbon Tetrachloride	0.021	1.0E-04	2.1E-06	4.2E-07	1.5E-07	0.011	0.15	3.8E-05	2.2E-08
Chloroform	0.016	4.6E-05	7.3E-07	1.4E-07	5.1E-08	0.086	0.019	1.7E-06	9.7E-10
1,2-Dichlorobenzene	0.066	7.4E-06	4.9E-07	9.5E-08	-	0.057	-	1.7E-06	-
1,1-Dichloroethane	0.065	1.3E-04	8.3E-06	1.6E-06	5.8E-07	0.14	0.0057	1.2E-05	3.3E-09
1,2-Dichloroethane	-	4.8E-05	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	3.8E-04	-	-	-	0.0057	-	-	-
cis-1,2-Dichloroethene	3.950	6.5E-05	2.6E-04	5.0E-05	-	0.01	-	5.0E-03	-
trans-1,2-Dichloroethene	0.063	1.5E-04	9.4E-06	1.8E-06	-	0.02	-	9.2E-05	-
Methylene Chloride	-	9.6E-05	-	-	-	0.086	0.0035	-	-
Tetrachloroethene	0.063	6.7E-05	4.2E-06	8.2E-07	2.9E-07	0.011	0.021	7.5E-05	6.2E-09

Table A-13
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	VFs_{amb}[b] (kg soil /m^3 air)	Outdoor Air Exposure Point Concentration[c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake[c] (mg/kg-day)	Carcinogenic Chronic Daily Intake[c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose[d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope[e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index[f]	Estimated Lifetime Incremental Cancer Risk[g]
Toluene	-	6.8E-05	-	-	-	0.11	-	-	-
1,1,1-Trichloroethane	-	1.4E-04	-	-	-	0.29	-	-	-
Trichloroethene	1.811	9.5E-05	1.7E-04	3.4E-05	1.2E-05	0.17	0.01	2.0E-04	1.2E-07
1,1,2-Trichlorn-1,2,2-Trifluoroethane	0.575	7.9E-04	4.6E-04	8.9E-05	-	26	-	3.4E-06	-
Vinyl Chloride	0.137	1.1E-03	1.5E-04	3.0E-05	1.1E-05	0.0014	0.27	2.1E-02	2.9E-06
Total Estimated Risk due to Inhalation of COCs Volatilized from Soil to Outdoor Air:								0.03	3.0E-06

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from soil to ambient air ("VFsamb") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") (ASTM, 1995). Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Cp * IRa * EF * ED}{BW * AT}$$

Table A-13

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Future Maintenance Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)

Ca = Exposure Point Air Concentration (mg/m^3) = VFsamb * RC for non-excavation work and Ca = VFsamb * RC * AgF for excavation work, where AgF = Agitation Factor = 18.

IRa = Air Inhalation Rate (m^3/day)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-14
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{amb} [b] (L H_2O / m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [e] (mg/kg-day)	Carcinogenic Chronic Daily Intake [e] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	37	6.0E-07	2.2E-08	4.3E-09	-	0.1	-	4.3E-08	-
Benzene	23	5.4E-06	1.2E-07	2.4E-08	8.7E-09	0.0017	0.1	1.4E-05	8.7E-10
Carbon Tetrachloride	2000	9.3E-06	1.9E-05	3.6E-06	1.3E-06	0.011	0.13	3.3E-04	1.9E-07
Chloroform	1000	3.8E-06	3.8E-06	7.4E-07	2.6E-07	0.086	0.019	8.6E-06	5.0E-09
1,2-Dichlorobenzene	-	2.3E-06	-	-	-	0.057	-	-	-
1,1-Dichloroethane	140	4.9E-06	6.8E-07	1.3E-07	4.8E-08	0.14	0.0057	9.5E-07	2.7E-10
1,2-Dichloroethane	5.0	2.1E-06	1.0E-08	-	7.2E-10	-	0.07	-	5.0E-11
1,1-Dichloroethene	270	1.0E-05	2.8E-06	5.4E-07	-	0.0057	-	9.5E-05	-
cis-1,2-Dichloroethene	25000	4.1E-06	1.0E-04	2.0E-05	-	0.01	-	2.0E-03	-
trans-1,2-Dichloroethene	2.0	6.6E-06	1.3E-08	2.6E-09	-	0.02	-	1.3E-07	-
Methylene Chloride	32	3.2E-06	1.0E-07	2.0E-08	7.2E-09	0.086	0.0035	2.3E-07	2.5E-11
Tetrachloroethene	46	6.8E-06	3.1E-07	6.1E-08	2.2E-08	0.011	0.021	5.6E-06	4.6E-10

Table A-14
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{amb} [b] (L H_2O / m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDI) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) (mg/kg-d)$^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	7.0	5.3E-06	3.7E-08	7.3E-09	-	0.11	-	6.7E-08	-
1,1,1-Trichloroethane	27	7.3E-06	2.0E-07	3.9E-08	-	0.29	-	1.3E-07	-
Trichloroethene	260000	5.8E-06	1.5E-03	2.9E-04	1.0E-04	0.17	0.01	1.7E-03	1.0E-06
1,1,2-Trichloro-1,2,2 Trifluoroethane	2200	3.8E-05	8.4E-05	1.6E-05	-	26	-	6.3E-07	-
Vinyl Chloride	650	1.2E-05	8.0E-06	1.6E-06	5.6E-07	0.0014	0.27	1.1E-03	1.5E-07
Total Estimated Risk due to Inhalation of COCs Volatilized from Groundwater to Outdoor Air:								0.005	1.4E-06

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from groundwater to ambient air ("VFwamb") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Ca * IRa * EF * ED}{BW * AT}$$

Table A-14

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Future Maintenance Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)

Ca = Exposure Point Air Concentration (mg/m^3) = VFwamb * RC

IRa = Air Inhalation Rate (m^3/day)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "j" is defined as the CDI_j/RfD_j. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "j" is defined as $CDI_j \times SF_j$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-15
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index	Estimated Lifetime Incremental Cancer Risk[f]
Acetone	-	-	-	0.1	-	-	-
Benzene	-	-	-	0.003	0.1	-	-
Carbon Tetrachloride	0.021	3.4E-08	4.9E-10	0.0007	0.15	4.9E-05	7.3E-11
Chloroform	0.016	2.6E-08	3.7E-10	0.01	0.031	2.6E-06	1.2E-11
1,2-Dichlorobenzene	0.066	1.1E-07	-	0.09	-	1.2E-06	-
1,1-Dichloroethane	0.065	1.1E-07	1.5E-09	0.1	0.0057	1.1E-06	8.6E-12
1,2-Dichloroethane	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	-	-	0.009	-	-	-
cis-1,2-Dichloroethene	3.950	6.4E-06	-	0.01	-	6.4E-04	-
trans-1,2-Dichloroethene	0.063	1.0E-07	-	0.02	-	5.2E-06	-
Methylene Chloride	-	-	-	0.06	0.014	-	-
Tetrachloroethene	0.063	1.0E-07	1.5E-09	0.01	0.051	1.0E-05	7.4E-11

Table A-15
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index	Estimated Lifetime Incremental Cancer Risk[f]
Toluene	-	-	-	0.2	-	-	-
1,1,1-Trichloroethane	-	-	-	0.035	-	-	-
Trichloroethene	1.811	2.9E-06	4.2E-08	0.17	0.015	1.7E-05	6.3E-10
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	9.4E-07	-	30	-	3.1E-08	-
Vinyl Chloride	0.137	2.2E-07	3.2E-09	0.0014	0.27	1.6E-04	8.6E-10
Total Estimated Risk due to Ingestion of Soil Containing COCs:						0.0009	1.7E-09

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations.

(b) Chronic daily intakes (CDIs) were estimated using methods recommended by U.S. EPA or Cal-EPA, as follows:
(Note that different soil ingestion rates were assumed for excavation and non-excavation work. See Table A-6 for details.)

$$CDI_{(ingestion)} = \frac{Cs * IRs * EF * ED * 10^{-6}\ kg/mg}{BW * AT}$$

where:

$CDI_{(ingestion)}$ = Chronic daily intake (mg/kg-day)
Cs = Concentration in soil (mg/kg)
IRs = Ingestion Rate of soil (mg/day)

Table A-15
Characterization of Baseline Human Health Risks due to Ingestion of COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)
and assuming Cs = RCsoil

(c) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(d) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(e) Non-carcinogenic hazard index (HI) for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(f) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-16
Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index[e]	Estimated Lifetime Incremental Cancer Risk[f]
Acetone	-	-	-	0.1	-	-	-
Benzene	-	-	-	0.003	0.1	-	-
Carbon Tetrachloride	0.021	3.2E-08	1.2E-08	0.0007	0.15	4.6E-05	1.7E-09
Chloroform	0.016	2.5E-08	8.8E-09	0.01	0.031	2.5E-06	2.7E-10
1,2-Dichlorobenzene	0.066	1.0E-07	-	0.09	-	1.1E-06	-
1,1-Dichloroethane	0.065	1.0E-07	3.6E-08	0.1	0.0057	1.0E-06	2.0E-10
1,2-Dichloroethane	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	-	-	0.009	-	-	-
cis-1,2-Dichloroethene	3.950	6.1E-06	-	0.01	-	6.1E-04	-
trans-1,2-Dichloroethene	0.063	9.8E-08	-	0.02	-	4.9E-06	-
Methylene Chloride	-	-	-	0.06	0.014	-	-
Tetrachloroethene	0.063	9.7E-08	3.5E-08	0.01	0.051	9.7E-06	1.8E-09

Table A-16
Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil[a] (mg/kg)	Non-Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Carcinogenic Chronic Daily Intake[b] (mg/kg-day)	Non-Carcinogenic Ingestion Reference Dose[c] (RfDo) (mg/kg-day)	Carcinogenic Oral Slope Factor[d] (SFo) (mg/kg-d)$^{-1}$	Non-Carcinogenic Hazard Index[e]	Estimated Lifetime Incremental Cancer Risk[f]
Toluene	-	-	-	0.2	-	-	-
1,1,1-Trichloroethane	-	-	-	0.035	-	-	-
Trichloroethene	1.811	2.8E-06	1.0E-06	0.17	0.015	1.6E-05	1.5E-08
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.575	8.9E-07	-	30	-	3.0E-08	-
Vinyl Chloride	0.137	2.1E-07	7.6E-08	0.0014	0.27	1.5E-04	2.0E-08
Total Estimated Risk due to Dermal Contact with Soil Containing COCs:						**8.4E-04**	**3.9E-08**

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations.

(b) Chronic daily intakes (CDIs) were estimated using methods recommended by U.S. EPA or Cal-EPA, as follows:

$$CDI_{(dermal\ contact)} = \frac{Cs*SAs*ABS*AF*EF*ED*10^{-6}\ kg/mg}{BW*AT}$$

Table A-16
Characterization of Baseline Human Health Risks due to Dermal Contact with COCs in Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(dermal\ contact)}$ = Chronic daily intake (mg/kg-day)
Cs = Concentration in soil (mg/kg)
SAs = Surface Area of Skin exposed to soil contact (cm^2/event)
AF = Soil Adherence Factor (mg/cm^2)
ABS = Soil-Dermal Absorbtion Fraction (dimensionless)
EF = Exposure Frequency (events/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)
and assuming Cs = RCsoil

(c) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(d) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(e) Non-carcinogenic hazard index (HI) for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(f) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-17

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Construction Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VFs_{amb} [b] (kg soil /m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFi) (mg/kg-d)$^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Acetone	-	1.7E-05	-	-	-	0.1	-	-	-
Benzene	-	9.1E-05	-	-	-	0.0017	0.1	-	-
Carbon Tetrachloride	0.021	1.0E-04	2.1E-06	1.4E-07	2.1E-09	0.011	0.15	1.3E-05	3.1E-10
Chloroform	0.016	4.6E-05	7.3E-07	4.9E-08	7.1E-10	0.086	0.019	5.7E-07	1.3E-11
1,2-Dichlorobenzene	0.066	7.4E-06	4.9E-07	3.3E-08	-	0.057	-	5.8E-07	-
1,1-Dichloroethane	0.065	1.3E-04	8.3E-06	5.7E-07	8.1E-09	0.14	0.0057	4.0E-06	4.6E-11
1,2-Dichloroethane	-	4.8E-05	-	-	-	-	0.07	-	-
1,1-Dichloroethene	-	3.8E-04	-	-	-	0.0057	-	-	-
cis-1,2-Dichloroethene	3.950	6.5E-05	2.6E-04	1.7E-05	-	0.01	-	1.7E-03	-
trans-1,2-Dichloroethene	0.063	1.5E-04	9.4E-06	6.4E-07	-	0.02	-	3.2E-05	-
Methylene Chloride	-	9.6E-05	-	-	-	0.086	0.0035	-	-
Tetrachloroethene	0.063	6.7E-05	4.2E-06	2.8E-07	4.1E-09	0.011	0.021	2.6E-05	8.5E-11

Table A-17
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Soil [a] (mg/kg)	VFs_{amb} [b] (kg soil /m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDi) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	-	6.8E-05	-	-	-	0.11	-	-	-
1,1,1-Trichloroethane	-	1.4E-04	-	-	-	0.29	-	-	-
Trichloroethene	1.811	9.5E-05	1.7E-04	1.2E-05	1.7E-07	0.17	0.01	6.9E-05	1.7E-09
1,1,2-Trichloro-1,2,2-Trifluorgethane	0.575	7.9E-04	4.6E-04	3.1E-05	-	26	-	1.2E-06	-
Vinyl Chloride	0.137	1.1E-03	1.5E-04	1.0E-05	1.5E-07	0.0014	0.27	7.3E-03	4.0E-08
Total Estimated Risk due to Inhalation of COCs Volatilized from Soil to Outdoor Air:								**0.0**	**4.2E-08**

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from soil to ambient air ("VFsamb") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Ca * IRa * EF * ED}{BW * AT}$$

Table A-17
Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Subsurface Soil for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)

Cs = Exposure Point Air Concentration (mg/m^3) = VFsamb * RC for non-excavation work and Cs = VFsamb * RC * AgF for excavation work, where AgF = Agitation Factor = 1.

IRa = Air Inhalation Rate (m^3/day)

EF = Exposure Frequency (days/year)

ED = Exposure Duration (years)

BW = Body Weight (kg)

AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-18

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Construction Workers

3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Representative Concentration (RC) of Compound in Groundwater [a] (ug/L)	VFw_{amb} [b] (L H_2O / m^3 air)	Outdoor Air Exposure Point Concentration [c] (mg/m^3)	Non-Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Carcinogenic Chronic Daily Intake [c] (mg/kg-day)	Non-Carcinogenic Inhalation Reference Dose [d] (RfDI) (mg/kg-day)	Carcinogenic Inhalation Slope [e] (SFo) $(mg/kg-d)^{-1}$	Non-Carcinogenic Hazard Index [f]	Estimated Lifetime Incremental Cancer Risk [g]
Toluene	7.0	5.3E-06	3.7E-08	2.5E-09	-	0.11	-	2.3E-08	-
1,1,1-Trichloroethane	27	7.3E-06	2.0E-07	1.3E-08	-	0.29	-	4.6E-08	-
Trichloroethene	260000	5.8E-06	1.5E-03	1.0E-04	1.5E-06	0.17	0.01	6.0E-04	1.5E-08
1,1,2-Trichloro-1,2,2 Trifluoroethane	2200	3.8E-05	8.4E-05	5.7E-06	-	26	-	2.2E-07	-
Vinyl Chloride	650	1.2E-05	8.0E-06	5.5E-07	7.8E-09	0.0014	0.27	3.9E-04	2.1E-09
Total Estimated Risk due to Inhalation of COCs Volatilized from Groundwater to Outdoor Air:								0.00	1.9E-08

Notes:

(a) Refer to Table A-3 for compilation of representative concentrations ("RCs").

(b) Volatilization factor from groundwater to ambient air ("VFwamb") was calculated for each chemical using the Risk-Based Corrective Action model ("RBCA") [ASTM, 1995]. Parameters used in the RBCA model are listed in Tables 7 and 8.

(c) Chronic daily intakes ("CDIs") were estimated using methods recommended by U.S. EPA or Cal-EPA. The following equation was used to calculate CDIs (Refer to Table A-6 for parameter values used in calculations):

$$CDI_{(inhalation)} = \frac{Cg * IRa * EF * ED}{BW * AT}$$

Table A-18

Characterization of Baseline Human Health Risks due to Inhalation of COCs Volatilized from Groundwater for Construction Workers

3695-3723 Haven Avenue Property, Menlo Park, California

where:

$CDI_{(inhalation)}$ = Chronic Daily Intake (mg/kg-day)
Ca = Exposure Point Air Concentration (mg/m^3) = VFwamb * RC
IRa = Air Inhalation Rate (m^3/day)
EF = Exposure Frequency (days/year)
ED = Exposure Duration (years)
BW = Body Weight (kg)
AT = Averaging Time (days)

(d) See Table A-4 for an explanation of chronic noncancer reference doses (RfD) used here. A hyphen (-) indicates an RfD was not found for the compound.

(e) See Table A-5 for an explanation of carcinogenic slope factors (SFs) used here. A hyphen (-) indicates an SF was not found for the compound.

(f) Non-carcinogenic hazard index ("HI") for a compound "i" is defined as the CDI_i/RfD_i. The non-carcinogenic HI, summed for all compounds and exposure pathways, assumes that there is a level of exposure (i.e., RfD) below which it is unlikely even for sensitive populations to experience adverse health effects [U.S. EPA, 1989]. If the chronic daily intake (i.e., CDI) exceeds this RfD threshold (i.e., HI greater than 1), there may be concern for potential adverse non-carcinogenic health effects.

(g) Estimated lifetime incremental cancer risk for compound "i" is defined as $CDI_i \times SF_i$. The estimated incremental lifetime cancer risk to an individual of developing cancer due to COCs is given by the sum of incremental cancer risks for all chemicals and exposure pathways.

Table A-19
Summary of Baseline Human Health Risks from All Exposure Pathways for Future Indoor Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index				Estimated Lifetime Cancer Risk			
	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	-	2.1E-07	2.1E-07	0%	-	-	-	-
Benzene	-	1.3E-04	1.3E-04	0%	-	7.7E-09	7.7E-09	0%
Carbon Tetrachloride	3.0E-05	6.2E-03	6.3E-03	8%	1.7E-08	3.7E-06	3.7E-06	19%
Chloroform	1.3E-06	5.9E-05	6.0E-05	0%	7.5E-10	3.4E-08	3.5E-08	0%
1,2-Dichlorobenzene	1.3E-06	-	1.3E-06	0%	-	-	-	-
1,1-Dichloroethane	9.1E-06	7.7E-06	1.7E-05	0%	2.6E-09	2.2E-09	4.8E-09	0%
1,2-Dichloroethane	-	-	-	-	-	2.8E-10	2.8E-10	0%
1,1-Dichloroethene	-	1.7E-03	1.7E-03	2%	-	-	-	-
cis-1,2-Dichloroethene	3.9E-03	1.4E-02	1.8E-02	22%	-	-	-	-
trans-1,2-Dichloroethene	7.2E-05	1.3E-06	7.3E-05	0%	-	-	-	-
Methylene Chloride	-	1.4E-06	1.4E-06	0%	-	1.5E-10	1.5E-10	0%
Tetrachloroethene	5.8E-05	7.7E-05	1.4E-04	0%	4.8E-09	6.4E-09	1.1E-08	0%
Toluene	-	6.6E-07	6.6E-07	0%	-	-	-	-
1,1,1-Trichloroethane	-	1.9E-06	1.9E-06	0%	-	-	-	-
Trichloroethene	1.5E-04	1.7E-02	1.7E-02	22%	9.4E-08	1.1E-05	1.1E-05	55%
1,1,2-Trichloro-1,2,2-	2.7E-06	2.9E-05	3.1E-05	0%	-	-	-	-
Vinyl Chloride	1.6E-02	2.0E-02	3.7E-02	46%	2.2E-06	2.7E-06	4.9E-06	26%
Subtotal Hazard Index or Risk	0.02	0.06			2.3E-06	1.7E-05		
% of Total	26%	74%			12%	88%		
Totals:	**Total Non-Carcinogenic Hazard Index for all COCs (Future Indoor Workers)**		**0.08**		**Total Estimated Lifetime Cancer Risk for all COCs (Future Indoor Workers)**		**1.9E-05**	

Table A-20
Summary of Baseline Human Health Risks from All Exposure Pathways for Future Maintenance Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index						Estimated Lifetime Cancer Risk					
	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	-	-	-	4.3E-08	4.3E-08	0%	-	-	-	-	-	-
Benzene	-	-	-	1.4E-05	1.4E-05	0%	-	-	-	8.7E-10	8.7E-10	0%
Carbon Tetrachloride	1.7E-05	4.6E-05	3.8E-05	3.3E-04	4.3E-04	1%	6.5E-10	1.7E-09	2.2E-08	1.9E-07	2.2E-07	5%
Chloroform	9.2E-07	2.5E-06	1.7E-06	8.6E-06	1.4E-05	0%	1.0E-10	2.7E-10	9.7E-10	5.0E-09	6.3E-09	0%
1,2-Dichlorobenzene	4.2E-07	1.1E-06	1.7E-06	-	3.2E-06	0%	-	-	-	-	-	-
1,1-Dichloroethane	3.7E-07	1.0E-06	1.2E-05	9.5E-07	1.4E-05	0%	7.6E-11	2.0E-10	3.3E-09	2.7E-10	3.9E-09	0%
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-	5.0E-11	5.0E-11	0%
1,1-Dichloroethene	-	-	-	9.5E-05	9.5E-05	0%	-	-	-	-	-	-
cis-1,2-Dichloroethene	2.3E-04	6.1E-04	5.0E-03	2.0E-03	7.8E-03	24%	-	-	-	-	-	-
trans-1,2-Dichloroethene	1.8E-06	4.9E-06	9.2E-05	1.3E-07	9.9E-05	0%	-	-	-	-	-	-
Methylene Chloride	-	-	-	2.3E-07	2.3E-07	0%	-	-	-	2.5E-11	2.5E-11	0%
Tetrachloroethene	3.6E-06	9.7E-06	7.5E-05	5.6E-06	9.3E-05	0%	6.5E-10	1.8E-09	6.2E-09	4.6E-10	9.0E-09	0%
Toluene	-	-	-	6.7E-08	6.7E-08	0%	-	-	-	-	-	-
1,1,1-Trichloroethane	-	-	-	1.3E-07	1.3E-07	0%	-	-	-	-	-	-
Trichloroethene	6.1E-06	1.6E-05	2.0E-04	1.7E-03	1.9E-03	6%	5.6E-09	1.5E-08	1.2E-07	1.0E-06	1.2E-06	27%
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.1E-08	3.0E-08	3.4E-06	6.3E-07	4.1E-06	0%	-	-	-	-	-	-
Vinyl Chloride	5.6E-05	1.5E-04	2.1E-02	1.1E-03	2.2E-02	68%	7.6E-09	2.0E-08	2.9E-06	1.5E-07	3.0E-06	68%
Subtotal Hazard Index or Risk	3.1E-04	8.4E-04	0.03	0.005			1.5E-08	3.9E-08	3.0E-06	1.4E-06		
% of Total	1%	3%	80%	16%			0%	1%	67%	31%		
Totals:	Total Estimated Non-Carcinogenic Hazard Index for All COC (Future Maintenance Workers)				0.03		Total Estimated Lifetime Cancer Risk for All COCs: (Future Maintenance Workers)				4.5E-06	

Table A-21
Summary of Baseline Human Health Risks from All Exposure Pathways for Construction Workers
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index						Estimated Lifetime Incremental Cancer Risk					
	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	-	-	-	1.5E-08	1.5E-08	0%	-	-	-	-	-	-
Benzene	-	-	-	5.0E-06	5.0E-06	0%	-	-	-	1.2E-11	1.2E-11	0%
Carbon Tetrachloride	4.9E-05	4.6E-05	1.3E-05	1.1E-04	2.2E-04	2%	7.3E-11	1.7E-09	3.1E-10	2.7E-09	4.8E-09	5%
Chloroform	2.6E-06	2.5E-06	5.7E-07	3.0E-06	8.6E-06	0%	1.2E-11	2.7E-10	1.3E-11	6.9E-11	3.7E-10	0%
1,2-Dichlorobenzene	1.2E-06	1.1E-06	5.8E-07	-	2.9E-06	0%	-	-	-	-	-	-
1,1-Dichloroethane	1.1E-06	1.0E-06	4.0E-06	3.3E-07	6.4E-06	0%	8.6E-12	2.0E-10	4.6E-11	3.8E-12	2.6E-10	0%
1,2-Dichloroethane	-	-	-	-	-	-	-	-	-	7.0E-13	7.0E-13	0%
1,1-Dichloroethene	-	-	-	3.3E-05	3.3E-05	0%	-	-	-	-	-	-
cis-1,2-Dichloroethene	6.4E-04	6.1E-04	1.7E-03	6.9E-04	3.7E-03	29%	-	-	-	-	-	-
trans-1,2-Dichloroethene	5.2E-06	4.9E-06	3.2E-05	4.4E-08	4.2E-05	0%	-	-	-	-	-	-
Methylene Chloride	-	-	-	8.1E-08	8.1E-08	0%	-	-	-	3.5E-13	3.5E-13	0%
Tetrachloroethene	1.0E-05	9.7E-06	2.6E-05	1.9E-06	4.8E-05	0%	7.4E-11	1.8E-09	8.5E-11	6.4E-12	1.9E-09	2%
Toluene	-	-	-	2.3E-08	2.3E-08	0%	-	-	-	-	-	-
1,1,1-Trichloroethane	-	-	-	4.6E-08	4.6E-08	0%	-	-	-	-	-	-
Trichloroethene	1.7E-05	1.6E-05	6.9E-05	6.0E-04	7.0E-04	5%	6.3E-10	1.5E-08	1.7E-09	1.5E-08	3.2E-08	31%
1,1,2-Trichloro-1,2,2-Trifluoroethane	3.1E-08	3.0E-08	1.2E-06	2.2E-07	1.5E-06	0%	-	-	-	-	-	-
Vinyl Chloride	1.6E-04	1.5E-04	7.3E-03	3.9E-04	8.0E-03	63%	8.6E-10	2.0E-08	4.0E-08	2.1E-09	6.3E-08	62%
Subtotal Hazard Index or Risk	8.9E-04	8.4E-04	9.2E-03	1.8E-03			1.7E-09	3.9E-08	4.2E-08	1.9E-08		
% of Total	7%	7%	72%	14%			2%	39%	41%	19%		
Totals:	Total Estimated Noncarcinogenic Hazard Index for All COCs: (Construction Workers)				0.01		Total Estimated Lifetime Cancer Risk for All COCs: (Construction Workers)				1.0E-07	

Table A-22

Risk-Based Action Levels for Soil
3695-3723 Haven Avenue Property, Menlo Park, California

Chemical	Risk-Based Action Level for Soil (mg/kg)[a]		Representative Site Soil Concentration (mg/kg)
Acetone	1000		-
Benzene	0.50		-
Carbon Tetrachloride	0.50		0.021
Chloroform	0.50		0.016
1,2-Dichlorobenzene	50		0.066
1,1-Dichloroethane	5.0		0.065
1,2-Dichloroethane	0.50		-
1,1-Dichloroethene	5.0		-
cis-1,2-Dichloroethene	500		4.0
trans-1,2-Dichloroethene	50		0.063
Methylene Chloride	0.50		-
Tetrachloroethene	0.50		0.063
Toluene	5.0		-
1,1,1-Trichloroethane	5.0		-
Trichloroethene	3.2	[b]	1.8
1,1,2-Trichloro-1,2,2-Trifluoroethane	1000		0.57
Vinyl Chloride	0.075	[b]	0.14

Notes:

(a) Risk based action levels rounded to two significant figures

(b) These volatile organic compounds have been detected in Site soil at concentrations greater than the risk-based action level

Table A-23
Risk-Based Action Levels for Groundwater
3695-3723 Haven Avenue Property, Menlo Park, California

Chemical	Risk-Based Action Level for Groundwater (ug/L)[a]		Representative Groundwater Concentration (ug/L)
Acetone	500		37
Benzene	1,000		23
Carbon Tetrachloride	2,600		2,000
Chloroform	2,000		1,000
1,2-Dichlorobenzene	500		-
1,1-Dichloroethane	510		140
1,2-Dichloroethane	500		5.0
1,1-Dichloroethene	520		270
cis-1,2-Dichloroethene	50,000		25,000
trans-1,2-Dichloroethene	510		2.0
Methylene Chloride	500		32
Tetrachloroethene	510		46
Toluene	510		7.0
1,1,1-Trichloroethane	510		27
Trichloroethene	8,000	(b)	260,000
1,1,2-Trichloro-1,2,2-Trifluoroethane	29,000		2,200
Vinyl Chloride	500	(b)	650

Note:

(a) Risk based action levels rounded to two significant figures

(b) These volatile organic compounds have been detected in Site groundwater at concentrations greater than the risk-based action level

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Table A-24
Summary of Estimated Human Health Risks from All Exposure Pathways at ACTION LEVELS for FUTURE INDOOR WORKERS
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index				Estimated Lifetime Cancer Risk			
	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	0.0264	2.8E-06	0.0264	4%	-	-	-	-
Benzene	0.0040	0.0056	0.0096	1%	2.5E-07	3.4E-07	5.9E-07	6%
Carbon Tetrachloride	7.0E-04	8.0E-03	8.7E-03	1%	4.2E-07	4.7E-06	5.1E-06	51%
Chloroform	4.1E-05	1.2E-04	1.6E-04	0%	2.4E-08	6.9E-08	9.3E-08	1%
1,2-Dichlorobenzene	0.0010	2.5E-05	0.0010	0%	-	-	-	-
1,1-Dichloroethane	6.9E-04	2.8E-05	0.0007	0%	2.0E-07	8.0E-09	2.1E-07	2%
1,2-Dichloroethane	-	-	-	-	9.2E-08	2.8E-08	1.2E-07	1%
1,1-Dichloroethene	0.05	0.003	0.05	7%	-	-	-	-
cis-1,2-Dichloroethene	0.49	0.03	0.52	73%	-	-	-	-
trans-1,2-Dichloroethene	0.06	0.0003	0.06	8%	-	-	-	-
Methylene Chloride	8.5E-05	2.2E-05	0.0001	0%	9.1E-09	2.4E-09	1.2E-08	0%
Tetrachloroethene	0.0005	0.0009	0.0013	0%	3.8E-08	7.1E-08	1.1E-07	1%
Toluene	0.000	4.8E-05	0.001	0%	-	-	-	-
1,1,1-Trichloroethane	0.000	3.5E-05	0.000	0%	-	-	-	-
Trichloroethene	0.0003	0.0005	0.0008	0%	1.7E-07	3.2E-07	4.9E-07	5%
1,1,2-Trichloro-1,2,2-Trifluoroethane	0.0047	0.0004	0.0050	1%	-	-	-	-
Vinyl Chloride	0.009	0.0156	0.025	3%	1.2E-06	2.1E-06	3.3E-06	33%
Subtotal Hazard Index or Risk	0.65	0.06			2.4E-06	7.6E-06		
% of Total	91%	9%			24%	76%		
Totals:	Estimated Non-Carcinogenic Total Hazard Index: (Future Indoor Workers)		0.71		Estimated Lifetime Total Cancer Risk: (Future Indoor Workers)		1.0E-05	

Table A-25
Summary of Estimated Human Health Risks from All Exposure Pathways at ACTION LEVELS for FUTURE MAINTENANCE WORKERS
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index						Estimated Lifetime Cancer Risk					
	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	5.7E-03	1.5E-02	0.0339	5.9E-07	0.0551	6%	-	-	-	-	-	-
Benzene	9.5E-05	2.6E-04	0.0052	6.3E-04	0.0062	1%	1.0E-08	2.7E-08	3.2E-07	3.8E-08	3.9E-07	10%
Carbon Tetrachloride	4.1E-04	1.1E-03	9.0E-04	4.2E-04	2.8E-03	0%	1.5E-08	4.1E-08	5.3E-07	2.5E-07	8.4E-07	22%
Chloroform	2.9E-05	7.8E-05	5.2E-05	1.7E-05	1.8E-04	0%	3.2E-09	8.6E-09	3.0E-08	1.0E-08	5.2E-08	1%
1,2-Dichlorobenzene	3.2E-04	8.6E-04	0.0013	4.0E-06	0.0024	0%	-	-	-	-	-	-
1,1-Dichloroethane	2.8E-05	7.7E-05	8.9E-04	3.5E-06	1.0E-03	0%	5.8E-09	1.6E-08	2.5E-07	9.9E-10	2.8E-07	7%
1,2-Dichloroethane	-	-	-	-	-	-	7.2E-09	1.9E-08	1.2E-07	5.0E-09	1.5E-07	4%
1,1-Dichloroethene	3.2E-04	8.5E-04	0.06	0.0002	0.07	7%	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0287	0.0773	0.63	0.0040	0.74	76%	-	-	-	-	-	-
trans-1,2-Dichloroethene	0.0014	0.0039	0.07	3.2E-05	0.08	8%	-	-	-	-	-	-
Methylene Chloride	4.8E-06	1.3E-05	0.0001	3.7E-06	0.0001	0%	1.4E-09	3.9E-09	1.2E-08	3.9E-10	1.7E-08	0%
Tetrachloroethene	2.9E-05	7.7E-05	0.0006	6.2E-05	0.0008	0%	5.2E-09	1.4E-08	4.9E-08	5.1E-09	7.4E-08	2%
Toluene	1.4E-05	3.9E-05	0.001	4.8E-06	0.001	0%	-	-	-	-	-	-
1,1,1-Trichloroethane	8.2E-05	0.0002	0.000	2.5E-06	0.001	0%	-	-	-	-	-	-
Trichloroethene	1.1E-05	2.9E-05	0.0004	5.3E-05	0.0004	0%	9.9E-09	2.7E-08	2.1E-07	3.2E-08	2.8E-07	7%
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.9E-05	5.2E-05	0.0060	8.3E-06	0.0060	1%	-	-	-	-	-	-
Vinyl Chloride	3.1E-05	8.3E-05	0.012	8.7E-04	0.013	1%	4.1E-09	1.1E-08	1.6E-06	1.2E-07	1.7E-06	45%
Subtotal Hazard Index or Risk	0.0372	0.100	0.83	0.006			6.2E-08	1.7E-07	3.1E-06	4.6E-07		
% of Total	4%	10%	85%	1%			2%	4%	82%	12%		
Totals:	Estimated Non-Carcinogenic Total Hazard Index: (Future Maintenance Workers)				0.98		Estimated Lifetime Total Cancer Risk: (Future Maintenance Workers)				3.8E-06	

Table A-26
Summary of Estimated Human Health Risks From All Exposure Pathways at ACTION LEVELS, for FUTURE CONSTRUCTION WORKERS
3695-3723 Haven Avenue Property, Menlo Park, California

Compound	Non-Carcinogenic Hazard Index						Estimated Lifetime Cancer Risk					
	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total	Soil Ingestion	Dermal Contact	Inhalation of Volatiles From Soil	Inhalation of Volatiles From Groundwater	Per Chemical Subtotal	% of Total
Acetone	1.6E-02	1.5E-02	1.2E-02	2.0E-07	0.0435	9%	-	-	-	-	-	-
Benzene	2.7E-04	2.6E-04	0.0018	2.2E-04	0.0025	1%	1.2E-09	2.7E-08	4.4E-09	5.3E-10	3.4E-08	15%
Carbon Tetrachloride	1.2E-03	1.1E-03	3.1E-04	1.5E-04	2.7E-03	1%	1.7E-09	4.1E-08	7.4E-09	3.5E-09	5.4E-08	24%
Chloroform	8.2E-05	7.8E-05	1.8E-05	6.0E-06	1.8E-04	0%	3.6E-10	8.6E-09	4.2E-10	1.4E-10	9.5E-09	4%
1,2-Dichlorobenzene	9.0E-04	8.6E-04	0.0004	1.4E-06	0.0022	0%	-	-	-	-	-	-
1,1-Dichloroethane	8.1E-05	7.7E-05	3.1E-04	1.2E-06	4.7E-04	0%	6.6E-10	1.6E-08	3.5E-09	1.4E-11	2.0E-08	9%
1,2-Dichloroethane	-	-	-	-	-	-	8.2E-10	1.9E-08	1.6E-09	7.0E-11	2.2E-08	10%
1,1-Dichloroethene	9.0E-04	8.5E-04	0.02	6.4E-05	0.02	5%	-	-	-	-	-	-
cis-1,2-Dichloroethene	0.0814	0.0773	0.220	0.0014	0.38	76%	-	-	-	-	-	-
trans-1,2-Dichloroethene	0.0041	0.0039	0.025	1.1E-05	0.0331	7%	-	-	-	-	-	-
Methylene Chloride	1.4E-05	1.3E-05	3.8E-05	1.3E-06	6.5E-05	0%	1.6E-10	3.9E-09	1.6E-10	5.5E-12	4.2E-09	2%
Tetrachloroethene	8.2E-05	7.7E-05	0.0002	2.2E-05	0.0004	0%	5.9E-10	1.4E-08	6.8E-10	7.1E-11	1.5E-08	7%
Toluene	4.1E-05	3.9E-05	-	1.7E-06	8.1E-05	0%	-	-	-	-	-	-
1,1,1-Trichloroethane	0.0002	0.0002	0.0002	8.8E-07	0.001	0%	-	-	-	-	-	-
Trichloroethene	3.1E-05	2.9E-05	1.2E-04	1.8E-05	2.0E-04	0%	1.1E-09	2.7E-08	3.9E-09	4.5E-10	3.1E-08	14%
1,1,2-Trichloro-1,2,2-Trifluoroethane	5.4E-05	5.2E-05	2.1E-03	2.9E-06	2.2E-03	0%	-	-	-	-	-	-
Vinyl Chloride	8.7E-05	8.3E-05	0.004	3.0E-04	0.004	1%	4.7E-10	1.1E-08	2.2E-08	1.6E-09	3.5E-08	16%
Subtotal Hazard Index or Risk	0.1057	0.100	0.29	0.002			7.1E-09	1.7E-07	4.3E-08	6.4E-09		
% of Total	21%	20%	58%	0%			3%	75%	19%	3%		
Totals:	Total Estimated Non-Carcinogenic Hazard Index: (Future Maintenance Workers)				0.50		Total Estimated Lifetime Cancer Risk for All COCs: (Future Maintenance Workers)				2.2E-07	

Appendix K

RWQCB Siltec Closure Package

CALIFORNIA
Water Boards

San Francisco Bay Regional Water Quality Control Board

June 16, 2014
File No. 41S0105 (RL)

SUMCO Phoenix Corp.
Attn: Mr. Jeffrey Bradshaw
19801 North Tatum Boulevard
Phoenix, AZ 85050

RE: No Further Action Required at the former Siltec site located at 3695-3723 Haven Avenue, Menlo Park, San Mateo County

Dear Mr. Bradshaw:

This letter confirms the completion of a site investigation and corrective action for the subject site. Thank you for your cooperation throughout this investigation.

This letter responds to the December 31, 2013, "Summary of Environmental Conditions, and Request for Declaration of No Further Active Remediation Status" prepared by Erler & Kalinowski, Inc. (EKI) on behalf of SUMCO Phoenix Corp. ("SUMCO") for the former Siltec facility located at 3695-3723 Haven Avenue, Menlo Park, in San Mateo County (Site). This request was based on an evaluation of the criteria specified in the Regional Water Board's July 31, 2009, "Assessment Tool for Closure of Low Threat Chlorinated Solvent Sites." As explained below, we conclude that no further action is necessary at the Site. I also concur with your request to properly abandon groundwater monitoring wells on-site, and on the off-site downgradient 3750 Haven Avenue property, except for the two on-site shallow monitoring wells MW-8 and MW-9, which are to be monitored by the current Site owner pursuant to the terms of the existing Deed Restrictions. You are requested to provide documentation within 30 days after the proper abandonment of these wells.

Summary of Site Investigation and Remediation

The Site is comprised of three commercial buildings and was formerly used for semiconductor manufacturing which resulted in adverse impact of subsurface soil and groundwater by volatile organic compounds (VOCs), principally trichloroethene (TCE) and cis-1,2-dichloroethene (cis-1,2-DCE). Due to the close proximity to former salt ponds, groundwater in the area has extremely elevated salinity and is not suitable for municipal supply. Extensive investigations of on-site and off-site soil and groundwater have been conducted from 1994 through 2012. Risk-based cleanup goals were developed as part of the 1999 Feasibility Study/Remedial Action Plan (FS/RAP) prepared by EKI. Remedial options were evaluated, including a pilot study of in-situ chemical oxidation using potassium permanganate injection. Ultimately, in-situ treatment did not achieve

targeted reductions in VOC concentrations, and Site remediation was accomplished in 1999 through excavation and removal of impacted soil that exceeded risk-based cleanup goal.

In accordance with the FS/RAP, approximately 2,860 cubic yards of VOC-impacted soil were excavated from the Site and the adjacent 3645 and 3665 Haven Avenue properties to the northwest. The excavation was backfilled with a multilayered mixture of materials intended to inhibit movement of VOC vapors from groundwater into the clean fill. As part of the excavation effort, the building in the middle (Building No. 2 at 3715 Haven Avenue) was demolished and a new two-story building was constructed south of the former Building 2 footprint, outside of the high groundwater risk area. A paved parking lot currently occupies this soil remediation area.

SUMCO and its predecessors have conducted groundwater monitoring for 13 years since Site source excavation, using on-site and off-site downgradient wells. Based on the available data, VOCs in groundwater have migrated off-site to the east and northeast, but the concentrations of chemicals of concern in groundwater have stabilized or declined over this time period through natural attenuation process. Shallow soil vapor sampling conducted by SUMCO's predecessors in 1999 near the commercial building on the adjacent downgradient property to the east (3750 Haven Avenue) did not detect chemicals of concern originated from the Site above laboratory reporting limits.

Currently, Building 2 (3715 Haven Avenue) is owned by Deerfield Realty, and Buildings 1 (3695-3705 Haven Avenue) and 3 (3721-3723 Haven Avenue) are owned by Integris Millennium Joint Venture LLC (Integris). A Risk Management Plan (RMP) was prepared and incorporated into a 1999 Covenant (a.k.a. Deed Restriction) between the Site owner and the Regional Water Board. In addition to specific measures to protect human health risk from residual contamination in the groundwater, the RMP also requires the performance of groundwater monitoring in certain on-site wells, and evaluation of changing Site and regulatory conditions, by the Site owner. SUMCO sampled the two on-site shallow (A-zone) wells MW-8 and MW-9 from 1999 through 2004, during which time the concentrations remained below site-specific risk-based screening levels. After 2004, Regional Water Board approved SUMCO's proposal to discontinue monitoring of these wells and they have not been sampled by the current owner since 2004. Based on the 2004 groundwater data, 95 and 3,300 µg/l of TCE remain in the sample collected from MW-8 and MW-9, respectively, which are lower than the site specific screening levels.

Conclusion

Based on our review, we conclude that the Site meets the Water Board's criteria for a low-threat chlorinated solvent site. Remedial actions implemented to date have effectively removed the source and resulted in stabilized and improving groundwater condition. Further remedial actions will have marginal effect and it is anticipated that groundwater quality will further improve over time due to natural attenuation processes. There is an isolated pocket of elevated TCE concentrations in groundwater near MW-9 based on 2004 sampling result, which is above the existing Regional Water Board's Environmental Screening Levels (ESLs) for commercial land use. However, MW-9 is located outside of existing building footprint areas and the detected TCE concentrations were

below the site-specific risk-based screening levels. Based on groundwater data since 2004 from other monitoring wells at the Site, it is reasonable to expect that current TCE concentrations at MW-9 have also decreased significantly from its 2004 level.

Based on information in the above-referenced file and with the provision that the information provided to this agency was accurate and representative of site conditions, I conclude that no further action is necessary at the subject Site. Any risk associated with residual contamination can be adequately managed by the RMP and the deed restrictions. However, in the event the current or future land owner(s) proposes a more sensitive land use at the Site, we will require the use of up-to-date groundwater information, especially near the MW-9 area, to evaluate the risk before any revision of the deed restrictions can be granted.

If you have any questions concerning this letter, please contact Randy Lee of my staff at (510) 622-2375, [e-mail: rylee@waterboards.ca.gov].

Sincerely,

Digitally signed by Stephen Hill
Date: 2014.06.16 12:41:37 -07'00'

Bruce H. Wolfe
Executive Officer

Attachment: Case Closure Summary
cc w/ attachment: Mailing List (next page)

Mailing List:

Mr. Charles Ice
San Mateo County
Environmental Health Division
2000 Alameda de las Pulgas, Suite 100
San Mateo, CA 94403
cice@co.sanmateo.ca.us

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3715 Haven Avenue
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Burlingame, CA 94010
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CASE CLOSURE SUMMARY

I. AGENCY INFORMATION

Date: June 12, 2014

Agency Name: SF Bay Regional Water Quality Control Board ("RWQCB")	*Address*: 1515 Clay Street, Suite 1400
City/State/Zip: Oakland, CA 94612	*Phone*: 510-622-2300
Responsible Staff Person: Randy Lee	*Title*: Water Resource Control Engineer

II. SITE INFORMATION

Site Facility Name: former Siltec facility		
Site Facility Address: 3695-3723 Haven Avenue, Menlo Park, San Mateo County		
RB Case No.: 41S0186	*Local Case No.*:	*Priority*:
Responsible Parties (include addresses and phone numbers)		
SUMCO Phoenix Corp. Attn: Mr. Jeffrey Bradshaw, Dir. Env. Health & Safety		
19801 North Tatum Boulevard		
Phoenix, AZ 85050		
(480) 473-6503		

Tank No.	*Size in Gallons*	*Contents*	*Closed In-Place/Removed?*	*Date*
n/a				

III. RELEASE AND SITE CHARACTERIZATION INFORMATION

Cause and Type of Release. Release to soil and groundwater associated with manufacture of silicon wafers		
Site characterization complete? Yes	*Date Approved by Oversight Agency:* March 1999	
Monitoring wells installed? Yes	*Number.* 6 onsite, 4 offsite, 3 destroyed	*Proper screened interval?* Yes
Highest GW Depth Below Ground Surface: 4 11	*Lowest Depth.* 9.00	*Flow Direction:* E - ENE
Most Sensitive Current Use: Commercial office		
Most Sensitive Potential Use and Probability of Use: Only commercial/industrial land use allowed on Site, by deed restriction. Surrounding properties used for commercial/industrial purposes		
Are drinking water wells affected? No	*Aquifer Name:* n/a	
Is surface water affected? No	*Nearest surface water name:* un-named channelized creek	
Off-Site Beneficial Use Impacts (Addresses/Locations): Minimal (see Sections IV and VI, below)		
Report(s) on file? Yes	*Where is report(s) filed?* Water Board	

TREATMENT AND DISPOSAL OF AFFECTED MATERIAL

Material	*Amount (Include Units)*	*Action (Treatment or Disposal w/Destination)*	*Date*
Tanks	n/a	n/a	
Piping	n/a	n/a	
Free Product	n/a	n/a	
Soil	2860 cu. yd.	Disposal at Allied Waste Forward Landfill, Stockton, CA	1999-2001
Groundwater	n/a	n/a	
Barrels	n/a	n/a	

III. RELEASE AND SITE CHARACTERIZATION INFORMATION (Cont'd)

MAXIMUM DOCUMENTED POLLUTANT CONCENTRATIONS – BEFORE AND AFTER CLEANUP

POLLUTANT	Soil (ppm)		Water (ppb)		POLLUTANT	Soil (ppm)		Water (ppb)	
	Before[a,b]	After[b,c]	Before[a]	After[c]		Before[a]	After	Before[a]	After[c]
Trichloroethene	40	3.2	260,000	3,300	1,1-Dichloroethane	0.38	(d)	140	ND <50
cis-1,2-Dichloroethene	51	(d)	25,000	1,100	Tetrachloroethene	0.073	(d)	46	ND <50
CFC-113 (1,1,2-Trichloro-1,2,2-trifluoroethane)	11	(d)	12,000	1,900	Methylene Chloride	n/a	(d)	32	ND <500
Carbon Tetrachloride	0.021	(d)	2,300	ND <50	1,1,1-Trichloroethane	n/a	(d)	27	ND <50
Vinyl Chloride	0.56	0.075	1,400	75	Toluene	n/a	(d)	6.6	ND <5
Chloroform	0.016	(d)	1,000	28	1,2-Dichloroethane	n/a	(d)	5	ND <50
Benzene	n/a	(d)	460	ND <5	trans-1,2-Dichloroethene	0.11	(d)	1.6	ND <50
1,1-Dichloroethene	n/a	(d)	270	ND <50					

Comments:

Excavation was performed in 1999-2001 to a maximum depth of approximately 6 feet below ground surface, i.e., approximately one foot above groundwater (EKI, 2000; EKI, 2001). Deeper excavation into the capillary fringe or saturated zone was not practicable.

Notes:

(a) Listed pre-excavation VOC concentrations in soil and groundwater are from EKI (1999).

(b) Post-excavation soil sampling was not required by the RWQCB. Soil was excavated to approximately one foot above groundwater, and lateral excavation boundaries were pre-determined, based on soil sampling prior to excavation. Excavation boundaries enclosed soil samples with VOCs above risk-based screening levels, and were extended to include soil samples with VOCs above reporting limits but below screening levels, as a conservative measure (EKI, 2000). Of the chemical species detected on-Site, risk drivers were trichloroethene and vinyl chloride. Values shown above, in the soil post-excavation column, are the risk-based maximum soil screening levels for VOCs used to demarcate excavation boundaries. These data do not represent analytical results for confirmation soil samples.

(c) Post-remediation VOC concentrations in groundwater are the maximum analytical values from the three most recent sampling events for each well (EKI, 2013). All maximum post-remediation concentrations listed (except benzene and toluene) are analytical results of samples collected from on-site A-zone well MW-9, most recently sampled in 2004 (EKI, 2013).

(d) The risk-based soil screening level for this chemical was greater than the maximum observed concentration, thus its distribution did not influence cleanup goals or excavation boundaries.

IV. CLOSURE

Does completed corrective action protect existing beneficial uses per the Regional Board Basin Plan? Yes. Current listed beneficial uses include MUN, PROC, and IND for groundwater. Given the extreme salinity of groundwater at and around the Site, such uses currently are not possible. Nevertheless, VOC concentrations are expected to continue to decline over time, such that such beneficial uses could be possible in the absence of high salinity in groundwater.		
Does completed corrective action protect potential beneficial uses per the Regional Board Basin Plan? Yes. Potential beneficial uses include AGR for groundwater. Given elevated salinity of groundwater at and around the Site, such use is not currently possible. Nevertheless, VOC concentrations are expected to continue to decline over time such that such a beneficial use could be possible in the absence of high salinity in groundwater.		
Does corrective action protect public health for current land use? Yes		
Site Management Requirements. Site activities must be managed in accordance with the Risk Management Plan, dated 12 March 1999, recorded 9 August 1999, County of San Mateo, California; Document no. 1999-135815.		
Monitoring Wells Decommissioned.	*Number Decommissioned.*	*Number Retained:* 2 on-site shallow wells to be retained
List Enforcement Actions Taken: None		
List Enforcement Actions Rescinded: N/A		

V. TECHNICAL REPORTS, CORRESPONDENCE, ETC., THAT THIS CLOSURE RECOMMENDATION WAS BASED UPON

EKI, 1999, *Feasibility Study and Remedial Action Plan, 3695-3723 Haven Avenue, Menlo Park, California.* Erler and Kalinowski, Inc., 12 March 1999.

EKI, 2000, *Remedial Excavation Summary Report, 3695-3723 Haven Avenue Site, Menlo Park, California.* Erler & Kalinowski, Inc., 5 May 2000.

EKI, 2001, *Remedial Excavation Summary Report Addendum, 3695-3723 Haven Avenue Site, Menlo Park, California.* Erler & Kalinowski, Inc., 18 April 2001.

EKI, 2004, *Five-Year Review of Groundwater Monitoring Data and Proposal for Modification of Ongoing Groundwater Monitoring Program, 3695-3750 Haven Avenue, Menlo Park, California.* Erler & Kalinowski, Inc , 23 November 2004.

EKI, 2013, *Summary of Environmental Conditions and Request for Declaration of No Further Active Remediation Status, 3695-3723 Haven Avenue, Menlo Park, California.* Erler & Kalinowski, Inc., 31 December 2013

VI. ADDITIONAL COMMENTS, DATA, ETC.

EKI (2013) presents a comprehensive summary of the land use history, physical characteristics, former and current chemical concentrations, and remediation activities completed at the 3695-3723 Haven Avenue property ("Site"). Also presented are a description of administrative and engineering controls implemented to address potential future risks presented by residual concentrations of VOCs at the Site, and an analysis of concentration trends and potential fate and transport of VOCs in groundwater at the Site, and downgradient of the Site.

The Site Risk Management Plan ("RMP") is presented in EKI (1999), and is attached to a Covenant and Environmental Restriction on the Property (i.e., a "deed restriction"), between the RWQCB and the property owner. The deed restriction and RMP detail the responsibilities of current and future owners of the Site for environmental monitoring and risk management, and prohibits certain land uses (e.g., water wells, day-care facilities, and others) that could potentially introduce or complete exposure pathways to future Site users. The deed restriction is recorded in the Official Records of San Mateo County and obligates current and future owners to specific actions to protect human health at the Site.

The Site meets RWQCB's criteria for a low-threat chlorinated solvent site. Additional environmental monitoring and remediation by SUMCO would not be productive, given the following:

- VOC concentrations in soil, groundwater, and soil vapor at and near the Site have been characterized;
- Source removal has been implemented;
- Engineering and administrative controls have been designed and implemented;
- Thirteen years of groundwater monitoring have been completed;
- VOC concentration trends in the off-Site VOC plume in groundwater are stable to declining;
- Off-site VOC concentrations are well below appropriate Environmental Screening Levels;
- The VOC plume poses minimal to no threat to existing and potential uses of groundwater;
- Movement of VOCs in groundwater to marine water of San Francisco Bay is expected to take centuries to millennia;
- The most recent on-Site VOC groundwater concentration data were below Site-specific risk-based cleanup levels; and
- Under the RMP and deed restriction between the Site owner and the RWQCB, the Site owner is required to monitor on-Site VOC concentrations and perform certain other actions to manage risk at the property; SUMCO is not a party to the RMP or deed restriction.

This document and the related CASE CLOSURE LETTER shall be retained by the lead agency as part of the official site file.

Appendix L

MW-8 Well Log

Erler & Kalinowski, Inc.

Borehole & Well Construction Log

BOREHOLE LOCATION	3723 Haven Avenue, Menlo Park, CA					BOREHOLE / WELL NAME	MW-3		
DRILLING COMPANY	West Hazmat Drilling Lic. # 554979					PROJECT NAME	Haven		
DRILLING METHOD	Hollow Stem Auger					PROJECT NUMBER	960007.99		
CONDUCTOR CASING		DIAMETER (inches)		FROM (feet)	TO	DATE STARTED	10/5/99	DATE COMPLETED	10/25/00
BLANK CASING	Sch. 40 PVC	DIAMETER (inches)	4.00	FROM (feet)	0.0 TO 5.0	BOREHOLE DIAM (inches)	4.0	TOTAL DEPTH (feet)	13
PERFORATED CASING	0.01 inch slotted Sch. 40 PVC	DIAMETER (inches)	4.00	FROM (feet)	5.0 TO 13.0	DATUM	Mean Sea Level NGVD 1929		
GROUT	Portland Cement			FROM (feet)	0.5 TO 3.0	TOP OF CASING	6.32	GROUND SURFACE	6.66
SEAL	Bentonite Pellets			FROM (feet)	3.0 TO 4.0	LOGGED BY	Darrell Sofield		
FILTER PACK	#2/12 Sand			FROM (feet)	4.0 TO 13.0	CHECKED BY	Carey E. Peabody, RG # 5018		

REMARKS: Soil samples were collected with a split spoon sampler. A slip cap was fastened to the bottom of the screen with 3 stainless steel screws.

SAMPLES: TIME COLLECTED	SAMPLE NAME	SAMPLE TYPE	RECOVERY (feet)	BLOW COUNT	OVM (ppmv)	DEPTH (feet)	MATERIAL DESCRIPTION AND DRILLING NOTES	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Asphalt.			
							Fill.			
						2	CLAY, black (N2), 5% silt to fine sand, subrounded sand grains, medium to high plasticity, firm, moist.	CL		
						4				
			0.5	4			CLAY, olive gray (5Y 3/2) with infrequent reddish brown (2.5YR 5/4) mottling, 10% sand, subrounded sand grains, medium plasticity, firm, moist to wet. CaCO3 concretions. 11/5/00 ▽	CL		
			0.5	5		6				
			0.5	5						
						8				
							10/5/00 ▽			
						10	GRAVELLY SAND, moderate olive brown (5Y 4/4), subrounded sand grains, loose, wet.	SP		
							CLAY, moderate olive brown (5Y 4/4) with frequent reddish brown (2.5YR 5/4) mottling, 5 to 10% fine sand, subrounded sand grains, medium plasticity, firm, moist to wet. CaCO3 concretions.	CL		
17:35			0.5	6						
			0.5	8						
			0.35	6	BZ=0.4	12	SAND, olive gray (5Y 3/2), fine to medium grained sand angular to subrounded sand grains of mixed lithology, loose wet, 5 inches thick	SP		
			0.5	7	Ar=1.3		CLAY, same as above.	CL		
			0.5	10		14				

BOREHOLE AND WELL CONSTRUCT ON HAVEN GPJ EKI GDT 1/8/01

Appendix M

Additional Supporting Reports for Former Siltec Site

Erler & Kalinowski, Inc.
Consulting Engineers and Scientists
1870 Ogden Drive
Burlingame, CA 94010
(650) 292-9100
Fax: (650) 552-9012

20 February 2015

Randy Lee, P.E.
Water Resource Control Engineer
California Regional Water Quality Control Board
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Subject: Destruction of Monitoring Wells at the Former Siltec Site
3695 - 3723 Haven Avenue
Menlo Park, California
(EKI 960007.26)

Dear Mr. Lee,

On behalf of SUMCO Phoenix Corporation ("SUMCO"), Erler & Kalinowski, Inc. ("EKI") is pleased to provide the California Regional Water Quality Control Board, San Francisco Bay Region ("RWQCB") this report, which documents the destruction of SUMCO's nine groundwater monitoring wells located at and near the former Siltec site at 3695-3723 Haven Avenue, Menlo Park, California ("Site"). The groundwater monitoring wells were destroyed as part of Site closure, authorized by the California Regional Water Quality Control Board in the 16 June 2014 letter titled *No Further Action Required At The Former Siltec Site Located At 3695-3723 Haven Avenue, Menlo Park, San Mateo County.*

BACKGROUND

The Site is a commercial and light-industrial property, formerly used for semiconductor manufacturing, located adjacent to San Francisco Bay in Menlo Park, California (Figure 1). Siltec's industrial operations at the Site extended from approximately 1970 to 1989, during which time chlorinated volatile organic compounds ("VOCs") were released to the subsurface, predominantly trichloroethylene ("TCE") and cis-1,2-dichloroethylene ("cis-1,2-DCE"). SUMCO and its predecessors have conducted extensive environmental investigations and remediation, including excavation and source removal, in-situ chemical oxidation, and groundwater monitoring from 1994 through 2012, using on-Site and off-Site wells. SUMCO's wells on the Site and on the adjacent parcel to the east were drilled during several investigations in the 1990s. Additional details of site history, remediation, and environmental data are available in EKI (2013).

During December 2014, SUMCO's remaining nine groundwater monitoring wells were destroyed. Two groundwater monitoring wells (MW-8 and MW-9) were not destroyed, as they belong to the current property owner. These monitoring wells will be needed for ongoing monitoring of shallow groundwater, which the property owner is obligated to perform. During Site remediation, a Risk Management Plan ("RMP") was incorporated into a covenant between the RWQCB and the current Site owner, when the owner purchased the Site from SUMCO's predecessor Mitsubishi Silicon America ("Deed Restriction"; Integris, 1999). The RMP requires the current Site owner to conduct groundwater monitoring using the owner's two on-Site monitoring wells MW-8 and MW-9, and also requires the current Site owner to periodically evaluate any changes in Site or regulatory conditions, among other things, subject to enforcement by the Water Board.

PREPARATION AND PLANNING

Site monitoring well locations are shown on Figure 2, and well construction and grouting details are summarized in Table 1. Well destruction permits are included in Appendix A. Borehole logs and California Department of Water Resources Driller's Reports for the destroyed wells are compiled in Appendix B.

In preparation for destruction and abandonment of SUMCO's wells on the Site and on the adjacent property to the east, EKI coordinated with the property owners of the 3715 Haven Avenue property (Deerfield Realty) and the 3750 Haven Avenue property (David D. Bohannon Organization) for drilling permit authorization and access to work locations.

EKI completed and submitted two applications for drilling permits from the San Mateo County Department of Environmental Health, Groundwater Protection Division ("SMCDEH"), one per parcel, with the required application fees of $577.00 each. Authorization was requested from the SMCDEH to destroy the wells through pressure-grouting. After reviewing borehole logs and construction details for the wells, SMCDEH determined that pressure-grouting was appropriate for seven of the nine wells, but required that the two monitoring wells constructed of ¾-inch PVC casing (MW-FE2B and PZ-1) be abandoned by overdrilling.

For drilling and grouting services, EKI contracted with Gregg Drilling and Testing, Inc. of Martinez, California ("Gregg Drilling"), a California C-57 licensed well driller.

EKI contracted with MacLeod and Associates of San Carlos, California ("MacLeod"), a California-licensed land surveyor, to determine the locations of two monitoring wells (MW-7 and PZ-1) that had been obscured by landscaping and soil fill cover. EKI met MacLeod at the Site on 10 December 2014 to locate and identify the hidden wells.

WELL DESTRUCTION

On 18 December 2014, EKI marked the locations of the two monitoring wells scheduled to be overdrilled (PZ-1 and MW-FE2B), and notified local underground utility companies through Underground Services Alert ("USA"), as required by law.

Field work began 22 December 2014, when EKI coned off work zones around well locations in parking areas, and worked with Subdynamic Locating Services of San Jose, California, to determine the location of existing underground utilities near the two wells requiring overdrilling. Gregg Drilling mobilized to the Site with capability to either pressure-grout or overdrill wells, as needed. From 22 - 24 December 2014, EKI observed as Gregg Drilling pressure-grouted monitoring wells MW-2, MW-5B, MW-6B, and MW-7B on the 3715 Haven Avenue parcel and wells MW-FE1, MW-FE1B, and MW-FE3 on the 3750 Haven Avenue parcel. Table 1 is a summary of well destruction details, including calculated and actual grout volumes emplaced.

Grout was mixed at the surface in the approximate ratio of one 47-lb bag of cement to three gallons of potable water, and was emplaced using a ¾-inch diameter tremie pipe, which was retracted during grouting to maintain the tremie pipe aperture just above the grout level in the well casing.

After the casing was full, a compression fitting cap with a quick-connect air valve was attached to the top of casing, and 25 pounds per square inch ("psi") of pressure from the rig compressor was applied to the grout column. All boreholes held pressure of 25 pounds per square inch for at least five minutes. After the application of pressure, the compression fitting cap was removed, and the grout level was topped-off, as needed.

Gregg Drilling also destroyed monitoring well MW-FE2B on the 3750 Haven Avenue parcel, and monitoring well PZ-1 on the 3715 Haven Avenue parcel, by overdrilling with a hollow-stem auger drilling rig.

Monitoring well MW-FE2B was originally emplaced in a 2 ½ inch diameter direct-push borehole, and it was overdrilled using six-inch augers to its total depth. The entire ¾-inch diameter PVC well casing was recovered from the borehole in two sections, and the hole was tremie-grouted to the surface with neat cement.

Monitoring well PZ-1 was not immediately accessible, having been buried beneath landscaping at some point in the past. After locating the well using its surveyed coordinates, EKI cut out a section of sod above it, and hand-dug to expose the vault and casing. The well was undamaged. The drilling rig was used to overdrill the well using eight-inch diameter augers, and the borehole was tremie-grouted to the current surface with neat cement grout. The ¾ -inch diameter PVC well casing from PZ-1 was recovered in several large pieces during drilling.

All wells had been built using at-grade flush-mount vaults. After grouting, the well vaults were removed, and the remaining hole was filled to grade with pre-mixed concrete, dyed as necessary to match the existing asphalt surface. Boreholes in landscaped areas were filled with grout to approximately one foot below ground surface, backfilled above the grout with mildly compacted imported turf soil, and re-seeded. At former monitoring well PZ-1, the original sod was replaced.

Borehole cuttings and other investigation-derived wastes ("IDW") were contained in two 55-gallon steel drums and sampled for disposal. Produced water was minor, and was combined in the soil drums or added to the mix water for grouting. Cuttings were collected and composited to a single soil sample, which was submitted to K Prime Analytical Laboratory in Santa Rosa,

California, a state-certified analytical laboratory. Drums were staged on-Site near the trash enclosure at 3715 Haven Avenue while waiting for analytical results.

IDW samples were submitted to the laboratory for the following analyses:

- Volatile Organic Compounds ("VOCs") by EPA Method 8260B;
- Title 22 Metals by EPA Method 6020;
- Total Petroleum Hydrocarbons quantified as diesel ("TPH-d") by EPA Method 8015M; and
- Total Petroleum Hydrocarbons quantified as motor oil ("TPH-mo") by EPA Method 8015M.

The laboratory report is included in Appendix C. Results indicated the soil was non-hazardous, and arrangements were made for disposal with Belshire Environmental Services, Inc., ("Belshire") of Foothill Ranch, California. Belshire picked up the drums on 13 January 2015 and transported them to the thermal treatment and recycling facility operated by Soil Safe, Inc., in Adelanto, California.

EKI attempted to limit the impact of well destruction activity on areas where monitoring wells were located in sensitive landscaping, i.e., around wells PZ-1 and MW-5B. During drilling or grouting, plywood sheets were used under the tires and outriggers to protect the grass, as needed. Sod was cut, rolled, preserved, and replaced at the PZ-1 location. Imported topsoil was backfilled and mildly compacted, then seeded with fertilized tall fescue grass seed at the former locations of monitoring well MW-5B. Seed also was added to the sod patch area at former monitoring well PZ-1, to speed its recovery from drilling impacts.

California Department of Water Resources ("DWR") Driller's Well Completion report forms for all destroyed wells are compiled in Appendix B.

Please contact me with any questions.

Very truly yours,
ERLER & KALINOWSKI, INC.

Jeff R. Shaw, P.G.
Project Manager

REFERENCES

EKI, 2013, *Summary of Environmental Conditions and Request for Declaration of No Further Active Remediation Status, 3695-3723 Haven Avenue, Menlo Park, California.* Erler & Kalinowski, Inc., 31 December 2013.

Integris, 1999, *Covenant and Environmental Restriction on Property, 3695-3723 Haven Avenue, Menlo Park, California.* Deed restriction on file, County of San Mateo, Integris-Millenium Joint Ventures, LLC, 9 August 1999.

TABLE

Table 1 - Details of Groundwater Monitoring Well Destruction

FIGURES

Figure 1 - Site Location

Figure 2 - Former and Existing Monitoring Well Locations

TABLE

Table 1
Details of Groundwater Monitoring Well Destruction

3695-3723 and 3750 Haven Avenue
Menlo Park, California
(EKI 960007.26)

Property	Well ID	Surface	Method of Destruction	Casing Diameter (in)	Total Casing Depth (ft)	Screen Length (ft)	Depth to Top of Screen (ft)	Depth to Top of Sand (ft)	Depth to Bottom of Sand (ft)	Borehole Diameter (in)	Total Casing Volume (gal)	Sandpack Void Volume [a] (gal)	Calculated Grout Volume (gal)	Actual Grout Volume [b] (gal)
3715 Haven	MW-2	Asphalt	Pressure Grout	2	15.5	10	5.5	5	16	8	2.5	8.1	11	13
	MW-5B	Lawn	Pressure Grout	4	34	10	24	22	34	10	22	12.3	35	42
	MW-6B	Asphalt	Pressure Grout	4	31	10	21	19	31	8	20	7.1	27	35
	MW-7B	Landscaping	Pressure Grout	4	28	10	18	17	28	8	18	6.5	25	35
	PZ-1	Lawn	Overdrill	1	34	10	24	22	34	8	1.4	9.3	(c)	(c)
3750 Haven	MW-FE1	Asphalt	Pressure Grout	2	14	9	5	4	14	8	2.3	7.3	10	10
	MW-FE1B	Asphalt	Pressure Grout	4	29	11	17.5	16.5	28.5	8	19	6.7	26	25
	MW-FE2B	Landscaping	Overdrill	0.75	30	10	20	19	30	2.5	0.69	0.77	(c)	(c)
	MW-FE3	Asphalt	Pressure Grout	4	11	6	5	4	12	8	7.2	4.9	12	20

NOTES:

(a) Calculated assuming porosity of 30%

(b) Pressure-grouted wells were destroyed by tremie-grouting the casing with neat cement, then applying pressure of 25 lb/in^2 for 5 minutes.

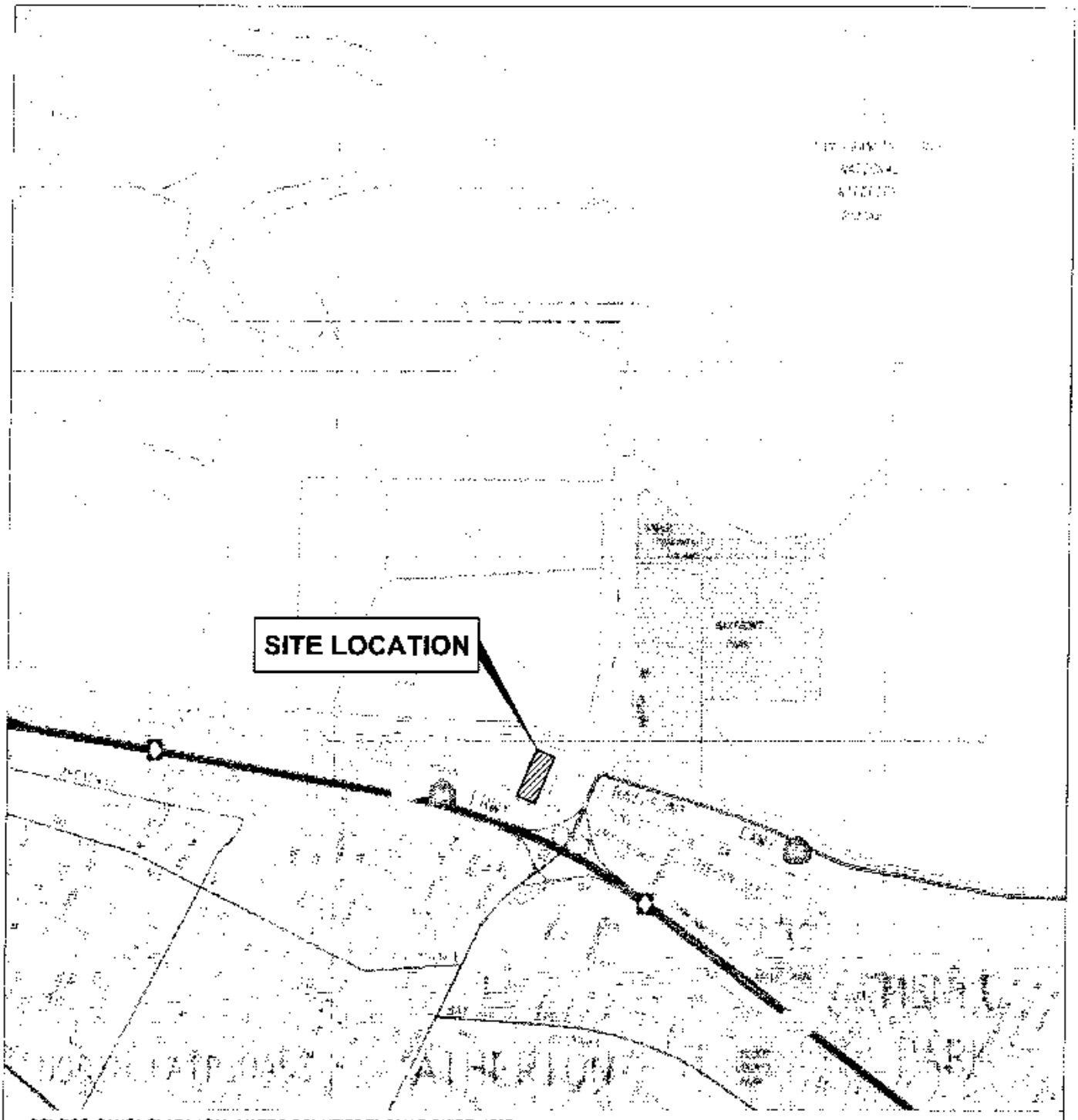
(c) Monitoring wells PZ-1 and MW-FE2B were destroyed by overdrilling using hollow-stem augers.

ABBREVIATIONS:

ft = feet
gal = gallons
in = inches

February 2015

FIGURES



SOURCE: SANTA CLARA / SAN MATEO COUNTIES THOMAS GUIDE, 1997.

N

0 2400 4800

(Approximate Scale in Feet)

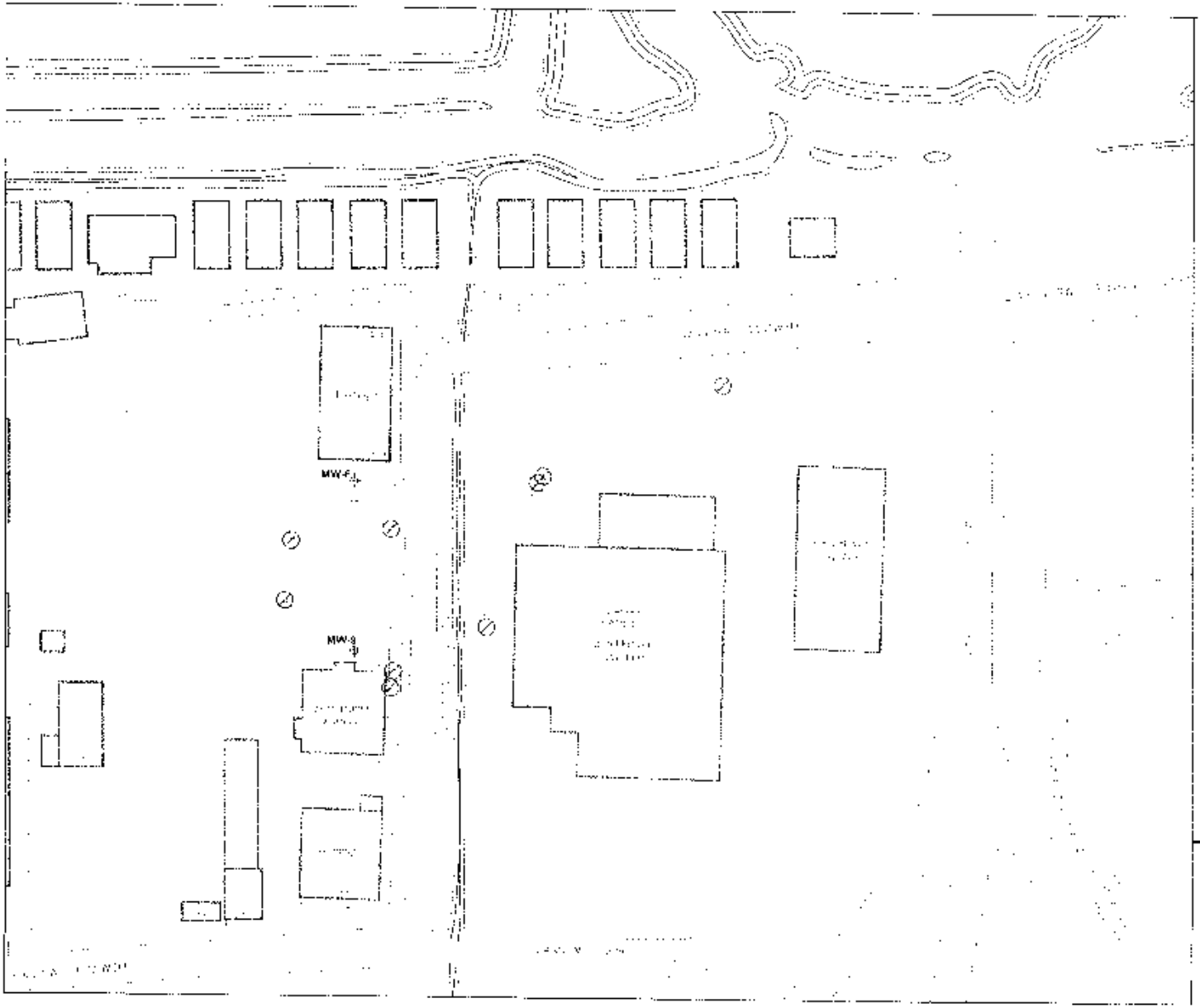
Erler & Kalinowski, Inc.

Site Location

3695-3723 and 3750 Haven Avenue
Menlo Park, CA

February 2015
EKI 960007.26

Figure 1



N

0 120 240

(Approximate Scale in Feet)

LEGEND

- Property Owner's A-Zone Groundwater Monitoring Well
- Destroyed A-Zone Monitoring Well
- Destroyed B-Zone Monitoring Well

Notes:

1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-38 feet bgs.
4. bgs = below ground surface.

Erler & Kalinowski, Inc.

Former and Existing
Monitoring Well Locations

3695-3723 Haven Avenue and Vicinity
Menlo Park, CA

February 2015
EKI 960007.20

Figure 2

APPENDIX A

San Mateo County
Department of Environmental Health
Well Destruction Drilling Permits

ORDINANCE: 04023

ENVIRONMENTAL HEALTH

PERMIT 14- 2619

P/E: 2010 MONITORING WELLS - INSTALLATION/DESTRUCTION

FACILITY:
3715 HAVEN AVE, MENLO PARK

OWNER:
SUMCO PHOENIX CORPORATION
19801 N TATUM BLVD
PHOENIX

WP0010138 FA0057205
0551703440
AMOUNT PAID: 577.00

CONTRACTOR:
GREGG DRILLING & TESTING

TERMS & CONDITIONS:

MONITORING: VAPOR WELL DESTRUCT (5)
CONSULTANT: ERLER & KALINOWSKI INC
PROJECT MGR: JEFF SHAW
SEE SPECIAL CONDITIONS NOTED ON APPLICATION
R00001499

ALLISON FANG

ENVIRONMENTAL HEALTH SPECIALIST

DATE ISSUED: 12/18/2014

EXPIRATION DATE: 4/18/2015

THIS PERMIT IS NONTRANSFERABLE AND MUST BE POSTED ON-SITE IN A CONSPICUOUS PLACE

ENVIRONMENTAL HEALTH

ORDINANCE: 04023

PERMIT 14- 2617

P/E: 2010 MONITORING WELLS - INSTALLATION/DESTRUCTION

FACILITY:
3750 HAVEN AVE MENLO PARK

OWNER:
SUMCO PHOENIX CORPORATION
1980 E N TATUM BLVD
PHOENIX

WP0010137 FA0057208
055231060
AMOUNT PAID: 577.00

CONTRACTOR:
GREGG DRILLING & TESTING

TERMS & CONDITIONS:

MONITORING/ VAPOR WELL DESTRUCT (4) BORINGS
CONSULTANT: ERLER & KALINOWSKI INC
PROJECT MGR: JEFF SHAW
SEE SPECIAL CONDITIONS NOTED ON APPLICATION
R00003499

ALLISON FANG

ENVIRONMENTAL HEALTH SPECIALIST

DATE ISSUED: 12/18/2014

EXPIRATION DATE: 4/18/2015

THIS PERMIT IS NONTRANSFERABLE AND MUST BE POSTED ON-SITE IN A CONSPICUOUS PLACE

APPENDIX B

California Department of Water Resources Driller's Reports And Original Borehole Logs

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0230356

Page 1 of 1

Owner's Well Number MW-2

Date Work Began 12/22/2014 Date Work Ended 12/22/2014

Local Permit Agency San Mateo County Environmental Health Services Division

Permit Number 14-2619 Permit Date 12/18/14

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Pressure Grout Drilling Fluid

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc.)
0.0	16.0	Tremie - grouted casing with neat cement, then applied 25 psi pressure for minimum of five minutes, then topped off casing with grout as-needed. Well vault removed, completed to grade with concrete.

Total Depth of Boring 16 Feet

Total Depth of Completed Well 15 Feet

Well Owner

Name SUMCO Phoenix Corporation

Mailing Address 19801 N. Tatum Blvd.

City Phoenix State AZ Zip 85050

Well Location

Address 3715 Haven Ave.

City Menlo Park County San Mateo

Latitude Deg. Min. Sec. N Longitude Deg Min. Sec. W

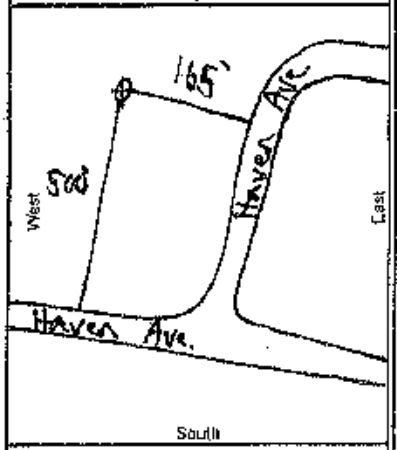
Datum NGVD 1929 Dec. Lat. 37.4865302 Dec. Long. 122.1819364

APN Book 055 Page 170 Parcel 340

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate distance of well from roads, buildings, fences, rivers, etc.; and attach a map if additional space is necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
○ Deepen
○ Other
◉ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0.0	5.0	8	Blank	PVC Sch. 40		2		
5.0	15.0	8	Screen	PVC Sch. 40		2	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0.0	3.0	Cement	
3.0	4.0	Bentonite	
4.0	15.0	Filter Pack	Monterey #3 Sand

Attachments

☑ Geologic Log
☑ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Gregg Drilling & Testing, Inc

Person, Firm or Corporation

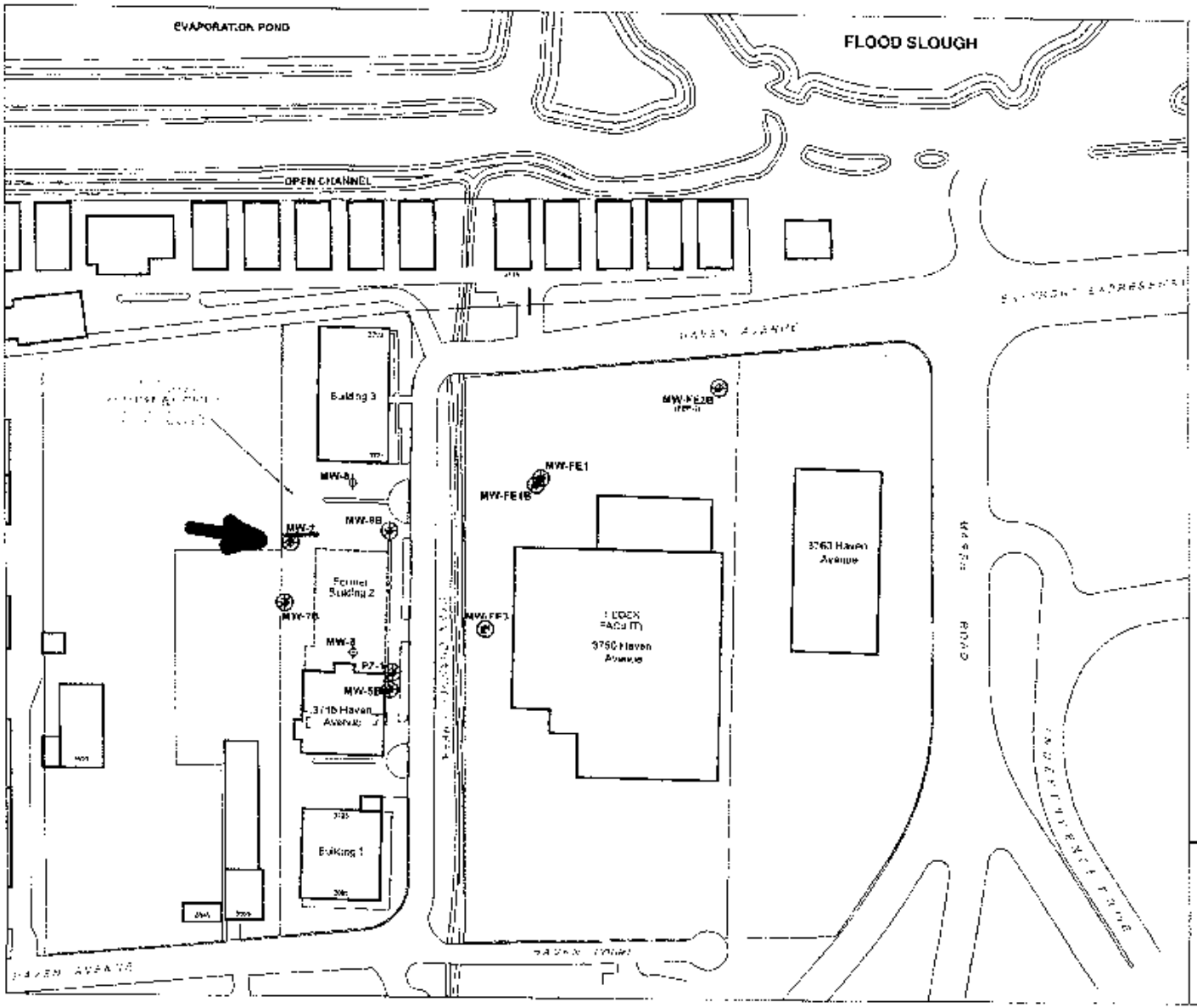
950 Howe Rd Martinez CA 94553

Address City State Zip

Signed C-57 Licensed Water Well Contractor 2/19/2015 Date Signed 485165 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM



N

0 120 240

(Approximate Scale in Feet)

LEGEND

- Property Owner's A-Zone Groundwater Monitoring Well
- Destroyed A-Zone Monitoring Well
- Destroyed B-Zone Monitoring Well

Notes:

1. All locations are approximate.
2. The A-Zone extends from 3 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-33 feet bgs.
4. bgs = below ground surface.

Erler & Kalinowski, Inc.

Former and Existing Monitoring Well Locations

3695-3723 Haven Avenue and Vicinity
Menlo Park, CA
February 2015
EKI 960007.26
Figure 2

LOG OF EXPLORATORY BORING

Client Name:	Edmond F. St. Geme	Boring Nº:	MW2
Location:	3705 Haven Avenue, Menlo Park, CA	Surface Elevation:	Grade
Project Nº:	041-94.01	Drilled By:	Alpha Geo Services
Boring Date:	10-3-94	Logged By:	M. Hajiaghai

Penetration (Blows/6")	PID (ppm)	Depth (ft)	Samples	Lithographic Column	Description
		0		CL	2" Asphalt Silty clay with traces of gravel; greenish gray ; damp; medium to high plasticity; stiff; no odor
4/6/10	40	5	MW1-5	CL	Silty clay with traces of gravel; black to gray;damp; medium plasticity; stiff; no odor
6/10/15	120	10	MW1-10	CL SC	Silty sandy clay; light brown; moist; high plasticity; stiff; faint hydrocarbon odor
		15		CL	Clay; greenish gray; very moist, high plasticity; soft;organic decay and faint hydrocarbon odor Bottom of boring at 16 feet
		20			

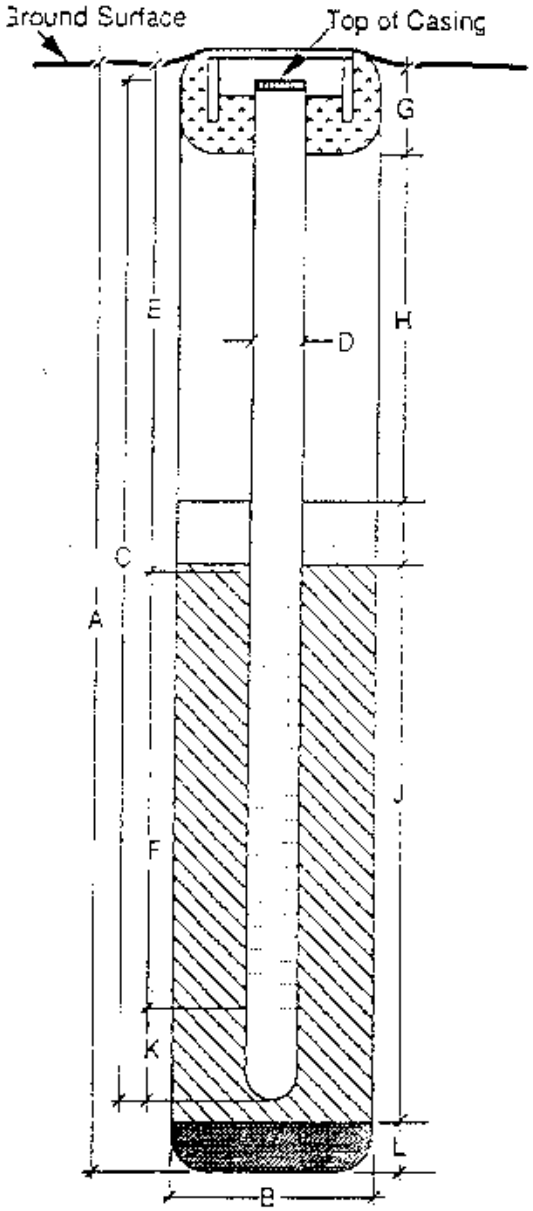
EnviroScience, Inc.
An Environmental Consulting and Construction Management Company
55 S. Bascom Ave. • Ste 202 • Campbell • California • 95008
(408) 371-4161 • FAX (408) 371-4156

REMARKS

The boring was drilled with a hollow stem auger to 16 feet below the ground surface (bgs) and converted to a groundwater monitoring well. Water was first encountered at 11 feet bgs and was raised to 8 feet bgs.

WELL DETAIL

Client Name:	Edmond F. St. Geme	**Boring/Well Nº:**	MW2
Location:	3705 Haven Avenue, Menlo Park, CA	**Top of Casing Elev:**	Within 0.01'
Project Nº:	041-94.01	**Ground Surface Elev:**	Within 0.01'
Installation Date:	10-3-94	**Datum:**	Grade
Well Permit Nº:	MW-072-94	**Installed By:**	Alpha Geo Services



Wellhead constructed of a water-tight locking well cap and a traffic-rated cover

EXPLORATORY BORING:

A. Total Depth 16 ft.
B. Diameter 8 in.

WELL CONSTRUCTION:

C. Total Casing Length 15 ft
Material Schedule 40 PVC
D. Diamter 2 in.
E. Depth to Top Perforation 5.5 ft.
F. Perforated Length 10 ft.
Perforated Interval from ____ to ____ ft.
Perforation Type Continuous Slot
Perforation Size 0.020"
G. Surface Seal ____ ft
Material Concrete
H. Backfill 3 ft.
Material Cement
I. Seal 1 ft.
Material Bentonite
J. Gravel Pack 11 ft.
Gravel Pack Interval from ____ to ____ ft.
Material Monterey #3 Sand
K. Sump ____ ft.
Material ____
L. Bottom Seal 0 ft.
Material ____

EnviroScience, Inc.
An Environmental Consulting and Construction Management Company
1155 S. Bascom Ave. • Ste 202 • Campbell • California • 95008
(408) 371-4191 • FAX (408) 371-4186

REMARKS

Groundwater was at 8 feet bgs.

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instruction Pamphlet
No. c0254898

Page 1 of 1

Owner's Well Number MW-5B

Date Work Began 12/24/2014 Date Work Ended 12/24/2014

Local Permit Agency San Mateo County Environmental Health Services Division

Permit Number 14-2619 Permit Date 12/18/14

DWR Use Only - Do Not Fill In

State Well Number/Site Number

Latitude Longitude

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Pressure Grout Drilling Fluid

Depth from Surface Feet to Feet	Description Describe material, grain size, color, etc
0.0 34.0	Tremie - grouted casing with neat cement, then applied 25 psi pressure for minimum of five minutes, then topped off casing with grout as needed. Well vault removed, completed to grade with concrete.

Total Depth of Boring 35 Feet

Total Depth of Completed Well 35 Feet

Well Owner

Name SUMCO Phoenix Corporation

Mailing Address 19801 N. Tatum Blvd.

City Phoenix State AZ Zip 85050

Well Location

Address 3715 Haven Ave.

City Menlo Park County San Mateo

Latitude ___ Deg. ___ Min. ___ Sec. N Longitude ___ Deg. ___ Min. ___ Sec. W

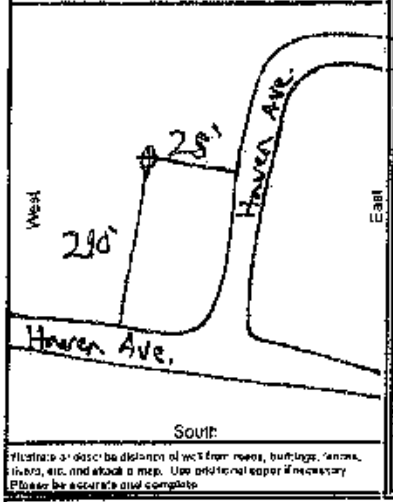
Datum NGVD 1929 Dec. Lat 37.4859438 Dec. Long. 122.1817761

APN Book 055 Page 170 Parcel 340

Township ___ Range ___ Section ___

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
○ Deepen
○ Other ___
◉ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other ___

Water Level and Yield of Completed Well

Depth to first water ___ (Feet below surface)

Depth to Static Water Level ___ (Feet) Date Measured ___

Estimated Yield * ___ (GPM) Test Type ___

Test Length ___ (Hours) Total Drawdown ___ (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0.0 24.0	10	Blank	PVC Sch. 40		4		
24.0 34.0	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet to Feet	Fill	Description
0.5 20.0	Cement	cement/bentonite grout
20.0 22.0	Bentonite	3/8" pellets
22.0 34.0	Filter Pack	Lapis Lustre #3 Sand
34.0 35.5	Slough	Native Soil

Attachments

☑ Geologic Log
☑ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

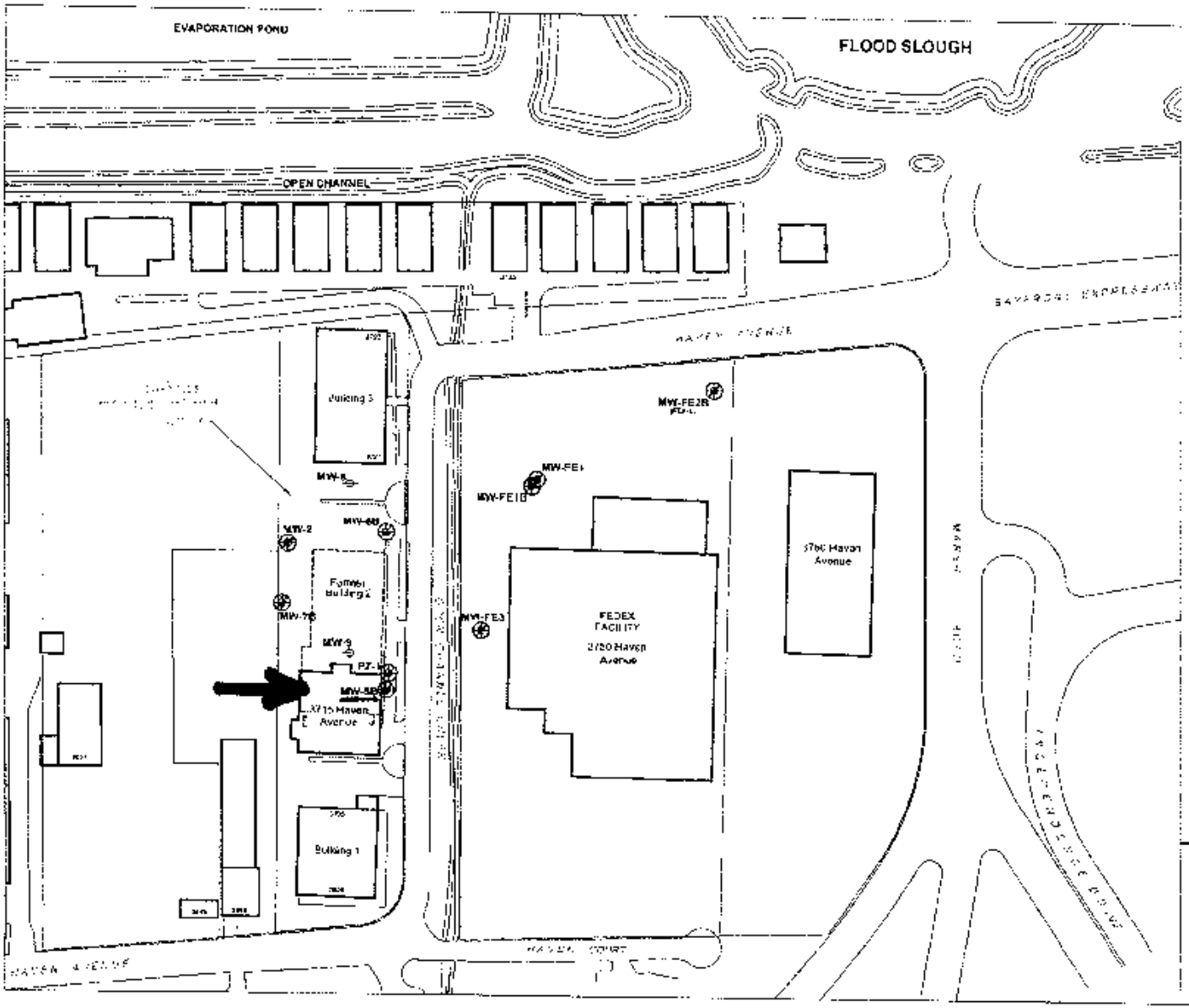
Name Gregg Drilling & Testing, Inc
Person, Firm or Corporation

950 Howe Rd Martinez CA 94553
Address City State Zip

Signed [signature] 2/19/2015 485165
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM


EVAPORATION POND
FLOOD SLOUGH
OPEN CHANNEL
BAYSHORE EXPRESSWAY
HAVEN AVENUE
Building 3
MW-8
MW-2
MW-6B
Former Building 2
MW-7B
MW-9
PZ-1
MW-5B
3715 Haven Avenue
Building 1
MW-FE2R
MW-FE1
MW-FE1B
MW-FE3
FEDEX FACILITY
3750 Haven Avenue
3760 Haven Avenue
MARSH ROAD
FACEBOOK WAY
HAVEN COURT
HAVEN AVENUE
N
0
120
240
(Approximate Scale in Feet)
LEGEND
Property Owner's A-Zone Groundwater Monitoring Well
Destroyed A-Zone Monitoring Well
Destroyed B-Zone Monitoring Well
Notes:
1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-25 feet bgs.
4. bgs = below ground surface.
Erler & Kalinowski, Inc.
Former and Existing Monitoring Well Locations
3695-3723 Haven Avenue and Vicinity
Menlo Park, CA
February 2015
EKI 960007.76
Figure 2

Boring & well Construction Log

BORING LOCATION: 3995-3721 Haven Avenue Menlo Park, California		Boring/Well Name: MW-5B
DRILLING COMPANY: West Hazmat Drilling Corporation	DRILLER: Gene Nunes	Project Name: Haven
DRILLING METHOD (S): Hollow Stem Auger (8-5/8")	DRILL BIT AND SIZE: 10 inch	Project Number: 960007.00
ISOLATION CASING: No	FROM 0 TO FT	ELEVATION AND DATUM: 6.57 msl (TOC) / TOTAL DEPTH: 35.5 Feet
BLANK CASING: Schedule 40 PVC 4-inch	FROM 0 TO 34 FT	DATE STARTED: 10/23/96 / DATE COMPLETED: 10/24/96
PERFORATED CASING: Schedule 40 PVC 4-inch (0.02 inch slot)	FROM 24 TO 34 FT	DEPTH TO WATER:
SIZE AND TYPE OF FILTER PACK: Lonester Lapis Luster Sand (#3)	FROM 22 TO 34 FT	LOGGED BY/CHECKED BY: Gail Clary/Beth Lamb, C.E.G.
SEAL: Bentonite Pellets (3/8-inch)	FROM 20 TO 22 FT	SAMPLING METHODS: Calif. Modified Split Spoon / WELL COMPLETION: ☒ Surface Housing ☐ Stand Pipe
GROUT: Cement/Bentonite Grout	FROM 5 TO 20	

SAMPLES Type	Number	Recovery (feet)	Blows/6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
					Traffic-Rated Watertight Vault Box					
				1					SILTY CLAY, brown (10YR 4/3), silt (20-30%), fine gravel (10-20%), moderately loose, minor fine grained sands, roots and rootlets, dry.	Begin drilling 10:48 a.m.
				2				10YR 4/3		
				3					no fine grained sand, no gravel, hard, dry.	Drill: notes hard drilling, OVM BZ=0 ppm
		.5	27	4						
		.5	30	5	Cement/ Bentonite Grout	CL			color changes to black (10YR 2/1) mottled with brown (10YR 4/3), hard, high plasticity, dry.	OVM A=0 ppm BZ=0 ppm
		.5	35	6						
				7				10YR 2/1		OVM BZ=0 ppm
				8						
				9						
		.5	15	10	Blank PVC				SANDY GRAVEL, dark yellowish brown (10YR 4/4), fine to coarse grained sand (20-50%), gravel < 1.5 inch diameter, loose, saturated.	OVM BZ=0 ppm S=0.8 ppm
		.5	18	11						
		.5	23	12		GW		10YR 4/4		
				13						
				14						
		0	10	15						
		.5	10	16						
		.5	45	17	Blank PVC				SANDY CLAY, yellow brown (10YR 5/4), fine grained sand (20-30%), silt (10-20%), gravel (5-10%) <1 inch diameter, moderately stiff, damp.	
				18		CL		10YR 5/4		
		0	10	19						OVM BZ=0 ppm S=0 ppm
		.5	15	20						
		.5	17		Hydrated Bentonite Pellets	SW				

Boring & Well Construction Log

(continuation)

Boring/Well Name: MW-5B
Project Name: Haven
Project Number: 960007.00

SAMPLES Type	SAMPLES Number	SAMPLES Recovery (feet)	SAMPLES Blows/6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
				22					(10YR 4/4), gravel varying in graded sequences (20–40%) < 1.5 inch diameter, clay (10–20%), fine to coarse grained sand, saturated.	
				23		SW		10YR 4/3		
	4	4	20	24						OVM @2=0 ppm
	5	5	24	25		SC			CLAYEY SAND, light olive brown (2.5Y 5/4), fine to medium grained sand, moist.	
	6	6	36	26	Slotted PVC (0.02 inch)				SANDY GRAVEL/GRAVELLY SAND, light olive brown (2.5Y 5/4), saturated.	
				27		SW/ SW		2.5Y 5/4		
				28						
	4	4	15	29					CLAY, light olive brown (2.5Y 5/4), stiff, damp to saturated.	OVM @2=0 ppm
	5	5	32	30		CL				
	5	5	40	31	Sand (#3)				SANDY GRAVEL, dark gray (10YR 4/1), medium to coarse grained sand (40–50%), minor clay, subrounded gravel <0.75 inch diameter, loose, saturated.	
				32		SW		10YR 4/1		Driller notes gravels flow into augers; lots of water in hole.
	5	5	30	33						
	5	5	30							
	6	6	35							
	1	1	20	34						
	5	5	35							
	5	5	45	35	Native Soil	CL		5Y 4/2	SILTY CLAY, olive gray (5Y 4/2), silt (20–30%), fine grained sand (5–10%), firm, minor coarse grained sand, damp.	
				36					Total depth of boring 35.5 feet.	End drilling 12:55 p.m.
				37						
				38						
				39						
				40						
				41						
				42						
				43						
				44						

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0254898

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude / Longitude

APN/TRS/Other

Page 1 of 1

Owner's Well Number MW-6S

Date Work Began 12/22/2014 Date Work Ended 12/22/2014

Local Permit Agency San Mateo County Environmental Health Services Division

Permit Number 34-2619 Permit Date 12/18/14

Geologic Log

Orientation ⊙ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Pressure Grout Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0.0	31.0	Tremie - grouted casing with neat cement, then applied 25 psi pressure for minimum of five minutes, then topped off casing with grout as-needed. Well vault removed, completed to grade with concrete.

Total Depth of Boring 31 Feet

Total Depth of Completed Well 31 Feet

Well Owner

Name SUMCO Phoenix Corporation

Mailing Address 19801 N. Tatum Blvd.

City Phoenix State AZ Zip 85050

Well Location

Address 3715 Haven Ave

City Menlo Park County San Mateo

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

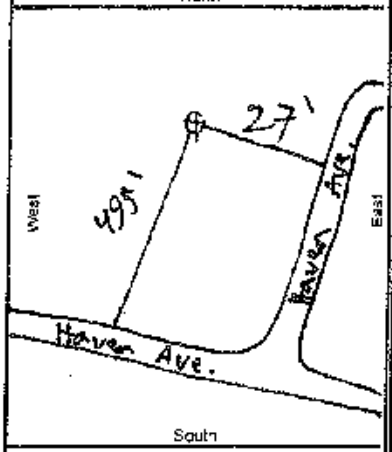
Datum NGVD 1929 Dec. Lat. 37.4864300 Dec. Long. 122.1815195

APN Book 055 Page 170 Parcel 340

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Indicate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
○ Deepen
○ Other
⊙ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
⊙ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0.5	14.5	15.75	Conductor	Steel		10		
0.0	21.0	8	Blank	PVC Sch. 40		4		
21.0	31.0	8	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0.5	17.0	Cement	cement/bentonite grout
17.0	19.0	Bentonite	pellets
19.0	31.0	Filter Pack	Lapis Lustre #3 Sand

Attachments

☑ Geologic Log
☑ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Gregg Drilling & Testing, Inc

Person, Firm or Corporation

950 Howe Rd Martinez CA 94553

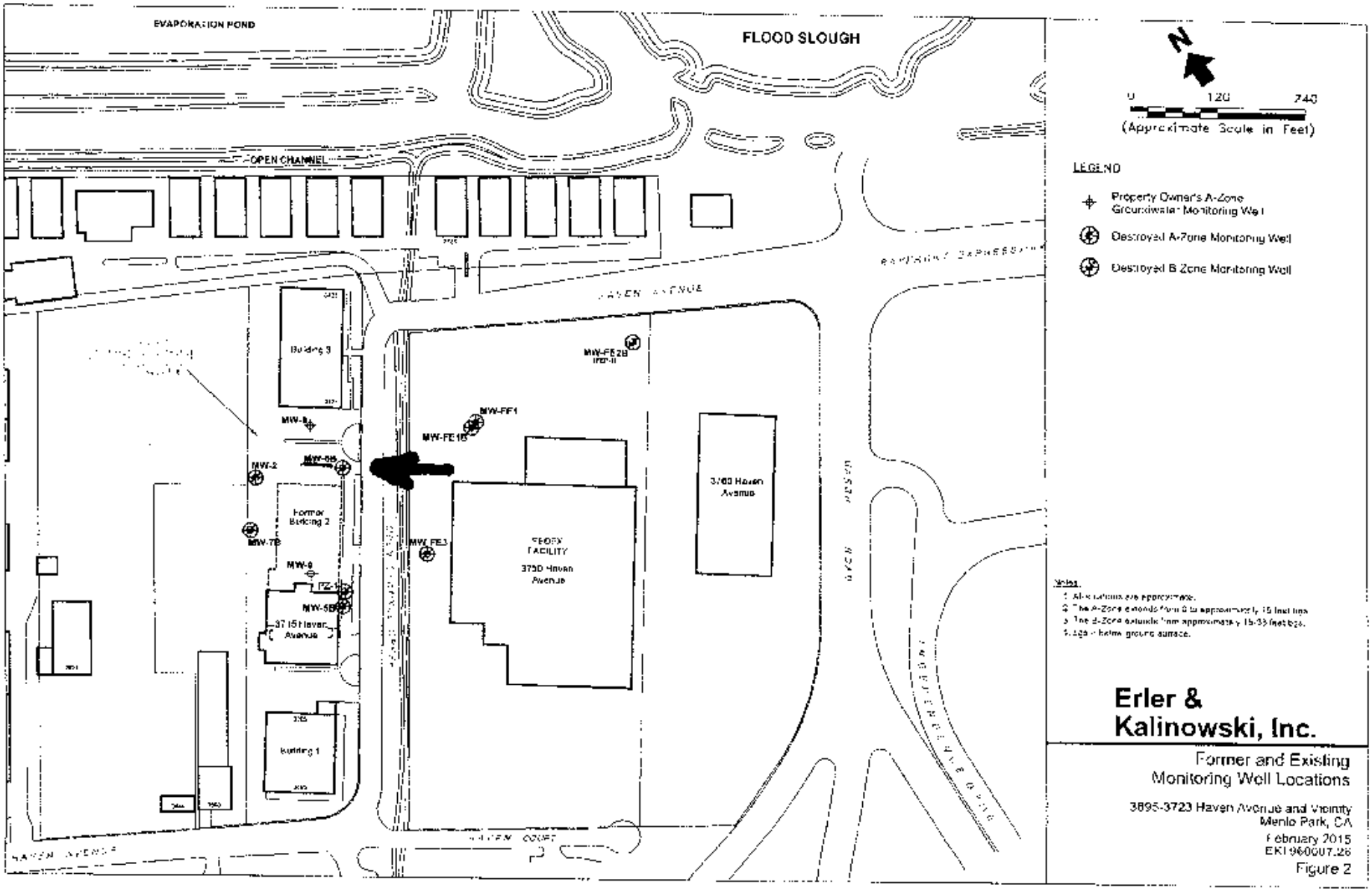
Address City State Zip

Signed [signature] 2/19/2015 485165

C-57 Licensed Water Well Contractor Date Signed C-57 License Number

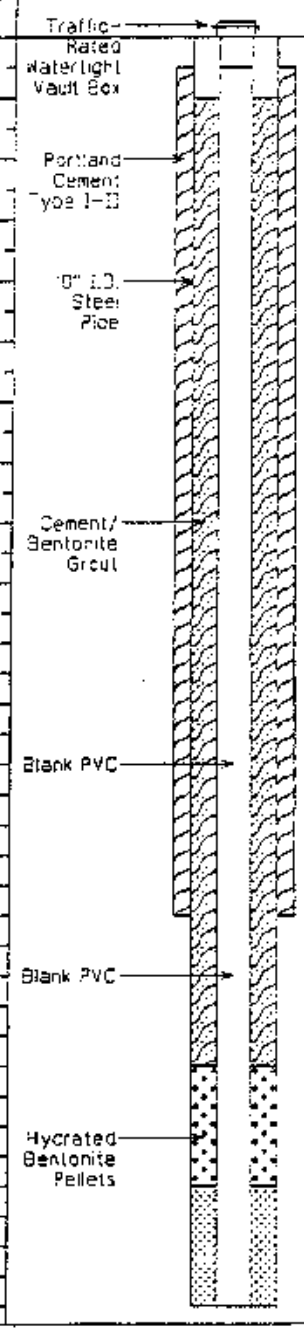
DWR 188 REV. 1/2005

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM


EVAPORATION POND
FLOOD SLOUGH
OPEN CHANNEL
HAVEN AVENUE
Building 3
MW-8
MW-2
MW-6B
Former Building 2
MW-7B
MW-9
PZ-1
MW-5B
3715 Haven Avenue
Building 1
MW-FE2B
MW-FE1
MW-FE1B
MW-FE3
FEDEX FACILITY
3750 Haven Avenue
3760 Haven Avenue
HAVEN COURT
N
0
120
240
(Approximate Scale in Feet)
LEGEND
Property Owner's A-Zone Groundwater Monitoring Well
Destroyed A-Zone Monitoring Well
Destroyed B Zone Monitoring Well
Notes:
1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-33 feet bgs.
4. Bgs = below ground surface.
Erler & Kalinowski, Inc.
Former and Existing Monitoring Well Locations
3695-3723 Haven Avenue and Vicinity
Menlo Park, CA
February 2015
EKI 960007.26
Figure 2

Boring & Well Construction Log

BORING LOCATION: 3695-3723 Haven Avenue, Menlo Park, California		Boring/Well Name: MW-6B
DRILLING COMPANY: West Hazmat Drilling Corporation	DRILLER: Gene Nunes	Project Name: Haven
DRILLING METHOD(S): Hollow Stem Auger (B-57)/Rotary Rig	DRILL BIT AND SIZE: 8 inch/15.75 inch	Project Number: 960C07.00
ISOLATION CASING: 10-inch I.D. Steel	FROM 0.5 TO 14.5 FT	ELEVATION AND DATUM: 5.72 msl (TOC) / TOTAL DEPTH: 31 Feet
BLANK CASING: Schedule 40 PVC 4-inch	FROM 0 TO 21 FT	DATE STARTED: 10/23/96 / DATE COMPLETED: 10/25/96
PERFORATED CASING: Schedule 40 PVC 4-inch (0.02 inch slot)	FROM 21 TO 31 FT	DEPTH TO WATER
SIZE AND TYPE OF FILTER PACK: Lonestar Lapis Luster Sand (#3)	FROM 19 TO 31 FT	LOGGED BY/CHECKED BY: Gail L. Clark/Beth Lamp, C.E.G.
SEAL: Bentonite Pellets	FROM 17 TO 19 FT	SAMPLING METHODS: Calif. Modified Split Spoon / WELL COMPLETION: ☒ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement/Bentonite Grout	FROM 15 TO 17 FT	



SAMPLES: Type Number	Recovery (feet)	Blows/6 in.	DEPTH (feet)	USCS LOG	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			0–1			Asphalt: 4 inches thick. Baserock, sand and gravel.	Begin drilling 3:10 p.m.
			1–3		N 2.5	SILTY CLAY, black (N 2.5), silt (20-30%), stiff, high plasticity, damp	
	.1	9	4				OVM A=0 ppm BZ=0 ppm
	.5	14				color changes to dark green gray (10YR 4/1), damp.	
	.5	16	5		10YR 4/1		OVM A=0 ppm S=0 ppm
			8	CL		color changes to yellow brown (10YR 5/6) mottled with light gray (10YR 7/2), silt content increases (30-40%), moderate to high plasticity, stiff, damp.	
	.5	14	9				
	.5	17					OVM BZ=0 ppm S=13.8 ppm
	.5	42	10		10YR 5/6 and 10YR 7/2		
	.5	9	14				OVM BZ=0 ppm S=9.7 ppm
	.5	11					
	.5	35	15			SANDY CLAY/CLAYEY SAND, light yellow brown (2.5Y 6/3), fine grained sand (40-50%), moderately soft, wet.	
			16			SANDY GRAVEL/GRAVELLY SAND, dark gray brown (10YR 4/2), graded gravel-sand sequences (12 inches thick), fine to coarse grained sand, subrounded to subangular gravel (<2 inch diameter), minor clay and silt, saturated.	
			18	GW/SW	10YR 4/2		
	0		20				Water in hole OVM BZ=0 and 1.3 ppm S=83 ppm
	.1						
	.5						

Boring & Well Construction Log

(continuation)

Boring/Well Name: MW-68
Project Name: Haven
Project Number: 980007.00

SAMPLES Type Number	Recovery (feet)	Blows/ 6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			22	Slotted PVC (0.02 inch)					
			23						
			24						
	0		25		SW/ SW		10YR 4/2	sand to gravel sequences.	OVM BZ=0 ppm
	.3		26						
	.5		27						
			28	Sand (#3)					Driller notes easier drilling
	.5		29						OVM A=159 ppm BZ=1.3 and 0 ppm S=0 and 1.3 ppm
	.5		30						Driller notes drilling feels like clay at 30-31 feet.
	.5		31		CL		10YR 5/1	SILTY CLAY, greenish gray (10YR 5/1), silt (20-30%), minor coarse grained sand (<2%), moderately stiff, high plasticity, damp. Total depth of boring 31 feet.	End drilling 8:30 a.m.
			32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						

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File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0254903

Page 1 of 1

Owner's Well Number MW-7B

Date Work Began 12/22/2014 Date Work Ended 12/22/2014

Local Permit Agency San Mateo County Environmental Health Services Division

Permit Number 14-2619 Permit Date 12/18/14

DWR Use Only - Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Pressure Grout Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0.0	28.0	Tremie - grouted casing with neat cement, then applied 25 psi pressure for minimum of five minutes, then topped off casing with grout as-needed. Well vault removed, completed to grade with concrete.

Total Depth of Boring 29.5 Feet

Total Depth of Completed Well 28 Feet

Well Owner

Name SUMCO Phoenix Corporation

Mailing Address 19801 N. Tatum Blvd.

City Phoenix State AZ Zip 85050

Well Location

Address 3715 Haven Ave.

City Menlo Park County San Mateo

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

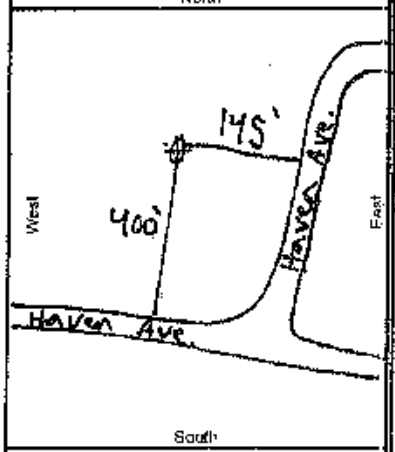
Datum NGVD 1929 Dec. Lat. 37.4863514 Dec. Long. 122.1820971

APN Book 055 Page 170 Parcel 340

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and check ☑ map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
○ Deepen
○ Other
◉ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)
0.5	15.0	15.75	Conductor	Steel		10		
0.0	18.0	10	Blank	PVC Sch. 40		4		
18.0	28.0	10	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0.5	15.0	Cement	Cement/bentonite grout
15.0	17.0	Bentonite	3/8" pellets
17.0	28.0	Filter Pack	Lapis Lustre #3 Sand
28.0	29.5	Slough	Native Soil

Attachments

☑ Geologic Log
☑ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

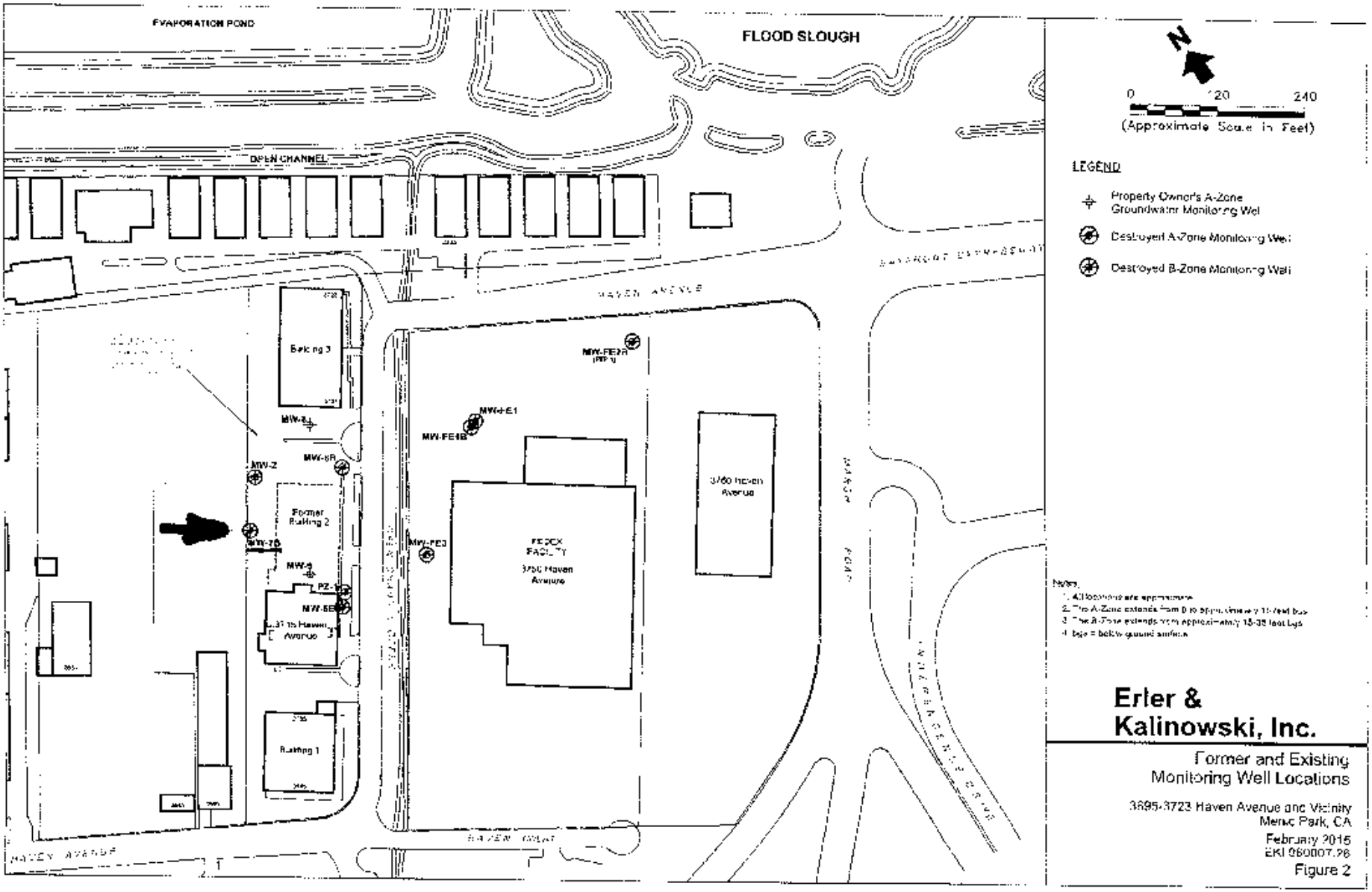
Name Gregg Drilling & Testing, Inc
Person, Firm or Corporation

950 Rowe Rd Martinez CA 94553
Address City State Zip

Signed 2/19/2015 485165
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM.


EVAPORATION POND
FLOOD SLOUGH
OPEN CHANNEL
HAVEN AVENUE
Building 3
MW-2
MW-6R
Former Building 2
MW-7B
MW-9
PZ-1
MW-6E
3715 Haven Avenue
Building 1
MW-FE2R
MW-FE1
MW-FE1B
MW-FE3
FEDEX FACILITY
3750 Haven Avenue
3760 Haven Avenue
HAVEN AVENUE
0
120
240
(Approximate Scale in Feet)
LEGEND
Property Owner's A-Zone Groundwater Monitoring Well
Destroyed A-Zone Monitoring Well
Destroyed B-Zone Monitoring Well
Notes:
1. All locations are approximate
2. The A-Zone extends from 0 to approximately 15-feet bgs
3. The B-Zone extends from approximately 15-35 feet bgs
4. bgs = below ground surface
Erler & Kalinowski, Inc.
Former and Existing Monitoring Well Locations
3695-3723 Haven Avenue and Vicinity
Menlo Park, CA
February 2015
EKI 060007.26
Figure 2

Boring & Well Construction Log

BORING LOCATION: 3895-3703 Haven Avenue, Menlo Park, California	DRILLER: Gene Nunes	Boring/Well Name: MW-7B	
DRILLING COMPANY: West Hazmat Drilling Corporation		Project Name: Haven	
DRILLING METHOD(S): Hollow Stem Auger (8-67)/Rotary Rig	DRILL BIT AND SIZE: 8 inch/5.75 inch	Project Number: 960007.00	
ISOLATION CASING: 10-inch I.D. Steel	FROM 0.5 TO 5 FT	ELEVATION AND DATUM: 7.28 msl (TOC)	TOTAL DEPTH: 29.5 feet
BLANK CASING: Schedule 40 PVC 4-inch	FROM 0 TO 8 FT	DATE STARTED: 10/23/96	DATE COMPLETED: 10/25/96
PERFORATED CASING: Schedule 40 PVC 4-inch (0.0" inch slot)	FROM 18 TO 28 FT	DEPTH TO WATER	
SIZE AND TYPE OF FILTER PACK: Lonestar Lapis Lustre Sand (#2/12)	FROM 17 TO 28 FT	LOGGED BY/CHECKED BY: Gail L. Clark/Beth Lamb, C.E.G.	
SEAL: Bentonite Pellets (3/8-inch)	FROM 15 TO 17 FT	SAMPLING METHODS: Calif. Modified; Split Spoon	WELL COMPLETION: ☒ Surface Housing ☐ Stand Pipe ft.
GROUT: Cement Bentonite Grout	FROM 5 TO 15 FT		

SAMPLES: Type Number	SAMPLES: Recovery (feet)	SAMPLES: Blows/6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
				Traffic-Rated Watertight Vault Box				Asphalt: 3 inches thick.	Begin drilling 9:55 a.m.
			1					Baserock, gravel.	
								SILTY CLAY, yellow brown (10YR 5/4), silt (30-40%), minor fine grained sand, moderate plasticity, damp.	
			2	Portland Cement			10YR 5/4	debris, concrete, and metal piping at 1.5 ft.	
			3						
	5	10							OVM
	5	15	4	6" ID Steel Pipe					S=510 ppm
	.5	20	5				N 2.5	color changes to black (N 2.5)	
			6						
								SILTY CLAY, very dark grey (10YR 3/1), silt (20-30%), moderately soft, high plasticity, moist.	Driller notes odor. OVM A=0 ppm BZ=0 ppm
			7	Cement/ Bentonite Grout					
			8				10YR 3/1		
			9					stiff, moist	OVM S=264 ppm
	.5	7							
	.5	15							
	.5	24	10					GRAVELLY CLAY, yellowish brown (10YR 5/4).	OVM S=142 ppm
			11	Blank PVC					
			12				10YR 5/4		Driller notes water during drilling. OVM A=81 ppm BZ=0 ppm
			13						
			14						
	.5	12					2.5Y 8/3 and 2.5Y 5/4	CLAYEY SILT/SILTY CLAY, light yellow brown (2.5Y 8/3) mottled with light olive brown (2.5Y 5/4), clay (40-60%), occasional coarse grained sand, (2%), firm, moderate plasticity, damp.	OVM S=0.6 ppm End drilling 9:32 a.m.
	.5	25	15		ML/ CL				
	5	43							
	.5	18							
	.5	35	16	Hydrated Bentonite Pellets					
	.5	50					2.5Y 7/3	color changes to pale yellow (2.5Y 7/3).	
			17						
			18					SANDY CLAY, light yellow brown (2.5Y 6/3), fine grained sand (20-30%), minor silt (5-10%), stiff, low plasticity, moist.	10/25/96 OVM BZ=0 ppm
			19		CL		2.5Y 6/3		
	.2	15							OVM A=38 ppm BZ=0 ppm S=11.9 ppm
	5	30	20	Slotted PVC (0.0 inch)					
	5	30						SILTY CLAY, dark yellowish brown (2.5Y 4/6), silt (20-30%), minor fine grained sand (5-10%), stiff, moderate	

Boring & Well Construction Log

(continuation)

Boring/Well Name: MW-7B
Project Name: Haven
Project Number: 980007.00

SAMPLES Type Number	Recovery (feet)	Blows/ 6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			22						OVM A=36 ppm B2=0 and 1.3 ppm
			23						
			24						
	.5	25							
	5	50/6	25	Sand (#3)	CL		10YR 4/3	fine grained sand content increases (10-20%), minor coarse grained sand, occasional gravel (<0.5 inch diameter), stiff, damp.	OVM A=3.6 ppm B2=0 ppm B=2.6 ppm
			26						
			27						
	.2	18	28	Native Soil					
	5	30							
	.5	30	29						
			30					Total depth of boring 29.5 feet.	
			31						
			32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. 00254914

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Page 1 of 1

Owner's Well Number PZ-1

Date Work Began 12/23/2014 Date Work Ended 12/23/2014

Local Permit Agency San Mateo County Environmental Health Services Division

Permit Number 14-2619 Permit Date 12/18/14

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Overdrill Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0.0	34.0	Overdrilled with 8" augers, then tremie-grouted borehole with neat cement to surface. Vault removed, topsoil added over grouted borehole.

Total Depth of Boring 34 Feet

Total Depth of Completed Well 34 Feet

Well Owner

Name SUMCO Phoenix Corporation

Mailing Address 19801 N. Tatum Blvd

City Phoenix State AZ Zip 85050

Well Location

Address 3750 Haven Ave.

City Menlo Park County San Mateo

Latitude 37 Deg. 29 Min. 9.96 Sec. N Longitude 122 Deg. 10 Min. 52.32 Sec. W

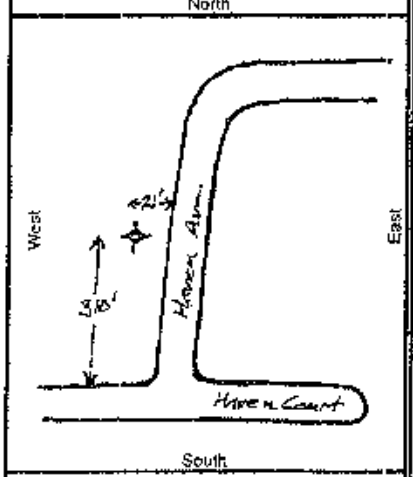
Datum NGVD 1929 Dec. Lat. Dec. Long.

APN Book 055 Page 170 Parcel 340

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
○ Deeper
○ Other
◉ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0.0	0.5	Fill	Topsoil
0.5	34.0	Cement	Neat cement grout

Attachments

☑ Geologic Log
☑ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

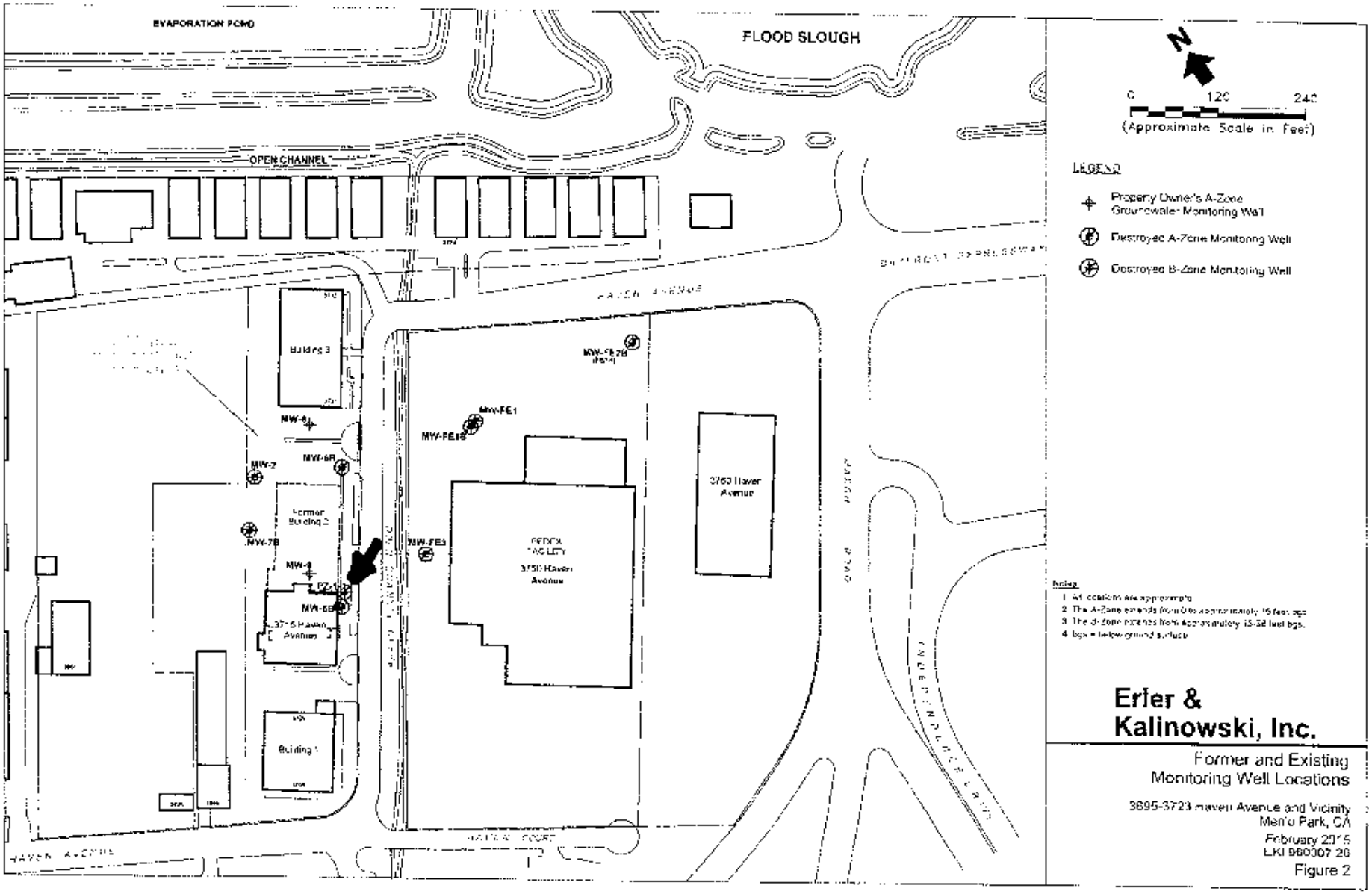
Name Gregg Drilling & Testing, Inc
Person, Firm or Corporation

950 Howe Rd Martinez CA 94553
Address City State Zip

Signed 2/20/2015 485165
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV 1/2009

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM


EVAPORATION POND
FLOOD SLOUGH
OPEN CHANNEL
HAVEN AVENUE
Building 3
MW-8
MW-6R
MW-2
Former Building 2
MW-7B
MW-4
PZ-1
MW-6B
3715 Haven Avenue
Building 1
MW-FE2B
MW-FE1
MW-FE1B
MW-FE3
FEDEX FACILITY
3750 Haven Avenue
3760 Haven Avenue
HAVEN COURT
N
0
120
240
(Approximate Scale in Feet)
LEGEND
Property Owner's A-Zone Groundwater Monitoring Well
Destroyed A-Zone Monitoring Well
Destroyed B-Zone Monitoring Well
Notes
1. All locations are approximate
2. The A-Zone extends from 0 to approximately 15 feet bgs
3. The B-Zone extends from approximately 15-38 feet bgs.
4. bgs = below ground surface
Erler & Kalinowski, Inc.
Former and Existing Monitoring Well Locations
3695-3723 Haven Avenue and Vicinity
Menlo Park, CA
February 2015
EKI 960307.20
Figure 2

Boring & Well Construction Log

BORING LOCATION: 3695-3723 Haven Avenue, Menlo Park, California		Boring/Well Name: PZ-1
DRILLING COMPANY: West Hazmat Drilling Corporation	DRILLER: Gene Nunes	Project Name: Haven
DRILLING METHOD (S): Hollow Stem Auger (8-57)	DRILL BIT AND SIZE: 8 inch OD	Project Number: 860007.00
ISOLATION CASING	FROM ___ TO ___ FT	ELEVATION AND DATUM: 8.55 msl (TOC) / TOTAL DEPTH: 34 Feet
BLANK CASING: Schedule 40 PVC 1-inch	FROM 0.5 TO 24 FT	DATE STARTED: 10/23/96 / DATE COMPLETED: 10/24/96
PERFORATED CASING: Schedule 40 PVC 1-inch (0.02 inch slot)	FROM 24 TO 34 FT	DEPTH TO WATER
SIZE AND TYPE OF FILTER PACK: Lonestar Lapis Luster Sand (#3)	FROM 22 TO 34 FT	LOGGED BY/CHECKED BY: Gail L. Clark/Beth Lamb, C.E.G.
SEAL: Bentonite Pellets (3/8-inch)	FROM 19 TO 22 FT	SAMPLING METHODS: Calif. Modified, Split Spoon / WELL COMPLETION: ☒ Surface Housing ☐ Stand Pipe ft.
GROUT: Bentonite Chips/Cement Bentonite Grout (0.5-19 ft)	FROM 5 TO 19 FT	

SAMPLES Type	SAMPLES Number	SAMPLES Recovery (feet)	SAMPLES Blows/6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
				1	Temporary Watertight Vault Box; Cement/Bentonite Grout				SILTY CLAY, dark gray brown (10YR 4/2), silt (30-40%), loose, dry.	Logged from drill cuttings.
				2						
				3						
				4						No grout, only chips and small grout seal.
				5					damp.	
				6	Bentonite chips	CL		10YR 4/2		
				7						
				8						
				9					stiff, moderate to high plasticity, moist.	
				10	Blank PVC					
				11						
				12					SANDY GRAVEL/GRAVELLY SAND, light yellowish brown (2.5Y 5/3), fine to coarse grained sand, gravel <1.5 inch diameter, saturated.	▽ first encountered water, Driller notes gravel.
				13						
				14						cutting saturated.
				15						
				16	Blank PVC	GW/SW		2.5Y 5/3		
				17						
				18						
				19						
				20	Hydrated Bentonite Pellets					

Boring & Well Construction Log

(continuation)

Boring/Well Name: PZ-1
Project Name: Haven
Project Number: 960007.00

SAMPLES Type Number	SAMPLES Recovery (feet)	SAMPLES Blows/6 in.	DEPTH (feet)	WELL CONSTRUCTION	USCS LOG	LITHOLOGY	COLOR	SAMPLE DESCRIPTION	DRILLING REMARKS
			22						cuttings very wet.
			23						
			24						
			25	Slotted PVC (0.02 inch)					Driller notes drills like gravel.
			26						
			27		GW/ SW		2.5Y 5/3		
			28	Sand (#3)					
			29						
			30						
			31	Sand (#3)					
			32						
			33						
			34					Total depth of boring 34 feet.	
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report

Refer to Instructions Pamphlet

No. e0254907

Page 1 of 1

Owner's Well Number MW-FE1

Date Work Began 12/22/2014 Date Work Ended 12/22/2014

Local Permit Agency San Mateo County Environmental Health Services Division

Permit Number 14-2618 Permit Date 12/18/14

DWR Use Only -- Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ⊙ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Pressure Grout Drilling Fluid

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc.)
0.0	14.0	Tremie - grouted casing with neat cement, then applied 25 psi pressure for minimum of five minutes, then topped off casing with grout as-needed. Well vault removed, completed to grade with concrete.

Total Depth of Boring 14 Feet

Total Depth of Completed Well 14 Feet

Well Owner

Name SUMCO Phoenix Corporation

Mailing Address 19801 N. Tatum Blvd.

City Phoenix State AZ Zip 85050

Well Location

Address 3750 Haven Ave.

City Menlo Park County San Mateo

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

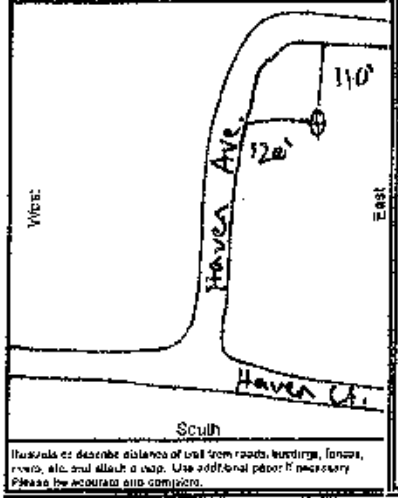
Datum NGVD 1929 Dec. Lat. 37.4864335 Dec. Long. -122.1808233

APN Book 055 Page 231 Parcel 060

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
○ Deepen
○ Other
⊙ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
⊙ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 5 (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0.5	5.0	8	Blank	PVC Sch. 40		2		
5.0	14.0	8	Screen	PVC Sch. 40		2	Milled Slots	0.010

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0.0	3.5	Cement	cement
3.5	4.0	Bentonite	
4.0	14.0	Filter Pack	#2/16 Sand (RMC Lone Star)

Attachments

☑ Geologic Log
☑ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Gregg Drilling & Testing, Inc.

Person, Firm or Corporation

950 Howe Rd Martinez CA 94553

Address City State Zip

Signed

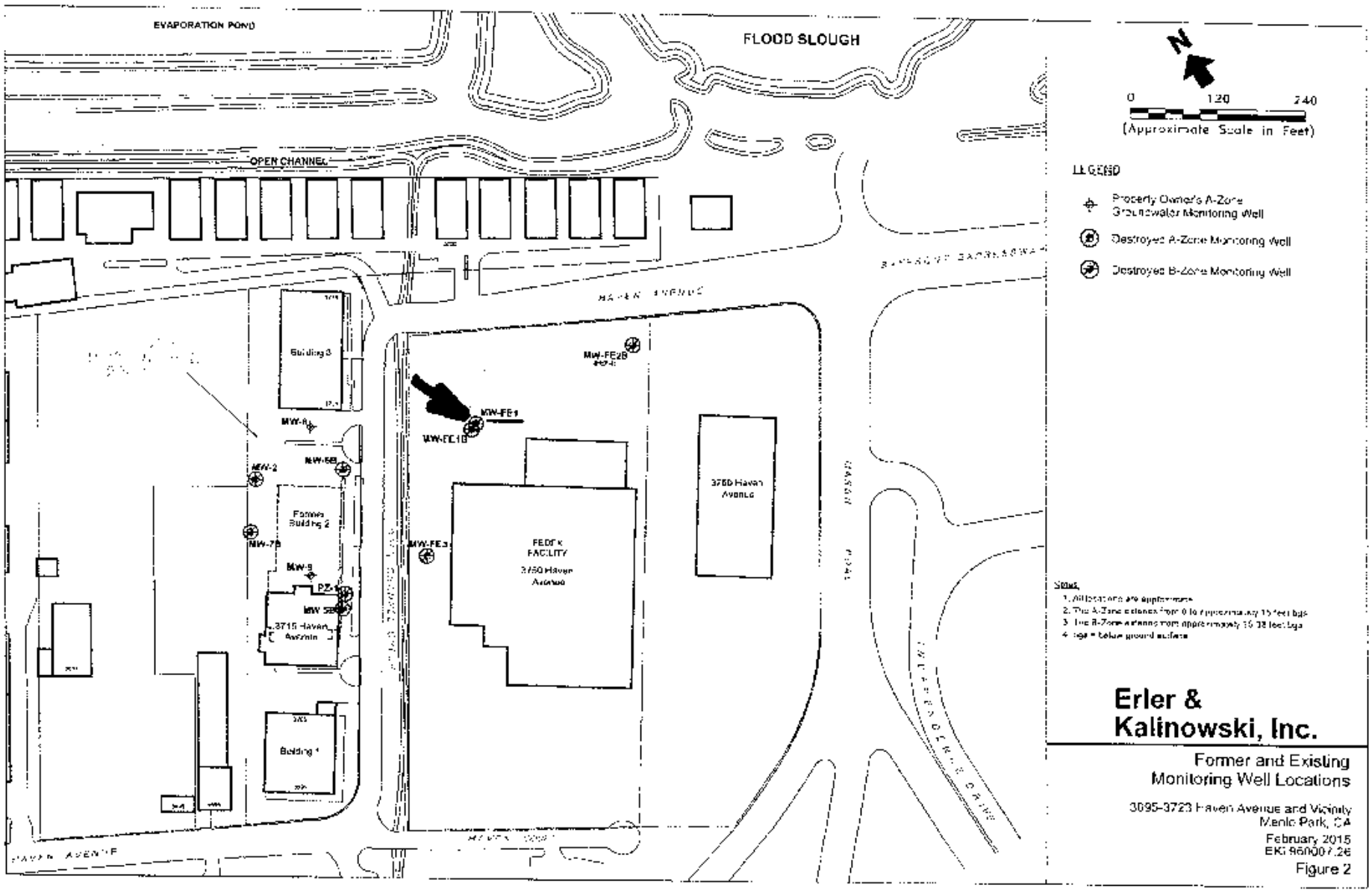
C-57 Licensed Water Well Contractor

2/19/2015 485185

Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM


EVAPORATION POND
FLOOD SLOUGH
OPEN CHANNEL
HAVEN AVENUE
Building 3
MW-FE2B
MW-FE1
MW-FE1B
MW-A
MW-2
MW-5B
Former Building 2
MW-7B
MW-3
PZ-1
MW-5B
3715 Haven Avenue
MW-FE3
FEDEX FACILITY
3750 Haven Avenue
3760 Haven Avenue
Building 1
HAVEN AVENUE
N
0
120
240
(Approximate Scale in Feet)
LEGEND
Property Owner's A-Zone Groundwater Monitoring Well
Destroyed A-Zone Monitoring Well
Destroyed B-Zone Monitoring Well
Notes:
1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-28 feet bgs.
4. bgs = below ground surface.
Erler & Kalinowski, Inc.
Former and Existing Monitoring Well Locations
3695-3723 Haven Avenue and Vicinity
Menlo Park, CA
February 2015
EKI 96000.26
Figure 2

Erler & Kalinowski, Inc.

Borehole & Well Construction Log

BOREHOLE LOCATION	FedEx, 3750 Haven Avenue, Menlo Park, California						BOREHOLE / WELL NAME	MW-FE1	
DRILLING COMPANY	Gregg Drilling & Testing Inc , C-57 Lic. # 485165						PROJECT NAME	Haven	
DRILLING METHOD	Hollow-Stem Auger						PROJECT NUMBER	960007.09	
CONDUCTOR CASING		DIAMETER (inches)		FROM (feet)		TO	DATE STARTED	6/30/00	DATE COMPLETED 6/30/00
BLANK CASING	Schedule 40 PVC	DIAMETER (inches)	2.00	FROM (feet)	0.5	TO 5.0	BOREHOLE DIAM (inches)	8.0	TOTAL DEPTH (feet) 14
PERFORATED CASING	0.01-inch Slotted Sch 40 PVC	DIAMETER (inches)	2.00	FROM (feet)	5.0	TO 14.0	DATUM	mean sea level NGVD 1929	
GROUT	Cement			FROM (feet)	1.0	TO 3.5	TOP OF CASING	5.06	GROUND SURFACE 5.41
SEAL	Bentonite			FROM (feet)	3.5	TO 4.0	LOGGED BY	Britt von Thaden	
FILTER PACK	#2/16 Sand (RMC Lone Star)			FROM (feet)	4.0	TO 14.0	CHECKED BY	Carey E. Peabody, RG # 5018	

REMARKS: Hand augered between 1 and 5 feet below ground surface.
Slip cap on bottom of well screen secured with two stainless steel screws.

SAMPLES: TIME COLLECTED	SAMPLE NAME	SAMPLE TYPE	RECOVERY (feet)	BLOW COUNT	OVM (ppmv)	DEPTH (feet)	MATERIAL DESCRIPTION AND DRILLING NOTES	USCS CODE	GRAPHIC LOG	WELL CONSTRUCTION
						0	Asphalt: 3 inches. Baserock: 6 inches.			
						1	FILL (SILTY SAND): Brown [10YR 4/3], 60% fine to coarse grained sand (f:30%, m:20%, c:10%), 35% silt, 5% fine to coarse gravel, moderately well sorted, dry to moist.	Fill (SM)		
						2	CLAY: Very dark gray [10YR 3/1], 5-10% fine to coarse sand, high plasticity, high dry strength, moist.	CH		
						3				
						4				
			0.5	1		5	6/30/00 ▽ color change to dark yellowish brown [10YR 4/4] with gray [10YR 6/1], <5% coarse grained sand.			
			0.5	2		6	at 5.5 to 6 feet, localized increase in sand to 50% wet.			
			0.5	5						
			0.4	1		7	color change to dark yellowish brown [10YR 4/4], water associated gray mottling, <1% carbonate nodules and Mn-oxide blebs.			
			0.5	3						
			0.5	5		8				
			0.5	1			color change to dark yellowish brown [10YR 4/6], 40% gray [10YR 6/1] mottling, increase in silt.			
			0.5	3						

BOREHOLE AND WELL CONSTRUCTION HAVEN00.GPJ EKI.GDT 2/8/00

Erler & Kalinowski, inc.

Borehole & Well Construction Log

PROJECT NAME	Haven	PROJECT NUMBER	960007.09	BOREHOLE / WELL NAME	MW-FE1

SAMPLES							MATERIAL DESCRIPTION AND DRILLING NOTES	USCS CODE	GRAPHIC LOG	WELL CONSTRUCTION
TIME COLLECTED	SAMPLE NAME	SAMPLE TYPE	RECOVERY (feet)	BLOW COUNT	OVM (ppmv)	DEPTH (feet)				
			0.5	8		10	SILTY CLAY. Dark yellowish brown [10YR 4/6], 15% localized carbonate mottling, up to 10% Mn-oxide blebs. medium to high plasticity, firm to hard, moist.	CL		
			0.5	2			at 9.5 to 10 feet, localized increase in coarse grained fraction to 50%, predominantly medium to coarse sand, wet.			
			0.5	4						
			0.5	6		11	1-3% coarse grained sand, moist.			
			0.5	5						
			0.5	8		12				
			0.5	10						
			0.5	4			SANDY CLAY. Yellowish brown [10YR 5/4], 30% fine to coarse grained sand, wet.	CL		
			0.5	8		13				
			0.5	15			SILTY CLAY. Dark yellowish brown [10YR 4/6], 40% carbonate nodules, 10% medium to coarse grained sand, 5% Mn-oxide blebs.	CL		
						14	Total Depth = 14 feet			
						15				
						16				
						17				
						18				
						19				
						20				
						21				
						22				
						23				

BOREHOLE AND WELL CONSTRUCTION HAVEN60.GPJ EKI.GDT 2/6/00

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to instruction Pamphlet

No. e0254909

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude / Longitude

APN/TRS/Other

Page 1 of 1

Owner's Well Number MW-FE1B

Date Work Began 12/22/2014 Date Work Ended 12/22/2014

Local Permit Agency San Mateo County Environmental Health Services Division

Permit Number 14-2618 Permit Date 12/18/14

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Pressure Grout Drilling Fluid

Depth from Surface Feet	to Feet	Description (Describe material, grain size, color, etc)
0.0	30.0	Tremie - grouted casing with neat cement, then applied 25 psi pressure for minimum of five minutes, then topped off casing with grout as-needed. Well vault removed, completed to grade with concrete.

Total Depth of Boring 30 Feet

Total Depth of Completed Well 29.2 Feet

Well Owner

Name SUMCO Phoenix Corporation

Mailing Address 19801 N. Tatum Blvd.

City Phoenix State AZ Zip 85050

Well Location

Address 3750 Haven Ave.

City Menlo Park County San Mateo

Latitude ___ Deg ___ Min ___ Sec N Longitude ___ Deg ___ Min ___ Sec W

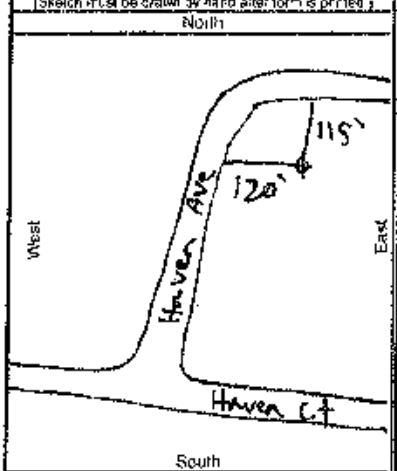
Datum NGVD 1929 Dec. Lat. 37.4864264 Dec. Long. 122.1808480

APN Book 055 Page 231 Parcel 060

Township ___ Range ___ Section ___

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Instruction: describe distance of well from roads, buildings, fences, rivers etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
○ Deepen
○ Other ___
◉ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other ___

Water Level and Yield of Completed Well

Depth to first water ___ (Feet below surface)

Depth to Static Water Level ___ (Feet) Date Measured ___

Estimated Yield * ___ (GPM) Test Type ___

Test Length ___ (Hours) Total Drawdown ___ (Feet)

*May not be representative of a well's long term yield

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Well Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0.0	17.5	8	Blank	PVC Sch. 40		4		
17.5	29.2	8	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0.5	11.0	Cement	Portland Cement
11.0	16.5	Bentonite	Pellets
16.5	28.5	Filter Pack	#3 Monterey Sand
28.5	29.2	Slough	Native Soil

Attachments

☑ Geologic Log
☑ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

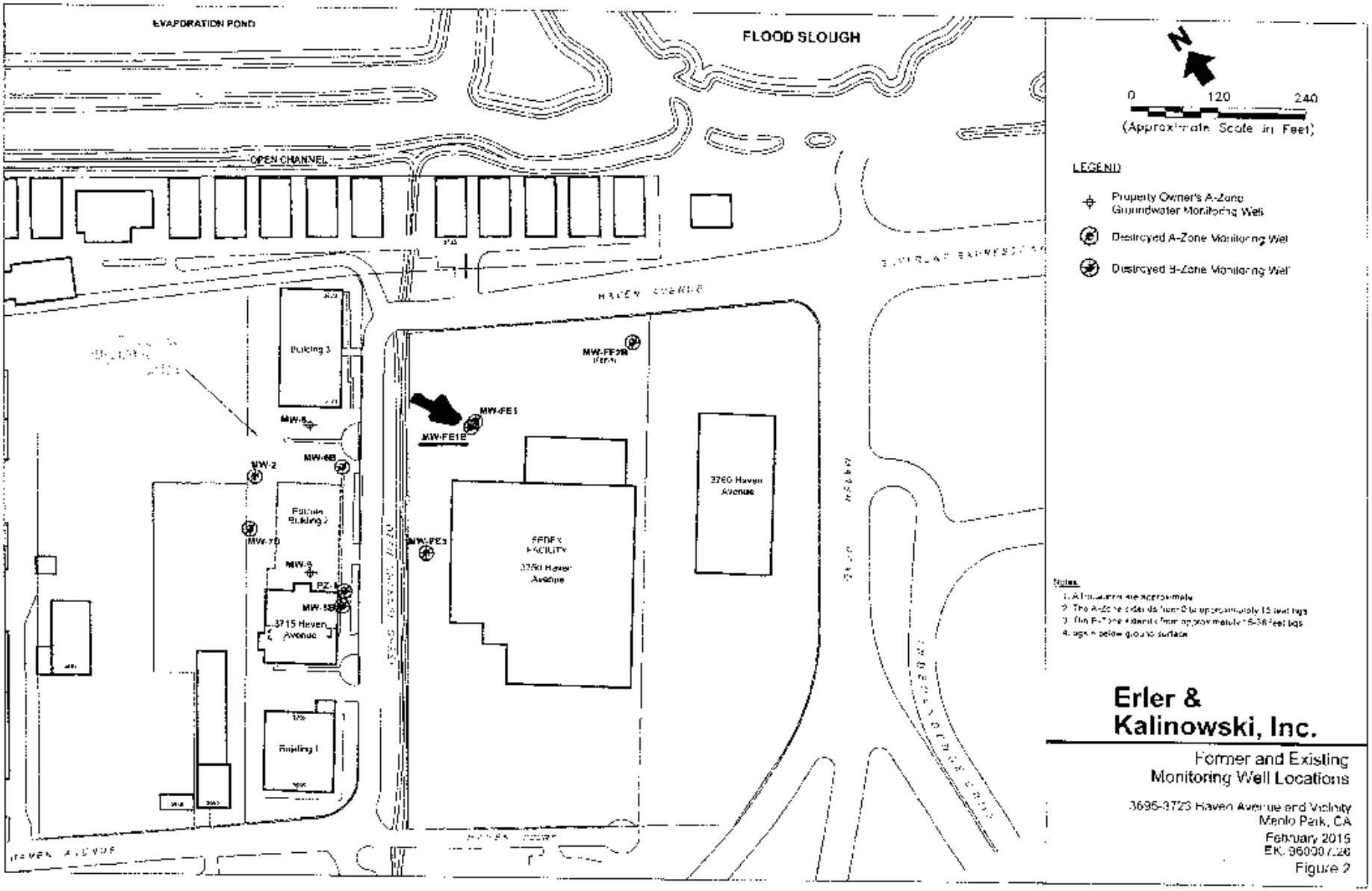
Name Gregg Drilling & Testing, Inc
Person, Firm or Corporation

950 Howe Rd Martinez CA 94553
Address City State Zip

Signed [signature] 2/19/2015 485165
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV 1/2009

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM


EVAPORATION POND
FLOOD SLOUGH
OPEN CHANNEL
HAVEN AVENUE
Building 3
MW-8
MW-6B
MW-2
Future Building 2
MW-7B
MW-9
PZ-1
MW-5B
3715 Haven Avenue
Building 1
MW-FE2B
MW-FE1
MW-FE1B
MW-FE3
FEDEX FACILITY
3775 Haven Avenue
3760 Haven Avenue
N
0
120
240
(Approximate Scale in Feet)
LEGEND
Property Owner's A-Zone Groundwater Monitoring Well
Destroyed A-Zone Monitoring Well
Destroyed B-Zone Monitoring Well
Notes:
1. All locations are approximate.
2. The A-Zone extends from 0 to approximately 15 feet bgs.
3. The B-Zone extends from approximately 15-35 feet bgs.
4. bgs = below ground surface.
Erler & Kalinowski, Inc.
Former and Existing Monitoring Well Locations
3695-3725 Haven Avenue and Vicinity
Menlo Park, CA
February 2015
EK: 36000.26
Figure 2

Erler & Kalinowski, Inc.

Borehole & Well Construction Log

BOREHOLE LOCATION	3723 Haven Avenue, Menlo Park, CA				BOREHOLE / WELL NAME	~~MW-FE1B~~ (MW-FE1B)	
DRILLING COMPANY	West Hazmat Drilling Lic. # 554979				PROJECT NAME	Haven	
DRILLING METHOD	Hollow Stem Auger				PROJECT NUMBER	960007.09	
CONDUCTOR CASING		DIAMETER (inches)	FROM (feet)	TO	DATE STARTED	10/1/99	DATE COMPLETED 10/2/99
BLANK CASING	Sch. 40 PVC	DIAMETER (inches) 4.00	FROM (feet) 0.0	TO 17.5	BOREHOLE DIAM (inches)	4.0	TOTAL DEPTH (feet) 30
PERFORATED CASING	0.02 inch slotted Sch. 40 PVC	DIAMETER (inches) 4.00	FROM (feet) 17.5	TO 29.2	DATUM	Mean Sea Level NGVD 1929	
GROUT	Portland Cement		FROM (feet) 0.5	TO 11.0	TOP OF CASING	5.20	GROUND SURFACE 5.59
SEAL	Bentonite Pellets		FROM (feet) ~~3.0~~ 11.0	TO 16.5	LOGGED BY	Darrell Sofield	
FILTER PACK	#3 Sand (Natural Fill from 28.5 to 30 feet)		FROM (feet) 16.5	TO 28.5	CHECKED BY	Carey E. Peabody, RG # 5019	

REMARKS: Minor collapse of borehole during placement of bentonite seal, which resulted in approximately 3 inches of native soil incorporated into bentonite seal. Soil samples were collected with a split spoon sampler. A slip cap was fastened to the bottom of the screen with 3 stainless steel screws.

TIME COLLECTED	SAMPLE NAME	SAMPLE TYPE	RECOVERY (feet)	BLOW COUNT	OVM (ppm)	DEPTH (feet)	MATERIAL DESCRIPTION AND DRILLING NOTES	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Asphalt. Baserock			
						2	CLAY, black (N1), 5% silt, medium plasticity, firm, dry.	CL		
							CLAY, olive gray (5Y 3/2) with reddish brown (5YR 4/3) mottling (moderate), 5% silt, medium plasticity, firm, moist. CaCO3 concretions.	CL		
			0.5	9		4				
			0.5	9						
			0.5	9						
			0.5	6			11/5/99 ▽			
12.10			0.5	10	BZ=0.0					
			0.5	11	A=0.0		~~10/2/99~~ ▽			
			0.5	9		6	CLAY WITH GRAVEL, olive gray (5Y 3/2), 15-20% fine gravel, subrounded gravel clasts, medium to high plasticity, firm, moist.	SC		
			0.5	9						
			0.5	19						
			0.25	8						
			0.5	12		8				
			5	17			CLAY WITH GRAVEL, light yellowish brown (5Y 6/5) with brown (7.5YR 4/3) mottling, 20% fine gravel of mixed lithology, subrounded gravel clasts, medium plasticity, firm, moist, CaCO3 concretions.	CL		
			0.5	9	BZ=0.0					
			0.5	15	A=0.0	10				
			0.5	19						
			0.5	8						
			0.5	13						
			0.5	22	BZ=0.4					
			0.5	3	A=1.3	12				
13.30			0.5	5						
			0.5	9			CLAY WITH SAND, light yellowish brown (5Y 3/2) with brown (7.5YR 4/3) mottling; 15% silt, 15% medium grained sand; subrounded sand grains; low plasticity; medium dense; wet.	CL		
			0.5	5						
			0.5	9		14				
			0.5	13						
			0	15						
			0	12						

BOREHOLE AND WELL CONSTRUCTION HAVEN.GPJ EKI.GDT 10/7/00

Erler & Kalinowski, Inc.

Borehole & Well Construction Log

PROJECT NAME	PROJECT NUMBER	BOREHOLE / WELL NAME
Haven	960007.09	~~MW-FE-1B~~ (MW-FE1B)

TIME COLLECTED	SAMPLE NAME	SAMPLE TYPE	RECOVERY (feet)	BLOW COUNT	OVM (ppmv)	DEPTH (feet)	MATERIAL DESCRIPTION AND DRILLING NOTES	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
			0	17				CL		
			0.5	28			SAND WITH GRAVEL; olive gray (5Y 3/2); 70% medium sand, 30% mixed lithology gravel, no fines; angular to subrounded sand grains and gravel clasts; wet.	SW		
			0.5	30						
			0.5	32		18				
						20				
						22				
						24	CLAY, light yellowish brown (5Y 3/2), 5% fine sand, high plasticity, firm, moist to wet.	CH		
			0.5	12						
			0.5	18			GRAVEL WITH SAND; olive gray (5Y 3/2); 85% fine grained mixed lithology gravel, 15% medium sand, angular to subrounded gravel clasts and sand grains; loose; wet.	GW		
			0.5	28		26				
						28	CLAY WITH SAND, light yellowish brown (5Y 2/3), 10% coarse to very coarse grained sand, medium to high plasticity, firm, moist to wet.	CH		
14:30			0.5	30						
			0.25	27						
			0.15	32		30				
						32				
						34				
						36				
						38				
						40				

BOREHOLE AND WELL CONSTRUCTION HAVEN GPJ EKI.GDT 1/31/09

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California
Well Completion Report
Refer to Instruction Pamphlet
No. e0254912

Page 1 of 1
Owner's Well Number MW-FE2R
Date Work Began 12/23/2014 Date Work Ended 12/23/2014
Local Permit Agency San Mateo County Environmental Health Services Division
Permit Number 14-2618 Permit Date 12/18/14

DWR Use Only – Do Not Fill In
State Well Number/Site Number
Latitude Longitude
APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify
Drilling Method Overdrill Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc.
0.0	30.0	Overdrilled with 6" augers, then tremie-grouted borehole with neat cement to surface. Vault removed, topsoil added over grouted borehole, then turf replaced over topsoil.

Total Depth of Boring 31 Feet
Total Depth of Completed Well 30 Feet

Well Owner

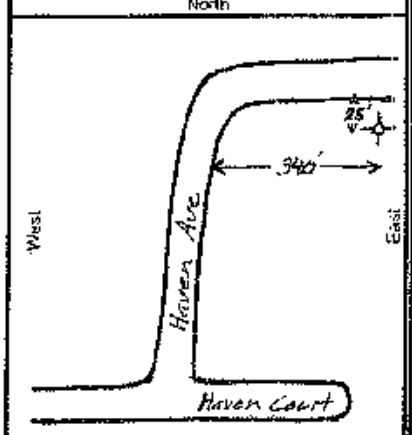
Name SUMCO Phoenix Corporation
Mailing Address 19801 N. Tatum Blvd.
City Phoenix State AZ Zip 85050

Well Location

Address 3750 Haven Ave.
City Menlo Park County San Mateo
Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W
Datum NGVD 1929 Dec. Lat. 37.4864508 Dec. Long. 122.1800162
APN Book 055 Page 231 Parcel 060
Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
○ Deepen
○ Other
◉ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)
Depth to Static
Water Level (Feet) Date Measured
Estimated Yield * (GPM) Test Type
Test Length (Hours) Total Drawdown (Feet)
*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0.0	0.5	Fill	Topsoil and grass sod
0.5	30.0	Cement	Neat cement grout

Attachments

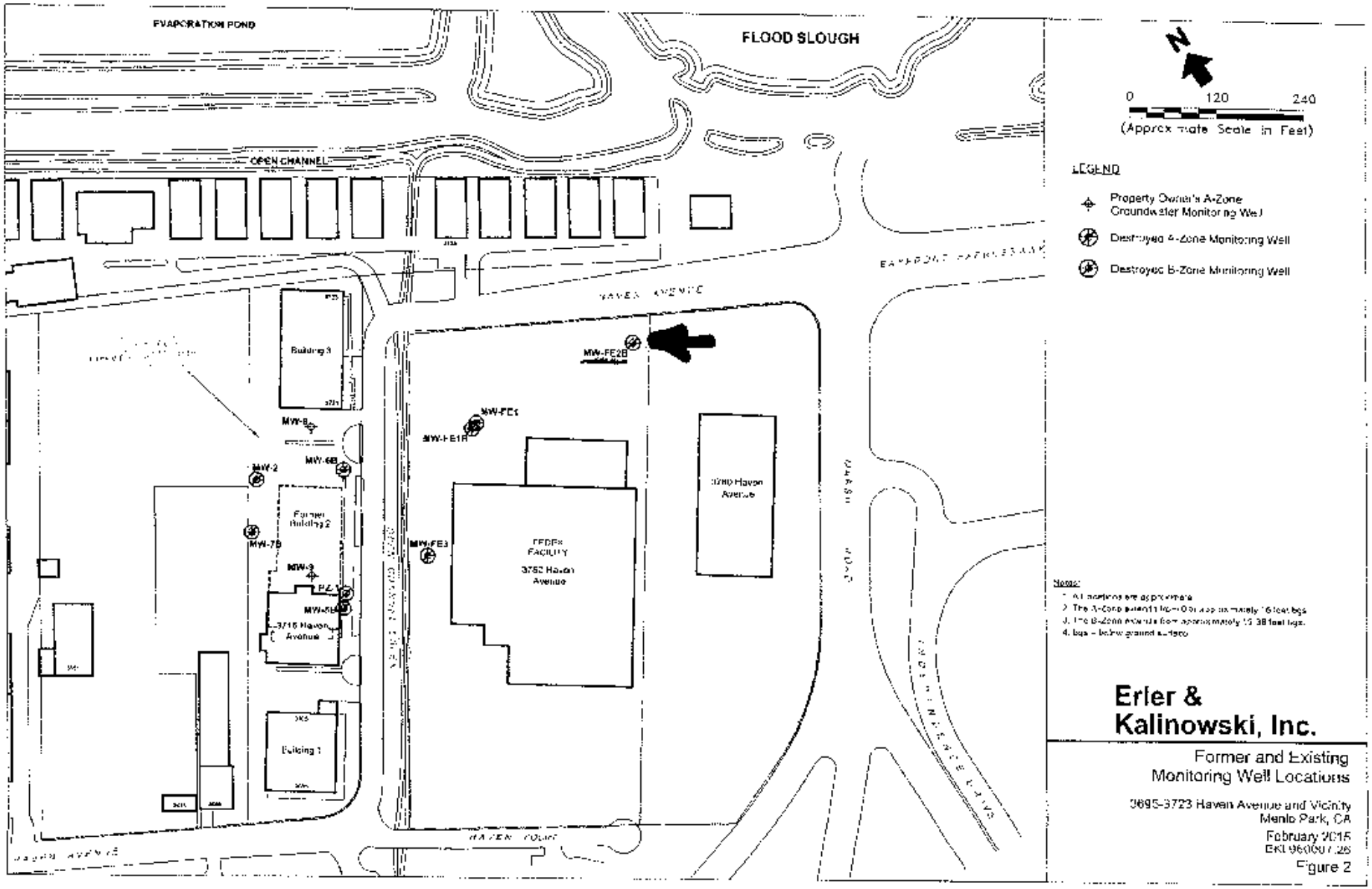
☑ Geologic Log
☑ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map
Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief
Name Gregg Drilling & Testing, Inc
Person, Firm or Corporation
950 Howe Rd Martinez CA 94553
Address City State Zip
Signed C-57 Licensed Water Well Contractor 2/20/2015 Date Signed 485165 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM


EVAPORATION POND
FLOOD SLOUGH
OPEN CHANNEL
HAVEN AVENUE
Building 3
MW-FE2B
MW-FE1
MW-FE1R
MW-B
MW-2
MW-6B
Former Building 2
MW-7B
MW-3
PZ-1
MW-5B
3716 Haven Avenue
FEDEX FACILITY
3752 Haven Avenue
MW-FE3
3760 Haven Avenue
Building 1
HAVEN COURT
N
0
120
240
(Approx mate Scale in Feet)
LEGEND
Property Owner's A-Zone Groundwater Monitoring Well
Destroyed A-Zone Monitoring Well
Destroyed B-Zone Monitoring Well
Notes:
1. All locations are approximate
2. The A-Zone is encountered approximately 16 feet bgs
3. The B-Zone extends from approximately 19-38 feet bgs.
4. bgs = below ground surface
Erler & Kalinowski, Inc.
Former and Existing Monitoring Well Locations
3695-3723 Haven Avenue and Vicinity
Menlo Park, CA
February 2015
EKI 960007.26
Figure 2

Boring & Well Construction Log

Erler & Kalinowski, Inc.

BOREHOLE LOCATION	3750 Haven Avenue, Menlo Park, CA				BOREHOLE/ WELL NAME	FEP-01 (converted to MW-FE2B)	
DRILLING COMPANY	Precision Sampling				PROJECT NAME	Haven	
DRILLING METHOD	EnviroCore Hydraulic Push				PROJECT NUMBER	960007.03	
CONDUCTOR CASING		DIAMETER (inches) 0.00in	FROM (feet) 0.00'	TO 0.00'	DATE STARTED	01/14/99	DATE COMPLETED 01/14/99
BLANK CASING	PVC	DIAMETER (inches) 0.75in	FROM (feet) 0.0'	TO 20.00'	BOREHOLE SIZE	2.50in	TOTAL DEPTH (feet) 31.00'
PERFORATED CASING	Slotted 0.020in	DIAMETER (inches) 0.75in	FROM (feet) 20.00'	TO 30.00'	DATUM	NGVD 1929	
GROUT	Bentonite Grout		FROM (feet) 0.00'	TO 14.00'	TOP OF CASING		GROUND SURFACE 6.93'
SEAL	Bentonite Pellets		FROM (feet) 14.00'	TO 19.00'	LOGGED BY	J. Shaw	
ANNULAR FILL	Sand Filter		FROM (feet) 19.00'	TO 33.00'	REVIEWED BY	C. Peabody, RG	

REMARKS: Soil samples were collected for the purpose of logging using the continuous core "EnviroCore" sampling technique.

SAMPLES: TIME COLLECTED	SAMPLE No.	SAMPLE	RECOVERY (ft)	BLOW COUNT	OVM (ppmV)	DEPTH (ft)	MATERIAL DESCRIPTION	Water Level	USCS Code	Graphic Log	WELL CONSTRUCTION	NOTES
			0.2			1	GRAVELLY CLAY; very dark greyish brown (10YR 3/2); 25% angular gravel; roots common; hard; moist.		CL			Hand Augered from 0 to 1 feet.
			0.5									
			0.0			2						
			0.0									
			0.5			3						
			0.2									
			0.0			4	6-inch interval "pea" gravel with clay.					
			0.5						CL			
			0.5			5	CLAY; black (10YR 2/1); massive; 5% sand; slightly sticky; plastic; hard; moist.					
			0.5									
			0.5			6	gradual color change to very dark grey brown (10YR 3/2); iron oxide and calcium carbonate mottles common but faint; soft; increasing moisture.					
			0.5									
			0.5			7	roots present; very sticky; very plastic; moist to wet.					
			0.5									
			0.5			8						
			0.5									
			0.5			9	increasing sand to 10%; color change to dark greenish grey (10Y 4/1); iron oxide mottles common.					
			0.5									
			0.5			10						
			0.5									
			0.5			11						
			0.5						CL			

(Converted to MW-FE2B)

BOREHOLE LOCATION FEP-01 | PROJECT NAME Haven | PROJECT NUMBER 960007.03

Boring & Well Construction Log

Erler & Kalinowski, Inc.

SAMPLES: TIME COLLECTED	SAMPLES: SAMPLE No.	SAMPLES: SAMPLE	SAMPLES: RECOVERY (ft)	SAMPLES: BLOW COUNT	SAMPLES: OVM (ppmv)	DEPTH (ft)	MATERIAL DESCRIPTION	Water Level	USCS Code	Graphic Log	WELL CONSTRUCTION	NOTES
			0.5									
			0.5									
			0.5			13	SILTY CLAY; light yellowish brown (10YR 6/4); iron oxide mottles distinct, pervasive; 20% silt, 10% sand; rare fine black mottles; more moist on fractures; slightly sticky; low plasticity; hard; moist.					
			0.5									
			0.5			14						
			0.5									
			0.5			15	increasing silt to 40%; core is hard; almost dry; calcium carbonate solid phase on fractures.					
			0.5									
			0.5			16						
			0.5									
			0.5			17	wet on fractures.					
			0.5									
			0.5			18						
			0.5									
			0.0			19						
			0.2									
			0.5			20						
			0.5									
			0.5			21	GRAVELLY SAND; dark yellowish brown (10YR 4/4); 15% gravel, 5% silt; clasts round; rare soft, brittle clasts, iron oxide-colored; weathered siltstone; very well sorted, fining upward sequence; loose; wet.		SW			
			0.5									
			0.0			22						
			0.0									
			0.5			23						
			0.5									
			0.5			24	increasing silt and clay to 10%.					
			0.4									
			0.0			25						
			0.0									
			0.0			26						
			0.5									
			0.5			27						
			0.5				SILTY CLAY; light yellowish brown (10YR 6/4); 30% silt, 5% sand; very sticky; moderately plastic; soft; wet.		CL			
			0.5			28						
			0.5									

(Converted to MW-FE2B)

BOREHOLE LOCATION FEP-01 PROJECT NAME Haven PROJECT NUMBER 960007.03

Erler & Kalinowski, Inc.

Boring & Well Construction Log

SAMPLES							MATERIAL DESCRIPTION	Water Level	USCS Code	Graphic Log	WELL CONSTRUCTION	NOTES
TIME COLLECTED	SAMPLE No.	SAMPLE	RECOVERY (ft)	BLOW COUNT	OVM (ppmV)	DEPTH (ft)						
			0.5			30						
			0.5									
			0.5									
			0.5				Increasing sand to 10%					
						31						Total Depth: 31 Feet.
						32						
						33						
						34						
						35						
						36						
						37						
						38						
						39						
						40						
						41						
						42						
						43						
						44						
						45						

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0254812

Page 1 of 1

Owner's Well Number MW-FE3

Date Work Began 12/23/2014 Date Work Ended 12/23/2014

Local Permit Agency San Mateo County Environmental Health Services Division

Permit Number 14-2618 Permit Date 12/18/14

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ◉ Vertical ○ Horizontal ○ Angle Specify

Drilling Method Pressure Grout Drilling Fluid

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc.
0.0	12.0	Tremie - grouted casing with neat cement, then applied 25 psi pressure for minimum of five minutes, then topped off casing with grout as-needed. Well vault removed, completed to grade with concrete.

Total Depth of Boring 13 Feet

Total Depth of Completed Well 11 Feet

Well Owner

Name SUMCO Phoenix Corporation

Mailing Address 19801 N. Tatum Blvd.

City Phoenix State AZ Zip 85050

Well Location

Address 3750 Haven Ave.

City Menlo Park County San Mateo

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

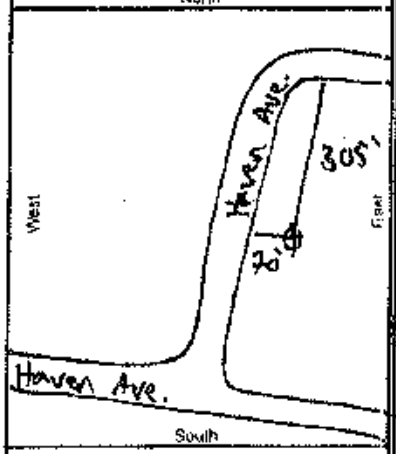
Datum NGVD 1929 Dec. Lat. 37.4860033 Dec. Long. 122.1812879

APN Book 055 Page 231 Parcel 060

Township Range Section

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc., and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
○ Deepen
○ Other
◉ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

○ Water Supply
☐ Domestic ☐ Public
☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
◉ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water (Feet below surface)

Depth to Static Water Level (Feet) Date Measured

Estimated Yield * (GPM) Test Type

Test Length (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0.0	5.0	8	Blank	PVC Sch. 40		4		
5.0	11.0	8	Screen	PVC Sch. 40		4	Milled Slots	0.020

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0.5	3.0	Cement	Portland Cement
3.0	4.0	Bentonite	Pellets
4.0	12.0	Filter Pack	#3 Monterey Sand
12.0	13.0	Slough	Native Soil

Attachments

☑ Geologic Log
☑ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☑ Other Site Map

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

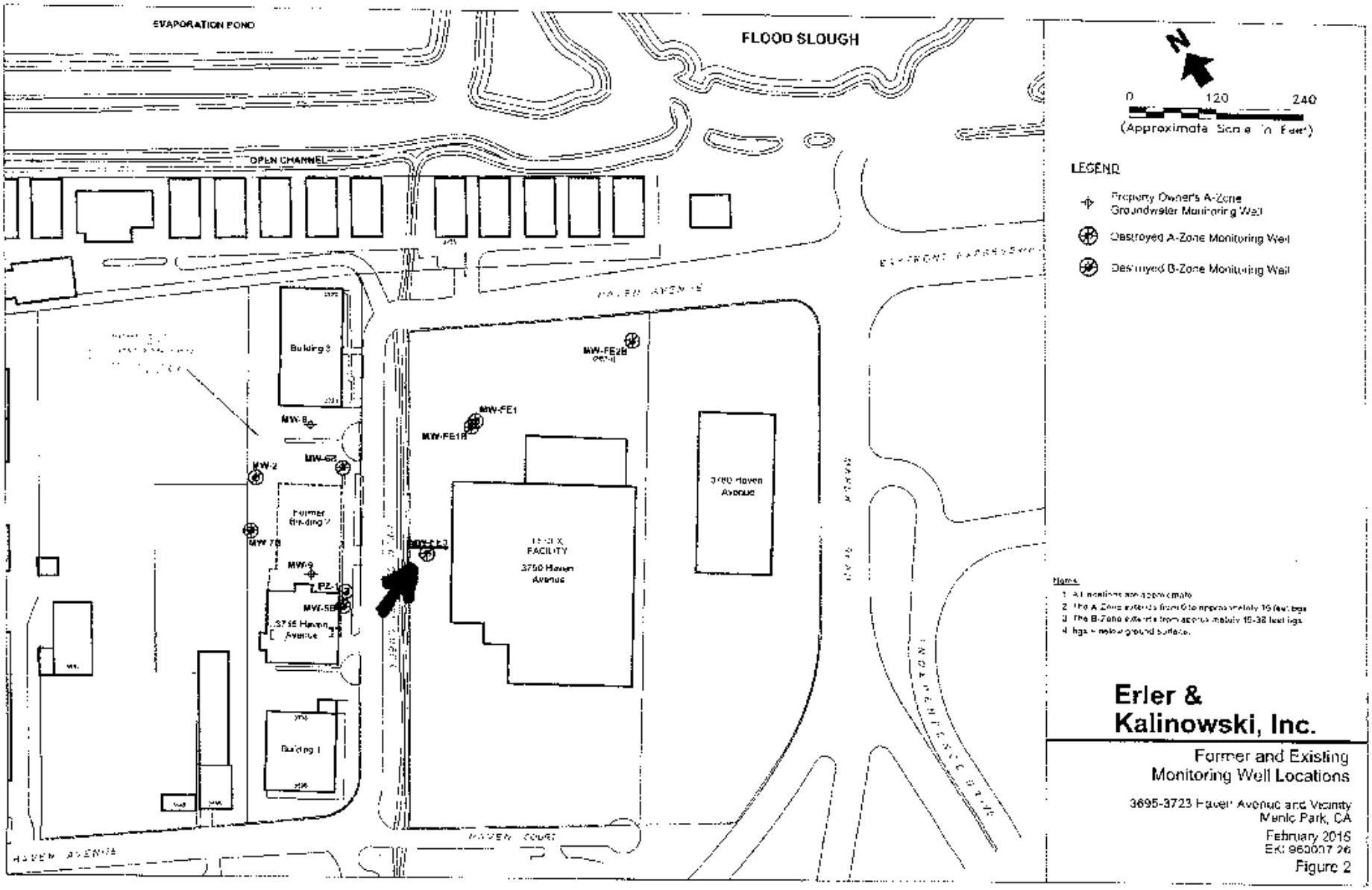
Name Gregg Drilling & Testing, Inc (Person, Firm or Corporation)

950 Howe Rd (Address) Martinez (City) CA (State) 94553 (Zip)

Signed (C-57 Licensed Water Well Contractor) 2/19/2015 (Date Signed) 485165 (C-57 License Number)

DWR 188 REV. 1/2005

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM


EVAPORATION POND
FLOOD SLOUGH
OPEN CHANNEL
HAVEN AVENUE
EASTPORT EXPRESSWAY
Building 3
MW-8
MW-2
MW-6B
Former Building 2
MW-7B
MW-9
PZ-1
MW-5B
3755 Haven Avenue
Building 1
MW-FE2B
MW-FE1
MW-FE1B
MW-FE3
FACILITY
3750 Haven Avenue
3780 Haven Avenue
HAVEN COURT
HAVEN AVENUE
N
0
120
240
(Approximate Scale in Feet)
LEGEND
Property Owner's A-Zone Groundwater Monitoring Well
Destroyed A-Zone Monitoring Well
Destroyed B-Zone Monitoring Well
Notes:
1. All locations are approximate
2. The A-Zone extends from 0 to approximately 15 feet bgs
3. The B-Zone extends from approximately 15-38 feet bgs
4. bgs = below ground surface.
Erler & Kalinowski, Inc.
Former and Existing Monitoring Well Locations
3695-3723 Haven Avenue and Vicinity
Menlo Park, CA
February 2016
EKI 960037.26
Figure 2

Erler & Kalinowski, Inc.

Borehole & Well Construction Log

BOREHOLE LOCATION	3723 Haven Avenue, Menlo Park, CA						BOREHOLE / WELL NAME	~~MW-FE3~~ MW-FE3	
DRILLING COMPANY	West Hazmat Drilling Lic. # 554979						PROJECT NAME	Haven	
DRILLING METHOD	Hollow Stem Auger						PROJECT NUMBER	960007.09	
CONDUCTOR CASING		DIAMETER (inches)		FROM (feet)		TO	DATE STARTED	10/5/99	DATE COMPLETED 10/5/99
BLANK CASING	Sch 40 PVC	DIAMETER (inches)	4.00	FROM (feet)	0.0	TO 5.0	BOREHOLE DIAM (inches)	4.0	TOTAL DEPTH (feet) 13
PERFORATED CASING	0.02 inch slotted Sch 40 PVC	DIAMETER (inches)	4.00	FROM (feet)	5.0	TO 11.0	DATUM	Mean Sea Level NGVD 1929	
GROUT	Portland Cement			FROM (feet)	0.5	TO 3.0	TOP OF CASING	6.29	GROUND SURFACE 6.74
SEAL	Bentonite Pellets			FROM (feet)	3.0	TO 4.0	LOGGED BY	Darrell Sofield	
FILTER PACK	#2/12 Sand (Native fill from 12 to 13 feet)			FROM (feet)	4.0	TO 12.0	CHECKED BY	Carey E. Peabody, RG # 5018	

REMARKS: Soil samples were collected with a split spoon sampler. A slip cap was fastened to the bottom of the screen with 3 stainless steel screws.

SAMPLES: TIME COLLECTED	SAMPLE NAME	SAMPLE TYPE	RECOVERY (feet)	BLOW COUNT	OVM (ppmv)	DEPTH (feet)	MATERIAL DESCRIPTION AND DRILLING NOTES	USCS CODE	LITHOLOGY	WELL CONSTRUCTION
						0	Asphalt.			
							Baserock.			
						2				
							CLAY, dark yellowish brown [10YR 4/2] with reddish brown [5YR 4/3] mottling (moderate), 5% silt, medium plasticity, firm, dry to moist. CaCO3 concretions.	CL		
						4				
			0.25	3			11/5/00 ▼			
10:50			0.5	4						
			0.5	10		6	CLAY, light yellowish brown [10Y 6/6], 10% fine to medium gravel, medium plasticity, firm, dry to moist. CaCO3 concretions.	CL		
						8	10/2/00 ▼			
							CLAY WITH SAND, light yellowish brown [10Y 6/6], 15% sand, 5% silt, low plasticity, wet.	CL		
			0.5	9		10				
11:07			0.5	18						
			0.5	20						
			0.5	5	BZ=0.0		GRAVELLY CLAY, moderate olive brown [5Y 4/4], 25% fine gravel, subrounded gravel clasts, medium plasticity, firm, moist to wet.	CL		
11:20			0.5	7	A=0.0	12	GRAVELLY SAND, olive gray [5Y 3/4], 65% sand, 30% fine gravel, 5% silt, loose, wet.	GP-GM/SC		
			0.5	8			CLAY WITH SAND, light yellowish brown [10Y 6/6], 15% sand, 5% silt, low plasticity, wet.	CL		
						14				

BOREHOLE AND WELL CONSTRUCTION HAVEN.GPJ EKI.GDT 10/1/00

APPENDIX C

Analytical Lab Report for Investigation Derived Wastes

K PRIME, Inc.

CONSULTING ANALYTICAL CHEMISTS

3621 Westwind Blvd.
Santa Rosa CA 95403
Phone: 707 527 7574
FAX: 707 527 7879

TRANSMITTAL

DATE: 1/5/2015

TO: MR. JEFF SHAW
ERLER & KALINOWSKI INC.
1870 OGDEN DRIVE
BURLINGAME, CA 94010

Phone: 650-292-9100
Email: labs@ekiconsult.com
jshaw@ekiconsult.com

ACCT: 9215
PROJ: 960007.26

FROM: Richard A. Kagel, Ph.D.
Laboratory Director RAK 1/5/2015

SUBJECT: LABORATORY RESULTS FOR YOUR PROJECT 960007.26

Enclosed please find K Prime's laboratory reports for the following samples:

SAMPLE ID	TYPE	DATE	TIME	KPI LAB #
COMP20141229	SOIL	12/23/2014	10:05	126625

The above listed sample group was received on 12/29/2014 and tested as requested on the chain of custody document.

Please call me if you have any questions or need further information.
Thank you for this opportunity to be of service.

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: COMP20141223A
LAB NO: 128628
DATE SAMPLED: 12/23/2014
TIME SAMPLED: 10:05
BATCH #: 122314S1
DATE ANALYZED: 12/31/2014

K PRIME PROJECT: 9115
CLIENT PROJECT: 960007.26

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5035/8260

SAMPLE TYPE: SOIL
UNITS: µg/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	1.49	ND
CHLOROMETHANE	74-87-3	1.49	ND
VINYL CHLORIDE	75-01-4	1.49	ND
BROMOMETHANE	74-83-9	1.49	ND
CHLOROETHANE	75-00-3	1.49	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.49	ND
1,1-DICHLOROETHENE	75-35-4	1.49	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1.49	ND
METHYLENE CHLORIDE	75-09-2	7.43	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	1.49	ND
1,1 DICHLOROETHANE	75-34-3	1.49	ND
CIS-1,2-DICHLOROETHENE	156-59-2	1.49	ND
2,2-DICHLOROPROPANE	594-20-7	1.49	ND
BROMOCHLOROMETHANE	74-97-5	1.49	ND
CHLOROFORM	67-66-3	1.49	ND
1,1,1-TRICHLOROETHANE	71-55-6	1.49	ND
CARBON TETRACHLORIDE	56-23-5	1.49	ND
1,1-DICHLOROPROPENE	563-58-6	1.49	ND
BENZENE	71-43-2	1.49	ND
1,2-DICHLOROETHANE	107-06-2	1.49	ND
TRICHLOROETHENE	79-01-6	1.49	2.60
1,2-DICHLOROPROPANE	78-87-5	1.49	ND
DIBROMOMETHANE	74-95-3	1.49	ND
BROMODICHLOROMETHANE	75-27-4	1.49	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.49	ND
TOLUENE	108-88-3	1.49	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.49	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.49	ND
TETRACHLOROETHENE	127-18-4	1.49	ND
1,3-DICHLOROPROPANE	142-28-9	1.49	ND
DIBROMOCHLOROMETHANE	124-48-1	1.49	ND
1,2-DIBROMOETHANE	106-93-4	1.49	ND
CHLOROBENZENE	108-90-7	1.49	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	1.49	ND
ETHYLBENZENE	100-41-4	1.49	ND
XYLENE (M+P)	1330-20-7	1.49	ND
XYLENE (O)	1330-20-7	1.49	ND
STYRENE	100-42-5	1.49	ND
BROMOFORM	75-25-2	1.49	ND
ISOPROPYLBENZENE	98-82-8	1.49	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.49	ND
BROMOBENZENE	108-86-1	1.49	ND
1,2,3-TRICHLOROPROPANE	96-18-4	1.49	ND
N-PROPYLBENZENE	103-65-1	1.49	ND
2-CHLOROTOLUENE	95-49-8	1.49	ND

K PRIME, INC.
LABORATORY REPORT

SAMPLE ID: COMP20141223A
LAB NO: 128628
DATE SAMPLED: 12/23/2014
TIME SAMPLED: 10:05
BATCH #: 122314S1
DATE ANALYZED: 12/31/2014

K PRIME PROJECT: 9115
CLIENT PROJECT: 960007.26

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5035/8260

SAMPLE TYPE: SOIL
UNITS: µg/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
1,3,5-TRIMETHYLBENZENE	108-67-8	1.49	ND
4-CHLOROTOLUENE	106-43-4	1.49	ND
TERT-BUTYLBENZENE	98-06-6	1.49	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	1.49	ND
SEC-BUTYLBENZENE	135-98-8	1.49	ND
1,3-DICHLOROBENZENE	541-73-1	1.49	ND
4-ISOPROPYLTOLUENE	99-87-6	1.49	ND
1,4-DICHLOROBENZENE	106-46-7	1.49	ND
N-BUTYLBENZENE	104-51-8	1.49	ND
1,2-DICHLOROBENZENE	95-50-1	1.49	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.49	ND
1,2,4-TRICHLOROBENZENE	120-82-1	2.97	ND
HEXACHLOROBUTADIENE	87-68-3	2.97	ND
NAPHTHALENE	91-20-3	2.97	ND
1,2,3-TRICHLOROBENZENE	87-61-6	2.97	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	110
TOLUENE-D8	105
4-BROMOFLUOROBENZENE	91

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

APPROVED BY: CH
DATE: 01/05/2015

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9115
CLIENT PROJECT: 960007.26

METHOD: DRO **SAMPLE TYPE:** SOIL
REFERENCE: EPA 8015B **UNITS:** mg/Kg

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	DRO PATTERN
COMP20141223A	128628	12/23/2014	121814S1	12/31/2014	01/02/2015	10 0	ND	

NOTES:

DRO	Diesel Range Organics (C12-C23)
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AD	Typical Pattern for Diesel
AM	Hydrocarbon response is in the C12-C22 range
AC	Heavier hydrocarbons contributing to diesel range quantitation
AJ	Heavier hydrocarbon than diesel
AK	Lighter hydrocarbon than diesel
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: _____
DATE: 01/05/2015

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9115
CLIENT PROJECT: 960007.26

METHOD: HRO
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

SAMPLE ID	LAB NO.	DATE SAMPLED	BATCH ID	EXTRACT DATE	DATE ANALYZED	MRL	SAMPLE CONC	HRO PATTERN
COMP20141223A	128628	12/23/2014	121814S1	12/31/2014	01/02/2015	10.0	ND	

NOTES:

HRO	Heavy Range Organics (C24-C34)
ND	Not Detected at or above the stated MRL
NA	Not Applicable or Available
MRL	Method Reporting Limit
AE	Unknown hydrocarbon with a single peak
AN	Unknown hydrocarbon with several peaks

APPROVED BY: _____
DATE: 01/05/2015

K PRIME, INC.
LABORATORY REPORT

K PRIME PROJECT: 9115
CLIENT PROJECT: 960007.26

SAMPLE ID: COMP20141223A
LAB NO: 128628
DATE SAMPLED: 12/23/2014
TIME SAMPLED: 10:05
BATCH ID: 123114S1

METHOD: TOTAL METALS BY ICP/MS
REFERENCE: EPA 3050B/6020A

SAMPLE TYPE: SOIl
UNITS: mg/Kg

ELEMENT NAME		DATE ANALYZED	REPORTING LIMIT	SAMPLE CONC
ANTIMONY	Sb	12/31/2014	2.50	ND
ARSENIC	As	12/31/2014	2.50	4.76
BARIUM	Ba	12/31/2014	2.50	167
BERYLLIUM	Be	12/31/2014	2.50	ND
CADMIUM	Cd	12/31/2014	2.50	ND
CHROMIUM	Cr	12/31/2014	2.50	37.8
COBALT	Co	12/31/2014	2.50	9.62
COPPER	Cu	12/31/2014	2.50	22.9
LEAD	Pb	12/31/2014	2.50	6.86
MERCURY	Hg	12/31/2014	0.100	ND
MOLYBDENUM	Mo	12/31/2014	2.50	ND
NICKEL	Ni	12/31/2014	2.50	43.1
SELENIUM	Se	12/31/2014	2.50	ND
SILVER	Ag	12/31/2014	2.50	ND
THALLIUM	Tl	12/31/2014	2.50	ND
VANADIUM	V	12/31/2014	2.50	40.8
ZINC	Zn	12/31/2014	2.50	58.7

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

APPROVED BY: [signature]
DATE: 01/05/2015

K PRIME, INC.
LABORATORY METHOD BLANK REPORT **METHOD BLANK ID:** B122314S1

BATCH #: 122314S1
DATE ANALYZED: 12/23/2014

METHOD: VOLATILE ORGANIC COMPOUNDS **SAMPLE TYPE:** SOIL
REFERENCE: EPA 5035/8260 **UNITS:** µg/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
DICHLORODIFLUOROMETHANE	75-71-8	1.50	ND
CHLOROMETHANE	74-87-3	1.50	ND
VINYL CHLORIDE	75-01-4	1.50	ND
BROMOMETHANE	74-83-9	1.50	ND
CHLOROETHANE	75-00-3	1.50	ND
TRICHLOROFLUOROMETHANE	75-69-4	1.50	ND
1,1-DICHLOROETHENE	75-35-4	1.50	ND
TRICHLOROTRIFLUOROETHANE	76-13-1	1.50	ND
METHYLENE CHLORIDE	75-09-2	7.50	ND
TRANS-1,2-DICHLOROETHENE	156-60-5	1.50	ND
1,1-DICHLOROETHANE	75-34-3	1.50	ND
CIS-1,2-DICHLOROETHENE	156-59-2	1.50	ND
2,2-DICHLOROPROPANE	594-20-7	1.50	ND
BROMOCHLOROMETHANE	74-97-5	1.50	ND
CHLOROFORM	67-66-3	1.50	ND
1,1,1-TRICHLOROETHANE	71-55-6	1.50	ND
CARBON TETRACHLORIDE	56-23-5	1.50	ND
1,1-DICHLOROPROPENE	563-58-6	1.50	ND
BENZENE	71-43-2	1.50	ND
1,2-DICHLOROETHANE	107-06-2	1.50	ND
TRICHLOROETHENE	79-01-6	1.50	ND
1,2-DICHLOROPROPANE	78-87-5	1.50	ND
DIBROMOMETHANE	74-95-3	1.50	ND
BROMODICHLOROMETHANE	75-27-4	1.50	ND
TRANS-1,3-DICHLOROPROPENE	10061-02-6	1.50	ND
TOLUENE	108-88-3	1.50	ND
CIS-1,3-DICHLOROPROPENE	10061-01-5	1.50	ND
1,1,2-TRICHLOROETHANE	79-00-5	1.50	ND
TETRACHLOROETHENE	127-18-4	1.50	ND
1,3-DICHLOROPROPANE	142-28-9	1.50	ND
DIBROMOCHLOROMETHANE	124-48-1	1.50	ND
1,2-DIBROMOETHANE	106-93-4	1.50	ND
CHLOROBENZENE	108-90-7	1.50	ND
1,1,1,2-TETRACHLOROETHANE	630-20-6	1.50	ND
ETHYLBENZENE	100-41-4	1.50	ND
XYLENE (M+P)	1330-20-7	1.50	ND
XYLENE (O)	1330-20-7	1.50	ND
STYRENE	100-42-5	1.50	ND
BROMOFORM	75-25-2	1.50	ND
ISOPROPYLBENZENE	98-82-8	1.50	ND
1,1,2,2-TETRACHLOROETHANE	79-34-5	1.50	ND
BROMOBENZENE	108-86-1	1.50	ND
1,2,3-TRICHLOROPROPANE	96-18-4	1.50	ND
N-PROPYLBENZENE	103-65-1	1.50	ND
2-CHLOROTOLUENE	95-49-8	1.50	ND

K PRIME, INC.

LABORATORY METHOD BLANK REPORT METHOD BLANK ID: B122314S1

BATCH #: 122314S1
DATE ANALYZED: 12/23/2014

METHOD: VOLATILE ORGANIC COMPOUNDS SAMPLE TYPE: SOIL
REFERENCE: EPA 5035/8260 UNITS: ug/Kg

COMPOUND NAME	CAS NO.	REPORTING LIMIT	SAMPLE CONC
1,3,5-TRIMETHYLBENZENE	108-67-8	1.50	ND
4-CHLOROTOLUENE	106-43-4	1.50	ND
TERT-BUTYLBENZENE	98-06-6	1.50	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	1.50	ND
SEC-BUTYLBENZENE	135-98-8	1.50	ND
1,3-DICHLOROBENZENE	541-73-1	1.50	ND
4-ISOPROPYLTOLUENE	99-87-6	1.50	ND
1,4-DICHLOROBENZENE	106-46-7	1.50	ND
N-BUTYLBENZENE	104-51-8	1.50	ND
1,2-DICHLOROBENZENE	95-50-1	1.50	ND
1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	1.50	ND
1,2,4-TRICHLOROBENZENE	120-82-1	3.00	ND
HEXACHLOROBUTADIENE	87-68-3	3.00	ND
NAPHTHALENE	91-20-3	3.00	ND
1,2,3-TRICHLOROBENZENE	87-61-6	3.00	ND

SURROGATE RECOVERY	%
DIBROMOFLUOROMETHANE	102
TOLUENE-D8	104
4-BROMOFLUOROBENZENE	91

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA -NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY QC REPORT

METHOD: VOLATILE ORGANIC COMPOUNDS
REFERENCE: EPA 5035/8260

SAMPLE ID: B122314S1
SPIKE ID: L122314S1
DUPLICATE ID: D122314S1
BATCH #: 122314S1
SAMPLE TYPE: SOIL
UNITS: µg/Kg

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
1,1 DICHLOROETHENE	30.0	ND	30.6	102	60-140
BENZENE	30.0	ND	34.3	114	60-140
TRICHLOROETHENE	30.0	ND	34.2	114	60-140
TOLUENE	30.0	ND	32.9	110	60-140
CHLOROBENZENE	30.0	ND	34.3	114	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
1,1 DICHLOROETHENE	1.50	30.6	29.2	4.2	±20
BENZENE	1.50	34.3	33.9	1.0	±20
TRICHLOROETHENE	1.50	34.2	33.8	1.2	±20
TOLUENE	1.50	32.9	32.9	0.0	±20
CHLOROBENZENE	1.50	34.3	33.9	1.2	±20

NOTES:
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT AVAILABLE OR APPLICABLE

K PRIME, INC.
LABORATORY QUALITY CONTROL REPORT

BATCH ID: 121814S1
DATE EXTRACTED: 12/18/2014
DATE ANALYZED: 12/18/2014

METHOD: DRO
REFERENCE: EPA 8015B

SAMPLE TYPE: SOIL
UNITS: mg/Kg

METHOD BLANK ID: B121814S1

COMPOUND NAME	REPORTING LIMIT	SAMPLE CONC
DRO	10.0	ND

SAMPLE ID: L121814S1
DUPLICATE ID: D121814S1

ACCURACY (MATRIX SPIKE)

PARAMETER	SPIKE ADDED	SAMPLE RESULT	SPIKE RESULT	RECOVERY (%)	LIMITS (%)
DRO	500	ND	487	97	60-140

PRECISION (SPIKE DUPLICATE)

COMPOUND NAME	REPORTING LIMIT	SPIKE RESULT	DUPLICATE RESULT	RPD (%)	LIMITS (%)
DRO	10.0	487	494	1.4	±20

NOTES:
DRO - DIESEL RANGE ORGANICS (C12-C34)
ND - NOT DETECTED AT OR ABOVE THE STATED REPORTING LIMIT
NA - NOT APPLICABLE OR AVAILABLE

K PRIME, INC.
LABORATORY BATCH QC REPORT

SAMPLE ID: L123114S1
DUPLICATE ID: D123114S1
METHOD BLANK ID: B123114S1
BATCH #: 123114S1
DATE ANALYZED: 12/31/2014

METHOD: TOTAL METALS BY ICP/MS
REFERENCE: EPA 3050B/6020A

SAMPLE TYPE: SOIL
UNITS: mg/Kg

ELEMENT		MB mg/Kg	SA mg/Kg	SR mg/Kg	SP mg/Kg	SPD mg/Kg	SP %R	RPD %
ANTIMONY	Sb	<2.50	25.0	0.0	25.2	25.4	101	0.7
ARSENIC	As	<2.50	25.0	0.0	24.9	25.1	99	1.0
BARIUM	Ba	<2.50	25.0	0.0	25.0	24.9	100	0.5
BERYLLIUM	Be	<2.50	25.0	0.0	25.2	25.4	101	0.7
CADMIUM	Cd	<2.50	25.0	0.0	24.8	25.1	99	1.4
CHROMIUM	Cr	<2.50	25.0	0.0	25.3	25.6	101	1.4
COBALT	Co	<2.50	25.0	0.0	25.7	25.6	103	0.2
COPPER	Cu	<2.50	25.0	0.0	25.1	25.0	100	0.3
LEAD	Pb	<2.50	25.0	0.0	24.6	24.8	98	0.6
MERCURY	Hg	<0.100	1.00	0.0	0.990	1.01	99	1.7
MOLYBDENUM	Mo	<2.50	25.0	0.0	24.9	25.3	100	1.5
NICKEL	Ni	<2.50	25.0	0.0	25.3	25.7	101	1.6
SELENIUM	Se	<2.50	25.0	0.0	24.3	24.4	97	0.3
SILVER	Ag	<2.50	12.5	0.0	12.6	12.8	101	1.4
THALLIUM	Tl	<2.50	25.0	0.0	25.6	25.5	102	0.3
VANADIUM	V	<2.50	25.0	0.0	25.4	25.7	102	1.0
ZINC	Zn	<2.50	25.0	0.0	24.3	24.3	97	0.1

NOTES:
ND: NOT DETECTED
MB: METHOD BLANK
SA: SPIKE ADDED
SR: SAMPLE RESULT
SP: SPIKE RESULT
SPD: SPIKE DUPLICATE RESULT
SP(%R): SPIKE % RECOVERY
RPD: RELATIVE PERCENT DIFFERENCE

K PRIME, INC.
LABORATORY BATCH QC REPORT

SAMPLE ID: MS128628
DUPLICATE ID: SD128628
METHOD BLANK ID: B123114S1
BATCH #: 123114S1
DATE ANALYZED: 12/31/2014

METHOD: TOTAL METALS BY ICP/MS
REFERENCE: EPA 3050B/6020A

SAMPLE TYPE: SOIL
UNITS: mg/Kg

ELEMENT		MB mg/Kg	SA mg/Kg	SR mg/Kg	SP mg/Kg	SPD mg/Kg	SP %R	RPD %
ANTIMONY	Sb	<2.50	25.0	<2.50	<2.50	<2.50	3	32.4
ARSENIC	As	<2.50	25.0	4.76	27.6	28.1	91	1.6
BARIUM	Ba	<2.50	25.0	167	205	219	150	6.8
BERYLLIUM	Be	<2.50	25.0	<2.50	25.5	25.8	100	1.3
CADMIUM	Cd	<2.50	25.0	<2.50	24.1	24.2	95	0.2
CHROMIUM	Cr	<2.50	25.0	37.8	63.9	67.7	104	5.8
COBALT	Co	<2.50	25.0	9.62	34.4	34.6	99	0.5
COPPER	Cu	<2.50	25.0	22.9	46.7	48.4	95	3.6
LEAD	Pb	<2.50	25.0	6.86	30.3	30.9	94	2.0
MERCURY	Hg	<0.100	1.00	<0.100	1.00	1.02	95	1.6
MOLYBDENUM	Mo	<2.50	25.0	<2.50	18.5	18.6	70	0.8
NICKEL	Ni	<2.50	25.0	43.1	67.9	70.1	99	3.2
SELENIUM	Se	<2.50	25.0	<2.50	22.2	22.5	87	1.5
SILVER	Ag	<2.50	12.5	<2.50	3.66	3.27	28	11.3
THALLIUM	Tl	<2.50	25.0	<2.50	24.3	24.4	96	0.3
VANADIUM	V	<2.50	25.0	40.8	67.7	70.8	107	4.6
ZINC	Zn	<2.50	25.0	58.7	82.9	86.2	97	3.8

NOTES:
ND: NOT DETECTED
MB: METHOD BLANK
SA: SPIKE ADDED
SR: SAMPLE RESULT
SP: SPIKE RESULT
SPD: SPIKE DUPLICATE RESULT
SP(%R): SPIKE % RECOVERY
RPD: RELATIVE PERCENT DIFFERENCE

9115

Erler & Kalinowski, Inc.
CONSULTING ENGINEERS AND SCIENTISTS

CHAIN OF CUSTODY RECORD

1870 Ogden Drive, Burlingame CA 94010 PHONE 650-292-9100 FAX 650-552-9012

PAGE 1 OF 1

Project Name: Haven - well destruction
Project No.: 960007.26
Location: 3693-3717 Haven Ave, Menlo Park, CA
Sampled By: J. Shaw
Laboratory: K-Prime Laboratories, Inc.
3621 Westwind Boulevard
Santa Rosa, CA, USA 95403
(707) 527-7574

Reporting:
Electronic Format: none Hard Copy Format: PDF
EPA Data Report Level: II
Please report results to the following people.
(1) Data Archive: labs@ekiconsult.com
(2) Jeff Shaw: jshaw@ekiconsult.com
(3)
(4)

ANALYSES REQUESTED

Field Sample Identification	Lab Sample No.	Date	Time	Matrix	No./Type of Containers	Method No. / Analyte Group: EPA8260B VOCs	TPH-d/mo	Title 22 Metals	EPA6020	Extract & HOLD	HOLD
COMP20141223A	128628	23 Dec '14	1005	Soil	8-oz jar	X	X	X			

EKI COC No.: (YYYYMMDD-#)
Revision: (A, B, C, D, etc.)
Date: By:

EXPECTED TURN-AROUND TIME: 5 day

Remarks: IDW disposal

Special Instructions:
(Stored @ 4°C in EKI sample-storage)

Relinquished by: Jeff Shaw	(Signature/Affiliation) EKI	Date 29 Dec '14	Time	Received By: (Signature/Affiliation or Carrier/Air Bill No.) (VTC) 12/29/14 2:00
Relinquished by: (VTC)	(Signature/Affiliation)	Date 12/29/14	Time 16:35	Received by: (Signature/Affiliation) 2W-Coole KRI
Relinquished by:	(Signature/Affiliation)	Date	Time	Received by: (Signature/Affiliation)

Erler & Kalinowski, Inc.
Consulting Engineers and Scientists
1870 Ogden Drive
Burlingame, CA 94010
(650) 292-9100
Fax: (650) 552-9012

31 December 2013

Mr. Randy Lee
Regional Water Quality Control Board, San Francisco Bay Region
1515 Clay St., Ste. 1400
Oakland, California 94612

Subject: Summary of Environmental Conditions, and
Request for Declaration of No Further Active Remediation Status
(EKI 960007.25)

Dear Mr. Lee:

Erler & Kalinowski, Inc. ("EKI") is pleased to present this summary of environmental history to the California Regional Water Quality Control Board, San Francisco Bay Region ("Water Board"), and requests that the Water Board grant No Further Active Remediation ("NFAR") status to SUMCO Phoenix Corporation ("SUMCO") for the Former Siltec facility located at 3695 - 3723 Haven Avenue in Menlo Park, California ("Site").

SUMCO requests NFAR status from Water Board consistent with criteria specified in the 31 July 2009 Water Board document *Assessment Tool for Closure of Low Threat Chlorinated Solvent Sites, Draft Final.*

If you have any questions, please do not hesitate to call.

Very truly yours,
ERLER & KALINOWSKI, INC.

Jeff Shaw, P.G.
Project Geologist

Carey E. Peabody, Ph.D., P.G.
Vice President

cc: Jeffrey Bradshaw, SUMCO

If enclosures are not as described, please advise us immediately at (650) 292-9100

Erler &
Kalinowski,
Inc.

Summary of Environmental Conditions and Request for Declaration of No Further Active Remediation Status

---

3695-3723 Haven Avenue
Menlo Park, California

SUMCO Phoenix Corporation
19801 North Tatum Boulevard
Phoenix, AZ 85050

Prepared by:
Erler & Kalinowski, Inc.
1870 Ogden Drive
Burlingame, California 94010
www.ekiconsult.com

31 December 2013

(EKI 960007.25)

Consulting engineers and scientists

Summary of Environmental Conditions and
Request for Declaration of No Further Active Remediation Status
3695 - 3723 Haven Avenue
Menlo Park, California

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Summary of Environmental Conditions and
Request for Declaration of No Further Active Remediation Status
3695 - 3723 Haven Avenue
Menlo Park, California

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EXECUTIVE SUMMARY

This document provides an environmental history summary of the Former Siltec facility located at 3695 - 3723 Haven Avenue in Menlo Park, California ("Site"), reports the results of groundwater monitoring events at the Site performed by SUMCO, successor to Siltec Corporation, and requests that the Site be granted No Further Active Remediation ("NFAR") status. NFAR status would allow a complete curtailment of the Site remediation and monitoring activity, and would allow the destruction and proper abandonment of unnecessary on-Site and off-Site groundwater monitoring wells.

SUMCO requests NFAR status from the California Regional Water Quality Control Board, San Francisco Bay Region ("Water Board"), consistent with criteria specified by the Water Board in the 31 July 2009 document *Assessment Tool for Closure of Low Threat Chlorinated Solvent Sites, Draft Final,* (RWQCB, 2009). SUMCO and its predecessors have performed voluntary investigation and remediation of the Site since 1996, with results reported to the Water Board during the process. No formal cleanup agreement with the Water Board exists, nor has the Water Board issued an Order for the Site.

The Site is a commercial and light-industrial property, formerly used for semiconductor manufacturing, that is located adjacent to San Francisco Bay in Menlo Park, California. The Site and adjacent properties have been subjected to extensive environmental investigations over the 18-year period from 1994 through 2012. Investigations of on-Site and off-Site soil and groundwater have resulted in spatial characterization of volatile organic compounds ("VOCs") in the subsurface, principally trichloroethene ("TCE") and cis-1,2-dichloroethene ("cis-1,2-DCE"). Other chemical species also have been detected in soil (EKI, 1999c) and groundwater at lesser concentrations.

Using Site-specific data, EKI developed risk-based cleanup goals, approved by the Water Board, for Site soil and groundwater as part of the Site Feasibility Study / Remedial Action Plan ("FSRAP"; EKI, 1999c). Remedial options were evaluated, including a pilot study of in-situ chemical oxidation using potassium permanganate injection. Ultimately, in-situ treatment did not achieve targeted reductions in VOC concentrations (EKI, 1999f), and Site remediation was accomplished through excavation, removal, and treatment at an approved off-Site disposal facility in 1999 (EKI, 2000b; EKI, 2001b). A Risk Management Plan ("RMP") was drafted as part of the FSRAP, and was incorporated into a Covenant between the Site owner and the Water Board ("Deed Restriction") which requires the performance of groundwater monitoring in certain on-Site wells, and evaluation of changing Site and regulatory conditions, among other things, by the purchaser of the Site (Integris, 1999), subject to enforcement by the Water Board.

SUMCO and its predecessors have conducted groundwater monitoring for the 13 years since Site source excavation, using on-Site and off-Site downgradient wells. Based on the available data, VOCs in groundwater have migrated off-Site to the east and northeast, but the concentrations of chemicals of concern in groundwater have stabilized or declined over this time period through natural attenuation processes.

Shallow soil vapor sampling conducted by SUMCO's predecessors in 1999 near the commercial building on the adjacent downgradient site to the east did not detect Site chemicals of concern in shallow soil vapor above laboratory reporting limits (EKI, 1999g).

Based on comparison of known Site conditions and the most recent sampling results to criteria for Site closure under the Water Board's Low-Threat Chlorinated Solvent Site guidance, the Site does not represent a current or projected threat to future on-Site and off-Site occupants, other receptors, or the environment. Based on this assessment, SUMCO requests the Site be granted No Further Active Remediation status by the Water Board.

Additional monitoring of environmental media pursuant to the terms of the Deed Restriction (e.g., monitoring of groundwater from wells MW-8 and MW-9) is the responsibility of current and future Site owners, under the terms of the Deed Restriction and their purchase agreements.

SUMCO sampled the two on-Site shallow A-zone groundwater wells MW-8 and MW-9 from 1999 through 2004, during which time the concentrations remained below Site-specific risk-based screening levels. After 2004, the Water Board approved SUMCO's proposal to discontinue monitoring of these wells. As stated in the Deed Restriction, it is the responsibility of the current property owners to determine the current status of (a) on-Site concentrations of chemicals of concern in shallow groundwater, and (b) regulatory limits on concentrations applicable to the Site. If conditions have changed since 2004, the current property owners may need to further investigate groundwater, soil vapor, or indoor air at the Site to ensure the safety of Site occupants.

This report provides an introduction to the Site in Section 1, a summary of environmental investigations conducted by SUMCO and its predecessors in Section 2, a report of the most recent field investigation results in Section 3, a summary of current Site conditions in Section 4, an evaluation of Site conditions with respect to Water Board criteria in Section 5, a summary of conclusions in Section 6, and references cited in Section 7.

1 INTRODUCTION

This document summarizes the results of environmental investigations and remedial actions conducted at the Former Siltec Corporation site at 3695 - 3723 Haven Avenue, Menlo Park, California ("Site") from 1994 to the present. Current conditions on the Site are consistent with closure criteria issued in the 31 July 2009 document *Assessment Tool for Closure of Low Threat Chlorinated Solvent Sites, Draft Final,* published by the California Regional Water Quality Control Board ("Water Board") (RWQCB, 2009), as illustrated in this document.

Accordingly, SUMCO requests that the Water Board issue a declaration of No Further Active Remediation ("NFAR") status for SUMCO at the Site, which would be independent of the current Site owners' responsibilities pursuant to the Covenant and Environmental Restriction attached to the deed in 1999, described below. Investigation and remediation of the Site has been performed voluntarily by SUMCO and its predecessors since 1996, with results reported to the Water Board during the process. No formal cleanup agreement with the Water Board was drawn up, and the Water Board has not issued an Order for the Site.

The Site, originally developed in 1969, is a commercial and light-industrial property located adjacent to San Francisco Bay in Menlo Park, California (Figure 1). Immediately north of the Site (3735 Haven Avenue) is a public storage and dog kennel facility; further north are former salt concentrator and evaporator ponds, and the former Menlo Park landfill, now covered by Bayfront Park. East of the Site across a section of Haven Avenue is a channelized creek that runs to San Francisco Bay via Flood and Westpoint Sloughs. West of the Site (3665 Haven Avenue) is an unpaved yard used for equipment and vehicle storage, and across Haven Avenue to the south are two-story buildings that are occupied by light industrial and commercial tenants.

From 1970 through 1989, Siltec Corporation used the Site for manufacturing polished silicon wafers, conducting various industrial activities in the three on-Site buildings. Chlorinated volatile organic compounds ("VOCs") were used on-Site during this period, and in 1994 VOCs were detected in local soil and groundwater.

On 1 July 1996, Siltec Corporation became Mitsubishi Silicon America ("MSA"). In 1999, after extensive investigation of soil and groundwater, and pilot-testing of in-situ remediation at the Site, the middle of the three original buildings (i.e., Building 2) was demolished to allow excavation and off-Site disposal of soil containing chlorinated VOCs and other chemicals of concern. After excavation, some concentrations of VOCs remained in subsurface soils within the saturated zone. MSA developed a risk-management plan ("RMP") for the residual concentrations in Site soil and groundwater.

In 1999, the Site was sold to Integris Millennium Joint Venture LLC ("Integris"). Accompanying the title was a Covenant between the new owners and the Water Board, in the form of a deed restriction (Integris, 1999) specifying prohibitions on certain Site uses, and outlining certain monitoring responsibilities of the new owners, including practices specified in the RMP. The RMP was incorporated into the deed restriction, and both were recorded in the Official Records of San Mateo County on 9 August 1999.

In 1999 and 2000, Integris constructed a new two-story building south of the former Building 2 footprint. On 1 February 2002, Mitsubishi Materials (including MSA) merged with Sumitomo Metals to form Sumitomo Mitsubishi Silicon Corporation ("SUMCO USA"), which was renamed SUMCO Phoenix Corporation ("SUMCO").

Currently, the Site is occupied by three slab-on-grade buildings, two of them dating from the original development, and is used for commercial purposes. Surrounding the buildings, the Site is mostly covered by asphalt or concrete pavement, with landscaped and planted areas located along Haven Avenue, adjacent to buildings, and in narrow strips in the parking area (Figure 2). The 3695 and 3723 Haven Avenue properties currently are owned by Integris, and Deerfield Realty currently owns the 3715 Haven Avenue property.

From 1994 to the present, SUMCO and its predecessor corporations have investigated, remediated, and monitored environmental conditions at the Site. Investigations and remedial activities conducted during the period 1994 to 2009 are summarized below in Section 2, with the results of recent 2010-2012 groundwater monitoring activities summarized in Section 3. Section 4 is a description of current Site conditions. This summary forms the basis for SUMCO's request to the Water Board for a declaration of Site NFAR status in Section 5.

2 SUMMARY OF ENVIRONMENTAL INVESTIGATIONS, 1994 - 2009

From 1994 through 2009, numerous environmental investigations were conducted at the Site and on adjacent properties (ESI, 1994a, 1994b; Geomatrix, 1995; EKI, 1996a, 1996b, 1997a, 1997b, 1997c, 1997d, 1998a, 1998b, 1998c, 1998d, 1998e, 1998f, 1998g, 1999a, 1999b, 1999c, 1999d, 1999e, 1999f, 2000a, 2000b, 2000c, 2000d, 2000e, 2001a, 2001b, 2001c, 2001d, 2001e, 2002a, 2002b, 2003, 2004, 2005, 2006, 2007, 2010). Through these investigations, chlorinated VOCs were detected in on-Site soil and groundwater, and off-Site groundwater, principally trichloroethene ("TCE") and cis-1,2-dichloroethene ("cis-1,2-DCE"), with lesser concentrations of other VOCs. The purpose of Section 2 is to provide a summary of these environmental investigations.

2.1 Pre-1996 Investigations

In October 1994, following up on a Phase I Environmental Site Assessment (ESI, 1994a), EnviroScience, Inc. drilled and sampled four exploratory soil boreholes to a maximum depth of approximately 16 feet below ground surface ("ft bgs") (ESI, 1994b) and constructed monitoring wells (i.e., MW-1, MW-2, and MW-3) in three of the boreholes. ESI sampled the wells and discovered TCE and cis-1,2-DCE in groundwater at concentrations of 140,000 micrograms per liter ("ug/L") and 23,000 ug/L, respectively in groundwater sampled from monitoring well MW-2 and benzene at a concentration of 460 ug/L in monitoring well MW-1. Well locations are shown on Figure 2.

In December 1994, Geomatrix Consultants collected shallow grab groundwater samples from a maximum depth of 15 ft bgs, at eight locations on-Site and four locations on the adjacent property to the west, 3665 Haven Avenue. The maximum detected concentrations of TCE and

cis-1,2-DCE in on-Site grab groundwater samples were 35,000 ug/L and 25,000 ug/L, respectively, as well as lesser concentrations of other VOCs (Geomatrix, 1995).

2.2 1996-1999 Investigations

In the mid- to late-1990s, EKI performed a series of environmental investigations on behalf of Siltec, and later MSA (e.g., EKI, 1997a, 1997d, 1998b, 1998d, 1999a, 1999b, 1999c, 1999d, 1999f). The distributions of VOCs in soil and groundwater were investigated, including TCE, cis-1,2-DCE, chloroform, Freon-113, carbon tetrachloride, and vinyl chloride.

On-Site and off-Site monitoring wells were constructed and sampled over time to characterize the extent of VOCs in shallow ("A-Zone") and deeper ("B-Zone") groundwater (EKI, 1997a). The finer-grained sediments of the "A-zone" extend from the ground surface to approximately 15 ft bgs, and the coarser sediments of the "B-zone" extend to an approximate depth of at least 38 ft bgs (EKI, 1997a). Well and selected grab groundwater sampling locations from these investigation efforts are shown on Figure 2. Besides VOCs, groundwater samples were found to contain elevated concentrations of total dissolved solids ("TDS"), up to approximately 150,000 milligrams per liter ("mg/L"), apparently related to subsurface migration of dense brine from the then operational salt concentrator and evaporator ponds located to the north, at the margin of San Francisco Bay. Later sampling of on-Site wells revealed TDS concentrations over 200,000 mg/L. For comparison, TDS of seawater is approximately 35,000 mg/L (Stumm & Morgan, 1996).

To assess the potential for VOC migration to the open channelized creek located east of the Site across Haven Avenue, samples of sediment and surface water were collected in 1996 from the channel and analyzed for VOCs. No VOCs were detected, indicating that the drainage channel had not been impacted (EKI, 1997a). The Remedial Investigation Report summarizes investigations conducted at the Site during this period (EKI, 1997a).

To assess the potential for migration of VOCs to off-Site locations and San Francisco Bay, grab groundwater samples were collected on properties east of the Site, west of the Site, and between the Site and the Bay (EKI, 1998b; EKI, 1998d). Analytical data from these grab groundwater samples defined a plume of VOC-impacted groundwater that extended off-Site to the east-northeast. Grab groundwater data were generated in 1999 along an east-west transect between the Site and the Bay to the north (Figure 2). As shown on cross section A-A' (Figure 3), TCE concentrations in groundwater were low or below the detection limit at most sampled intervals. Based on the results of the grab groundwater data, additional groundwater monitoring wells were constructed off-Site to allow assessment of VOC concentrations in groundwater through time (EKI, 1998d).

Hydraulic testing of three on-Site wells was conducted in November 1996 (EKI, 1997a). Pumped wells were A-zone monitoring wells MW-3 and MW-4, and B-zone monitoring well MW-5B. Hydraulic conductivity of the A-zone sediments, based on the analysis of the MW-3 and MW-4 pumping tests, ranged from 15 - 131 feet per day ("ft/day"). B-zone sediments have a higher hydraulic conductivity of 71 - 176 ft/day, based on analysis of the pumping test in monitoring well MW-5B.

Horizontal groundwater gradients within the A-zone were determined to be toward the open-channelized creek along Haven Avenue. B-zone groundwater gradient directions, based on data collected during this period, appeared to vary but generally pointed northeast to east, toward San Francisco Bay and Flood Slough. Correction of measured water levels for groundwater density was not performed during this period; thus the presence of brines in the B-zone likely confounded an accurate determination of gradient direction. Chemical concentrations in off-Site monitoring wells suggested an easterly flow of groundwater in the B-zone.

During the period 1996 to 1997, the extent of VOCs in on-Site soil was investigated. A significant volume of soils containing elevated concentrations of VOCs was discovered beneath and northwest of Building 2. The zone of soil affected by VOCs extended onto the adjacent 3645 and 3665 Haven Avenue properties to the northwest (EKI, 1997a).

In 1999, an in-situ chemical oxidation ("ICO") pilot test was performed at the Site, where potassium permanganate (a strong oxidant) was injected into VOC-impacted soils and groundwater to test its effectiveness at reducing in-situ VOC concentrations. The pilot test showed permeability of Site soils to be very low, preventing uniform, effective delivery of potassium permanganate to targeted VOC concentrations. Concentrations were temporarily reduced, but rebounded within a short period. Thus, this method of cleanup was not adopted for the Site (EKI, 1999f).

2.3 1999 Soil Excavation, Feasibility Study, and Remedial Action Plan

In September 1998, EKI submitted a Work Plan on behalf of MSA to excavate soils containing VOCs in the vicinity of former Building 2. The Work Plan was approved by the Water Board in a letter dated 2 March 1999. A Feasibility Study and Remedial Action Plan ("FSRAP") was prepared for the Site, submitted to the Water Board in March 1999 (EKI, 1999c), and was approved by the Water Board in a letter dated 23 April 1999.

A Human Health Risk Assessment was performed, and based on that work, risk-based action levels ("cleanup goals") were established as provided in Appendix A of the FSRAP for the three primary risk-driving VOCs found in Site soil and groundwater.

Risk-based soil action levels in milligrams per kilogram (EKI, 1999c; EKI, 2001b):

- TCE 3.2 mg/kg
- cis-1,2-DCE 15 mg/kg
- vinyl chloride 0.075 mg/kg

Risk-based groundwater action levels in micrograms per liter (EKI, 1999c):

- TCE 8,000 ug/L
- cis-1,2-DCE 50,000 ug/L
- vinyl chloride 500 ug/L

In accordance with the FSRAP, approximately 3,200 tons (approximately 2600 cubic yards) of VOC-affected soil were excavated from the Site and the adjacent 3645 Haven Avenue property to the northwest, in November and December 1999 (EKI, 2001b). Excavation depths ranged from four to six feet below ground surface (EKI, 1999c). After an access agreement was reached with the owner of a second adjacent property to the northwest located at 3665 Haven Avenue, an additional 260 cubic yards of soil was excavated from that parcel in January 2001 (EKI, 2001b). Groundwater was encountered at approximately seven feet below ground surface at the Site at the time of excavation. Excavated soil was transported to Allied Waste's Forward landfill, a permitted Class II disposal facility located in Stockton, California (EKI, 2001b). Final pit outlines, after excavation from all three parcels, are shown in EKI (2001b).

The excavation was backfilled with a multilayered mixture of materials intended to inhibit movement of VOC vapors from groundwater into the clean fill. In the bottom of the excavation, a 6-inch thick layer of pozzolanic controlled density fill ("PCDF") was placed, followed by a hydrated bentonite clay liner, and a 12-inch layer of clean, angular, crushed compacted rock. The crushed rock was placed to disrupt movement of VOCs in groundwater to the surface through capillary action. A geotextile filter was placed over the crushed rock, to reduce movement of overlying soil fines into void spaces. The remaining depth of the excavation was backfilled with clean granular fill in compacted 6-inch lifts containing 10% - 30% fines, to reduce air permeability and restrict vapor migration from groundwater (EKI, 2000b).

The unexcavated soil left in-place complied with the Water Board approved Site risk-based cleanup levels, based on analytical data from a dense network of in-situ soil samples collected and analyzed before the onset of excavation (EKI, 2000b). Due to the large spatially-distributed analytical dataset available prior to excavation, no additional sampling or analyses were performed at the time of excavation.

A paved parking lot currently occupies this soil remediation area. A new two-story building was constructed south of the former soil remediation area shortly after excavation.

2.4 1999 Risk Management Plan and Deed Restriction

A Site Risk Management Plan ("RMP") was prepared in 1999, included as Appendix C to the FSRAP (EKI, 1999c), and incorporated into the Site Deed Restriction (Integris, 1999, see below). The Deed Restriction, a covenant between the Water Board and all current and future Site owners, runs with the land title, and specifically references the RMP. The RMP details (a) risk management protocols to be implemented during future construction on Site; and (b) post-construction risk management protocols for mitigation of long-term human-health risks from contact with VOCs in soil or groundwater during activities related to Site use, occupancy, repairs, or maintenance. An area near the middle of the Site containing elevated residual groundwater concentrations of VOCs is defined as the "Groundwater Risk Area" ("GRA") in the RMP. Specific future owners' requirements for monitoring and risk management in the GRA and elsewhere on the Site are detailed in the RMP.

The RMP states "It will be the responsibility of the property owner to monitor the existing groundwater monitoring wells [at the perimeter of the Groundwater Risk Area, i.e., wells MW-8

and MW-9] and to verify that groundwater with concentrations of VOCs greater than risk-based action levels have not migrated outside of the Groundwater Risk Area." The GRA delineated in 1999 is shown on Figure 2.

The RMP was prepared to facilitate implementation of prudent short-term and long-term risk management measures for the Site. It is a communication and planning tool prepared for the independent review and appropriate use by current and future owners of the Site, and by lessees and contractors for construction or maintenance activities, as needed.

The RMP was attached to, and made part of, a "Covenant And Environmental Restriction on Property" ("Deed Restriction") recorded on 9 August 1999, in the San Mateo County Recorder's Office (Integris, 1999). In accordance with the Deed Restriction, the current property owners are responsible for maintaining land use conditions and implementing the RMP, to ensure that the cleanup levels for soil and groundwater achieved on-Site continue to effectively protect human health. Activities prohibited or specifically regulated by the Deed Restriction include:

- Residential development, or other non commercial/industrial development;
- Construction or operation of hospitals, schools, or day care facilities for children or senior citizens;
- Excavation except as specified in the RMP, with strict controls on soil management;
- Any uses or activities in conflict with guidance from the RMP;
- Drilling and well construction for domestic, potable, industrial, or other uses, except as expressly allowed by the Water Board;
- Damage to the integrity of the engineered backfill or to monitoring wells or remediation equipment, without notification to the Water Board within 10 working days of any damage, plus specifics of the type and date of repair;
- Aggravation or contribution to existing environmental conditions; and
- Reasonable Water Board access to the Site must be maintained.

Additionally, the Deed Restriction specifies that Site owners must comply with the RMP, and provides the Water Board with enforcement power (Integris, 1999).

2.5 1999 Off-Site Soil Vapor Investigation

Given the presence of a northeast-trending plume of VOCs in deeper groundwater extending from the Site, the potential for vapor intrusion was assessed through active soil vapor sampling on the eastern adjacent downgradient 3750 Haven Avenue property on 28 September 1999 (EKI, 1999g). Soil vapor samples were collected at depths of approximately 3 ft bgs and 6 ft bgs in each of four hydraulic direct-push soundings located near the 3750 Haven Avenue building, two on the northeast side, and two on the northwest side. Samples were collected using the post-run tubing system, where a hollow steel rod with a short stainless-steel mesh screen ("implant") threaded onto an expendable drive-cone tip was advanced to the sampling depth, then a length of polyethylene tubing with a threaded tip was pushed down through the rods and screwed into the

top of the implant screen, to allow collection of a soil vapor sample through the screen and tubing. The top of the drill string was sealed, the rods were retracted approximately six inches to expose the screen to the soil, and approximately 200 milliliters ("mL") of air was purged from the tubing and apparatus, at a flow rate of approximately 200 mL per minute. After purging, samples were collected into evacuated, passivated stainless steel 1L Summa-type canisters for transport to K-Prime analytical laboratory, under chain-of-custody protocol. One duplicate sample was collected from approximately 3 ft bgs at location SV-3, and a trip blank Summa canister was included with all samples.

Analytical results indicated that soil vapor samples did not contain TCE, 1,2-DCE, or vinyl chloride above laboratory reporting limits ranging from 1.00 to 6.25 parts per billion volumetric "ppbv" (i.e., 6.11 to 36.7 ug/m^3, at standard temperature and pressure). These reporting limits for Site chemicals of concern are well below the Water Board's current soil vapor Environmental Screening Levels ("ESLs") for commercial/industrial land use of 3,000 ug/m^3 for TCE, 20,000 ug/m^3 for cis-1,2-DCE, and 160 ug/m^3 for vinyl chloride.

The soil vapor samples from the 3750 Haven Avenue property contained other VOCs, including methylene chloride in all but one sample, at concentrations ranging from 39.3 to 525 ppbv, and toluene in all samples, at concentrations ranging from 4.68 to 1520 ppbv. Other chemicals detected were low levels of m+p xylene (3 samples), styrene (2 samples), and 1,2,4-trimethylbenzene (2 samples). The trip blank did not contain detectable VOCs above reporting limits. These chemical species have not been detected in soil or groundwater on-Site and therefore suggest the presence of other sources of VOCs at the 3750 Haven Avenue property that are unrelated to the Site. Based on these soil vapor results, MSA concluded that no additional investigation of soil vapor was necessary (EKI, 1999g), and the Water Board did not request further investigation.

2.6 2000-2009 Monitoring and Other Field Activities

In October 2000, under Water Board approval, and working on behalf of MSA, EKI destroyed and abandoned three on-Site shallow monitoring wells (MW-1, MW-3, and MW-4), and two on-Site multilevel monitoring points constructed of continuous multichannel tubing (MLMP-1 and MLMP-2), which had been constructed as part of an in-situ chemical oxidation ("ICO") pilot test (EKI,1999a). The wells were abandoned in accordance with existing guidance and regulations from San Mateo County Department of Health Services (EKI, 2000a).

In January 2002, EKI submitted a report on behalf of MSA to the Water Board summarizing the previous two years of groundwater monitoring data, noting that the VOC plume in shallow groundwater at the Site appeared to be stable, and proposed abandonment of on-Site and off-Site shallow (A-zone) monitoring wells, except the on-Site wells MW-8 and MW-9 (EKI, 2002a)[1].

[1] In accordance with the Risk Management Plan for the Site, it is the responsibility of the current property owner to monitor A-Zone wells MW-8 and MW-9 (EKI, 1999).

In June 2002, the Water Board issued a response letter denying the proposed well abandonment, and requesting three more annual groundwater monitoring events, to be conducted in 2002, 2003, and 2004 (RWQCB, 2002). The purpose for ongoing monitoring was to establish a sufficiently long data set to allow assessment of plume stability.

In November 2004, EKI submitted a follow-up report on behalf of SUMCO to the Water Board summarizing the results of five years of groundwater monitoring (EKI, 2004). Based on the available data, the report concluded that (a) VOCs in groundwater did not exceed applicable human health risk-based action levels, (b) no adverse impact to downgradient environmental receptors existed, and (c) the VOC plume appeared to be stable. The Water Board requested a continuation of groundwater monitoring.

In March 2005, EKI submitted a proposal on behalf of SUMCO to the Water Board to modify the groundwater monitoring program at the Site (EKI, 2005). EKI described the shallow A-zone groundwater plume as adequately characterized, and proposed that SUMCO's groundwater monitoring be discontinued in the on-Site and off-Site A-Zone wells, i.e., MW-8, MW-9, MW-FE1, and MW-FE3.

SUMCO further proposed to monitor groundwater elevations and groundwater chemical quality semi-annually in B-zone wells MW-6B, MW-FE1B and MW-FE2B, and proposed that groundwater elevations also be monitored in B-Zone well MW-5B. The proposed additional groundwater monitoring was intended to facilitate evaluation of an apparent upward trend in TCE concentrations detected in groundwater from off-Site well MW-FE2B. SUMCO's proposal was approved by the Water Board in a letter dated 27 June 2005 (RWQCB, 2005).

In February 2006, EKI submitted a summary of the results of the 2005 monitoring program on behalf of SUMCO to the Water Board (EKI, 2006). In the report, EKI proposed to further modify the groundwater monitoring program, based on the discovery that groundwater in the B-Zone wells was stratified with a layer of fresher water overlying a dense brine[2], likely related to infiltration and migration of highly saline water from the salt works evaporation ponds located north of the Site (Figure 1). This brine, occurring at depths below approximately 18-24 ft bgs, appeared to contain greater concentrations of VOCs in all wells. EKI proposed that the apparent increase in TCE concentration in well MW-FE2B may have been an artifact of inadvertently mixing brine and fresher water in the well during sampling. To evaluate this possibility, EKI proposed modification of the Site groundwater monitoring program (a) to collect vertically-spaced discrete measurements of electrical conductivity and temperature (i.e., "profiles") within wells MW-5B, MW-6B, MW-FE1B, and MW-FE2B, and (b) to collect discrete samples from existing groundwater density layers within the wells, using a low-flow sampling technique. SUMCO's proposal was verbally approved by the Water Board during a meeting between EKI and the Water Board on 22 February 2006.

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[2]Water classification by Total Dissolved Solids (Freeze and Cherry, 1979):

Classification	Total Dissolved Solids
Fresh water	0 to 1,000 mg/L
Brackish water	1,000 to 10,000 mg/L
Saline water	10,000 to 100,000 mg/L
Brine	more than 100,000 mg/L

In June 2007, EKI submitted a report on behalf of SUMCO to the Water Board summarizing data collected through 2006, and proposing a two-year continuation of semi-annual monitoring and temperature and electrical conductivity profiling (EKI, 2007). Further evidence in support of local groundwater stratification into a relatively freshwater layer overlying a layer of brine was described and discussed. The proposal was accepted by the Water Board on 20 December 2007.

During 2008 and 2009, EKI conducted semiannual groundwater sampling and electrical conductivity and temperature profiling in the wells MW-6B, MW-FE1B, and MW-FE2B, and electrical conductivity and temperature profiling in monitoring well MW-5B.

2.7 2010 Reduction and Simplification of Groundwater Monitoring Procedures

In 2010, EKI submitted a report on behalf of SUMCO to the Water Board (EKI, 2010), summarizing the semiannual groundwater monitoring data for 2008 and 2009. The report included a proposal to (a) reduce the frequency of groundwater sampling to once per year, (b) to simplify the investigation procedure by discontinuing electrical conductivity profiling, since the density profiles did not appear to change markedly from year to year; and (c) to collect samples only from the lower-elevation dense brine, which based on previous analytical data had been observed to contain the majority of VOC concentrations (EKI, 2010). The Water Board approved the plan in an email dated 9 September 2010.

3 2011 - 2012 FIELD INVESTIGATION RESULTS

The purpose of Section 3 is to summarize the results of the B-zone groundwater monitoring program conducting during 2011 - 2012. The objective of the work was to collect additional data to allow assessment of whether VOC concentrations in the northwest-trending off-Site B-zone plume were increasing, stable, or declining.

Environmental monitoring at the Site in 2011-2012 consisted of water-level gauging and low-flow sampling of three B-Zone monitoring wells (i.e., wells screened within the coarser-grained saturated zone, located between approximately 15 and 35 feet below ground surface) near the end of the local "dry season". This work was performed in accordance with EKI's proposal, submitted to the Water Board on 30 August 2010 and approved 9 September 2010, entitled *2010 Groundwater Monitoring Report and Proposal For Modification of Ongoing Groundwater Monitoring Program, 3695-3750 Haven Avenue, Menlo Park, California.* Samples were submitted to K-Prime for VOC analysis. Well gauging and sampling was conducted on 12 August 2011 and 11 September 2012.

3.1 Preparation for Sampling

Prior to each sampling event, EKI coordinated with the property owners regarding the schedule for the planned work, and for temporary staging of purged groundwater and decontamination

wash and rinse water at the Site. EKI contracted with Blaine Tech Services ("Blaine Tech") of San Jose, California, to assist with groundwater sampling and measurements in the field.

3.2 Water-Level Gauging and Groundwater Sampling

Upon arrival at the Site and following a health and safety briefing, monitoring wells MW-5B, MW-6B, MW-FE1B, and MW-FE2B were opened to allow equilibration with atmospheric pressure. Existing well locations are shown on Figure 2, and well construction details are summarized in Table 1. After a minimum of 30 minutes, a round of groundwater elevation measurements was then collected from the four wells using an electric sounder. All downhole equipment was thoroughly decontaminated before use and between uses by washing in a solution of laboratory-grade detergent (e.g., Liquinox™) and distilled water, followed by two separate rinses in distilled water.

After well gauging was completed, monitoring wells MW-6B, MW-FE1B, and MW-FE2B were sampled, using a low-flow minimal-drawdown technique. Data from previous sampling efforts indicate that a high-dissolved-solids brine layer persists in the lower screened intervals of the wells and that higher concentrations of VOCs are associated with this brine (EKI 2006). Discrete samples of groundwater were collected from the brine layer near the bottom of each well's screened interval.

Groundwater sampling was performed by Blaine Tech with oversight by EKI. Wells were purged with a peristaltic pump at approximately 200 mL/min until water quality parameters stabilized. A YSI 556 multi-parameter meter with flow-through cell was used to measure temperature, pH, electrical conductivity, turbidity, dissolved oxygen, and oxidation-reduction potential during purging. Parameters were recorded manually on field data sheets (compiled in Appendix A). Stability was judged using the following guidance:

Parameter	Maximum change between measurements
• pH	± 0.1 pH unit
• Temperature:	± 0.2°C
• Conductivity:	± 3%
• Dissolved Oxygen:	± 10% (if practicable)
• Turbidity	± 10% (if practicable)

Samples were collected for off-Site analysis by K-Prime of Santa Rosa, California. Analyses requested included VOCs, TDS, alkalinity, major anions, and major cations. Sampling started with the downgradient well, then progressed upgradient toward the Site in a general order of increasing expected VOC concentrations, i.e., the sampling order was (1) MW-FE2B, (2) MW-FE1B, and (3) MW-6B.

At each well, groundwater samples were collected using new, clean polyethylene tubing down the well casing and new flexible tubing at the pump head. Sample bottles were new, supplied by the analytical laboratory, and pre-preserved, as appropriate to each analysis. Groundwater samples for each VOC analysis were collected in three 40-milliliter ("mL") Volatile Organic

Analysis sample vials ("VOAs") pre-preserved with hydrochloric acid. Groundwater samples for TDS, alkalinity, and major anion analysis were collected in unpreserved 250-mL polyethylene bottles, and groundwater samples for major cation analysis were field-filtered using an inline 0.45-micron filter into 250-mL polyethylene bottles pre-preserved with nitric acid.

Water density was measured at each well in the field, using a floating hydrometer in a 1000-mL graduated cylinder. The cylinder was filled immediately after purging was complete, but just before sampling. The temperature of the water was noted, and the hydrometer was read to a precision of 0.001 g/mL.

Duplicate groundwater samples were collected for VOC analysis from well MW-FE2B during each of the two 2011-2012 sampling events. An equipment rinseate blank of de-ionized water also was collected during each sampling event by rinsing the multi-probe sonde with deionized water after it had been decontaminated.

Sample containers were labeled with a unique sample identification number, and the date and time of collection. The containers were then packed on ice in an insulated cooler, and transported to the analytical lab under chain-of-custody protocol. Copies of field notes and data collection sheets are compiled in Appendix A. Analytical laboratory reports and chain-of-custody forms are presented in Appendix B.

3.3 Chemical Analysis

After collection, samples were labeled with a unique identifier and the date and time of collection, stored on ice in an insulated cooler, and couriered under chain-of-custody protocols to K-Prime in Santa Rosa. Groundwater samples were analyzed by K-Prime for the following:

- VOCs using EPA Method 8260B;
- Cations (Ca, Mg, K, Na, Fe, and Mn) using EPA Method 200.8.
- Anions (F, Cl, NO_3-N, NO_2-N, SO_4, Br, PO_4) using EPA Method 300.0;
- Total Dissolved Solids using SM 2540C; and
- Alkalinity using SM2320B.

For VOC analysis, the normal analyte list for EPA Method 8010 was expanded to include 1,1,2-tricholoro-1,2,2-trifluoroethane ("CFC-113").

3.4 Results of 2011-2012 Sampling

Groundwater level and elevation data from 2011 and 2012 are combined with data from previous well-gauging events and summarized in Table 2. Analytical results for VOCs from the 2011 and 2012 sampling events are compiled with previous analytical data from 1999-2010 and presented in Table 3. Analytical data from 2011 and 2012 for major ions, alkalinity, and total dissolved solids are combined with data from previous sampling events (2005-2009) and summarized in Table 4.

Concentrations of TCE and cis-1,2-DCE, the primary VOCs of concern, appear to be stable or declining in downgradient off-Site wells, based on the full set of analytical data from 1999 through 2012. Other analytes appeared to be within their previous range of concentrations. A discussion of concentration trends is presented below, in Section 4.4.

The density-corrected B-zone piezometric surface is contoured for the latest (2012) sampling event on Figure 4. Based on these data, the groundwater gradient direction for the deeper B-zone is generally east-northeastward, toward San Francisco Bay and Flood Slough, as it has been during previous sampling and well-gauging events.

3.5 Density Correction of Hydraulic Data

The Site is located within 200 feet of former commercial saltwater concentration and evaporation ponds ("saltworks") that border much of the existing San Francisco Bay shoreline. Over decades, the saltworks operation appears to have produced elevated levels of dissolved solids in shallow groundwater, with salinity several times greater than seawater. The resulting brines appear to have migrated landward in complex ways, moving into shallow water-bearing zones, and following irregular and laterally discontinuous small channel-bed features (EKI, 1997a; EKI, 1999a). On-Site and off-Site wells historically have contained highly saline water with measured TDS ranging up to 210,000 mg/L in the deeper screened intervals, a characteristic that also was evident in the 2011-2012 sampling and analytical data.

From 2006-2009, a series of depth-discrete water electrical conductivity measurements ("profiles") was collected within each sampled well prior to sampling. Electrical conductivity profiling of the wells was conducted during each sampling event as a simpler surrogate for depth -discrete density profiling. The conductivity data were then used to estimate a downhole density profile for each well, using a Site-specific empirical linear regression equation[3] (EKI, 2010). In 2010, the Water Board approved SUMCO's request to discontinue conductivity profiling, as the data had shown that the stratification did not change appreciably over time.

Density profiling in monitoring wells at the Site was discontinued after 2009, with approval from the Water Board (RWQCB, 2010). Density-corrected hydraulic heads for the 2011-2012 water level data were obtained by scaling the average 2008-2009 depth-discrete density profiles to match the 2011 and 2012 measured densities at the depth of measurement. Estimated (scaled) density profiles for 2011 are shown on Table 5a, and for 2012 on Table 5b. The method of density correction is discussed in Appendix C.

3.6 Abandonment of Off-Site Monitoring Well NP-1

In January 1999, EKI constructed a narrow-diameter well (NP-1) for piezometric surface measurements on the nearby 3760 Haven Avenue property, as part of an off-Site investigation which included grab groundwater sampling and limited well construction (EKI, 1999d). This

[3] [Estimated Density, (g/mL)] = 7.228e-07 * [Electrical Conductivity, (uS/cm)] + 0.9974; $R^2 = 0.9917$

monitoring well remained in a closed vault with a locked well plug in-place, but to SUMCO's knowledge, the well was neither gauged nor sampled after 1999.

In January 2012, a representative of the David D. Bohannon Organization ("Bohannon"), the owner of the 3760 Haven Avenue parcel, contacted the Water Board concerning several existing wells on the property, including the NP-1 monitoring well. Bohannon was planning redevelopment of the 3760 Haven Avenue property and wanted to decommission the wells. An EKI geologist visited the property, and confirmed that one of the wells in question was indeed monitoring well NP-1. The other wells were of unknown origin.

An agreement was reached between SUMCO and Bohannon to abandon the well. An EKI geologist observed the destruction of NP-1 by over-drilling, casing removal, and cement grouting on 17 February 2012, performed by the drilling firm Environmental Control Associates of Aptos, California, under supervision of Bohannon's representative Eric Lautenbach of Light, Air & Space Construction of San Jose, California. Amy Demasi of San Mateo County Health Department, Environmental Health Services Division also observed the abandonment. Field notes from the abandonment, as well as the California Department of Water Resources well completion report for NP-1 are included in Appendix A.

4 CURRENT SITE CONDITIONS

Current Site improvements include the central two-story building at 3715 Haven Avenue constructed in 2000-2001, and the two single-story buildings to the north and south, dating from the Site's initial industrial development in 1969. The central building (3715 Haven Avenue) is occupied by Deerfield Realty and a credit union office; the other buildings are used for various commercial interests, or are vacant. Paved areas and landscaping have remained largely unchanged since Site redevelopment in 2001.

4.1 Regional Hydrogeologic Setting

The Site is located within the 48,000-acre San Mateo Plain sub-basin of the Santa Clara Valley Groundwater Basin (DWR, 2003), which is filled with Plio-Pleistocene to Quaternary alluvial fan deposits ranging from less than 10,000 years up to 5 million years old (Metzger, 2002; RWQCB, 2003). The Quaternary alluvium consists of gravel, sand, silt, and clay strata deposited by streams as they converged and flowed eastward from the Santa Cruz Mountains toward the present-day San Francisco Bay. At the bay margins, stream channels are typically confined within natural levees (Helley et al., 1979). The coarse-grained channel sediments grade laterally into silty and clay-rich material, reflecting the stream courses shifting over time and depositing interfingered and laterally-discontinuous gravel and sand layers (Ferriz, 2001; RWQCB, 2003).

At greater depths within the Quaternary alluvium, several thin aquifers extend through much of the sub-basin (DWR, 2003; Poland & Garrett, 1943), separated by confining layers of clay and silt up to 200 feet thick (Fio & Leighton, 1995; RWQCB, 2003). Below the Quaternary alluvium are the interbedded and laterally-discontinuous clastic sediments of the Santa Clara Formation

(DWR, 2003), underlain by faulted, sheared, and folded Mesozoic rocks of the Franciscan Complex (Brabb, Graymer, & Jones, 2000).

Regionally, fresh water flows from the Santa Cruz Mountains through surface channels and groundwater aquifers towards San Francisco Bay, where it mixes into the salt water of the bay itself, and into the marine sediments below the bay (Fio & Leighton, 1995). Highly-saline brines, associated with former salt evaporation ponds that ring much of southern San Francisco Bay, have migrated landward in the subsurface saturated zone near the bay margins, including in the area adjacent to the Site (EKI, 2006).

4.2 Surface Water Drainage

Surface water drainage runs eastward toward a storm drain along the eastern Site frontage, which then drains into the channelized creek east of Haven Avenue. Near the north end of the Site, Haven Avenue crosses a two-lane bridge over the creek and turns east. The creek meanders north and east approximately 650 curvilinear feet from the bridge, then enters Flood Slough, a tributary of Westpoint Slough, located within the tidal flats and shallow water of southern San Francisco Bay.

The tidal shallows extend several thousand feet into the bay, having water depths of less than five feet, out to approximately 17,000 feet (3.2 miles) northeast of the Site, where the main channel of the bay cuts through accumulated sediment, with an approximate water depth of 40-45 feet (NOAA, 2006).

4.3 Subsurface Site Geology and Groundwater Hydrology

The Site is located on an alluvial plain adjacent to San Francisco Bay (Helley et al., 1979). Based on local subsurface investigations, the Site has been characterized as having two subsurface units of interest, the lower-permeability, variably-saturated silts and clays of the "A-zone", from near surface to 15 ft bgs, and the discontinuous, higher-permeability coarser materials of the saturated "B-zone", from 15 to approximately 38 ft bgs (EKI, 1997a).

Schematic cross-section A-A' (Figure 3) illustrates a simplified interpretation of the unconsolidated-sediment geology and 1999 grab groundwater sampling results between the saltworks ponds and the Site. Cross-section A-A' trends west to east; its location is shown on Figure 2. As illustrated, two distinct subsurface sand and gravel beds, located at a depth of approximately 20-30 ft bgs, appear to be horizontally separated by a deposit of finer-grained sediments, interpreted as probable fluvial overbank deposits of silt and clay. The sand and gravel unit near the western end of cross-section A-A' is interpreted to be the northern extension of buried lag deposits laid down gradually by what is now the channelized creek on the east side of Haven Avenue. The eastern sand and gravel unit shown on cross-section A-A' is interpreted as a different channel, possibly related to lag deposits of ancestral Flood Slough.

Based on borehole logs and grab groundwater sampling data, the coarser, more permeable materials in both the A-zone and B-zone are typically relatively thin, discontinuous beds of sand

with variable gravels, probably laid down in complex deposits by local sloughs and streams. Multiple buried irregular stream channels appear to exist at the Site and on adjacent properties (Figure 3). These coarser-grained intervals likely comprise the primary conduits for groundwater flow.

Depth to groundwater at the Site generally varies from 5 to 8 ft bgs. The groundwater gradient direction in the B-zone appears to be northeasterly toward San Francisco Bay (Figure 4), but existing grab groundwater and well sampling analytical data indicate the actual direction of VOC transport in groundwater is more easterly, toward Flood Slough (EKI, 2010).

The presence of industrial sea-salt production ponds less than 200 feet north of the Site adds additional complexity to Site groundwater flow. The saltworks ponds were used for salt mining through concentration and evaporation of marine bay water, leading, over decades, to the accumulation of highly saline groundwater ("brine") in the subsurface. This brine appears to have migrated landward from the evaporation ponds (EKI, 1997a), and has been observed on-Site in the lower screened intervals of B-zone monitoring wells, forming a dense, hypersaline layer with generally higher concentrations of VOCs (EKI, 2006). TDS within the brine have been measured as high as 222,000 mg/L (Table 4), which is over six times the TDS of normal sea water (Stumm & Morgan, 1996). Density of the brine was measured as high as 1.160 g/mL in the field during sampling, requiring the addition of 1.64 feet of water to the measured piezometric head in the well, in order to correct back to equivalent freshwater head. Correction methods are described in Table 2, and in Appendix C.

Given that the brine concentration is spatially-variable, actual piezometric surface gradients in areas affected by brine are complex. Thus, as described above, although piezometric surface contours indicate a gradient direction northeast toward the bay (Figure 4), the primary direction of historical groundwater flow appears to have been more eastward, toward Flood Slough, based on analytical VOC data (Table 3; Figure 3; Figure 5). Concentrations of chemicals of concern analyzed in grab groundwater samples collected along cross-section A-A' (Figure 3) indicate that groundwater flow directly toward San Francisco Bay from the Site (i.e., north-northeast) is impeded. The apparently preferred east-northeast flow direction may be controlled by a combination of (a) heterogeneous sedimentary channel deposits, (b) hydraulic influence of a potential buried channel gravel aligned with Flood Slough, and (c) the continued presence of highly dense, relatively low-mobility residual brines in the B-zone related to the former saltworks operations.

4.4 Concentration Trends of Chlorinated VOCs in Groundwater

From 1999 through 2012, the Water Board has required SUMCO to perform groundwater monitoring, using a number of both on-Site and off-Site wells. After 2004, SUMCO was required to monitor (gauge and sample) on-Site well MW-6B, and off-Site downgradient wells MW-FE1B and MW-FE2B, and to gauge MW-5B. The Water Board approved the discontinuation of sampling and analysis in other wells after September 2004, including those screened within the shallower A-zone (RWQCB, 2005). Figures 6, 7, and 8 are chemical concentration time-series plots for on-Site well MW-6B and off-Site wells MW-FE1B and MW-

FE2B, respectively. The figures graphically depict concentrations of the chemicals of concem TCE and cis-1,2-DCE measured in these wells over time.

Based on this dataset, the groundwater VOC plume migrating from the Site toward San Francisco Bay appears to have stabilized, with stable or declining concentrations of the major constituents (TCE and cis-1,2-DCE) in off-Site wells MW-FE1B and MW-FE2B (Figures 7 and 8). Concentrations in on-Site well MW-6B appear to be stable (i.e., no trend is visible) but concentrations are more variable than in the downgradient wells (Figure 6). A visible break in 2006 of the concentration patterns for all wells illustrates the effect of changing to a low-flow minimal-drawdown sampling technique, with the later samples collected from discrete depths, i.e., in each well, one sample collected from the relatively-fresh shallow water near the top of the water column, and one sample collected from the deeper brine near the bottom of each well.

The graphs on Figures 6, 7, and 8 illustrate that in each monitored well, concentrations of TCE and cis-1,2-DCE, the primary constituents of concern, are less than Water Board groundwater ESLs for evaluation of potential vapor intrusion concerns during commercial and industrial activities. The 2013 commercial/industrial ESL for TCE in groundwater is 1,300 ug/L. The 2013 guidance currently does not include a screening level for cis-1,2-DCE, but the 2008 commercial/industrial ESL was 17,000 ug/L (Table 3, and Figures 6, 7, and 8).

As shown on the figures, VOC concentrations remaining in monitored on-Site and off-Site wells are below current ESLs for commercial and industrial uses. Table 3 also lists analytical data for other infrequently-detected VOCs such as chloroform and 1,1,2-trichloro-1,2,2-trifluoroethane ("CFC-113"). Concentrations of these analytes, when detected in monitored wells, were below their respective commercial-industrial ESLs (RWQCB, 2013).

On-Site monitoring wells MW-8 and MW-9 are not monitored by SUMCO, as the Deed Restriction places that responsibility on the current property owners, and SUMCO does not know the status of groundwater monitoring by the current property owners. As of September 2012, EKI observed that the well vaults for monitoring wells MW-8 and MW-9 were still in-place, but the current condition of the wells, and their suitability for sampling, is unknown. VOC concentrations in shallow A-zone groundwater could be determined through sampling and analysis of those wells, if they still exist and are in proper condition for sampling. The analytical data could be compared to existing ESLs, to evaluate the potential for hazards to human health and the environment due to residual VOC concentrations in groundwater, if any exist.

4.4.1 Statistical Evaluation of Concentration Trends in Groundwater

A Mann-Kendall analysis (Gibbons, 1994) was used to evaluate the presence or absence of a trend in concentration of TCE and cis-1,2-DCE in groundwater, based on recent analytical data from 2008-2012. In accordance with the FSRAP (EKI, 1999c), the Mann-Kendall test was used to evaluate the statistical significance of potential trends in chemical concentrations detected in groundwater at the Site and was conducted using data from on-Site B-zone well MW-6B and off-Site B-zone wells MW-FE1B and MW-FE2B. Data were from six sampling events between 22 February 2008 and 11 September 2012. Table 6 summarizes the analysis.

The Mann-Kendall test determines whether a trend in chemical concentrations exists over time by calculating an indicator statistic, called Kendall's S ("S"), which is effectively the sum of the signs of the change in slope between all possible data pairs, in a series of concentration values over time. If S is a negative number of sufficient magnitude, then later measurements tend to be smaller than those taken earlier, indicating a decreasing trend of concentration with time. Similarly, if S is positive and large enough, an increasing trend is indicated (Gilbert, 1987). For the purposes of this analysis, the "null" (default) hypothesis was that no trend exists in groundwater chemical concentrations at a given well, i.e., concentrations are stable. USEPA (1994) recommends use of a significance level of $\alpha = 0.05$ (corresponding to a 95% confidence interval) to ensure adequate statistical power, while limiting false positives. USEPA (1998) also recommends a minimum of four data points for statistical analysis using the Mann-Kendall test (USEPA, 1998a; Gilbert, 1987). In this case, the six most recent sampling events were used for analysis.

As shown in Table 6, groundwater concentrations of TCE and cis-1,2-DCE did not express a statistically significant trend at either a 95% or a 90% confidence level in any of the monitored wells over the period from February 2008 to September 2012. Off-Site wells MW-FE1B and MW-FE2B did show decreasing cis-1,2-DCE concentration trends, however, at the 92% and 97.5% confidence levels, respectively. Thus, the northwest-trending VOC plume in groundwater from the B-zone appears to be stable or declining in concentration.

5 COMPARISON OF SITE CONDITIONS TO WATER BOARD LOW-THREAT CLOSURE CRITERIA

The Water Board guidance document, *Assessment Tool for Closure of Low-Threat Chlorinated Solvent Sites - Draft Final, 31 July 2009* ("Low-Threat Assessment Guidance"; RWQCB, 2009) is intended to outline "criteria for evaluating if and when chlorinated solvent sites that pose little threat to human and ecological health, water quality, and beneficial uses but do not yet meet cleanup standards at all locations, could be closed." Discussion of specific Site conditions and comparison to closure criteria are included below.

5.1 Conceptual Site Model

As described in the Low-Threat Assessment Guidance, the Conceptual Site Model for the Site includes the following elements:

- Identification and evaluation of pollutant sources;
- Assessment of site characterization adequacy; and
- Identification of exposure pathways, receptors, potential risks, and threats.

5.1.1 Identification and Evaluation of Pollutant Sources

As reported above, the Site was developed in 1969, and from 1970 through 1989 was used for manufacture of silicon crystals for the semiconductor industry. Chlorinated solvents, principally

TCE, were used on-Site as part of the manufacturing process. Sumps in the floor of Building 2 of the manufacturing facility were identified as having likely provided a conduit for movement of VOCs into the fine-grained sediments of the shallow subsurface (EKI, 1998c). Contaminated source-zone soil was delineated using site-specific risk-based cleanup levels, excavated, and removed off-Site in 1999 (EKI, 2000b). However, analytical data from 2004 for groundwater from monitoring well MW-9, the most recent data available, indicate that residual VOC contamination may remain in shallow Site groundwater (Table 3).

Based on analytical data from off-Site wells and grab groundwater samples, other off-Site sources of low-level VOC contamination may exist in the area. For example, the presence of 1,1-dichloroethene ("1,1-DCE"), 1,1-dichloroethane ("1,1-DCA"), and 1,1,1-trichloroethane ("1,1,1-TCA") in off-Site wells (Table 3) and grab groundwater samples to the northeast and east (EKI, 1998d) appear to suggest another source or sources of VOCs may exist in the area.

5.1.2 Assessment of Site Characterization Adequacy

Since 1994, the Site has been investigated using various techniques in numerous locations both on-Site and off-Site. Section 2 of this document provides a summary of the major investigations and remedial efforts conducted.

Methods of investigation have included:

- Continuous-core soil sampling;
- Cone penetration soil testing;
- Dual-tube direct-push grab groundwater sampling;
- Monitoring well and piezometer construction and sampling;
- Passive and active soil vapor sampling;
- Subslab vapor sampling;
- Surficial sediment and surface water sampling in the creek channel; and
- Hydraulic testing of monitoring wells.

Soil and grab groundwater sampling, monitoring well construction and sampling, and subslab or soil vapor sampling have been conducted on the Site proper and also on adjacent sites to the northwest, northeast, and east (Figure 2). As a result of this body of data, the lateral and vertical extents of contamination in soil were defined resulting in the excavation and off-Site disposal discussed in Section 2.3.

As discussed above, groundwater monitoring of the B-zone has been conducted from 1999 through 2012. As discussed in Section 4.4, thirteen years of groundwater monitoring have provided sufficient data to document evolution of the off-Site plume to a state of stability or decline (Figures 6, 7, and 8). Given that future decreases in groundwater VOC concentrations are likely, and concentrations measured since 2006 have been below Water Board ESLs for all constituents of concern, additional monitoring of the B-Zone appears unnecessary.

SUMCO conducted groundwater monitoring in the A-zone from 1999 through 2004. TCE, cis-1,2-DCE, and vinyl chloride concentrations detected in on-Site A-zone monitoring wells MW-8 and MW-9, and in off-Site A-zone monitoring wells MW-FE1 and MW-FE3 remained below the Site-specific risk-based action levels during that time period (Table 3). Accordingly, in 2005, EKI submitted a proposal to the Water Board on behalf of SUMCO to discontinue monitoring in the A-Zone wells. This proposal was approved by the Water Board in a letter dated 27 June 2005 (RWQCB, 2005).

On-Site A-Zone monitoring wells MW-8 and MW-9 are subject to monitoring requirements in the property Deed Restriction, and are the responsibility of the current property owners to monitor. SUMCO has not performed any A-Zone groundwater monitoring in those wells since 2004, and does not know the status of groundwater monitoring by the current Site owners.

The most recent available analytical data for VOCs in groundwater from monitoring wells MW-8 and MW-9 are from 2004. These data were below the Site-specific risk-based action levels calculated in 1999, using regulatory and toxicological guidance available at the time. SUMCO has no knowledge of the current concentrations of VOCs in groundwater in these wells or consequently whether the concentrations are above or below current screening levels, such as the ESLs issued by the Water Board in 2013. It is the responsibility of the current Site owner to assess Site conditions with respect to current regulatory guidance and laws.

5.1.3 Identification of Exposure Pathways, Receptors, Potential Risks, and Threats

Human-health and ecological risks from residual VOC concentrations in Site soil and groundwater were evaluated in 1999, prior to excavation (EKI, 1999c). Results of that evaluation are summarized below, along with discussion of other pathways, receptors, and risks.

5.1.3.1 1999 FSRAP and Human Health Risk Assessment

As described in Section 2.3, EKI submitted a Site Feasibility Study / Remedial Action Plan on behalf of MSA to the Water Board in March 1999 (EKI, 1999c). This FSRAP was reviewed and approved by the Water Board in a letter dated 23 April 1999.

Appendix A of the FSRAP is a human health risk assessment which quantified estimates of carcinogenic risk and non-carcinogenic hazard for potential Site occupants. Part of the risk assessment detailed calculations of risk based action levels for cleanup of Site soil, allowing establishment of dig lines for the excavation which was carried out later that year (see Section 2.3). The risk assessment also contained calculated risk-based action levels for future monitoring of VOC concentrations in groundwater from A-zone wells. Based on the risk calculations and assumptions, future occupants of the Site would experience a U.S. EPA-defined "acceptable" cumulative additional cancer risk of 1×10^{-5} or less (i.e., 1 in 100,000) from Site A-zone groundwater if it contained no more than the following maximum concentrations:

- TCE 8,000 ug/L
- cis-1,2-DCE 50,000 ug/L
- vinyl chloride 500 ug/L

From 1999 to 2004, TCE, cis-1,2-DCE, and vinyl chloride concentrations detected in groundwater from the A-zone monitoring wells (i.e., MW-8, MW-9, MW-FE1 and MW-FE3) remained below the Site-specific risk-based action levels (Table 3). SUMCO has no knowledge of VOC concentration data for A-zone groundwater after 2004.

5.1.3.2 Exposure to Residual VOCs in Soil

Based on Site soil sampling and analysis data, and based on risk-based action levels calculated as part of the Water Board-approved Site-specific human health risk assessment (EKI, 1999a), shallow soil containing VOCs above action levels was identified, excavated to 4 or 6 ft bgs (depending on location within the pit), and removed off-Site. Details are presented in Section 2.3. Remaining shallow soil left in-place contained VOC concentrations below action levels, based on the existing data.

Deeper soil (i.e., greater than 4-6 ft bgs) within the saturated zone did contain VOC concentrations above action levels. Thus, (a) the excavation was backfilled with engineered materials designed to isolate the deeper soil and reduce movement of groundwater and VOCs through the capillary zone to the surface, and (b) a Deed Restriction specifying mitigation and monitoring requirements was placed on the property, prior to its sale to Integris in 1999. The engineered fill is described in Section 2.3, and the Deed Restriction is described in more detail in Sections 2.4 and 5.2.

5.1.3.3 Exposure to Residual VOCs in Groundwater and Volatilization from Groundwater

The most recent analytical data for groundwater available to SUMCO for monitoring well MW-9 date from September 2004 (Table 3). It is possible that VOC concentrations may persist in A-zone shallow groundwater within the on-Site Groundwater Risk Area above current Commercial / Industrial ESLs (Figure 2). Off-Site, concentrations in shallow A-Zone and deeper B-Zone groundwater are below ESLs for concerns of vapor intrusion (Table 3, Figures 3, 6, 7, and 8).

On-Site, potential groundwater exposure pathways for human health are addressed through engineering and administrative controls implemented as part of the Risk Management Plan, and the Deed Restriction (EKI, 1999c; see Section 2.4). These potential pathways include the following:

- Drinking water, industrial use, or agricultural use:
    - Use or construction of wells for water supply are prohibited by the Deed Restriction.

- Gross contamination (e.g., taste, odors):
  - Groundwater is isolated from the surface and cannot be legally used.
- Vapor intrusion to indoor air:
  - Administrative requirements are specified in the Deed Restriction regarding construction/excavation practices;
  - Engineering requirements are specified in the Deed Restriction to prevent vapor migration into new construction; and
  - The Deed Restriction requires the Site owners to monitor groundwater in A-zone monitoring wells and assess the potential for vapor intrusion.

Off-Site, potential exposure to groundwater does not present a human-health risk, as VOC concentrations are significantly below current Commercial / Industrial ESLs for concerns of vapor intrusion by a factor of approximately 6 to 18; and the extreme salinity of the deeper groundwater (see Section 4.4) precludes its use for drinking, industrial, or agricultural uses. Supply wells in the area are not known to draw from the shallow saturated B-zone, presumably due to its high dissolved-solids content. Vertical conduits to deeper groundwater from improperly-abandoned historical supply wells are not known to exist on-Site, nor in the adjacent properties down-gradient of the Site.

A soil vapor sampling investigation conducted in 1999 on the off-Site downgradient 3750 Haven Avenue property did not detect TCE, 1,2-DCE, or vinyl chloride above laboratory reporting limits (EKI, 1999g). The reporting limits were well below the Water Board's 2013 soil vapor ESLs for commercial/industrial land use of 3,000 ug/m^3 for TCE and 160 ug/m^3 for vinyl chloride. The 2013 guidance does not contain a soil vapor ESL for cis-1,2-DCE, but the ESL published in 2008 was 20,000 ug/m^3, well above the reporting limits of the soil vapor analyses.

Exposure pathways such as groundwater discharge to surface water bodies, including the channelized creek and San Francisco Bay, appear to be incomplete, based on existing data. Sampling of creek water and channel sediment was conducted in 1997 and VOC analytical results were below detection limits for all surface water and sediment samples (EKI, 1997a). Although A-zone groundwater gradients tend to direct groundwater flow toward the creek channel (EKI, 2004), generally low seepage velocities in the shallow saturated sediments on-Site and in the surrounding area appear to prevent movement of sufficient VOC flux to the creek to cause detectable concentrations. The RWQCB concurred with this conclusion (RWQCB, 2002).

5.1.3.4 Transport of VOCs in Groundwater to San Francisco Bay

In an effort to examine whether or not Site groundwater with VOCs migrates north to northeast in an approximately straight-line pathway to San Francisco Bay, EKI collected grab groundwater samples along an east-west transect between the Site and the Bay in 1998 (EKI, 1998d). Most samples did not contain detectable concentrations of VOCs. Those that did contain VOCs were collected from locations farther east of the Site, indicating that the transport of VOCs off-Site and downgradient to the Bay followed a complex pathway to the east-northeast, rather than directly toward the saltworks ponds across the property to the north. The data also indicated the

presence of other non-Site related sources of VOCs in groundwater in the area, based on detections of chemical species (e.g., chloroform) not generally detected on-Site (EKI, 1998d).

The potential exposure of humans and other species to Site chemicals of concern via San Francisco Bay was evaluated using three approaches:

- Seepage velocity calculations based on Site-specific hydraulic data and assumed groundwater gradients;
- Assessment of VOC retardation during groundwater transport using peak concentration time-series data, and calculation of a Site-specific retardation factor for TCE; and
- 1-D modeling of VOC transport using the USEPA fate and transport model BIOCHLOR (Aziz & Newell, 2002).

To assess the exposure pathway to San Francisco Bay, an estimate was made of the probable seepage velocity of groundwater flow to the bay, using hydraulic conductivity values derived from the pumping test conducted in 1996, and recent (2012) measured head differences corrected for density. Discharge to the bay was assumed to occur from the deeper B-zone (located approximately 15-35 ft bgs) only where the sand and gravel units are likely to be exposed to marine water at the main scour channel along the axis of the bay, approximately 17,000 feet (3.25 mi) north-northeast of the Site (NOAA, 2006). Between the Site and the main channel, mapped water depths in the bay are less than five feet, and in most locations are less than three feet. Groundwater from the A-zone was assumed to enter the bay by seepage into the channelized creek, but at such a minor flux that VOC concentrations remain negligible, as demonstrated in a previous investigation of the creek water and sediment (EKI, 1997a).

Based on the assumptions above, and using additional assumptions as detailed in Appendix D, the estimated mean groundwater travel time in the B-zone from the Site (MW-6B) to San Francisco Bay (at the main scour channel 17,000 feet northeast) using Site-specific hydraulic data and current density-corrected gradients ranged from approximately 250 years to 650 years, corresponding to seepage velocities of 67 to 26 feet per year ("ft/year"), depending upon the value of hydraulic conductivity used (see Appendix D).

Local groundwater flow from Site well MW-6B to off-Site well MW-FE2B may be faster, due to the greater magnitude of the piezometric gradient between these wells in comparison to the overall gradient in the tidal flats, with seepage velocity estimates ranging from 191 to 492 ft/year, using the reported range of hydraulic conductivity values for the B-zone (EKI, 1997a).

Estimates of TCE transport velocity (as opposed to groundwater seepage velocity) in the B-zone also were calculated, assuming that (a) observed declines in TCE concentration from peak values were due to source removal in 1999, and (b) that the timing of the peak TCE concentration observed in a given well was due to transport of VOC-containing groundwater from the source area to the well. TCE concentration data in off-Site monitoring wells MW-FE1B and MW-FE2B were used to determine the time to peak concentration, and the travel distance was assumed to be from the location of the former source-area well MW-2. Based on these assumptions, VOC

transport from the former on-Site source area to off-Site wells was estimated to range from 46 ft/year to 80 ft/year, approximately 4-6 times slower than groundwater.

To check the between-well TCE transport velocity estimated above, the empirical TCE retardation factor described above was compared to an estimate for the TCE retardation factor ("Rf") calculated from chemical-specific and Site-specific soil parameters, using the following equation (Freeze & Cherry, 1979):

$$Rf = (Vs / Vc) = 1 + (\rho b / n) * Koc * foc$$

Where:

Rf	=	Retardation factor for TCE at the Site
Vs	=	mean estimated linear seepage velocity of groundwater, (using gradients from MW-2 to MW-FE1B, and MW-2 to MW-FE2B)
Vc	=	mean estimated linear velocity of TCE
ρ_b	=	mean bulk density of aquifer materials
n	=	mean porosity of aquifer materials
Koc	=	organic carbon partition coefficient for TCE
foc	=	mass fraction of organic carbon in aquifer materials

The empirical retardation factor, Rf, for TCE in the vicinity of the Site varies from 5.4, using the chemical peak-concentration timing approach, to 4.6, using Site-specific soil parameters. These methods of estimation are independent, yet the calculated Rf values are similar enough to provide some assurance that the actual retardation factor for TCE moving from the Site to off-Site wells is near 5, i.e., movement of TCE is approximately 5 times slower than groundwater.

Based on this Site-specific average retardation factor of 5 for TCE, and the groundwater velocity estimates described above, the time for chemicals of concern to reach San Francisco Bay from the Site are estimated to range from 1,250 years to 3,250 years.

Calculations and assumed parameter values are described in more detail in Appendix D. Implicit assumptions are that saturated-zone sediment characteristics on-Site and in the immediate area (e.g., tortuosity, hydraulic conductivity, organic carbon in sediments, physical and chemical conditions of groundwater, sea-level elevation, etc.) are representative of conditions in B-zone sediments under the Bay, and that they do not vary in time or space.

Modeling of chemical fate and transport using BIOCHLOR (Aziz & Newell, 2002) was performed to examine movement of VOCs in groundwater to San Francisco Bay from Site monitoring well MW-6B, along a flowpath through MW-FE1B and MW-FE2B. A number of conservative simplifying assumptions were made to facilitate modeling, including the assumption of a constant VOC source at MW-6B at 2012 concentrations, and only dispersion, no biotransformation, during transport. Simulation was run for 300 years, assuming no change in conditions. Specific values for parameters and assumptions are shown in Appendix E.

Based on the model output, dispersion alone will restrict concentration of total chlorinated ethenes after 300 years of movement to less than 10 micrograms per liter ("ug/L") at a downgradient distance of approximately 3,500 feet, or approximately one-third of the way to the main scour channel in the bay. Based on the approach outlined in Aziz & Newell (2002), "limited evidence" exists for biotransformation of chlorinated ethenes at the Site, thus, the assumption of no biodegradation in the simulation is conservative, and attenuation of VOCs in groundwater would likely be greater, and concentrations less, than calculated by the BIOCHLOR model.

The ESLs for protection of aquatic receptors (RWQCB, 2008) are 360 ug/L for TCE, and 590 ug/L for cis-1,2-DCE. The modeling results discussed above indicate that VOC concentrations will remain well below these aquatic receptor ESLs for several centuries, under the conservative assumptions in the model. Thus, existing VOCs in groundwater do not appear to present a significant exposure risk for aquatic receptors. Predicted sea-level rise due to climate change over the modeled period also will tend to reduce or even reverse the magnitude of the hydraulic gradient, thus slowing or stopping the movement of groundwater from the Site toward San Francisco Bay, further attenuating the potential impact to downgradient aquatic receptors.

5.2 Control of Pollution Sources and Implemented Risk-Mitigation Measures

5.2.1 Completeness of Source Remediation to Extent Feasible

As described in Section 2.3, above, and in accordance with the Water Board-approved FSRAP, remediation of the on-Site source of VOCs has been accomplished. Source soil was delineated using human-health risk-based criteria, excavated, and removed to the extent feasible (i.e., above the saturated zone). The excavation was backfilled with engineered materials which were designed to prevent or reduce VOC migration from groundwater to the surface, and to hypothetical future buildings at the Site. Currently, a parking lot covers the former excavation. Groundwater plume monitoring has been performed for over 13 years. Monitoring was conducted in both the shallow A-zone and deeper B-zone until 2004, after which the Water Board approved cessation of monitoring in the A-zone, but required a continuation of monitoring in the B-zone until 2012.

Residual VOCs in on-Site B-zone groundwater persist above ESLs in the Groundwater Risk Area, but groundwater in the GRA contains very high dissolved solids, having salinity several times that of seawater (EKI, 1999c). Long-term monitoring data indicate that B-Zone groundwater VOC concentrations continue to decline (Figures 6, 7, and 8). VOC concentrations in A-Zone groundwater on-Site are not currently known (see Section 5.1.2).

5.2.2 Mitigation of Current and Future Risks to Human Health, Ecological Health, and Sensitive Receptors

Potential receptor categories, considering current and future uses of the Site, could include

- On-Site commercial / industrial workers
- Off-Site commercial / industrial workers
- Ecological receptors

Current and future risks to on-Site commercial and industrial workers and other potential future Site receptors are mitigated through engineering and administrative controls (see Sections 2.3 and 2.4),. Engineering controls include the low-vapor permeability backfill used to restore the Site after source area excavation (EKI, 2000b; EKI, 2001b), and construction of the 3715 Haven Avenue office building south and upgradient of the former excavation and Groundwater Risk Area (Figure 3).

A partial list of administrative controls mandated by the Deed Restriction for the Site includes (a) mandatory health and safety procedures in the RMP for future Site construction (EKI, 1999c); (b) construction design requirements which will help avoid creating vertical conduits on-Site for soil vapor or groundwater; (c) a prohibition on use of groundwater for any purpose; (d) management requirements for soil or groundwater produced from the Site; and (e) the requirement that current Site owners must monitor groundwater over time and notify occupants of any changes in conditions. If the current Site owners have not complied with their obligations regarding administrative controls at the Site, e.g., groundwater monitoring and notification, the Water Board may compel them to do so. Obtaining up-to-date concentration data for chemicals of concern in Site groundwater, and comparing these data to current Water Board ESLs, would allow evaluation of potential health risks to current Site occupants, if such risks exist.

The Deed Restriction also includes a prohibition on construction of on-Site residential housing, schools, hospitals, or day-care facilities. These controls, in combination with other details of the Deed Restriction, mitigate risks to potential future occupants of the Subject Property.

Off-Site, mitigation of potential threats to human health by vapor intrusion to indoor air is unnecessary, because off-Site VOC concentrations in groundwater have declined below commercial/industrial ESLs for vapor intrusion concerns (Table 3, Figures 7 and 8). Other exposure pathways are rendered incomplete by (a) the occurrence of chemicals of concern primarily within deeper groundwater, which is unsuitable for most beneficial uses due to its extremely high salinity, (b) low groundwater seepage and VOC transport velocities, and (c) natural attenuation of groundwater VOC concentrations (see Section 5.1.3, above).

As discussed in Section 2.4, the area where VOCs in groundwater exceed risk-based allowable concentrations was defined in 1999 as the Groundwater Risk Area, or "GRA" (Figure 3; EKI, 1999c). Here, the current Site property owners are required to conduct groundwater monitoring of Site A-zone wells MW-8 and MW-9, to ensure that VOC concentrations remain at acceptable levels. Mitigation measures are specified within the RMP if the current or future property owners discover concentrations above risk-based levels during monitoring.

Measures listed in the RMP are codified in the Deed Restriction, as are legal terms and conditions of the restriction, including prohibited future activities on the Site, such as construction of residences, schools, or health-care facilities (Integris, 1999). Additional requirements are listed in the Deed Restriction, and summarized in Section 2.4.

5.2.3 Mitigation of Unacceptable Threats to Groundwater and Surface Water Resources, Considering Both Existing and Potential Beneficial Uses

The Water Board document *San Francisco Bay Basin (Region 2) Water Quality Control Plan* ("Basin Plan") locates the Site within the South Bay surface water basin, and the Santa Clara Valley Groundwater Basin, San Mateo Plain Sub-Basin (2-9.03) (RWQCB, 2011; DWR, 2003). Tidelands downgradient of the Site are mapped as salt ponds, marshlands, and tidal flats.

Flood Slough (the recipient of discharge from the creek adjacent to the Site) is not specifically listed as a surface water body in the Basin Plan, but nearby Ravenswood Slough is listed as having existing beneficial uses of (a) estuarine habitat, (b) preservation of rare and endangered species, (c) wildlife habitat, (d) water contact recreation, and (e) non-water contact recreation. The San Mateo Plain Sub-Basin is listed as providing groundwater for existing beneficial uses of (1) municipal and domestic supply, (2) industrial process water supply, and (3) industrial service water supply. Agricultural water supply also is listed as a "potential" beneficial use (RWQCB, 2011).

Groundwater quality objectives for basins designated as having a beneficial use of municipal or domestic water supply are equivalent to U.S. EPA maximum contaminant levels for drinking water ("MCLs") for VOCs, but locally, the presence of extremely saline brines in the subsurface, combined with generally low transmissivity, would preclude use of local groundwater within the Site VOC plume for domestic, industrial, or agricultural supply.

The channelized creek that runs north toward San Francisco Bay along the east side of Haven Avenue was sampled in several locations during the remedial investigation (EKI, 1997a). Surface water and sediment samples were collected and analyzed for VOCs. All analytes were below reporting limits (EKI, 1997a), and were below current groundwater ESLs for protection of aquatic receptors, i.e., below 360 ug/L TCE, and 590 ug/L cis-1,2-DCE (RWQCB, 2008).

EKI performed a comparative analysis in 2002 of creek sampling results and shallow groundwater analytical data, and concluded based on relative concentrations of TDS and VOCs that groundwater contributions to the creek were negligible. Thus, VOC concentrations in the shallow subsurface do not represent a threat to local surface water, and do not require mitigation. As discussed in Section 5.1.3.4 above, interpretation of existing data and reasonable projections based on modeling indicate that VOC concentrations in groundwater from the Site and surrounding off-Site areas do not, and will not, present a risk to existing and potential beneficial uses listed for surface and groundwater in the Basin Plan. This includes surface freshwater in the channelized creek and San Francisco Bay.

Changes to existing and potential beneficial uses of groundwater at the Site (and downgradient) are unlikely, as the basin has all currently-designated beneficial use categories listed as either existing or possible (RWQCB, 2011). Future changes to current beneficial uses of groundwater at the Site are unlikely, given the widespread presence of the brine in the B-zone.

5.3 Lack of Adverse Effects on Present and Anticipated Land and Water Uses from Residual Pollution

Existing land uses for the Site are limited to commercial and light industrial activity. Residential use is expressly prevented by the Deed Restriction. There are no present or anticipated groundwater uses on the Site, nor are there known human uses of groundwater from downgradient locations within the plume of elevated groundwater VOC concentrations. Groundwater use on-Site also is prohibited by the Deed Restriction.

5.3.1 Groundwater Plumes are Decreasing

As discussed in Section 4.4, VOC concentrations analyzed in on-Site and off-Site B-zone wells are either stable, with no trend, or are decreasing. Groundwater VOC plumes have been characterized by monitoring of concentrations in on-Site and off-Site wells for over 13 years. The lateral and vertical extent of VOCs in groundwater has been determined by grab groundwater sampling in the late 1990s, and periodic monitoring of wells through 2012.

Spatial and temporal trends for TCE and cis-1,2-DCE have been estimated, by means of time series concentration plots, and a Mann-Kendall analysis (see Section 4.4). The consistent presence of TCE breakdown products cis-1,2-DCE, and sporadic detections of low levels of vinyl chloride in on-Site well MW-6B and off-Site well MW-FE1B may indicate ongoing reductive dechlorination (Table 3). U.S. EPA's natural attenuation screening protocol (USEPA, 1998b) as presented within the screening tools of BIOCHLOR (Aziz & Newell, 2002) indicates "limited evidence for anaerobic biodegradation of chlorinated organics" based on field criteria collected during monitoring well sampling, e.g., dissolved oxygen, nitrate, pH, and temperature, along with analyzed concentrations of cis-1,2-DCE and vinyl chloride.

5.3.2 Cleanup Standards Can Be Met in a Reasonable Timeframe

The slow rate of groundwater movement requires long periods of data collection to determine trends in concentration, thus estimation of the time frame for on-Site and off-Site groundwater to achieve cleanup standards is imprecise. Based on projected log-linear concentration trends interpreted from concentration time-series graphs (Figures 7 and 8), natural attenuation of TCE and cis-1,2-DCE to MCL values of 5 ug/L and 6 ug/L, respectively, may occur within approximately 20 to 30 years in off-Site wells, assuming other groundwater conditions and the existing head distribution remain unchanged.

6 CONCLUSIONS

In summary, SUMCO believes that it has investigated and addressed residual VOCs at the Site, and that additional environmental monitoring and remediation by SUMCO would not be productive, given the following:

- VOC concentrations in soil, groundwater, and soil vapor at and near the Site have been characterized;
- Source removal has been implemented;
- Engineering and administrative controls have been designed and implemented;
- Thirteen years of groundwater monitoring have been completed;
- Concentration trends are well below appropriate ESLs;
- The VOC plume poses little to no threat to existing and potential beneficial uses of groundwater;
- Movement of VOCs in groundwater to marine water of San Francisco Bay is expected to take centuries to millennia;
- VOC concentration trends in the off-Site VOC plume in groundwater are stable to declining; and
- Monitoring of on-Site VOC concentrations is required of the current Site owner, in a covenant between the current Site owner and the Water Board, of which SUMCO is not a party.

Therefore, SUMCO requests that the Water Board issue a letter granting SUMCO No Further Active Remediation status for the 3695-3723 Haven Avenue Site.

Based upon results and interpretation of data obtained through the investigations described above, SUMCO believes the Site meets the Water Board's criteria for a low-threat chlorinated solvent site. A possible exception can be made for VOCs in on-Site shallow A-zone groundwater, the current status of which is the contractual responsibility of the Site owner to assess, as established in the Deed Restriction.

Accordingly, SUMCO proposes to destroy and abandon the remaining groundwater monitoring wells on-Site, and on the adjacent 3750 Haven Avenue property, except for monitoring wells MW-8 and MW-9, which are to be monitored by the current Site owner pursuant to the terms of the Deed Restriction, and are not SUMCO's responsibility.

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TABLES

Table 1
Groundwater Monitoring Well Construction Details
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Well ID	Groundwater Zone	Location	Casing Diameter (inches)	Total Well Depth (ft bgs)	Screened Interval Depth (ft bgs)	TOC Elevation (ft, NGVD)	Ground Surface Elevation (ft, NGVD)	Elevation of Bottom of Screen (ft, NGVD)
MW-1	A	destroyed	n/a	15.5	5.5 to 15.5	7.06	n/a	-8.44
MW-3	A	destroyed	n/a	15.5	5.5 to 15.5	6.31	n/a	-9.19
MW-4	A	destroyed	n/a	16	6.0 to 16.0	6.47	n/a	-9.53
MW-2	A	3695-3723 Haven Ave	2	15.5	5.5 to 15.5	6.91	n/a	-8.59
MW-5B	B	3695-3723 Haven Ave	4	34	24.0 to 34.0	10.92	11.31	-23.08
MW-6B	B	3695-3723 Haven Ave	4	31	21.0 to 31.0	8.46	8.85	-22.54
MW-8	A	3695-3723 Haven Ave	4	13	5.0 to 13.0	6.33	6.65	-6.67
MW-9	A	3695-3723 Haven Ave	4	15	5.0 to 12.5	7.12	7.35	-5.38
MW-FE1	A	3750 Haven Ave	2	14	5.0 to 14.0	5.06	5.41	-8.94
MW-FE1B	B	3750 Haven Ave	4	29	18.0 to 29.0	7.95	8.40	-21.05
MW-FE2B	B	3750 Haven Ave	1	30	20.0 to 30.0	9.67	9.82	-20.33
MW-FE3	A	3750 Haven Ave	4	13	5.0 to 11.0	6.29	6.74	-4.71

Abbreviations

TOC: Top of well casing
Elev: Elevation
ft bgs: Feet below ground surface
ft, NGVD: Elevation in feet relative to National Geodetic Vertical Datum of 1929

Table 2
Summary of Groundwater Elevation Data
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Well ID	Date	Mean Screened Elevation (ft, NGVD)	Well Bottom Elevation (ft, NGVD)	Top of Casing Elevation[a] (ft, NGVD)	Depth to Water (ft bTOC)	Groundwater Elevation (ft, NGVD)	Measured Density [b,c] (g/mL)	Measured Temperature [b,c] (°C)	Equivalent Freshwater Head [d] (ft, NGVD)
MW-5B	5-Nov-1999	-22.43	-27.43	6.57	7.02	-0.45	1.154	20.2	3.04
MW-5B	20-Mar-2000	-22.43	-27.43	6.57	6.90	-0.33	1.130	15.1	2.54
MW-5B	19-Jun-2000	-22.43	-27.43	6.57	6.75	-0.18	1.130	22.4	2.74
MW-5B	11-Sep-2000	-22.43	-27.43	6.57	7.06	-0.49	1.132	19.4	2.42
MW-5B	18-Dec-2000	-22.43	-27.43	6.57	7.09	-0.52	1.134	17.7	2.42
MW-5B	12-Mar-2001	-22.43	-27.43	6.57	5.71	0.86	1.174	18.7	4.93
MW-5B	19-Jun-2001	-22.43	-27.43	6.57	6.03	0.54	1.057	21.8	1.88
MW-5B	16-Sep-2002	-20.87	-27.43	8.13	9.00	-0.87	1.120	18.6	1.54
MW-5B	15-Sep-2003	-20.87	-27.43	8.13	6.83	1.30	1.124	18.7	4.26
MW-5B	21-Sep-2004	-20.87	-27.43	8.13	7.36	0.77	1.058	18.6	2.13
MW-5B	24-Aug-2005	-20.87	-27.43	8.13	7.49	0.64	1.120	18.3	2.62
MW-5B	21-Dec-2005	-20.87	-27.43	8.13	6.80	1.33	1.004	19.3	1.40
MW-5B	8-Aug-2006	-17.69	-23.08	10.92	5.67	5.25	-- (e)	-- (e)	5.45
MW-5B	19-Dec-2006	-17.69	-23.08	10.92	7.40	3.52	-- (e)	-- (e)	4.40
MW-5B	22-Feb-2008	-17.69	-23.08	10.92	7.11	3.81	-- (e)	-- (e)	5.64
MW-5B	9-Sep-2008	-17.69	-23.08	10.92	7.73	3.19	-- (e)	-- (e)	4.83
MW-5B	17-Mar-2009	-17.69	-23.08	10.92	7.56	3.36	-- (e)	-- (e)	4.98
MW-5B	19-Aug-2009	-17.69	-23.08	10.92	7.92	3.00	-- (e)	-- (e)	4.69
MW-5B	12-Aug-2011	-17.69	-23.08	10.92	6.66	4.26	-- (e)	-- (e)	6.18
MW-5B	11-Sep-2012	-17.69	-23.08	10.92	6.80	4.12	-- (e)	-- (e)	6.03

Table 2
Summary of Groundwater Elevation Data
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Well ID	Date	Mean Screened Elevation (ft, NGVD)	Well Bottom Elevation (ft, NGVD)	Top of Casing Elevation[a] (ft, NGVD)	Depth to Water (ft bTOC)	Groundwater Elevation (ft, NGVD)	Measured Density [b,c] (g/mL)	Measured Temperature [b,c] (°C)	Equivalent Freshwater Head [d] (ft, NGVD)
MW-6B	5-Nov-1999	-19.92	-25.28	5.72	5.82	-0.10	1.090	20.8	1.76
MW-6B	5-Nov-1999	-19.92	-25.28	5.72	5.82	-0.10	1.090	20.8	1.76
MW-6B	20-Mar-2000	-19.92	-25.28	5.72	4.92	0.80	1.060	16.0	2.04
MW-6B	19-Jun-2000	-19.92	-25.28	5.72	5.82	-0.10	1.063	22.4	1.17
MW-6B	11-Sep-2000	-19.92	-25.28	5.72	5.76	-0.04	1.086	21.3	1.69
MW-6B	18-Dec-2000	-19.92	-25.28	5.72	5.74	-0.02	1.088	18.7	1.73
MW-6B	12-Mar-2001	-19.92	-25.28	5.72	5.49	0.23	1.118	18.0	2.61
MW-6B	19-Jun-2001	-19.92	-25.28	5.72	5.77	-0.05	1.069	21.8	1.34
MW-6B	17-Sep-2001	-20.31	-25.31	5.69	5.82	-0.13	1.120	22.3	2.32
MW-6B	16-Sep-2002	-20.31	-25.31	5.69	5.90	-0.21	1.079	23.0	1.41
MW-6B	15-Sep-2003	-20.31	-25.31	5.69	4.81	0.88	1.098	21.3	2.94
MW-6B	21-Sep-2004	-20.31	-25.31	5.69	5.36	0.33	1.056	21.7	1.49
MW-6B	24-Aug-2005	-20.31	-25.31	5.69	5.16	0.53	1.078	19.5	1.77
MW-6B	21-Dec-2005	-20.31	-25.31	5.69	5.06	0.63	1.028	19.4	1.08
MW-6B	8-Aug-2006	-17.15	-22.54	8.46	5.69	2.77	0.999 [7'] 1.115 [25']	23.4 [7'] 19.5 [25']	3.64
MW-6B	19-Dec-2006	-17.15	-22.54	8.46	5.02	3.44	0.999 [10'] 1.120 [27']	16.3 [10'] 19.5 [27']	3.96
MW-6B	22-Feb-2008	-17.15	-22.54	8.46	4.99	3.47	1.001 [6'] 1.131 [27']	16.46 [6'] 18.68 [27']	4.97
MW-6B	9-Sep-2008	-17.15	-22.54	8.46	5.71	2.75	1.026 [7'] 1.160 [27']	24.20 [7'] 19.45 [27']	4.39
MW-6B	17-Mar-2009	-17.15	-22.54	8.46	5.24	3.22	0.998 [9'] 1.132 [27']	18.65 [9'] 19.85 [27']	4.33
MW-6B	19-Aug-2009	-17.15	-22.54	8.46	5.63	2.83	1.000 [7'] 1.120 [27']	24.54 [7'] 19.42 [27']	4.02
MW-6B	12-Aug-2011	-17.15	-22.54	8.46	4.68	3.78	1.099	20.9	5.26
MW-6B	11-Sep-2012	-17.15	-22.54	8.46	4.68	3.78	1.099	20.9	5.26

Table 2
Summary of Groundwater Elevation Data
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Well ID	Date	Mean Screened Elevation (ft, NGVD)	Well Bottom Elevation (ft, NGVD)	Top of Casing Elevation[a] (ft, NGVD)	Depth to Water (ft bTOC)	Groundwater Elevation (ft, NGVD)	Measured Density [b,c] (g/mL)	Measured Temperature [b,c] (°C)	Equivalent Freshwater Head [d] (ft, NGVD)
MW-FE1B	5-Nov-1999	-17.91	-23.80	5.20	5.09	0.11	1.062	20.5	1.30
MW-FE1B	20-Mar-2000	-17.91	-23.80	5.20	5.85	-0.65	1.040	14.8	0.04
MW-FE1B	19-Jun-2000	-17.91	-23.80	5.20	5.35	-0.15	1.079	22.7	1.28
MW-FE1B	11-Sep-2000	-17.91	-23.80	5.20	5.26	-0.06	1.080	21.8	1.39
MW-FE1B	18-Dec-2000	-17.91	-23.80	5.20	5.07	0.13	1.072	17.6	1.43
MW-FE1B	12-Mar-2001	-17.91	-23.80	5.20	4.98	0.22	1.110	17.9	2.22
MW-FE1B	19-Jun-2001	-17.91	-23.80	5.20	5.22	-0.02	1.071	20.8	1.27
MW-FE1B	17-Sep-2001	-17.91	-23.80	5.20	5.27	-0.07	1.102	21.8	1.77
MW-FE1B	16-Sep-2002	-17.91	-23.80	5.20	5.25	-0.05	1.060	20.9	1.04
MW-FE1B	15-Sep-2003	-17.91	-23.80	5.20	5.29	-0.09	1.040	20.0	0.64
MW-FE1B	21-Sep-2004	-17.91	-23.80	5.20	4.75	0.45	1.018	21.6	0.80
MW-FE1B	24-Aug-2005	-17.91	-23.80	5.20	4.63	0.57	1.060	18.7	1.43
MW-FE1B	21-Dec-2005	-17.91	-23.80	5.20	4.11	1.09	1.010	19.3	1.23
MW-FE1B	8-Aug-2006	-14.95	-21.05	7.95	5.20	2.75	0.998 [6.5'] 1.125 [24.5']	22.7 [6.5'] 18.8 [24.5']	3.28
MW-FE1B	19-Dec-2006	-14.95	-21.05	7.95	4.68	3.27	0.999 [10'] 1.101 [27']	16.8 [10'] 17.6 [27']	3.58
MW-FE1B	22-Feb-2008	-14.95	-21.05	7.95	4.39	3.56	1.002 [6'] 1.110 [27']	16.22 [6'] 17.27 [27']	4.89
MW-FE1B	9-Sep-2008	-14.95	-21.05	7.95	5.01	2.94	1.030 [6'] 1.150 [27']	21.85 [6'] 20.55 [27']	4.02
MW-FE1B	17-Mar-2009	-14.95	-21.05	7.95	4.81	3.14	1.000 [9'] 1.120 [27']	17.37 [9'] 19.17 [27']	4.11
MW-FE1B	19-Aug-2009	-14.95	-21.05	7.95	5.22	2.73	1.000 [6'] 1.112 [27']	22.71 [6'] 18.77 [27']	3.75
MW-FE1B	12-Aug-2011	-14.95	-21.05	7.95	4.26	3.69	1.114	19.7	4.94
MW-FE1B	12-Aug-2011	-14.95	-21.05	7.95	4.27	3.68	1.070	19.3	4.93

Table 2
Summary of Groundwater Elevation Data
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Well ID	Date	Mean Screened Elevation (ft, NGVD)	Well Bottom Elevation (ft, NGVD)	Top of Casing Elevation[a] (ft, NGVD)	Depth to Water (ft bTOC)	Groundwater Elevation (ft, NGVD)	Measured Density [b,c] (g/mL)	Measured Temperature [b,c] (°C)	Equivalent Freshwater Head [d] (ft, NGVD)
MW-FE2B	5-Nov-1999	-17.95	-23.25	6.75	6.42	0.33	1.012	20.0	0.62
MW-FE2B	20-Mar-2000	-17.95	-23.25	6.75	5.94	0.81	1.020	14.6	1.19
MW-FE2B	19-Jun-2000	-17.95	-23.25	6.75	6.55	0.20	1.020	22.2	0.58
MW-FE2B	11-Sep-2000	-17.95	-23.25	6.75	6.14	0.61	1.022	18.7	1.03
MW-FE2B	18-Dec-2000	-17.95	-23.25	6.75	6.37	0.38	1.016	17.2	0.68
MW-FE2B	12-Mar-2001	-17.95	-23.25	6.75	6.05	0.70	1.046	17.3	1.56
MW-FE2B	19-Jun-2001	-17.95	-23.25	6.75	6.23	0.52	1.004	20.4	0.61
MW-FE2B	17-Sep-2001	-17.95	-23.25	6.75	6.20	0.55	1.050	18.2	1.48
MW-FE2B	16-Sep-2002	-17.95	-23.25	6.75	6.40	0.35	1.010	21.8	0.55
MW-FE2B	15-Sep-2003	-17.95	-23.25	6.75	6.24	0.51	1.010	18.7	0.70
MW-FE2B	21-Sep-2004	-17.95	-23.25	6.75	6.26	0.49	1.004	19.5	0.57
MW-FE2B	24-Aug-2005	-17.95	-23.25	6.75	6.28	0.47	1.042 1.034	18.7 18.2	1.05 / 0.94
MW-FE2B	21-Dec-2005	-17.95	-23.25	6.75	5.50	1.25	1.010	19.3	1.42
MW-FE2B	8-Aug-2006	-15.18	-20.33	9.67	6.75	2.92	1.000 [8'] 1.083 [26']	18.2 [8'] 18.9 [26']	3.14
MW-FE2B	19-Dec-2006	-15.18	-20.33	9.67	6.13	3.54	0.999 [10'] 1.083 [27']	14.6 [10'] 17.9 [27']	3.86
MW-FE2B	22-Feb-2008	-15.18	-20.33	9.67	5.96	3.71	1.002 [6.5'] 1.084 [27']	15.46 [6.5'] 18.50 [27']	4.02
MW-FE2B	9-Sep-2008	-15.18	-20.33	9.67	6.54	3.13	1.028 [8'] 1.118 [27']	19.15 [8'] 19.40 [27']	3.57
MW-FE2B	17-Mar-2009	-15.18	-20.33	9.67	6.31	3.36	0.999 [9'] 1.082 [27']	16.32 [7'] 18.30 [27']	3.80
MW-FE2B	18-Aug-2009	-15.18	-20.33	9.67	6.74	2.93	1.001 [8'] 1.085 [27']	18.36 [8'] 19.22 [27']	3.40
MW-FE2B	12-Aug-2011	-15.18	-20.33	9.67	6.00	3.67	1.066	19.1	4.25
MW-FE2B	11-Sep-2012	-15.18	-20.33	9.67	5.96	3.71	1.078	17.2	4.28

Table 2
Summary of Groundwater Elevation Data
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Abbreviations

ft, NGVD: Elevation in feet relative to National Geodetic Vertical Datum of 1929
ft bTOC: Feet below top of well casing
g/mL: Grams per milliliter
TOC: Top of casing
-- : No data available

Notes:

(a) Due to site regrading, the top of casing for monitoring well MW-5B was extended on 29 October 2001. The top of casing elevation was recalculated from the measured length of the extension and the previous top of casing elevation. The new ground surface elevation at MW-5B was similarly recalculated. Monitoring well MW-6B was damaged during regrading and construction in 2001. The TOC elevation and ground surface elevation were resurveyed on 28 June 2001 by Wilsey-Ham, Inc. The TOC and ground surface elevations for sampled wells were resurveyed on 8 May 2006 by MacLeod and Associates, Inc. for incorporation into GeoTracker.

(b) Unless otherwise noted, density and temperature data were measured in the field. Density and temperature data for samples collected on 20 March 2000 were measured at EKI in San Mateo, CA. Density and temperature data for samples collected on 19 December 2006 were measured at EKI in Burlingame, CA.

(c) Two groundwater samples have been collected from each well except MW-5B since the 8 August 2006 sampling event, including one sample each from the upper and lower density zones of the water column. For multilevel sampling, the sampling depth in ft bTOC is indicated here in square brackets. No samples were collected from monitoring well MW-5B.

(d) Density-corrected "equivalent freshwater" heads for water levels measured after 2006 were calculated through the equation shown below (Guo & Langevin, 2002). Depth-integrated density was estimated for each well from the electrical conductivity and temperature profiles shown on Table 3. Equivalent freshwater heads were calculated using a slightly different method from 1999 through 2006 (EKI, 2008).

$$h_f = \frac{\rho}{\rho_f} \times h - \frac{\rho - \rho_f}{\rho_f} \times Z$$

h_f = Corrected "equivalent freshwater" head
ρ = Density of saline water
h = Measured head
Z = Elevation of bottom of well screen
ρ_f = Density of freshwater, calculated as a function of temperature, using the Theisen-Scheel-Diesselhorst equation (see Table A1)

(e) After 2006, monitoring well MW-5B was no longer actively sampled, and field-measured density data of water samples were not collected. Density was estimated from electrical conductivity profiling.

Table 3
Summary of Analytical Results for Volatile Organic Compounds in Groundwater
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bTOC)	Analytical Results (ug/L)[a]											
				Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Carbon Tetrachloride	Chloroform	Chlorobenzene	CFC-11 (trichlorofluoromethane)	CFC-113 (1,1,2-Trichloro-1,2,2-trifluoroethane)
MW-6B	MW-6B(b)	11/5/1999	-	**6400**	<100	<100	<100	<200	<100	<100	<100	<100	<100	<100	**2600**
MW-6B	MW-6B	3/20/2000	-	**6940**	<180	<180	<180	<180	<180	<180	<180	<180	<180	<180	**2310**
MW-6B	MW-6B (dup)	3/20/2000	-	**7300**	<180	<180	<180	<180	<180	<180	<180	**326**	<180	<180	**2150**
MW-6B	MW-6B	6/19/2000	-	**3040**	<250	<250	<250	<500	<250	<250	<250	<250	<250	<250	**934**
MW-6B	MW-6B (dup)	6/19/2000	-	**3580**	<125	<125	<125	<250	<125	<125	<125	<125	<125	<125	**1220**
MW-6B	MW-6B	9/11/2000	-	**4700**	<125	<125	<125	<250	<125	<125	<125	<125	<125	<125	**2290**
MW-6B	MW-6B (dup)	9/11/2000	-	**4300**	<125	<125	<125	<250	<125	<125	<125	<125	<125	<125	**2000**
MW-6B	MW-6B	12/18/2000	-	**7190**	<250	<250	<250	<500	<250	<250	<250	<250	<250	<250	**2560**
MW-6B	MW-6B	3/12/2001	-	**6940**	<250	<250	<250	<500	<250	<250	<250	<250	<250	<250	**1650**
MW-6B	MW-6B	6/19/2001	-	**9200**	<250	<250	<250	<500	<250	<250	<250	<250	<250	<250	**3600**
MW-6B	MW-6B	9/17/2001	-	**4400**	<120	<120	<120	<250	<120	<120	<120	<120	<120	<120	**1100**
MW-6B	MW-6B	9/16/2002	-	**7600**	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	**1200**
MW-6B	MW-6B	9/15/2003	-	**9800**	<250	<250	<250	<250	<250	<250	<250	<250	<250	<250	**2300**
MW-6B	MW-6B	9/21/2004	-	**3600**	**28**	<25	<25	<25	<25	<25	<25	<25	<25	<25	**820**
MW-6B	MW-6B	8/24/2005	-	**1040**	**5.83**	<5	<5	<5	<5	<5	<5	<5	<5	<5	**222**
MW-6B	MW-6B	12/21/2005	-	**5690**	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	**2690**
MW-6B	MW-6B-7.0	8/8/2006	7	**402**	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	**37.4**
MW-6B	MW-6B-25.0	8/8/2006	25	**379**	**32.3**	<5	<5	<5	<5	<5	<5	**13.5**	<5	<5	**246**
MW-6B	MW-6B-10	12/19/2006	10	**110**	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	**1.85**
MW-6B	MW-6B-27	12/19/2006	27	**151**	**25**	<1	<1	<1	<1	<1	<1	**9**	<1	<1	**54**
MW-6B	MW-6B(6.0)	2/22/2008	6	**726**	**4.79**	<4	<4	<4	<4	<4	<4	<4	<4	<4	**54.5**
MW-6B	MW-6B(27.0)	2/22/2008	27	**98.7**	**31.9**	<0.5	<0.5	**1.28**	<0.5	<0.5	<0.5	**12.2**	<0.5	<0.5	**77.8**
MW-6B	MW-6B-7	9/9/2008	7	**904**	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	**185**
MW-6B	MW-6B-27	9/9/2008	27	**229**	**32.7**	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	**11.4**	<2.5	<2.5	**56.5**
MW-6B	MW-6B-09	3/17/2009	-	**310**	**2.89**	<2	<2	<2	<2	<2	<2	<2	<2	<2	**16.2**
MW-6B	MW-6B-27	3/17/2009	-	**94**	**28.1**	<1	<1	**1.68**	<1	<1	<1	**11.3**	<1	<1	**61.2**
MW-6B	MW-6B-7	8/19/2009	7	**386**	**3.91**	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	**36**

Table 3
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3695-3723 and 3750 Haven Avenue
Menlo Park, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bTOC)	Analytical Results (ug/L)[a]											
				Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Carbon Tetrachloride	Chloroform	Chlorobenzene	CFC-11 (trichlorofluoromethane)	CFC-113 (1,1,2-Trichloro-1,2,2-trifluoroethane)
MW-6B	MW-6B-27	8/19/2009	27	**93**	**25.3**	<1	<1	**1.82**	<1	<1	<1	**12.7**	<1	<1	**70.6**
MW-6B	MW-6B-27	3/17/2009	27	**94**	**28.1**	<1	<1	**1.68**	<1	<1	<1	**11.3**	<1	<1	**61.2**
MW-6B	MW-6B-7	8/19/2009	7	**386**	**3.91**	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	**36**
MW-6B	MW-6B-27	8/19/2009	27	**93**	**25.3**	<1	<1	**1.82**	<1	<1	<1	**12.7**	<1	<1	**70.6**
MW-6B	MW-6B-27	8/12/2011	27	**888**	**114**	<5	<5	<5	<5	<5	<5	**21.7**	<5	<5	**425**
MW-6B	MW-6B	9/11/2012	27	**162**	**54.2**	<1	<1	**1.87**	<1	<1	**2.29**	**13.7**	<1	<1	**99.1**
MW-8	MW-8	11/5/1999	-	**240**	**35**	**4.5**	<2.5	<5	<2.5	<2.5	<5	**18**	<5	<5	**6**
MW-8	MW-8	3/20/2000	-	**145**	**21.1**	**3.59**	<3.25	<3.25	<3.25	<3.25	<3.25	**3.84**	<3.25	<3.25	<6.5
MW-8	MW-8	6/19/2000	-	**236**	<10	<10	<10	<20	<10	<10	**12.3**	**33.6**	<10	<10	<20
MW-8	MW-8	9/11/2000	-	**215**	<12.5	<12.5	<12.5	<25	<12.5	<12.5	<12.5	<12.5	<12.5	<12.5	<25
MW-8	MW-8	12/18/2000	-	**240**	<10	<10	<10	<20	<10	<10	<10	**33.7**	<10	<10	<20
MW-8	MW-8	3/12/2001	-	**183**	**5.64**	<5	<5	<10	<5	<5	**11.3**	**34.9**	<5	<5	<10
MW-8	MW-8	6/19/2001	-	**190**	**15**	<5	<5	<10	<5	<5	**14**	**31**	<5	**10**	**64**
MW-8	MW-8	9/17/2001	-	**53**	**15**	<2.5	<2.5	<5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	<5
MW-8	MW-8	9/16/2002	-	**130**	**16**	<10	<10	<10	<10	<10	<10	**13**	<10	<10	**11**
MW-8	MW-8	9/15/2003	-	**76**	**13**	**1.3**	<1	<1	<1	<1	**1.3**	**3.1**	<1	<1	**4.5**
MW-8	MW-8	9/21/2004	-	**95**	**9.6**	<1	<1	<1	<1	<1	**3.5**	**8.6**	<1	<1	**11**
MW-9	MW-9	11/5/1999	-	**5000**	**3000**	<50	<50	<100	<50	<50	<50	<50	<50	<50	**3400**
MW-9	MW-9 (dup)	11/5/1999	-	**4300**	**2500**	<50	<50	<100	<50	<50	<50	<50	<50	<50	**3100**
MW-9	MW-9	3/20/2000	-	**1500**	**647**	<85	<85	<85	<85	<85	<85	<85	<85	<85	**894**
MW-9	MW-9	6/19/2000	-	**2840**	**1280**	<125	<125	<250	<125	<125	<125	<125	<125	**252**	**1150**
MW-9	MW-9	9/11/2000	-	**2910**	**1310**	<100	<100	<200	<100	<100	<100	**109**	<100	**341**	**2450**
MW-9	MW-9	12/18/2000	-	**2350**	**1210**	<50	<50	<100	<50	<50	<50	**80.6**	<50	**291**	**1530**
MW-9	MW-9	3/12/2001	-	**2200**	**1290**	<50	<50	<100	<50	<50	<50	**67.2**	<50	<50	**1160**
MW-9	MW-9	6/19/2001	-	**3600**	**1700**	<250	<250	<500	<250	<250	<250	<250	<250	<250	**6300**
MW-9	MW-9	9/17/2001	-	**2600**	**1100**	<120	<120	<250	<120	<120	<120	<120	<120	<120	**1800**
MW-9	MW-9	9/16/2002	-	**3200**	**1100**	<50	<50	**75**	<50	<50	<50	<50	<50	<50	**1600**

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Menlo Park, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bTOC)	Analytical Results (ug/L)[a]												
				Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Carbon Tetrachloride	Chloroform	Chlorobenzene	CFC-11 (trichlorofluoromethane)	CFC-113 (1,1,2-Trichloro-1,2,2-trifluoroethane)
MW-9	MW-9 (c)	9/15/2003	-	3000	700	<50	<50	<50	<50	<50	<50	<50	<50	<50	1400
MW-9	MW-9	9/21/2004	-	3300	640	<25	<25	48	<25	<25	<25	28	<25	<25	1900
MW-FE1	MW-FE1	7/11/2000	-	<0.5	0.632	<0.5	<0.5	<1	<0.5	1.29	<0.5	<0.5	<0.5	<0.5	<0.5
MW-FE1	MW-FE1	9/11/2000	-	<0.5	0.6	<0.5	<0.5	<1	<0.5	0.878	<0.5	<0.5	<0.5	<0.5	<1
MW-FE1	MW-FE1	12/18/2000	-	<0.5	0.91	<0.5	<0.5	<1	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	<1
MW-FE1	MW-FE1	3/12/2001	-	<0.5	0.874	<0.5	<0.5	<1	<0.5	0.977	<0.5	<0.5	<0.5	<0.5	<1
MW-FE1	MW-FE1	6/19/2001	-	<0.5	1.6	<0.5	0.71	<1	0.62	1.8	<0.5	<0.5	<0.5	<0.5	<1
MW-FE1	MW-FE1	9/17/2001	-	<0.5	0.8	<0.5	0.88	1	<0.5	0.84	<0.5	<0.5	<0.5	<0.5	<1
MW-FE1	MW-FE1	9/16/2002	-	<0.5	0.59	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5
MW-FE1	MW-FE1	9/15/2003	-	<0.5	1.2	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	<0.5
MW-FE1	MW-FE1	9/21/2004	-	2.4	2.7	<0.5	0.77	0.58	0.76	1.3	<0.5	<0.5	<0.5	<0.5	<0.5
MW-FE1B	MW-FE1B	11/5/1999	-	1100	240	<13	<13	<25	<13	<13	<13	90	<13	<13	280
MW-FE1B	MW-FE1B	3/20/2000	-	178	40.7	<5	<5	<5	<5	<5	<5	12.1	<5	<5	38.6
MW-FE1B	MW-FE1B	6/19/2000	-	225	55.2	<12.5	<12.5	<25	<12.5	<12.5	<12.5	28.7	<12.5	<12.5	<25
MW-FE1B	MW-FE1B	9/11/2000	-	1860	<50	<50	<50	<100	<50	<50	<50	<50	<50	<50	785
MW-FE1B	MW-FE1B	12/18/2000	-	1210	226	<25	<25	<50	<25	<25	<25	114	<25	<25	295
MW-FE1B	MW-FE1B (dup)	12/18/2000	-	1080	201	<25	<25	<50	<25	<25	<25	102	<25	<25	275
MW-FE1B	MW-FE1B	3/12/2001	-	203	46.9	<5	<5	<10	<5	<5	<5	18.8	<5	<5	39.7
MW-FE1B	MW-FE1B (dup)	3/12/2001	-	216	43.1	<10	<10	<20	<10	<10	<10	18.3	<10	<10	34.3
MW-FE1B	MW-FE1B	6/19/2001	-	1400	240	<25	<25	<50	<25	<25	<25	120	<25	<25	1200
MW-FE1B	MW-FE1B (dup)	6/19/2001	-	1400	250	<25	<25	<50	<25	<25	<25	120	<25	<25	1200
MW-FE1B	MW-FE1B	9/17/2001	-	950	160	<50	<50	<100	<50	<50	<50	74	<50	<50	190
MW-FE1B	MW-FE1B (dup)	9/17/2001	-	960	150	<50	<50	<100	<50	<50	<50	74	<50	<50	190
MW-FE1B	MW-FE1B	9/16/2002	-	2900	410	<50	<50	<50	<50	<50	<50	180	<50	<50	880
MW-FE1B	MW-FE1B (dup)	9/16/2002	-	1700	280	<100	<100	<100	<100	<100	<100	130	<100	<100	530
MW-FE1B	MW-FE1B	9/15/2003	-	2600	170	<25	<25	<25	<25	<25	<25	63	<25	<25	920
MW-FE1B	MW-FE1B (dup)	9/15/2003	-	2300	170	<50	<50	<50	<50	<50	<50	58	<50	<50	740

Table 3
Summary of Analytical Results for Volatile Organic Compounds in Groundwater
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bTOC)	Analytical Results (ug/L)[a]											
				Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Carbon Tetrachloride	Chloroform	Chlorobenzene	CFC-11 (trichlorofluoromethane)	CFC-113 (1,1,2-Trichloro-1,2,2-trifluoroethane)
MW-FE1B	MW-FE1B	9/21/2004	-	**950**	**52**	<25	<25	<25	<25	<25	<25	<25	<25	<25	**370**
MW-FE1B	MW-FE1B (dup)	9/21/2004	-	**920**	**44**	<25	<25	<25	<25	<25	<25	<25	<25	<25	**370**
MW-FE1B	MW-FE1B	8/24/2005	-	**612**	**32.7**	<5	<5	<5	<5	<5	<5	**9.72**	<5	<5	**269**
MW-FE1B	MW-FE1B	12/21/2005	-	**499**	**20.5**	<10	<10	<10	<10	<10	<10	<10	<10	<10	**336**
MW-FE1B	MW-FE1B-6.5	8/8/2006	6.5	**65.8**	**5.55**	<2	<2	<2	<2	<2	<2	<2	<2	<2	**3.75**
MW-FE1B	MW-FE1B-24.5	8/8/2006	24.5	**54.8**	**17.1**	<2	<2	<2	<2	<2	<2	**3.63**	<2	<2	**40.2**
MW-FE1B	MW-FE1B-24.5DUP	8/8/2006	24.5	**73.5**	**16.7**	<2	<2	<2	<2	<2	<2	**3.61**	<2	<2	**51.4**
MW-FE1B	MW-FE1B-10	12/19/2006	10	**90.1**	**6.92**	<1	<1	<1	<1	<1	<1	**1.22**	<1	<1	**3.69**
MW-FE1B	MW-FE1B-27	12/19/2006	27	**65.5**	**25.9**	<1	<1	**1.17**	<1	<1	<1	**3.67**	<1	<1	**21.5**
MW-FE1B	MW-FE1B(6.0)	2/22/2008	6	**82.3**	**7.47**	<0.5	**0.51**	<0.5	**0.95**	<0.5	<0.5	**0.62**	<0.5	<0.5	**22.3**
MW-FE1B	MW-FE1B(27.0)	2/22/2008	27	**87.7**	**30.1**	<0.5	**0.66**	**0.81**	<0.5	<0.5	<0.5	**4.77**	<0.5	<0.5	**72.3**
MW-FE1B	MW-FE1B-6	9/9/2008	6	**82.9**	**7.55**	<0.5	**0.61**	<0.5	**1.38**	<0.5	<0.5	**0.62**	<0.5	<0.5	**35.1**
MW-FE1B	MW-FE1B-27	9/9/2008	27	**113**	**31.3**	<0.5	**0.91**	**0.99**	<0.5	<0.5	<0.5	**5.04**	<0.5	<0.5	**81.7**
MW-FE1B	FE-1B-09	3/17/2009	-	**60**	**4.85**	<0.5	**0.62**	<0.5	**1.45**	<0.5	<0.5	<0.5	<0.5	<0.5	**12.9**
MW-FE1B	FE-1B-27	3/17/2009	-	**109**	**22.5**	<1	**1.05**	**1.13**	<1	<1	<1	**3.86**	<1	<1	**58.1**
MW-FE1B	MW-FE1B-6	8/19/2009	6	**64.4**	**4.35**	<0.5	<0.5	<0.5	**1.33**	<0.5	<0.5	**0.61**	<0.5	<0.5	**12.5**
MW-FE1B	MW-FE1B-27	8/19/2009	27	**111**	**45.8**	<1	**1.02**	**1.12**	<1	<1	<1	**4.17**	<1	<1	**81.1**
MW-FE1B	MW-FE1B-27	8/12/2011	27	**114**	**22.3**	<1	**1.06**	<1	<1	<1	<1	**2.96**	<1	<1	**17.6**
MW-FE1B	MW-FE1B	9/11/2012	27	**98.6**	**12.2**	<0.5	**0.65**	<0.5	<0.5	<0.5	<0.5	**1.45**	<0.5	<0.5	**50.3**
MW-FE2B	MW-FE2B	11/5/1999	-	**7.7**	**83**	<1.3	**1.6**	<2.5	<1.3	<13	<1.3	**13**	<1.3	<1.3	**3**
MW-FE2B	MW-FE2B	3/20/2000	-	**5.69**	**47.8**	<1.2	<1.2	<1.2	<1.2	**1.61**	<1.2	**3.67**	<1.2	<1.2	<2.4
MW-FE2B	MW-FE2B	6/19/2000	-	**2.36**	**13.5**	<0.5	<0.5	<1	<0.5	**1.21**	<0.5	**2.31**	**1.1**	**1.38**	<1
MW-FE2B	MW-FE2B	9/11/2000	-	**8.18**	**44.1**	<2.5	<2.5	<5	<2.5	<2.5	<2.5	**7.49**	<2.5	**3.01**	<5
MW-FE2B	MW-FE2B	12/18/2000	-	**14.1**	**44.8**	<1	<1	<2	<1	<1	<1	**6.93**	<1	**3.72**	<2
MW-FE2B	MW-FE2B	3/12/2001	-	**13**	**38.4**	<1	<1	<2	<1	<1	<1	**4.64**	<1	<1	<2
MW-FE2B	MW-FE2B	6/19/2001	-	**4.6**	**12**	<0.5	<0.5	<1	<0.5	**1.5**	<0.5	**1**	<0.5	<0.5	**2.3**
MW-FE2B	MW-FE2B	9/17/2001	-	**11**	**29**	<1.2	<1.2	<2.5	<1.2	<1.2	<1.2	**2.8**	<1.2	<1.2	<2.5

Table 3
Summary of Analytical Results for Volatile Organic Compounds in Groundwater
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bTOC)	Analytical Results (ug/L)[a]											
				Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Carbon Tetrachloride	Chloroform	Chlorobenzene	CFC-11 (trichlorofluoromethane)	CFC-113 (1,1,2-Trichloro-1,2,2-trifluoroethane)
MW-FE2B	MW-FE2B	9/16/2002	-	24	27	<0.5	0.62	0.76	0.6	0.96	<0.5	2.8	<0.5	<0.5	6.7
MW-FE2B	MW-FE2B	9/15/2003	-	40	23	<0.5	0.55	<0.5	0.5	1.3	<0.5	1.8	<0.5	<0.5	5.2
MW-FE2B	MW-FE2B	9/21/2004	-	90	26	<25	<25	<25	<25	<25	<25	<25	<25	<25	38
MW-FE2B	MW-FE2B	8/24/2005	-	31.2	11.5	<0.5	0.59	<0.5	0.92	0.97	<0.5	0.91	<0.5	<0.5	11.9
MW-FE2B	MW-FE2B (dup)	8/24/2005	-	27.7	10.5	<0.5	<0.5	<0.5	0.77	0.88	<0.5	0.86	<0.5	<0.5	9.74
MW-FE2B	MW-FE2B	12/21/2005	-	122	38.4	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	8.63	<2.5	<2.5	62
MW-FE2B	MW-FE2B (dup)	12/21/2005	-	123	37.9	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	8.45	<2.5	<2.5	61.7
MW-FE2B	MW-FE2B-8.0	8/8/2006	8	19.6	8.29	<0.5	0.52	<0.5	0.93	0.75	<0.5	0.67	<0.5	<0.5	10.4
MW-FE2B	MW-FE2B-26.0	8/8/2006	26	192	58.6	<2	<2	<2	<2	<2	<2	13.2	<2	<2	100
MW-FE2B	MW-FE2B-10	12/19/2006	10	30.5	7.65	<0.5	0.64	<0.5	0.79	0.55	<0.5	0.6	<0.5	<0.5	7.94
MW-FE2B	MW-FE2B-27	12/19/2006	27	205	52.8	<2	<2	<2	<2	<2	<2	11.3	<2	<2	63
MW-FE2B	MW-FE2B DUP	12/19/2006	-	204	51.4	<2	<2	<2	<2	<2	<2	12.3	<2	<2	67.9
MW-FE2B	MW-FE2B(6.5)	2/22/2008	6.5	23.4	6.36	<0.5	0.62	<0.5	0.66	0.52	<0.5	<0.5	<0.5	<0.5	12
MW-FE2B	MW-FE2B(27.0)	2/22/2008	27	255	55.6	<2	<2	<2	<2	<2	<2	10.6	<2	<2	189
MW-FE2B	MW-FE2B(27.0)DUP	2/22/2008	27	262	55.6	<2	<2	<2	<2	<2	<2	10.7	<2	<2	200
MW-FE2B	MW-FE2B-8	9/9/2008	8	31.7	6.77	<0.5	0.56	<0.5	0.79	<0.5	<0.5	<0.5	<0.5	<0.5	14.3
MW-FE2B	MW-FE2B-27	9/9/2008	27	316	63.5	<2	<2	<2	<2	<2	<2	11.9	<2	<2	220
MW-FE2B	MW-FE2B-27D	9/9/2008	27	325	64.5	<2	<2	<2	<2	<2	<2	12.4	<2	<2	228
MW-FE2B	FE-2B-09	3/17/2009	-	27.4	4.29	<0.5	0.51	<0.5	0.65	<0.5	<0.5	<0.5	<0.5	<0.5	6.77
MW-FE2B	FE-2B-27	3/17/2009	-	317	45.2	<2	<2	<2	<2	<2	<2	9.53	<2	<2	147
MW-FE2B	FE-2B-27D	3/17/2009	-	320	46.1	<2	<2	<2	<2	<2	<2	9.61	<2	<2	155
MW-FE2B	MW-FE2B-8	8/19/2009	8	29.2	3.74	<0.5	<0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	8.79
MW-FE2B	MW-FE2B-27	8/19/2009	27	324	39.7	<2	<2	<2	<2	<2	<2	10.5	<2	<2	191
MW-FE2B	MW-FE2B-27D	8/19/2009	27	319	40.5	<2	<2	<2	<2	<2	<2	10.7	<2	<2	203
MW-FE2B	MW-FE2B-27	8/12/2011	27	338	48	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	7.69	<2.5	<2.5	41.9
MW-FE2B	MW-FE2B-27-DUP	8/12/2011	27	334	49.9	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	7.25	<2.5	<2.5	41.1
MW-FE2B	MW-FE2B	9/11/2012	27	282	34.5	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	3.82	<2.5	<2.5	103

Table 3
Summary of Analytical Results for Volatile Organic Compounds in Groundwater
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bTOC)	Analytical Results (ug/L)[a]											
				Trichloroethene	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1-Dichloroethene	Vinyl Chloride	1,1,1-Trichloroethane	1,1-Dichloroethane	Carbon Tetrachloride	Chloroform	Chlorobenzene	CFC-11 (trichlorofluoromethane)	CFC-113 (1,1,2-Trichloro-1,2,2-trifluoroethane)
MW-FE2B	MW-FE2B-DUP	9/11/2012	27	**265**	**34.1**	<2.5	<2.5	<2.5	<2.5	<2.5	<2.5	**3.82**	<2.5	<2.5	**101**
MW-FE3	MW-FE3	11/5/1999	-	**17**	**1.7**	<0.5	**1.1**	<1	<0.5	**2**	<0.5	<0.5	<0.5	<0.5	**0.8**
MW-FE3	MW-FE3	3/20/2000	-	**11.5**	**1.07**	<0.5	**0.897**	**0.533**	<0.5	**2.07**	<0.5	<0.5	<0.5	<0.5	<1
MW-FE3	MW-FE3	6/19/2000	-	**7.87**	**1.05**	<0.5	**0.79**	<1	<0.5	**1.76**	<0.5	<0.5	<0.5	<0.5	<1
MW-FE3	MW-FE3	9/11/2000	-	**7.71**	**1.21**	<0.5	**0.886**	<1	<0.5	**1.72**	<0.5	<0.5	<0.5	<0.5	<1
MW-FE3	MW-FE3	12/18/2000	-	**7.73**	**1.29**	<0.5	**0.894**	<1	<0.5	**1.74**	<0.5	<0.5	<0.5	<0.5	<1
MW-FE3	MW-FE3	3/12/2001	-	**7.47**	**1.32**	<0.5	**0.694**	<1	<0.5	**1.45**	<0.5	<0.5	<0.5	<0.5	<1
MW-FE3	MW-FE3	6/19/2001	-	**8.1**	**2**	<0.5	**1.3**	<1	**0.7**	**2.2**	<0.5	<0.5	<0.5	<0.5	<1
MW-FE3	MW-FE3	9/17/2001	-	**6.1**	**1.2**	<0.5	**0.63**	<1	<0.5	**1.2**	<0.5	<0.5	<0.5	<0.5	<1
MW-FE3	MW-FE3	9/16/2002	-	**5.4**	**2.3**	<0.5	**1.2**	**0.62**	**0.83**	**1.6**	<0.5	<0.5	<0.5	<0.5	<0.5
MW-FE3	MW-FE3	9/15/2003	-	**4.6**	**2.8**	<0.5	**1.2**	<0.5	**1.3**	**1.3**	<0.5	<0.5	<0.5	<0.5	<0.5
MW-FE3	MW-FE3	9/21/2004	-	**5.3**	**3.7**	<1	**1.4**	<1	**2.9**	**1**	<1	<1	<1	<1	<1
2008 Com/Ind ESLs for Vapor Intrusion:				*1,800*	*17,000*	*19,000*	*18,000*	*13*	*360,000*	*3,400*	*31*	*1,100*	*37,000*	*n/a*	*n/a*
2013 (interim final) Com/Ind ESLs for Vapor Intrusion:				*1,300*	*(c)*	*120,000*	*130,000*	*18*	*(c)*	*(c)*	*48*	*1,700*	*(c)*	*n/a*	*n/a*

Abbreviations:

<0.50 = Compound not detected at or above indicated laboratory detection limit
CFC-113 = Freon 113 (1,1,2-Trichloro-1,2,2-trifluoroethane)
CFC-11 = Freon 11 (Trichlorofluoromethane)
ug/L = Micrograms per Liter
n/a = Not applicable

Notes:

(a) All samples were analyzed using EPA Method 8010 or 8021B prior to the end of 2001, and using 8260B beginning 2002 with an analyte list expanded to include CFC-113. VOCs not shown were not detectable above laboratory reporting limits.
(b) The laboratory control sample ("LCS") recovery for this analyte is greater than the control limit range. This indicates the possibility of positive bias in the associated sample result. Therefore, the result should be considered estimated because the actual concentration may be lower than reported.
(c) No concentration value is listed for this analyte in the 2013 ESLs.

Table 4
Summary of Analytical Results for Major Ions, Alkalinity, and Total Dissolved Solids in Groundwater
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bTOC)	Analytical Results (mg/L)																	
				Cations[a]						Anions[b]						Alkalinity Species[c]					
				Calcium	Iron	Magnesium	Manganese	Potassium	Sodium	Chloride	Fluoride	Bromide	Nitrate-Nitrogen	Nitrite-Nitrogen	Sulfate	Total Alkalinity	Carbonate Alkalinity	Bicarbonate Alkalinity	Hydroxide Alkalinity	TDS[d]
MW-6B	MW-6B	8/24/2005	-	389	1.56	787	5.77	68.2	3110	4300	<100	<100	<100	<100	930	121	ND	121	<10	7360
MW-6B	MW-6B	12/21/2005	-	1396	0.007	4390	0.019	293	17500	31700	<100	<100	<100	<100	2069	400	<10	400	<10	57900
MW-6B	MW-6B-7.0	8/8/2006	7	33.6	<0.1	27.6	0.322	9.73	178	99.2	<1	<1	<1	--	<10	77.5	<10	77.5	<10	883
MW-6B	MW-6B-10	12/19/2006	10	19.8	<0.1	19.3	<0.1	11	97.8	50.9	2.95	<1	13.7	--	20.4	44.7	<10	44.7	<10	246
MW-6B	MW-6B(6.0)	2/22/2008	6	41.8	0.227	38.6	0.105	14.1	399	900	<3	49.8	<3	<3	3.73	70	<10	70	<10	1800
MW-6B	MW-6B-7	9/9/2008	7	134	--	205	--	28.3	1040	1920	<5	7.82	<5	<5	130	214	--	--	--	3800
MW-6B	MW-6B-09	3/17/2009	9	41.3	0.337	45.3	<0.01	1.48	280	515	<5	<5	<5	<5	46	110	--	--	--	2270
MW-6B	MW-6B-7	8/19/2009	7	68.4	0.44	99.2	0.049	21.1	555	933	<20	<20	<20	<20	89.2	101	--	--	--	1770
MW-6B	MW-6B-25.0	8/8/2006	25	1090	<1	9840	46.1	550	41900	25900	<100	<100	<100	--	4320	829	<10	829	<10	180000
MW-6B	MW-6B-27	12/19/2006	27	1130	<1	11200	51.8	631	46900	69800	<100	<100	<100	--	11500	808	<10	808	<10	176000
MW-6B	MW-6B(27.0)	2/22/2008	27	954	1.59	9060	54.2	666	50500	1E+05	<1000	11700	<1000	<1000	<1000	840	<10	840	<10	191000
MW-6B	MW-6B-27	9/9/2008	27	1070	--	11300	--	779	51700	1E+05	<125	493	<125	<125	13400	771	--	--	--	202000
MW-6B	MW-6B-27	3/17/2009	27	1270	11.6	11300	56.1	859	45200	1E+05	<1,250	<1,250	<1,250	<1,250	17100	727	--	--	--	189000
MW-6B	MW-6B-27	8/19/2009	27	2180	10.4	12400	45.2	860	50900	1E+05	<2,000	<2,000	<2,000	<2,000	19100	889	--	--	--	199000
MW-6B	MW-6B-27	8/12/2011	27	1210	<0.1	10300	44.5	621	37600	90300	<0.5	529	<0.5	<0.5	11300	806	--	--	--	165000
MW-6B	MW-6B	9/11/2012	27	1170	<10	10500	45.7	890	45500	96400	<5	496	<5	<5	12100	830	--	--	--	186000
MW-FE1B	MW-FE1B	8/24/2005	-	415	2.26	2840	51.8	341	11700	29600	<100	<100	<100	<100	5810	735	ND	735	<10	62100
MW-FE1B	MW-FE1B	12/21/2005	-	354	0.003	2000	0.01	244	7700	17800	<100	<100	<100	<100	90	675	<10	675	<10	30000
MW-FE1B	MW-FE1B-6.5	8/8/2006	6.5	54	<0.1	50.4	<0.1	13.2	366	158	<1	<1	<1	--	<10	167	<10	167	<10	1450
MW-FE1B	MW-FE1B-10	12/19/2006	10	53.3	<0.1	78.5	<0.1	16.6	473	504	<1	<1	<1	--	63.6	274	<10	274	<10	1830
MW-FE1B	MW-FE1B(6.0)	2/22/2008	6	108	0.309	192	0.005	4.46	753	1550	<3	275	<3	<3	6.71	595	<10	595	<10	3530
MW-FE1B	MW-FE1B-6	9/9/2008	6	135	--	157	--	10.6	873	1400	<5	5.68	<5	<5	236	620	--	--	--	3200
MW-FE1B	FE-1B-09	3/17/2009	9	150	1.02	175	<0.01	1.35	766	1420	<5	<5	<5	<5	226	581	--	--	--	4440
MW-FE1B	MW-FE1B-6	8/19/2009	6	174	1.14	206	0.049	13.9	755	1290	<20	<20	<20	25.8	563	680	--	--	--	3350
MW-FE1B	MW-FE1B-24.5	8/8/2006	24.5	1140	<1	8520	40.9	581	36200	23200	<100	<100	<100	--	4210	800	<10	800	<10	154000
MW-FE1B	MW-FE1B-27	12/19/2006	27	1170	<1	9640	46.6	638	40800	55200	<100	<100	<100	--	8990	753	<10	753	<10	158000
MW-FE1B	MW-FE1B(27.0)	2/22/2008	27	970	1.02	8420	44	560	44000	99500	<1000	11600	<1000	<1000	<1000	770	<10	770	<10	178000
MW-FE1B	MW-FE1B-27	9/9/2008	27	1230	--	11300	--	722	44100	99900	<250	414	<250	<250	11600	810	--	--	--	182000
MW-FE1B	FE-1B-27	3/17/2009	27	1320	11.2	10400	51.9	756	40900	97900	<1,250	<1,250	<1,250	<1,250	16800	870	--	--	--	158000
MW-FE1B	MW-FE1B-27	8/19/2009	27	967	10.4	11100	43.4	371	43900	94200	<2,000	<2,000	<2,000	<2,000	18300	837	--	--	--	176000
MW-FE1B	MW-FE1B-27	8/12/2011	27	1320	0.122	11700	52.7	800	44300	1E+05	<0.5	587	<0.5	<0.5	13800	779	--	--	--	222000
MW-FE1B	MW-FE1B	9/11/2012	27	1580	<10	6410	32.6	378	24700	52190	<5	262	<5	<5	7260	690	--	--	--	108000

Table 4
Summary of Analytical Results for Major Ions, Alkalinity, and Total Dissolved Solids in Groundwater
3695-3723 and 3750 Haven Avenue
Menlo Park, California

Sample Location	Sample ID	Sample Date	Sample Depth (ft bTOC)	Analytical Results (mg/L)																
				Cations[c]						Anions[b]						Alkalinity Species[a]				TDS[d]
				Calcium	Iron	Magnesium	Manganese	Potassium	Sodium	Chloride	Fluoride	Bromide	Nitrate-Nitrogen	Nitrite-Nitrogen	Sulfate	Total Alkalinity	Carbonate Alkalinity	Bicarbonate Alkalinity	Hydroxide Alkalinity	
MW-FE2B	MW-FE2B	8/24/2005	-	29.1	0.15	122	0.592	19.6	1090	1700	<10	<10	<10	<10	354	760	<10	760	<10	3460
MW-FE2B	MW-FE2B	12/21/2005	-	844	0.004	6480	0.027	609	25600	54600	<100	<100	<100	<100	8640	1035	<10	1035	<10	95000
MW-FE2B	MW-FE2B-8.0	8/8/2006	8	19.9	<0.01	49.7	0.307	9.29	626	489	<1	<1	<1	--	210	750	<10	750	<10	2120
MW-FE2B	MW-FE2B-10	12/19/2006	10	25.1	<0.1	76.8	0.293	12.3	733	578	<1	<1	1.74	--	174	668	<10	668	<10	2330
MW-FE2B	MW-FE2B(6.5)	2/22/2008	6.5	21.8	0.146	111	0.938	9.35	712	800	<3	200	<3	<3	3.65	700	<10	700	<10	2410
MW-FE2B	MW-FE2B-8	9/9/2008	8	48	--	98.2	--	21.9	883	1000	<5	<5	<5	<5	232	740	--	--	--	2570
MW-FE2B	FE-2B-09	3/17/2009	9	45.9	0.337	104	0.527	1.08	716	810	8.39	<5	<5	<5	208	709	--	--	--	3500
MW-FE2B	MW-FE2B-8	8/19/2009	8	65.1	0.312	147	0.724	11.7	809	992	<20	<20	<20	27.6	254	786	--	--	--	2650
MW-FE2B	MW-FE2B-26.0	8/8/2006	26	917	0.56	6380	27	580	26300	16200	<100	<100	<100	--	2680	933	<10	933	<10	115000
MW-FE2B	MW-FE2B-27	12/19/2006	27	1020	<1	7070	32.8	669	29500	40300	<100	<100	<100	--	8550	787	<10	787	<10	113000
MW-FE2B	MW-FE2B(27.0)	2/22/2008	27	1010	1.48	6580	36.3	580	30500	68000	<1000	7900	<1000	<1000	<1000	770	<10	770	<10	120000
MW-FE2B	MW-FE2B-27	9/9/2008	27	1290	--	8590	--	711	35000	75000	<250	296	<250	<250	8640	782	--	--	--	137000
MW-FE2B	FE-2B-27	3/17/2009	27	1210	10.6	6860	36.5	568	29500	65900	<1,250	<1,250	<1,250	<1,250	14100	837	--	--	--	117000
MW-FE2B	MW-FE2B-27	8/19/2009	27	945	10.6	7910	33.5	273	31300	63600	<2,000	<2,000	<2,000	<2,000	17200	871	--	--	--	129000
MW-FE2B	MW-FE2B-27	8/12/2011	27	894	<0.1	6570	28.1	569	25900	58700	<0.5	304	<0.5	<0.5	7960	741	--	--	--	117000
MW-FE2B	MW-FE2B	9/11/2012	27	1520	<10	7840	37.5	465	29800	62600	<5	330	<5	<5	9110	739	--	--	--	130000

Abbreviations:

<0.50 = Compound not detected at or above indicated laboratory detection limit
TDS = Total Dissolved Solids
µg/L = Micrograms per liter

Notes:

(a) Samples were analyzed using Method SM2320B
(b) Samples were analyzed using EPA Method 300.
(c) Samples were analyzed using EPA Method 200.8 using ICP/MS.
(d) Samples were analyzed using EPA Method 160.1.

Table 5a
August 2011 Electrical Conductivity, Temperature, and Density Profile Data

3695-3723 and 3750 Haven Avenue
Menlo Park, California

MW-5B					MW-6B					MW-FE1B					MW-FE2B				
Depth [a]	Elec. Cond. [b]	Temp. [b]	Groundwater Density (g/mL)		Depth [a]	Elec. Cond. [b]	Temp. [b]	Groundwater Density (g/mL)		Depth [a]	Elec. Cond. [b]	Temp. [b]	Groundwater Density (g/mL)		Depth [a]	Elec. Cond. [b]	Temp. [b]	Groundwater Density (g/mL)	
			2011 Meas.[c]	2008-09 Est.[d]				2011 Meas.[c]	2011 Est.[d]				2011 Meas.[c]	2011 Est.[d]				2011 Meas.[c]	2011 Est.[d]
(ft bTOC)	(uS/cm)	(°C)			(ft bTOC)	(uS/cm)	(°C)			(ft bTOC)	(uS/cm)	(°C)			(ft bTOC)	(uS/cm)	(°C)		
6	-	-	-	-	6	-	-	-	1.000	6	-	-	-	1.001	6	-	-	-	-
7	-	-	-	-	7	-	-	-	0.999	7	-	-	-	1.001	7	-	-	-	1.000
8	-	-	-	1.005	8	-	-	-	1.000	8	-	-	-	1.001	8	-	-	-	1.000
10	-	-	-	1.007	10	-	-	-	1.001	10	-	-	-	1.001	10	-	-	-	1.000
12	-	-	-	1.008	12	-	-	-	0.985	12	-	-	-	1.001	12	-	-	-	1.000
14	-	-	-	1.008	14	-	-	-	0.993	14	-	-	-	1.001	14	-	-	-	1.000
16	-	-	-	1.008	16	-	-	-	0.996	16	-	-	-	1.002	16	-	-	-	1.000
18	-	-	-	1.011	18	-	-	-	1.002	18	-	-	-	1.003	18	-	-	-	1.000
20	-	-	-	1.026	20	-	-	-	1.015	20	-	-	-	1.028	20	-	-	-	1.000
22	-	-	-	1.057	22	-	-	-	1.066	22	-	-	-	1.098	22	-	-	-	1.001
24	-	-	-	1.100	24	-	-	-	1.091	24	-	-	-	1.113	24	-	-	-	0.994
26	-	-	-	1.134	26	-	-	-	1.095	26	-	-	-	1.113	26	-	-	-	1.056
27	-	-	-	1.133	27	160,317	20.9	1.099	1.099	27	161,407	19.7	1.114	1.114	27	113,291	19.1	1.066	1.066
28	-	-	-	1.133	28	-	-	-	1.095	28	-	-	-	1.113	28	-	-	-	1.060
30	-	-	-	1.131	30	-	-	-	1.090	30	-	-	-	1.117	30	-	-	-	-
32	-	-	-	1.132	32	-	-	-	-	32	-	-	-	-	32	-	-	-	-
34	-	-	-	1.136	34	-	-	-	-	34	-	-	-	-	34	-	-	-	-
Mean[e]:	92.246	18.31	-	1.069	**Mean:**	160,317	20.89	-	1.054	**Mean:**	161,407	19.65	-	1.049	**Mean:**	113,291	19.08	-	1.023

Abbreviations:
bTOC - below top of casing
°C - degrees Celsius
uS/cm - microsiemens per centimeter
g/mL - grams per milliter

Notes:
(a) Depth to water measurements collected using an electric water level sounder.
(b) Temperature and conductivity measurements collected using a YSI 650 MDS multiparameter instrument with YSI 600 XLM flow-through cell.
(c) Density measured in the field
(d) Density estimated by scaling regression-calculated 2008-2009 high densities (> 1.005) by current (September 2012) measured values.
2008-2009 estimated density calculated from electrical conductivity by means of a site-specific empirical regression:
[Estimated Density, (g/ml)] = 7.228e-07 * [Electrical Conductivity, (uS/cm)] + 0.9974; Coefficient of Determination (R2) = 0.9917
(see Table C-3)
(e) Estimated using 2008-2009 data.

Table 5b
September 2012 Electrical Conductivity, Temperature, and Density Profile Data
3695-3723 and 3750 Haven Avenue
Menlo Park, California

MW-5B					MW-6B					MW-FE1B					MW-FE2B				
Depth [a]	Elec. Cond. [b]	Temp. [b]	Groundwater Density (g/mL)		Depth [a]	Elec. Cond. [b]	Temp. [b]	Groundwater Density (g/mL)		Depth [a]	Elec. Cond. [b]	Temp. [b]	Groundwater Density (g/mL)		Depth [a]	Elec. Cond. [b]	Temp. [b]	Groundwater Density (g/mL)	
			2012 Meas.[c]	2008-09 Est.[d]				2012 Meas.[c]	2012 Est.[d]				2012 Meas.[c]	2012 Est.[d]				2012 Meas.[c]	2012 Est.[d]
(ft bTOC)	(uS/cm)	(°C)			(ft bTOC)	(uS/cm)	(°C)			(ft bTOC)	(uS/cm)	(°C)			(ft bTOC)	(uS/cm)	(°C)		
6	-	-	-	-	6	-	-	-	1.000	6	-	-	-	1.001	6	-	-	-	-
7	-	-	-	-	7	-	21.5	0.998	0.999	7	-	18.9	0.998	1.001	7	-	17.1	0.998	1.000
8	-	-	-	1.005	8	-	-	-	1.000	8	-	-	-	1.001	8	-	-	-	1.000
10	-	-	-	1.007	10	-	-	-	1.001	10	-	-	-	1.001	10	-	-	-	1.000
12	-	-	-	1.008	12	-	-	-	1.000	12	-	-	-	1.001	12	-	-	-	1.000
14	-	-	-	1.008	14	-	-	-	1.008	14	-	-	-	1.001	14	-	-	-	1.000
16	-	-	-	1.008	16	-	-	-	1.012	16	-	-	-	1.002	16	-	-	-	1.000
18	-	-	-	1.011	18	-	-	-	1.018	18	-	-	-	1.003	18	-	-	-	1.000
20	-	-	-	1.026	20	-	-	-	1.031	20	-	-	-	1.028	20	-	-	-	1.000
22	-	-	-	1.057	22	-	-	-	1.082	22	-	-	-	1.054	22	-	-	-	1.001
24	-	-	-	1.100	24	-	-	-	1.108	24	-	-	-	1.069	24	-	-	-	1.005
26	-	-	-	1.134	26	-	-	-	1.112	26	-	-	-	1.069	26	-	-	-	1.067
27	-	-	-	1.133	27	169,234	19.5	1.116	1.116	27	121,690	19.3	1.070	1.070	27	129,870	17.2	1.078	1.078
28	-	-	-	1.133	28	-	-	-	1.112	28	-	-	-	1.069	28	-	-	-	1.072
30	-	-	-	1.131	30	-	-	-	1.107	30	-	-	-	1.073	30	-	-	-	-
32	-	-	-	1.132	32	-	-	-	-	32	-	-	-	-	32	-	-	-	-
34	-	-	-	1.138	34	-	-	-	-	34	-	-	-	-	34	-	-	-	-
Mean[e]:	92,248	18.31	-	1.069	**Mean:**	169,234	20.50	-	1.054	**Mean:**	121,690	19.05	-	1.049	**Mean:**	129,870	17.15	-	1.023

Abbreviations:
bTOC - below top of casing
°C - degrees Celsius
uS/cm - microsiemens per centimeter
g/mL - grams per milliter

Notes:
(a) Depth to water measurements collected using an electric water level sounder.
(b) Temperature and conductivity measurements collected using a YSI 650 MDS multiparameter instrument with YSI 600 XLM flow-through cell.
(c) Density measured in the field.
(d) Density estimated by scaling regression-calculated 2008-2009 high densities (> 1.005) by current (September 2012) measured values.
2008-2009 estimated density calculated from electrical conductivity by means of a site-specific empirical regression:
[Estimated Density, (g/ml)] = 7.223e-07 * [Electrical Conductivity, (uS/cm)] + 0.9974; Coefficient of Determination (R2) = 0.9917
(see Table C-3)
(e) Estimated using 2008-2009 data.

Table 6
Trend Evaluation using Mann-Kendall Test
3695-3723 and 3750 Haven Avenue
Menlo Park, California

MW-6B, (2008-2012)	Sample Date	TCE Concentration (ug/L)	Pair Comparisons (1 = concordant, -1 = discordant) 2/22/2008	9/9/2008	3/17/2009	8/19/2009	8/12/2011
MW-6B	8/8/2006	379					
MW-6B	12/19/2006	151					
MW-6B	2/22/2008	98.7					
MW-6B	9/9/2008	229	1				
MW-6B	3/17/2009	94	-1	-1			
MW-6B	8/19/2009	93	-1	-1	-1		
MW-6B	8/12/2011	888	1	1	1	1	
MW-6B	9/11/2012	162	1	-1	1	1	-1

Minimum:	93	
Maximum:	888	
Kendall's S:	1	S = sum of pair comparisons
Kendall's Tau:	0.100	Tau = S/(n*(n-1)/2)
No. of pair comparisons, n:	5	
Abs value Kendall's S, |S|:	1	
P(S=0), i.e., no trend:	0.500	Probability that S = 0 [from Gibbons, 1994, Table 9.4]
P(S≠0), i.e., trend exists:	0.500	Probability that slope (trend) is positive

CONCLUSION: **NO TREND** (at 90% confidence level)

MW-6B, (2008-2012)	Sample Date	cis-1,2-DCE Concentration (ug/L)	Pair Comparisons (1 = concordant, -1 = discordant) 2/22/2008	9/9/2008	3/17/2009	8/19/2009	8/12/2011
MW-6B	8/8/2006	32.3					
MW-6B	12/19/2006	25					
MW-6B	2/22/2008	31.9					
MW-6B	9/9/2008	32.7	1				
MW-6B	3/17/2009	28.1	-1	-1			
MW-6B	8/19/2009	25.3	-1	-1	-1		
MW-6B	8/12/2011	114	1	1	1	1	
MW-6B	9/11/2012	54.2	1	1	1	1	-1

Minimum:	25	
Maximum:	114	
Kendall's S:	3	S = sum of pair comparisons
Kendall's Tau:	0.300	Tau = S/(n*(n-1)/2)
No. of pair comparisons, n:	5	
Abs value Kendall's S, |S|:	3	
P(S=0), i.e., no trend:	0.325	Probability that S = 0 [from Gibbons, 1994, Table 9.4]
P(S≠0), i.e., trend exists:	0.675	Probability that slope (trend) is positive

CONCLUSION: **NO TREND** (at 90% confidence level)

Table 6
Trend Evaluation using Mann-Kendall Test
3695-3723 and 3750 Haven Avenue
Menlo Park, California

MW-FE1B, (2008-2012)	Sample Date	TCE Concentration (ug/L)	Pair Comparisons (1 = concordant, -1 = discordant) 2/22/2008	9/9/2008	3/17/2009	8/19/2009	8/12/2011
MW-FE1B	8/8/2006	64.15					
MW-FE1B	12/19/2006	65.5					
MW-FE1B	2/22/2008	87.7					
MW-FE1B	9/9/2008	113	1				
MW-FE1B	3/17/2009	109	1	-1			
MW-FE1B	8/19/2009	111	1	-1	1		
MW-FE1B	8/12/2011	114	1	1	1	1	
MW-FE1B	9/11/2012	98.6	1	-1	-1	-1	-1

Minimum:	64.15	
Maximum:	114	
Kendall's S:	3	S = sum of pair comparisons
Kendall's Tau:	0.300	Tau = S/(n*(n-1)/2)
No. of pair comparisons, n:	5	
Abs value Kendall's S, |S|:	3	
P(S=0), i.e., no trend:	0.325	Probability that S = 0 [from Gibbons, 1994, Table 9.4]
P(S≠0), i.e., trend exists:	0.675	Probability that slope (trend) is positive

CONCLUSION: **NO TREND** (at 90% confidence level)

MW-FE1B, (2008-2012)	Sample Date	cis-1,2-DCE Concentration (ug/L)	Pair Comparisons (1 = concordant, -1 = discordant) 2/22/2008	9/9/2008	3/17/2009	8/19/2009	8/12/2011
MW-FE1B	8/8/2006	16.9					
MW-FE1B	12/19/2006	25.9					
MW-FE1B	2/22/2008	30.1					
MW-FE1B	9/9/2008	31.3	1				
MW-FE1B	3/17/2009	22.5	-1	-1			
MW-FE1B	8/19/2009	45.8	1	1	1		
MW-FE1B	8/12/2011	22.3	-1	-1	-1	-1	
MW-FE1B	9/11/2012	12.2	-1	-1	-1	-1	-1

Minimum:	12.2	
Maximum:	45.8	
Kendall's S:	-7	S = sum of pair comparisons
Kendall's Tau:	-0.700	Tau = S/(n*(n-1)/2)
No. of pair comparisons, n:	5	
Abs value Kendall's S, |S|:	7	
P(S=0), i.e., no trend:	0.080	Probability that S = 0 [from Gibbons, 1994, Table 9.4]
P(S≠0), i.e., trend exists:	0.920	Probability that slope (trend) is negative

CONCLUSION: **NEGATIVE TREND** (at 90% confidence level)

Table 6
Trend Evaluation using Mann-Kendall Test
3695-3723 and 3750 Haven Avenue
Menlo Park, California

MW-FE2B, (2008-2012)	Sample Date	TCE Concentration (ug/L)	Pair Comparisons (1 = concordant, -1 = discordant) 2/22/2008	9/9/2008	3/17/2009	8/19/2009	8/12/2011
MW-FE2B	8/8/2006	192					
MW-FE2B	12/19/2006	204.5					
MW-FE2B	2/22/2008	258.5					
MW-FE2B	9/9/2008	320.5	1				
MW-FE2B	3/17/2009	318.5	1	-1			
MW-FE2B	8/19/2009	321.5	1	1	1		
MW-FE2B	8/12/2011	336	1	1	1	1	
MW-FE2B	9/11/2012	273.5	1	-1	-1	-1	-1

Minimum:	192	
Maximum:	336	
Kendall's S:	**5**	S = sum of pair comparisons
Kendall's Tau:	0.500	Tau = S/(n*(n-1)/2)
No. of pair comparisons, n:	5	
Abs value Kendall's S, |S|:	5	
P(S=0), i.e., no trend:	0.180	Probability that S = 0 [from Gibbons, 1994, Table 9.4]
P(S≠0), i.e., trend exists:	0.820	Probability that slope (trend) is positive

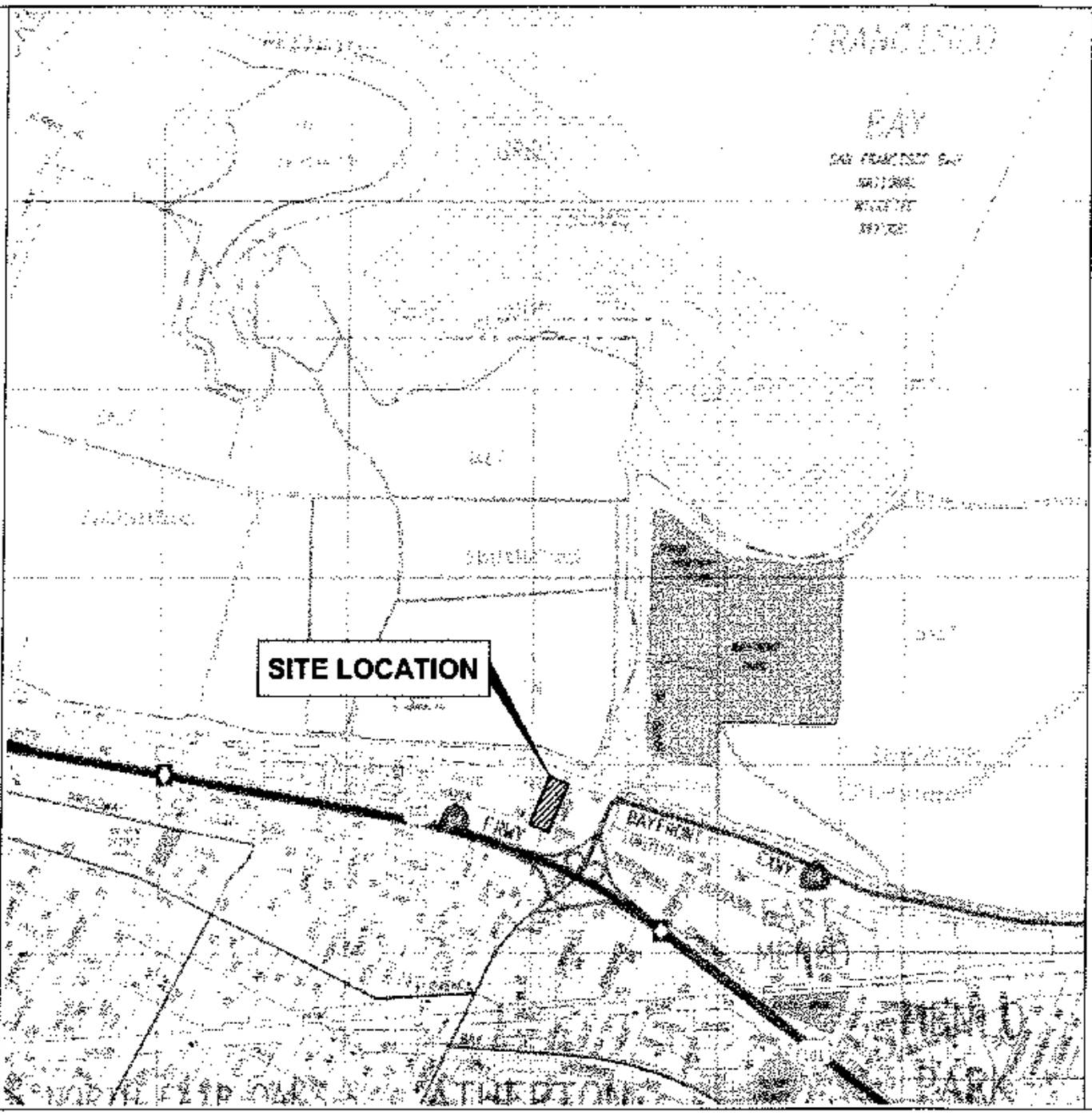
CONCLUSION: **NO TREND** (at 90% confidence level)

MW-FE2B, (2008-2012)	Sample Date	cis-1,2-DCE Concentration (ug/L)	Pair Comparisons (1 = concordant, -1 = discordant) 2/22/2008	9/9/2008	3/17/2009	8/19/2009	8/12/2011
MW-FE2B	8/8/2006	58.6					
MW-FE2B	12/19/2006	52.1					
MW-FE2B	2/22/2008	55.6					
MW-FE2B	9/9/2008	64	1				
MW-FE2B	3/17/2009	45.65	-1	-1			
MW-FE2B	8/19/2009	40.1	-1	-1	-1		
MW-FE2B	8/12/2011	48.95	-1	-1	1	1	
MW-FE2B	9/11/2012	34.3	-1	-1	-1	-1	-1

Minimum:	34.3	
Maximum:	64	
Kendall's S:	**-9**	S = sum of pair comparisons
Kendall's Tau:	-0.900	Tau = S/(n*(n-1)/2)
No. of pair comparisons, n:	5	
Abs value Kendall's S, |S|:	9	
P(S=0), i.e., no trend:	0.025	Probability that S = 0 [from Gibbons, 1994, Table 9.4]
P(S≠0), i.e., trend exists:	0.975	Probability that slope (trend) is negative

CONCLUSION: **NEGATIVE TREND** (at 95% confidence level)

FIGURES



Notes:

1. All locations are approximate.
2. Basemap source: Santa Clara / San Mateo Counties Thomas Guide, 1997.

N

0 2400 4800

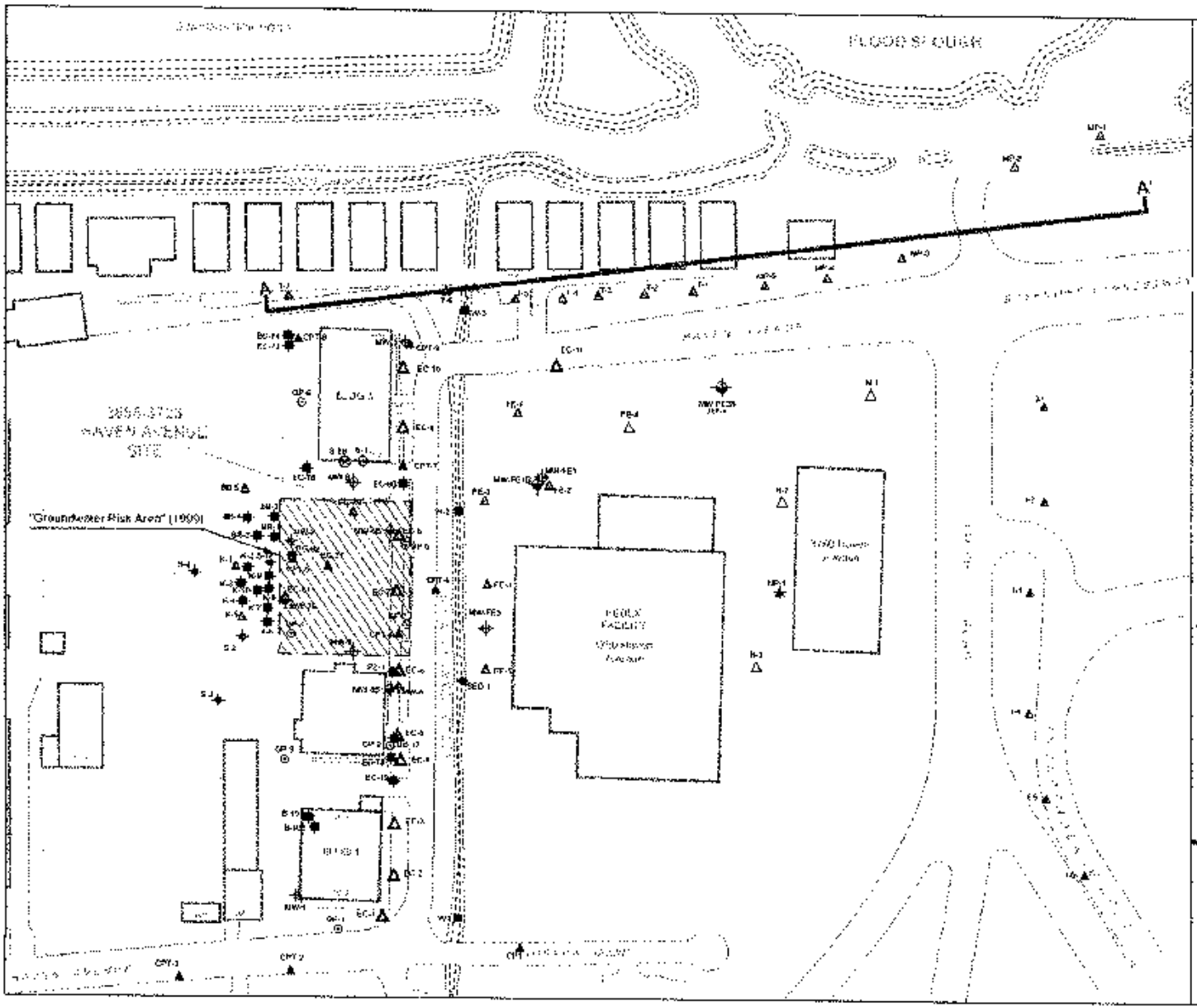
(Approximate Scale in Feet)

Erler & Kalinowski, Inc.

Site Location

3695-3723 Haven Avenue
Menlo Park, CA
December 2013
EKI 960007.25

Figure 1



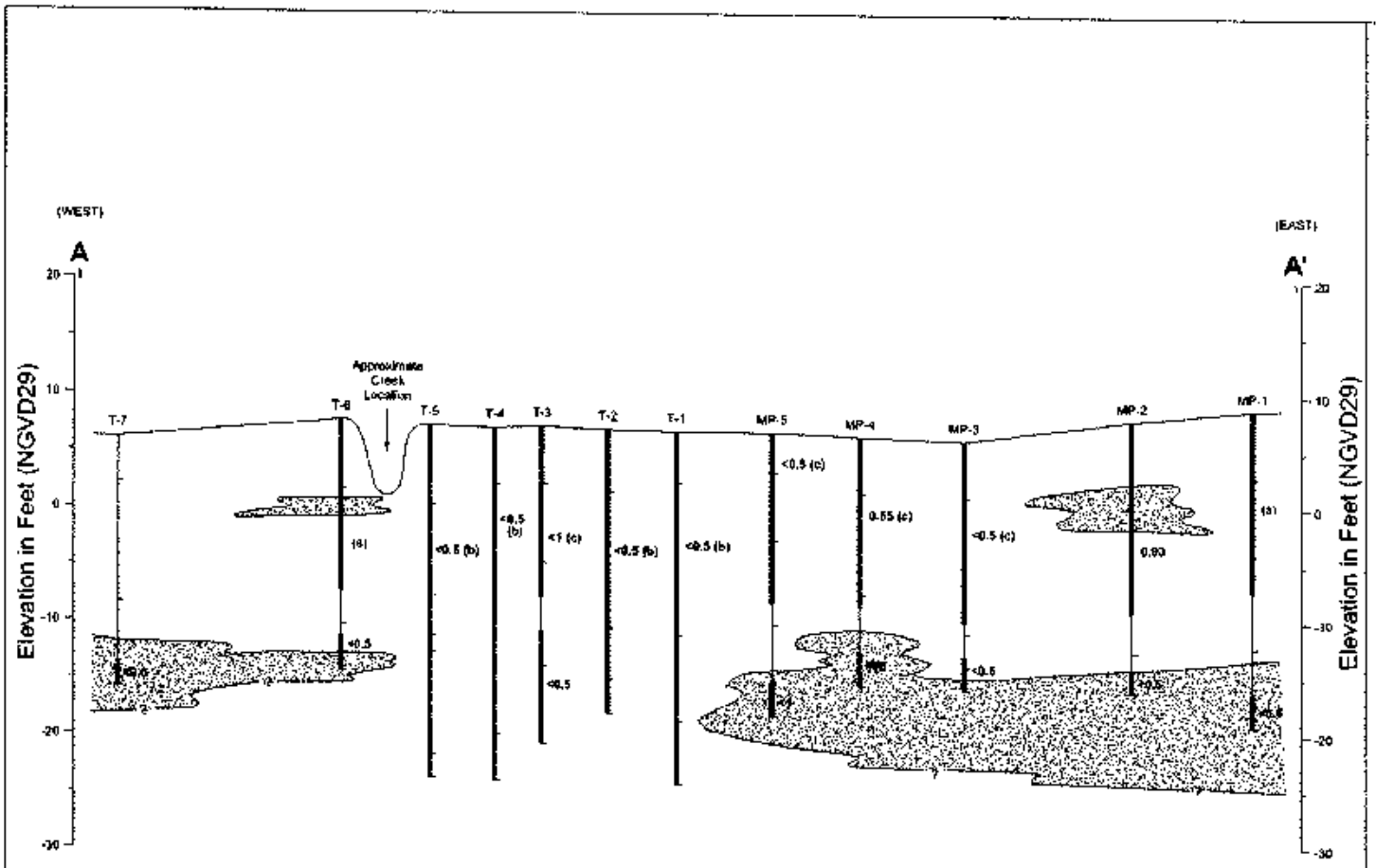
Erler & Kalinowski, Inc.

Wells, Cross-Section Line, and Sampling Locations, 1994 - 2012

3695-3723 Haven Avenue and Vicinity
Menlo Park, CA

December 2013
EKI 960007.25

Figure 2



10
0
0
100
Scale:
10x Vertical Exaggeration

LEGEND

Sand, Gravel

Silt, Clay

Grab Groundwater Sample Interval

39 TCE Concentration (ug/L) detected in groundwater sample collected October 1998 (EKI, 1998d).

(a) Unable to collect sufficient sample volume for analysis.

(b) Sample collected from interval spanning both the A and B zones.

(c) Sample collected after 12+ hour recovery.

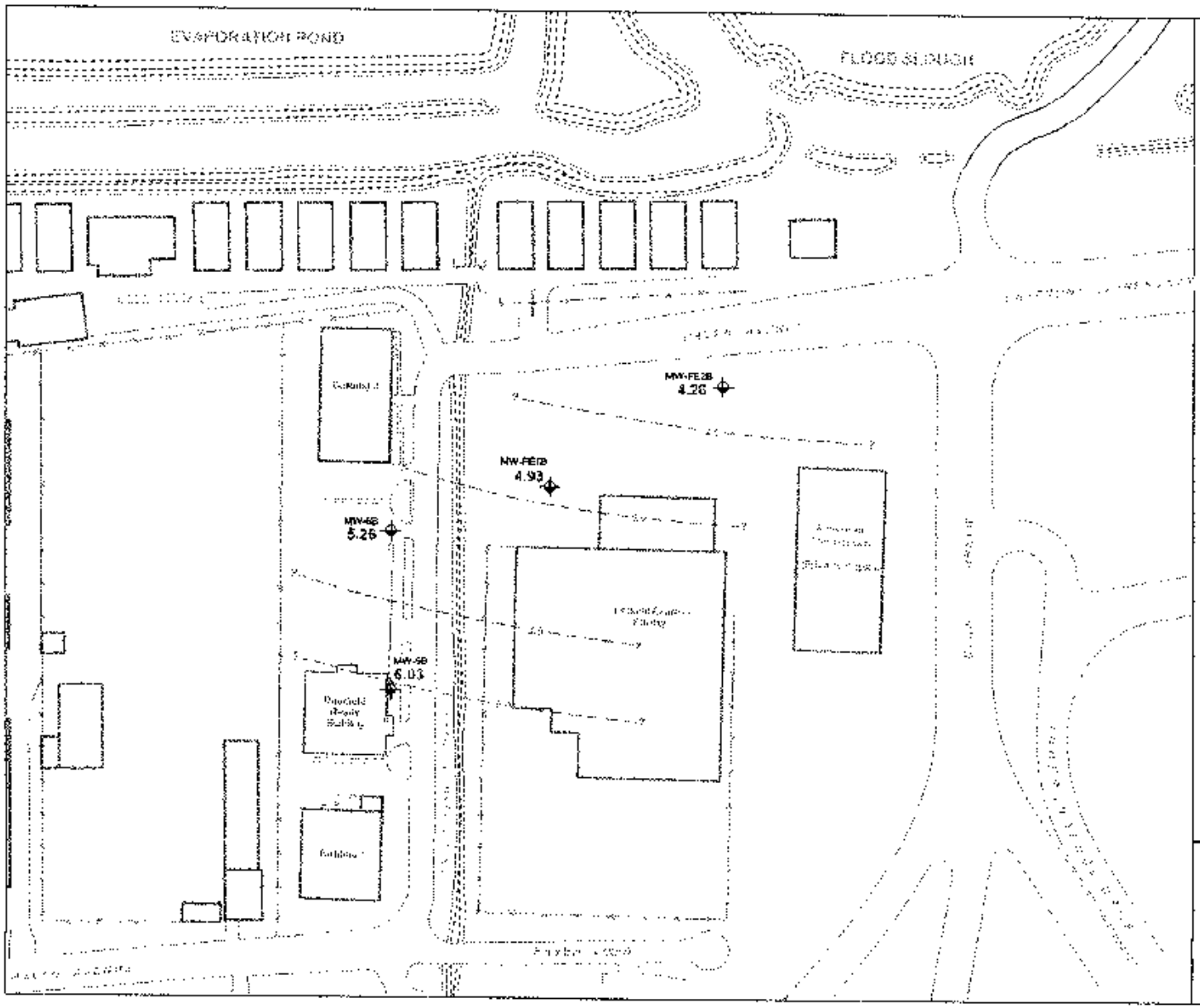
Notes:

1. All locations are approximate.
2. Elevations in feet relative to National Geodetic Vertical Datum of 1929 ("NGVD 1929").

Erler & Kalinowski, Inc.

Schematic Cross-Section A-A'

3695-3723 Haven Avenue and Vicinity
Menlo Park, CA
December 2013
EKI 960007.25
Figure 3



N

0 120 240

(Approximate Scale in Feet)

LEGEND

- Groundwater Monitoring Well Screened in The B-Zone
- 5.90 Density-Corrected Groundwater Elevation (ft msl, measured 11 September 2012)
- Piezometric Surface Contour

Notes:

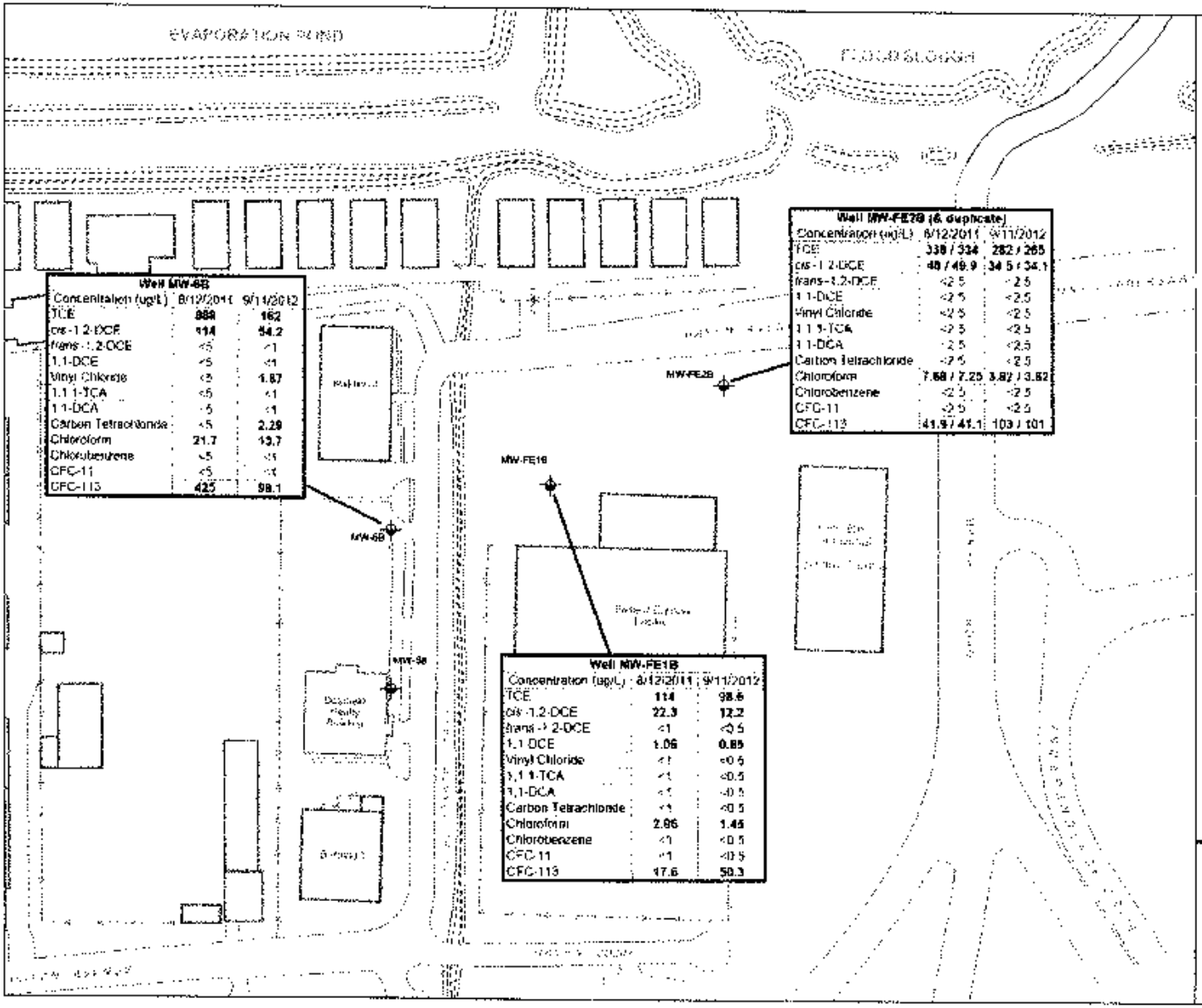
1. All locations are approximate
2. The B-Zone extends from approximately 15-30 feet bgs
3. bgs = below ground surface
4. Contour interval = 0.5 ft
5. ft msl = elevation in feet relative to mean sea level
6. Vertical datum = NGVD29

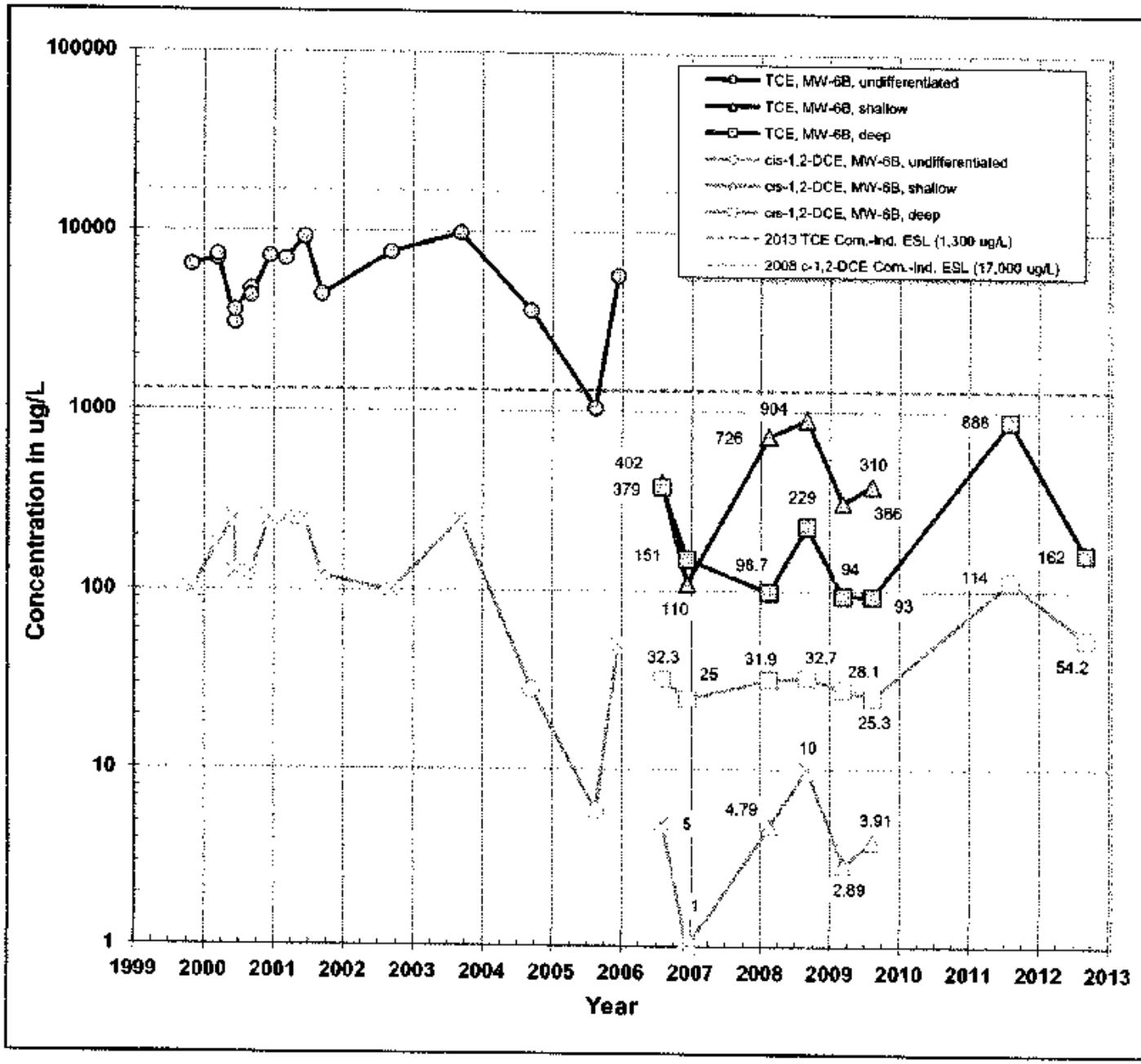
Erler & Kalinowski, Inc.

Density-Corrected B-Zone 2012
Potentiometric Surface Contours

3695-3723 and 3750 Haven Avenue
Menlo Park, CA
December 2013
EKI 960007.25

Figure 4


EVAPORATION POND
MW-6B
MW-FE2B
MW-FE1B
MW-5B
Well MW-6B
Concentration (ug/L) | 8/12/2011 | 9/14/2012
TCE | 889 | 162
cis-1,2-DCE | 114 | 54.2
trans-1,2-DCE | <5 | <1
1,1-DCE | <5 | <1
Vinyl Chloride | <5 | 1.87
1,1,1-TCA | <5 | <1
1,1-DCA | <5 | <1
Carbon Tetrachloride | <5 | 2.29
Chloroform | 21.7 | 13.7
Chlorobenzene | <5 | <1
CFC-11 | <5 | <1
CFC-113 | 425 | 98.1
Well MW-FE2B (& duplicate)
Concentration (ug/L) | 8/12/2011 | 9/11/2012
TCE | 338 / 334 | 282 / 265
cis-1,2-DCE | 48 / 49.9 | 34.5 / 34.1
trans-1,2-DCE | <2.5 | <2.5
1,1-DCE | <2.5 | <2.5
Vinyl Chloride | <2.5 | <2.5
1,1,1-TCA | <2.5 | <2.5
1,1-DCA | <2.5 | <2.5
Carbon Tetrachloride | <2.5 | <2.5
Chloroform | 7.68 / 7.25 | 3.82 / 3.52
Chlorobenzene | <2.5 | <2.5
CFC-11 | <2.5 | <2.5
CFC-113 | 41.9 / 41.1 | 103 / 101
Well MW-FE1B
Concentration (ug/L) | 8/12/2011 | 9/11/2012
TCE | 114 | 98.6
cis-1,2-DCE | 22.3 | 12.2
trans-1,2-DCE | <1 | <0.5
1,1-DCE | 1.06 | 0.85
Vinyl Chloride | <1 | <0.5
1,1,1-TCA | <1 | <0.5
1,1-DCA | <1 | <0.5
Carbon Tetrachloride | <1 | <0.5
Chloroform | 2.96 | 1.45
Chlorobenzene | <1 | <0.5
CFC-11 | <1 | <0.5
CFC-113 | 17.6 | 50.3
N
0
120
240
(Approximate Scale in Feet)
LEGEND
Groundwater Monitoring Well Screened In The B-Zone
Notes:
1. All locations are approximate
2. The B-Zone extends from approximately 15-38 feet bgs
3. bgs = below ground surface
4. Concentrations shown in micrograms per liter ("ug/L")
5. TCE = trichloroethylene
6. DCE = dichloroethylene
7. CFC-11 = trichlorofluoromethane
8. CFC-113 = 1,1,2-trichloro-1,2,2-trifluoroethane
Erler & Kalinowski, Inc.
Groundwater VOC Concentrations in B-Zone Wells, 2011-2012
3695-3723 and 3750 Haven Avenue
Menlo Park, CA
December 2013
EKI 960007.26
Figure 5



NOTE:

1. "X" symbols show the reporting limit for a non-detected analytical result.

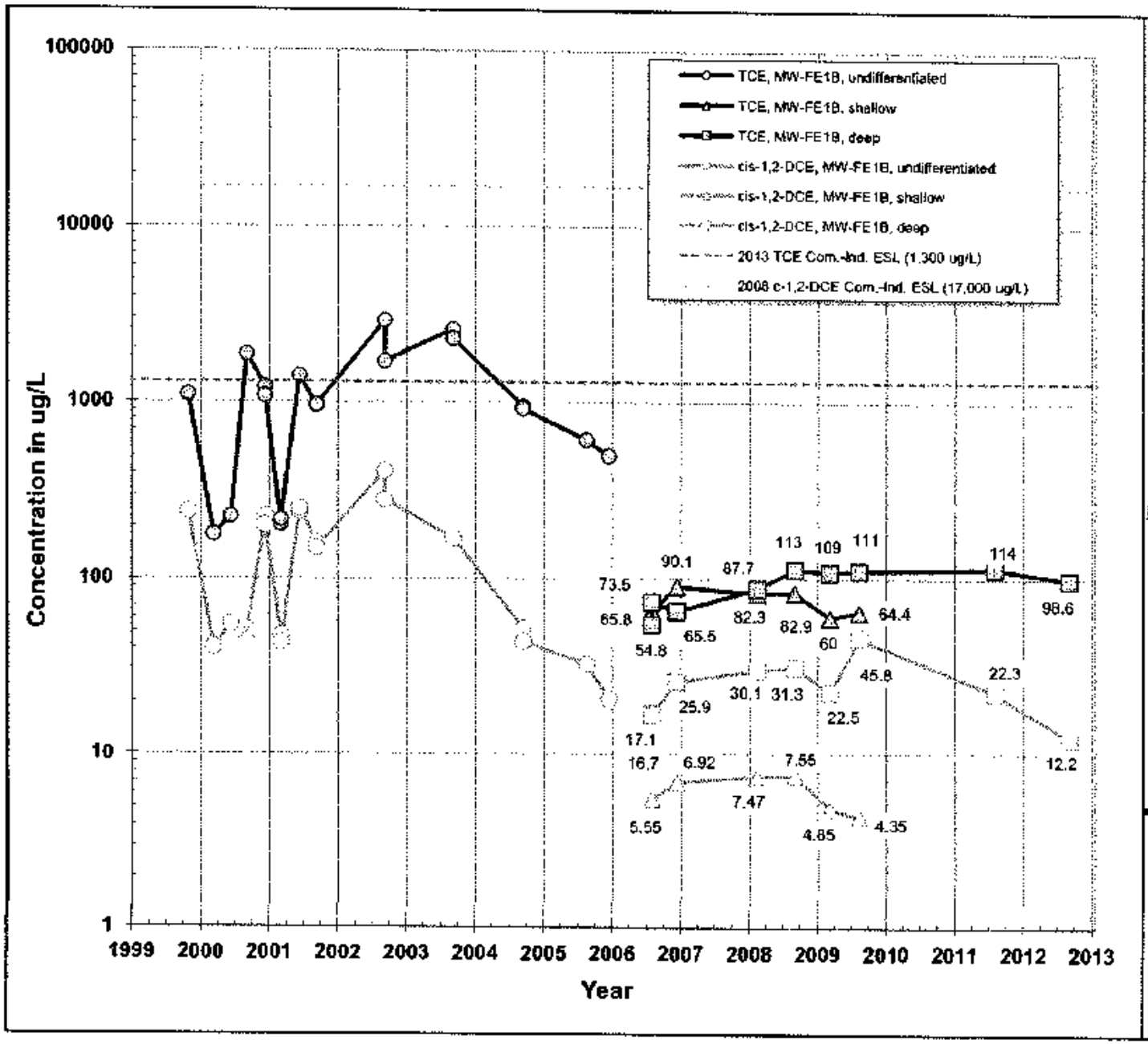
2. ESL: Environmental Screening Levels, Table E-1, Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion, San Francisco Bay Regional Water Quality Control Board, 2013, 2008.

Erler & Kalinowski, Inc.

VOCs in Groundwater, 1999-2012
Monitoring Well MW-6B

3695-3723 Haven Avenue
Menlo Park, CA
December 2013
EKI 960007.25

Figure 6



NOTE:

1. "X" symbols show the reporting limit for a non-detected analytical result.

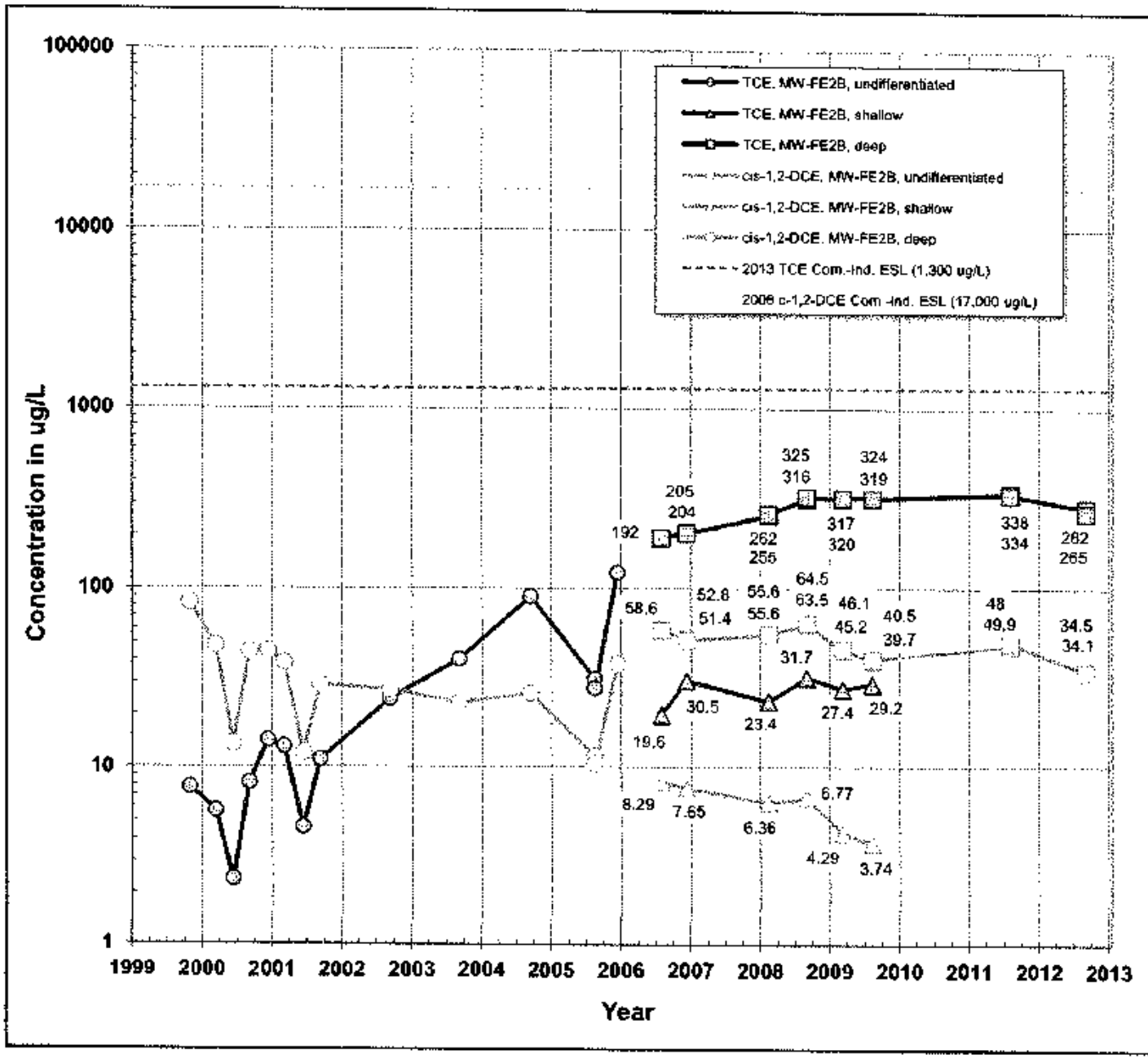
2. ESL: Environmental Screening Levels, Table E-1. Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion, San Francisco Bay Regional Water Quality Control Board, 2013, 2008.

Erler & Kalinowski, Inc.

VOCs in Groundwater, 1999-2012
Monitoring Well MW-FE1B

3695-3723 Haven Avenue
Menlo Park, CA
December 2013
EKI 960007.25

Figure 7



NOTE:

1. "X" symbols show the reporting limit for a non-detected analytical result.

2. ESL: Environmental Screening Levels, Table E-1. Groundwater Screening Levels for Evaluation of Potential Vapor Intrusion, San Francisco Bay Regional Water Quality Control Board, 2013, 2008

Erler & Kalinowski, Inc.

VOCs in Groundwater, 1999-2012
Monitoring Well MW-FE2B

3695-3723 Haven Avenue
Menlo Park, CA
December 2013
EKI 960007.25

Figure 8

NOISE IMPACT ANALYSIS

HOTEL MOXY HOUSING PROJECT

MENLO PARK, CALIFORNIA

LSA

September 2022

NOISE IMPACT ANALYSIS

HOTEL MOXY HOUSING PROJECT

MENLO PARK, CALIFORNIA

Submitted to:

City of Menlo Park
701 Laurel Street
Menlo Park, California 94025

Prepared by:

LSA
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Project No. CMK2201

LSA

September 2022

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LIST OF ABBREVIATIONS AND ACRONYMS

ADT	average daily trips
ALUC	Airport Land Use Compatibility
ALUCP	Airport Land Use Compatibility Plan
CEQA	California Environmental Quality Act
City	City of Menlo Park
CMU	concrete masonry unit
CNEL	Community Noise Equivalent Level
dB	decibel(s)
dBA	A-weighted decibel(s)
EV	electric vehicle
FHWA	Federal Highway Administration
ft	foot/feet
FTA	Federal Transit Administration
FTA Manual	FTA's *Transit Noise and Vibration Impact Assessment Manual*
hp	horsepower
HVAC	heating, ventilation, and air conditioning
L_{dn}	day-night average noise level
L_{eq}	equivalent continuous sound level
L_{max}	maximum instantaneous sound level
LEED	Leadership in Energy and Environmental Design
MM	Mitigation Measure
Noise Element	City of Menlo Park General Plan Noise Element
PAO	Palo Alto Airport
project	Hotel Moxy Project
SQL	San Carlos Airport

INTRODUCTION

This noise impact analysis has been prepared to evaluate the potential noise impacts and reduction measures associated with the proposed Hotel Moxy Project (project) in the City of Menlo Park, California. This report is intended to satisfy the City of Menlo Park's (City) requirement for a project-specific noise impact analysis by examining the impacts of the project site and evaluating noise reduction measures that the project may require.

PROJECT LOCATION AND DESCRIPTION

The 0.76-acre project site is located at 3723 Haven Avenue in the City of Menlo Park, San Mateo County, California. The project site is shown in Figure 1, Project Location, and is currently developed with an existing office building and associated parking lot. The project site is located within a developed urban setting, surrounded by primarily commercial and industrial uses.

The proposed project would include the demolition of the existing office building and the construction of a 163-room hotel, totaling 57,923 square feet. The proposed project would provide 124 parking spaces largely contained in the first three floors of the new structure as podium parking, including 40 electric vehicle (EV) parking spaces. The building would contain three stories of podium parking, five stories of hotel rooms, a ground floor lobby space and coffee shop, which would be open to the public, and a fourth floor bar and restaurant area, which would include an outdoor rooftop garden and would also be publicly accessible (regardless of coffee shop and bar/lounge patronage) from 6:00 a.m. to 10:00 p.m. See Figure 2, Site Plan.

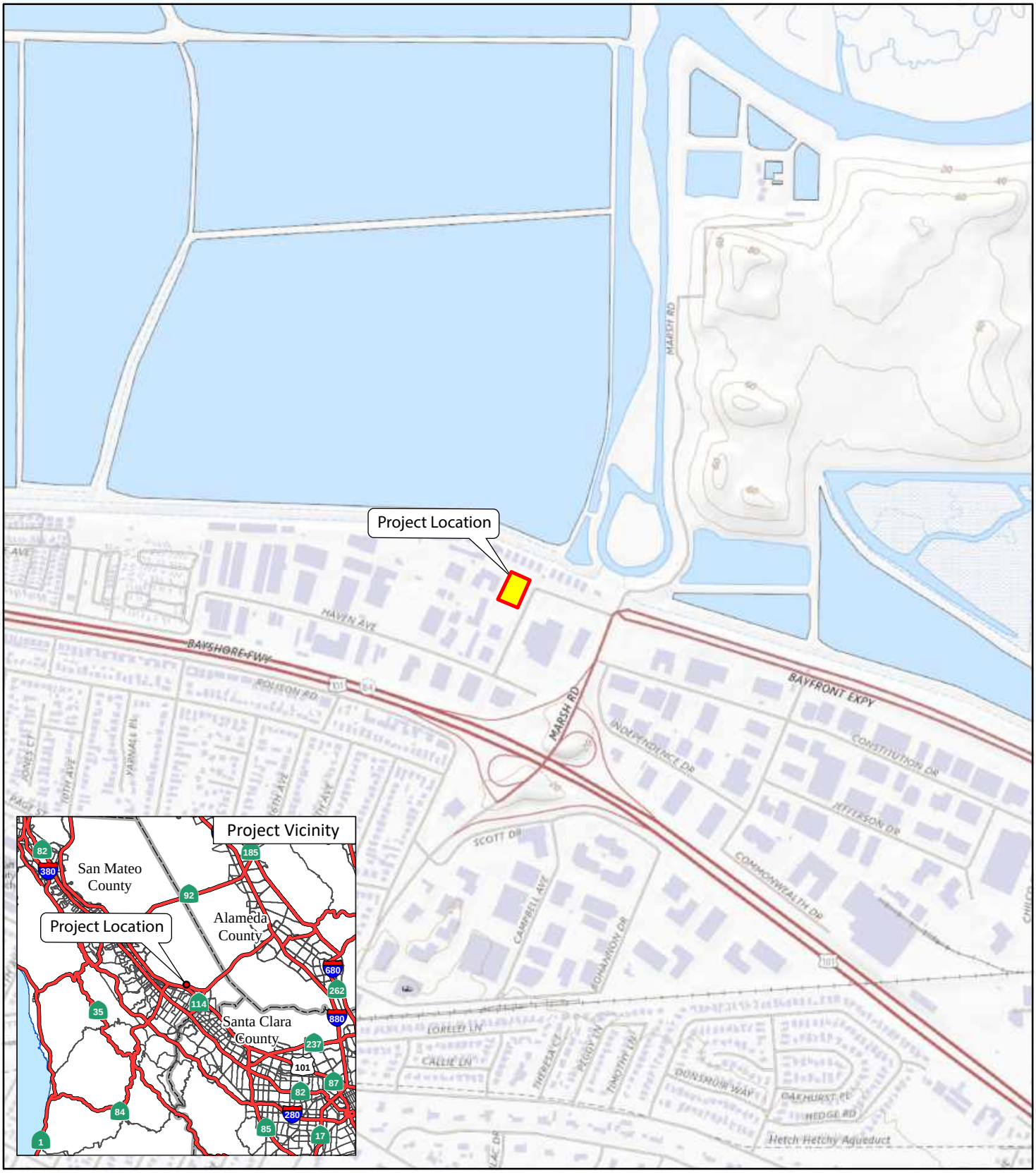
Once operational, the proposed project would generate 957 net new average daily trips. The proposed project would be built to Leadership in Energy and Environmental Design (LEED) Silver standards, would include solar panels, and would be 12 percent more energy efficient than the 2019 Title 24 standards. In addition, the proposed project would not increase the demand for natural gas as the City's reach codes would require the buildings to be all electric. The proposed project would also include a 625 kilovolt-amp (670 horsepower [HP]) diesel backup generator.

Construction of the proposed project is anticipated to begin in January 2023 and end in January 2025. In addition, construction activities would include the demolition of the existing building and surface parking lot on the project site and would include the net import of approximately 439 cubic yards of soil.

EXISTING LAND USES IN THE PROJECT AREA

The project site is surrounded primarily by commercial and industrial uses. The areas adjacent to the project site include the following uses:

- **North:** Existing Menlo-Atherton Storage
- **East:** Existing FedEx Ship Center opposite Haven Avenue
- **South:** Existing office building
- **West:** Existing multi-family apartments (Elan Menlo Park Apartments)



LSA

LEGEND

Project Location

FIGURE 1

N

0 500 1000

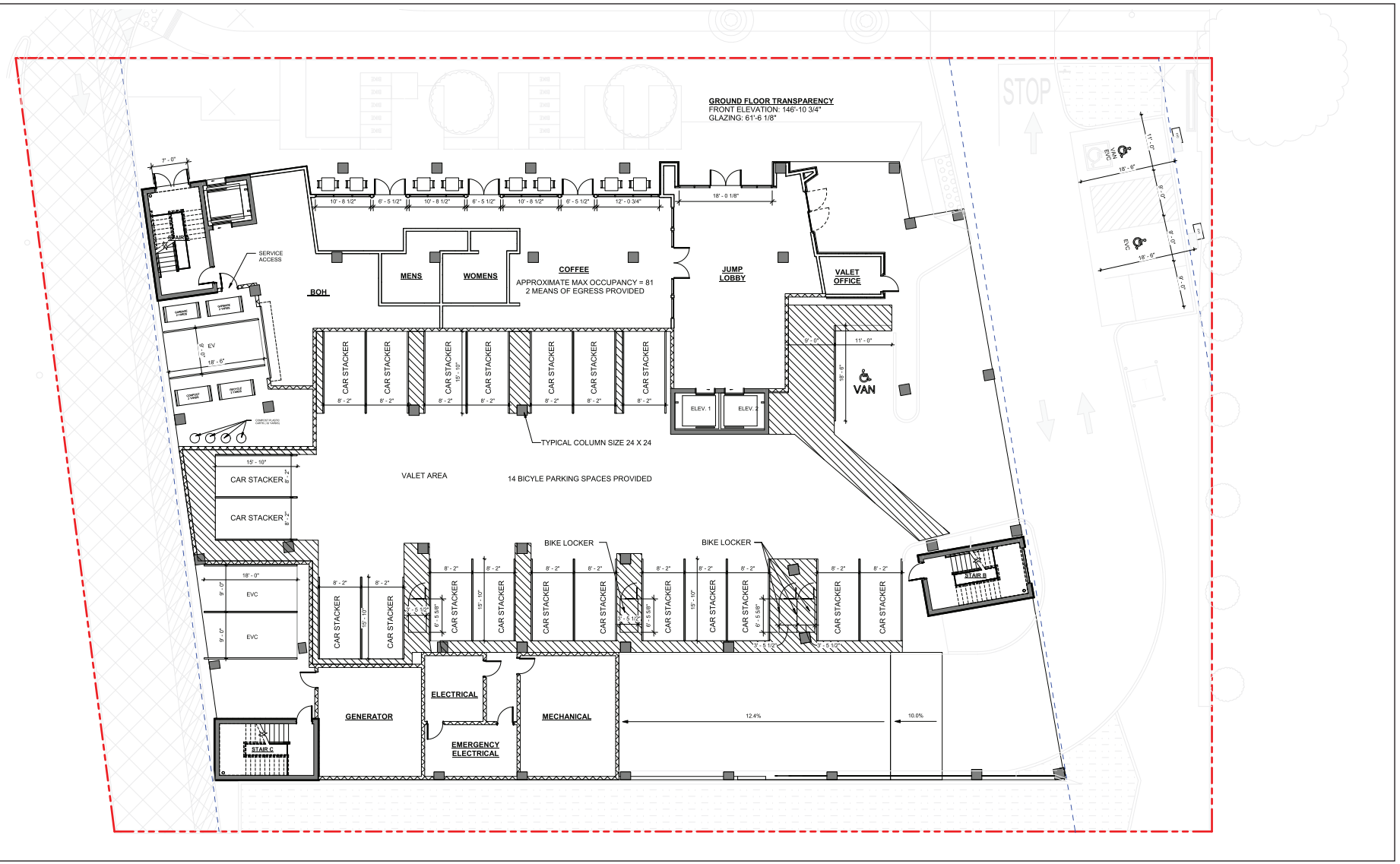
FEET

SOURCE: USGS The National Map (2018)

I:\CMK2201\GIS\MXD\Project_Location.mxd (8/17/2022)

Hotel Moxy Project

Project Location



LSA

FIGURE 2

N

0 16 32

FEET

Hotel Moxy Project

Site Plan

SOURCES: FPG Development Group; Elevate Architecture Studio, 5/13/2022

I:\CMK2201\G\Fig 2_Site Plan.ai (8/9/2022)

NOISE AND VIBRATION FUNDAMENTALS

CHARACTERISTICS OF SOUND

Noise is usually defined as unwanted sound. Noise consists of any sound that may produce physiological or psychological damage and/or interfere with communication, work, rest, recreation, and sleep.

To the human ear, sound has two significant characteristics: pitch and loudness. Pitch is generally an annoyance, while loudness can affect the ability to hear. Pitch is the number of complete vibrations, or cycles per second, of a sound wave, which results in the tone's range from high to low. Loudness is the strength of a sound, and it describes a noisy or quiet environment; it is measured by the amplitude of the sound wave. Loudness is determined by the intensity of the sound waves combined with the reception characteristics of the human ear. Sound intensity is the average rate of sound energy transmitted through a unit area perpendicular to the direction in which the sound waves are traveling. This characteristic of sound can be precisely measured with instruments. The analysis of a project defines the noise environment of the project area in terms of sound intensity and its effect on adjacent sensitive land uses.

MEASUREMENT OF SOUND

Sound intensity is measured with the A-weighted decibel (dBA) scale to correct for the relative frequency response of the human ear. That is, an A-weighted noise level de-emphasizes low and very high frequencies of sound, similar to the human ear's de-emphasis of these frequencies. Decibels (dB), unlike the linear scale (e.g., inches or pounds), are measured on a logarithmic scale representing points on a sharply rising curve.

For example, 10 dB is 10 times more intense than 0 dB, 20 dB is 100 times more intense than 0 dB, and 30 dB is 1,000 times more intense than 0 dB. Thirty decibels (30 dB) represents 1,000 times as much acoustic energy as 0 dB. The decibel scale increases as the square of the change, representing the sound pressure energy. A sound as soft as human breathing is about 10 times greater than 0 dB. The decibel system of measuring sound gives a rough connection between the physical intensity of sound and its perceived loudness to the human ear. A 10 dB increase in sound level is perceived by the human ear as only a doubling of the sound's loudness. Ambient sounds generally range from 30 dB (very quiet) to 100 dB (very loud).

Sound levels are generated from a source, and their decibel level decreases as the distance from that source increases. Sound levels dissipate exponentially with distance from their noise sources. For a single point source, sound levels decrease approximately 6 dB for each doubling of distance from the source. This drop-off rate is appropriate for noise generated by stationary equipment. If noise is produced by a line source (e.g., highway traffic or railroad operations), the sound decreases 3 dB for each doubling of distance in a hard site environment. Line-source sound levels decrease 4.5 dB for each doubling of distance in a relatively flat environment with absorptive vegetation.

There are many ways to rate noise for various time periods, but an appropriate rating of ambient noise affecting humans also accounts for the annoying effects of sound. The equivalent continuous sound level (L_{eq}) is the total sound energy of time-varying noise over a sample period. However, the predominant rating scales for human communities in the State of California are the L_{eq} and Community Noise Equivalent Level (CNEL) or the day-night average noise level (L_{dn}) based on A-weighted decibels. CNEL is the time-weighted average noise over a 24-hour period, with a 5 dBA weighting factor applied to the hourly L_{eq} for noises occurring from 7:00 p.m. to 10:00 p.m. (defined as relaxation hours) and a 10 dBA weighting factor applied to noises occurring from 10:00 p.m. to 7:00 a.m. (defined as sleeping hours). L_{dn} is similar to the CNEL scale but without the adjustment for events occurring during relaxation hours. CNEL and L_{dn} are within 1 dBA of each other and are normally interchangeable. The City uses the CNEL noise scale for long-term traffic noise impact assessment.

Other noise rating scales of importance when assessing the annoyance factor include the maximum instantaneous noise level (L_{max}), which is the highest sound level that occurs during a stated time period. The noise environments discussed in this analysis for short-term noise impacts are specified in terms of maximum levels denoted by L_{max}, which reflects peak operating conditions and addresses the annoying aspects of intermittent noise. It is often used together with another noise scale, or noise standards in terms of percentile noise levels, in noise ordinances for enforcement purposes. For example, the L_{10} noise level represents the noise level exceeded 10 percent of the time during a stated period. The L_{50} noise level represents the median noise level. Half the time the noise level exceeds this level, and half the time it is less than this level. The L_{90} noise level represents the noise level exceeded 90 percent of the time and is considered the background noise level during a monitoring period. For a relatively constant noise source, the L_{eq} and L_{50} are approximately the same.

Noise impacts can be described in three categories. The first category includes audible impacts, which are increases in noise levels noticeable to humans. Audible increases in noise levels generally refer to a change of 3 dB or greater because this level has been found to be barely perceptible in exterior environments. The second category, potentially audible, refers to a change in the noise level between 1 dB and 3 dB. This range of noise levels has been found to be noticeable only in laboratory environments. The last category includes changes in noise levels of less than 1 dB, which are inaudible to the human ear. Only audible changes in existing ambient or background noise levels are considered potentially significant.

Physiological Effects of Noise

Physical damage to human hearing begins at prolonged exposure to sound levels higher than 85 dBA. Exposure to high sound levels affects the entire system, with prolonged sound exposure in excess of 75 dBA increasing body tensions, thereby affecting blood pressure and functions of the heart and the nervous system. In comparison, extended periods of sound exposure above 90 dBA would result in permanent cell damage. When the sound level reaches 120 dBA, a tickling sensation occurs in the human ear, even with short-term exposure. This level of sound is called the threshold of feeling. As the sound reaches 140 dBA, the tickling sensation is replaced by a feeling of pain in the ear (i.e., the threshold of pain). A sound level of 160–165 dBA will result in dizziness or a

loss of equilibrium. The ambient or background noise problem is widespread and generally more concentrated in urban areas than in outlying, less developed areas.

Table A lists definitions of acoustical terms, and Table B shows common sound levels and their sources.

Table A: Definitions of Acoustical Terms

Term	Definitions
Decibel, dB	A unit of sound measurement that denotes the ratio between two quantities that are proportional to power; the number of decibels is 10 times the logarithm (to the base 10) of this ratio.
Frequency, Hz	Of a function periodic in time, the number of times that the quantity repeats itself in 1 second (i.e., the number of cycles per second).
A-Weighted Sound Level, dBA	The sound level obtained by use of A-weighting. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise. (All sound levels in this report are A-weighted unless reported otherwise.)
L_{01}, L_{10}, L_{50}, L_{90}	The fast A-weighted noise levels that are equaled or exceeded by a fluctuating sound level 1%, 10%, 50%, and 90% of a stated time period, respectively.
Equivalent Continuous Noise Level, L_{eq}	The level of a steady sound that, in a stated time period and at a stated location, has the same A-weighted sound energy as the time-varying sound.
Community Noise Equivalent Level, CNEL	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 5 dBA to sound levels occurring in the evening from 7:00 p.m. to 10:00 p.m. and after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
Day/Night Noise Level, L_{dn}	The 24-hour A-weighted average sound level from midnight to midnight, obtained after the addition of 10 dBA to sound levels occurring in the night between 10:00 p.m. and 7:00 a.m.
L_{max}, L_{min}	The maximum and minimum A-weighted sound levels measured on a sound level meter, during a designated time interval, using fast time averaging.
Ambient Noise Level	The all-encompassing noise associated with a given environment at a specified time. Usually a composite of sound from many sources from many directions, near and far; no particular sound is dominant.
Intrusive	The noise that intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends upon its amplitude, duration, frequency, time of occurrence, and tonal or informational content, as well as the prevailing ambient noise level.

Source: *Handbook of Acoustical Measurements and Noise Control* (Harris 1991).

Table B: Common Sound Levels and Their Noise Sources

Noise Source	A-Weighted Sound Level in Decibels	Noise Environments	Subjective Evaluations
Near Jet Engine	140	Deafening	128 times as loud
Civil Defense Siren	130	Threshold of Pain	64 times as loud
Hard Rock Band	120	Threshold of Feeling	32 times as loud
Accelerating Motorcycle at a Few Feet Away	110	Very Loud	16 times as loud
Pile Driver; Noisy Urban Street/Heavy City Traffic	100	Very Loud	8 times as loud
Ambulance Siren; Food Blender	95	Very Loud	—
Garbage Disposal	90	Very Loud	4 times as loud
Freight Cars; Living Room Music	85	Loud	—
Pneumatic Drill; Vacuum Cleaner	80	Loud	2 times as loud
Busy Restaurant	75	Moderately Loud	—
Near Freeway Auto Traffic	70	Moderately Loud	Reference level
Average Office	60	Quiet	One-half as loud
Suburban Street	55	Quiet	—
Light Traffic; Soft Radio Music in Apartment	50	Quiet	One-quarter as loud
Large Transformer	45	Quiet	—
Average Residence without Stereo Playing	40	Faint	One-eighth as loud
Soft Whisper	30	Faint	—
Rustling Leaves	20	Very Faint	—
Human Breathing	10	Very Faint	Threshold of Hearing
—	0	Very Faint	—

Source: Compiled by LSA (2022).

REGULATORY SETTING

APPLICABLE NOISE STANDARDS

The applicable noise standards governing the project site include the criteria in the Noise Element of the City's General Plan (Noise Element), and the City of Menlo Park Municipal Code.

City of Menlo Park

Noise Element of the General Plan

The City of Menlo Park addresses noise in the City's Noise Element of the General Plan (City of Menlo Park 2013). The goals, objectives, and policies in the City's General Plan are designed to provide noise compatible land use relationships by establishing noise standards utilized for design and siting purposes and minimize noise impacts from significant noise generators. The following policies are applicable to the proposed project:

- **Goal N1:** Achieve Acceptable Noise Levels.

  Policies:

  - N1.1: *Compliance with Noise Standards*. Consider the compatibility of proposed land uses with the noise environment when preparing or revising community and/or specific plans. Require new projects to comply with the noise standards of local, regional, and building code regulations, including but not limited to the City's Municipal Code, Title 24 of the California Code of Regulations, and subdivision and zoning codes.

  - N1.2: *Land Use Compatibility Noise Standards*. Protect people in new development from excessive noise by applying the City's Land Use Compatibility Noise Standards for New Development (see Table C) to the siting and required mitigation for new uses in existing noise environments.

  - N1.3: *Exterior and Interior Noise Standards for Residential Use Areas.* Strive to achieve acceptable interior noise levels and exterior noise levels for backyards and/or common usable outdoor areas in new residential development and reduce outdoor noise levels in existing residential areas where economically and aesthetically feasible.

  - N1.4: *Noise Sensitive Uses*. Protect existing residential neighborhoods and noise sensitive uses from unacceptable noise levels and vibration impacts. Noise sensitive uses include, but are not limited to, hospitals, schools, religious facilities, convalescent homes and businesses with highly sensitive equipment. Discourage the siting of noise-sensitive uses in areas in excess of 65 dBA CNEL without appropriate mitigation and locate noise sensitive uses away from noise sources unless mitigation measures are included in development plans.

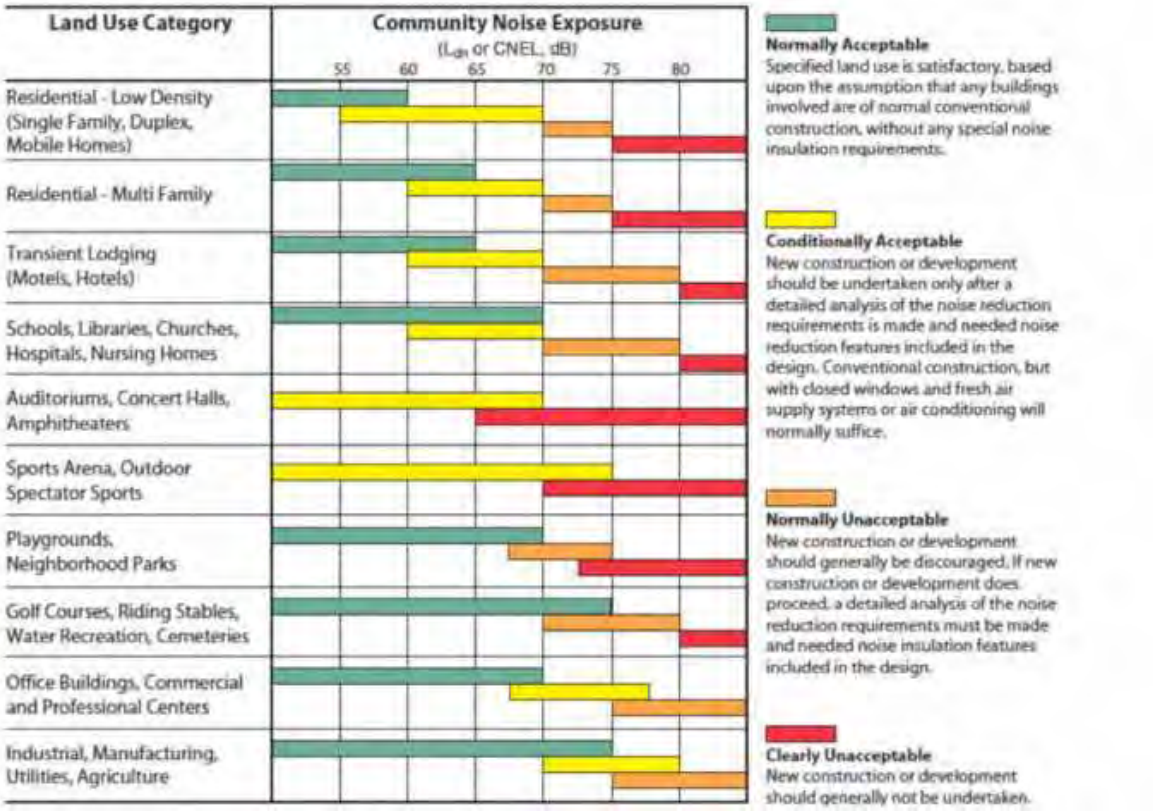
  - N1.5: *Planning and Design of New Development to Reduce Noise Impacts*. Design residential developments to minimize the transportation-related noise impacts to adjacent residential areas and encourage new development to be site planned and architecturally designed to

minimize noise impacts on noise sensitive spaces. Proper site planning can be effective in reducing noise impacts.

- N1.6: *Noise Reduction Measures*. Encourage the use of construction methods, state-of-the-art noise abating materials and technology and creative site design including, but not limited to, open space, earthen berms, parking, accessory buildings, and landscaping to buffer new and existing development from noise and to reduce potential conflicts between ambient noise levels and noise-sensitive land uses. Use sound walls only when other methods are not practical or when recommended by an acoustical expert.

- N1.8: *Potential Annoying or Harmful Noise*. Preclude the generation of annoying or harmful noise on stationary noise sources, such as construction and property maintenance activity and mechanical equipment.

Table C: Land Use Compatibility Noise Standards for New Development



Source: *City of Menlo Park General Plan* (2013).
CNEL: Community Noise Equivalent Level
L_{dn}: day-night average noise level

Municipal Code

Chapter 8.06 of the City's Municipal Code (City of Menlo Park 2022) establishes the maximum permissible noise level that may intrude into a neighbor's property. The Noise Ordinance establishes noise level standards for various land use categories affected by stationary noise sources. The following regulations would be applicable to the Project:

Section 8.06.030 Noise Limitations.

(a) Except as otherwise permitted in this chapter, any source of sound in excess of the sound level limits set forth in Section 8.06.030 shall constitute a noise disturbance. For purposes of determining sound levels from any source of sound, sound level measurements shall be made at a point on the receiving property nearest where the sound source at issue generates the highest sound level.

(1) For all sources of sound measured from any residential property:

(A) "Nighttime" hours (10:00 p.m. to 7:00 a.m.) — Fifty (50) dBA

(B) "Daytime" hours (7:00 a.m. to 10:00 p.m.) — Sixty (60) dBA

(2) (For all sources of sound within a multifamily residential structure transmitting through a common interior partition (wall, floor or ceiling) from one (1) dwelling unit to another:

(A) "Nighttime" hours (10:00 p.m. to 7:00 a.m.) —thirty-five (35) dBA

(B) "Daytime" hours (7:00 a.m. to 10:00 p.m.) —forty-five (45) dBA

Section 8.06.040 Exceptions

The following are exceptions to the noise limitations set forth in Section 8.06.030. These activities may occur at other times provided they meet the noise levels set forth in Section 8.06.030.

(a) **Construction Activities**

(1) Construction activities between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday.

(2) Residents/property owners personally undertaking construction activities to maintain or improve their property on Saturdays, Sundays or holidays between the hours of 9:00 a.m. and 5:00 p.m.

(3) A sign, containing the permitted hours of construction activities exceeding the noise limits set forth in Section 8.06.030, shall be posted at all entrances to a construction site upon the commencement of construction, for the purpose of informing contractors and subcontractors and all other persons at the construction site of the basic requirements of this chapter. The sign shall be at least five (5) feet above ground level and shall consist of a white background with black letters.

(4) Notwithstanding any other provision set forth above, all powered equipment shall comply with the limits set forth in Section 8.06.040(b).

(b) **Powered Equipment**

(1) Powered equipment used on a temporary, occasional, or infrequent basis operated between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday. No piece of equipment shall generate noise in excess of 85 dBA at 50 feet.

(2) Residents/property owners personally using powered equipment to maintain their property and/or residence on Saturdays, Sundays or holidays between the hours of 9:00 a.m. and 5:00 p.m. No piece of equipment shall generate noise in excess of 85 dBA at 50 feet.

Federal Transit Administration

Although the City does not have daytime construction noise level limits for activities that occur within the specified hours in Section 11.80.030(D)(7) to determine potential California Environmental Quality Act (CEQA) noise impacts, construction noise was assessed using criteria from the *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018) (FTA Manual). Table D shows the FTA's General Assessment Construction Noise Criteria based on the composite noise levels per construction phase.

Table D: General Assessment Construction Noise Criteria

Land Use	Daytime 1-hour L_{eq} (dBA)	Nighttime 1-hour L_{eq} (dBA)
Residential	90	80
Commercial	100	100
Industrial	100	100

Source: *Transit Noise and Vibration Impact Assessment Manual* (FTA 2018).
dBA = A-weighted decibels
FTA = Federal Transit Administration
L_{eq} = equivalent continuous sound level

OVERVIEW OF THE EXISTING NOISE ENVIRONMENT

The primary existing noise sources in the project area are transportation facilities. Traffic on Haven Avenue, Marsh Boulevard, and U.S. Highway 101 are a steady source of ambient noise.

AMBIENT NOISE MEASUREMENTS

Two long-term (24-hour) noise level measurements were conducted on August 2 through August 3, 2022, using two Larson Davis Spark 706RC Dosimeters. Table E provides a summary of the measured hourly noise levels from the noise level measurements. Hourly noise levels at surrounding sensitive uses are as low as 42.0 dBA L_{eq} during nighttime hours and 49.9 dBA L_{eq} during daytime hours. Noise monitoring data results are provided in Appendix A. Figure 3 shows the noise monitoring locations.

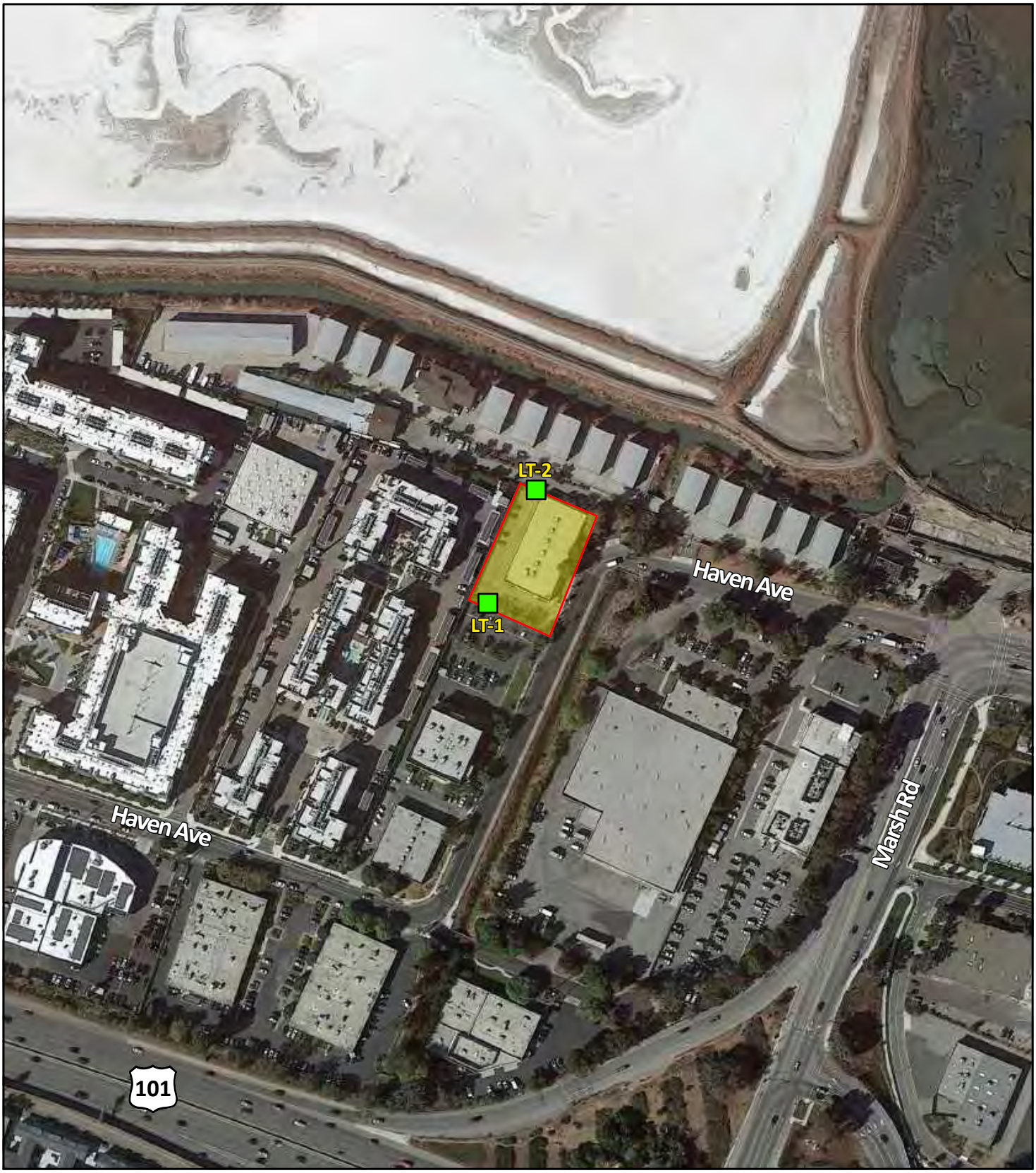
Table E: Existing Noise Level Measurements

Location	Location Description	Daytime Noise Levels[1] (dBA L_{eq})	Average Daytime Noise Level (dBA L_{eq})	Evening Noise Levels[2] (dBA L_{eq})	Nighttime Noise Levels[3] (dBA L_{eq})	Average Daily Noise Levels (dBA CNEL)
LT-1	Western corner of project site, on a tree closest to the fence	53.3 – 57.8	55.6	51.2 – 55.5	42.4 – 55.0	58.4
LT-2	Northern corner of existing building façade, closest to parking lot behind the building, on a black pipe attached to the building.	49.9 – 63.0	56.5	48.8 – 58.4	42.0 – 50.2	57.3

Source: Compiled by LSA (August 2022).
[1] Daytime Noise Levels = noise levels during the hours of 7:00 a.m. to 7:00 p.m.
[2] Evening Noise Levels = noise levels during the hours of 7:00 p.m. to 10:00 p.m.
[3] Nighttime Noise Levels = noise levels during the hours of 10:00 p.m. to 7:00 a.m.
dBA = A-weighted decibels
ft = foot/feet
CNEL = Day-night Level
L_{eq} = equivalent continuous sound level

EXISTING AIRCRAFT NOISE

Airport-related noise levels are primarily associated with aircraft engine noise made while aircraft are taking off, landing, or running their engines while still on the ground. The closest airports to the proposed project site are San Carlos (SQL) and Palo Alto (PAO) Airports, located approximately 4.2 miles west and east of the project site, respectively. The project site is outside the 60 dBA CNEL noise contour of SQL based on the *San Carlos Airport Final Airport Land Use Compatibility Plan (ALUCP)* (ESA Airports 2015) and PAO based on the *2022 Forecasted Palo Alto Airport Noise Contour Map* (Palo Alto Airport 2016 Annual noise complaints report). Therefore, the project site is not expected to experience airport-related noise levels in excess of the City of Menlo Park exterior standards. No further analysis is necessary.



LSA

FIGURE 3

LEGEND

- Project Site Boundary

LT-1 - Long-Term Noise Monitoring Location

N

0 100 200

FEET

SOURCE: Google Earth 2021

I:\CMK2201\G\Noise_Locs.ai (8/17/22)

Hotel Moxy Project

Noise Monitoring Locations

PROJECT IMPACT ANALYSIS

SHORT-TERM CONSTRUCTION NOISE IMPACTS

Two types of short-term noise impacts could occur during the construction of the proposed project. First, construction crew commutes and the transport of construction equipment and materials to the site for the proposed project would incrementally increase noise levels on access roads leading to the site. Although there would be a relatively high single-event noise-exposure potential causing intermittent noise nuisance (passing trucks at 50 ft would generate up to 84 dBA L_{max}), the effect on longer-term ambient noise levels would be small when compared to existing daily traffic volumes on Haven Avenue. Because construction-related vehicle trips would not approach existing daily traffic volumes, traffic noise would not increase by 3 dBA CNEL. A noise level increase of less than 3 dBA would not be perceptible to the human ear in an outdoor environment. Therefore, short-term, construction-related impacts associated with worker commute and equipment transport to the project site would be less than significant.

The second type of short-term noise impact is related to noise generated during construction, which includes demolition, site preparation, grading, building construction, trenching, paving, landscaping, and architectural coating on the project site. Construction is completed in discrete steps, each of which has its own mix of equipment and, consequently, its own noise characteristics. These various sequential phases would change the character of the noise generated on the site and, therefore, the noise levels surrounding the site as construction progresses. Despite the variety in the type and size of construction equipment, similarities in the dominant noise sources and patterns of operation allow construction-related noise ranges to be categorized by work phase. Table F lists typical construction equipment noise levels recommended for noise impact assessments, based on a distance of 50 ft between the equipment and a noise receptor, taken from the Federal Highway Administration's (FHWA) *Roadway Construction Noise Model* (FHWA 2006).

In addition to the reference maximum noise level, the usage factor provided in Table F is used to calculate the hourly noise level impact for each piece of equipment based on the following equation:

$$L_{eq}(equip) = E.L. + 10\log(U.F.) - 20\log\left(\frac{D}{50}\right)$$

where: $L_{eq}(equip)$ = L_{eq} at a receiver resulting from the operation of a single piece of equipment over a specified time period.

E.L. = noise emission level of the particular piece of equipment at a reference distance of 50 ft.

U.F. = usage factor that accounts for the fraction of time that the equipment is in use over the specified period of time.

D = distance from the receiver to the piece of equipment.

Table F: Typical Construction Equipment Noise Levels

Equipment Description	Acoustical Usage Factor (%)[1]	Maximum Noise Level (L_{max}) at 50 Feet[2]
Auger Drill Rig	20	84
Backhoes	40	80
Compactor (ground)	20	80
Compressor	40	80
Cranes	16	85
Dozers	40	85
Dump Trucks	40	84
Excavators	40	85
Flat Bed Trucks	40	84
Forklift	20	85
Front-end Loaders	40	80
Graders	40	85
Impact Pile Drivers	20	95
Jackhammers	20	85
Paver	50	77
Pickup Truck	40	55
Pneumatic Tools	50	85
Pumps	50	77
Rock Drills	20	85
Rollers	20	85
Scrapers	40	85
Tractors	40	84
Trencher	50	80
Welder	40	73

Source: *FHWA Roadway Construction Noise Model User's Guide,* Table 1 (FHWA 2006).
Note: Noise levels reported in this table are rounded to the nearest whole number.
[1] Usage factor is the percentage of time during a construction noise operation that a piece of construction equipment is operating at full power.
[2] Maximum noise levels were developed based on Specification 721.560 from the Central Artery/ Tunnel program to be consistent with the City of Boston's Noise Code for the "Big Dig" project.
FHWA = Federal Highway Administration
L_{max} = maximum instantaneous sound level

Each piece of construction equipment operates as an individual point source. Using the following equation, a composite noise level can be calculated when multiple sources of noise operate simultaneously:

$$Leq\ (composite) = 10 * \log_{10}\left(\sum_{1}^{n} 10^{\frac{Ln}{10}}\right)$$

While noise levels associated with construction noise can be described in both maximum levels (L_{max}) and average hourly levels (L_{eq}), the potential impacts from on-site construction activities to surrounding uses is most accurately assessed using the L_{eq} metric. Because activities within each phase are likely to occur for multiple hours in a given day or for a number of days, the average noise level is the best method to capture the potential impact. Using the equations from the methodology

above, the reference information in Table F, and the construction equipment list provided, the composite noise level of each construction phase was calculated. The project construction composite noise levels at a distance of 50 ft would range from 74 dBA L_{eq} to 89 dBA L_{eq}, with the highest noise levels occurring during the rough grading phase.

Once composite noise levels are calculated, reference noise levels can then be adjusted for distance using the following equation:

$$Leq\ (at\ distance\ X) = Leq\ (at\ 50\ feet) - 20 * \log_{10}\left(\frac{X}{50}\right)$$

In general, this equation shows that doubling the distance would decrease noise levels by 6 dBA, while halving the distance would increase noise levels by 6 dBA.

Table G shows the nearest sensitive uses to the project site, their distance from the center of construction activities, and composite noise levels expected during the loudest phase of construction, rough grading. These noise level projections do not consider intervening topography or barriers. Table H shows the construction noise levels, by phase when construction occurs at the western property line, closest to the nearest sensitive receptor. Construction equipment calculations are provided in Appendix B.

While construction noise will vary, it is expected that composite noise levels during construction at the nearest off-site sensitive residential use to the west would reach an average noise level of 83 dBA L_{eq} during daytime hours. These predicted noise levels would only occur if all construction equipment is operating simultaneously near the property line and, therefore, are assumed to be conservative in nature. While construction-related short-term noise levels have the potential to be higher than existing ambient noise levels in the project area under existing conditions, the noise impacts would no longer occur once project construction is completed.

Table G: Potential Construction Noise Impacts at Surrounding Receptors During Rough Grading – Center of Site

Receptor (Location)	Composite Noise Level at 50 ft[1] (dBA L_{eq} / dBA L_{max})	Distance (ft)	Composite Noise Level (dBA L_{eq} / dBA L_{max})
Residences (West)	85 / 90	130	77 / 81
Menlo-Atherton Storage (North)		170	74 / 79
FedEx Shipping Center (East)		270	70 / 75
Commercial (South)		300	69 / 74

Source: Compiled by LSA (2022).

[1] The composite construction noise level represents the rough grading phase, which is expected to result in the greatest noise level as compared to other phases.

dBA = A-weighted decibels ft = foot/feet

L_{eq} = equivalent continuous sound level L_{max}= maximum sound level

Table H: Potential Construction Noise Impacts at Nearest Sensitive Residential Receptor – Perimeter of Site

Phase)	Composite Noise Level at 50 ft (dBA L_{eq})	Composite Noise Level at 50 ft (dBA L_{max})	Composite Noise Level at 65 ft[1] (dBA L_{eq})	Composite Noise Level at 65 ft[1] (dBA L_{max})
Demolition	84	91	82	88
Asphalt Demolition	77	81	75	79
Rough Grading	85	90	83	87
Building Construction	83	87	81	85
Site Preparation	80	84	78	82
Utility Trenching	82	86	80	83
Fine Grading	84	88	82	86
Finishing / Landscaping	80	84	78	82
Paving	81	85	79	83
Architectural Coating	74	78	72	76

Source: Compiled by LSA (2022).
[1] The distance from the perimeter of construction to the closest residential receptor.
dBA = A-weighted decibels
ft = foot/feet
L_{eq} = equivalent continuous sound level
L_{max}= maximum sound level

As stated above, construction activities are regulated by the City's Noise Ordinance. The proposed project would comply with the construction hours specified in the City's Noise Ordinance, which states that construction activities are allowed between the hours of 8:00 a.m. and 6:00 p.m. Monday through Friday.

As it relates to off-site uses, construction-related noise levels would remain below the daytime 90 dBA L_{eq} 1-hour construction noise level criteria established by the FTA for residential and similar sensitive uses. However, construction noise would be 83 dBA L_{eq} at the nearest receptor, which is 27.4 dBA greater than the measured average noise level of 55.6 at this receptor location. Therefore, construction would increase ambient noise at the nearest sensitive receptor by more than 10 dBA. As such, additional mitigation would be required. Implementation of a 16-foot-high construction noise barrier at the western project site boundary would provide approximately 14 dBA reduction in noise levels to the 1st floor of the closest residential receptors to the west. At 2nd floor and 3rd receptors, the barrier would reduce construction noise levels by approximately 11 to 13 dBA. As presented in Appendix B, additional barrier calculations were completed to test the effectiveness of increasing the barrier to heights of 18 and 20 feet. The results indicate that each 2-foot increment increase only provides an additional reduction of less than 2 dBA. Due to minimum increase of noise reduction and the increased heights, a barrier height of 16 feet is recommended. The recommended barrier shall have a minimum density of 2 lb/ft^2 or is sound rated with a minimum Sound Transmission Class (STC) rating of 28 or higher. With these minimum material requirements, it is expected that noticeable noise would not be transmitted through the barrier, thus, increasing the barrier thickness would provide negligible noise reduction overall.

Implementation Project-Specific Mitigation Measure (MM) NOI-1 and Mitigation Measure NOISE-1c from the *ConnectMenlo: General Plan Land Use & Circulation Elements Update Environmental Impact Report* (ConnectMenlo EIR) would be required to reduce construction noise. With the implementation of Project-Specific MM NOI-1 noise levels would be reduced to 69 dBA L_{eq} (83 dBA – 14 dBA= 69 dBA) at the 1st floor receptors height where impacts are typically assessed during the noisiest phase of construction and when construction is occurring at the property line. This noise level would be greater than a 10 dBA increase in ambient noise at the nearest sensitive receptor. However, the ConnectMenlo EIR identified Mitigation Measure NOISE-1c, which includes noise reducing construction practices that would minimize noise impacts to surrounding receptors. The Connect Menlo EIR found that implementation of this measure would reduce construction noise impacts to a less than significant level. Therefore, impacts after mitigation would be less than significant.

Project-Specific MM NOI-1

The construction contractor shall ensure that a minimum 16-foot-high barrier, such as a plywood structure or flexible sound control curtain that has a density of 2 lb/ft^2 or is sound rated with a minimum Sound Transmission Class (STC) rating of 28 or higher, shall be erected on the western project site boundary adjacent to the sensitive receptors to minimize the amount of noise during construction.

ConnectMenlo EIR MM NOISE-1c

Project applicants shall minimize the exposure of nearby properties to excessive noise levels from construction-related activity through CEQA review, conditions of approval and/or enforcement of the City's Noise Ordinance. Prior to issuance of demolition, grading, and/or building permits for development projects, a note shall be provided on development plans indicating that during on-going grading, demolition, and construction, the property owner/developer shall be responsible for requiring contractors to implement the following measures to limit construction- related noise:

- Construction activity is limited to the daytime hours between 8:00 a.m. to 6:00 p.m. on Monday through Friday, as prescribed in the City's Municipal Code.
- All internal combustion engines on construction equipment and trucks are fitted with properly maintained mufflers, air intake silencers, and/or engine shrouds that are no less effective than as originally equipped by the manufacturer.
- Stationary equipment such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses.
- Stockpiling is located as far as feasible from nearby noise-sensitive receptors.

- Limit unnecessary engine idling to the extent feasible.
- Limit the use of public address systems.
- Construction traffic shall be limited to the haul routes established by the City of Menlo Park.

LONG-TERM OPERATIONAL NOISE IMPACT ANALYSIS

Potential long-term noise would be associated with stationary sources proposed on the project site. New operational sources of noise would be associated with the project's proposed heating, ventilation, and air conditioning (HVAC) system and back-up generator. The back-up generator would be tested on the first Monday of every month at 9:00 am for a period of 30 minutes

Heating, Ventilation, and Air Conditioning Equipment

The project would include a variety of rooftop mechanical equipment include rooftop HVAC units (RTU). The HVAC equipment could operate 24 hours per day. The project is estimated to have 18 rooftop HVAC units on the proposed building to provide ventilation to the proposed hotel rooms and restaurant. The HVAC equipment could operate 24 hours per day and based on reference information, would generate sound pressure levels (SPL) of up to 72 dBA L_{eq} at 5 ft, based on manufacturer data (Trane) for similar equipment expected to be used. The combined equipment has the potential to approach 61 dBA L_{eq}. With the incorporation of the parapet wall that is a minimum of 7 ft tall around the perimeter of the roof, an additional 7 dBA can be expected resulting in a noise level of 54 dBA L_{eq}. In order to achieve a noise level of 50 dBA L_{eq}, the nighttime stationary noise standard, an additional noise reduction of 4 dBA L_{eq} would be necessary. With the implementation of Project-Specific MM NOI-2, operational noise levels would be reduced to below 50 dBA L_{eq}.

Project-Specific MM NOI-2 The following mitigation measure is required to reduce heating, ventilation, and air conditioning (HVAC) operational noise levels:

- Once specifications of the rooftop HVAC equipment are determined, an analysis shall be prepared and submitted to the satisfaction of the City Planning Director to confirm that the operation of rooftop equipment would meet the City's nighttime 50 dBA equivalent continuous sound level (L_{eq}) noise level standard. This can be achieved by the following design features:

  1. Choosing rooftop mechanical equipment that has a reference noise level of 68 dBA L_{eq} at 5 feet or less, or

  2. Installation of silencers or enclosures capable of reducing noise levels by a minimum of 4 dBA.

Back-up Generator

The proposed project would include a 625 Kilovolt-amp (670 horsepower [hp]) diesel backup generator (Generac SD500). Based on the specifications provided, the generator would achieve an average noise level of 75 dBA at 23 ft at full load with a level 2 sound attenuated enclosure. The generator will be placed in a room with a wall height of 11 ft, 8 inches according to the site plans and would be tested periodically during the daytime hours. A standard concrete masonry unit (CMU) block wall with a density of 95 pounds per cubic foot lbs/ft^3) would reduce noise by approximately 36 dBA resulting in a noise level of 39 dBA L_{eq} at a distance of 23 ft. When propagated to the adjacent property line 10 ft away, the resulting noise level would be approximately 46.5 dBA L_{eq}. With distance and wall attenuation, the generated noise levels would be below the daytime noise level standard of 60 dBA $L_{eq,}$ and no further reduction is necessary.

Exterior Deck Operations

The proposed project would include two (2) decks, one public and one hotel deck, on the west side of the project site on the fourth floor. There would be no hosted events or amplified sound at either deck. Both decks would be closed daily at 10:00 p.m. Published data for human speech noise levels were used to estimate additional noise from adults talking. Reference speech noise levels for people in various noise environments are shown in Table I. It was assumed that up to 10 adults (five male and five female) would be talking in loud voices simultaneously at the roof deck for extended periods of time.

Table I: Sound Levels of Speech for Different Vocal Efforts

Vocal Effort	Sound Level at 3.3 ft. (dBA L_{eq})		
	Male	Female	Children
Casual	53	50	50
Normal	58	55	55
Raised	65	62	62
Loud	75	71	71
Shout	88	82	82

Source: Harris 1998; U.S. Environmental Protection Agency 1977.
dBA = A-weighted decibels ft = foot/feet
L_{eq} = equivalent continuous sound level

Based on the calculations provided in Appendix C, with distance attenuation, the generated noise levels would be approximately 58 dBA L_{eq} at the residential use to the west. This noise level would be as much as 9 dBA higher above the quietest hour measured between 7:00 a.m. and 10:00 p.m., the hours defined as "daytime" by the City Municipal Code. However, this noise level would only be 2 dBA above the average ambient noise level during daytime hours, 56 dBA L_{eq}, and would be below the daytime noise level standard of 60 dBA $L_{eq,}$; therefore, the two decks would not result in noise impacts to off-site receptors.

CONCLUSION

Off-Site Construction Impacts

As described in the analysis above, construction of the proposed project would not result in potentially significant short-term noise impacts on adjacent land uses. Construction activities would be short-term and would be less than significant with the implementation of Project-Specific MM NOI-1 and ConnectMenlo EIR MM NOISE-1c. Construction vibration impacts to surrounding receptors would be less than significant.

Project-Specific MM NOI-1

The construction contractor shall ensure that a minimum 16-foot-high barrier, such as a plywood structure or flexible sound control curtain, shall be erected on the western project site boundary adjacent to the sensitive receptors to minimize the amount of noise during construction.

ConnectMenlo EIR MM NOISE-1c

Project applicants shall minimize the exposure of nearby properties to excessive noise levels from construction-related activity through CEQA review, conditions of approval and/or enforcement of the City's Noise Ordinance. Prior to issuance of demolition, grading, and/or building permits for development projects, a note shall be provided on development plans indicating that during on-going grading, demolition, and construction, the property owner/developer shall be responsible for requiring contractors to implement the following measures to limit construction- related noise:

- Construction activity is limited to the daytime hours between 8:00 a.m. to 6:00 p.m. on Monday through Friday, as prescribed in the City's Municipal Code.
- All internal combustion engines on construction equipment and trucks are fitted with properly maintained mufflers, air intake silencers, and/or engine shrouds that are no less effective than as originally equipped by the manufacturer.
- Stationary equipment such as generators and air compressors shall be located as far as feasible from nearby noise-sensitive uses.
- Stockpiling is located as far as feasible from nearby noise-sensitive receptors.
- Limit unnecessary engine idling to the extent feasible.
- Limit the use of public address systems.
- Construction traffic shall be limited to the haul routes established by the City of Menlo Park.

Off-Site Operations Impacts

Implementation of the proposed project would generate stationary noise from HVAC equipment to surrounding receptors. However, with the implementation of Project-Specific MM NOI-2, stationary source noise impacts would be less than significant.

Project-Specific MM NOI-2

The following mitigation measure is required to reduce heating, ventilation, and air conditioning (HVAC) operational noise levels:

- Once specifications of the rooftop HVAC equipment are determined, an analysis shall be prepared and submitted to the satisfaction of the City Planning Director to confirm that the operation of rooftop equipment would meet the City's nighttime 50 dBA equivalent continuous sound level (L_{eq}) noise level standard. This can be achieved by the following design features:

    1. Choosing rooftop mechanical equipment that has a reference noise level of 68 dBA L_{eq} at 5 feet or less, or

    2. Installation of silencers or enclosures capable of reducing noise levels by a minimum of 4 dBA.

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APPENDIX A

NOISE MONITORING DATA

Noise Measurement Survey – 24 HR

Project Number: CMK2201
Project Name: Hotel Moxy

Test Personnel: Moe Abushanab
Equipment: Spark 706RC (SN:18904)

Site Number: LT-1 Date: 8/2/2022

Time: From 12:00 p.m. To 12:00 p.m.

Site Location: Located on the west corner of project site, on a tree closest to the western fence.

Primary Noise Sources: Regular traffic noise on Haven Avenue, Marsh Rd, and Hwy 101 Occasional parking lot activities.

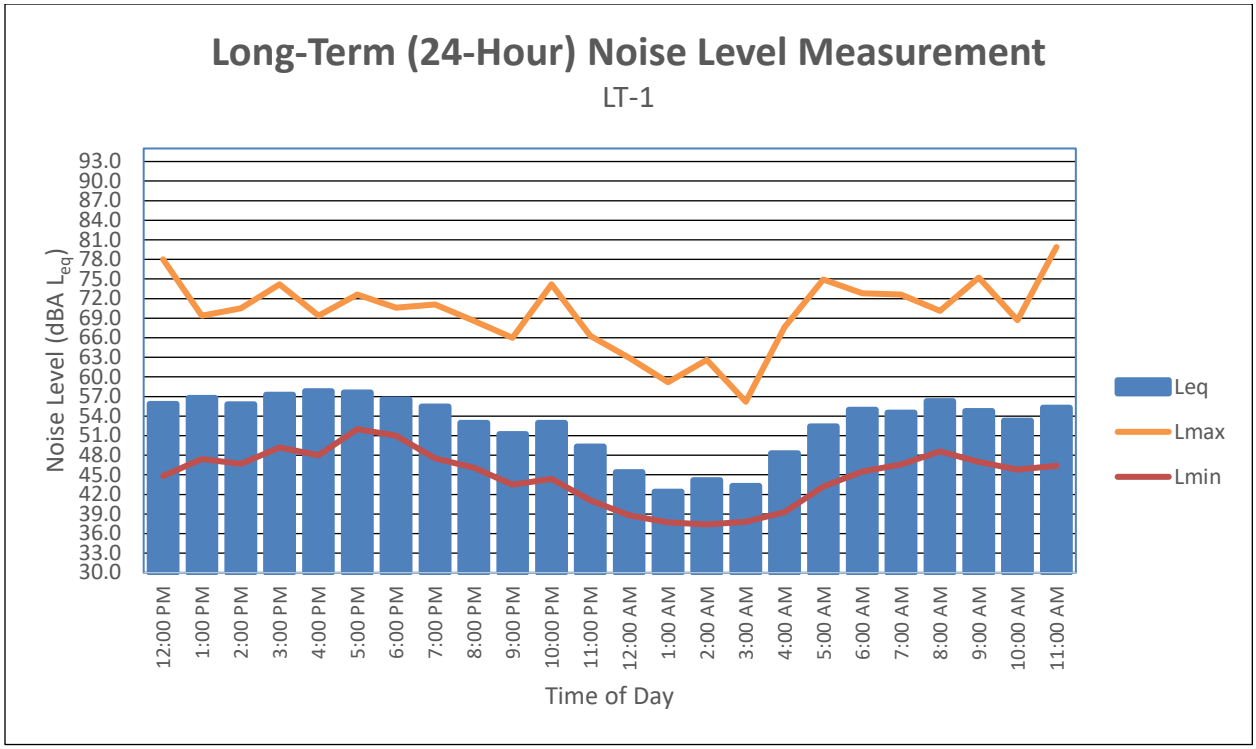
Comments:

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-1

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
12:00 PM	8/2/22	55.9	78.0	44.8
1:00 PM	8/2/22	56.8	69.4	47.4
2:00 PM	8/2/22	55.8	70.5	46.7
3:00 PM	8/2/22	57.3	74.2	49.2
4:00 PM	8/2/22	57.8	69.4	48.0
5:00 PM	8/2/22	57.6	72.6	52.0
6:00 PM	8/2/22	56.5	70.6	51.0
7:00 PM	8/2/22	55.5	71.1	47.5
8:00 PM	8/2/22	53.0	68.6	46.1
9:00 PM	8/2/22	51.2	66.0	43.5
10:00 PM	8/2/22	53.0	74.2	44.4
11:00 PM	8/2/22	49.3	66.3	41.1
12:00 AM	8/3/22	45.4	62.9	38.8
1:00 AM	8/3/22	42.4	59.2	37.7
2:00 AM	8/3/22	44.2	62.6	37.4
3:00 AM	8/3/22	43.3	56.2	37.8
4:00 AM	8/3/22	48.3	67.6	39.3
5:00 AM	8/3/22	52.4	74.9	43.2
6:00 AM	8/3/22	55.0	72.8	45.5
7:00 AM	8/3/22	54.5	72.6	46.6
8:00 AM	8/3/22	56.3	70.1	48.6
9:00 AM	8/3/22	54.8	75.2	47.0
10:00 AM	8/3/22	53.3	68.7	45.8
11:00 AM	8/3/22	55.3	79.9	46.4

Source: Compiled by LSA Associates, Inc. (2022).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level


Long-Term (24-Hour) Noise Level Measurement
LT-1
Noise Level (dBA Leq)
93.0
90.0
87.0
84.0
81.0
78.0
75.0
72.0
69.0
66.0
63.0
60.0
57.0
54.0
51.0
48.0
45.0
42.0
39.0
36.0
33.0
30.0
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
Time of Day
Leq
Lmax
Lmin

Noise Measurement Survey – 24 HR

Project Number: CMK2201
Project Name: Hotel Moxy

Test Personnel: Moe Abushanab
Equipment: Spark 706RC (SN:18903)

Site Number: LT-2 Date: 8/2/2022

Time: From 12:00 p.m. To 12:00 p.m.

Site Location: Located north corner of building façade closest to parking lot behind building, on a black pipe attached to the building.

Primary Noise Sources: Dog barking
Faint traffic
Faint aircraft noise
Occasional parking lot activities

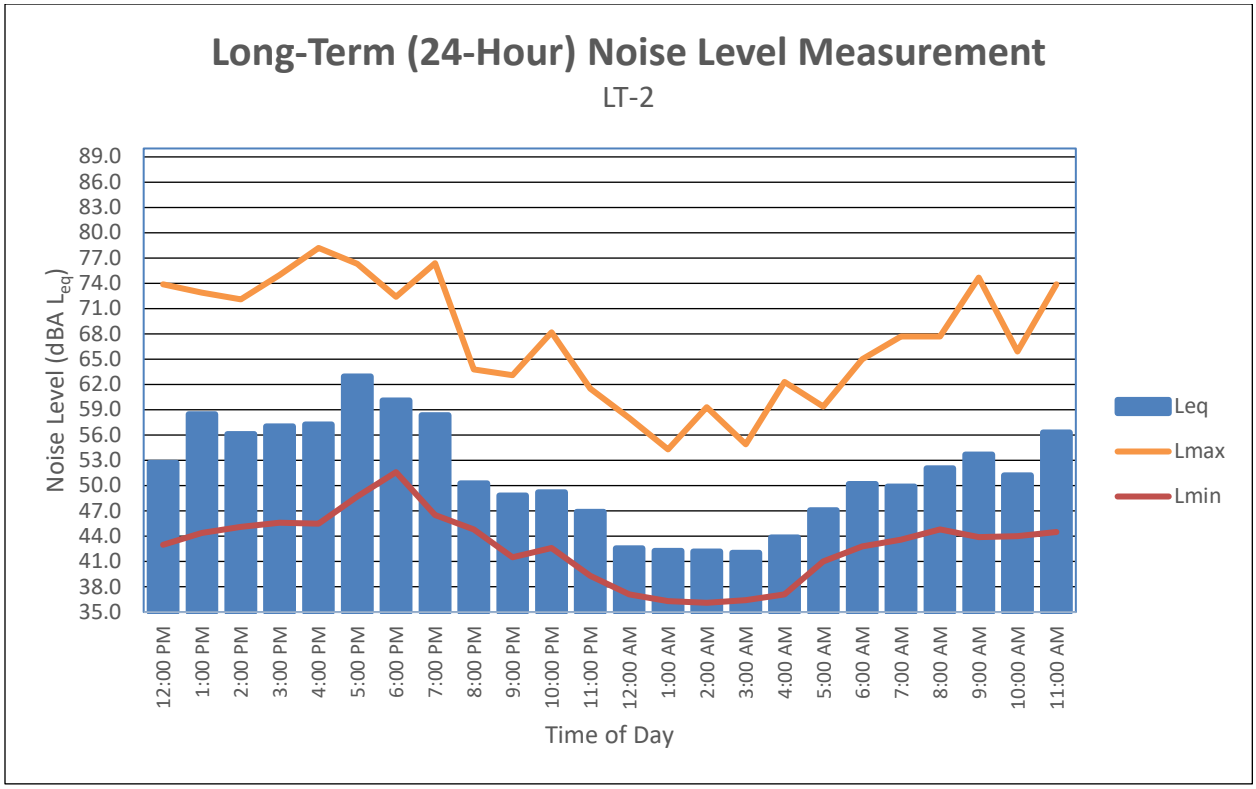
Comments:

Photo:

Long-Term (24-Hour) Noise Level Measurement Results at LT-2

Start Time	Date	Noise Level (dBA)		
		L_{eq}	L_{max}	L_{min}
12:00 PM	8/2/22	52.7	73.9	43.0
1:00 PM	8/2/22	58.5	72.9	44.4
2:00 PM	8/2/22	56.1	72.1	45.1
3:00 PM	8/2/22	57.0	75.0	45.6
4:00 PM	8/2/22	57.2	78.2	45.5
5:00 PM	8/2/22	63.0	76.3	48.7
6:00 PM	8/2/22	60.1	72.4	51.6
7:00 PM	8/2/22	58.4	76.4	46.5
8:00 PM	8/2/22	50.3	63.8	44.8
9:00 PM	8/2/22	48.8	63.1	41.5
10:00 PM	8/2/22	49.2	68.2	42.6
11:00 PM	8/2/22	46.9	61.5	39.3
12:00 AM	8/3/22	42.6	58.0	37.1
1:00 AM	8/3/22	42.3	54.3	36.3
2:00 AM	8/3/22	42.2	59.3	36.1
3:00 AM	8/3/22	42.0	54.9	36.4
4:00 AM	8/3/22	43.8	62.3	37.1
5:00 AM	8/3/22	47.1	59.4	41.0
6:00 AM	8/3/22	50.2	65.0	42.8
7:00 AM	8/3/22	49.9	67.7	43.6
8:00 AM	8/3/22	52.0	67.7	44.8
9:00 AM	8/3/22	53.7	74.7	43.9
10:00 AM	8/3/22	51.2	65.9	44.0
11:00 AM	8/3/22	56.3	73.9	44.5

Source: Compiled by LSA Associates, Inc. (2022).
dBA = A-weighted decibel
L_{eq} = equivalent continuous sound level
L_{max} = maximum instantaneous noise level
L_{min} = minimum measured sound level


Long-Term (24-Hour) Noise Level Measurement
LT-2
Noise Level (dBA Leq)
89.0
86.0
83.0
80.0
77.0
74.0
71.0
68.0
65.0
62.0
59.0
56.0
53.0
50.0
47.0
44.0
41.0
38.0
35.0
12:00 PM
1:00 PM
2:00 PM
3:00 PM
4:00 PM
5:00 PM
6:00 PM
7:00 PM
8:00 PM
9:00 PM
10:00 PM
11:00 PM
12:00 AM
1:00 AM
2:00 AM
3:00 AM
4:00 AM
5:00 AM
6:00 AM
7:00 AM
8:00 AM
9:00 AM
10:00 AM
11:00 AM
Time of Day
Leq
Lmax
Lmin

APPENDIX B

CONSTRUCTION NOISE CALCULATIONS

Construction Calculations

Phase: Demolition

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Concrete Saw	1	90	20	50	0.5	90	83
Excavator	1	81	40	50	0.5	81	77
					Combined at 50 feet	**91**	**84**
					Combined at Receptor 65 feet	**88**	**82**

Phase: Asphalt Demolition

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Excavator	1	81	40	50	0.5	81	77
					Combined at 50 feet	**81**	**77**
					Combined at Receptor 65 feet	**79**	**75**

Phase: Rough Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Excavator	1	81	40	50	0.5	81	77
Grader	1	85	40	50	0.5	85	81
Compactor (ground)	1	83	20	50	0.5	83	76
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**90**	**85**
					Combined at Receptor 65 feet	**87**	**83**

Phase:Building Construstion

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Crane	1	81	16	50	0.5	81	73
Man Lift	1	75	20	50	0.5	75	68
Tractor	1	84	40	50	0.5	84	80
Welder / Torch	1	74	40	50	0.5	74	70
Generator	1	81	50	50	0.5	81	78
					Combined at 50 feet	**87**	**83**
					Combined at Receptor 65 feet	**85**	**81**

Phase: Site Preparation

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**84**	**80**
					Combined at Receptor 65 feet	**82**	**78**

Phase: Utility Trenching

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Excavator	1	81	40	50	0.5	81	77
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**86**	**82**
					Combined at Receptor 65 feet	**83**	**80**

Phase: Fine Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Excavator	1	81	40	50	0.5	81	77
Grader	1	85	40	50	0.5	85	81
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**88**	**84**
					Combined at Receptor 65 feet	**86**	**82**

Phase: Finishing/Landscaping

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**84**	**80**
					Combined at Receptor 65 feet	**82**	**78**

Phase: Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Roller	1	80	20	50	0.5	80	73
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**85**	**81**
					Combined at Receptor 65 feet	**83**	**79**

Phase:Architectural Coating

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Compressor (air)	1	78	40	50	0.5	78	74
					Combined at 50 feet	**78**	**74**
					Combined at Receptor 65 feet	**76**	**72**

Sources: RCNM

[1]- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Construction Calculations

Phase: Demolition

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Concrete Saw	1	90	20	50	0.5	90	83
Excavator	1	81	40	50	0.5	81	77
					Combined at 50 feet	**91**	**84**
					Combined at Receptor 130 feet	**82**	**76**
					Combined at Receptor 170 feet	**80**	**73**
					Combined at Receptor 270 feet	**76**	**69**
					Combined at Receptor 300 feet	**75**	**68**

Phase: Asphalt Demolition

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Excavator	1	81	40	50	0.5	81	77
					Combined at 50 feet	**81**	**77**
					Combined at Receptor 130 feet	**73**	**69**
					Combined at Receptor 170 feet	**70**	**66**
					Combined at Receptor 270 feet	**66**	**62**
					Combined at Receptor 300 feet	**65**	**61**

Phase: Rough Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Excavator	1	81	40	50	0.5	81	77
Grader	1	85	40	50	0.5	85	81
Compactor (ground)	1	83	20	50	0.5	83	76
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**90**	**85**
					Combined at Receptor 130 feet	**81**	**77**
					Combined at Receptor 170 feet	**79**	**74**
					Combined at Receptor 270 feet	**75**	**70**
					Combined at Receptor 300 feet	**74**	**69**

Phase:Building Construstion

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Crane	1	81	16	50	0.5	81	73
Man Lift	1	75	20	50	0.5	75	68
Tractor	1	84	40	50	0.5	84	80
Welder / Torch	1	74	40	50	0.5	74	70
Generator	1	81	50	50	0.5	81	78
					Combined at 50 feet	**87**	**83**
					Combined at Receptor 130 feet	**79**	**75**
					Combined at Receptor 170 feet	**77**	**72**
					Combined at Receptor 270 feet	**73**	**68**
					Combined at Receptor 300 feet	**72**	**67**

Phase: Site Preparation

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**84**	**80**
					Combined at Receptor 130 feet	**76**	**72**
					Combined at Receptor 170 feet	**73**	**69**
					Combined at Receptor 270 feet	**69**	**65**
					Combined at Receptor 300 feet	**68**	**64**

Phase: Utility Trenching

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Excavator	1	81	40	50	0.5	81	77
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**86**	**82**
					Combined at Receptor 130 feet	**77**	**73**
					Combined at Receptor 170 feet	**75**	**71**
					Combined at Receptor 270 feet	**71**	**67**
					Combined at Receptor 300 feet	**70**	**66**

Phase: Fine Grading

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Excavator	1	81	40	50	0.5	81	77
Grader	1	85	40	50	0.5	85	81
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**88**	**84**
					Combined at Receptor 130 feet	**80**	**76**
					Combined at Receptor 170 feet	**69**	**66**
					Combined at Receptor 270 feet	**55**	**51**
					Combined at Receptor 300 feet	**73**	**69**

Phase: Finishing/Landscaping

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**84**	**80**
					Combined at Receptor 130 feet	**76**	**72**
					Combined at Receptor 170 feet	**73**	**69**
					Combined at Receptor 270 feet	**69**	**65**
					Combined at Receptor 300 feet	**68**	**64**

Phase: Paving

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Roller	1	80	20	50	0.5	80	73
Tractor	1	84	40	50	0.5	84	80
					Combined at 50 feet	**85**	**81**
					Combined at Receptor 130 feet	**77**	**73**
					Combined at Receptor 170 feet	**75**	**70**
					Combined at Receptor 270 feet	**71**	**66**
					Combined at Receptor 300 feet	**70**	**65**

Phase:Architectural Coating

Equipment	Quantity	Reference (dBA) 50 ft Lmax	Usage Factor[1]	Distance to Receptor (ft)	Ground Effects	Noise Level (dBA) Lmax	Noise Level (dBA) Leq
Compressor (air)	1	78	40	50	0.5	78	74
					Combined at 50 feet	**78**	**74**
					Combined at Receptor 130 feet	**70**	**66**
					Combined at Receptor 170 feet	**67**	**63**
					Combined at Receptor 270 feet	**63**	**59**
					Combined at Receptor 300 feet	**62**	**58**

Sources: RCNM

[1]- Percentage of time that a piece of equipment is operating at full power.
dBA – A-weighted Decibels
Lmax- Maximum Level
Leq- Equivalent Level

Wall Assessment

Receiver Name	Wall Height	Wall Elevation	Rec. elev.	Rec. Height	Source Elevation	Source Height	Source to Barrier	Rec. to Source dist.	Rec. to Barr. dist.	Noise Reduction
	16	0	0	5	0	8	10	65	55	14.3
R	16	0	0	15	0	8	10	65	55	12.7
	16	0	0	25	0	8	10	65	55	10.9
	18	0	0	5	0	8	10	65	55	15.5
R	18	0	0	15	0	8	10	65	55	14.3
	18	0	0	25	0	8	10	65	55	12.7
	20	0	0	5	0	8	10	65	55	16.4
R	20	0	0	15	0	8	10	65	55	15.5
	20	0	0	25	0	8	10	65	55	14.1

APPENDIX C

HUMAN VOICE NOISE CALCULATIONS

Sound Levels from Vocal Efforts

	Male	Female	
Quantity	5	5	
Loud Noise Level (dBA Leq)	75	71	Total at 3.3 ft
Combined level for each gender	82.0	78.0	83.4

Distance to Receiver	Noise Level at Receptor (dBA L_{eq})
65	58

Range of Ambient Noise Levels During Rooftop Deck		Highest increase in noise level above ambient
48.8	63	9

Average Ambient Noise Level During Rooftop Deck	Increase in noise level above average ambient
56	2

Source: Harris 1998; U.S. Environmental Protection Agency 1977.

HEXAGON TRANSPORTATION CONSULTANTS, INC.

3723 Haven Avenue Hotel Development

Draft Transportation Impact Analysis

Prepared for:

City of Menlo Park

May 20, 2021

Hexagon Transportation Consultants, Inc.
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San Jose, CA 95113
Hexagon Job Number: 20LJ03
Phone: 408.971.6100

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Executive Summary

This report presents the results of the Transportation Impact Analysis (TIA) conducted for the proposed hotel development at 3723 Haven Avenue in the City of Menlo Park, California. The project proposes to construct a 163-room hotel including a lounge, fitness center and business center above a three-level parking garage. Currently the site is occupied by a one-story office building with 13,681 square feet (s.f.), which would be demolished. Vehicular access to the project site would be provided by one full-access driveway located on Haven Avenue.

The transportation impacts of the project were evaluated following the standards and methodologies established by the City of Menlo Park in the TIA Guidelines. The transportation analysis report for the project includes a California Environmental Quality Act (CEQA) transportation analysis focused on Vehicle Miles Travelled (VMT) and a non-CEQA level of service (LOS) analysis (or roadway congestion analysis) to inform local planning efforts.

Pursuant to SB 743, LOS is no longer a threshold of significance under CEQA. Therefore, noncompliance with a local LOS standard does not constitute an impact under CEQA and any improvements to remedy deficiencies would need to be addressed as conditions of approval through the entitlement process and not mitigation measures in the CEQA process.

CEQA Transportation Impacts

Based on consultation with the City and applicant, the VMT analysis for the proposed hotel development focuses on the evaluation of VMT generated by land uses within a three-mile radius of the proposed hotel. Hexagon used the citywide travel demand forecast model to evaluate the project's effect on total daily VMT generated by land uses within a three-mile radius under existing conditions (year 2020 model scenario).

Hexagon compared the total daily VMT generated by land uses within a three-mile radius with and without the proposed project. The proposed project was shown to slightly reduce the total daily VMT generated by land uses within a three-mile radius of the project site (see Table ES 1). Since the proposed hotel would be located within very close proximity to a major employment area in the Bayfront Area, hotel patrons would enjoy shorter travel distances to their business destinations. Because the proposed project would not cause an increase in total VMT generated by the analysis area, it is concluded that the proposed project would have a less-than-significant transportation impact. It should be noted that this conclusion is not based on the City-required 20 percent TDM reduction, and the project would still be required to implement trip-reduction measures to meet the 20 percent TDM reduction requirement outlined in the City's Zoning Ordinance.

Table ES 1
Project VMT Evaluation

	3-Mile Radius Area of Project Site		
	Existing Condition	Existing with Project Condition	% Change
Total Daily VMT [1]	7,126,189	7,092,216	-0.5%

Notes:
1. Total daily VMT includes VMT generated by all trips having at least one trip-end in the analysis area, as estimated by the citywide travel demand model.

Level of Service (LOS) Transportation Analysis (Non-CEQA Analysis)

Project Trip Generation

The trip generation rates published for hotel (Land Use Code 310) were used to estimate the trips generated by the proposed project. Based on the ITE rates, the proposed project would generate 1,363 gross daily vehicle trips, including 77 gross AM peak-hour vehicle trips and 98 gross PM peak-hour vehicle trips. After applying the required TDM trip reductions and crediting the existing trips, the proposed project is expected to generate a net total of 957 daily vehicle trips with 46 trips (22 in and 24 out) during the AM peak hour and 62 trips (37 in and 25 out) during the PM peak hour.

Table ES 2
Project Trip Generation Estimates

			Daily		AM Peak Hour				PM Peak Hour			
					Pk-Hr	Trips			Pk-Hr	Trips		
Land Use	ITE Land Use Code	Size	Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Land Use												
Hotel[1]	310	163 rm	8.36	1,363	0.47	45	32	77	0.60	50	48	98
TDM Reduction (20%)				*(273)*		*(9)*	*(6)*	*(15)*		*(10)*	*(10)*	*(20)*
Existing Land Use												
Office[2]	710	13,681 s.f.	9.74	(133)	1.16	(14)	(2)	(16)	1.15	(3)	(13)	(16)
Net Project Trips				**957**		**22**	**24**	**46**		**37**	**25**	**62**

Notes:
All trip rates are from *ITE Trip Generation Manual, 10th Edition*, 2017.
1. Average trip rates for Hotel (Land Use 310), expressed in trips per room (rm).
2. Average trip rates for General Office Building (Land Use 710), expressed in trips per 1,000 s.f. of GFA.

Existing Plus Project Intersection Levels of Service

The TIA Guidelines require consideration of level of service for local planning purposes. If a project would result in increased delay exceeding the standards identified in the TIA Guidelines, the TIA is required to discuss specific measures to remedy the deficiencies which may occur as a result of the proposed project. The results of the intersection level of service analysis show that the following five study intersections would continue operating at acceptable LOS D or better and would comply with the City's TIA Guidelines with the proposed project.

#1 Marsh Road and US 101 Northbound Off Ramp
#2 Marsh Road and US 101 Southbound Off Ramp
#3 Marsh Road and Haven Avenue/Bayfront Expressway (SR 84)
#4 Chrysler Drive and Bayfront Expressway (SR 84)
#5 Chilco Street and Bayfront Expressway (SR 84)

The following two study intersections would continue to operate at an unacceptable level of service F during both AM and PM peak hours under existing plus project conditions. The increases in delay attributed to the proposed project would be less than four seconds, which would not meet the criteria established by the City of Menlo Park to define non-compliance with local policies for intersections involving two state routes:

#6 University Avenue (SR 109) and Bayfront Expressway (SR 84)
#7 Willow Road (SR 114) and Bayfront Expressway (SR 84)

Near-term (2022) Plus Project Intersection Levels of Service

Under near-term (2022) plus project conditions, the following four study intersections would continue operating at acceptable LOS D or better and would comply with the City's TIA Guidelines with the proposed project.

#1 Marsh Road and US 101 Northbound Off Ramp
#2 Marsh Road and US 101 Southbound Off Ramp
#4 Chrysler Drive and Bayfront Expressway (SR 84)
#5 Chilco Street and Bayfront Expressway (SR 84)

The following two study intersections would continue to operate at an unacceptable level of service F during both AM and PM peak hours under near-term (2022) plus project conditions. The increases in delay attributed to the proposed project would be less than four seconds, which would not meet the criteria established by the City of Menlo Park to define non-compliance with local policies for intersections involving two state routes:

#6 University Avenue (SR 109) and Bayfront Expressway (SR 84)
#7 Willow Road (SR 114) and Bayfront Expressway (SR 84)

The intersection at Marsh Road and Bayfront Expressway (SR 84) would operate at LOS E during the AM peak hour under near-term (2020) plus project conditions. The addition of project traffic causes an increase of more than 0.8 seconds of delay to vehicles on the most critical movements at this intersection, which would be considered to be non-compliant with local policies based on the criteria specified in the TIA Guidelines. The City's planned Haven Avenue streetscape project would restripe the eastbound approach at this intersection to include a shared through-left lane, a shared through-right lane, and a right-turn only. With the planned reconfiguration, the intersection at Marsh Road and Bayfront Expressway would operate at an acceptable level of service (LOS) D during both the AM and PM peak hours. Because the proposed project would pay the City of Menlo Park's Transportation Impact Fee, which will partially fund the Haven Avenue streetscape project, the project would comply with local policies related to intersection levels of service.

Cumulative (2040) Plus Project Intersection Levels of Service

Under cumulative (2040) plus project conditions, the following two study intersections would continue operating at acceptable LOS D or better and would comply with the City's TIA Guidelines with the proposed project.

#1 Marsh Road and US 101 Northbound Off Ramp
#2 Marsh Road and US 101 Southbound Off Ramp

The following two study intersections would continue to operate at an unacceptable level of service F during both AM and PM peak hours under cumulative (2040) plus project conditions. The increases in delay attributed to the proposed project would be less than four seconds, which would not meet the criteria established by the City of Menlo Park to define non-compliance with local policies for intersections involving two state routes:

#6 University Avenue (SR 109) and Bayfront Expressway (SR 84)
#7 Willow Road (SR 114) and Bayfront Expressway (SR 84)

Measured against the City's level of service standards, the proposed project would cause the following three intersections to be potentially non-compliant with local policies during either the AM or the PM peak hour under cumulative (2040) plus project conditions.

#3 Marsh Road and Haven Avenue/Bayfront Expressway (SR 84) – AM peak hour
#4 Chrysler Drive and Bayfront Expressway (SR 84) – PM peak hour
#5 Chilco Street and Bayfront Expressway (SR 84) – AM peak hour

#3. Marsh Road and Haven Avenue/Bayfront Expressway (SR 84)

The results show that under cumulative (2040) no project conditions, this intersection would operate at LOS E during the AM peak hour. Under cumulative (2040) plus project conditions, the intersection would continue operating at LOS E and the proposed project would cause an increase in delay of the critical movement on the local approach by more than 0.8 seconds. Measured against the City's level of service standards, the project would cause this intersection to be potentially non-compliant with local policies during the AM peak hour.

The City of Menlo Park is implementing a traffic signal adaptive coordination system on the Marsh Road, Bayfront Expressway, and Willow Road corridors to improve traffic flow. Adaptive traffic control is a technology that automatically adjusts traffic signal timing based on actual traffic demand at an intersection. This measure will improve the intersection operations and could reduce the intersection delay. The reduction in delay due to adaptive signal coordination is not expected to bring the intersection in compliance with the City's level of service policy. Other physical intersection improvements are considered infeasible due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel. In addition, since this intersection is owned and maintained by Caltrans, any physical improvements need Caltrans' approval.

#4. Chrysler Drive and Bayfront Expressway (SR 84)

The results show that under cumulative (2040) no project conditions, the intersection of Chrysler Drive and Bayfront Expressway (SR 84) would operate at LOS E during the PM peak hour. Under cumulative (2040) plus project conditions, the intersection would continue operating at LOS E and the proposed project would cause an increase in delay of the critical movement on the local approach by more than 0.8 seconds. Measured against the City's level of service standards, the project would cause this intersection to be potentially non-compliant with local policies during the PM peak hour. The planned traffic signal adaptive coordination system will improve the intersection operations on Bayfront Expressway and could reduce the intersection delay. The reduction in delay due to adaptive signal coordination is not expected to bring the intersection in compliance with the City's level of service policy. Due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel there are no feasible physical improvements to bring the intersection in compliance with TIA guidelines/standards. In addition, since this intersection is owned and maintained by Caltrans, any physical improvements need Caltrans' approval.

#5. Chilco Street and Bayfront Expressway (SR 84)

The results show that under cumulative (2040) no project conditions, the intersection of Chilco Street and Bayfront Expressway (SR 84) would operate at LOS E during the AM peak hour. Under cumulative (2040) plus project conditions, the intersection would continue operating at LOS E and the proposed project would cause an increase in delay of the critical movement on the local approach by more than 0.8 seconds. Measured against the City's level of service standards, the project would cause this intersection to be potentially non-compliant with local policies during the AM peak hour. The planned traffic signal adaptive coordination system will improve the intersection operations on Bayfront Expressway and could reduce the intersection delay. The reduction in delay due to adaptive signal coordination is not expected to bring the intersection in compliance with the City's level of service policy. Due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel, there are no feasible physical improvements to bring the intersection in compliance with TIA guidelines/standards. In addition, since this intersection is owned and maintained by Caltrans, any physical improvements need Caltrans' approval.

Other Transportation Issues

Generally, the proposed site plan shows adequate site access and on-site circulation, and the proposed project would not have an adverse effect on the existing transit services, pedestrian facilities, or bicycle facilities in the study area. Hexagon provides the following recommendations and enhancements for the proposed project:

1. Proper signage should be placed to direct hotel guests to the drop-off and pick-up area.
2. The drop off space near the driveway entrance should be extended to accommodate two vehicles and the hotel should ensure sufficient valet staff are on hand to avoid back-ups onto the street during peak periods.
3. The current site plan does not show a pick-up zone for hotel guests to pick up their vehicles. The site plan should be modified to provide more room for valet operations. Opposite the loading area would be a turn-out, which is designated as a parking space in the site plan. It is recommended that this turn-out be modified into a pick-up zone and extended to accommodate two vehicles.
4. A pedestrian connection should be added between the hotel lobby and the pick-up zone. Furthermore, the drop-off and pick-up area will also be used by ridesharing taxi services. Sufficient space should be provided for the taxi to turn around and exit the site after pick-up/drop-off.
5. It is recommended that the parking space on level 3 of the garage near Exit Stair A be removed or the exit be redesigned to allow for sufficient space to park a vehicle.
6. Vehicles driving up the garage ramp would not be able to see a vehicle backing out of the tandem parking space immediately adjacent to the top of the garage ramp. A mirror should be placed at an appropriate location at the top of the ramp to improve the visibility at this location. Likewise, valet staff should be instructed to reduce speed and check the mirror when traveling up the ramp.
7. It is recommended that one of the ADA accessible spaces be designated as a van space.
8. It is recommended that bike parking in the upper levels of the garage be shifted to the ground floor or signage be installed to discourage bikes from riding on the parking garage ramps.

Table ES 3
Intersection Level of Service Summary

#	Intersection	LOS Standards	Juris-diction	Peak Hour	Existing		Existing with Project			Near-term (2022) No Project		Near-term (2022) with Project			Near-term (2022) Plus Project with Improvements		Cumulative (2040) No Project		Cumulative (2040) with Project		
					Ave Delay	LOS	Ave Delay	LOS	Incr. In Ave./Crit. Delay	Ave Delay	LOS	Ave Delay	LOS	Incr. In Ave./Crit. Delay	Ave Delay	LOS	Ave Delay	LOS	Ave Delay	LOS	Incr. In Ave./Crit. Delay
1	Marsh Road and US 101 Southbound Off Ramp	D	Caltrans	AM	19.0	B	19.0	B	0.0	23.6	C	24.1	C	0.5	--	--	37.1	D	37.9	D	0.8
				PM	17.0	B	17.0	B	0.0	17.7	B	17.8	B	0.1	--	--	40.7	D	42.1	D	1.4
2	Marsh Road and US 101 Northbound Off Ramp	D	Caltrans	AM	15.8	B	15.8	B	0.0	25.3	C	25.9	C	0.6	--	--	33.9	C	34.9	C	1.0
				PM	13.3	B	13.4	B	0.1	13.3	B	13.5	B	0.2	--	--	17.3	B	18.0	B	0.7
3	Marsh Road and Bayfront Expressway (SR 84)	D	Caltrans	AM	50.5	D	55.0	D	4.5	**58.4**	**E**	**63.9**	**E**	5.5	43.8	D	**75.7**	**E**	**79.6**	E	3.9
	Critical Movements on Local Approaches:																				
	Eastbound Right Turn				**91.1**	**F**	**107.0**	**F**	15.9	**108.4**	**F**	**113.4**	**F**	5.0	**88.1**	**F**	**86.6**	**F**	**87.9**	**F**	1.3
				PM	31.6	C	32.1	C	0.5	35.0	C	36.4	D	1.4	36.1	D	34.4	C	38.3	D	3.9
	Critical Movements on Local Approaches: [1]																				
	Eastbound Left Turn				**69.4**	**E**	**69.1**	**E**	-0.3	**85.2**	**F**	**89.2**	**F**	4.0	**86.6**	**F**	**82.5**	**F**	**84.0**	**F**	1.6
4	Chrysler Drive and Bayfront Expressway (SR 84)	D	Caltrans	AM	8.4	A	8.4	A	0.0	9.5	A	9.5	A	0.0	--	--	12.4	B	12.5	B	0.1
	Critical Movements on Local Approaches:																				
	Northbound Left Turn				14.1	B	14.2	B	0.0	18.2	B	18.2	B	0.1	--	--	35.4	D	35.6	D	0.2
				PM	13.1	B	13.2	B	0.1	20.1	C	20.3	C	0.2	--	--	**62.6**	**E**	**62.7**	**E**	0.1
	Critical Movements on Local Approaches:																				
	Northbound Left Turn				21.4	C	21.5	C	0.1	29.1	C	29.3	C	0.2			**223.2**	**F**	**224.2**	**F**	1.0
5	Chilco Street and Bayfront Expressway (SR 84)	D	Caltrans	AM	12.7	B	12.7	B	0.0	21.9	C	22.0	C	0.1	--	--	**61.5**	**E**	**61.6**	**E**	0.1
	Critical Movements on Local Approaches:																				
	Northbound Right Turn				25.4	C	25.7	C	0.4	**59.2**	**E**	**60.5**	**E**	1.3	--	--	**252.7**	**F**	**253.5**	**F**	0.9
				PM	16.0	B	16.0	B	0.0	25.3	C	25.3	C	0.0	--	--	**67.2**	**E**	**67.1**	**E**	-0.1
	Critical Movements on Local Approaches:																				
	Northbound Right Turn				39.7	D	40.0	D	0.4	**122.1**	**F**	**122.6**	**F**	0.5			**399.3**	**F**	**399.3**	**F**	0.0
6	Willow Road (SR 114) and Bayfront Expressway (SR 84)	D	Caltrans	AM	**106.0**	**F**	**106.1**	**F**	0.1	**193.1**	**F**	**193.6**	**F**	0.5	--	--	**325.1**	**F**	**325.6**	**F**	0.5
				PM	168.1	**F**	168.0	**F**	-0.1	**180.9**	**E**	**180.9**	**F**	0.0	--	--	**372.4**	**F**	**373.8**	**F**	1.4
7	University Avenue (SR 109) and Bayfront Expressway (SR 84)	D	Caltrans	AM	**>80***	**F**	**>80***	**F**	0.1	**>80***	**F**	**>80***	**F**	0.1	--	--	**100.8**	**F**	**101.0**	**F**	0.2
				PM	**94.1**	**F**	**94.2**	**F**	0.1	**113.1**	**F**	**113.2**	**F**	0.1	--	--	**215.3**	**F**	**215.3**	**F**	0.0

Notes:

* Indicates LOS based on "unserved demand." At this location, upstream & downstream congestion results in delay not captured by the VISTRO analysis.

[1] The critical movement on local approaches shifts from eastbound left turn under existing and background conditions to eastbound through under cumulative conditions.

Bold indicates a substandard level of service.

Bold indicates that the project would cause the intersection to be potentially non-compliant with local policies.

1. Introduction

This report presents the results of the Transportation Impact Analysis (TIA) conducted for the proposed hotel development at 3723 Haven Avenue in City of Menlo Park, California. The proposed project would consist of a 163-room hotel including a lounge, fitness center and library above a three-level parking garage. The site is currently occupied by a one-story office building with 13,681 square feet (s.f.), which would be demolished. Vehicular access to the project site would be provided by one full-access driveway located on Haven Avenue. The project site and the surrounding study area are shown on Figure 1. The project site plan is shown on Figure 2.

Scope of Study

The purpose of the traffic study is to identify any traffic impacts in accordance with City of Menlo Park standards and procedures. This report includes an evaluation of transportation impacts according to CEQA and a non-CEQA level of service (LOS) analysis (or roadway congestion analysis) to inform local planning efforts per the City's TIA Guidelines.

CEQA Analysis

Vehicle Miles Travelled (VMT) Analysis

Senate Bill (SB) 743 changed the way transportation impacts are identified under CEQA from level of service (LOS) to vehicle miles travelled (VMT). The City of Menlo Park adopted updated Transportation Impact Analysis (TIA) Guidelines (June 16, 2020) that set forth new procedures and thresholds for VMT. The updated TIA Guidelines require that a project shall analyze both VMT to determine impacts under CEQA and non-CEQA level of service (LOS) for planning purposes, except those meeting the following exemption criteria:

1. Projects generating less than 100 vehicle trips/day

2. Local servicing retail projects and other commercial projects where the total square footage is 10,000 square feet or less (less than 10,000 square feet is exempt from VMT analysis only)

3. Residential or office developments located in a low VMT area and within ½ mile of an existing "major transit stop" or within ½ mile of a "high-quality transit corridor"

4. Affordable housing developments with 100 percent affordable units, either in a low VMT area or within ½ mile of an existing major transit stop or within ½ mile of a high-quality transit corridor

5. Local serving public facilities where the total new or added square footage is 10,000 square feet or less, such as libraries, police stations, fire stations or parks. Facility type and size outside the description shall provide evidence of local serving status to City satisfaction.

6. Projects in compliance with the El Camino Real and Downtown Specific Plan

The proposed hotel development would not meet the above exemption criteria. Therefore, the CEQA transportation impact analysis was based on an evaluation of the proposed project's VMT and also includes a non-CEQA LOS analysis for planning purposes.

VMT Analysis Methodology

In order to estimate VMT, the City's TIA Guidelines require the use of a travel demand forecast model. The model estimates the proposed project's effect on total daily VMT in accordance with City's TIA Guidelines. The evaluated daily VMT accounts for the entire distance of a trip associated with the proposed project. For example, the entire length of a trip made by a hotel staff person coming from and returning to their home would be captured in the daily VMT analysis.

However, hotel land uses are not explicitly represented in the model. Therefore, the hotel rooms and jobs expected for the proposed project are accounted for separately. Hotel employees are represented in the model by service employees. To reflect trips by hotel patrons, Hexagon used residential land use as a proxy, as it most closely resembles the behavior pattern of a hotel guest. Trip making characteristics for the residential land uses were restricted to offices and restaurants/shops to mimic patron activities at a typical business hotel (home-based work and home-based shopping trips).

Based on consultation with the City and applicant, the hotel is expected to have a service area of approximately three miles in radius. The VMT analysis is conducted by comparing the existing and existing plus project scenarios to determine the relative impact of the proposed project on VMT.

CEQA Significance Criteria Based on VMT Analysis

The proposed hotel project would generate more than 100 daily trips (based on the ITE rates, the proposed project would generate 1,363 gross daily vehicle trips). Per the City's TIA Guidelines, Attachment B, for large projects (nonexempt, non-retail projects that generate more than 100 daily vehicle trips), the City travel demand model is used to estimate the total daily City VMT, which is a measure of the total vehicle travel generated by all land uses within the City of Menlo Park. Based on the newly adopted City TIA Guidelines, a hotel development is considered to have a significant impact on VMT if the project causes a net increase in total City VMT.

Non-CEQA Level of Service (Roadway Congestion Analysis)

An LOS analysis also was conducted to identify whether the proposed project would comply with local policies. The following thresholds are from the City's TIA Guidelines and the proposed project's compliance with local policies was evaluated based on these thresholds:

- A project is considered potentially noncompliant with local policies if the addition of project traffic causes an intersection on a collector street operating at LOS A through C to operate at an unacceptable level (LOS D, E or F) or have an increase of 23 seconds or greater in average vehicle delay, whichever comes first. Potential noncompliance shall also include a project that causes an intersection on arterial streets or local approaches to State controlled signalized intersections operating at LOS A through D to operate at an unacceptable level (LOS E or F) or have an increase of 23 seconds or greater in average vehicle delay, whichever comes first.

- A project is also considered potentially noncompliant if the addition of project traffic causes an increase of more than 0.8 seconds of average delay to vehicles on all critical movements for intersections operating at a near-term LOS D through F for collector streets and at a near-term LOS E or F for arterial streets. For local approaches to State controlled signalized intersections, a project is considered to be potentially noncompliant if the addition of project traffic causes an increase of more than 0.8 seconds of delay to vehicles on the most critical movements for intersections operating at a near-term LOS E or F.

State (Caltrans) Controlled Intersections:

For signalized intersections involving two state routes, the project is considered potentially non-compliant with local policies if for any peak hour:

1. The level of service degrades from an acceptable LOS D or better under existing conditions to an unacceptable LOS E or F under existing plus project conditions, and the average delay per vehicle increases by four seconds or more, or
2. The level of service is an unacceptable LOS E or F under existing conditions and the addition of project trips causes an increase in the average control delay at the intersection by four seconds or more.

The effects of the project on other transportation facilities, such as bicycle facilities and transit service, were determined on the basis of engineering judgment.

Because the proposed project would generate only about 70 net peak-hour trips, its effect would extend to only a small area in the vicinity of the project site. The traffic analysis is based on the AM and PM peak-hour LOS for seven signalized intersections in the vicinity of the project site. The study intersections are listed below.

Study Intersections

#1 Marsh Road and US 101 Northbound Off Ramp
#2 Marsh Road and US 101 Southbound Off Ramp
#3 Marsh Road and Haven Avenue/Bayfront Expressway (SR 84)
#4 Chrysler Drive and Bayfront Expressway (SR 84)
#5 Chilco Street and Bayfront Expressway (SR 84)
#6 University Avenue (SR 109) and Bayfront Expressway (SR 84)
#7 Willow Road (SR 114) and Bayfront Expressway (SR 84)

Traffic conditions at the study intersections were analyzed for the weekday AM and PM peak hours of adjacent street traffic. The AM peak hour is expected to occur between 7:00 AM and 10:00 AM, and the PM peak hour between 4:00 PM and 7:00 PM on a typical weekday. These are the hours during which most traffic congestion occurs on the roadways.

The proposed project would generate less than 100 peak-hour trips on San Mateo County Congestion Management Plan (CMP) facilities. The City/County Association of Governments of San Mateo County (C/CAG) administers the CMP. Therefore, an analysis in accordance with the C/CAG's CMP guidelines, as well as a C/CAG checklist, is not required.

The proposed project would only add minimal trips to the freeway ramps; therefore, a freeway ramp analysis is not necessary. Instead, the study documents the trips added by the proposed project to the freeway ramps for informational purposes only.

Figure 1
Site Location and Study Intersections

NORTH
Not to Scale

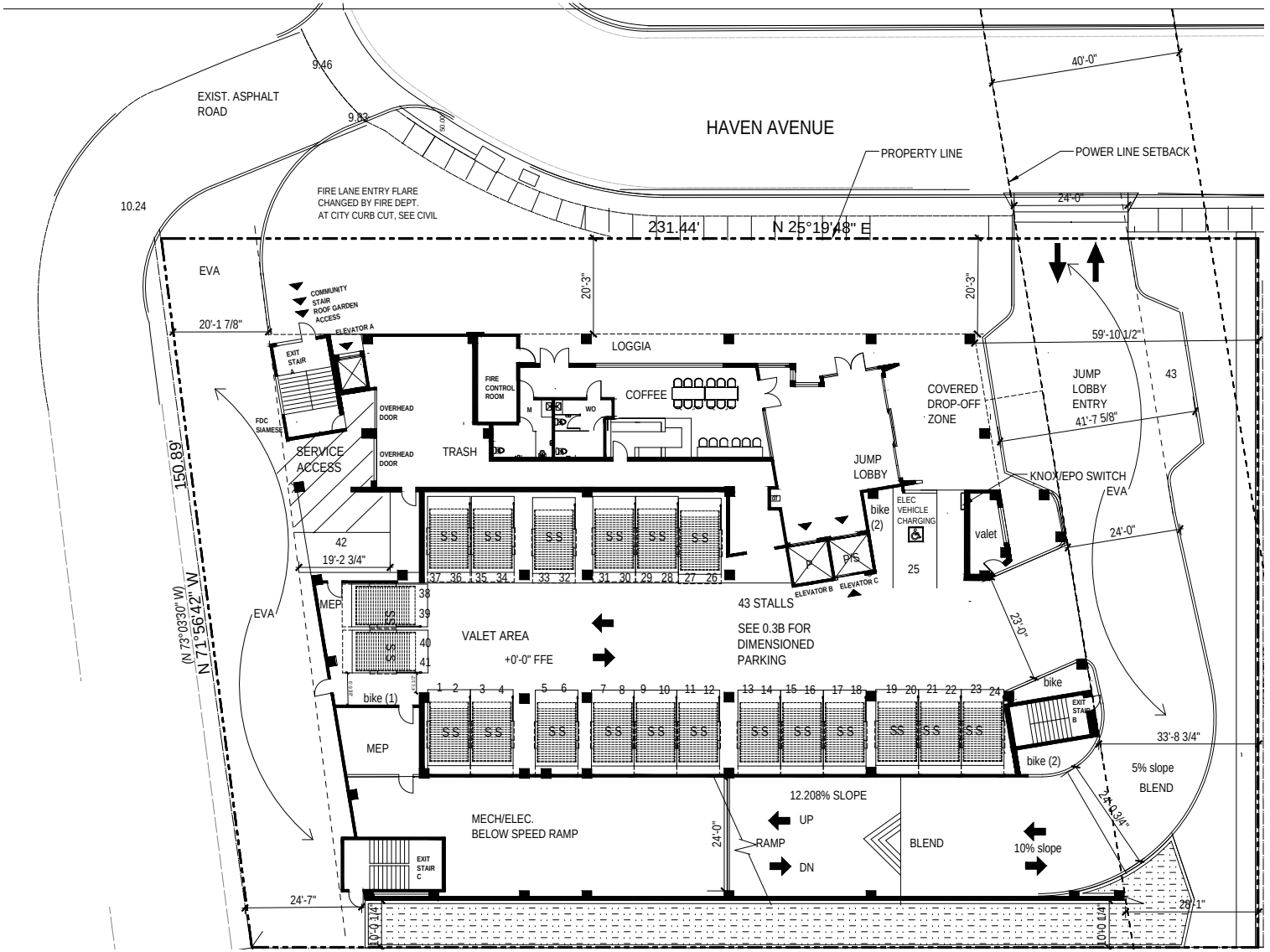


Figure 2
Site Plan

NORTH
Not to Scale

Traffic conditions were evaluated for the following scenarios:

Scenario 1: *Existing Conditions.* Existing traffic volumes at the study intersections are based on traffic counts obtained from the City of Menlo Park and/or previous studies for other nearby developments.

Scenario 2: *Existing plus Project Conditions.* Existing traffic volumes with the project were estimated by adding to existing traffic volumes the additional traffic generated by the project. Existing plus project conditions were evaluated relative to existing conditions in order to determine if the project is compliant with local policies.

Scenario 3: *Near-term (2022) Conditions.* Near-term traffic volumes were estimated by adding to existing traffic volumes the projected volumes from approved but not yet constructed projects that would generate trips at the study intersections. Near-term no project traffic volumes were obtained from the Commonwealth: Building 3 Project traffic study being conducted by Kittelson & Associates, Inc. In addition, roadway improvements associated with the approved developments were assumed as directed by City Staff.

Scenario 4: *Near-term (2022) plus Project Conditions.* Near-term traffic volumes with the project were estimated by adding to near-term traffic volumes the additional traffic generated by the project. Near-term plus project conditions were evaluated relative to near-term conditions.

Scenario 5 *Cumulative (2040) Conditions.* The 2040 model run results for the City of Menlo Park General Plan EIR certified in December 2016 were used to describe operating conditions at the study intersections under cumulative (2040) conditions. Because the current development proposal at 123 Independence Drive is larger than the development size assumed in the General Plan traffic study, the trips associated with the 107 extra units proposed at 123 Independence Drive were added to produce cumulative (2040) plus project traffic forecasts. The City has determined that the proposed hotel was included in the Year 2040 model forecasts. Therefore, the cumulative (2040) no project traffic volumes were estimated by subtracting the trips generated by the proposed project from the cumulative (2040) plus project traffic volumes.

Scenario 6 *Cumulative (2040) Plus Project Conditions.* The 2040 model run results for the City of Menlo Park General Plan EIR certified in December 2016 were used to describe operating conditions at the study intersections under cumulative (2040) plus project conditions. Cumulative (2040) plus project conditions were evaluated relative to cumulative (2040) without project conditions.

Methodology

This section presents the methods used to determine the traffic conditions at study intersections for each scenario described above. It includes descriptions of the data requirements, the analysis methodologies, and the applicable level of service standards and criteria used to determine if a project is compliant with local policies.

Data Requirements

The data required for the analysis were obtained from the City of Menlo Park, field observations, and previous studies. The following data were obtained from these sources:

- existing peak-hour intersection turning-movement volumes,
- existing lane configurations,
- signal timing and phasing,
- existing bicycle and pedestrian volumes, and
- list of approved projects.

Intersection Level of Service Methodologies

Traffic conditions were evaluated using level of service (LOS). Level of service is a qualitative description of operating conditions ranging from LOS A, or free-flow conditions with little or no delay, to LOS F, or forced-flow conditions with extreme delays. Per City's LOS standard (Policy CIRC-3.4 in the Circulation Element of the City's General Plan, adopted on 11/29/2016), the City strives to maintain LOS D at all City-controlled signalized intersections during peak hours, except at the intersection of Ravenswood Avenue and Middlefield Road and at intersections along Willow Road from Middlefield Road to US 101. The City shall work with Caltrans to ensure that average stopped delay on local approaches to State-controlled signalized intersections does not exceed LOS E.

Traffic operations at all the signalized intersections in the City of Menlo Park were evaluated using the VISTRO software based on the level-of-service method described in the *Highway Capacity Manual (HCM) 6th Edition*. The *HCM 6th Edition* evaluates signalized intersection operations on the basis of average control delay time for all vehicles at the intersection. Table 1 shows the level of service definitions for signalized intersections.

Table 1
Signalized Intersection Level of Service Definitions Based on Control Delay

Level of Service	Description	Average Control Delay Per Vehicle (sec.)
A	Signal progression is extremely favorable. Most vehicles arrive during the green phase and do not stop at all. Short cycle lengths may also contribute to the very low vehicle delay.	10.0 or less
B	Operations characterized by good signal progression and/or short cycle lengths. More vehicles stop than with LOS A, causing higher levels of average vehicle delay.	10.1 to 20.0
C	Higher delays may result from fair signal progression and/or longer cycle lengths. Individual cycle failures may begin to appear at this level. The number of vehicles stopping is significant, though some vehicles may still pass through the intersection without stopping.	20.1 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable signal progression, long cycle lengths, or high volume-to-capacity (V/C) ratios. Many vehicles stop and individual cycle failures are noticeable.	35.1 to 55.0
E	This is considered to be the limit of acceptable delay. These high delay values generally indicate poor signal progression, long cycle lengths, and high volume-to-capacity (V/C) ratios. Individual cycle failures occur frequently.	55.1 to 80.0
F	This level of delay is considered unacceptable by most drivers. This condition often occurs with oversaturation, that is, when arrival flow rates exceed the capacity of the intersection. Poor progression and long cycle lengths may also be major contributing causes of such delay levels.	greater than 80.0

Source: Transportation Research Board, *Highway Capacity Manual 6th Edition* (Washington, D.C., 2016), p.16-19.

Intersection Vehicle Queuing Analysis

For selected high-demand movements at the study intersections, the estimated maximum vehicle queues were compared to the existing or planned storage capacity. The queuing analysis is used to determine the appropriate storage lengths for the high-demand turn lanes where the project would add a substantial number of trips to these movements. Vehicle queues were estimated using a Poisson probability distribution, which estimates the probability of "n" vehicles for a vehicle movement using the following formula:

$$\text{Probability } (X=n) = \frac{\lambda^n e^{-(\lambda)}}{n!}$$

Where:

Probability (X=n) = probability of "n" vehicles in queue per lane

n = number of vehicles in the queue per lane

λ = Average number of vehicles in queue per lane (vehicles per hour per lane/signal cycles per hour)

The basis of the analysis is as follows: (1) the Poisson probability distribution is used to estimate the 95th percentile maximum number of queued vehicles per signal cycle for a particular movement; (2) the estimated maximum number of vehicles in the queue is translated into a queue length, assuming 25 feet per vehicle; and (3) the estimated maximum queue length is compared to the existing or planned available storage capacity for the movement.

For signalized intersections, the 95th percentile queue length value indicates that during the peak hour, a queue of this length or less would occur on 95 percent of the signal cycles. In other words, a queue length larger than the 95th percentile queue would only occur on five percent of the signal cycles (about three cycles during the peak hour for a signal with a 60-second cycle length). Therefore, left-turn storage pocket designs based on the 95th percentile queue length would ensure that storage space would be exceeded only five percent of the time. The 95th percentile queue length is also known as the "design queue length."

Report Organization

The remainder of this report is divided into five chapters. Chapter 2 describes existing conditions including the existing roadway network, transit service, bicycle, pedestrian facilities, and an introduction of a new transportation metric – vehicle miles travelled. Chapter 3 describes the CEQA transportation analysis, including the VMT analysis and mitigation measures to reduce the project's VMT impact. Chapter 4 describes the LOS transportation analysis including operations of study intersections, the methods used to estimate project-generated traffic, the project's effect on the local transportation system, and any recommended improvements for circulation or access deficiencies. Chapter 5 provides an evaluation of other transportation-related issues, such as site access, on-site circulation, vehicle queuing, parking, as well as potential project impacts on bicycle, pedestrian, and transit facilities.

2. Existing Conditions

This chapter describes the existing conditions for transportation facilities in the vicinity of the project site, including the roadway network, transit service, pedestrian, and bicycle facilities. A new transportation metric, vehicle miles travelled, is also discussed.

Existing Roadway Network

Regional access to the project study area is provided by US 101 and SR 84. Local access to the project site is provided by Marsh Road, Haven Avenue, Chilco Street, Constitution Drive, and Chrysler Drive. These facilities are described below. Many streets in the study area run at a diagonal compared to the ordinal directions. For the purposes of this study, US 101 and all parallel streets are considered to run east-west, and cross streets are considered to run north-south.

US 101 extends to the northwest through San Francisco and to the southeast through San Jose. Within Menlo Park, this freeway has three general-purpose travel lanes, one high-occupancy vehicle (HOV) lane, and one auxiliary lane in each direction. Access to and from the project study area is provided via a full-access interchange at Marsh Road.

Bayfront Expressway (SR 84) is a six-lane expressway that extends along the northern edge of Menlo Park. SR 84 extends eastward across the Dumbarton Bridge into Alameda County and westward through San Mateo County. Bayfront Expressway provides access to the project site via Haven Avenue.

Marsh Road extends from SR 84/Bayshore Expressway in the north to Middlefield Road in the south. In the project area, Marsh Road is a four-lane thoroughfare between Scott Drive and Bayfront Expressway. The posted speed limit in the project area is 35 mph. Sidewalks are present on both sides of Marsh Road between Bayfront Expressway and Scott Drive. It transfers to a mixed-use collector between Scott Drive and Bay Road. A Class III bike route is designated between Bay Road and Scott Drive. On-street parking is permitted on the west side of Marsh Road between Fair Oaks Avenue and Rolison Road. Access to the project site is provided via Haven Avenue.

Haven Avenue is a two-lane mixed use collector street that extends to the east from Sleepy Hollow Lane and then turns north at Haven Court. In the vicinity of the project site, Haven Avenue turns back to east and connects with Marsh Road and Bayfront Expressway. Sidewalks are presented along both directions of the roadway except for the section where it connects to Marsh Road. The posted speed limit is 30 mph along the most sections of the roadway. In the vicinity of the project site, there is an advisory speed limit of 15 mph when the roadway curves from north to east. Class II bike lanes are present on the east-west segment of Haven Avenue. On-street parking is permitted along most

sections of Haven Avenue except for the north-south segment in the vicinity of the project site, where on-street parking is prohibited along both directions. Haven Avenue serves as the eastern boundary of the project site and provides direct access to the project site.

Chilco Street is a two-lane mixed use collector street in the project area, extending from Bayfront Expressway in the north to Hamilton Avenue in the south. South of Hamilton Avenue, Chilco Street serves as a neighborhood collector and connects to Windermere Avenue. The posted speed limit is 25 to 40 mph. Sidewalks are present on both sides of Chilco Street between Windermere Avenue and the Menlo Park Fire District Station No. 77. A sidewalk is present on the east side of Chilco Street between Constitution Drive and Bayfront Expressway. A Class I separated shared-use path is present along Chilco Street between the fire station and Constitution Drive. Class II bike lanes are provided on both sides between Constitution Drive and Bayfront Expressway and in the southbound direction between Constitution Drive and the fire station. On-street parking is permitted on both sides of Chilco Street between Windermere Avenue and the fire station.

Chrysler Drive is a north-south two-lane mixed use collector street that extends from Commonwealth Drive in the south to Bayfront Expressway in the north. A sidewalk is present on the east side of Chrysler Drive and some segments on the west side. Class II bike lanes are present along Chrysler Drive between Independence Drive and Bayfront Expressway. On-street parking is permitted. The speed limit on Chrysler Drive is 25 mph.

Constitution Drive is a two-lane mixed use collector street with a speed limit of 35 mph. It extends from Independence Drive to connect to Chilco Street in the east. Sidewalks are present along the south side of the street. Class II bike lanes are present along Constitution Drive with on-street parking prohibited.

Existing Bicycle Facilities

Bicycle facilities include bike paths, bike lanes, and bike routes. Bike paths (Class I facilities) are pathways, separate from roadways that are designated for use by bicycles. Often, these pathways also allow pedestrian access. Bike lanes (Class II facilities) are lanes on roadways designated for use by bicycles with special lane markings, pavement legends, and signage. Bike routes (Class III) are existing rights-of-way that accommodate bicycles but are not separate from the existing travel lanes. Routes are typically designated only with signs.

The existing bicycle facilities in the study area are shown on Figure 3. Information about bicycle facilities in the study area is provided in the *General Plan Circulation Element*, published by the City of Menlo Park in 2016, and in the *San Mateo County Bicycle Map,* published by San Mateo County in 2010. The following bicycle facilities exist within the vicinity of the project site:

Bike Paths:

- Bayfront Expressway between Marsh Road and Marshlands Road across the Dumbarton Bridge
- Chilco Street between the Menlo Park Fire District Station No. 77 and Constitution Drive
- The Bay Trail along University Avenue north of Purdue Avenue
- Recreational trails at Bedwell Bayfront Park, Facebook along Hacker Way, and on the Bay Trail near Ravenswood Preserve

Bike Lanes:

- Haven Avenue between Sleepy Hollow Ln and Haven Court
- Chrysler Drive between Independence Drive and Bayfront Expressway
- Constitution Drive between Independence Drive and Chilco Street
- Chilco Street between Constitution Drive and Bayfront Expressway

- Willow Road between Bayfront Expressway and Bay Road south of US 101
- University Avenue between Donohoe Street and Bayfront Expressway
- Bay Road on the south side of US 101
- Jefferson Drive between Chrysler Drive and Constitution Drive

Bike Routes:

- Independence Drive between Constitution Drive and Chrysler Drive
- Market Place between Hamilton Avenue and Newbridge Street
- Ivy Drive between Market Place and Almanor Avenue
- Hamilton Avenue between Modoc Avenue and Chilco Street
- Newbridge Street in the westbound direction between Bay Road and Menalto Avenue
- Hacker Way

Proposed bicycle facilities in the vicinity of the project site include a multi-use pedestrian/bike bridge over Bayfront Expressway located between Chilco Street and Facebook MPK 21 Driveway. The bridge is currently in the design phase. In conjunction with City's planned Haven Avenue Streetscape Project, a new bicycle and pedestrian bridge over the Atherton Channel is planned as a part of a City project to extend the bike lanes and sidewalks on Haven Avenue to Marsh Road.

Overall, the existing and proposed bicycle facilities in the project vicinity provide some connection for bicycles along major thoroughfares. These bicycle facilities do not provide immediate access to the project site. However, due to low traffic volumes, Haven Avenue immediately adjacent to the project site is conducive to bicycle traffic.

Existing Pedestrian Facilities

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. Roadways providing pedestrian access to the project site include Haven Avenue and Marsh Road. Sidewalks are present along both sides of Haven Avenue except for the section where it connects to Marsh Road. Sidewalks are provided on both sides of Marsh Road between Bayfront Expressway and Scott Drive. South of Scott Drive, sidewalks are only provided on the east side of Marsh Road.

Crosswalks with pedestrian signal heads and push buttons are found on one or more approaches at all the signalized study intersections. The intersection at Marsh Road/Bayfront Expressway has crosswalks on all approaches. The intersection at Marsh Road and US101 northbound off-ramp has crosswalks on all but the south approach. The intersection at Marsh Road and US101 southbound off-ramp has crosswalks on all but the north approach.

Existing bicycle and pedestrian counts were conducted as part of the peak-hour turning movement counts conducted for this study during the weekday AM and PM peak hours. Pedestrian and bicycle traffic are relatively low within the study area.

Existing Transit Service

Existing transit service to the study area is provided by the San Mateo County Transit District (SamTrans), AC Transit, and the Menlo Park Shuttle Service. The bus routes that provide services near the project site are described in Table 2 and shown on Figure 4. The transit services presented reflect reductions in service due to the current Covid-19 pandemic.

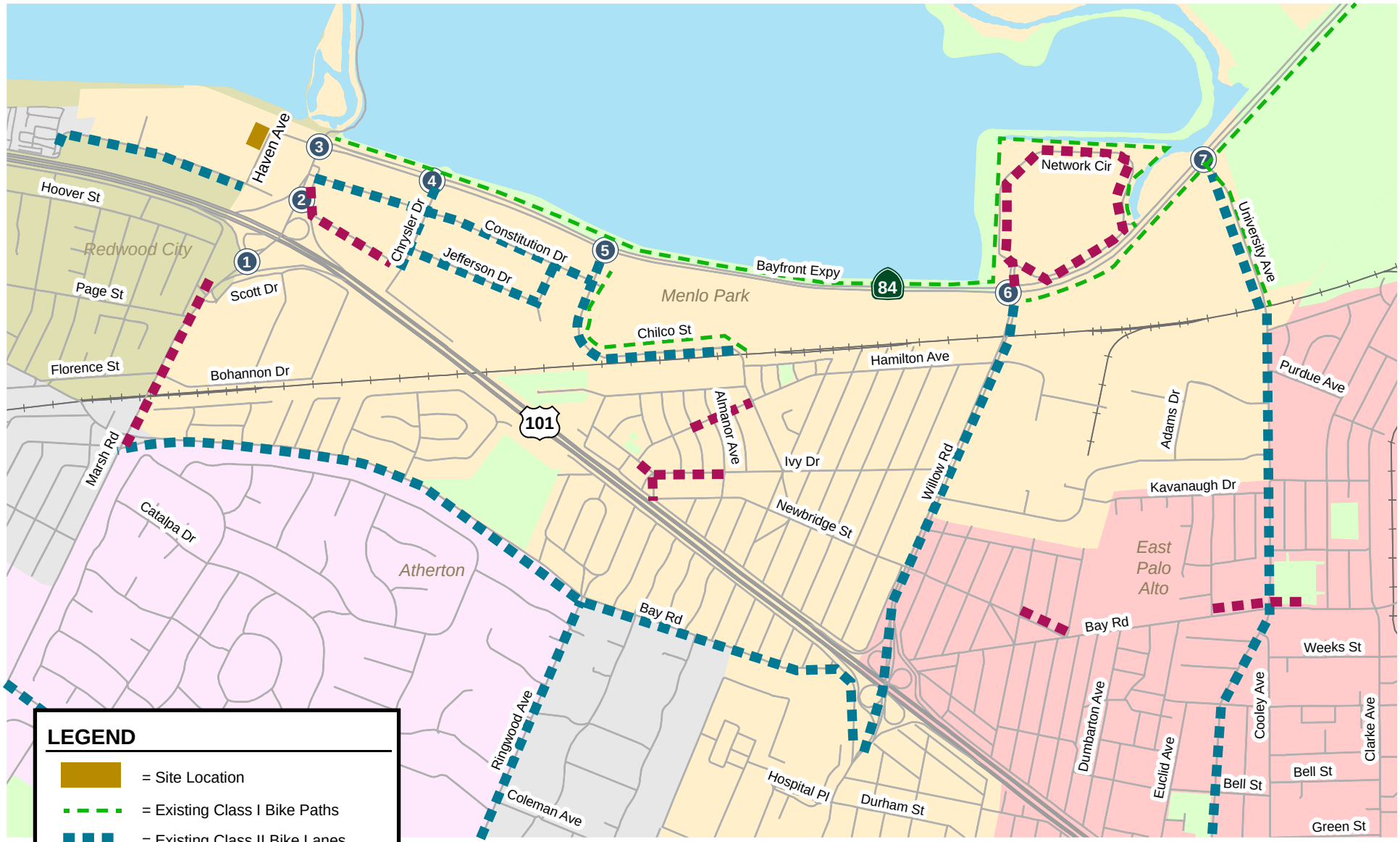


Figure 3
Existing Bicycle Facilities

NORTH
Not to Scale

Table 2
Existing Bus Service

Bus Route	Route Description	Travelled Roadways	Weekday Hours of Operation	Headway
Dumbarton Express Line DB	Union City BART to Stanford University	Dumbarton Bridge, Bayfront Expressway, Willow Road, Middlefield Road	5:25 AM - 8:45 PM	15 - 75 min
Dumbarton Express Line DB1	Union City BART to Stanford Research Park	Dumbarton Bridge, Bayfront Expressway, Willow Road, US 101	5:10 AM - 8:30 PM	15 - 65 min
SamTrans Route 270	Redwood City Caltrain to Florence/17th Loop	Marsh Road, Haven Avenue, Florence Street, Bayshore Freeway, Bay Road, Broaway	6:30 AM - 7:10 PM	60 min
SamTrans Route 281	Onetta Harris Center to Stanford Mall	Newbridge Street, Bay Road, University Avenue	8:05 AM - 8:35 PM	60 min
SamTrans Route 296	Redwood City Transit Center to Palo Alto Transit Center	Middlefield Road, Willow Road, Newbridge Street, Bay Road	All Day	60 min
SamTrans Route 397	San Francisco to Palo Alto Transit Center	Middlefield Road, Willow Road, Newbridge Street, Bay Road, University Avenue	12:45 AM - 6:30 AM	60 min
M2 Belle Haven Shuttle	Menlo Park Senior Center to Partridge & Kennedy	Middlefield Road, Willow Road, Ivy Drive, Chilco Street, Terminal Avenue	6:40 AM - 5:45 PM	120 min
M3 Marsh Road Shuttle	Menlo Park Caltrain to Marsh Road Business Parks	Haven Avenue, Marsh Road, Bayfront Expressway, Jefferson Drive	6:50 AM - 9:30 AM 3:25 PM - 6:00 AM	50-60 min
M4 Willow Road Shuttle	Menlo Park Caltrain Station to Adams Court	Willow Road, O'Brien Drive, Hamilton Avenue, Hamilton Court, Adams Court	6:50 AM - 9:30 AM 3:25 PM - 6:00 AM	50-60 min

Note: Transit Service as of July 2020. The above schedule reflects reduced transit service due to shelter-in-place caused by COVID-19.

Existing Lane Configurations and Traffic Volumes

The existing lane configurations at the study intersections were obtained from field observations (see Figure 5).

Existing traffic volumes were obtained from counts conducted in April 2019 (see Appendix A). The existing traffic volumes at the study intersection are shown on Figure 6.

LEGEND

- = Site Location
- = SamTrans Routes Connecting to Caltrain Stations
- = SamTrans School-day Only Routes
- = SamTrans Routes Connecting to BART and Caltrain Stations
- = M2 Belle Haven Shuttle
- = M3 Marsh Road Shuttle
- = M4 Willow Road Shuttle
- DB = Dumbarton Express Bus Route

Figure 4
Existing Transit Services

NORTH
Not to Scale

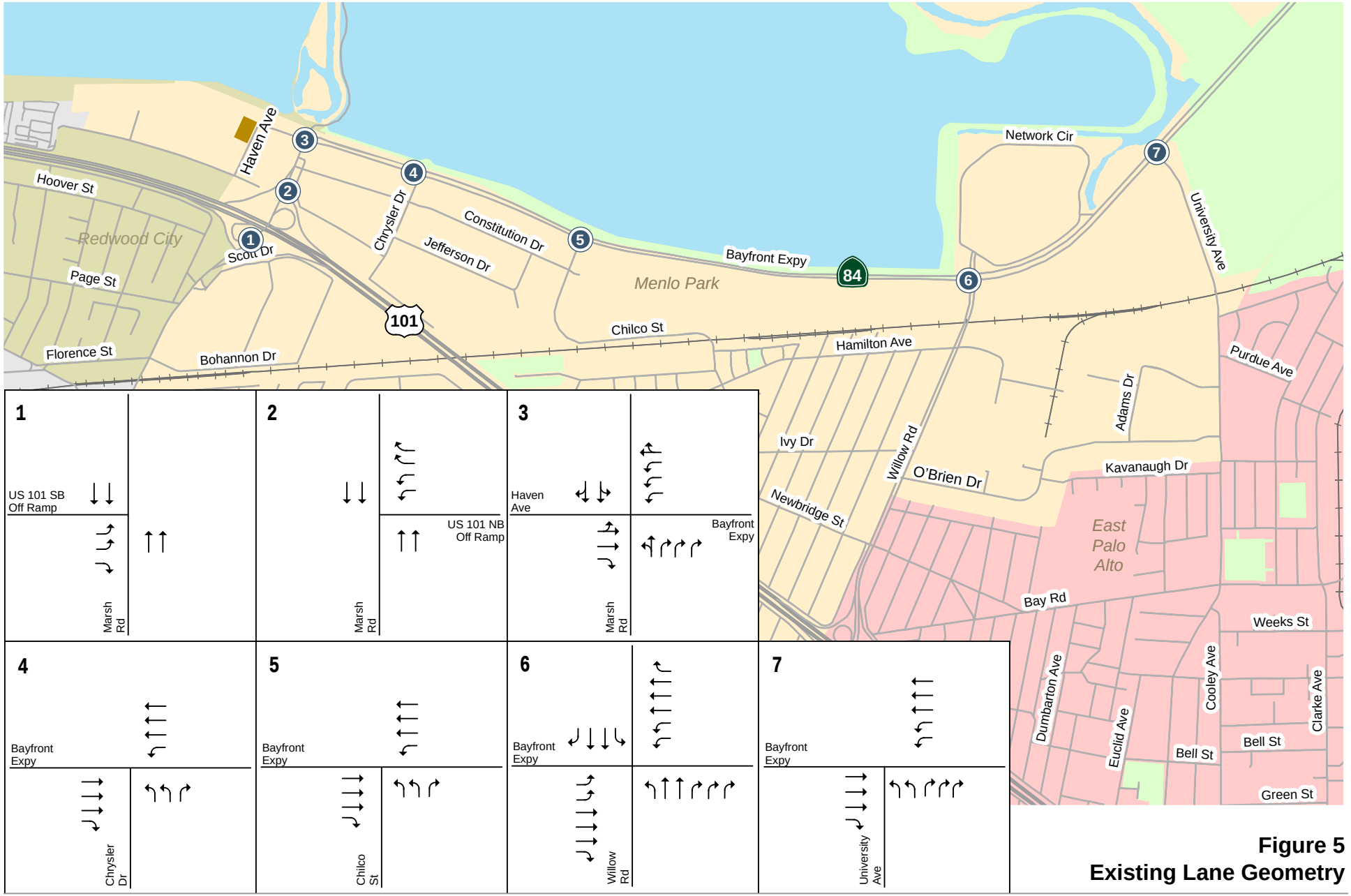


Figure 5
Existing Lane Geometry

NORTH
Not to Scale

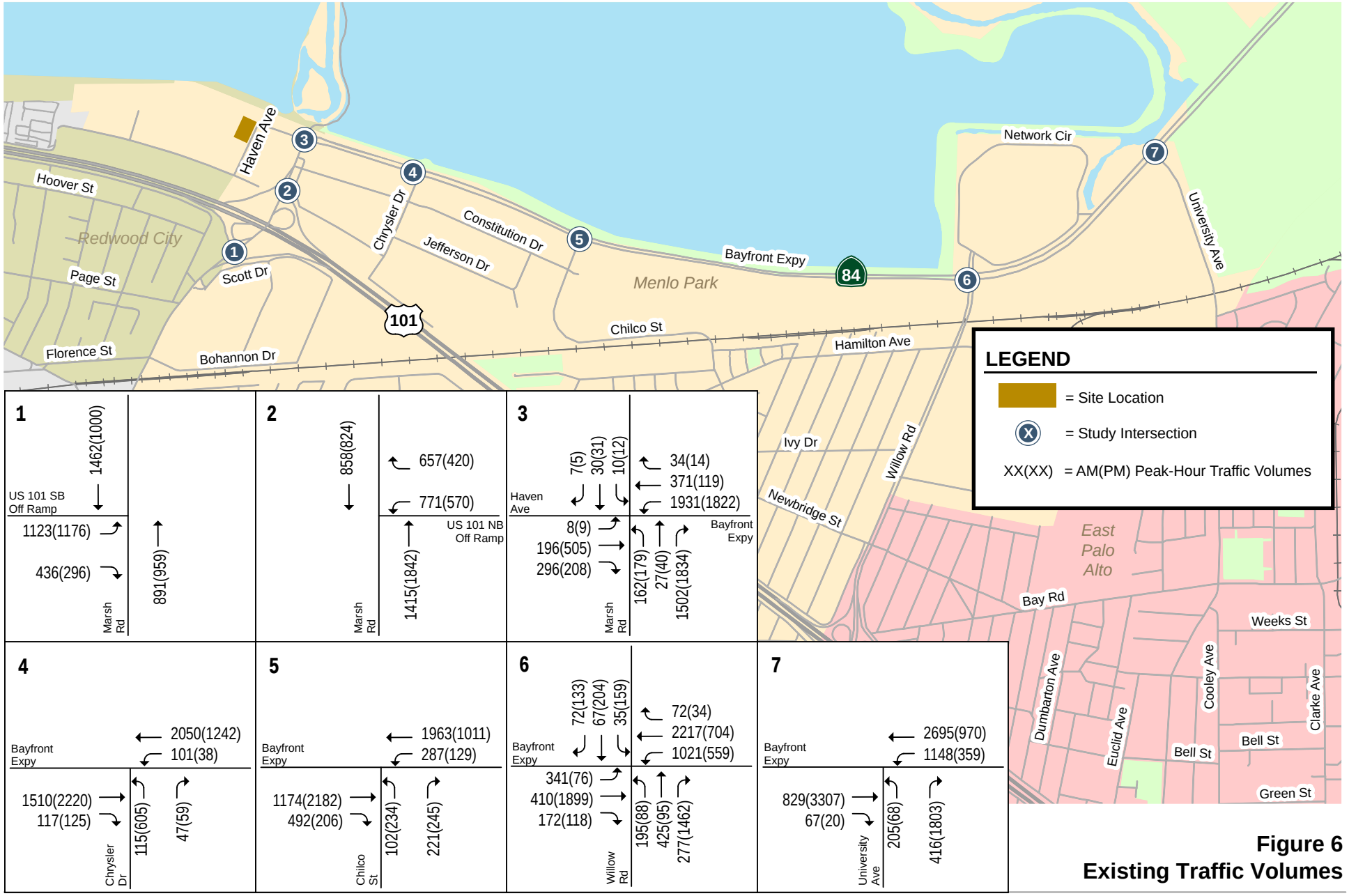


Figure 6
Existing Traffic Volumes

HEXAGON

NORTH
Not to Scale

Observed Existing Traffic Conditions

Traffic conditions were observed in the field in order to identify existing operational deficiencies and to confirm the accuracy of calculated intersection levels of service. The purpose of this effort was (1) to identify any existing traffic problems that may not be directly related to level of service, and (2) to identify any locations where the level of service analysis does not accurately reflect existing traffic conditions. Field observations were conducted on a regular weekday during the AM and PM peak hours in May, October, and November of 2019. Most of the study intersections had no significant operational issues, and vehicular queues on all approaches were mostly able to clear in one cycle. The observed operational issues at the remaining study intersections are identified below.

University Avenue (SR 109) and Bayfront Expressway (SR 84)

During the AM peak hour, queues on westbound Bayfront Expressway extend on to the Dumbarton Bridge and need several green cycles to proceed through the intersection.

During the PM peak hour, there is congestion on the northbound University Avenue and eastbound Bayfront Expressway approaches. Northbound right-turn queues consistently extend through upstream intersections. Eastbound queues extend to the upstream intersection at Willow Road and Bayfront Expressway. Vehicles in the northbound and eastbound directions need several green cycles to proceed through the intersection.

Willow Road and Bayfront Expressway

During the AM peak hour, the northbound left-turn exceeds the queue storage. The northbound left-turn traffic encroaches into the adjacent northbound through lane. The northbound left-turn traffic may require more than one cycle to clear the intersection. The westbound left turn was observed to back up traffic due to congestion downstream on Willow Road. The Willow Road backup also affects southbound through traffic, which occasionally requires more than one cycle to clear the intersection.

During the PM peak hour, the northbound right-turn lanes exceed the queue storage length and spills into the nearest through lane. The northbound right-turn lane occasionally requires more than one cycle to clear the intersection.

All other study intersections were observed to operate in a manner consistent with their calculated level of service. No other operational problems were noted.

3. CEQA Transportation Analysis

This chapter describes the CEQA transportation analysis, including the VMT analysis methodology, threshold of significance, and the project-level VMT impact analysis results. Pursuant to SB 743, the California Natural Resources Agency finalized updates to the CEQA Guidelines in late 2018. The guidelines state that level of service will no longer be considered to be an environmental impact under CEQA and consider vehicle-miles-travelled (VMT) the most appropriate measure of transportation impact. The City of Menlo Park updated its *Transportation Impact Analysis Guidelines* (TIA Guidelines) in July 2020 to include guidelines on evaluating VMT. For hotel uses, a project is considered to have a significant impact on VMT if the project results in a net increase in total City VMT.

VMT Analysis Methodology

Travel Demand Model Introduction

VMT is simply defined as the total distance traveled by vehicles traveling to and from the proposed project site over a typical day. In order to estimate VMT, the City's TIA Guidelines require the use of a travel demand forecast model. The citywide travel demand model is the best available model to represent travel within the City of Menlo Park, and serves as the primary forecasting tool for the City. The model is a mathematical representation of travel within the nine Bay Area counties, as well as the Santa Cruz, San Benito, Monterey and San Juaquin counties. The base model structure was developed by Metropolitan Transportation Commission (MTC) and further refined by C/CAG and Santa Clara Valley Transportation Authority (VTA) for use within San Mateo and Santa Clara Counties. The City further refined this model for application within Menlo Park to add more detail to the zone structure and transportation network. There are four main components of the model: 1) trip generation, 2) trip distribution, 3) mode choice, and 4) trip assignment. The model uses socioeconomic inputs (i.e., population, income, employment) aggregated into geographic areas, called transportation analysis zones (TAZ) to estimate travel within the model area. There are 80 TAZs within the model to represent the City of Menlo Park.

The model estimates the proposed project's effect on total daily VMT in accordance with City's TIA Guidelines. The evaluated daily VMT accounts for the entire distance of a trip associated with the proposed project. For example, the entire length of a trip made by a hotel staff person coming from and returning to their home would be captured in the daily VMT analysis.

However, hotel land uses are not explicitly represented in the model. Therefore, the hotel rooms and jobs expected for the proposed project are accounted for separately. Hotel employees are represented in the model by service employees. To reflect trips by hotel patrons, Hexagon used residential land use as a proxy, as it most closely resembles the behavior pattern of a hotel guest. Trip making characteristics for these proxy residential land uses were restricted to offices and restaurants/shops to mimic patron activities at a typical business hotel (home-based work and home-based shopping trips).

Other types of trip-making typical to an actual home such as school trips are not applicable to hotel guests. Given the models could only explicitly represent hotel employee VMT before, this proxy evaluation provides a conservative analysis as more VMT (hotel guest VMT) can be associated with the proposed project. This methodology is undertaken only for VMT purposes.

Project Study Area

Based on consultation with the City and applicant, the hotel is expected to have a service area of approximately three miles in radius. This means that most of the destinations of hotel patrons are expected to be within three miles of the hotel. While some trips are expected to be longer than three miles, the majority of the change in VMT is expected to occur within this three-mile radius, and the analysis will include the total VMT generated by all land uses within this area. As mentioned above, the VMT includes the entire length of the trip even when it extends beyond the three-mile radius. Analyzing larger radii is not ideal, as it could reflect changes in VMT that are not related to the proposed project but rather merely the result of normal variations that can occur during the model's trip assignment process.

Scenario Evaluation

The VMT analysis is conducted by comparing the existing and existing plus project scenarios to determine the relative impact of the proposed project on VMT. Within the model, mathematical formulations are established so every person's travel needs (work, shopping, leisure, school, etc.) are accounted for. The number of jobs, and other attractions are scaled accordingly to ensure there is just enough for every person's travel needs to be met, in other words trip attractions are factored to balance with trip productions. Thus, adding more trip attractions for the proposed hotel without an equivalent reduction in attractions elsewhere would cause the model to scale down the trip making for all attractions to restore balance with trip productions. This scaling would cause a change in the travel characteristics and the distribution of trips within the whole model area (Bay Area and peripheral counties). Such changes in trip making far from the project site are merely the result of the model's need to balance trip productions and attractions and not a real result of the proposed development. To avoid this, the total travel needs and the jobs/attractions serving those travel needs are held constant between with and without project scenarios. This ensures a consistent comparison and isolates the change in VMT due to the proposed project. This process is represented in the model by redistribution of the hotel attractions from nearby existing hotels. Five comparable hotels were found within the area for this redistribution effort (see Figure 7).

Service employees are coded in the model under existing conditions for the zones representing the five existing hotels. Under the "with-project" model run, service employees at these zones were shifted to the project zone. According to the project applicant, the hotel would have 35 employees. Thus, seven service employees were shifted from each of the five existing zones to the project zone under the "with-project" model run.

The zones representing the five existing hotels do not include any residential land use as a proxy for hotel patrons under existing conditions. Thus, residential dwelling units were first added to these five zones under the "existing" model run, so that under the "with-project" model run, shifting these residential land uses to the project zone would still maintain the same model-wide total land uses. Approximately 282 households are needed at the project zone in addition to the 35 service employees under the "with-project" model run for the model to compute trip generations equivalent to the daily trip generations estimated by ITE. Therefore, under the "existing" model run, 282 households were evenly distributed to the five zones with existing hotels.

VMT Evaluation

Hexagon compared the total daily VMT generated by land uses within a three-mile radius with and without the proposed project. As shown in Table 3, the proposed project was shown to slightly reduce the total daily VMT generated by land uses within a three-mile radius of the project site. Since the proposed Moxy Hotel would be located within very close proximity to a major employment area in the Bayfront Area, hotel patrons would enjoy shorter travel distances to their business destinations. Because the proposed project would not cause an increase in total VMT generated by the analysis area, it is concluded that the proposed project would have a less than significant transportation impact on vehicle miles travelled. It should be noted that the City-required 20 percent TDM reduction is independent from the VMT evaluation, and the proposed project would still be required to implement trip-reduction measures to meet the 20 percent TDM reduction goal outlined in the City ordinance. Implementation of the TDM requirement of the Zoning Ordinance would further reduce VMT associated with the proposed project. Regardless, even without the required 20 percent TDM reduction, the proposed project would slightly reduce the VMT within the three-mile study radius.

Table 3
Project VMT Evaluation

	3-Mile Radius Area of Project Site		
	Existing Condition	Existing with Project Condition	% Change
Total Daily VMT [1]	7,126,189	7,092,216	-0.5%

Notes:
1. Total daily VMT includes VMT generated by all trips having at least one trip-end in the analysis area, as estimated by the citywide travel demand model.

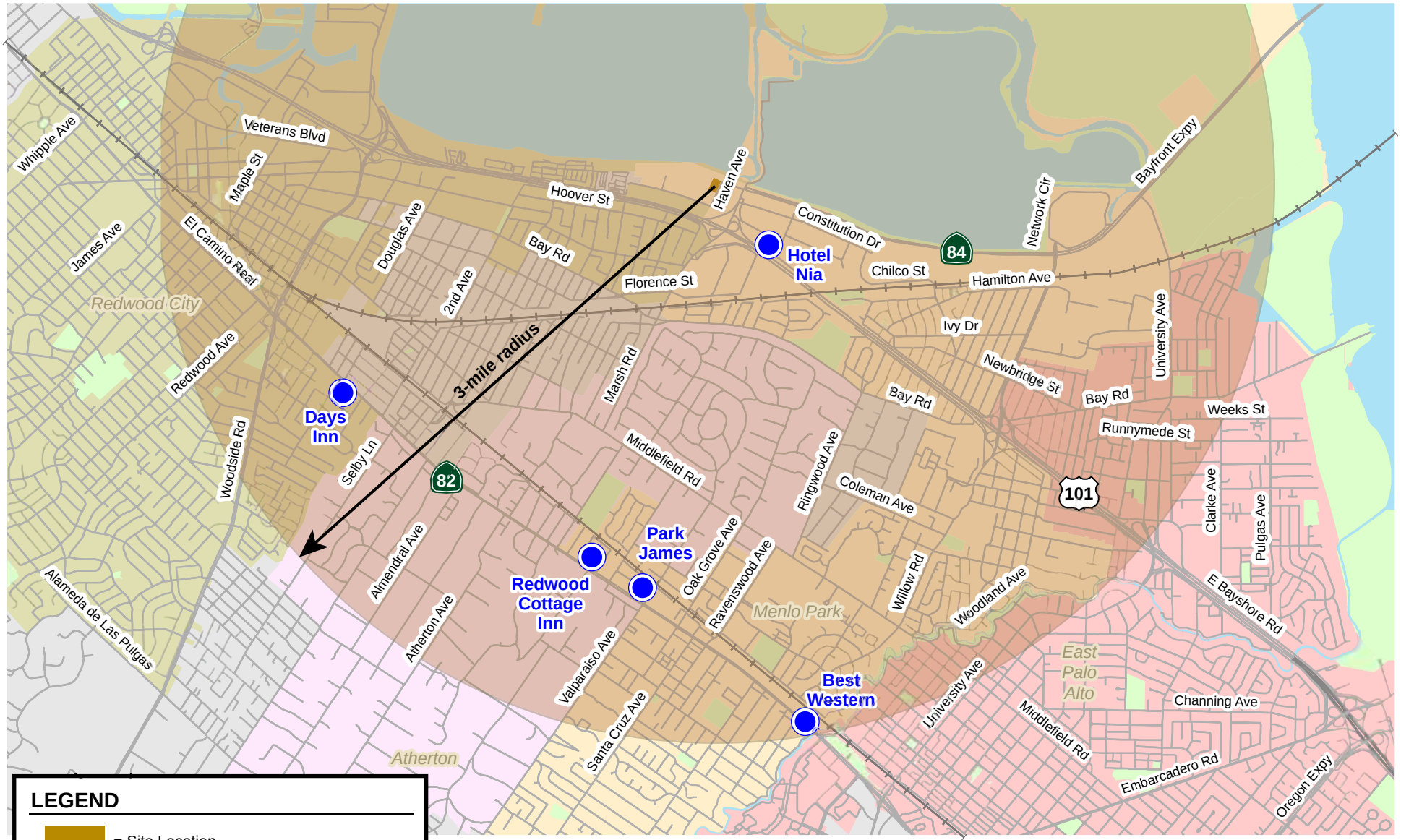


Figure 7
Existing Comparable Hotels Used in VMT Analysis

4. Non-CEQA Level of Service Transportation Analysis

This chapter describes the level of service transportation analysis including the method by which project traffic is estimated and any adverse effects to intersection levels of service caused by the proposed project under existing, near-term (2022), and cumulative (2040) conditions.

Project Trip Estimates

The magnitude of traffic produced by a new development and the locations where that traffic would appear are estimated using a three-step process: 1) trip generation, 2) trip distribution, and 3) trip assignment. In determining project trip generation, the magnitude of traffic entering and exiting the project site is estimated for the AM and PM peak hours. As part of the project trip distribution, an estimate is made of the directions to and from which the project trips would travel. In the project trip assignment, the project trips are assigned to specific streets and intersections. These procedures are described below.

Trip Generation

Through empirical research, data have been collected that quantify the amount of traffic produced by many types of land uses. These data are compiled in the Institute of Transportation Engineers' (ITE) *Trip Generation Manual, 10th Edition (*2017). The magnitude of traffic added to the roadway system by a development is estimated by multiplying the applicable trip generation rates by the size of the development. The trip generation rates published for Hotel (Land Use Code 310) were used to estimate the trips generated by the proposed project. Based on the ITE rates, the proposed project would generate 1,363 gross daily vehicle trips, including 77 gross AM peak-hour vehicle trips and 98 gross PM peak-hour vehicle trips.

The proposed project will be required to develop a comprehensive Transportation Demand Management (TDM) plan to reduce vehicle trips by 20 percent. Therefore, this analysis assumes that the project site will achieve a 20 percent reduction in peak-hour and daily trips. Furthermore, the site is occupied by an office building. Trip generation rates published for General Office Building (Land Use Code 720) were used to estimate existing trips. After applying the TDM trip reductions and crediting the existing trips, the proposed project is expected to generate a net total of 957 daily vehicle trips with 46 trips (22 in and 24 out) during the AM peak hour and 62 trips (37 in and 25 out) during the PM peak hour (see Table 4).

Table 4
Project Trip Generation Estimates

Land Use	ITE Land Use Code	Size		Daily		AM Peak Hour				PM Peak Hour			
						Pk-Hr	Trips			Pk-Hr	Trips		
				Rate	Trips	Rate	In	Out	Total	Rate	In	Out	Total
Proposed Land Use													
Hotel[1]	310	163	rm	8.36	1,363	0.47	45	32	77	0.60	50	48	98
TDM Reduction (20%)					*(273)*		*(9)*	*(6)*	*(15)*		*(10)*	*(10)*	*(20)*
Existing Land Use													
Office[2]	710	13,681	s.f.	9.74	(133)	1.16	(14)	(2)	(16)	1.15	(3)	(13)	(16)
Net Project Trips					**957**		**22**	**24**	**46**		**37**	**25**	**62**

Notes:
All trip rates are from *ITE Trip Generation Manual, 10th Editio*n, 2017.
1. Average trip rates for Hotel (Land Use 310), expressed in trips per room (rm).
2. Average trip rates for General Office Building (Land Use 710), expressed in trips per 1,000 s.f. of GFA.

Trip Distribution and Assignment

The trip distribution pattern for the proposed use was estimated based on existing travel patterns on the surrounding roadway system and the location of complimentary land uses. The project trip distribution pattern for the proposed project is shown on Figure 8. A substantial proportion of the project trips (approximately 30 percent) are anticipated to be associated with hotel guests visiting employment sites in the M-2 Area of Menlo Park (east of US 101). Hotel trips traveling to and from the site via US 101 (approximately 55 percent) include hotel guest trips to and from more distant sites as well as hotel employees. The remaining hotel trips are expected to travel to the East Bay, East Palo Alto, or local destinations west of US 101 via Marsh Road. The net project trip assignment is shown on Figure 9.

Future Traffic Volumes

Near-Term (2022) Traffic Volumes

Near-term traffic conditions are defined as conditions just prior to completion of the proposed project. Traffic volumes for near-term (2022) conditions comprise volumes from existing traffic counts plus traffic generated by approved projects in the vicinity of the project site. Near-term (2022) traffic volumes for the study intersections (see Figure 10) were obtained from the Commonwealth: Building 3 Project traffic study being conducted by Kittelson & Associates, Inc. The near-term (2022) traffic volumes were estimated by adding to the existing traffic volumes the trips generated by nearby approved projects that have not been constructed or occupied. Vehicle trips from the approved projects were obtained from the project's TIA or environmental document (initial study or EIR), if available. For projects without a traffic study, trip estimates were developed using rates published in the ITE *Trip Generation Manual, 10th Edition*. The estimated trips were assigned to the study intersections according to distributions identified in the development traffic studies, if available, or based on local traffic patterns.

Figure 8
Project Trip Distribution

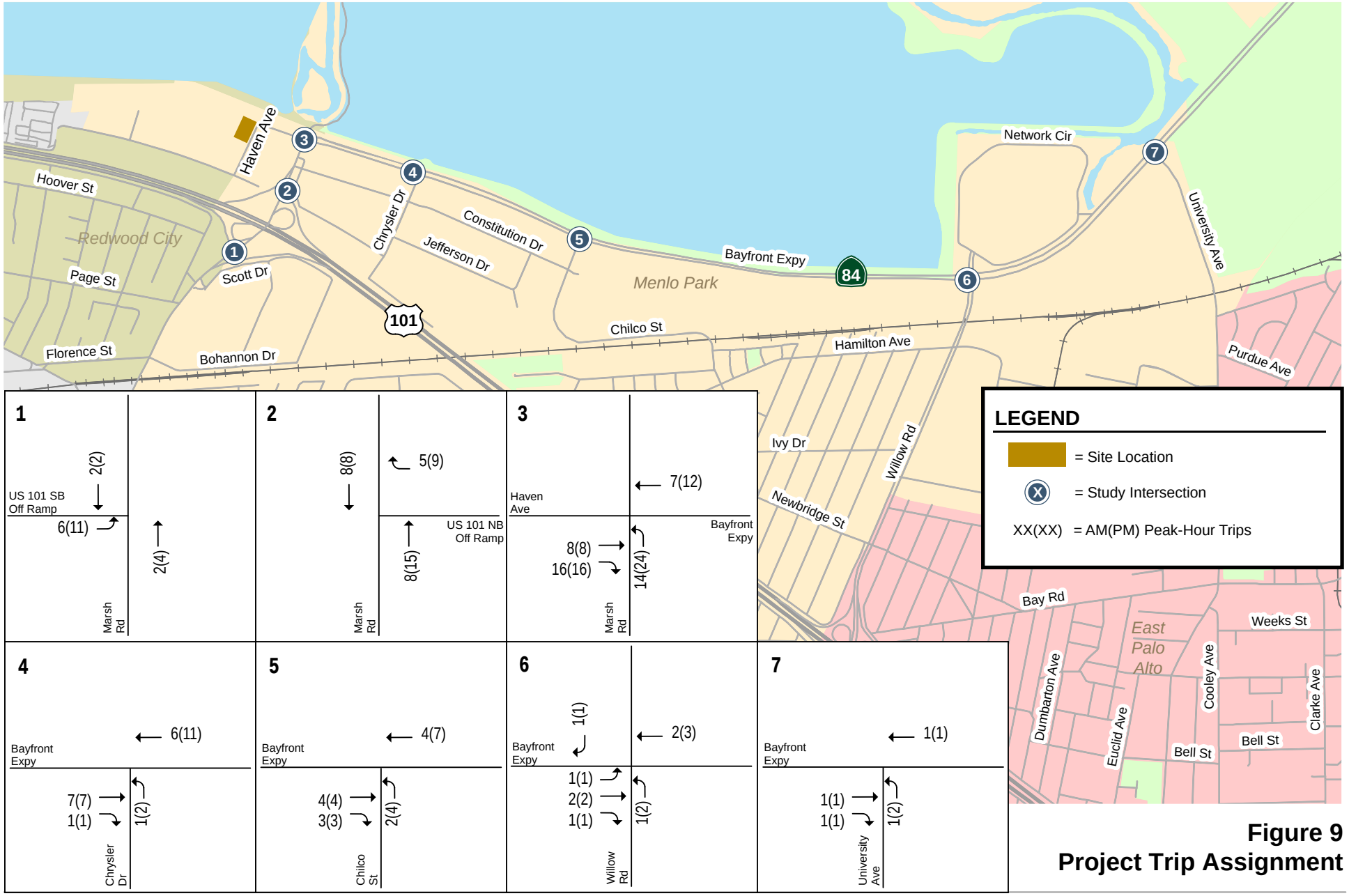


Figure 9
Project Trip Assignment

NORTH
Not to Scale

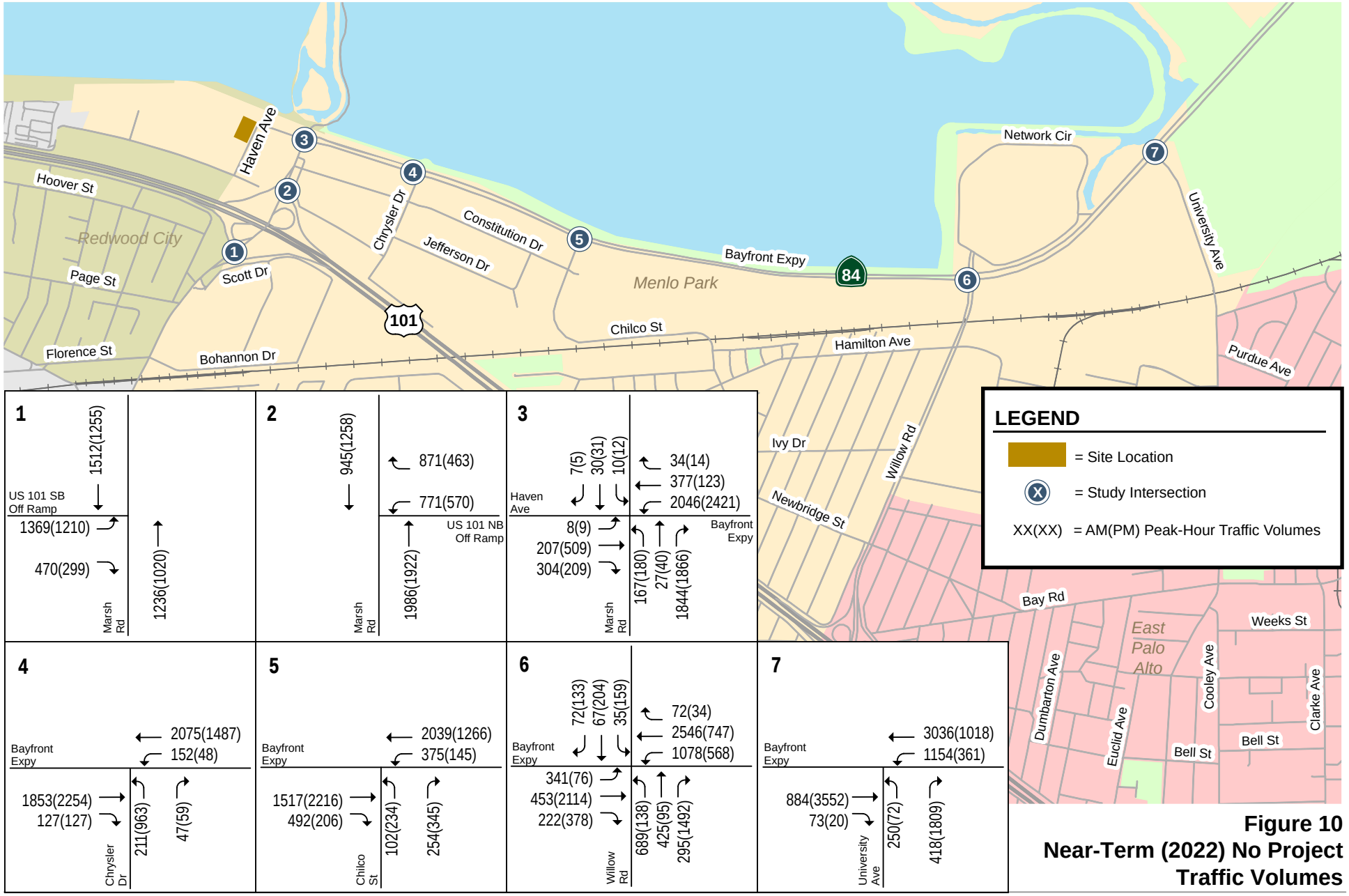


Figure 10
Near-Term (2022) No Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

Existing Plus Project Traffic Volumes

For the existing plus project scenario, the net new trips generated by the proposed project were added to the existing traffic volumes to derive the existing plus project traffic volumes (see Figure 11).

Near-term (2022) Plus Project Traffic Volumes

For the near-term (2022) plus project scenario, the net new trips generated by the proposed project were added to the near-term (2022) traffic volumes to derive the near-term (2022) plus project traffic volumes (see Figure 12).

Cumulative (2040) Traffic Volumes

The AM and PM peak-hour traffic volumes under cumulative (2040) conditions were obtained from the 2040 forecasts developed by Kittelson & Associates, Inc. for the City of Menlo Park General Plan EIR certified in December 2016. Because the current development proposal at 123 Independence Drive is larger than the development size assumed in the General Plan traffic study, the trips associated with the 107 extra units proposed at 123 Independence Drive were added to produce cumulative plus project traffic forecasts. The City has determined that the proposed hotel was included in the Year 2040 model forecasts. Therefore, the cumulative (2040) no project traffic volumes were estimated by subtracting the trips generated by the proposed project from the cumulative (2040) plus project traffic volumes. Figures 13 and 14 show the traffic volumes under cumulative (2040) no project conditions and under cumulative (2040) plus project conditions, respectively. Compliance with local policies was evaluated by comparing the cumulative (2040) plus project traffic conditions to the cumulative (2040) no project traffic conditions.

Future Transportation Networks

Existing Plus Project Conditions

The transportation network and intersection lane configurations under existing plus project conditions are assumed to be the same as that described under existing conditions.

Near-term (2022) Conditions

The roadway network under near-term (2022) conditions is assumed to be the same as under existing conditions.

Cumulative (2040) Conditions

The transportation network under cumulative (2040) conditions is assumed to include the planned Haven Avenue streetscape project that would alter the lane configuration at the intersection of Marsh Road and Bayfront Expressway (SR 84):

- The eastbound approach will be restriped to include a shared through-left lane, a shared through-right lane, and a right-turn only lane.

In addition, the City is also planning to construct a multi-use pedestrian/bike bridge over Bayfront Expressway located between Chilco Street and the Facebook MPK 21 Driveway.

The ongoing implementation of a traffic signal adaptive coordination system on the Willow Road, Marsh Road, and Bayfront Expressway corridors was considered as a possible measure to improve traffic flow along with other improvements.

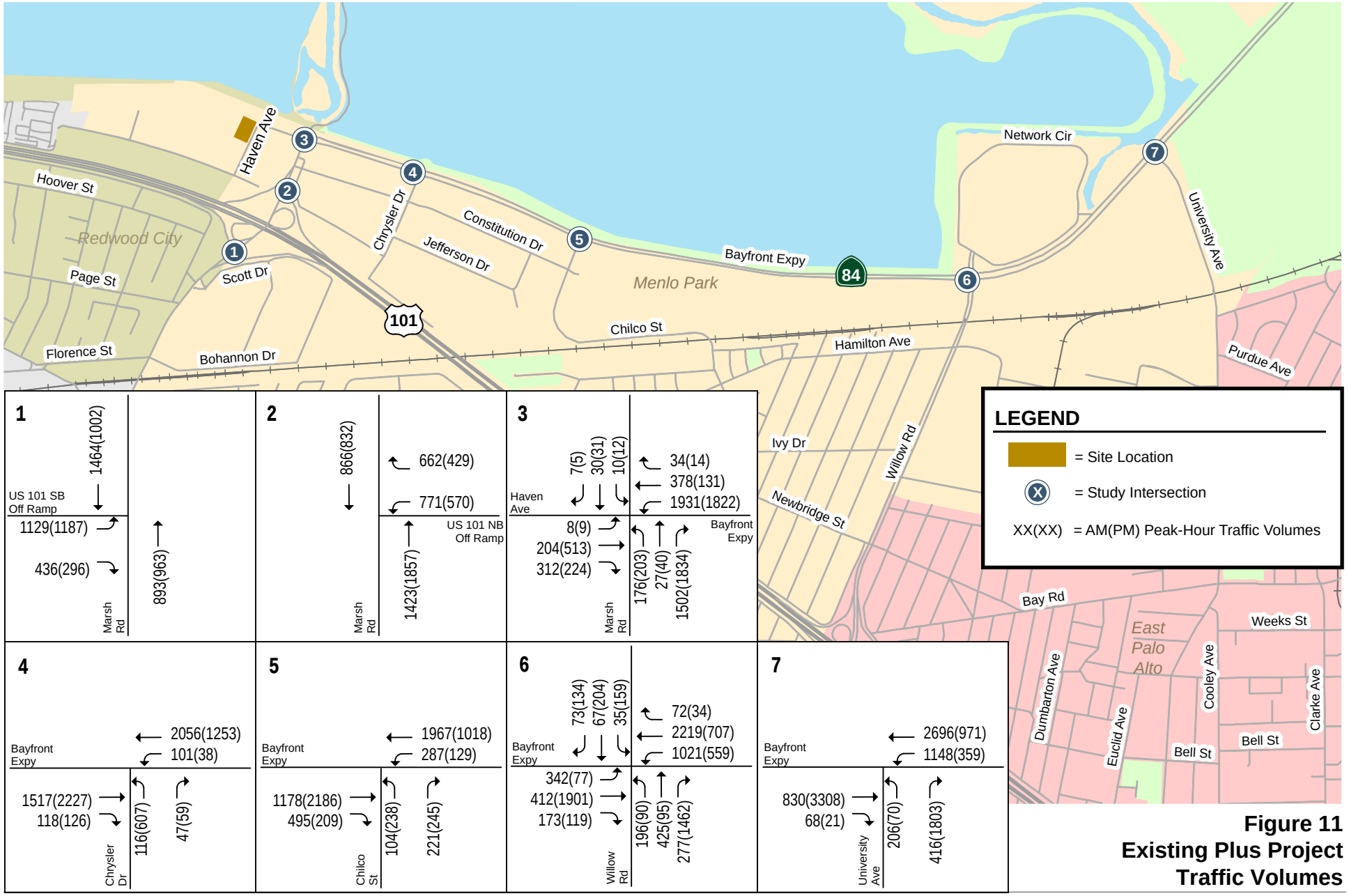


Figure 11
Existing Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

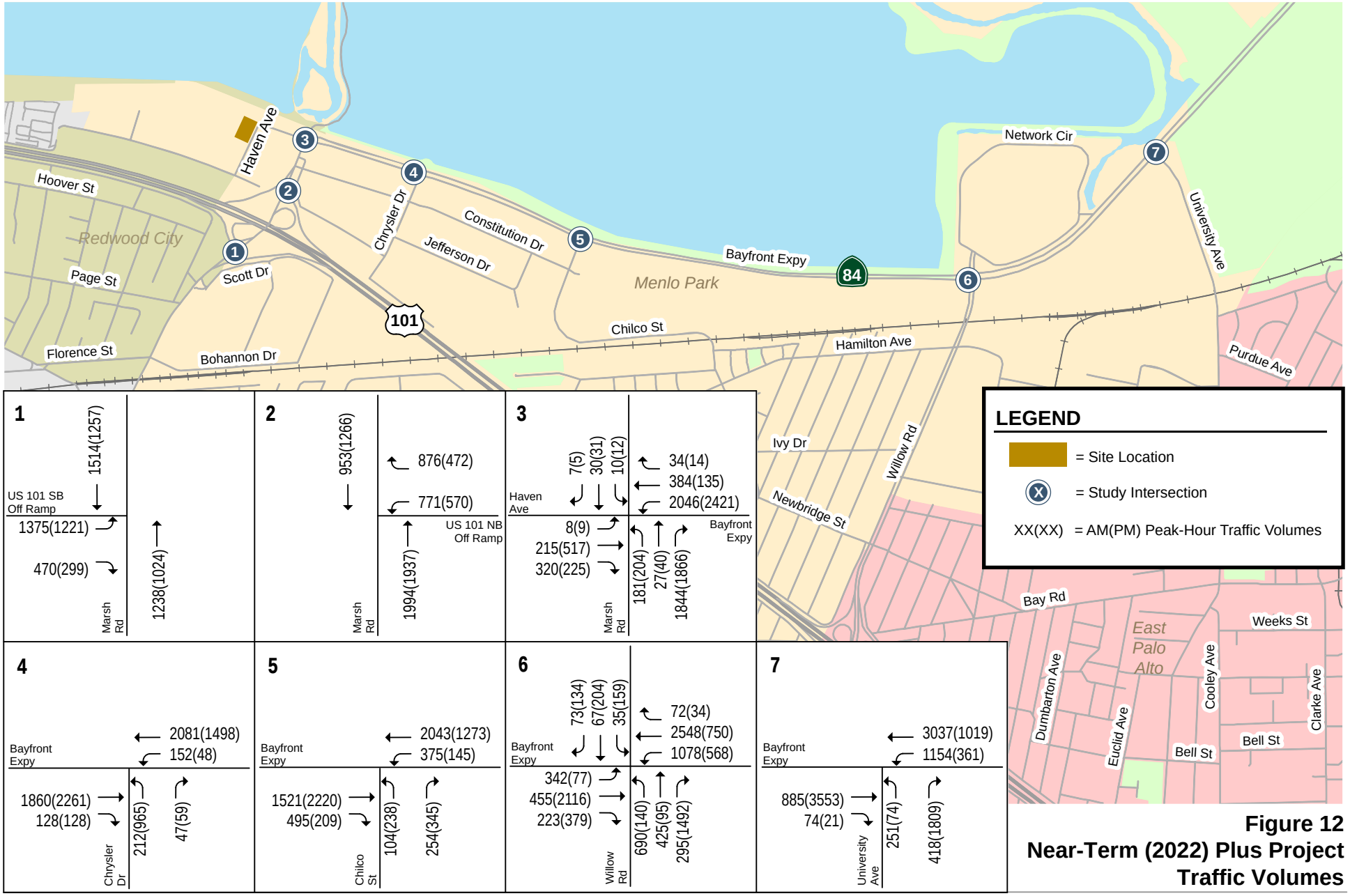


Figure 12
Near-Term (2022) Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

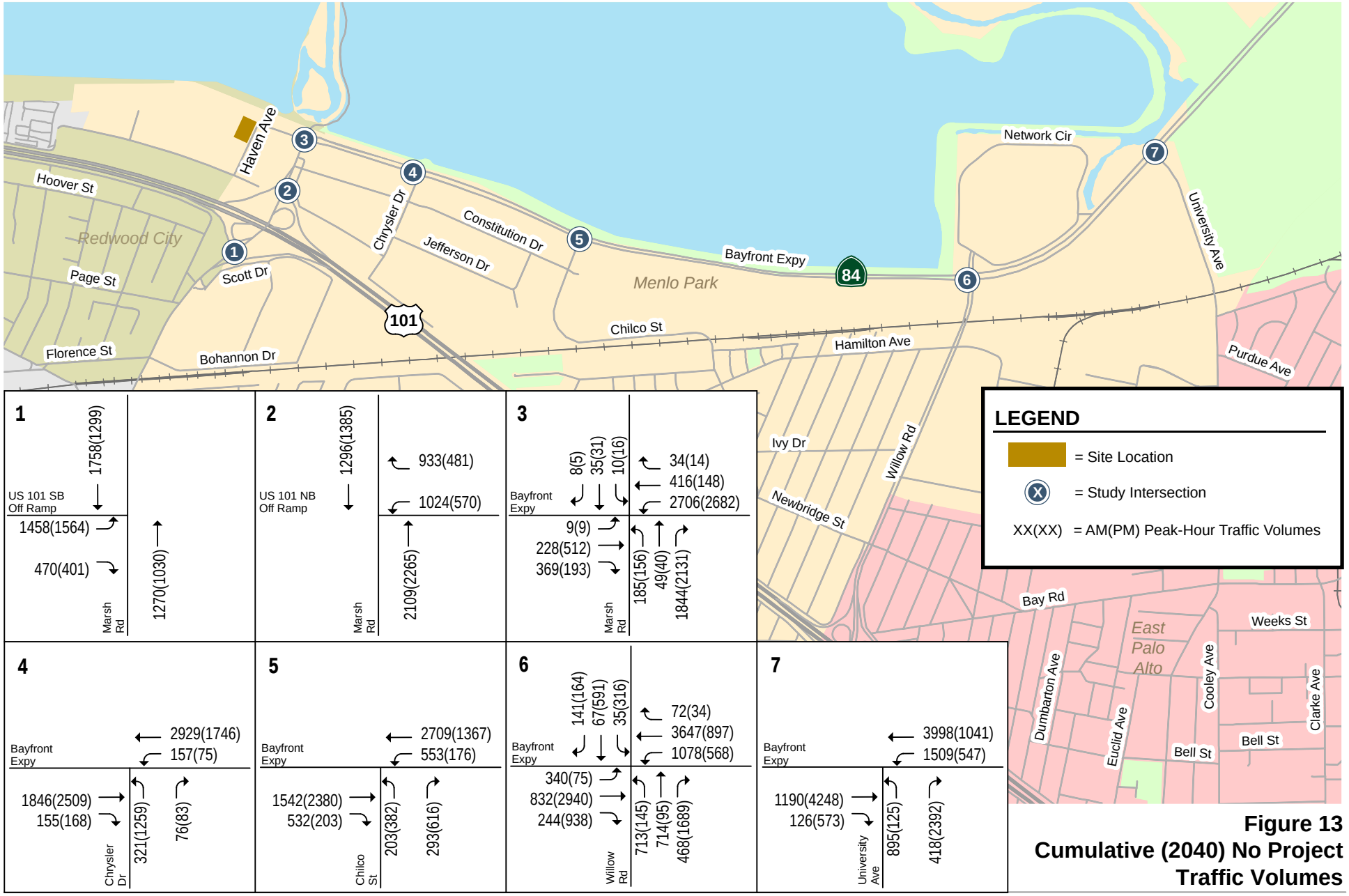


Figure 13
Cumulative (2040) No Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

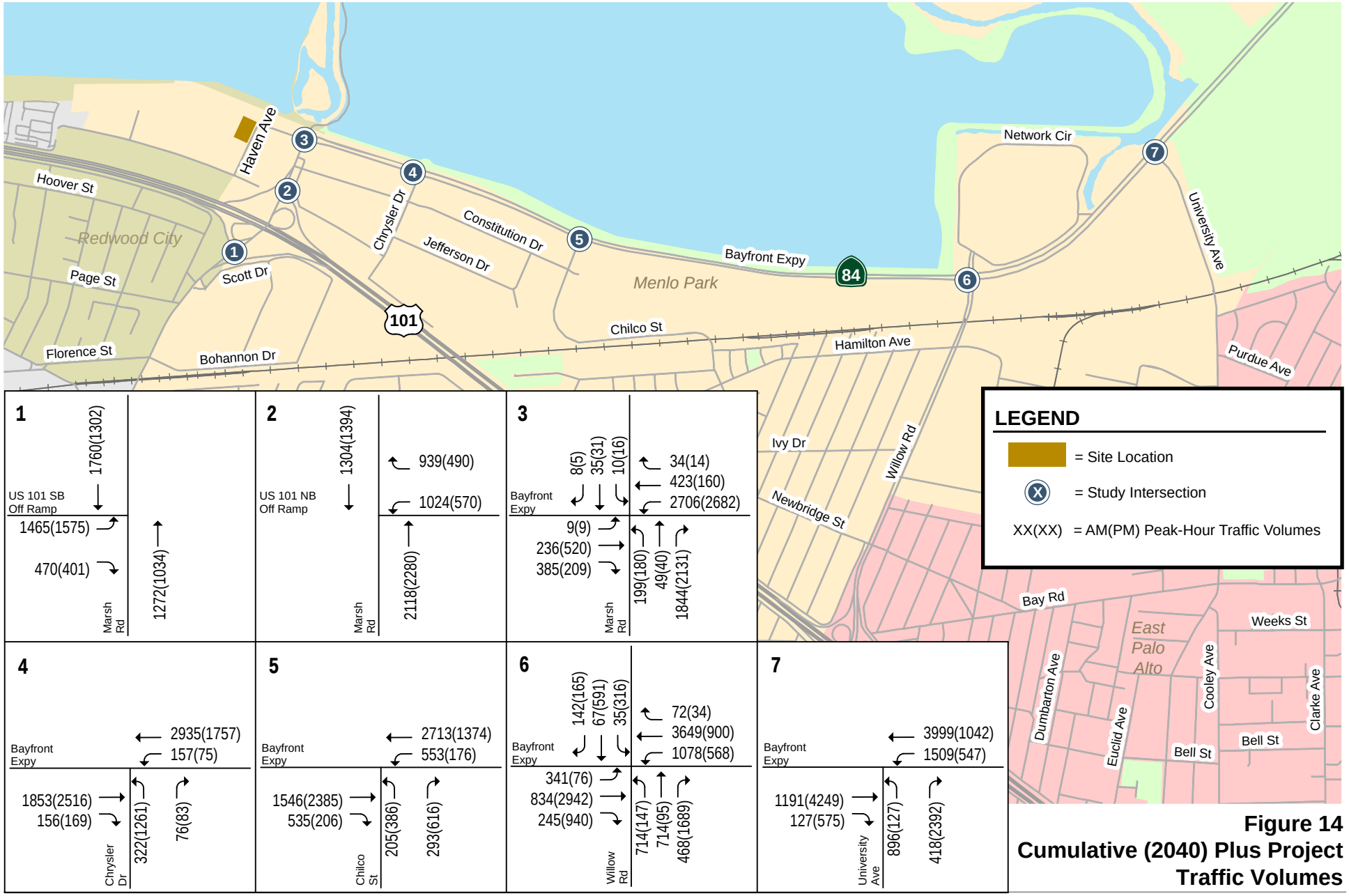


Figure 14
Cumulative (2040) Plus Project Traffic Volumes

HEXAGON

NORTH
Not to Scale

Existing Intersection Levels of Service

The results of the intersection level-of-service analysis under existing conditions show that most of the study intersections currently operate at an acceptable level (LOS D or better) (see Table 5). The following study intersections currently operate at an unacceptable level of service during at least one peak hour:

- University Avenue (SR 109) and Bayfront Expressway (SR 84)– AM and PM peak hours
- Willow Road (SR 114) and Bayfront Expressway (SR 84)– AM and PM peak hours

As noted in the City of Menlo Park General Plan EIR certified in December 2016, the counted traffic volumes at the intersections along Willow Road between the US 101 interchange and Bayfront Expressway do not accurately reflect demand, and isolated intersection operations limit the ability of the VISTRO program to capture these results. Therefore, a “User Defined Base Saturation Flow Rate” in VISTRO of 850 vehicles per hour (vph) was used for the through movements on Willow Road to address the unserved demand issues for the intersection at Willow Road and Bayfront Expressway. At the intersection of University Avenue and Bayfront Expressway, instead of calculated level of service, the existing level of service results are reported based on level of service as identified by the City to reflect “unserved demand”.

The intersection levels of service calculation sheets are included in Appendix B.

Table 5
Existing Intersection Levels of Service

#	Intersection	LOS Standards	Jurisdiction	Peak Hour	Count Date	Avg Delay	LOS
1	Marsh Road and US 101 Southbound Off Ramp	D	Caltrans	AM	04/16/19	19.0	B
				PM	04/16/19	17.0	B
2	Marsh Road and US 101 Northbound Off Ramp	D	Caltrans	AM	04/16/19	15.8	B
				PM	04/16/19	13.3	B
3	Marsh Road and Bayfront Expressway (SR 84)	D	Caltrans	AM	04/16/19	50.5	D
	Critical Movements on Local Approaches:						
	Eastbound Right Turn					**91.1**	**F**
				PM	04/16/19	31.6	C
	Critical Movements on Local Approaches:						
	Eastbound Left Turn					**69.4**	**E**
4	Chrysler Drive and Bayfront Expressway (SR 84)	D	Caltrans	AM	04/16/19	8.4	A
	Critical Movements on Local Approaches:						
	Northbound Left Turn					14.1	B
				PM	04/16/19	13.1	B
	Critical Movements on Local Approaches:						
	Northbound Left Turn					21.4	C
5	Chilco Street and Bayfront Expressway (SR 84)	D	Caltrans	AM	04/16/19	12.7	B
	Critical Movements on Local Approaches:						
	Northbound Right Turn					25.4	C
				PM	04/16/19	16.0	B
	Critical Movements on Local Approaches:						
	Northbound Right Turn					39.7	D
6	Willow Road (SR 114) and Bayfront Expressway (SR 84)	D	Caltrans	AM	04/23/19	**106.0**	**F**
				PM	04/23/19	**168.1**	**F**
7	University Avenue (SR 109) and Bayfront Expressway (SR 84)	D	Caltrans	AM	04/25/19	**>80***	**F**
				PM	04/25/19	**94.1**	**F**

Notes:
* Indicates LOS based on "unserved demand." At this location, upstream & downstream congestion results in delay not captured by the VISTRO analysis.
Bold indicates a substandard level of service.

Near-Term (2022) Intersection Levels of Service

The results of the intersection level of service analysis under near-term conditions are summarized in Table 6. The intersection LOS calculation sheets are included in Appendix B. Most of the study intersections would operate at acceptable LOS. The following study intersections would operate at an unacceptable level of service during at least one peak hour:

- Marsh Road (SR 84) and Bayfront Expressway (SR 84)– AM peak hour
- University Avenue (SR 109) and Bayfront Expressway (SR 84)– AM and PM peak hours
- Willow Road (SR 114) and Bayfront Expressway (SR 84)– AM and PM peak hours

As described in Chapter 2, traffic volumes at the intersections along Willow Road between the US 101 interchange and Bayfront Expressway do not accurately reflect demand, and isolated intersection operations limit the ability of the VISTRO program to capture these results. Therefore, a “User Defined Base Saturation Flow Rate” in VISTRO of 850 vph was used for the through movements on Willow Road to address the unserved demand issues for the intersection at Willow Road and Bayfront Expressway. At the intersection of University Avenue and Bayfront Expressway, instead of calculated

level of service, the existing level of service results are reported based on level of service as identified by the City to reflect “unserved demand”.

Table 6
Near-term (2022) Level of Service Summary

#	Intersection	LOS Standards	Peak Hour	Existing No Project Avg Delay	Existing No Project LOS	Near-term (2022) No Project Avg Delay	Near-term (2022) No Project LOS
1	Marsh Road and US 101 Southbound Off Ramp	D	AM	19.0	B	23.6	C
			PM	17.0	B	17.7	B
2	Marsh Road and US 101 Northbound Off Ramp	D	AM	15.8	B	25.3	C
			PM	13.3	B	13.3	B
3	Marsh Road and Bayfront Expressway (SR 84)	D	AM	50.5	D	**58.4**	**E**
	Critical Movements on Local Approaches:						
	Eastbound Right Turn			**91.1**	**F**	**108.4**	**F**
			PM	31.6	C	35.0	C
	Critical Movements on Local Approaches:						
	Eastbound Left Turn			**69.4**	**E**	**85.2**	**F**
4	Chrysler Drive and Bayfront Expressway (SR 84)	D	AM	8.4	A	9.5	A
	Critical Movements on Local Approaches:						
	Northbound Left Turn			14.1	B	18.2	B
			PM	13.1	B	20.1	C
	Critical Movements on Local Approaches:						
	Northbound Left Turn			21.4	C	29.1	C
5	Chilco Street and Bayfront Expressway (SR 84)	D	AM	12.7	B	21.9	C
	Critical Movements on Local Approaches:						
	Northbound Right Turn			25.4	C	**59.2**	**E**
			PM	16.0	B	25.3	C
	Critical Movements on Local Approaches:						
	Northbound Right Turn			39.7	D	**122.1**	**F**
6	Willow Road (SR 114) and Bayfront Expressway (SR 84)	D	AM	**106.0**	**F**	**193.1**	**F**
			PM	**168.1**	**F**	**180.9**	**E**
7	University Avenue (SR 109) and Bayfront Expressway (SR 84)	D	AM	**>80***	**F**	**>80***	**F**
			PM	**94.1**	**F**	**113.1**	**F**

Notes:
* Indicates LOS based on "unserved demand." At this location, upstream & downstream congestion results in delay not captured by the VISTRO analysis.
Bold indicates a substandard level of service.

Existing Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis under existing plus project conditions are summarized in Table 7. The results show that the following five study intersections would continue operating at LOS D or better and would comply with the City's TIA Guidelines with the proposed project.

#1 Marsh Road and US 101 Northbound Off Ramp
#2 Marsh Road and US 101 Southbound Off Ramp
#3 Marsh Road and Haven Avenue/Bayfront Expressway (SR 84)
#4 Chrysler Drive and Bayfront Expressway (SR 84)
#5 Chilco Street and Bayfront Expressway (SR 84)

The following two study intersections would continue to operate at an unacceptable level of service F during both AM and PM peak hours under existing plus project conditions. The increases in delay attributed to the proposed project would be less than four seconds, which would not meet the criteria established by the City of Menlo Park to define non-compliance with local policies for intersections involving two state routes.

#6 University Avenue (SR 109) and Bayfront Expressway (SR 84)
#7 Willow Road (SR 114) and Bayfront Expressway (SR 84)

At the intersection of Marsh Road and Bayfront Expressway (SR 84), the average intersection delay would increase while the delay for the critical movement on the local approach (eastbound left turn) would decrease slightly with the addition of traffic by the proposed project. This occurs because the proposed project would add trips to the eastbound through and right-turn movements causing longer green time to be allotted to all eastbound movements. However, because the proposed project is not expected to add traffic to the eastbound left-turn volume, the delay would decrease slightly for this critical movement.

Table 7
Existing Plus Project Intersection Level of Service Summary

#	Intersection	LOS Standards	Peak Hour	Existing Avg Delay	Existing LOS	Existing Plus Project Avg Delay	Existing Plus Project LOS	Incr. In Avg./Crit. Delay
1	Marsh Road and US 101 Southbound Off Ramp	D	AM	19.0	B	19.0	B	0.0
			PM	17.0	B	17.0	B	0.0
2	Marsh Road and US 101 Northbound Off Ramp	D	AM	15.8	B	15.8	B	0.0
			PM	13.3	B	13.4	B	0.1
3	Marsh Road and Bayfront Expressway (SR 84)	D	AM	50.5	D	55.0	D	4.5
	Critical Movements on Local Approaches:							
	Eastbound Right Turn			**91.1**	**F**	**107.0**	**F**	15.9
			PM	31.6	C	32.1	C	0.5
	Critical Movements on Local Approaches:							
	Eastbound Left Turn			**69.4**	**E**	**69.1**	**E**	-0.3
4	Chrysler Drive and Bayfront Expressway (SR 84)	D	AM	8.4	A	8.4	A	0.0
	Critical Movements on Local Approaches:							
	Northbound Left Turn			14.1	B	14.2	B	0.0
			PM	13.1	B	13.2	B	0.1
	Critical Movements on Local Approaches:							
	Northbound Left Turn			21.4	C	21.5	C	0.1
5	Chilco Street and Bayfront Expressway (SR 84)	D	AM	12.7	B	12.7	B	0.0
	Critical Movements on Local Approaches:							
	Northbound Right Turn			25.4	C	25.7	C	0.4
			PM	16.0	B	16.0	B	0.0
	Critical Movements on Local Approaches:							
	Northbound Right Turn			39.7	D	40.0	D	0.4
6	Willow Road (SR 114) and Bayfront Expressway (SR 84)	D	AM	**106.0**	**F**	**106.1**	**F**	0.1
			PM	**168.1**	**F**	**168.0**	**F**	-0.1
7	University Avenue (SR 109) and Bayfront Expressway (SR 84)	D	AM	**>80***	**F**	**>80***	**F**	0.1
			PM	**94.1**	**F**	**94.2**	**F**	0.1

Notes:
* Indicates LOS based on "unserved demand." At this location, upstream & downstream congestion results in delay not captured by the VISTRO analysis.
Bold indicates a substandard level of service.
Bold indicates that the project would cause the intersection to be potentially non-compliant with local policies.

Near-Term (2022) Plus Project Intersection Level of Service Analysis

The results of the intersection level of service analysis under near-term plus project conditions are summarized in Table 8. Under near-term (2022) plus project conditions, the following four study intersections would continue operating at acceptable LOS D or better and would comply with the City's TIA Guidelines with the proposed project.

#1 Marsh Road and US 101 Northbound Off Ramp
#2 Marsh Road and US 101 Southbound Off Ramp
#4 Chrysler Drive and Bayfront Expressway (SR 84)
#5 Chilco Street and Bayfront Expressway (SR 84)

The following two study intersections would continue to operate at an unacceptable level of service F during both AM and PM peak hours under near-term (2022) plus project conditions. The increases in delay attributed to the proposed project would be less than four seconds, which would not meet the criteria established by the City of Menlo Park to define non-compliance with local policies for intersections involving two state routes:

#6 University Avenue (SR 109) and Bayfront Expressway (SR 84)
#7 Willow Road (SR 114) and Bayfront Expressway (SR 84)

The results show that #3 Marsh Road and Bayfront Expressway (SR 84) would continue operating at LOS E during the AM peak hour under near-term (2022) plus project conditions and the proposed project would cause the critical movement delay on the local approach to increase by more than 0.8 seconds per vehicle. Measured against the City's level of service standards, the proposed project would cause the intersection at Marsh Road and Bayfront Expressway (SR 84) to be potentially non-compliant with local policies during the AM peak hour. The City's planned Haven Avenue streetscape project would restripe the eastbound approach at this intersection to include a shared through-left lane, a shared through-right lane, and a right-turn only. With the planned reconfiguration, the intersection at Marsh Road and Bayfront Expressway would operate at an acceptable LOS D during both the AM and PM peak hours. Because the proposed project would pay the City of Menlo Park's Transportation Impact Fee, which will partially fund the Haven Avenue streetscape project, the project would comply with local policies related to intersection levels of service.

Table 8
Near-term (2022) Plus Project Intersection Level of Service Summary

				Near-term (2022)					Near-term (2022)Plus Project with Improvements	
				No Project		with Project				
#	Intersection	LOS Standards	Peak Hour	Avg Delay	LOS	Avg Delay	LOS	Incr. In Avg./Crit. Delay	Avg Delay	LOS
1	Marsh Road and US 101 Southbound Off Ramp	D	AM	23.6	C	24.1	C	0.5	--	--
			PM	17.7	B	17.8	B	0.1	--	--
2	Marsh Road and US 101 Northbound Off Ramp	D	AM	25.3	C	25.9	C	0.6	--	--
			PM	13.3	B	13.5	B	0.2	--	--
3	Marsh Road and Bayfront Expressway (SR 84)	D	AM	**58.4**	**E**	**63.9**	**E**	5.5	43.8	D
	Critical Movements on Local Approaches:									
	Eastbound Right Turn			**108.4**	**F**	**113.4**	**F**	5.0	**88.1**	**F**
			PM	35.0	C	36.4	D	1.4	36.1	D
	Critical Movements on Local Approaches:									
	Eastbound Left Turn			**85.2**	**F**	**89.2**	**F**	4.0	**86.6**	**F**
4	Chrysler Drive and Bayfront Expressway (SR 84)	D	AM	9.5	A	9.5	A	0.0	--	--
	Critical Movements on Local Approaches:									
	Northbound Left Turn			18.2	B	18.2	B	0.1	--	--
			PM	20.1	C	20.3	C	0.2	--	--
	Critical Movements on Local Approaches:									
	Northbound Left Turn			29.1	C	29.3	C	0.2		
5	Chilco Street and Bayfront Expressway (SR 84)	D	AM	21.9	C	22.0	C	0.1	--	--
	Critical Movements on Local Approaches:									
	Northbound Right Turn			**59.2**	**E**	**60.5**	**E**	1.3	--	--
			PM	25.3	C	25.3	C	0.0	--	--
	Critical Movements on Local Approaches:									
	Northbound Right Turn			**122.1**	**F**	**122.6**	**F**	0.5		
6	Willow Road (SR 114) and Bayfront Expressway (SR 84)	D	AM	**193.1**	**F**	**193.6**	**F**	0.5	--	--
			PM	**180.9**	**E**	**180.9**	**F**	0.0	--	--
7	University Avenue (SR 109) and Bayfront Expressway (SR 84)	D	AM	**>80***	**F**	**>80***	**F**	0.1	--	--
			PM	**113.1**	**F**	**113.2**	**F**	0.1	--	--

Notes:
* Indicates LOS based on "unserved demand." At this location, upstream & downstream congestion results in delay not captured by the VISTRO analysis.
Bold indicates a substandard level of service.
Bold indicates that the project would cause the intersection to be potentially non-compliant with local policies.

Cumulative (2040) Plus Project Intersection Levels of Service

The results of the intersection level of service analysis under cumulative (2040) no project and cumulative (2040) plus project conditions are summarized in Table 9. Under cumulative (2040) plus project conditions, the following two study intersections would continue operating at acceptable LOS D or better and would comply with the City's TIA Guidelines with the proposed project.

#1 Marsh Road and US 101 Northbound Off Ramp
#2 Marsh Road and US 101 Southbound Off Ramp

Table 9
Cumulative (2040) Conditions Intersection Levels of Service Results

#	Intersection	LOS Standards	Peak Hour	Cumulative (2040) No Project Avg Delay	No Project LOS	Cumulative (2040) with Project Avg Delay	with Project LOS	Incr. In Avg./Crit. Delay
1	Marsh Road and US 101 Southbound Off Ramp	D	AM	37.1	D	37.9	D	0.8
			PM	40.7	D	42.1	D	1.4
2	Marsh Road and US 101 Northbound Off Ramp	D	AM	33.9	C	34.9	C	1.0
			PM	17.3	B	18.0	B	0.7
3	Marsh Road and Bayfront Expressway (SR 84)	D	AM	**75.7**	**E**	**79.6**	**E**	3.9
	Critical Movements on Local Approaches:							
	Eastbound Right Turn			**86.6**	**F**	**87.9**	**F**	1.3
			PM	34.4	C	38.3	D	3.9
	Critical Movements on Local Approaches:							
	Eastbound Through			**82.5**	**F**	**84.0**	**F**	1.6
4	Chrysler Drive and Bayfront Expressway (SR 84)	D	AM	12.4	B	12.5	B	0.1
	Critical Movements on Local Approaches:							
	Northbound Left Turn			35.4	D	35.6	D	0.2
			PM	**62.6**	**E**	**62.7**	**E**	0.1
	Critical Movements on Local Approaches:							
	Northbound Left Turn			**223.2**	**F**	**224.2**	**F**	1.0
5	Chilco Street and Bayfront Expressway (SR 84)	D	AM	**61.5**	**E**	**61.6**	**E**	0.1
	Critical Movements on Local Approaches:							
	Northbound Right Turn			**252.7**	**F**	**253.5**	**F**	0.9
			PM	**67.2**	**E**	**67.1**	**E**	-0.1
	Critical Movements on Local Approaches:							
	Northbound Right Turn			**399.3**	**F**	**399.3**	**F**	0.0
6	Willow Road (SR 114) and Bayfront Expressway (SR 84)	D	AM	**325.1**	**F**	**325.6**	**F**	0.5
			PM	**372.4**	**F**	**373.8**	**F**	1.4
7	University Avenue (SR 109) and Bayfront Expressway (SR 84)	D	AM	**100.8**	**F**	**101.0**	**F**	0.2
			PM	**215.3**	**F**	**215.3**	**F**	0.0

Notes:
Bold indicates a substandard level of service.
Bold indicates that the project would cause the intersection to be potentially non-compliant with local policies.

The following two study intersections would continue to operate at an unacceptable level of service F during both AM and PM peak hours under cumulative (2040) plus project conditions. The increases in delay attributed to the proposed project would be less than four seconds, which would not meet the criteria established by the City of Menlo Park to define non-compliance with local policies for intersections involving two state routes:

#6 University Avenue (SR 109) and Bayfront Expressway (SR 84)
#7 Willow Road (SR 114) and Bayfront Expressway (SR 84)

Measured against the criteria presented in Chapter 1, the proposed project would cause the following three intersections to be potentially non-compliant with local policies during either the AM or the PM peak hour.

#3 Marsh Road and Haven Avenue/Bayfront Expressway (SR 84) – AM peak hour
#4 Chrysler Drive and Bayfront Expressway (SR 84) – PM peak hour
#5 Chilco Street and Bayfront Expressway (SR 84) – AM peak hour

#3. Marsh Road and Haven Avenue/Bayfront Expressway (SR 84)

The results show that under cumulative (2040) no project conditions, this intersection would operate at LOS E during the AM peak hour. Under cumulative (2040) plus project conditions, the intersection would continue operating at LOS E and the proposed project would cause an increase in delay of the critical movement on the local approach by more than 0.8 seconds.

Measured against the City's level of service standards, the project would cause this intersection to be potentially non-compliant with local policies during the AM peak hour.

The City of Menlo Park is implementing a traffic signal adaptive coordination system on the Marsh Road, Bayfront Expressway, and Willow Road corridors to improve traffic flow. Adaptive traffic control is a technology that automatically adjusts traffic signal timing based on actual traffic demand at an intersection. This measure will improve the intersection operations and could reduce the intersection delay. The reduction in delay due to adaptive signal coordination is not expected to bring the intersection in compliance with the City's level of service policy. Other physical intersection improvements are considered infeasible due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel. In addition, since this intersection is owned and maintained by Caltrans, any physical improvements need Caltrans' approval.

#4. Chrysler Drive and Bayfront Expressway (SR 84)

The results show that under cumulative (2040) no project conditions, the intersection of Chrysler Drive and Bayfront Expressway (SR 84) would operate at LOS E during the PM peak hour. Under cumulative (2040) plus project conditions, the intersection would continue operating at LOS E and the proposed project would cause an increase in delay of the critical movement on the local approach by more than 0.8 seconds. Measured against the City's level of service standards, the proposed project would cause this intersection to be potentially non-compliant with local policies during the PM peak hour. The planned traffic signal adaptive coordination system will improve the intersection operations on Bayfront Expressway and could reduce the intersection delay. The reduction in delay due to adaptive signal coordination is not expected to bring the intersection in compliance with the City's level of service policy. Due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel, there are no feasible physical improvements to bring the intersection in compliance with TIA guidelines/standards. In addition, since this intersection is owned and maintained by Caltrans, any physical improvements need Caltrans' approval.

#5. Chilco Street and Bayfront Expressway (SR 84)

The results show that under cumulative (2040) no project conditions, the intersection of Chilco Street and Bayfront Expressway (SR 84) would operate at LOS E during the AM peak hour. Under cumulative (2040) plus project conditions, the intersection would continue operating at LOS E and the proposed project would cause an increase in delay of the critical movement on the local approach by more than 0.8 seconds. Measured against the City's level of service standards, the proposed project would cause this intersection to be potentially non-compliant with local policies during the AM peak hour. The planned traffic signal adaptive coordination system will improve the intersection operations on Bayfront Expressway and could reduce the intersection delay. The reduction in delay due to adaptive signal coordination is not expected to bring the intersection in compliance with the City's level of service policy. Due to right-of-way constraints and/or adverse effects on pedestrian and bicycle travel, there are no feasible physical improvements to bring the intersection in compliance with TIA guidelines/standards. In addition, since this intersection is owned and maintained by Caltrans, any physical improvements need Caltrans' approval.

5. Other Transportation Issues

This chapter presents other transportation issues associated with the proposed project. These include an analysis of:

- Site access and on-site circulation
- Potential impacts to transit, bicycle, and pedestrian facilities
- Vehicle queuing
- Parking

Unlike the level of service and VMT impact methodology, which is adopted by the City Council, the analyses in this chapter are based on professional judgment in accordance with the standards and methods employed by the traffic engineering community.

Site Access

Site access and on-site circulation were evaluated using commonly accepted transportation principles. This review is based on the site plan prepared by Coonan & Bonds Architects (see Figure 2).

Vehicle Site Access

Vehicular access to the project site would be provided by one full-access driveway on Haven Avenue. This driveway would provide direct access to a covered guest drop-off zone close to the entrance of the site. The driveway would continue running along the southern side of the project site and provide access to the surface level parking spaces and lead to a ramp up to level 2 and level 3 of the parking garage (see Figures 15, 16, and 17). The proposed hotel would provide mechanical stacker parking spaces in the parking garage. Therefore, full time valet service would be provided at the proposed hotel. Proper signage should be placed to direct hotel guests to the drop-off and pick-up area.

The project site will also have an emergency vehicle access (EVA) from Haven Avenue located along the northern portion of the site. The EVA provides access to the parking garage and internally connects to the project driveway via a service corridor in the parking garage.

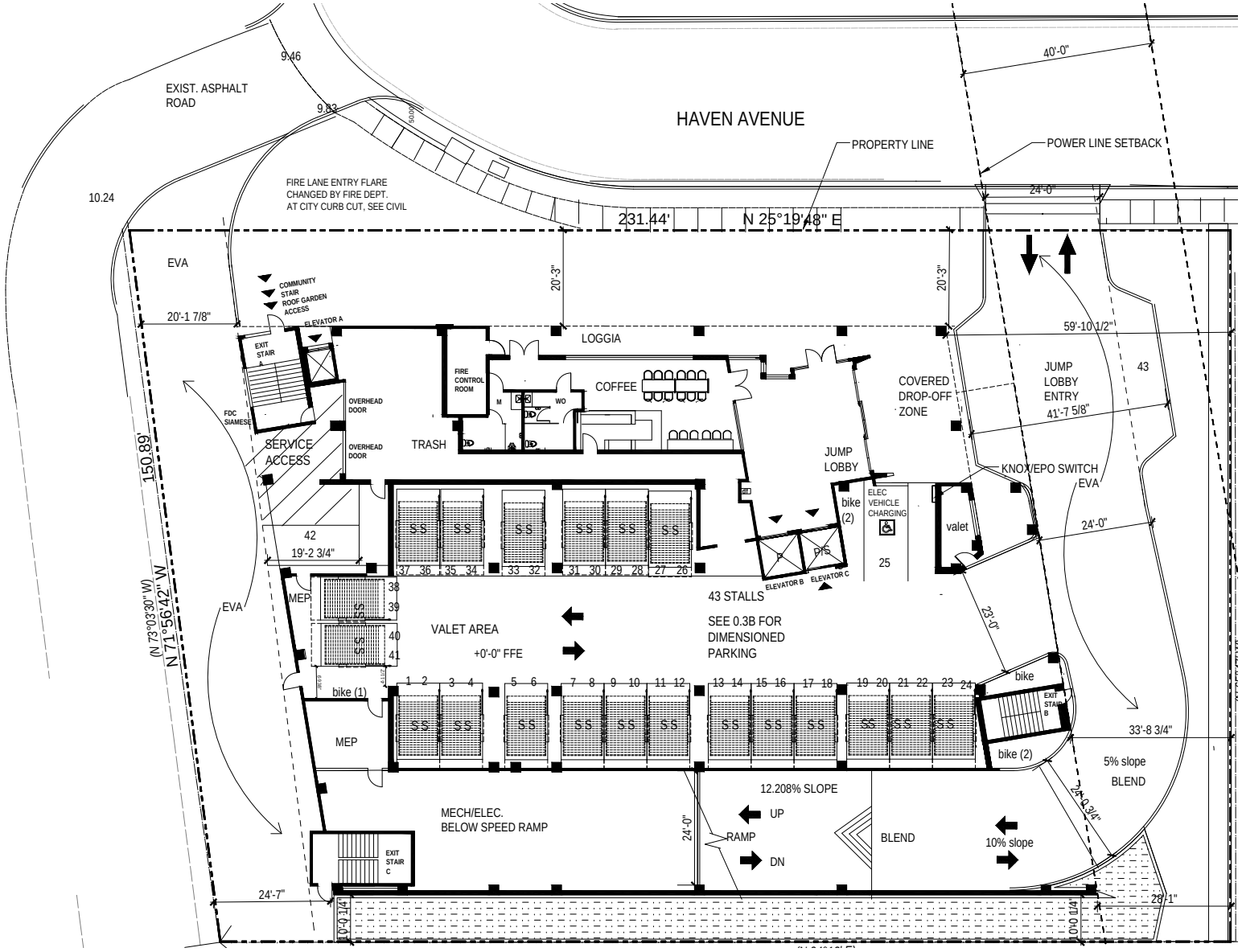


Figure 15
Garage - Level 1

NORTH
Not to Scale

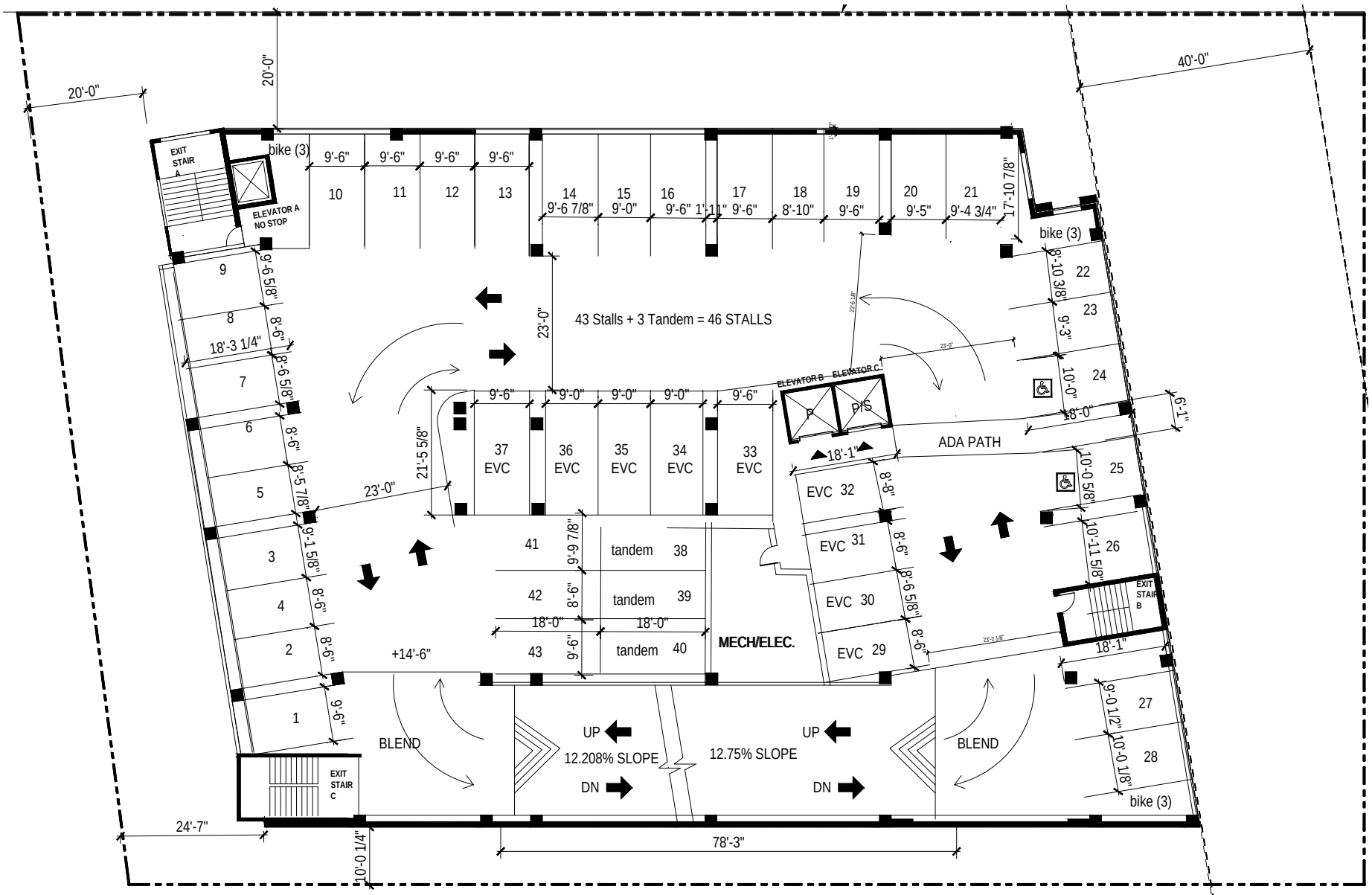


Figure 16
Garage - Level 2

NORTH
Not to Scale

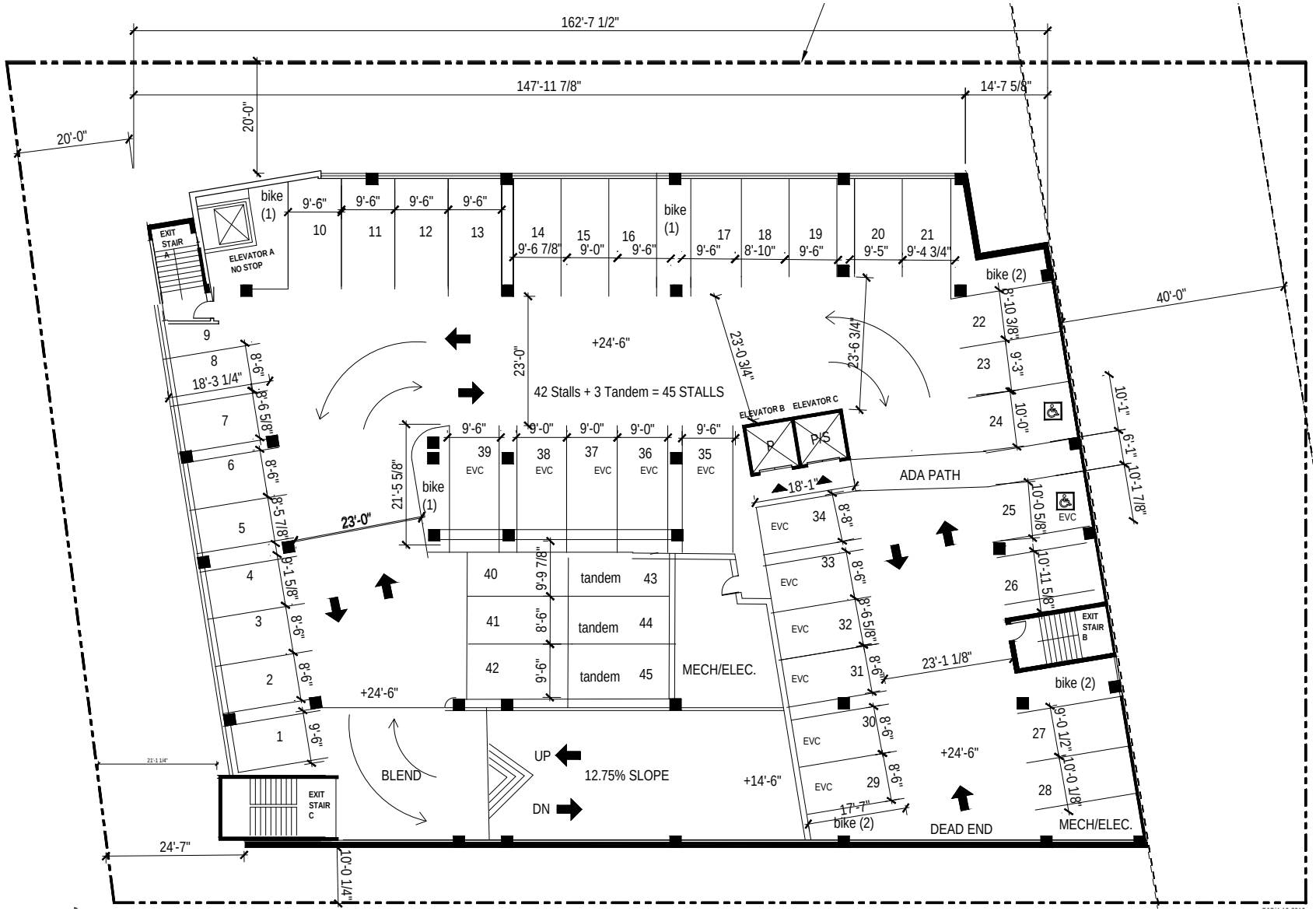


Figure 17
Garage - Level 3

NORTH
Not to Scale

Driveway Operations

The driveway on Haven Avenue would be 24-feet wide and would meet City of Menlo Park's two-way driveway width standard. The proposed hotel is expected to generate 62 vehicles (36 inbound and 26 outbound) during the AM peak hour and 78 vehicles (40 inbound and 38 outbound) during the PM peak hour, which would be less than one vehicle in each direction every minute. Under cumulative (2040) plus project conditions, the driveway would operate at LOS C with the exiting vehicles experiencing an average delay of 21.2 seconds per vehicle during the AM peak hour and 18.8 seconds per vehicle during the PM peak hour.

Sight Distance

Currently, on-street parking is not allowed on Haven Avenue near the driveway. There is a bus stop for Samtrans Route 270, which has 60-minute headways, located immediately south of the driveway. Since the bus frequency is low, most outbound hotel trips would not be affected. However, on rare occasions a stopped bus may obstructs a driver's ability to see down the road on Haven Avenue from the hotel driveway. Thus, it is recommended that the project applicant and the City work with Samtrans to determine if the bus stop can be shifted approximately 150 feet to the south to ensure adequate sight distance at the proposed hotel driveway and the driveway immediately south of the project site. The advisory speed limit along Haven Avenue near the project site is 15 mph due to a 90-degree curve located approximately 100 feet north of the proposed hotel driveway. The Caltrans recommended stopping sight distance at this speed is 100 feet. Vehicles exiting the hotel would be able to see approaching traffic from the north for a distance of approximately 150 feet. Thus, there is sufficient stopping sight distance north of the driveway. The project driveway shown on the site plan will be free and clear of any obstructions to optimize sight distance, thereby ensuring that exiting vehicles can see pedestrians on the sidewalk and other vehicles traveling on Haven Avenue.

Vehicular On-Site Circulation

On-site circulation was reviewed in accordance with generally accepted traffic engineering standards. On-site parking for the proposed project would be provided via a three-level parking garage. The garage would have 90-degree parking spaces with a minimum width of 8-feet 5.8 inches and a minimum two-way drive aisle width of 23-feet. The proposed dimensions fall short of the City of Menlo Park's design guidelines, which require a minimum parking stall width of 8 feet 6 inches and a drive aisle width of 24 feet. Given the parking garage is proposed to operate with full-time valet only parking, the proposed dimensions would be adequate.

A covered drop-off area near the driveway entrance, would be provided. The drop-off area is approximately 28-feet in length and can accommodate only one car. The drop off space should be extended to accommodate two vehicles and the hotel should ensure sufficient valet staff are on hand to avoid back-ups onto the street during peak periods. With full-time valet only parking services on site, guests exiting the site would also need to pick up their vehicles. The site plan does not show a pick-up zone for the vehicles. The site plan should be modified to provide more room for valet operations. Opposite the loading area would be a turn-out, which is designated as a parking space in the site plan. It is recommended that this turn-out be modified into a pick-up zone and extended to accommodate two vehicles. A pedestrian connection should be added between the hotel lobby and the pick-up zone. Furthermore, the drop-off and pick-up area will also be used by ridesharing taxi services. Sufficient space should be provided for the taxi to turnaround and exit the site after pick-up/drop-off.

The proposed project would provide 90-degree parking throughout the ground level and upper levels of the parking garage. There is one dead-end drive aisle on each level of the garage. The dead-end driveway aisle on level 2 and level 3 is located next to the garage wall. There are back-up spaces provided next to the dead-end drive aisle on the upper levels, which would facilitate backing out of the last parking stalls in those rows. Full time valet service should prevent vehicles from needing to turn

around after proceeding down a fully parked dead-end aisle. The dead-end drive aisle on the ground level has four parking stalls (total 8 stacked spaces) at the end of the aisle. This would not be a problem with the proposed valet parking.

After the drop-off area would be the entrance to level 1 of the garage following which would be a ramp to level 2 and level 3 of the garage. Level 1 of the garage would have 20 parking spaces, which would provide stacked parking for 40 cars through an automated parking system. One regular parking space would also be provided next to the stacked parking spaces.

Outside of the garage along the north edge of the building, one service parking space would also be provided adjacent to a service access used for trash pick-up. The service parking space as well as the service access area would be accessed from Haven Avenue by an emergency vehicle access drive aisle. The service access area would have access to the parking garage internally via a service corridor.

The slope of the ramp in the garage would be between 10 percent and 13 percent, which is adequate. Level 2 and level 3 of the garage would not have any stacked parking spaces. They would have regular parking spaces plus three tandem parking spaces on each level. Typically, tandem parking spaces are allowed in a hotel if full-time valet service is provided as would be in the proposed development.

On level 3 of the garage, the wall of Exit Stair A is extended into the parking space designated as number 9. It is recommended that the parking space near Exit Stair A be removed or the exit be redesigned to allow for sufficient space to park a vehicle.

Vehicles driving up the garage ramp would not be able to see a vehicle backing out of the tandem parking space immediately adjacent to the top of the garage ramp. A mirror should be placed at an appropriate location at the top of the ramp to improve the visibility at this location. Likewise, valet staff should be instructed to reduce speed and check the mirror when traveling up the ramp.

Pedestrian, Bicycle and Transit Analysis

Pedestrian facilities near the project site consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. As shown on the site plan, the proposed project will provide new sidewalks, a nature trail, and a front plaza area along its frontage on Haven Avenue. Pedestrian access to the project site will be via the new sidewalks along Haven Avenue.

The proposed project will also offer a ground floor coffee shop which can be directly accessed from the street and sidewalk, as opposed to entering through the hotel. The project is expected to generate limited pedestrian walking trips between the project site and the nearby bus stops. New transit trips generated by the hotel can be well-served by the existing pedestrian facilities.

The existing bicycle facilities in the project vicinity provide some connection for bicycles along major thoroughfares. These bicycle facilities do not provide immediate access to the project site. However, due to low traffic volumes, Haven Avenue immediately adjacent to the project site is conducive to bicycle traffic (see Figure 3 in Chapter 2). The proposed project is expected to generate limited bicycle traffic. Overall, the existing bicycle facilities provide adequate connectivity to the project site.

The City is working on the Haven Avenue streetscape project that would provide new bicycle and pedestrian facilities to Haven Avenue, connecting Menlo Park, San Mateo County and Redwood City residents and employees. The planned new bicycle and pedestrian facilities will provide a direct connection to the San Francisco Bay Trail and will function as an interim gap closure of the Bay Trail between Bedwell Bayfront Park and Seaport Boulevard, better serving both commute and recreational needs. As part of this proposed project, a new bicycle and pedestrian bridge over the Atherton Channel

will be constructed to extend the bike lane and sidewalk on Haven Avenue to Marsh Road. These additions to the existing transportation network will greatly improve pedestrian and bike access to the site.

The project site is located about 3.3 miles east of the Menlo Park Caltrain Station and about 4.5 miles southeast of the Redwood City Caltrain Station, which are considered beyond walking distance. Samtrans Route 270, which has a stop adjacent to the hotel driveway provides a connection to the Redwood City Caltrain Station. The proposed hotel, as part of its TDM plan will also provide a free shuttle service to the hotel guests. The new transit ridership generated by the proposed project could be accommodated by the existing and planned transit services.

Intersection Vehicle Queuing

The analysis of intersection levels of service was supplemented with a vehicle queuing analysis for intersection turning movements where the proposed project would add a substantial number of trips. This analysis provides a basis for estimating future storage requirements at the intersections (see Table 10). Vehicle queues were estimated using a Poisson probability distribution, described in Chapter 1. The following turn movements were selected for evaluation:

- Eastbound left-turn at US 101 Southbound Ramp and Marsh Road
- Westbound right-turn at US 101 Northbound Ramp and Marsh Road
- Eastbound right turn at Haven Avenue/Bayfront Expressway and Marsh Road

Locations where the estimated 95th percentile queues would exceed the available storage capacity for the movement are discussed below.

Eastbound Left-Turn at US 101 Southbound Ramps and Marsh Road

Under all scenarios, the eastbound left-turn queues on the US 101 southbound off-ramp at Marsh Road are projected to be less than the available storage capacity during the AM and PM peak hours. No improvements are needed.

Westbound Right-Turn at US 101 Northbound Ramps and Marsh Road

Under all scenarios, the westbound right-turn queues on the US 101 northbound off-ramp at Marsh Road are projected to be less than the available storage capacity during the AM and PM peak hours. No improvements are needed.

Eastbound Right-Turn at Haven Avenue/Bayfront Expressway and Marsh Road

The existing vehicle storage for the eastbound right turn pocket on Haven Avenue at Bayfront Expressway is only 150 feet, which provides enough storage for about six vehicles. Under existing conditions, the 95th percentile queue exceeds the storage length of the turn pocket by 13 vehicles during the AM peak hour and 8 vehicles during the PM peak hour. The addition of the project would add only one vehicle to the 95th percentile queue during both peak hours.

During the AM peak hour and PM peak hour, under near-term (2022) conditions, the 95th percentile queue would exceed the storage length of the turn pocket by 14 vehicles during the AM peak hour and by 9 vehicles during the PM peak hour. Under near-term (2022) plus project condition, the addition of project traffic would cause the 95th percentile queue to increase by one vehicle during the AM peak hour. The proposed project would not cause a noticeable increase in vehicle queues during the PM peak hour.

The planned Haven Avenue Streetscape project would restripe the eastbound approach to include a shared through-left lane, a shared through-right lane, and a right-turn only lane. The improvement

would allow right-turns from two lanes and thus reduce the queues for the eastbound right-turn movement to be less than the available storage capacity.

Table 10
Intersection Vehicle Queuing Results

Intersection	Marsh Road & US 101 Southbound Off Ramp		Marsh Road & US 101 Northbound Off Ramp		Marsh Road & Bayfront Expressway/Haven Avenue	
Movement	EBLT		WBRT		EBRT	
Peak Hour Period	AM	PM	AM	PM	AM	PM
Existing						
Cycle/Delay[1] (sec)	80	80	80	80	160	160
Volume (vphpl)	562	588	329	210	296	208
95th% Queue (veh/ln)	19	19	12	8	19	14
95th% Queue (ft/ln)	475	475	300	200	475	350
Storage (ft/ ln)	1200	1200	800	800	150	150
Adequate (Y/N)	Y	Y	Y	Y	***N***	***N***
Existing Plus Project						
Cycle/Delay[1] (sec)	80	80	80	80	160	160
Volume (vphpl)	565	594	331	215	312	224
95th% Queue (veh/ln)	19	19	12	9	20	15
95th% Queue (ft/ln)	475	475	300	225	500	375
Storage (ft/ ln)	1200	1200	800	800	150	150
Adequate (Y/N)	Y	Y	Y	Y	***N***	***N***
Near-term (2022)						
Cycle/Delay[1] (sec)	80	80	80	80	160	160
Volume (vphpl)	685	605	436	232	304	209
95th% Queue (veh/ln)	22	20	15	9	20	15
95th% Queue (ft/ln)	550	500	375	225	500	375
Storage (ft/ ln)	1200	1200	800	800	150	150
Adequate (Y/N)	Y	Y	Y	Y	***N***	***N***
Near-term (2022) Plus Project						
Cycle/Delay[1] (sec)	80	80	80	80	160	160
Volume (vphpl)	688	611	438	236	320	225
95th% Queue (veh/ln)	22	20	15	9	21	15
95th% Queue (ft/ln)	550	500	375	225	525	375
Storage (ft/ ln)	1200	1200	800	800	150	150
Adequate (Y/N)	Y	Y	Y	Y	***N***	***N***

Notes:
WB = westbound; EB = eastbound
RT = right turn movement; LT = left turn movement
[1] Vehicle queue calculations based on cycle length for signalized intersections.
[2] Assumes 25 feet per vehicle queued.

Parking Analysis

On-site parking was reviewed based on the City of Menlo Park Municipal Code parking requirements.

Vehicle Parking

According to the City of Menlo Park Zoning Code, Ordinance No. 1024 Section 16.43.090, a hotel located in the office district requires a minimum of 0.75 spaces per room and a maximum of 1.1 spaces per room. With 163 rooms, the hotel is required to provide 122 to 179 spaces. The project proposes to provide 134 vehicle spaces, which meets the City's requirements. The on-site parking supply includes stacker parking spaces on the first level and a few tandem parking spaces on the 2nd and 3rd levels. These spaces would not be available for self-parking and the applicant will provide full-time valet only parking services.

Accessible Parking

Accessible parking stalls shall be provided in accordance with the 2016 California Building Code (CBC) Table 11B-208.2. The project proposes 134 parking spaces; therefore, the project would be required to provide five ADA accessible spaces, including one van accessible space. The site plan shows 5 ADA spaces in the parking garage. It is recommended that one of the ADA accessible spaces be designated as a van space.

Bicycle Parking Requirements

Based on the City's bicycle parking requirements, the hotel should provide one bicycle parking for every 5,000 square feet of gross built area. 80 percent of the bicycle parking spaces should be designated long-term bicycle parking and 20 percent of the bicycle parking spaces should be designated short-term bicycle parking. The total proposed gross square footage of the hotel is 57,953 square feet. Therefore, the proposed project is required to provide 12 bicycle parking spaces. At least 10 of the required bicycle parking spaces should be long-term bicycle parking and 2 should be short-term bicycle parking. The proposed project would provide 5 short-term bicycle parking spaces located on the plaza along the Haven Avenue frontage and 23 long-term bicycle parking spaces located in the parking garage for a total of 28 bicycle parking spaces, which meets the City's requirements. It is recommended that bike parking in the upper levels of the garage be shifted to the ground floor or signage be installed to discourage bikes from riding on the parking garage ramps.

TDM Measures

A TDM plan (see Appendix C) was prepared for the project by Walker Consultants (dated December 14, 2020). The plan includes a broad range of TDM measures designed to reduce single-occupant vehicle trips through a combination of appropriate measures to promote alternative forms of transportation. The recommended implementation has been broken down into two phases.

Phase 1:

- Subsidizing transit passes for employees
- Secure bicycle storage racks
- Preferential parking for carpoolers
- Operation of a dedicated shuttle service
- Install and maintain alternative transportation kiosk at lobby
- Survey employees and guests to monitor use

TDM measures included in Phase 1 have the potential to meet or exceed the goal of reducing 20 percent of trips.

Phase 2:

- Subsidizing employees that walk or bike to work
- Operation of commute assistance center at concierge/reception desk
- Provide access to motor vehicles on site for employee/guest use
- Join Commute.org's guaranteed ride home (GRH) program

Implementation of these measures can be treated as optional if the 20 percent trip reduction goal is met, or as additional implementation measures to strengthen the TDM program if reduction goals have not been met.

3723 Haven Avenue
Transportation Analysis

Technical Appendices

Appendix A
Traffic Counts

File Name: G:\Data 2019\Menlo Park 3-19\44AM FINAL.ppd
Start Date: 4/16/2019
Start Time: 7:00:00 AM
Site Code: 00000044
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	US-101 SB RAMPS Southbound				MARSH RD Westbound				US-101 SB ON-RAMP Northbound				MARSH RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	118	0	193	0	44	339	0	0	0	0	0	0	148	136	0	0
07:15 AM	133	0	245	0	42	352	0	0	0	0	0	0	156	154	0	1
07:30 AM	117	0	211	0	52	355	0	0	0	0	0	0	167	179	0	1
07:45 AM	120	0	276	0	46	345	0	0	0	0	0	0	162	202	0	0
08:00 AM	101	0	280	0	58	385	0	0	0	0	0	0	168	210	0	0
08:15 AM	121	0	265	0	45	396	0	0	0	0	0	0	138	238	0	0
08:30 AM	94	0	302	0	68	336	0	0	0	0	0	0	142	241	0	0
08:45 AM	90	0	265	0	51	301	0	0	0	0	0	0	99	173	0	0
09:00 AM	110	0	269	0	35	272	0	0	0	0	0	0	92	193	0	0
09:15 AM	52	0	250	0	36	220	0	0	0	0	0	0	87	180	0	0
09:30 AM	89	0	276	3	38	272	0	0	0	0	0	0	116	194	0	0
09:45 AM	91	0	262	2	30	242	0	0	0	0	0	0	106	164	0	0

File Name: G:\Data 2019\Menlo Park 3-19\44PM FINAL.ppd
Start Date: 4/16/2019
Start Time: 4:00:00 PM
Site Code: 00000044
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	US-101 SB RAMPS Southbound				MARSH RD Westbound				US-101 SB ON-RAMP Northbound				MARSH RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	55	0	223	1	108	201	0	0	0	0	0	0	233	281	0	0
04:15 PM	52	0	276	1	125	198	0	0	0	0	0	0	238	287	0	1
04:30 PM	67	0	262	0	127	216	0	0	0	0	0	0	207	260	0	0
04:45 PM	51	0	309	1	130	263	0	0	0	0	0	0	199	247	0	0
05:00 PM	56	0	275	2	129	228	0	0	0	0	0	0	198	282	0	0
05:15 PM	75	0	261	2	130	252	0	0	0	0	0	0	218	244	0	0
05:30 PM	114	0	331	4	134	257	0	0	0	0	0	0	185	186	0	0
05:45 PM	97	0	282	2	135	228	0	0	0	0	0	0	170	225	0	0
06:00 PM	81	0	228	2	143	264	0	1	0	0	0	0	173	185	0	0
06:15 PM	94	0	264	3	155	250	0	0	0	0	0	0	136	175	0	0
06:30 PM	99	0	278	2	143	223	0	0	0	0	0	3	101	207	0	0
06:45 PM	108	0	224	4	93	197	0	0	0	0	0	0	126	203	0	0

File Name: G:\Data 2019\Menlo Park 3-19\45AM FINAL.ppd
Start Date: 4/16/2019
Start Time: 7:00:00 AM
Site Code: 00000045
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	US-101 NB ON-RAMP Southbound				MARSH RD Westbound				US-101 NB RAMPS Northbound				MARSH RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	0	0	0	0	355	189	0	0	85	0	198	0	82	252	0	0
07:15 AM	0	0	0	1	369	207	0	0	98	0	231	2	100	301	0	0
07:30 AM	0	0	0	0	318	178	0	0	116	0	229	1	102	281	0	0
07:45 AM	0	0	0	0	338	196	0	0	129	0	208	0	101	354	0	0
08:00 AM	0	0	0	2	313	214	0	1	164	0	214	0	110	355	0	0
08:15 AM	0	0	0	0	331	211	0	0	179	0	218	0	117	357	0	0
08:30 AM	0	0	0	1	350	237	0	1	185	0	131	0	123	349	0	0
08:45 AM	0	0	0	2	382	190	0	0	189	0	133	0	92	334	0	0
09:00 AM	0	0	0	0	320	170	0	0	172	0	136	0	97	367	0	0
09:15 AM	0	0	0	0	344	144	0	0	180	0	109	0	89	313	0	0
09:30 AM	0	0	0	3	339	191	0	0	153	0	115	0	117	364	0	0
09:45 AM	0	0	0	2	376	153	0	1	187	0	118	0	92	338	0	0

File Name: G:\Data 2019\Menlo Park 3-19\45PM FINAL.ppd
Start Date: 4/16/2019
Start Time: 4:00:00 PM
Site Code: 00000045
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	US-101 NB ON-RAMP Southbound				MARSH RD Westbound				US-101 NB RAMPS Northbound				MARSH RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	0	0	0	0	238	193	0	0	140	0	119	0	82	427	0	0
04:15 PM	0	0	0	2	294	174	0	0	111	0	144	1	82	448	0	0
04:30 PM	0	0	0	1	279	222	0	0	109	0	136	0	71	449	0	0
04:45 PM	0	0	0	2	292	218	0	0	102	0	147	0	64	466	0	0
05:00 PM	0	0	0	1	291	210	0	0	98	0	143	0	72	479	0	0
05:15 PM	0	0	0	3	300	225	0	0	91	0	133	0	78	418	0	0
05:30 PM	0	0	0	8	275	228	0	0	78	0	150	0	59	447	0	0
05:45 PM	0	0	0	3	243	201	0	0	90	0	139	1	72	430	0	0
06:00 PM	0	0	0	1	248	242	0	0	115	0	151	0	74	350	0	0
06:15 PM	0	0	0	2	258	239	0	0	89	0	158	0	60	370	0	0
06:30 PM	0	0	0	6	261	222	0	0	65	0	139	0	94	397	0	0
06:45 PM	0	0	0	2	223	163	0	0	60	0	122	0	67	345	0	0

File Name: G:\Data 2019\Menlo Park 3-19\42AM FINAL.ppd
Start Date: 4/16/2019
Start Time: 7:00:00 AM
Site Code: 00000042
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	HAVEN AVE Southbound				MARSH RD Westbound				BAYFRONT EXPY Northbound				MARSH RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	45	14	1	0	1	2	0	5	5	35	477	0	275	9	49	0
07:15 AM	64	19	1	0	1	4	1	5	5	46	519	0	349	5	38	0
07:30 AM	55	15	1	0	3	11	1	4	9	64	419	0	342	2	37	0
07:45 AM	87	22	1	0	1	14	0	6	7	84	451	0	431	4	48	0
08:00 AM	76	41	0	1	0	10	4	13	9	97	443	0	485	4	43	0
08:15 AM	82	43	2	0	1	10	0	14	9	88	448	0	519	12	42	0
08:30 AM	81	54	4	1	2	6	2	13	12	109	510	0	481	8	41	0
08:45 AM	57	58	2	0	4	4	4	4	4	77	530	0	517	3	36	0
09:00 AM	48	74	2	2	2	5	1	11	1	71	435	0	515	7	41	0
09:15 AM	52	66	1	0	0	9	3	6	1	54	429	0	441	7	44	0
09:30 AM	46	41	1	3	0	10	4	5	1	55	483	0	494	7	35	0
09:45 AM	34	41	2	1	1	8	3	5	0	63	490	0	500	11	41	0

File Name: G:\Data 2019\Menlo Park 3-19\42PM FINAL.ppd
Start Date: 4/16/2019
Start Time: 4:00:00 PM
Site Code: 00000042
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	HAVEN AVE Southbound				MARSH RD Westbound				BAYFRONT EXPY Northbound				MARSH RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	50	79	1	2	1	5	1	1	6	28	382	0	549	12	44	0
04:15 PM	56	127	1	2	0	12	2	3	5	24	394	0	520	10	40	0
04:30 PM	49	117	3	2	0	5	3	5	1	28	471	0	533	12	44	0
04:45 PM	54	152	1	2	0	11	4	5	4	24	416	0	541	8	35	0
05:00 PM	53	120	2	2	3	8	1	13	4	26	470	0	534	8	55	0
05:15 PM	52	116	3	0	2	7	4	9	5	41	465	0	426	12	45	1
05:30 PM	57	64	3	7	0	5	4	13	3	43	467	0	481	16	43	1
05:45 PM	48	76	8	4	2	13	7	14	7	37	386	0	468	15	45	0
06:00 PM	39	47	5	1	1	9	1	8	4	35	468	0	422	12	41	0
06:15 PM	46	58	4	2	3	15	2	11	4	23	416	0	371	17	48	0
06:30 PM	37	35	2	4	3	12	4	5	7	28	453	0	394	13	52	0
06:45 PM	44	39	2	8	1	13	10	10	7	22	313	0	300	19	61	0

File Name: G:\Data 2019\Menlo Park 3-19\41AM FINAL.ppd
Start Date: 4/16/2019
Start Time: 7:00:00 AM
Site Code: 00000041
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BAYFRONT EXPY Southbound					Westbound			BAYFRONT EXPY Northbound				CHRYSLER DR Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	116	177	0	0	0	0	0	0	0	540	14	1	4	0	37	0
07:15 AM	164	215	0	0	0	0	0	0	0	514	15	2	7	0	25	0
07:30 AM	153	208	0	0	0	0	0	0	0	504	11	8	13	0	53	0
07:45 AM	188	239	0	0	0	0	0	0	0	492	23	5	8	0	45	0
08:00 AM	211	293	0	0	0	0	0	0	0	495	7	6	18	0	35	0
08:15 AM	202	305	0	0	0	0	0	0	0	431	9	5	19	0	35	0
08:30 AM	166	337	0	0	0	0	0	0	0	576	20	3	15	0	22	0
08:45 AM	142	371	0	0	0	0	0	0	0	548	16	1	12	0	27	0
09:00 AM	174	433	0	0	0	0	0	0	0	454	28	0	7	0	38	0
09:15 AM	135	369	0	0	0	0	0	0	0	472	37	0	13	0	28	0
09:30 AM	146	395	0	0	0	0	0	0	0	487	29	3	15	0	40	0
09:45 AM	157	379	0	1	0	0	0	0	0	499	29	0	11	0	35	0

File Name: G:\Data 2019\Menlo Park 3-19\41PM FINAL.ppd
Start Date: 4/16/2019
Start Time: 4:00:00 PM
Site Code: 00000041
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BAYFRONT EXPY Southbound					Westbound			BAYFRONT EXPY Northbound				CHRYSLER DR Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	40	578	0	0	0	0	0	0	0	281	10	5	21	0	126	0
04:15 PM	47	627	0	0	0	0	0	0	0	282	11	1	11	0	163	0
04:30 PM	52	571	0	0	0	0	0	0	0	314	9	7	13	0	182	0
04:45 PM	57	574	0	0	0	0	0	0	0	302	8	2	17	0	151	0
05:00 PM	69	548	0	0	0	0	0	0	0	344	10	2	18	0	109	0
05:15 PM	94	449	0	0	0	0	0	0	0	374	14	5	4	0	136	0
05:30 PM	82	482	0	0	0	0	0	0	0	320	8	0	11	0	162	0
05:45 PM	69	461	0	0	0	0	0	0	0	314	10	3	15	0	124	0
06:00 PM	60	412	0	2	0	0	0	0	0	320	17	0	14	0	167	0
06:15 PM	47	394	0	0	0	0	0	0	0	318	9	5	13	0	169	1
06:30 PM	30	394	0	0	0	0	0	0	0	281	13	1	16	0	149	0
06:45 PM	35	334	0	0	0	0	0	0	0	257	11	5	7	0	105	0

File Name: G:\Data 2019\Menlo Park 3-19\40AM FINAL.ppd
Start Date: 4/16/2019
Start Time: 7:00:00 AM
Site Code: 00000040
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BAYFRONT EXPY Southbound					Westbound			BAYFRONT EXPY Northbound				CHILCO ST Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	29	134	0	0	0	0	0	0	0	484	35	3	12	0	43	0
07:15 AM	36	216	0	2	0	0	0	0	0	480	37	0	18	0	28	0
07:30 AM	36	162	0	0	0	0	0	0	0	532	34	5	33	0	48	0
07:45 AM	60	246	0	1	0	0	0	0	0	544	56	7	24	0	42	0
08:00 AM	76	211	0	1	0	0	0	0	0	461	63	4	23	0	24	0
08:15 AM	84	157	0	2	0	0	0	0	0	481	47	4	40	0	26	0
08:30 AM	96	156	0	0	0	0	0	0	0	485	60	1	44	0	34	1
08:45 AM	96	158	0	1	0	0	0	0	0	498	83	3	37	0	28	0
09:00 AM	155	322	0	3	0	0	0	0	0	455	69	4	49	0	23	0
09:15 AM	121	254	0	4	0	0	0	0	0	489	70	3	52	0	21	0
09:30 AM	131	297	0	0	0	0	0	0	0	511	83	1	61	0	31	0
09:45 AM	85	301	0	2	0	0	0	0	0	508	65	3	59	0	27	0

File Name: G:\Data 2019\Menlo Park 3-19\40PM FINAL.ppd
Start Date: 4/16/2019
Start Time: 4:00:00 PM
Site Code: 00000040
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BAYFRONT EXPY Southbound					Westbound			BAYFRONT EXPY Northbound				CHILCO ST Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	40	533	0	0	0	0	0	0	0	240	33	0	63	0	49	0
04:15 PM	52	615	0	0	0	0	0	0	0	247	35	1	63	0	59	0
04:30 PM	51	511	0	0	0	0	0	0	0	266	29	2	69	0	56	0
04:45 PM	63	523	0	0	0	0	0	0	0	258	32	2	50	0	70	0
05:00 PM	63	391	0	1	0	0	0	0	0	288	36	6	85	0	74	0
05:15 PM	46	463	0	3	0	0	0	0	0	299	31	1	75	0	88	0
05:30 PM	47	525	0	2	0	0	0	0	0	235	21	8	53	0	75	0
05:45 PM	56	456	0	1	0	0	0	0	0	272	32	3	43	0	62	0
06:00 PM	53	351	0	3	0	0	0	0	0	239	37	4	57	0	80	0
06:15 PM	51	377	0	1	0	0	0	0	0	255	29	4	46	0	73	0
06:30 PM	54	363	0	0	0	0	0	0	0	235	21	0	38	0	49	0
06:45 PM	38	295	0	1	0	0	0	0	0	223	30	0	42	0	65	0

File Name: G:\Data 2019\Menlo Park 3-19\37AM FINAL.ppd
Start Date: 4/23/2019
Start Time: 7:00:00 AM
Site Code: 00000037
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BAYFRONT EXPY Southbound				WILLOW RD Westbound				BAYFRONT EXPY Northbound				WILLOW RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	15	125	17	1	3	9	3	0	6	610	344	0	41	24	14	2
07:15 AM	21	166	32	2	5	10	2	1	10	653	289	1	72	45	32	2
07:30 AM	16	129	47	1	11	9	3	0	4	639	179	0	61	45	47	1
07:45 AM	28	157	65	1	18	15	10	0	13	498	76	0	79	65	40	2
08:00 AM	48	162	69	5	14	20	5	0	9	352	229	0	91	57	43	2
08:15 AM	45	129	70	5	9	10	5	1	9	385	201	0	81	76	38	7
08:30 AM	25	118	66	2	23	15	6	2	15	466	278	4	70	101	48	1
08:45 AM	49	131	95	0	19	14	8	0	16	553	255	0	69	105	43	2
09:00 AM	30	103	89	2	10	16	6	0	16	587	267	0	75	98	50	1
09:15 AM	54	83	76	1	29	18	7	0	21	533	268	0	68	113	46	3
09:30 AM	39	93	81	2	14	19	14	0	19	544	231	0	65	109	56	1
09:45 AM	36	119	80	1	21	14	17	0	22	553	242	0	53	87	50	5

File Name: G:\Data 2019\Menlo Park 3-19\37PM FINAL.ppd
Start Date: 4/23/2019
Start Time: 4:00:00 PM
Site Code: 00000037
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	BAYFRONT EXPY Southbound				WILLOW RD Westbound				BAYFRONT EXPY Northbound				WILLOW RD Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	23	506	15	2	22	45	32	0	9	194	85	0	273	19	27	0
04:15 PM	21	426	16	0	18	30	44	1	5	178	125	0	276	14	30	0
04:30 PM	28	526	15	4	28	41	40	0	6	194	102	0	263	23	21	0
04:45 PM	30	430	8	3	37	31	41	0	7	187	127	0	267	15	21	2
05:00 PM	17	514	13	1	40	36	39	1	14	193	114	0	295	13	28	1
05:15 PM	21	440	8	7	34	44	54	1	7	225	137	0	264	15	26	7
05:30 PM	15	522	23	12	23	32	38	0	10	212	106	0	279	24	24	4
05:45 PM	25	441	15	2	33	48	49	0	7	204	152	0	253	22	29	2
06:00 PM	24	500	15	12	32	53	36	0	4	162	141	0	288	29	20	6
06:15 PM	32	413	22	2	38	59	43	0	14	160	149	0	302	20	26	6
06:30 PM	37	545	24	6	30	44	31	1	9	178	117	1	269	24	13	2
06:45 PM	29	355	16	1	35	27	34	0	8	134	107	0	296	17	13	3

File Name: G:\Data 2019\Menlo Park 3-19\38AM FINAL.ppd
Start Date: 4/25/2019
Start Time: 7:00:00 AM
Site Code: 00000038
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	Southbound				BAYFRONT EXPY Westbound				UNIVERSITY AVE Northbound				BAYFRONT EXPY Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
07:00 AM	0	0	0	0	0	724	243	0	88	0	39	2	19	216	0	0
07:15 AM	0	0	0	0	0	699	269	1	108	0	55	6	17	209	0	0
07:30 AM	0	0	0	0	0	636	332	0	112	0	58	4	17	196	0	0
07:45 AM	0	0	0	0	0	636	304	1	108	0	53	1	14	208	0	0
08:00 AM	0	0	0	0	0	494	426	2	93	0	48	4	29	161	0	0
08:15 AM	0	0	0	0	0	462	394	0	107	0	57	5	35	137	0	0
08:30 AM	0	0	0	0	0	536	376	2	127	0	70	7	32	145	0	0
08:45 AM	0	0	0	0	0	520	388	5	106	0	83	3	29	130	0	0
09:00 AM	0	0	0	0	0	576	362	4	118	0	96	5	31	161	0	0
09:15 AM	0	0	0	0	0	581	358	4	107	0	81	2	24	153	0	0
09:30 AM	0	0	0	0	0	635	368	3	113	0	81	3	11	168	0	0
09:45 AM	0	0	0	0	0	589	335	0	86	0	73	2	21	174	0	0

File Name: G:\Data 2019\Menlo Park 3-19\38PM FINAL.ppd
Start Date: 4/25/2019
Start Time: 4:00:00 PM
Site Code: 00000038
Comment 1: 0
Comment 2: 0
Comment 3: 0
Comment 4: 0

	Southbound				BAYFRONT EXPY Westbound				UNIVERSITY AVE Northbound				BAYFRONT EXPY Eastbound			
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds
04:00 PM	0	0	0	0	0	268	102	0	467	0	16	1	2	810	0	0
04:15 PM	0	0	0	0	0	262	74	0	410	0	15	4	9	877	0	0
04:30 PM	0	0	0	0	0	230	95	0	525	0	19	5	6	791	0	0
04:45 PM	0	0	0	0	0	210	88	0	401	0	18	5	3	829	0	0
05:00 PM	0	0	0	0	0	246	109	2	478	0	17	3	12	698	0	0
05:15 PM	0	0	0	0	0	225	82	1	358	0	4	4	4	791	0	0
05:30 PM	0	0	0	0	0	272	129	0	471	0	19	3	4	671	0	0
05:45 PM	0	0	0	0	0	233	104	0	380	0	11	3	8	797	0	0
06:00 PM	0	0	0	0	0	183	104	2	368	0	12	7	8	477	0	0
06:15 PM	0	0	0	0	0	164	71	2	355	0	9	9	5	498	0	0
06:30 PM	0	0	0	0	0	156	99	1	426	0	18	3	5	478	0	0
06:45 PM	0	0	0	0	0	124	63	1	277	0	9	2	5	465	0	0

Appendix B
Level of Service Calculations

Vistro File: P:\...\Existing Conditions_AM-3723 Haven Ave.vistro
Report File: P:\...\Existing AM.pdf

Scenario 16 Existing AM (2019 vols)
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Right	0.838	19.0	B
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	0.727	11.4	B
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Thru	0.967	106.0	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NWB Right	0.727	15.8	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.816	50.5	D
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.808	12.7	B
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.621	8.4	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.838

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	891	1462	217	1123	436
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.30	3.60	2.15	5.10	3.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	891	1462	217	1123	436
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	227	373	54	286	111
Total Analysis Volume [veh/h]	0	909	1492	217	1146	445
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	3		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	0
Maximum Green [s]	0	32	32	0	32	0
Amber [s]	0.0	4.1	4.1	0.0	3.1	0.0
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	10	0	5	0
Pedestrian Clearance [s]	0	16	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	46	44	30	30
g / C, Green / Cycle	0.57	0.54	0.37	0.37
(v / s)_i Volume / Saturation Flow Rate	0.23	0.42	0.34	0.28
s, saturation flow rate [veh/h]	4000	3515	3373	1572
c, Capacity [veh/h]	2283	1914	1257	586
d1, Uniform Delay [s]	9.52	14.40	23.80	21.91
k, delay calibration	0.50	0.50	0.04	0.23
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.52	3.22	1.14	4.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.78	0.91	0.76
d, Delay for Lane Group [s/veh]	10.04	17.62	24.94	26.21
Lane Group LOS	B	B	C	C
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.95	9.95	9.78	7.55
50th-Percentile Queue Length [ft/ln]	98.65	248.63	244.40	188.71
95th-Percentile Queue Length [veh/ln]	7.10	15.12	14.90	12.05
95th-Percentile Queue Length [ft/ln]	177.56	377.93	372.59	301.35

Movement, Approach, & Intersection Results

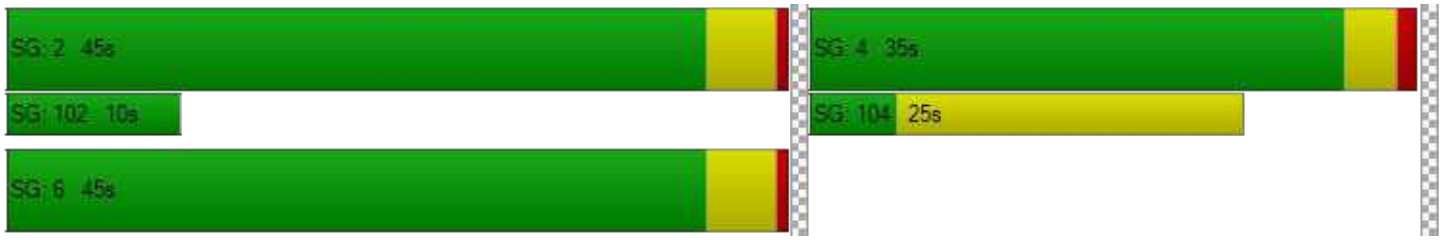
d_M, Delay for Movement [s/veh]	0.00	10.04	17.62	0.00	24.94	26.21
Movement LOS		B	B		C	C
d_A, Approach Delay [s/veh]	10.04		17.62		25.30	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	18.95					
Intersection LOS	B					
Intersection V/C	0.838					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	14.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	27.23
I_p,int, Pedestrian LOS Score for Intersection	2.936	0.000	2.509
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.82	9.80	15.07
I_b,int, Bicycle LOS Score for Intersection	2.310	2.791	1.560
Bicycle LOS	B	C	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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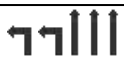
Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	11.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	829	67	1148	2695	205	416
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.40	3.50	1.60	3.10	2.20	3.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	829	67	1148	2695	205	416
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	214	17	296	695	53	107
Total Analysis Volume [veh/h]	855	69	1184	2778	211	429
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	6		0		7	
v_ci, Inbound Pedestrian Volume crossing mi	7		0		6	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	35	110	75	110	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	3.9	1.5	3.9	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	63	63	63	63	63	63
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	5.90	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	3.90	2.00	0.00
g_i, Effective Green Time [s]	18	18	25	46	7	36
g / C, Green / Cycle	0.29	0.29	0.39	0.74	0.11	0.56
(v / s)_i Volume / Saturation Flow Rate	0.17	0.04	0.34	0.55	0.06	0.10
s, saturation flow rate [veh/h]	4955	1549	3470	5049	3453	4166
c, Capacity [veh/h]	1415	442	1365	3716	370	2349
d1, Uniform Delay [s]	19.46	16.85	17.62	4.89	26.79	6.69
k, delay calibration	0.13	0.13	0.04	0.13	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.51	0.20	0.68	0.37	0.52	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.16	0.87	0.75	0.57	0.18
d, Delay for Lane Group [s/veh]	19.97	17.04	18.30	5.26	27.31	6.70
Lane Group LOS	B	B	B	A	C	A
Critical Lane Group	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	2.99	0.64	6.06	1.37	1.43	0.72
50th-Percentile Queue Length [ft/ln]	74.72	15.91	151.47	34.24	35.83	18.10
95th-Percentile Queue Length [veh/ln]	5.38	1.15	10.10	2.47	2.58	1.30
95th-Percentile Queue Length [ft/ln]	134.50	28.64	252.38	61.64	64.49	32.58

Movement, Approach, & Intersection Results

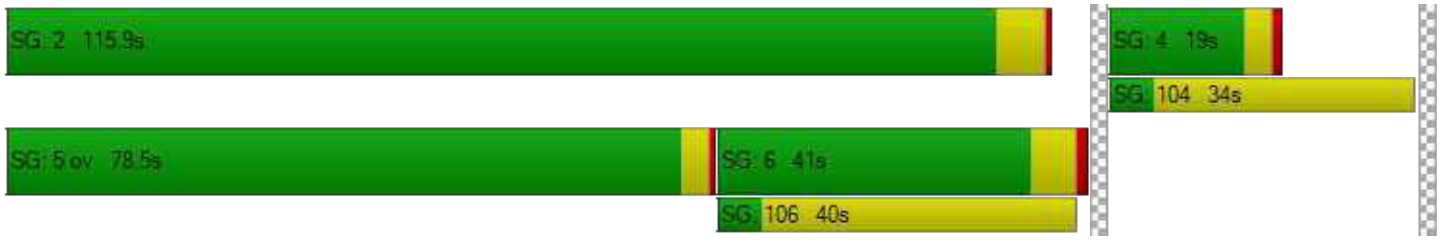
d_M, Delay for Movement [s/veh]	19.97	17.04	18.30	5.26	27.31	6.70
Movement LOS	B	B	B	A	C	A
d_A, Approach Delay [s/veh]	19.75		9.16		13.49	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	11.43					
Intersection LOS	B					
Intersection V/C	0.727					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
l_p,int, Pedestrian LOS Score for Intersection	3.561	0.000	2.870
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1458	583	625
d_b, Bicycle Delay [s]	1.76	12.05	11.34
l_b,int, Bicycle LOS Score for Intersection	2.068	3.739	1.670
Bicycle LOS	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	106.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.967

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	2	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Base Volume Input [veh/h]	195	425	277	35	67	72	341	410	172	1021	2217	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.90	4.20	10.20	37.50	30.50	40.50	4.60	6.20	12.30	6.70	3.80	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	16	0	0	106	0	0	0
Total Hourly Volume [veh/h]	195	425	277	35	67	56	341	410	66	1021	2217	72
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	108	71	9	17	14	87	105	17	260	566	18
Total Analysis Volume [veh/h]	199	434	283	36	68	57	348	418	67	1042	2262	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			2			3			0		
v_di, Inbound Pedestrian Volume crossing m	0			3			2			0		
v_co, Outbound Pedestrian Volume crossing	4			0			3			0		
v_ci, Inbound Pedestrian Volume crossing mi	3			0			4			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	8	8	15	15	8	6	10	10	6	10	10
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.6	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	15	25	25	20	20	25	25	55	70	40	70	55
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	5	7	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	10	0	29	10	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	3.1	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		No	Yes		No	Yes	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	108	108	108	108	108	108	108	108	108	108	108	108
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	5.10	5.10	4.60	6.00	6.00	4.60	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	3.10	3.10	2.60	4.00	4.00	2.60	4.00	4.00
g_i, Effective Green Time [s]	15	15	44	9	10	10	14	39	39	25	50	50
g / C, Green / Cycle	0.14	0.14	0.41	0.08	0.09	0.09	0.13	0.36	0.36	0.23	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.12	0.28	0.16	0.03	0.06	0.05	0.10	0.08	0.05	0.31	0.45	0.05
s, saturation flow rate [veh/h]	1654	1565	1764	1273	1228	1080	3386	4922	1458	3328	5020	1615
c, Capacity [veh/h]	230	218	726	106	112	98	432	1768	524	771	2326	748
d1, Uniform Delay [s]	45.44	46.44	22.23	46.66	47.21	47.04	45.77	24.21	23.22	41.46	28.29	16.28
k, delay calibration	0.15	0.39	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.20	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.18	457.60	0.34	1.87	5.26	5.33	3.57	0.07	0.11	161.68	4.38	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	1.99	0.39	0.34	0.61	0.58	0.81	0.24	0.13	1.35	0.97	0.10
d, Delay for Lane Group [s/veh]	57.62	504.04	22.58	48.52	52.47	52.36	49.34	24.28	23.33	203.15	32.67	16.34
Lane Group LOS	E	F	C	D	D	D	D	C	C	F	C	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.86	16.71	1.63	0.98	0.97	1.64	4.73	2.50	1.16	27.41	19.03	1.02
50th-Percentile Queue Length [ft/ln]	146.48	417.84	40.67	24.55	24.34	40.88	118.14	62.39	29.04	685.16	475.71	25.48
95th-Percentile Queue Length [veh/ln]	9.83	28.50	2.93	1.77	1.75	2.94	8.29	4.49	2.09	41.77	26.18	1.83
95th-Percentile Queue Length [ft/ln]	245.72	712.40	73.20	44.19	43.81	73.59	207.27	112.31	52.28	1044.13	654.56	45.87

Movement, Approach, & Intersection Results

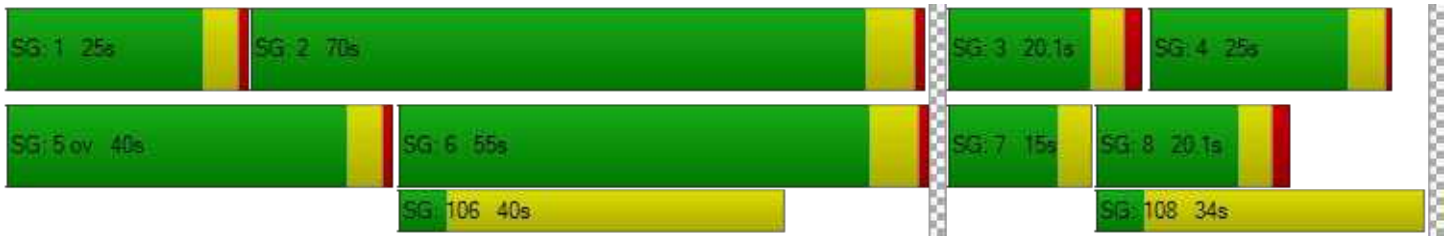
d_M, Delay for Movement [s/veh]	57.62	504.04	22.58	48.52	52.47	52.36	49.34	24.28	23.33	203.15	32.67	16.34
Movement LOS	E	F	C	D	D	D	D	C	C	F	C	B
d_A, Approach Delay [s/veh]	258.30			51.55			34.67			84.92		
Approach LOS	F			D			C			F		
d_I, Intersection Delay [s/veh]	106.03											
Intersection LOS	F											
Intersection V/C	0.967											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.29	0.00	61.29	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.114	0.000	3.333	0.000
Crosswalk LOS	C	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	294	214	700	914
d_b, Bicycle Delay [s]	50.92	55.80	29.58	20.63
l_b,int, Bicycle LOS Score for Intersection	2.315	1.706	2.076	3.417
Bicycle LOS	B	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 110: Marsh Road and US 101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name	Marsh Road		Marsh Road			
Approach	Northbound		Southbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road			
Base Volume Input [veh/h]	1415	0	0	858	771	657
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.50	0.00	0.00	5.20	1.90	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1415	0	0	858	771	657
Peak Hour Factor	0.9700	1.0000	1.0000	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	365	0	0	221	199	169
Total Analysis Volume [veh/h]	1459	0	0	885	795	677
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	1		0		2	
v_ci, Inbound Pedestrian Volume crossing mi	2		0		1	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	1
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	0
Maximum Green [s]	32	0	0	32	26	0
Amber [s]	4.1	0.0	0.0	4.1	3.2	0.0
All red [s]	0.5	0.0	0.0	0.5	1.0	0.0
Split [s]	50	0	0	50	30	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	0	10	5	0
Pedestrian Clearance [s]	12	0	0	10	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	53	53	23	23
g / C, Green / Cycle	0.66	0.66	0.28	0.28
(v / s)_i Volume / Saturation Flow Rate	0.42	0.26	0.23	0.25
s, saturation flow rate [veh/h]	3489	3469	3461	2761
c, Capacity [veh/h]	2303	2290	981	783
d1, Uniform Delay [s]	7.92	6.18	26.60	27.14
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.34	0.49	0.62	1.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.39	0.81	0.87
d, Delay for Lane Group [s/veh]	9.26	6.68	27.22	28.30
Lane Group LOS	A	A	C	C
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.28	2.93	6.80	5.96
50th-Percentile Queue Length [ft/ln]	157.07	73.27	169.90	148.95
95th-Percentile Queue Length [veh/ln]	10.39	5.28	11.07	9.96
95th-Percentile Queue Length [ft/ln]	259.84	131.89	276.79	249.03

Movement, Approach, & Intersection Results

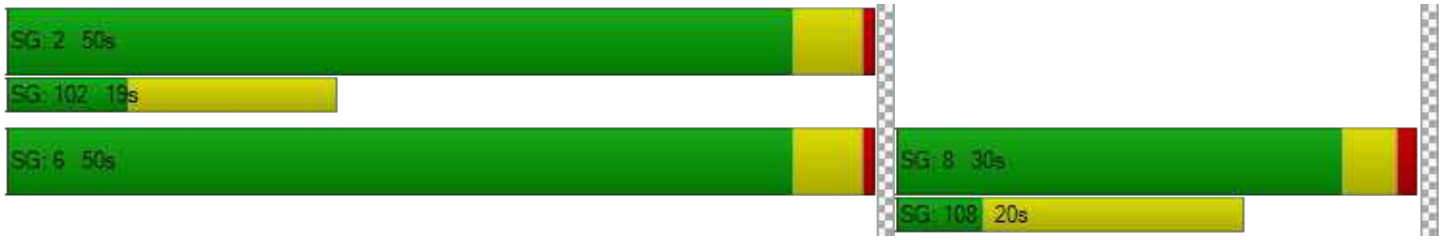
d_M, Delay for Movement [s/veh]	9.26	0.00	0.00	6.68	27.22	28.30
Movement LOS	A			A	C	C
d_A, Approach Delay [s/veh]	9.26		6.68		27.72	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	15.78					
Intersection LOS	B					
Intersection V/C	0.727					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.863	2.483
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.49	7.49	18.36
l_b,int, Bicycle LOS Score for Intersection	2.763	2.290	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	50.5
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	162	27	1502	10	30	7	8	196	296	1931	371	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	4.60	0.00	0.00	16.70	0.00	18.20	9.10	4.70	4.90	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	162	27	1502	10	30	7	8	196	296	1931	371	34
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	42	7	391	3	8	2	2	51	77	503	97	9
Total Analysis Volume [veh/h]	169	28	1565	10	31	7	8	204	308	2011	386	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			1			1			0	
v_di, Inbound Pedestrian Volume crossing m		0			1			1			0	
v_co, Outbound Pedestrian Volume crossing		0			22			0			22	
v_ci, Inbound Pedestrian Volume crossing mi		0			22			0			22	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		1			13			25			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	7	4	6	4	1	4	1	2	8
Auxiliary Signal Groups		3	2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	0	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	0	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	69	11	11	0	32	25	32	48	32	48	69	0
Vehicle Extension [s]	4.5	0.0	0.0	0.0	0.0	3.0	0.0	3.0	0.0	3.0	4.5	0.0
Walk [s]	5	0	0	0	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		Yes			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	19	88	29	29	36	36	36	67	67
g / C, Green / Cycle	0.12	0.55	0.18	0.18	0.22	0.22	0.22	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.11	0.38	0.01	0.01	0.07	0.07	0.21	0.40	0.24
s, saturation flow rate [veh/h]	1822	4114	1863	1610	1621	1480	1443	5075	1787
c, Capacity [veh/h]	215	2160	339	293	360	329	321	2120	746
d1, Uniform Delay [s]	69.75	29.01	54.28	54.32	51.96	51.96	60.93	44.91	35.48
k, delay calibration	0.50	0.50	0.04	0.04	0.11	0.11	0.30	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	42.53	2.16	0.03	0.04	0.48	0.52	30.18	10.68	3.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.91	0.72	0.07	0.08	0.31	0.31	0.96	0.95	0.56
d, Delay for Lane Group [s/veh]	112.27	31.16	54.31	54.36	52.44	52.48	91.11	55.60	38.55
Lane Group LOS	F	C	D	D	D	D	F	E	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	10.57	15.72	0.86	0.78	3.82	3.49	14.97	27.60	13.29
50th-Percentile Queue Length [ft/ln]	264.21	393.09	21.43	19.47	95.45	87.21	374.29	690.04	332.24
95th-Percentile Queue Length [veh/ln]	15.90	22.23	1.54	1.40	6.87	6.28	21.32	36.22	19.27
95th-Percentile Queue Length [ft/ln]	397.50	555.66	38.58	35.04	171.82	156.97	532.94	905.44	481.70

Generated with PTV VISTRO

Version 2020 (SP 0-3)

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	112.27	112.27	31.16	54.31	54.34	54.36	52.44	52.46	91.11	55.60	38.55	38.55
Movement LOS	F	F	C	D	D	D	D	D	F	E	D	D
d_A, Approach Delay [s/veh]	40.23			54.33			75.35			52.65		
Approach LOS	D			D			E			D		
d_I, Intersection Delay [s/veh]	50.55											
Intersection LOS	D											
Intersection V/C	0.816											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.007	2.423	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	80	349	555	791
d_b, Bicycle Delay [s]	73.76	54.89	42.29	29.24
l_b,int, Bicycle LOS Score for Intersection	4.467	1.599	1.989	5.572
Bicycle LOS	E	A	A	F

Sequence

Ring 1	-	2	1	4	3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	12.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.808

Intersection Setup

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	30.00		50.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	102	221	1174	492	287	1963
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.40	23.10	5.10	5.30	6.30	3.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	221	1174	492	287	1963
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	58	309	129	76	517
Total Analysis Volume [veh/h]	107	233	1236	518	302	2066
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	4	3	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	5	10
Maximum Green [s]	20	10	50	0	25	50
Amber [s]	3.2	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	8.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	1.7	9.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	56	56	56	56	56	56
L, Total Lost Time per Cycle [s]	3.70	3.70	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	4.20	4.20	0.00	4.20
g_i, Effective Green Time [s]	13	13	22	22	34	34
g / C, Green / Cycle	0.22	0.22	0.40	0.40	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.03	0.20	0.28	0.37	0.42	0.46
s, saturation flow rate [veh/h]	3078	1188	4470	1393	717	4518
c, Capacity [veh/h]	692	267	1768	551	522	2711
d1, Uniform Delay [s]	17.59	21.12	14.26	16.43	9.39	8.33
k, delay calibration	0.04	0.05	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.04	4.26	0.19	3.63	0.38	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.87	0.70	0.94	0.58	0.76
d, Delay for Lane Group [s/veh]	17.62	25.37	14.45	20.06	9.77	8.50
Lane Group LOS	B	C	B	C	A	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.52	3.00	3.26	5.24	1.07	3.47
50th-Percentile Queue Length [ft/ln]	12.92	74.98	81.59	130.94	26.71	86.76
95th-Percentile Queue Length [veh/ln]	0.93	5.40	5.87	8.99	1.92	6.25
95th-Percentile Queue Length [ft/ln]	23.26	134.97	146.86	224.78	48.08	156.17

Movement, Approach, & Intersection Results

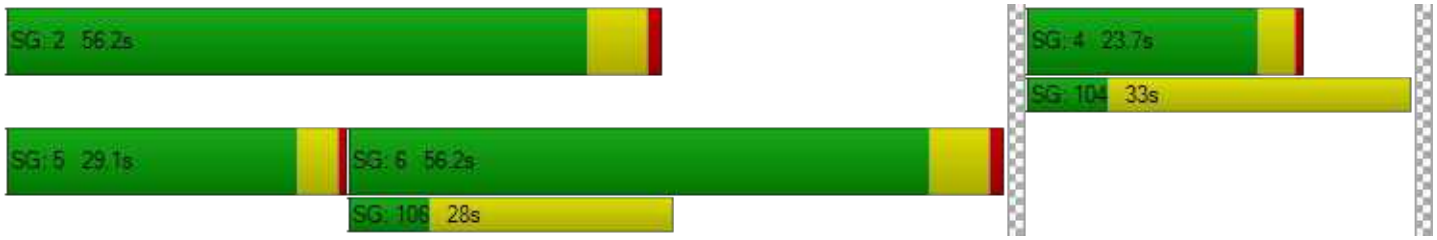
d_M, Delay for Movement [s/veh]	17.62	25.37	14.45	20.06	9.77	8.50
Movement LOS	B	C	B	C	A	A
d_A, Approach Delay [s/veh]	22.94		16.11		8.66	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	12.68					
Intersection LOS	B					
Intersection V/C	0.808					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.711	3.523	3.395
Crosswalk LOS	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.22	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.524	2.862
Bicycle LOS	A	B	C

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	8.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.621

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	115	47	1510	117	101	2050
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	12.30	8.30	5.30	7.10	0.00	3.70
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	115	47	1510	117	101	2050
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	12	389	30	26	528
Total Analysis Volume [veh/h]	119	48	1557	121	104	2113
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	10
Pedestrian Clearance [s]	26	0	21	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	34	34	34	34	34	34
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	4	4	12	12	3	19
g / C, Green / Cycle	0.12	0.12	0.36	0.36	0.09	0.57
(v / s)_i Volume / Saturation Flow Rate	0.04	0.03	0.31	0.08	0.06	0.42
s, saturation flow rate [veh/h]	3173	1509	4959	1492	1810	5024
c, Capacity [veh/h]	371	177	1769	532	168	2858
d1, Uniform Delay [s]	13.93	13.85	10.37	7.73	15.01	5.51
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.30	0.59	0.08	1.38	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.27	0.88	0.23	0.62	0.74
d, Delay for Lane Group [s/veh]	14.11	14.15	10.96	7.81	16.39	5.66
Lane Group LOS	B	B	B	A	B	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.36	0.30	2.04	0.35	0.62	0.70
50th-Percentile Queue Length [ft/ln]	9.12	7.50	50.97	8.73	15.61	17.58
95th-Percentile Queue Length [veh/ln]	0.66	0.54	3.67	0.63	1.12	1.27
95th-Percentile Queue Length [ft/ln]	16.42	13.50	91.75	15.71	28.09	31.64

Movement, Approach, & Intersection Results

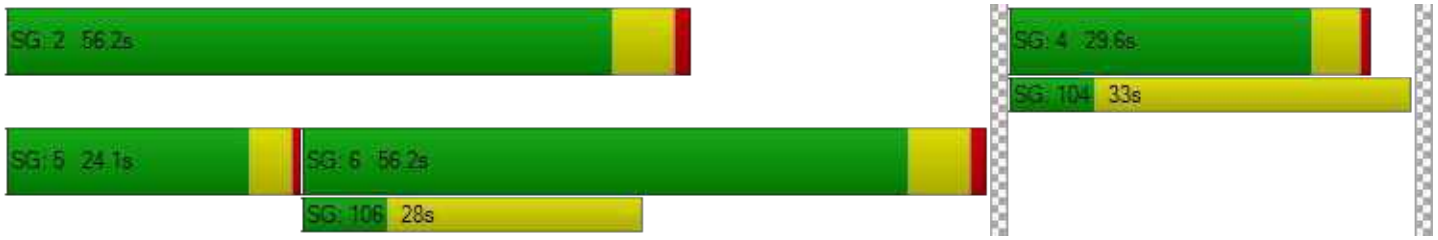
d_M, Delay for Movement [s/veh]	14.11	14.15	10.96	7.81	16.39	5.66
Movement LOS	B	B	B	A	B	A
d_A, Approach Delay [s/veh]	14.12		10.73		6.16	
Approach LOS	B		B		A	
d_I, Intersection Delay [s/veh]	8.38					
Intersection LOS	A					
Intersection V/C	0.621					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.210	3.440	3.392
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.483	2.779
Bicycle LOS	A	B	C

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: P:\...\Existing PM.pdf

Scenario 16 Existing PM (2019 vols)
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.701	17.0	B
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.043	94.1	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Right	1.249	168.1	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Left	0.771	13.3	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	SB Right	0.839	31.6	C
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.862	16.0	B
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.779	13.1	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.701

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	959	1000	279	1176	296
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.60	2.70	2.15	3.60	0.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	959	1000	279	1176	296
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	245	255	70	300	76
Total Analysis Volume [veh/h]	0	979	1020	279	1200	302
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		4		5	
v_ci, Inbound Pedestrian Volume crossing mi	0		5		4	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	6		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	0
Maximum Green [s]	0	32	32	0	32	0
Amber [s]	0.0	4.1	4.1	0.0	3.1	0.0
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	7	0	5	0
Pedestrian Clearance [s]	0	0	16	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	45	43	31	31
g / C, Green / Cycle	0.56	0.53	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.24	0.29	0.35	0.19
s, saturation flow rate [veh/h]	4000	3540	3414	1609
c, Capacity [veh/h]	2236	1886	1313	619
d1, Uniform Delay [s]	10.29	12.25	23.32	18.62
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.63	1.12	1.13	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.54	0.91	0.49
d, Delay for Lane Group [s/veh]	10.91	13.37	24.44	18.84
Lane Group LOS	B	B	C	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	4.53	5.50	10.17	4.04
50th-Percentile Queue Length [ft/ln]	113.27	137.61	254.25	101.06
95th-Percentile Queue Length [veh/ln]	8.02	9.35	15.40	7.28
95th-Percentile Queue Length [ft/ln]	200.55	233.80	385.00	181.91

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.91	13.37	0.00	24.44	18.84
Movement LOS		B	B		C	B
d_A, Approach Delay [s/veh]	10.91		13.37		23.32	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	16.95					
Intersection LOS	B					
Intersection V/C	0.701					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	29.76
l_p,int, Pedestrian LOS Score for Intersection	2.781	0.000	2.422
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.83	9.81	15.07
l_b,int, Bicycle LOS Score for Intersection	2.367	2.401	1.560
Bicycle LOS	B	B	A

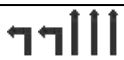
Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	94.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.043

Intersection Setup

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	3307	20	359	970	68	1803
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	16.10	4.90	3.80	9.00	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3307	20	359	970	68	1803
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	844	5	92	247	17	460
Total Analysis Volume [veh/h]	3374	20	366	990	69	1840
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	7		0		8	
v_ci, Inbound Pedestrian Volume crossing mi	8		0		7	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	90	140	50	140	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	5.8	1.5	5.8	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	152	152	152	152	152	152
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	7.80	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	5.80	2.00	0.00
g_i, Effective Green Time [s]	90	90	34	125	15	53
g / C, Green / Cycle	0.59	0.59	0.22	0.82	0.10	0.35
(v / s)_i Volume / Saturation Flow Rate	0.66	0.01	0.11	0.20	0.02	0.43
s, saturation flow rate [veh/h]	5077	1399	3378	5020	3264	4237
c, Capacity [veh/h]	2999	826	751	4137	321	1470
d1, Uniform Delay [s]	31.18	12.94	51.69	2.94	63.25	49.75
k, delay calibration	0.13	0.13	0.04	0.13	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	57.57	0.01	0.18	0.04	0.12	113.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.12	0.02	0.49	0.24	0.21	1.25
d, Delay for Lane Group [s/veh]	88.74	12.96	51.87	2.97	63.37	163.57
Lane Group LOS	F	B	D	A	E	F
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	48.44	0.27	5.95	1.42	1.24	33.89
50th-Percentile Queue Length [ft/ln]	1211.03	6.82	148.74	35.53	31.00	847.26
95th-Percentile Queue Length [veh/ln]	65.94	0.49	9.95	2.56	2.23	49.83
95th-Percentile Queue Length [ft/ln]	1648.39	12.27	248.75	63.95	55.80	1245.64

Movement, Approach, & Intersection Results

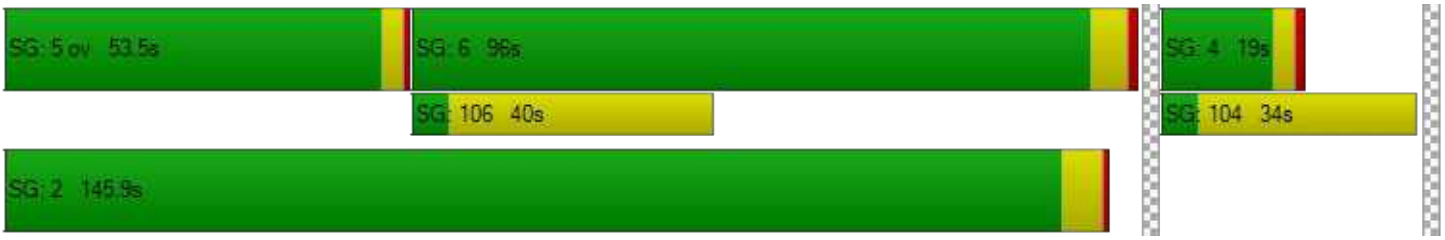
d_M, Delay for Movement [s/veh]	88.74	12.96	51.87	2.97	63.37	163.57
Movement LOS	F	B	D	A	E	F
d_A, Approach Delay [s/veh]	88.29		16.17		159.95	
Approach LOS	F		B		F	
d_I, Intersection Delay [s/veh]	94.15					
Intersection LOS	F					
Intersection V/C	1.043					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
l_p,int, Pedestrian LOS Score for Intersection	3.699	0.000	2.935
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1750	1833	625
d_b, Bicycle Delay [s]	0.38	0.17	11.34
l_b,int, Bicycle LOS Score for Intersection	3.426	2.305	1.670
Bicycle LOS	C	B	A

Sequence

Ring 1	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	168.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.249

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Base Volume Input [veh/h]	88	95	1462	159	204	133	76	1899	118	559	704	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.20	10.90	3.30	4.30	1.00	1.70	37.10	2.50	12.00	6.40	5.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	70	0	0	45	0	0	1
Total Hourly Volume [veh/h]	88	95	1462	159	204	63	76	1899	73	559	704	33
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	24	377	41	53	16	20	489	19	144	181	9
Total Analysis Volume [veh/h]	91	98	1507	164	210	65	78	1958	75	576	726	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			11			11			0		
v_di, Inbound Pedestrian Volume crossing m	0			11			11			0		
v_co, Outbound Pedestrian Volume crossing	8			0			8			0		
v_ci, Inbound Pedestrian Volume crossing mi	8			0			8			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			3			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	155
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	5	5	5	4	5	5	5	4
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.0	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	47	47	20	42	47	21	38	64	47	64	38
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	5	5	0	5	5	0	5	0	0	0	5
Pedestrian Clearance [s]	0	0	0	0	29	0	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	2.5	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		Yes	No		Yes	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	108	108	108	108	108	108	108	108	108	108	108	108
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	4.50	4.50	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	2.50	2.50	0.00	4.00	4.00	0.00	4.00	4.00
g_i, Effective Green Time [s]	7	15	44	9	18	18	69	40	40	69	60	60
g / C, Green / Cycle	0.07	0.14	0.40	0.08	0.17	0.17	0.63	0.37	0.37	0.63	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.81	0.09	0.13	0.04	0.07	0.39	0.05	0.37	0.15	0.02
s, saturation flow rate [veh/h]	1749	1479	1853	1748	1606	1507	1171	5073	1462	1553	4959	1615
c, Capacity [veh/h]	118	205	744	145	269	252	773	1877	541	958	2724	887
d1, Uniform Delay [s]	49.69	43.03	32.19	49.68	43.23	39.17	7.84	34.14	22.67	24.06	12.90	11.25
k, delay calibration	0.11	0.11	0.50	0.37	0.20	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	10.03	1.72	465.85	103.81	8.79	0.54	0.06	23.62	0.12	0.61	0.05	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.48	2.02	1.13	0.78	0.26	0.10	1.04	0.14	0.60	0.27	0.04
d, Delay for Lane Group [s/veh]	59.72	44.75	498.04	153.49	52.02	39.71	7.90	57.76	22.79	24.67	12.95	11.26
Lane Group LOS	E	D	F	F	D	D	A	F	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	2.70	1.23	38.15	8.17	3.06	1.57	0.33	20.06	1.29	2.90	3.03	0.37
50th-Percentile Queue Length [ft/ln]	67.56	30.83	953.63	204.18	76.43	39.21	8.30	501.39	32.19	72.47	75.83	9.36
95th-Percentile Queue Length [veh/ln]	4.86	2.22	64.90	13.41	5.50	2.82	0.60	28.21	2.32	5.22	5.46	0.67
95th-Percentile Queue Length [ft/ln]	121.61	55.49	1622.38	335.21	137.57	70.58	14.94	705.26	57.94	130.44	136.49	16.84

Movement, Approach, & Intersection Results

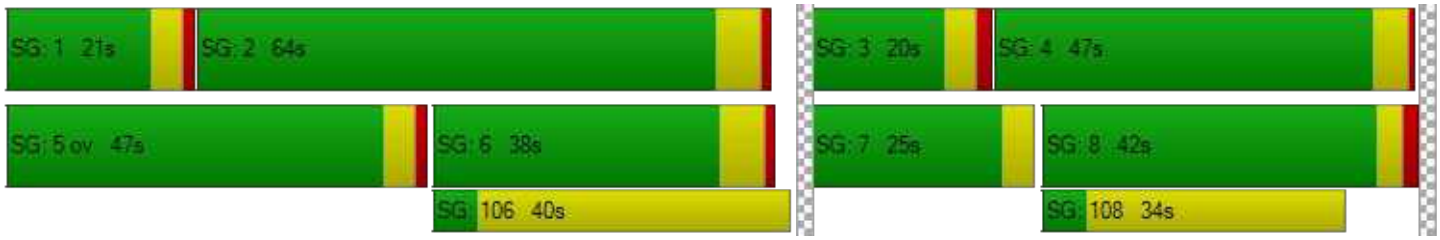
d_M, Delay for Movement [s/veh]	59.72	44.75	498.04	153.49	52.02	39.71	7.90	57.76	22.79	24.67	12.95	11.26
Movement LOS	E	D	F	F	D	D	A	F	C	C	B	B
d_A, Approach Delay [s/veh]	448.33			88.10			54.68			17.96		
Approach LOS	F			F			D			B		
d_I, Intersection Delay [s/veh]	168.12											
Intersection LOS	F											
Intersection V/C	1.249											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	68.76	0.00	68.76	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.468	0.000	3.238	0.000
Crosswalk LOS	C	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	484	413	748
d_b, Bicycle Delay [s]	40.77	44.60	48.80	30.35
l_b,int, Bicycle LOS Score for Intersection	2.959	1.980	2.745	2.295
Bicycle LOS	C	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 110: Marsh Road/101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.771

Intersection Setup

Name	Marsh Road		Marsh Road		101 NB Ramps	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road		101 NB Ramps	
Base Volume Input [veh/h]	1842	0	0	824	570	420
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.40	0.00	0.00	3.00	5.10	12.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1842	0	0	824	570	420
Peak Hour Factor	0.9900	1.0000	1.0000	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	465	0	0	208	144	106
Total Analysis Volume [veh/h]	1861	0	0	832	576	424
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		1	
v_ci, Inbound Pedestrian Volume crossing mi	1		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		7		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	1
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	0
Maximum Green [s]	32	0	0	32	26	0
Amber [s]	4.1	0.0	0.0	4.1	3.2	0.0
All red [s]	0.5	0.0	0.0	0.5	1.0	0.0
Split [s]	50	0	0	50	30	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	0	0	5	0
Pedestrian Clearance [s]	12	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	58	58	17	17
g / C, Green / Cycle	0.73	0.73	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.53	0.24	0.17	0.16
s, saturation flow rate [veh/h]	3492	3532	3373	2585
c, Capacity [veh/h]	2549	2578	721	552
d1, Uniform Delay [s]	6.23	3.81	29.75	29.51
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.88	0.33	0.79	0.85
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.73	0.32	0.80	0.77
d, Delay for Lane Group [s/veh]	8.11	4.14	30.54	30.36
Lane Group LOS	A	A	C	C
Critical Lane Group	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.87	1.81	5.14	3.76
50th-Percentile Queue Length [ft/ln]	171.66	45.31	128.43	93.96
95th-Percentile Queue Length [veh/ln]	11.16	3.26	8.85	6.77
95th-Percentile Queue Length [ft/ln]	279.09	81.57	221.35	169.14

Movement, Approach, & Intersection Results

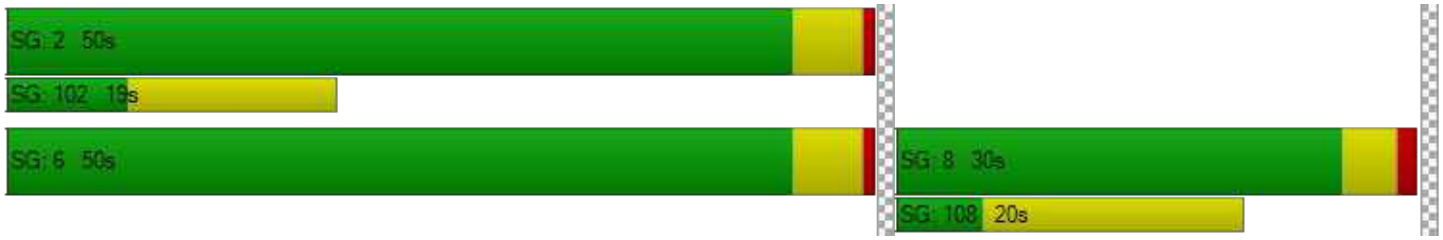
d_M, Delay for Movement [s/veh]	8.11	0.00	0.00	4.14	30.54	30.36
Movement LOS	A			A	C	C
d_A, Approach Delay [s/veh]	8.11		4.14		30.46	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	13.27					
Intersection LOS	B					
Intersection V/C	0.771					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.887	2.368
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.48	7.51	18.36
l_b,int, Bicycle LOS Score for Intersection	3.095	2.246	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	31.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	179	40	1834	12	31	5	9	505	208	1822	119	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.20	0.00	2.90	0.00	0.00	0.00	0.00	0.40	2.20	2.90	14.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	179	40	1834	12	31	5	9	505	208	1822	119	14
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	10	478	3	8	1	2	132	54	474	31	4
Total Analysis Volume [veh/h]	186	42	1910	13	32	5	9	526	217	1898	124	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			4			4			0	
v_di, Inbound Pedestrian Volume crossing m		0			4			4			0	
v_co, Outbound Pedestrian Volume crossing		0			13			0			13	
v_ci, Inbound Pedestrian Volume crossing mi		0			13			0			13	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			13			8			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	1	2	8
Auxiliary Signal Groups			2,3									
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	10	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	10	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	58	11	11	25	32	25	32	59	32	59	58	0
Vehicle Extension [s]	4.5	2.0	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	4.5	0.0
Walk [s]	5	0	0	10	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	10	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.1	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	38	128	10	10	26	26	26	76	76
g / C, Green / Cycle	0.24	0.80	0.06	0.06	0.16	0.16	0.16	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.12	0.46	0.02	0.01	0.15	0.15	0.14	0.37	0.08
s, saturation flow rate [veh/h]	1826	4190	1707	1588	1891	1724	1551	5150	1644
c, Capacity [veh/h]	436	3257	137	97	311	284	255	2450	782
d1, Uniform Delay [s]	52.96	7.29	71.59	71.56	65.54	65.54	64.69	34.82	24.02
k, delay calibration	0.10	0.50	0.04	0.04	0.04	0.04	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.88	0.78	0.27	0.45	3.84	4.18	3.08	2.47	0.50
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	0.59	0.20	0.23	0.90	0.90	0.85	0.77	0.18
d, Delay for Lane Group [s/veh]	53.85	8.07	71.86	72.00	69.38	69.72	67.77	37.29	24.52
Lane Group LOS	D	A	E	E	E	E	E	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	8.18	8.44	1.10	0.89	11.58	10.58	8.83	20.99	3.20
50th-Percentile Queue Length [ft/ln]	204.39	211.03	27.52	22.30	289.56	264.57	220.67	524.82	80.12
95th-Percentile Queue Length [veh/ln]	12.86	13.21	1.98	1.61	17.16	15.92	13.70	28.51	5.77
95th-Percentile Queue Length [ft/ln]	321.62	330.15	49.54	40.15	429.10	397.95	342.48	712.67	144.22

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	53.85	53.85	8.07	71.86	71.94	72.00	69.38	69.54	67.77	37.29	24.52	24.52
Movement LOS	D	D	A	E	E	E	E	E	E	D	C	C
d_A, Approach Delay [s/veh]	12.95			71.92			69.03			36.42		
Approach LOS	B			E			E			D		
d_I, Intersection Delay [s/veh]	31.62											
Intersection LOS	C											
Intersection V/C	0.839											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.006	2.420	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	80	349	693	654
d_b, Bicycle Delay [s]	73.73	54.89	34.33	36.27
l_b,int, Bicycle LOS Score for Intersection	5.087	1.601	2.180	4.921
Bicycle LOS	F	A	B	E

Sequence

Ring 1	-	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	16.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.862

Intersection Setup

Name	Chilco Street		Bayfront Expy			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy			
Base Volume Input [veh/h]	234	245	2182	206	129	1011
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.50	3.10	3.10	1.30	21.10	4.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	234	245	2182	206	129	1011
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	66	587	55	35	272
Total Analysis Volume [veh/h]	252	263	2346	222	139	1087
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	8		1		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	4	3	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	5	10
Maximum Green [s]	20	10	50	0	10	50
Amber [s]	3.2	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	8.0	1.0	0.0	0.0	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	1.7	9.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	3.70	3.70	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	4.20	4.20	0.00	4.20
g_i, Effective Green Time [s]	15	15	37	37	45	45
g / C, Green / Cycle	0.21	0.21	0.53	0.53	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.52	0.16	0.48	0.24
s, saturation flow rate [veh/h]	3025	1389	4544	1421	288	4481
c, Capacity [veh/h]	634	291	2414	755	270	2909
d1, Uniform Delay [s]	23.88	26.88	15.92	9.11	15.68	5.69
k, delay calibration	0.04	0.14	0.04	0.04	0.16	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	12.78	1.81	0.08	2.18	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.90	0.97	0.29	0.52	0.37
d, Delay for Lane Group [s/veh]	24.03	39.66	17.74	9.19	17.86	5.72
Lane Group LOS	C	D	B	A	B	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.73	5.06	10.48	1.65	0.77	1.89
50th-Percentile Queue Length [ft/ln]	43.22	126.59	262.03	41.32	19.32	47.27
95th-Percentile Queue Length [veh/ln]	3.11	8.75	15.79	2.98	1.39	3.40
95th-Percentile Queue Length [ft/ln]	77.80	218.85	394.77	74.38	34.77	85.09

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.03	39.66	17.74	9.19	17.86	5.72
Movement LOS	C	D	B	A	B	A
d_A, Approach Delay [s/veh]	32.01		17.00		7.10	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	15.98					
Intersection LOS	B					
Intersection V/C	0.862					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.581	3.138	3.128
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.33	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.972	2.234
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	13.1
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.779

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	605	59	2220	125	38	1242
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.80	0.00	2.80	0.90	0.00	4.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	605	59	2220	125	38	1242
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	154	15	566	32	10	317
Total Analysis Volume [veh/h]	617	60	2265	128	39	1267
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	10
Pedestrian Clearance [s]	26	0	21	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	53	53	53	53	53	53
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	11	11	25	25	2	31
g / C, Green / Cycle	0.21	0.21	0.47	0.47	0.04	0.59
(v / s)_i Volume / Saturation Flow Rate	0.18	0.04	0.45	0.08	0.02	0.25
s, saturation flow rate [veh/h]	3464	1615	5061	1604	1810	4975
c, Capacity [veh/h]	728	339	2377	753	75	2924
d1, Uniform Delay [s]	20.28	17.31	13.60	8.16	25.08	6.09
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.09	0.09	1.16	0.04	2.07	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.18	0.95	0.17	0.52	0.43
d, Delay for Lane Group [s/veh]	21.37	17.40	14.76	8.20	27.15	6.13
Lane Group LOS	C	B	B	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.50	0.57	6.12	0.61	0.47	1.45
50th-Percentile Queue Length [ft/ln]	87.60	14.30	153.06	15.13	11.67	36.26
95th-Percentile Queue Length [veh/ln]	6.31	1.03	10.18	1.09	0.84	2.61
95th-Percentile Queue Length [ft/ln]	157.68	25.74	254.51	27.24	21.00	65.27

Movement, Approach, & Intersection Results

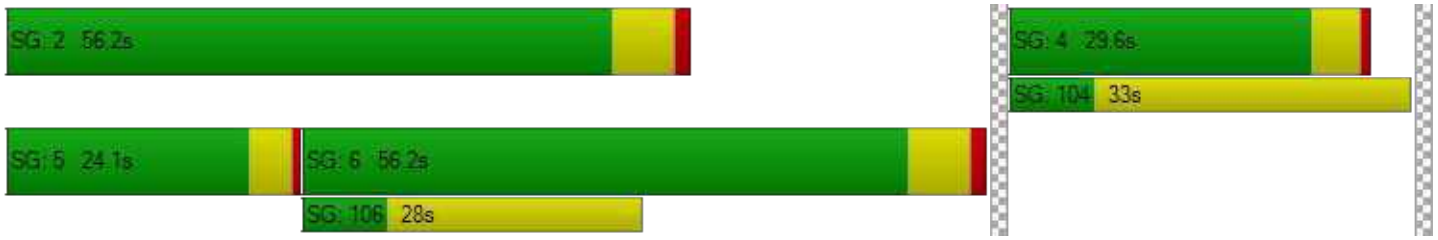
d_M, Delay for Movement [s/veh]	21.37	17.40	14.76	8.20	27.15	6.13
Movement LOS	C	B	B	A	C	A
d_A, Approach Delay [s/veh]	21.02		14.41		6.75	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	13.15					
Intersection LOS	B					
Intersection V/C	0.779					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.302	3.507	3.352
Crosswalk LOS	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.876	2.278
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 19 Existing+ 3723 Haven AM (2019 vols)
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Right	0.841	19.0	B
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	0.727	11.5	B
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Thru	0.967	106.1	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NWB Right	0.733	15.8	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.837	55.0	D
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.809	12.7	B
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.623	8.4	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	19.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.841

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	893	1464	217	1130	436
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.30	3.60	2.15	5.10	3.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	893	1464	217	1130	436
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	228	373	54	288	111
Total Analysis Volume [veh/h]	0	911	1494	217	1153	445
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	3		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	0
Maximum Green [s]	0	32	32	0	32	0
Amber [s]	0.0	4.1	4.1	0.0	3.1	0.0
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	10	0	5	0
Pedestrian Clearance [s]	0	16	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	45	43	30	30
g / C, Green / Cycle	0.57	0.54	0.38	0.38
(v / s)_i Volume / Saturation Flow Rate	0.23	0.43	0.34	0.28
s, saturation flow rate [veh/h]	4000	3515	3373	1572
c, Capacity [veh/h]	2275	1907	1264	589
d1, Uniform Delay [s]	9.62	14.54	23.72	21.78
k, delay calibration	0.50	0.50	0.04	0.23
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.53	3.30	1.15	4.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.78	0.91	0.76
d, Delay for Lane Group [s/veh]	10.14	17.84	24.87	25.96
Lane Group LOS	B	B	C	C
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.98	10.04	9.83	7.51
50th-Percentile Queue Length [ft/ln]	99.60	251.04	245.71	187.68
95th-Percentile Queue Length [veh/ln]	7.17	15.24	14.97	12.00
95th-Percentile Queue Length [ft/ln]	179.28	380.97	374.24	300.02

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	10.14	17.84	0.00	24.87	25.96
Movement LOS		B	B		C	C
d_A, Approach Delay [s/veh]	10.14		17.84		25.17	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	19.02					
Intersection LOS	B					
Intersection V/C	0.841					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	14.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	27.23
I_p,int, Pedestrian LOS Score for Intersection	2.937	0.000	2.510
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.82	9.80	15.07
I_b,int, Bicycle LOS Score for Intersection	2.311	2.792	1.560
Bicycle LOS	B	C	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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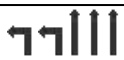
Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	11.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.727

Intersection Setup

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	830	68	1148	2696	206	416
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.40	3.50	1.60	3.10	2.20	3.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	830	68	1148	2696	206	416
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	214	18	296	695	53	107
Total Analysis Volume [veh/h]	856	70	1184	2779	212	429
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	6		0		7	
v_ci, Inbound Pedestrian Volume crossing mi	7		0		6	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	35	110	75	110	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	3.9	1.5	3.9	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	63	63	63	63	63	63
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	5.90	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	3.90	2.00	0.00
g_i, Effective Green Time [s]	18	18	25	46	7	36
g / C, Green / Cycle	0.29	0.29	0.39	0.74	0.11	0.56
(v / s)_i Volume / Saturation Flow Rate	0.17	0.05	0.34	0.55	0.06	0.10
s, saturation flow rate [veh/h]	4955	1549	3470	5049	3453	4166
c, Capacity [veh/h]	1415	442	1365	3716	371	2350
d1, Uniform Delay [s]	19.49	16.87	17.65	4.90	26.82	6.69
k, delay calibration	0.13	0.13	0.04	0.13	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.51	0.20	0.68	0.37	0.52	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.16	0.87	0.75	0.57	0.18
d, Delay for Lane Group [s/veh]	19.99	17.07	18.33	5.27	27.34	6.71
Lane Group LOS	B	B	B	A	C	A
Critical Lane Group	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.00	0.65	6.07	1.38	1.44	0.73
50th-Percentile Queue Length [ft/ln]	74.96	16.18	151.83	34.61	36.06	18.14
95th-Percentile Queue Length [veh/ln]	5.40	1.17	10.11	2.49	2.60	1.31
95th-Percentile Queue Length [ft/ln]	134.92	29.13	252.87	62.29	64.90	32.65

Movement, Approach, & Intersection Results

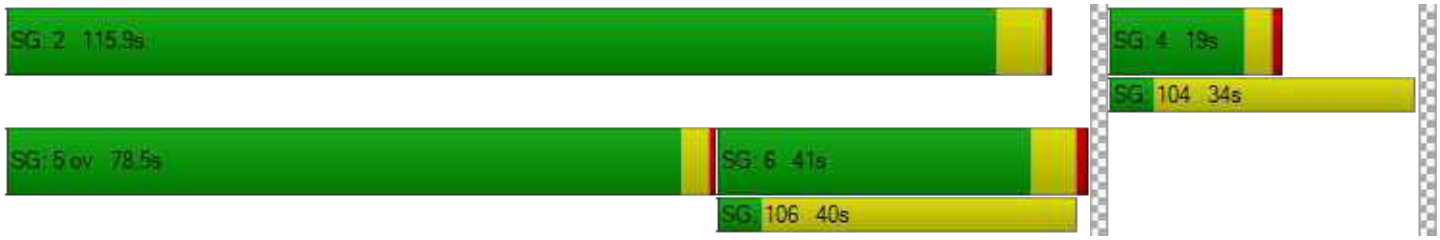
d_M, Delay for Movement [s/veh]	19.99	17.07	18.33	5.27	27.34	6.71
Movement LOS	B	B	B	A	C	A
d_A, Approach Delay [s/veh]	19.77		9.17		13.53	
Approach LOS	B		A		B	
d_I, Intersection Delay [s/veh]	11.45					
Intersection LOS	B					
Intersection V/C	0.727					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
l_p,int, Pedestrian LOS Score for Intersection	3.562	0.000	2.870
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1458	583	625
d_b, Bicycle Delay [s]	1.76	12.05	11.34
l_b,int, Bicycle LOS Score for Intersection	2.069	3.739	1.670
Bicycle LOS	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	106.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.967

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	2	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Base Volume Input [veh/h]	196	425	277	35	67	73	342	412	173	1021	2219	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.90	4.20	10.20	37.50	30.50	40.50	4.60	6.20	12.30	6.70	3.80	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	16	0	0	106	0	0	0
Total Hourly Volume [veh/h]	196	425	277	35	67	57	342	412	67	1021	2219	72
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	50	108	71	9	17	15	87	105	17	260	566	18
Total Analysis Volume [veh/h]	200	434	283	36	68	58	349	420	68	1042	2264	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			2			3			0		
v_di, Inbound Pedestrian Volume crossing m	0			3			2			0		
v_co, Outbound Pedestrian Volume crossing	4			0			3			0		
v_ci, Inbound Pedestrian Volume crossing mi	3			0			4			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	8	8	15	15	8	6	10	10	6	10	10
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.6	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	15	25	25	20	20	25	25	55	70	40	70	55
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	5	7	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	10	0	29	10	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	3.1	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		No	Yes		No	Yes	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	108	108	108	108	108	108	108	108	108	108	108	108
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	5.10	5.10	4.60	6.00	6.00	4.60	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	3.10	3.10	2.60	4.00	4.00	2.60	4.00	4.00
g_i, Effective Green Time [s]	15	15	44	9	10	10	14	39	39	25	50	50
g / C, Green / Cycle	0.14	0.14	0.41	0.08	0.09	0.09	0.13	0.36	0.36	0.23	0.46	0.46
(v / s)_i Volume / Saturation Flow Rate	0.12	0.28	0.16	0.03	0.06	0.05	0.10	0.09	0.05	0.31	0.45	0.05
s, saturation flow rate [veh/h]	1654	1565	1764	1273	1228	1080	3386	4922	1458	3328	5020	1615
c, Capacity [veh/h]	231	218	726	106	111	97	433	1769	524	771	2325	748
d1, Uniform Delay [s]	45.43	46.46	22.25	46.68	47.30	47.17	45.77	24.21	23.23	41.48	28.34	16.30
k, delay calibration	0.15	0.39	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.20	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	12.35	457.85	0.34	1.87	5.39	5.68	3.57	0.07	0.11	161.90	4.50	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	1.99	0.39	0.34	0.61	0.59	0.81	0.24	0.13	1.35	0.97	0.10
d, Delay for Lane Group [s/veh]	57.77	504.31	22.59	48.55	52.69	52.85	49.34	24.28	23.34	203.38	32.84	16.35
Lane Group LOS	E	F	C	D	D	D	D	C	C	F	C	B
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	5.90	16.72	1.63	0.98	0.98	1.67	4.74	2.51	1.18	27.42	19.10	1.02
50th-Percentile Queue Length [ft/ln]	147.50	417.95	40.70	24.56	24.40	41.83	118.52	62.72	29.50	685.60	477.44	25.50
95th-Percentile Queue Length [veh/ln]	9.88	28.50	2.93	1.77	1.76	3.01	8.31	4.52	2.12	41.79	26.26	1.84
95th-Percentile Queue Length [ft/ln]	247.09	712.57	73.26	44.21	43.93	75.30	207.78	112.90	53.10	1044.86	656.62	45.90

Movement, Approach, & Intersection Results

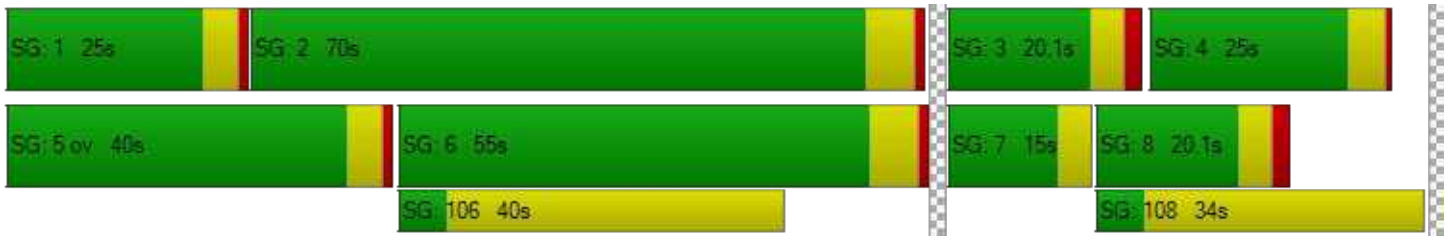
d_M, Delay for Movement [s/veh]	57.77	504.31	22.59	48.55	52.69	52.85	49.34	24.28	23.34	203.38	32.84	16.35
Movement LOS	E	F	C	D	D	D	D	C	C	F	C	B
d_A, Approach Delay [s/veh]	258.25			51.83			34.65			85.08		
Approach LOS	F			D			C			F		
d_I, Intersection Delay [s/veh]	106.08											
Intersection LOS	F											
Intersection V/C	0.967											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.29	0.00	61.29	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.114	0.000	3.333	0.000
Crosswalk LOS	C	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	294	214	700	914
d_b, Bicycle Delay [s]	50.92	55.80	29.58	20.63
l_b,int, Bicycle LOS Score for Intersection	2.316	1.706	2.078	3.418
Bicycle LOS	B	A	B	C

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 110: Marsh Road and US 101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	15.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.733

Intersection Setup

Name	Marsh Road		Marsh Road			
Approach	Northbound		Southbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road			
Base Volume Input [veh/h]	1424	0	0	866	771	663
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.50	0.00	0.00	5.20	1.90	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1424	0	0	866	771	663
Peak Hour Factor	0.9700	1.0000	1.0000	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	367	0	0	223	199	171
Total Analysis Volume [veh/h]	1468	0	0	893	795	684
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	1		0		2	
v_ci, Inbound Pedestrian Volume crossing mi	2		0		1	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	1
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	0
Maximum Green [s]	32	0	0	32	26	0
Amber [s]	4.1	0.0	0.0	4.1	3.2	0.0
All red [s]	0.5	0.0	0.0	0.5	1.0	0.0
Split [s]	50	0	0	50	30	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	0	10	5	0
Pedestrian Clearance [s]	12	0	0	10	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	53	53	23	23
g / C, Green / Cycle	0.66	0.66	0.29	0.29
(v / s)_i Volume / Saturation Flow Rate	0.42	0.26	0.23	0.25
s, saturation flow rate [veh/h]	3489	3469	3461	2761
c, Capacity [veh/h]	2295	2282	989	789
d1, Uniform Delay [s]	8.07	6.29	26.42	27.05
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.38	0.51	0.59	1.16
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.64	0.39	0.80	0.87
d, Delay for Lane Group [s/veh]	9.45	6.80	27.01	28.22
Lane Group LOS	A	A	C	C
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	6.42	3.00	6.77	6.02
50th-Percentile Queue Length [ft/ln]	160.60	75.00	169.13	150.40
95th-Percentile Queue Length [veh/ln]	10.58	5.40	11.03	10.04
95th-Percentile Queue Length [ft/ln]	264.52	135.00	275.77	250.96

Movement, Approach, & Intersection Results

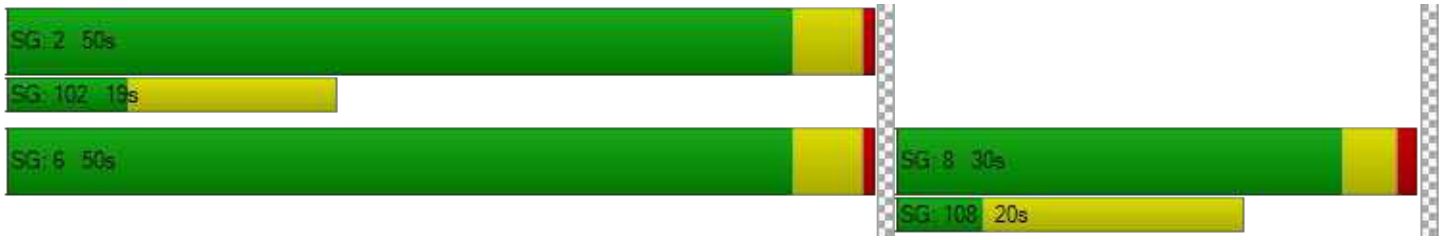
d_M, Delay for Movement [s/veh]	9.45	0.00	0.00	6.80	27.01	28.22
Movement LOS	A			A	C	C
d_A, Approach Delay [s/veh]	9.45		6.80		27.57	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	15.81					
Intersection LOS	B					
Intersection V/C	0.733					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.869	2.485
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.49	7.49	18.36
l_b,int, Bicycle LOS Score for Intersection	2.771	2.296	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	55.0
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.837

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	176	27	1502	10	30	7	8	204	312	1931	371	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	4.60	0.00	0.00	16.70	0.00	18.20	9.10	4.70	4.90	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	176	27	1502	10	30	7	8	204	312	1931	371	34
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	46	7	391	3	8	2	2	53	81	503	97	9
Total Analysis Volume [veh/h]	183	28	1565	10	31	7	8	213	325	2011	386	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			1			1			0	
v_di, Inbound Pedestrian Volume crossing m		0			1			1			0	
v_co, Outbound Pedestrian Volume crossing		0			22			0			22	
v_ci, Inbound Pedestrian Volume crossing mi		0			22			0			22	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		1			13			25			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	7	4	6	4	1	4	1	2	8
Auxiliary Signal Groups		3	2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	0	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	0	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	67	21	21	0	32	25	32	40	32	40	67	0
Vehicle Extension [s]	4.5	0.0	0.0	0.0	0.0	3.0	0.0	3.0	0.0	3.0	4.5	0.0
Walk [s]	5	0	0	0	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		Yes			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	20	87	29	29	36	36	36	65	65
g / C, Green / Cycle	0.13	0.54	0.18	0.18	0.23	0.23	0.23	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.12	0.38	0.01	0.01	0.07	0.07	0.23	0.40	0.24
s, saturation flow rate [veh/h]	1821	4112	1863	1610	1621	1480	1444	5075	1786
c, Capacity [veh/h]	230	2140	339	293	367	336	327	2056	724
d1, Uniform Delay [s]	69.07	29.57	54.28	54.32	51.51	51.51	61.09	46.88	37.03
k, delay calibration	0.50	0.50	0.04	0.04	0.11	0.11	0.46	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	41.24	2.25	0.03	0.04	0.48	0.53	45.89	15.28	3.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.92	0.73	0.07	0.08	0.31	0.31	0.99	0.98	0.58
d, Delay for Lane Group [s/veh]	110.31	31.81	54.31	54.36	52.00	52.04	106.98	62.16	40.43
Lane Group LOS	F	C	D	D	D	D	F	E	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	11.22	15.91	0.86	0.78	3.97	3.62	17.24	29.04	13.65
50th-Percentile Queue Length [ft/ln]	280.47	397.73	21.43	19.47	99.16	90.59	430.94	725.89	341.13
95th-Percentile Queue Length [veh/ln]	16.71	22.45	1.54	1.40	7.14	6.52	24.05	37.87	19.70
95th-Percentile Queue Length [ft/ln]	417.80	561.26	38.58	35.04	178.50	163.07	601.17	946.82	492.58

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	110.31	110.31	31.81	54.31	54.34	54.36	52.00	52.02	106.98	62.16	40.43	40.43
Movement LOS	F	F	C	D	D	D	D	D	F	E	D	D
d_A, Approach Delay [s/veh]	41.14			54.33			84.74			58.40		
Approach LOS	D			D			F			E		
d_I, Intersection Delay [s/veh]	54.97											
Intersection LOS	D											
Intersection V/C	0.837											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.007	2.433	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	205	349	455	766
d_b, Bicycle Delay [s]	64.47	54.89	48.34	30.46
l_b,int, Bicycle LOS Score for Intersection	4.490	1.599	2.010	5.572
Bicycle LOS	E	A	B	F

Sequence

Ring 1	-	2	1	4	3	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Generated with PTV VISTRO

Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	12.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.809

Intersection Setup

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	30.00		50.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	104	221	1178	495	287	1967
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.40	23.10	5.10	5.30	6.30	3.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	221	1178	495	287	1967
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	58	310	130	76	518
Total Analysis Volume [veh/h]	109	233	1240	521	302	2071
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	4	3	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	5	10
Maximum Green [s]	20	10	50	0	25	50
Amber [s]	3.2	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	8.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	1.7	9.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	57	57	57	57	57	57
L, Total Lost Time per Cycle [s]	3.70	3.70	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	4.20	4.20	0.00	4.20
g_i, Effective Green Time [s]	13	13	23	23	34	34
g / C, Green / Cycle	0.22	0.22	0.40	0.40	0.60	0.60
(v / s)_i Volume / Saturation Flow Rate	0.04	0.20	0.28	0.37	0.42	0.46
s, saturation flow rate [veh/h]	3078	1188	4470	1393	714	4518
c, Capacity [veh/h]	691	267	1777	554	521	2716
d1, Uniform Delay [s]	17.70	21.24	14.27	16.48	9.44	8.35
k, delay calibration	0.04	0.05	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.04	4.49	0.19	3.66	0.38	0.17
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.16	0.87	0.70	0.94	0.58	0.76
d, Delay for Lane Group [s/veh]	17.74	25.73	14.46	20.13	9.82	8.52
Lane Group LOS	B	C	B	C	A	A
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.53	3.04	3.29	5.31	1.08	3.51
50th-Percentile Queue Length [ft/ln]	13.27	75.93	82.28	132.68	26.89	87.73
95th-Percentile Queue Length [veh/ln]	0.96	5.47	5.92	9.09	1.94	6.32
95th-Percentile Queue Length [ft/ln]	23.89	136.67	148.11	227.13	48.41	157.92

Movement, Approach, & Intersection Results

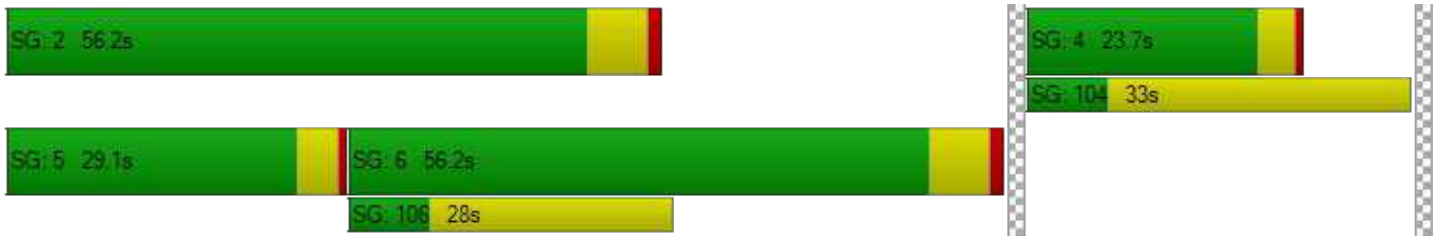
d_M, Delay for Movement [s/veh]	17.74	25.73	14.46	20.13	9.82	8.52
Movement LOS	B	C	B	C	A	A
d_A, Approach Delay [s/veh]	23.19		16.14		8.68	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	12.72					
Intersection LOS	B					
Intersection V/C	0.809					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.712	3.525	3.397
Crosswalk LOS	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.22	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.528	2.865
Bicycle LOS	A	B	C

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	8.4
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.623

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	116	47	1517	118	101	2056
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	12.30	8.30	5.30	7.10	0.00	3.70
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	116	47	1517	118	101	2056
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	30	12	391	30	26	530
Total Analysis Volume [veh/h]	120	48	1564	122	104	2120
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	10
Pedestrian Clearance [s]	26	0	21	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	34	34	34	34	34	34
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	4	4	12	12	3	20
g / C, Green / Cycle	0.12	0.12	0.36	0.36	0.09	0.57
(v / s)_i Volume / Saturation Flow Rate	0.04	0.03	0.32	0.08	0.06	0.42
s, saturation flow rate [veh/h]	3173	1509	4959	1492	1810	5024
c, Capacity [veh/h]	372	177	1775	534	168	2862
d1, Uniform Delay [s]	13.97	13.88	10.38	7.72	15.06	5.52
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.18	0.30	0.59	0.08	1.39	0.14
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.32	0.27	0.88	0.23	0.62	0.74
d, Delay for Lane Group [s/veh]	14.15	14.18	10.97	7.80	16.44	5.67
Lane Group LOS	B	B	B	A	B	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	0.37	0.30	2.06	0.35	0.63	0.71
50th-Percentile Queue Length [ft/ln]	9.24	7.53	51.41	8.82	15.68	17.80
95th-Percentile Queue Length [veh/ln]	0.67	0.54	3.70	0.64	1.13	1.28
95th-Percentile Queue Length [ft/ln]	16.63	13.55	92.55	15.88	28.23	32.04

Movement, Approach, & Intersection Results

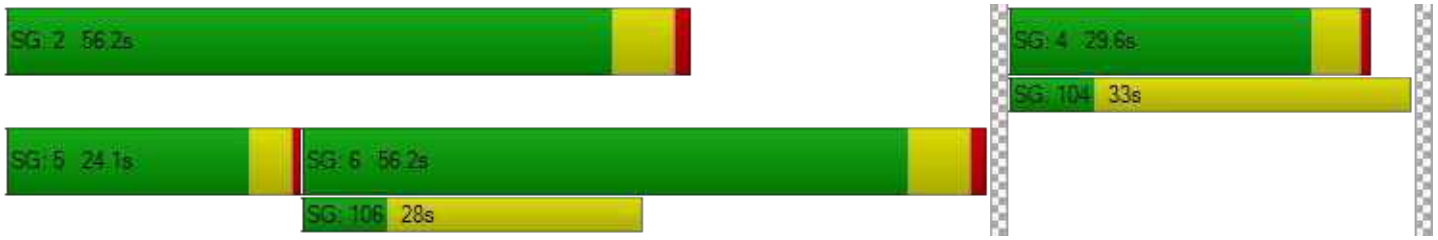
d_M, Delay for Movement [s/veh]	14.15	14.18	10.97	7.80	16.44	5.67
Movement LOS	B	B	B	A	B	A
d_A, Approach Delay [s/veh]	14.16		10.74		6.17	
Approach LOS	B		B		A	
d_I, Intersection Delay [s/veh]	8.39					
Intersection LOS	A					
Intersection V/C	0.623					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.211	3.443	3.395
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.487	2.783
Bicycle LOS	A	B	C

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 19 Existing + 3723 Haven PM (2019 vols)
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.705	17.0	B
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.043	94.2	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Right	1.250	168.0	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Right	0.776	13.4	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	SB Right	0.842	32.1	C
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.862	16.0	B
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.780	13.2	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	17.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.705

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	963	1003	279	1187	296
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.60	2.70	2.15	3.60	0.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	963	1003	279	1187	296
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	246	256	70	303	76
Total Analysis Volume [veh/h]	0	983	1023	279	1211	302
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		4		5	
v_ci, Inbound Pedestrian Volume crossing mi	0		5		4	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	6		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	0
Maximum Green [s]	0	32	32	0	32	0
Amber [s]	0.0	4.1	4.1	0.0	3.1	0.0
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	7	0	5	0
Pedestrian Clearance [s]	0	0	16	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	44	42	31	31
g / C, Green / Cycle	0.56	0.53	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.25	0.29	0.35	0.19
s, saturation flow rate [veh/h]	4000	3540	3414	1609
c, Capacity [veh/h]	2224	1875	1324	624
d1, Uniform Delay [s]	10.44	12.43	23.20	18.43
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.64	1.15	1.13	0.22
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.44	0.55	0.91	0.48
d, Delay for Lane Group [s/veh]	11.08	13.57	24.34	18.65
Lane Group LOS	B	B	C	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	4.60	5.58	10.25	4.02
50th-Percentile Queue Length [ft/ln]	115.04	139.49	256.29	100.42
95th-Percentile Queue Length [veh/ln]	8.12	9.45	15.50	7.23
95th-Percentile Queue Length [ft/ln]	202.99	236.34	387.57	180.76

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	11.08	13.57	0.00	24.34	18.65
Movement LOS		B	B		C	B
d_A, Approach Delay [s/veh]	11.08		13.57		23.20	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	17.02					
Intersection LOS	B					
Intersection V/C	0.705					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.783	0.000	2.425
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.83	9.81	15.07
I_b,int, Bicycle LOS Score for Intersection	2.371	2.404	1.560
Bicycle LOS	B	B	A

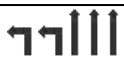
Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	94.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.043

Intersection Setup

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	3308	22	359	971	70	1803
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	16.10	4.90	3.80	9.00	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3308	22	359	971	70	1803
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	844	6	92	248	18	460
Total Analysis Volume [veh/h]	3376	22	366	991	71	1840
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	7		0		8	
v_ci, Inbound Pedestrian Volume crossing mi	8		0		7	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	90	140	50	140	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	5.8	1.5	5.8	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	152	152	152	152	152	152
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	7.80	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	5.80	2.00	0.00
g_i, Effective Green Time [s]	90	90	34	125	15	53
g / C, Green / Cycle	0.59	0.59	0.22	0.82	0.10	0.35
(v / s)_i Volume / Saturation Flow Rate	0.66	0.02	0.11	0.20	0.02	0.43
s, saturation flow rate [veh/h]	5077	1399	3378	5020	3264	4237
c, Capacity [veh/h]	2999	826	751	4137	321	1470
d1, Uniform Delay [s]	31.18	12.96	51.69	2.94	63.29	49.75
k, delay calibration	0.13	0.13	0.04	0.13	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	57.86	0.02	0.18	0.04	0.13	113.82
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.13	0.03	0.49	0.24	0.22	1.25
d, Delay for Lane Group [s/veh]	89.03	12.98	51.87	2.97	63.42	163.57
Lane Group LOS	F	B	D	A	E	F
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	48.52	0.30	5.95	1.42	1.28	33.89
50th-Percentile Queue Length [ft/ln]	1213.07	7.51	148.74	35.57	31.92	847.26
95th-Percentile Queue Length [veh/ln]	66.07	0.54	9.95	2.56	2.30	49.83
95th-Percentile Queue Length [ft/ln]	1651.65	13.52	248.75	64.03	57.46	1245.64

Movement, Approach, & Intersection Results

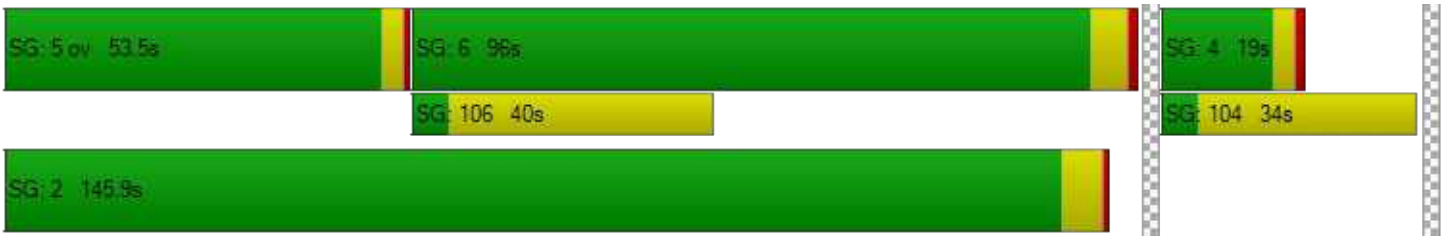
d_M, Delay for Movement [s/veh]	89.03	12.98	51.87	2.97	63.42	163.57
Movement LOS	F	B	D	A	E	F
d_A, Approach Delay [s/veh]	88.54		16.16		159.85	
Approach LOS	F		B		F	
d_I, Intersection Delay [s/veh]	94.25					
Intersection LOS	F					
Intersection V/C	1.043					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
I_p,int, Pedestrian LOS Score for Intersection	3.701	0.000	2.936
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1750	1833	625
d_b, Bicycle Delay [s]	0.38	0.17	11.34
I_b,int, Bicycle LOS Score for Intersection	3.429	2.306	1.670
Bicycle LOS	C	B	A

Sequence

Ring 1	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	168.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.250

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Base Volume Input [veh/h]	90	95	1462	159	204	134	77	1901	120	559	707	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.20	10.90	3.30	4.30	1.00	1.70	37.10	2.50	12.00	6.40	5.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	70	0	0	45	0	0	1
Total Hourly Volume [veh/h]	90	95	1462	159	204	64	77	1901	75	559	707	33
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	23	24	377	41	53	16	20	490	19	144	182	9
Total Analysis Volume [veh/h]	93	98	1507	164	210	66	79	1960	77	576	729	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			11			11			0		
v_di, Inbound Pedestrian Volume crossing m	0			11			11			0		
v_co, Outbound Pedestrian Volume crossing	8			0			8			0		
v_ci, Inbound Pedestrian Volume crossing mi	8			0			8			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			3			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	155
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	5	5	5	4	5	5	5	4
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.0	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	47	47	20	42	47	21	38	64	47	64	38
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	5	5	0	5	5	0	5	0	0	0	5
Pedestrian Clearance [s]	0	0	0	0	29	0	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	2.5	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		Yes	No		Yes	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	108	108	108	108	108	108	108	108	108	108	108	108
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	4.50	4.50	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	2.50	2.50	0.00	4.00	4.00	0.00	4.00	4.00
g_i, Effective Green Time [s]	7	15	44	9	18	18	69	40	40	69	60	60
g / C, Green / Cycle	0.07	0.14	0.40	0.08	0.17	0.17	0.63	0.37	0.37	0.63	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.05	0.07	0.81	0.09	0.13	0.04	0.07	0.39	0.05	0.37	0.15	0.02
s, saturation flow rate [veh/h]	1749	1479	1853	1748	1606	1506	1169	5073	1462	1553	4959	1615
c, Capacity [veh/h]	121	205	744	145	266	250	772	1877	541	958	2723	887
d1, Uniform Delay [s]	49.61	43.03	32.19	49.68	43.37	39.32	7.85	34.14	22.71	24.06	12.91	11.25
k, delay calibration	0.11	0.11	0.50	0.37	0.20	0.11	0.11	0.11	0.11	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.93	1.72	465.85	103.81	9.15	0.56	0.06	24.03	0.12	0.61	0.05	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.48	2.02	1.13	0.79	0.26	0.10	1.04	0.14	0.60	0.27	0.04
d, Delay for Lane Group [s/veh]	59.54	44.75	498.04	153.49	52.51	39.88	7.91	58.17	22.83	24.67	12.97	11.27
Lane Group LOS	E	D	F	F	D	D	A	F	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	2.76	1.23	38.15	8.17	3.07	1.60	0.34	20.13	1.32	2.90	3.05	0.37
50th-Percentile Queue Length [ft/ln]	68.92	30.83	953.63	204.18	76.81	39.93	8.41	503.18	33.10	72.47	76.23	9.36
95th-Percentile Queue Length [veh/ln]	4.96	2.22	64.90	13.41	5.53	2.87	0.61	28.32	2.38	5.22	5.49	0.67
95th-Percentile Queue Length [ft/ln]	124.06	55.49	1622.38	335.21	138.26	71.87	15.14	707.93	59.57	130.44	137.21	16.85

Generated with PTV VISTRO

Version 2020 (SP 0-3)

Movement, Approach, & Intersection Results

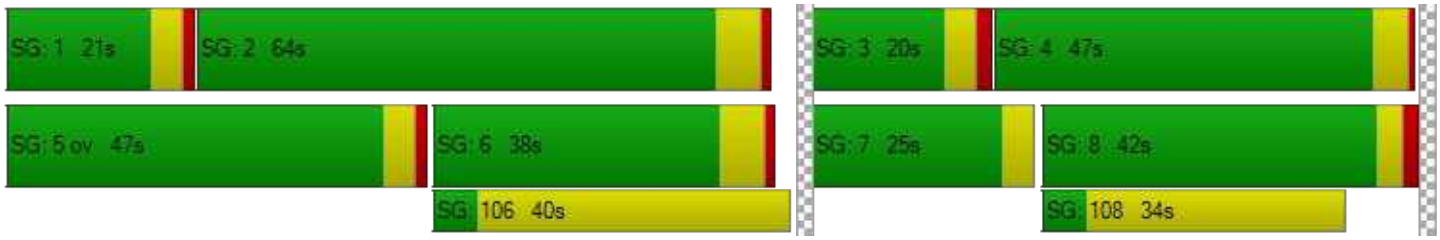
d_M, Delay for Movement [s/veh]	59.54	44.75	498.04	153.49	52.51	39.88	7.91	58.17	22.83	24.67	12.97	11.27
Movement LOS	E	D	F	F	D	D	A	F	C	C	B	B
d_A, Approach Delay [s/veh]	447.86			88.25			55.01			17.96		
Approach LOS	F			F			E			B		
d_I, Intersection Delay [s/veh]	168.02											
Intersection LOS	F											
Intersection V/C	1.250											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	68.76	0.00	68.76	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.469	0.000	3.239	0.000
Crosswalk LOS	C	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	484	413	748
d_b, Bicycle Delay [s]	40.77	44.60	48.80	30.35
l_b,int, Bicycle LOS Score for Intersection	2.960	1.980	2.748	2.297
Bicycle LOS	C	A	B	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 110: Marsh Road/101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.776

Intersection Setup

Name	Marsh Road		Marsh Road		101 NB Ramps	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road		101 NB Ramps	
Base Volume Input [veh/h]	1857	0	0	833	570	429
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.40	0.00	0.00	3.00	5.10	12.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1857	0	0	833	570	429
Peak Hour Factor	0.9900	1.0000	1.0000	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	469	0	0	210	144	108
Total Analysis Volume [veh/h]	1876	0	0	841	576	433
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		1	
v_ci, Inbound Pedestrian Volume crossing mi	1		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		7		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	1
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	0
Maximum Green [s]	32	0	0	32	26	0
Amber [s]	4.1	0.0	0.0	4.1	3.2	0.0
All red [s]	0.5	0.0	0.0	0.5	1.0	0.0
Split [s]	50	0	0	50	30	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	0	0	5	0
Pedestrian Clearance [s]	12	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	58	58	17	17
g / C, Green / Cycle	0.73	0.73	0.21	0.21
(v / s)_i Volume / Saturation Flow Rate	0.54	0.24	0.17	0.17
s, saturation flow rate [veh/h]	3492	3532	3373	2585
c, Capacity [veh/h]	2549	2578	721	552
d1, Uniform Delay [s]	6.29	3.82	29.75	29.63
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.94	0.34	0.79	0.94
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.33	0.80	0.78
d, Delay for Lane Group [s/veh]	8.23	4.16	30.54	30.57
Lane Group LOS	A	A	C	C
Critical Lane Group	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	6.99	1.84	5.14	3.86
50th-Percentile Queue Length [ft/ln]	174.85	45.96	128.43	96.48
95th-Percentile Queue Length [veh/ln]	11.33	3.31	8.85	6.95
95th-Percentile Queue Length [ft/ln]	283.28	82.73	221.35	173.66

Movement, Approach, & Intersection Results

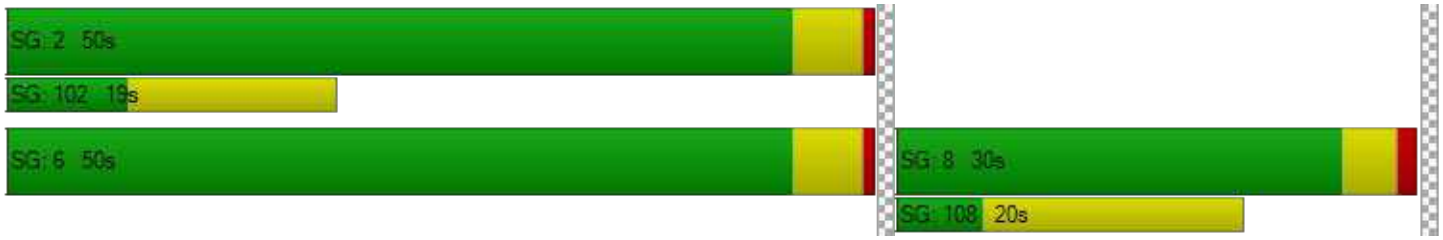
d_M, Delay for Movement [s/veh]	8.23	0.00	0.00	4.16	30.54	30.57
Movement LOS	A			A	C	C
d_A, Approach Delay [s/veh]	8.23		4.16		30.55	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	13.35					
Intersection LOS	B					
Intersection V/C	0.776					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.895	2.370
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.48	7.51	18.36
I_b,int, Bicycle LOS Score for Intersection	3.107	2.253	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	32.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.842

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	203	40	1834	12	31	5	9	513	224	1822	131	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.20	0.00	2.90	0.00	0.00	0.00	0.00	0.40	2.20	2.90	14.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	40	1834	12	31	5	9	513	224	1822	131	14
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	10	478	3	8	1	2	134	58	474	34	4
Total Analysis Volume [veh/h]	211	42	1910	13	32	5	9	534	233	1898	136	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			4			4			0	
v_di, Inbound Pedestrian Volume crossing m		0			4			4			0	
v_co, Outbound Pedestrian Volume crossing		0			13			0			13	
v_ci, Inbound Pedestrian Volume crossing mi		0			13			0			13	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			13			8			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	1	2	8
Auxiliary Signal Groups			2,3									
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	10	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	10	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	58	11	11	25	32	25	32	59	32	59	58	0
Vehicle Extension [s]	4.5	2.0	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	4.5	0.0
Walk [s]	5	0	0	10	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	10	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.1	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	38	128	10	10	27	27	27	76	76
g / C, Green / Cycle	0.24	0.80	0.06	0.06	0.17	0.17	0.17	0.48	0.48
(v / s)_i Volume / Saturation Flow Rate	0.14	0.46	0.02	0.01	0.15	0.15	0.15	0.37	0.09
s, saturation flow rate [veh/h]	1824	4190	1707	1588	1891	1724	1551	5150	1647
c, Capacity [veh/h]	431	3247	137	97	316	288	259	2450	783
d1, Uniform Delay [s]	54.15	7.45	71.59	71.56	65.34	65.33	65.07	34.83	24.21
k, delay calibration	0.16	0.50	0.04	0.04	0.04	0.04	0.04	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.90	0.79	0.27	0.45	3.80	4.13	4.56	2.47	0.55
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.59	0.20	0.23	0.90	0.90	0.90	0.77	0.19
d, Delay for Lane Group [s/veh]	56.04	8.24	71.86	72.00	69.13	69.47	69.63	37.30	24.76
Lane Group LOS	E	A	E	E	E	E	E	D	C
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.35	8.57	1.10	0.89	11.75	10.73	9.65	21.00	3.51
50th-Percentile Queue Length [ft/ln]	233.86	214.20	27.52	22.30	293.65	268.30	241.28	524.88	87.75
95th-Percentile Queue Length [veh/ln]	14.37	13.37	1.98	1.61	17.37	16.10	14.75	28.51	6.32
95th-Percentile Queue Length [ft/ln]	359.26	334.21	49.54	40.15	434.17	402.62	368.65	712.75	157.96

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	56.04	56.04	8.24	71.86	71.94	72.00	69.13	69.29	69.63	37.30	24.76	24.76
Movement LOS	E	E	A	E	E	E	E	E	E	D	C	C
d_A, Approach Delay [s/veh]	13.83			71.92			69.39			36.37		
Approach LOS	B			E			E			D		
d_I, Intersection Delay [s/veh]	32.13											
Intersection LOS	C											
Intersection V/C	0.842											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.006	2.434	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	80	349	693	654
d_b, Bicycle Delay [s]	73.73	54.89	34.33	36.27
I_b,int, Bicycle LOS Score for Intersection	5.129	1.601	2.200	4.940
Bicycle LOS	F	A	B	E

Sequence

Ring 1	-	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	16.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.862

Intersection Setup

Name	Chilco Street		Bayfront Expy			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy			
Base Volume Input [veh/h]	238	245	2187	209	129	1018
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.50	3.10	3.10	1.30	21.10	4.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	238	245	2187	209	129	1018
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	66	588	56	35	274
Total Analysis Volume [veh/h]	256	263	2352	225	139	1095
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	8		1		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	4	3	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	5	10
Maximum Green [s]	20	10	50	0	10	50
Amber [s]	3.2	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	8.0	1.0	0.0	0.0	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	1.7	9.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	70	70	70	70	70	70
L, Total Lost Time per Cycle [s]	3.70	3.70	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	4.20	4.20	0.00	4.20
g_i, Effective Green Time [s]	15	15	37	37	46	46
g / C, Green / Cycle	0.21	0.21	0.53	0.53	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.08	0.19	0.52	0.16	0.49	0.24
s, saturation flow rate [veh/h]	3025	1389	4544	1421	286	4481
c, Capacity [veh/h]	634	291	2419	756	269	2913
d1, Uniform Delay [s]	24.03	27.01	15.96	9.12	15.78	5.71
k, delay calibration	0.04	0.15	0.04	0.04	0.16	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	13.01	1.82	0.08	2.28	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.40	0.90	0.97	0.30	0.52	0.38
d, Delay for Lane Group [s/veh]	24.19	40.02	17.78	9.21	18.06	5.74
Lane Group LOS	C	D	B	A	B	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	1.77	5.11	10.57	1.68	0.78	1.92
50th-Percentile Queue Length [ft/ln]	44.23	127.63	264.16	42.10	19.56	47.93
95th-Percentile Queue Length [veh/ln]	3.18	8.81	15.90	3.03	1.41	3.45
95th-Percentile Queue Length [ft/ln]	79.61	220.27	397.43	75.78	35.21	86.27

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	24.19	40.02	17.78	9.21	18.06	5.74
Movement LOS	C	D	B	A	B	A
d_A, Approach Delay [s/veh]	32.21		17.03		7.13	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	16.03					
Intersection LOS	B					
Intersection V/C	0.862					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.582	3.141	3.130
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.33	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.977	2.238
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	13.2
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.780

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	607	59	2227	126	38	1253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.80	0.00	2.80	0.90	0.00	4.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	607	59	2227	126	38	1253
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	155	15	568	32	10	320
Total Analysis Volume [veh/h]	619	60	2272	129	39	1279
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	10
Pedestrian Clearance [s]	26	0	21	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	54	54	54	54	54	54
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	11	11	25	25	2	32
g / C, Green / Cycle	0.21	0.21	0.47	0.47	0.04	0.59
(v / s)_i Volume / Saturation Flow Rate	0.18	0.04	0.45	0.08	0.02	0.26
s, saturation flow rate [veh/h]	3464	1615	5061	1604	1810	4975
c, Capacity [veh/h]	729	340	2383	755	75	2928
d1, Uniform Delay [s]	20.39	17.39	13.65	8.18	25.23	6.12
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.09	0.09	1.17	0.04	2.08	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.85	0.18	0.95	0.17	0.52	0.44
d, Delay for Lane Group [s/veh]	21.48	17.48	14.82	8.22	27.31	6.16
Lane Group LOS	C	B	B	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.54	0.58	6.19	0.61	0.47	1.48
50th-Percentile Queue Length [ft/ln]	88.52	14.39	154.83	15.35	11.75	37.06
95th-Percentile Queue Length [veh/ln]	6.37	1.04	10.27	1.11	0.85	2.67
95th-Percentile Queue Length [ft/ln]	159.34	25.91	256.86	27.63	21.15	66.70

Movement, Approach, & Intersection Results

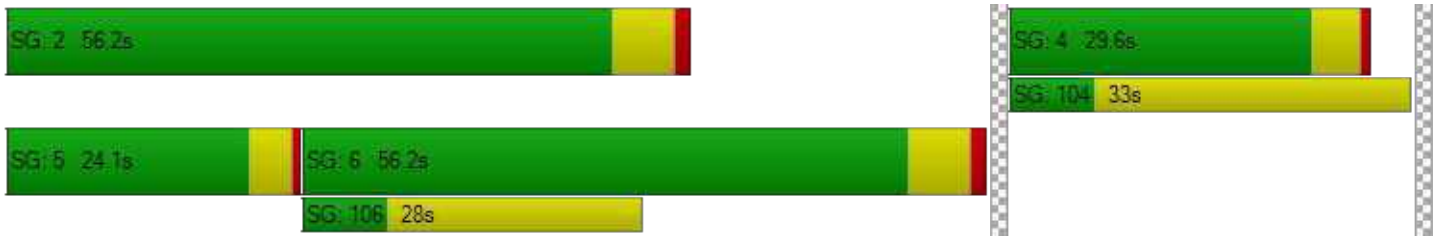
d_M, Delay for Movement [s/veh]	21.48	17.48	14.82	8.22	27.31	6.16
Movement LOS	C	B	B	A	C	A
d_A, Approach Delay [s/veh]	21.13		14.46		6.78	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	13.19					
Intersection LOS	B					
Intersection V/C	0.780					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.303	3.511	3.356
Crosswalk LOS	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
I_b,int, Bicycle LOS Score for Intersection	1.560	2.880	2.285
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: P:\...\Background No Proj AM.pdf

Scenario 18 Near Term No Project AM (2019 vols)
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.935	23.6	C
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	0.815	12.7	B
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Left	1.229	193.1	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NB Thru	0.999	25.3	C
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.849	58.4	E
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.839	21.9	C
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.690	9.5	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	23.6
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.935

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	891	1462	217	1123	436
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.30	3.60	2.15	5.10	3.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	345	50	0	246	34
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1236	1512	217	1369	470
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	315	386	54	349	120
Total Analysis Volume [veh/h]	0	1261	1543	217	1397	480
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	3		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	0
Maximum Green [s]	0	32	32	0	32	0
Amber [s]	0.0	4.1	4.1	0.0	3.1	0.0
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	10	0	5	0
Pedestrian Clearance [s]	0	16	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	42	40	33	33
g / C, Green / Cycle	0.53	0.50	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.32	0.44	0.41	0.31
s, saturation flow rate [veh/h]	4000	3515	3373	1572
c, Capacity [veh/h]	2121	1772	1394	650
d1, Uniform Delay [s]	12.87	17.51	23.43	19.79
k, delay calibration	0.50	0.50	0.06	0.28
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.24	6.19	8.57	4.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.59	0.87	1.00	0.74
d, Delay for Lane Group [s/veh]	14.10	23.71	32.01	24.06
Lane Group LOS	B	C	F	C
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	7.09	12.38	13.72	7.79
50th-Percentile Queue Length [ft/ln]	177.33	309.43	343.02	194.63
95th-Percentile Queue Length [veh/ln]	11.46	18.15	19.83	12.36
95th-Percentile Queue Length [ft/ln]	286.53	453.67	495.67	309.03

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	14.10	23.71	0.00	32.01	24.06
Movement LOS		B	C		F	C
d_A, Approach Delay [s/veh]	14.10		23.71		29.98	
Approach LOS	B		C		C	
d_I, Intersection Delay [s/veh]	23.63					
Intersection LOS	C					
Intersection V/C	0.935					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	14.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	27.23
l_p,int, Pedestrian LOS Score for Intersection	3.061	0.000	2.578
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.82	9.80	15.07
l_b,int, Bicycle LOS Score for Intersection	2.600	2.833	1.560
Bicycle LOS	B	C	A

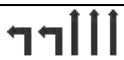
Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	12.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.815

Intersection Setup

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	829	67	1148	2695	205	416
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.40	3.50	1.60	3.10	2.20	3.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	55	6	6	341	45	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	884	73	1154	3036	250	418
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	228	19	297	782	64	108
Total Analysis Volume [veh/h]	911	75	1190	3130	258	431
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	6		0		7	
v_ci, Inbound Pedestrian Volume crossing mi	7		0		6	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	35	110	75	110	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	3.9	1.5	3.9	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	5.90	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	3.90	2.00	0.00
g_i, Effective Green Time [s]	20	20	26	50	8	38
g / C, Green / Cycle	0.29	0.29	0.39	0.74	0.12	0.57
(v / s)_i Volume / Saturation Flow Rate	0.18	0.05	0.34	0.62	0.07	0.10
s, saturation flow rate [veh/h]	4955	1549	3470	5049	3453	4166
c, Capacity [veh/h]	1444	452	1359	3718	405	2367
d1, Uniform Delay [s]	20.83	17.85	19.06	6.19	28.51	7.04
k, delay calibration	0.13	0.13	0.04	0.13	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	0.21	0.74	0.67	0.62	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.17	0.88	0.84	0.64	0.18
d, Delay for Lane Group [s/veh]	21.38	18.06	19.80	6.85	29.14	7.06
Lane Group LOS	C	B	B	A	C	A
Critical Lane Group	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.53	0.76	6.85	2.79	1.91	0.80
50th-Percentile Queue Length [ft/ln]	88.25	18.94	171.16	69.72	47.82	20.12
95th-Percentile Queue Length [veh/ln]	6.35	1.36	11.14	5.02	3.44	1.45
95th-Percentile Queue Length [ft/ln]	158.84	34.09	278.44	125.49	86.08	36.21

Movement, Approach, & Intersection Results

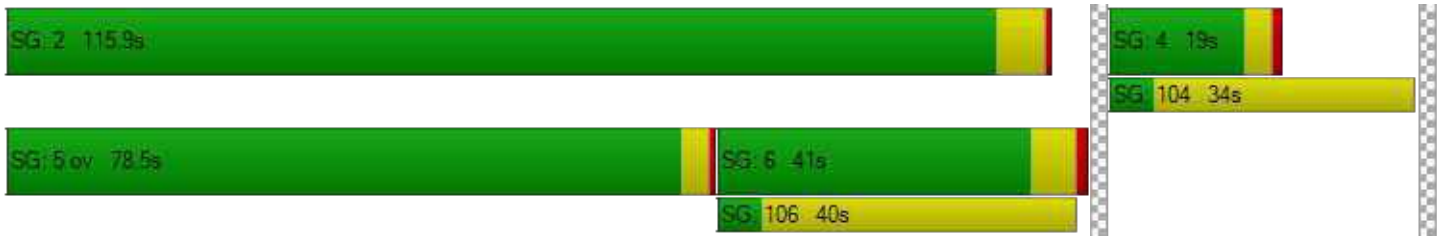
d_M, Delay for Movement [s/veh]	21.38	18.06	19.80	6.85	29.14	7.06
Movement LOS	C	B	B	A	C	A
d_A, Approach Delay [s/veh]	21.13		10.42		15.32	
Approach LOS	C		B		B	
d_I, Intersection Delay [s/veh]	12.74					
Intersection LOS	B					
Intersection V/C	0.815					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
l_p,int, Pedestrian LOS Score for Intersection	3.679	0.000	2.880
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1458	583	625
d_b, Bicycle Delay [s]	1.76	12.05	11.34
l_b,int, Bicycle LOS Score for Intersection	2.102	3.936	1.670
Bicycle LOS	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	193.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.229

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	2	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Base Volume Input [veh/h]	195	425	277	35	67	72	341	410	172	1021	2217	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.90	4.20	10.20	37.50	30.50	40.50	4.60	6.20	12.30	6.70	3.80	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	494	0	18	0	0	0	0	43	50	57	329	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	16	0	0	106	0	0	0
Total Hourly Volume [veh/h]	689	425	295	35	67	56	341	453	116	1078	2546	72
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	176	108	75	9	17	14	87	116	30	275	649	18
Total Analysis Volume [veh/h]	703	434	301	36	68	57	348	462	118	1100	2598	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			2			3			0		
v_di, Inbound Pedestrian Volume crossing m	0			3			2			0		
v_co, Outbound Pedestrian Volume crossing	4			0			3			0		
v_ci, Inbound Pedestrian Volume crossing mi	3			0			4			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	8	8	15	15	8	6	10	10	6	10	10
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.6	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	15	25	25	20	20	25	25	55	70	40	70	55
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	5	7	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	10	0	29	10	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	3.1	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		No	Yes		No	Yes	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	5.10	5.10	4.60	6.00	6.00	4.60	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	3.10	3.10	2.60	4.00	4.00	2.60	4.00	4.00
g_i, Effective Green Time [s]	22	21	51	9	9	9	14	39	39	25	50	50
g / C, Green / Cycle	0.19	0.18	0.44	0.08	0.08	0.08	0.13	0.34	0.34	0.22	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.43	0.28	0.17	0.03	0.06	0.05	0.10	0.09	0.08	0.33	0.52	0.05
s, saturation flow rate [veh/h]	1654	1565	1764	1273	1228	1077	3386	4922	1458	3328	5020	1615
c, Capacity [veh/h]	316	288	778	100	97	85	425	1691	501	726	2190	705
d1, Uniform Delay [s]	46.34	46.74	21.60	50.07	51.50	51.31	48.85	27.25	26.86	44.80	32.30	19.07
k, delay calibration	0.50	0.43	0.11	0.11	0.11	0.11	0.11	0.11	0.11	0.25	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	560.35	242.17	0.32	2.17	8.99	8.99	3.95	0.09	0.24	235.46	84.89	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	2.22	1.50	0.39	0.36	0.70	0.67	0.82	0.27	0.24	1.52	1.19	0.10
d, Delay for Lane Group [s/veh]	606.69	288.91	21.92	52.24	60.49	60.30	52.80	27.33	27.10	280.26	117.19	19.13
Lane Group LOS	F	F	C	D	E	E	D	C	C	F	F	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	57.99	13.70	1.77	1.06	1.09	1.83	5.08	3.08	2.35	33.96	36.72	1.16
50th-Percentile Queue Length [ft/ln]	1449.76	342.52	44.28	26.42	27.22	45.72	126.88	76.91	58.68	848.98	918.04	29.10
95th-Percentile Queue Length [veh/ln]	91.22	23.14	3.19	1.90	1.96	3.29	8.77	5.54	4.22	52.44	52.53	2.10
95th-Percentile Queue Length [ft/ln]	2280.57	578.50	79.70	47.56	48.99	82.29	219.24	138.44	105.62	1311.10	1313.14	52.38

Movement, Approach, & Intersection Results

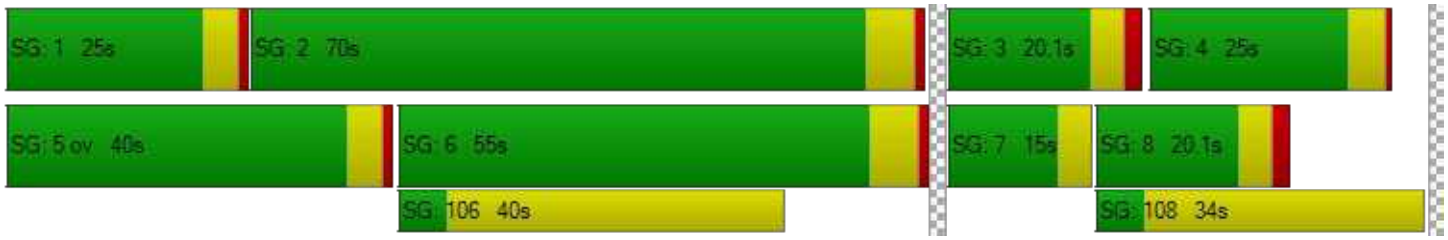
d_M, Delay for Movement [s/veh]	606.69	288.91	21.92	52.24	60.49	60.30	52.80	27.33	27.10	280.26	117.19	19.13
Movement LOS	F	F	C	D	E	E	D	C	C	F	F	B
d_A, Approach Delay [s/veh]	388.38			58.58			36.85			162.86		
Approach LOS	F			E			D			F		
d_I, Intersection Delay [s/veh]	193.12											
Intersection LOS	F											
Intersection V/C	1.229											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.29	0.00	61.29	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.163	0.000	3.364	0.000
Crosswalk LOS	C	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	294	214	700	914
d_b, Bicycle Delay [s]	50.92	55.80	29.58	20.63
l_b,int, Bicycle LOS Score for Intersection	2.746	1.706	2.128	3.634
Bicycle LOS	B	A	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 110: Marsh Road and US 101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.999

Intersection Setup

Name	Marsh Road		Marsh Road			
Approach	Northbound		Southbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road			
Base Volume Input [veh/h]	1415	0	0	858	771	657
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.50	0.00	0.00	5.20	1.90	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	571	0	0	87	0	214
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1986	0	0	945	771	871
Peak Hour Factor	0.9700	1.0000	1.0000	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	512	0	0	244	199	224
Total Analysis Volume [veh/h]	2047	0	0	974	795	898
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	1		0		2	
v_ci, Inbound Pedestrian Volume crossing mi	2		0		1	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	1
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	0
Maximum Green [s]	32	0	0	32	26	0
Amber [s]	4.1	0.0	0.0	4.1	3.2	0.0
All red [s]	0.5	0.0	0.0	0.5	1.0	0.0
Split [s]	50	0	0	50	30	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	0	10	5	0
Pedestrian Clearance [s]	12	0	0	10	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	47	47	28	28
g / C, Green / Cycle	0.59	0.59	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.59	0.28	0.23	0.33
s, saturation flow rate [veh/h]	3489	3469	3461	2761
c, Capacity [veh/h]	2070	2059	1212	967
d1, Uniform Delay [s]	15.96	9.17	21.87	24.97
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	17.28	0.78	0.23	1.83
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.99	0.47	0.66	0.93
d, Delay for Lane Group [s/veh]	33.24	9.95	22.10	26.80
Lane Group LOS	C	A	C	C
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	20.16	4.38	5.99	7.92
50th-Percentile Queue Length [ft/ln]	504.08	109.45	149.82	198.11
95th-Percentile Queue Length [veh/ln]	27.53	7.81	10.01	12.54
95th-Percentile Queue Length [ft/ln]	688.18	195.24	250.19	313.53

Movement, Approach, & Intersection Results

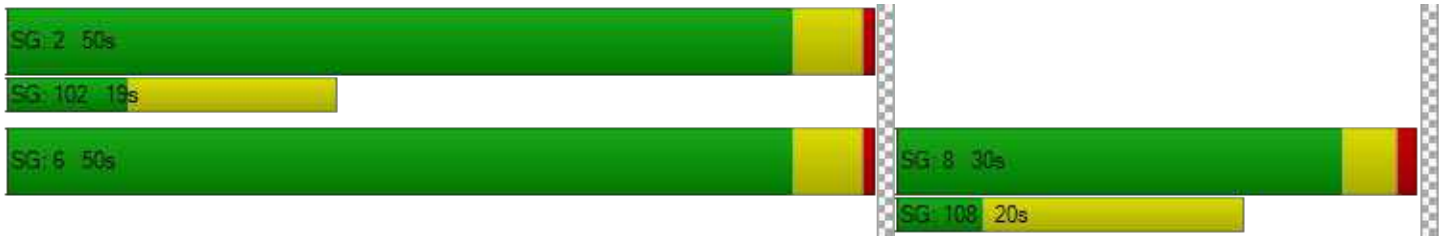
d_M, Delay for Movement [s/veh]	33.24	0.00	0.00	9.95	22.10	26.80
Movement LOS	C			A	C	C
d_A, Approach Delay [s/veh]	33.24		9.95		24.59	
Approach LOS	C		A		C	
d_I, Intersection Delay [s/veh]	25.32					
Intersection LOS	C					
Intersection V/C	0.999					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.082	2.537
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.49	7.49	18.36
I_b,int, Bicycle LOS Score for Intersection	3.248	2.363	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	58.4
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.849

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	162	27	1502	10	30	7	8	196	296	1931	371	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	4.60	0.00	0.00	16.70	0.00	18.20	9.10	4.70	4.90	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	342	0	0	0	0	11	8	115	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	167	27	1844	10	30	7	8	207	304	2046	377	34
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	43	7	480	3	8	2	2	54	79	533	98	9
Total Analysis Volume [veh/h]	174	28	1921	10	31	7	8	216	317	2131	393	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			1			1			0	
v_di, Inbound Pedestrian Volume crossing m		0			1			1			0	
v_co, Outbound Pedestrian Volume crossing		0			22			0			22	
v_ci, Inbound Pedestrian Volume crossing mi		0			22			0			22	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		1			13			25			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	7	4	6	4	1	4	1	2	8
Auxiliary Signal Groups		3	2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	0	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	0	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	69	20	20	0	32	25	32	39	32	39	69	0
Vehicle Extension [s]	4.5	0.0	0.0	0.0	0.0	3.0	0.0	3.0	0.0	3.0	4.5	0.0
Walk [s]	5	0	0	0	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		Yes			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	19	88	29	29	35	35	35	67	67
g / C, Green / Cycle	0.12	0.55	0.18	0.18	0.22	0.22	0.22	0.42	0.42
(v / s)_i Volume / Saturation Flow Rate	0.11	0.47	0.01	0.01	0.07	0.07	0.22	0.42	0.24
s, saturation flow rate [veh/h]	1822	4113	1863	1610	1621	1480	1443	5075	1787
c, Capacity [veh/h]	217	2164	339	293	358	327	319	2120	747
d1, Uniform Delay [s]	69.79	33.52	54.28	54.32	52.32	52.32	61.56	46.58	35.66
k, delay calibration	0.50	0.50	0.04	0.04	0.11	0.11	0.46	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	45.05	5.89	0.03	0.04	0.53	0.58	46.82	20.76	3.19
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.89	0.07	0.08	0.33	0.33	0.99	1.01	0.57
d, Delay for Lane Group [s/veh]	114.84	39.41	54.31	54.36	52.85	52.90	108.38	67.34	38.85
Lane Group LOS	F	D	D	D	D	D	F	F	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	10.96	22.92	0.86	0.78	4.06	3.71	16.91	31.97	13.59
50th-Percentile Queue Length [ft/ln]	274.06	572.98	21.43	19.47	101.46	92.69	422.65	799.15	339.77
95th-Percentile Queue Length [veh/ln]	16.39	30.77	1.54	1.40	7.30	6.67	23.65	41.40	19.64
95th-Percentile Queue Length [ft/ln]	409.81	769.26	38.58	35.04	182.62	166.84	591.22	1035.02	490.92

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	114.84	114.84	39.41	54.31	54.34	54.36	52.85	52.87	108.38	67.34	38.85	38.85
Movement LOS	F	F	D	D	D	D	D	D	F	F	D	D
d_A, Approach Delay [s/veh]	46.59			54.33			85.40			62.58		
Approach LOS	D			D			F			E		
d_I, Intersection Delay [s/veh]	58.40											
Intersection LOS	E											
Intersection V/C	0.849											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.007	2.431	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	193	349	443	791
d_b, Bicycle Delay [s]	65.37	54.89	49.13	29.24
l_b,int, Bicycle LOS Score for Intersection	5.063	1.599	2.006	5.782
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	4	3	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	21.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.839

Intersection Setup

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	30.00		50.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	102	221	1174	492	287	1963
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.40	23.10	5.10	5.30	6.30	3.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	33	343	0	88	76
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	102	254	1517	492	375	2039
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	67	399	129	99	537
Total Analysis Volume [veh/h]	107	267	1597	518	395	2146
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	4	3	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	5	10
Maximum Green [s]	20	10	50	0	25	50
Amber [s]	3.2	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	8.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	1.7	9.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	3.70	3.70	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	4.20	4.20	0.00	4.20
g_i, Effective Green Time [s]	20	20	32	32	52	52
g / C, Green / Cycle	0.24	0.24	0.39	0.39	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.03	0.22	0.36	0.37	0.55	0.47
s, saturation flow rate [veh/h]	3078	1188	4470	1393	723	4518
c, Capacity [veh/h]	750	290	1735	540	491	2871
d1, Uniform Delay [s]	24.30	30.25	23.90	24.46	20.00	10.38
k, delay calibration	0.04	0.36	0.04	0.10	0.34	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	28.99	0.94	9.88	9.30	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.14	0.92	0.92	0.96	0.80	0.75
d, Delay for Lane Group [s/veh]	24.33	59.24	24.84	34.34	29.30	10.53
Lane Group LOS	C	E	C	C	C	B
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.80	7.27	8.55	9.85	3.78	6.49
50th-Percentile Queue Length [ft/ln]	19.94	181.67	213.77	246.20	94.52	162.33
95th-Percentile Queue Length [veh/ln]	1.44	11.69	13.35	14.99	6.81	10.67
95th-Percentile Queue Length [ft/ln]	35.88	292.20	333.66	374.86	170.14	266.80

Movement, Approach, & Intersection Results

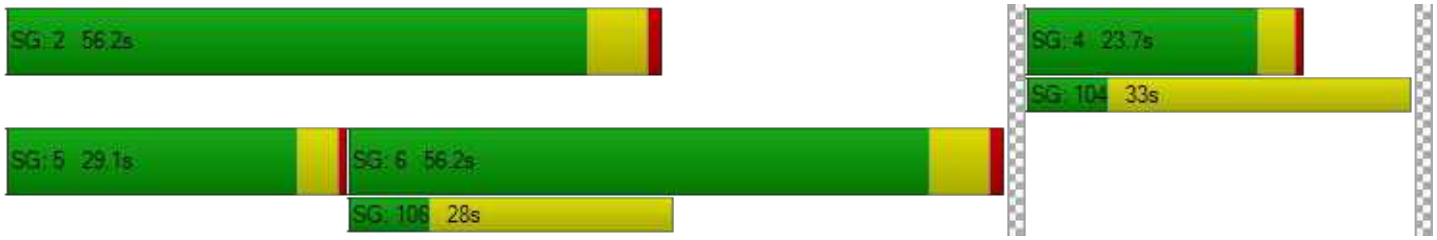
d_M, Delay for Movement [s/veh]	24.33	59.24	24.84	34.34	29.30	10.53
Movement LOS	C	E	C	C	C	B
d_A, Approach Delay [s/veh]	49.25		27.17		13.45	
Approach LOS	D		C		B	
d_I, Intersection Delay [s/veh]	21.88					
Intersection LOS	C					
Intersection V/C	0.839					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.782	3.612	3.514
Crosswalk LOS	C	D	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.22	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.723	2.957
Bicycle LOS	A	B	C

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.690

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	115	47	1510	117	101	2050
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	12.30	8.30	5.30	7.10	0.00	3.70
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	96	0	343	10	51	25
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	211	47	1853	127	152	2075
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	12	478	33	39	535
Total Analysis Volume [veh/h]	218	48	1910	131	157	2139
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	10
Pedestrian Clearance [s]	26	0	21	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	42	42	42	42	42	42
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	5	5	17	17	5	26
g / C, Green / Cycle	0.11	0.11	0.42	0.42	0.11	0.63
(v / s)_i Volume / Saturation Flow Rate	0.07	0.03	0.39	0.09	0.09	0.43
s, saturation flow rate [veh/h]	3173	1509	4959	1493	1810	5024
c, Capacity [veh/h]	364	173	2064	621	203	3148
d1, Uniform Delay [s]	17.56	16.89	11.56	7.78	18.01	5.07
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.59	0.32	0.84	0.06	2.39	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.28	0.93	0.21	0.77	0.68
d, Delay for Lane Group [s/veh]	18.15	17.21	12.40	7.84	20.40	5.16
Lane Group LOS	B	B	B	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.92	0.39	3.47	0.47	1.29	0.97
50th-Percentile Queue Length [ft/ln]	22.92	9.78	86.65	11.70	32.20	24.34
95th-Percentile Queue Length [veh/ln]	1.65	0.70	6.24	0.84	2.32	1.75
95th-Percentile Queue Length [ft/ln]	41.26	17.60	155.97	21.06	57.95	43.82

Movement, Approach, & Intersection Results

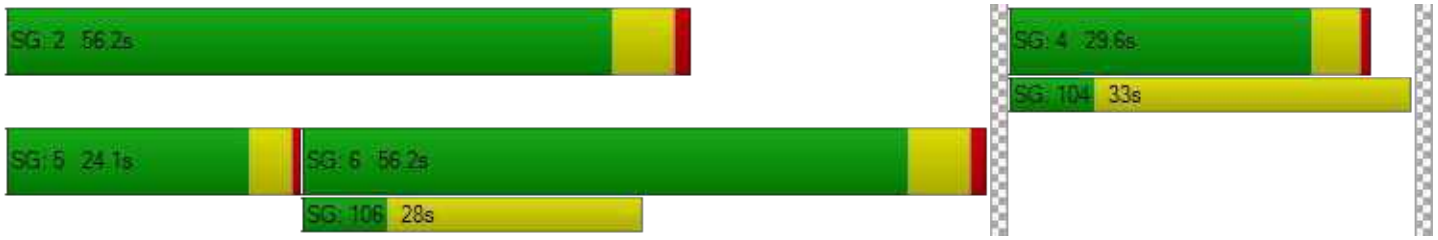
d_M, Delay for Movement [s/veh]	18.15	17.21	12.40	7.84	20.40	5.16
Movement LOS	B	B	B	A	C	A
d_A, Approach Delay [s/veh]	17.98		12.11		6.21	
Approach LOS	B		B		A	
d_I, Intersection Delay [s/veh]	9.50					
Intersection LOS	A					
Intersection V/C	0.690					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.243	3.529	3.482
Crosswalk LOS	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.682	2.822
Bicycle LOS	A	B	C

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 18 Near Term No Project PM (2019 vols)
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.793	17.7	B
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.097	113.1	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Right	1.317	180.9	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Right	0.808	13.3	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	EB Thru	0.942	35.0	C
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.942	25.3	C
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.863	20.1	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	17.7
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.793

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	959	1000	279	1176	296
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.60	2.70	2.15	3.60	0.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	61	255	0	34	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1020	1255	279	1210	299
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	260	320	70	309	76
Total Analysis Volume [veh/h]	0	1041	1281	279	1235	305
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		4		5	
v_ci, Inbound Pedestrian Volume crossing mi	0		5		4	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	6		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	0
Maximum Green [s]	0	32	32	0	32	0
Amber [s]	0.0	4.1	4.1	0.0	3.1	0.0
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	7	0	5	0
Pedestrian Clearance [s]	0	0	16	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	44	42	32	32
g / C, Green / Cycle	0.55	0.52	0.39	0.39
(v / s)_i Volume / Saturation Flow Rate	0.26	0.36	0.36	0.19
s, saturation flow rate [veh/h]	4000	3540	3414	1609
c, Capacity [veh/h]	2198	1852	1346	634
d1, Uniform Delay [s]	10.96	14.23	22.96	18.08
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.73	2.15	1.15	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.47	0.69	0.92	0.48
d, Delay for Lane Group [s/veh]	11.70	16.38	24.11	18.29
Lane Group LOS	B	B	C	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	5.08	8.07	10.43	4.01
50th-Percentile Queue Length [ft/ln]	127.05	201.67	260.74	100.26
95th-Percentile Queue Length [veh/ln]	8.78	12.72	15.73	7.22
95th-Percentile Queue Length [ft/ln]	219.48	318.12	393.15	180.47

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Version 2020 (SP 0-3)

Movement, Approach, & Intersection Results

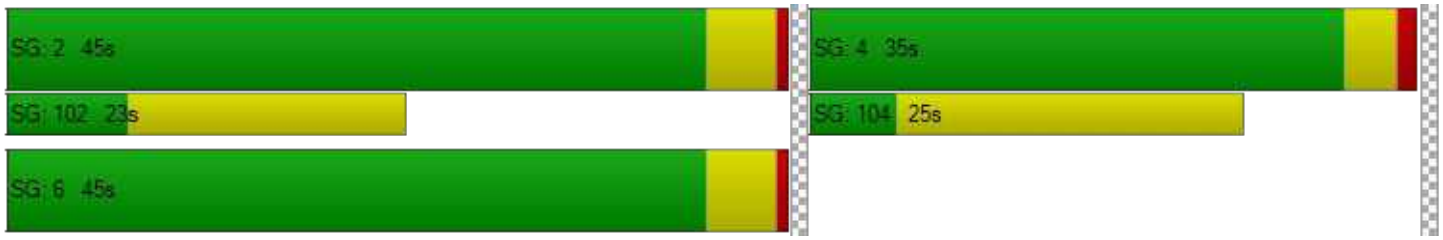
d_M, Delay for Movement [s/veh]	0.00	11.70	16.38	0.00	24.11	18.29
Movement LOS		B	B		C	B
d_A, Approach Delay [s/veh]	11.70		16.38		22.96	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	17.74					
Intersection LOS	B					
Intersection V/C	0.793					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.874	0.000	2.434
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.83	9.81	15.07
I_b,int, Bicycle LOS Score for Intersection	2.418	2.616	1.560
Bicycle LOS	B	B	A

Sequence

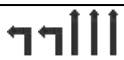
Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	113.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.097

Intersection Setup

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	3307	20	359	970	68	1803
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	16.10	4.90	3.80	9.00	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	245	0	2	48	4	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3552	20	361	1018	72	1809
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	906	5	92	260	18	461
Total Analysis Volume [veh/h]	3624	20	368	1039	73	1846
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	7		0		8	
v_ci, Inbound Pedestrian Volume crossing mi	8		0		7	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	90	140	50	140	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	5.8	1.5	5.8	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	153	153	153	153	153	153
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	7.80	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	5.80	2.00	0.00
g_i, Effective Green Time [s]	90	90	34	126	15	53
g / C, Green / Cycle	0.59	0.59	0.22	0.82	0.10	0.35
(v / s)_i Volume / Saturation Flow Rate	0.71	0.01	0.11	0.21	0.02	0.44
s, saturation flow rate [veh/h]	5077	1399	3378	5020	3264	4237
c, Capacity [veh/h]	2995	825	754	4138	321	1474
d1, Uniform Delay [s]	31.29	13.02	51.64	2.97	63.44	49.75
k, delay calibration	0.13	0.13	0.04	0.13	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	95.38	0.01	0.18	0.04	0.13	114.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.21	0.02	0.49	0.25	0.23	1.25
d, Delay for Lane Group [s/veh]	126.67	13.03	51.83	3.01	63.57	163.86
Lane Group LOS	F	B	D	A	E	F
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	58.94	0.27	5.99	1.51	1.32	34.05
50th-Percentile Queue Length [ft/ln]	1473.52	6.85	149.65	37.74	32.90	851.25
95th-Percentile Queue Length [veh/ln]	83.01	0.49	10.00	2.72	2.37	50.06
95th-Percentile Queue Length [ft/ln]	2075.15	12.33	249.96	67.94	59.22	1251.40

Movement, Approach, & Intersection Results

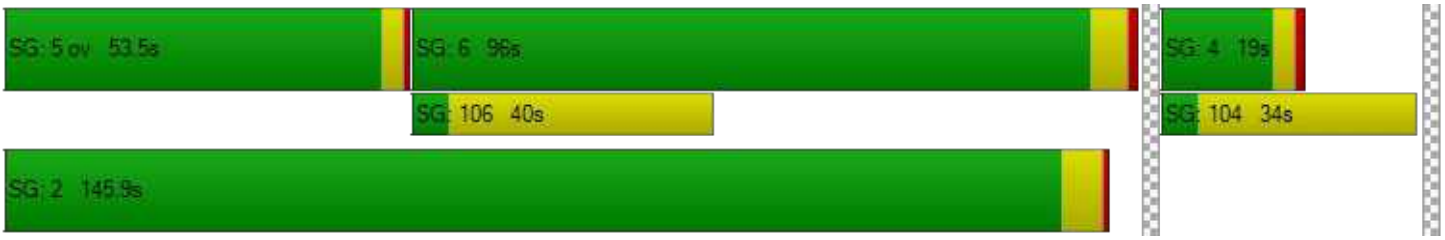
d_M, Delay for Movement [s/veh]	126.67	13.03	51.83	3.01	63.57	163.86
Movement LOS	F	B	D	A	E	F
d_A, Approach Delay [s/veh]	126.04		15.78		160.04	
Approach LOS	F		B		F	
d_I, Intersection Delay [s/veh]	113.15					
Intersection LOS	F					
Intersection V/C	1.097					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
l_p,int, Pedestrian LOS Score for Intersection	3.776	0.000	2.937
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1750	1833	625
d_b, Bicycle Delay [s]	0.38	0.17	11.34
l_b,int, Bicycle LOS Score for Intersection	3.564	2.333	1.670
Bicycle LOS	D	B	A

Sequence

Ring 1	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	180.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.317

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Base Volume Input [veh/h]	88	95	1462	159	204	133	76	1899	118	559	704	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.20	10.90	3.30	4.30	1.00	1.70	37.10	2.50	12.00	6.40	5.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	50	0	30	0	0	0	0	215	260	9	43	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	70	0	0	45	0	0	1
Total Hourly Volume [veh/h]	138	95	1492	159	204	63	76	2114	333	568	747	33
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	24	385	41	53	16	20	545	86	146	193	9
Total Analysis Volume [veh/h]	142	98	1538	164	210	65	78	2179	343	586	770	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			11			11			0		
v_di, Inbound Pedestrian Volume crossing m	0			11			11			0		
v_co, Outbound Pedestrian Volume crossing	8			0			8			0		
v_ci, Inbound Pedestrian Volume crossing mi	8			0			8			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			3			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	155
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	5	5	5	4	5	5	5	4
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.0	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	47	47	20	42	47	21	38	64	47	64	38
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	5	5	0	5	5	0	5	0	0	0	5
Pedestrian Clearance [s]	0	0	0	0	29	0	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	2.5	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		Yes	No		Yes	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	108	108	108	108	108	108	108	108	108	108	108	108
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	4.50	4.50	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	2.50	2.50	0.00	4.00	4.00	0.00	4.00	4.00
g_i, Effective Green Time [s]	11	15	44	9	15	15	69	40	40	69	60	60
g / C, Green / Cycle	0.10	0.14	0.40	0.08	0.14	0.14	0.64	0.37	0.37	0.64	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.08	0.07	0.83	0.09	0.13	0.04	0.07	0.43	0.23	0.39	0.16	0.02
s, saturation flow rate [veh/h]	1749	1479	1853	1748	1606	1491	1135	5073	1462	1505	4959	1615
c, Capacity [veh/h]	174	205	745	145	217	201	748	1875	540	959	2725	888
d1, Uniform Delay [s]	47.83	43.07	32.19	49.72	46.68	42.30	7.90	34.18	28.15	24.45	13.02	11.24
k, delay calibration	0.11	0.11	0.50	0.38	0.20	0.11	0.11	0.11	0.17	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.83	1.72	483.58	104.14	31.74	0.92	0.06	74.29	1.94	0.64	0.06	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.81	0.48	2.06	1.13	0.97	0.32	0.10	1.16	0.63	0.61	0.28	0.04
d, Delay for Lane Group [s/veh]	56.66	44.79	515.77	153.86	78.41	43.22	7.96	108.46	30.08	25.08	13.08	11.25
Lane Group LOS	E	D	F	F	E	D	A	F	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	4.10	1.23	39.41	8.18	3.80	1.65	0.33	28.86	7.50	2.96	3.25	0.37
50th-Percentile Queue Length [ft/ln]	102.54	30.85	985.25	204.45	95.10	41.24	8.30	721.41	187.51	74.04	81.28	9.36
95th-Percentile Queue Length [veh/ln]	7.38	2.22	67.08	13.43	6.85	2.97	0.60	41.55	11.99	5.33	5.85	0.67
95th-Percentile Queue Length [ft/ln]	184.58	55.54	1676.93	335.65	171.18	74.23	14.95	1038.69	299.80	133.27	146.30	16.84

Movement, Approach, & Intersection Results

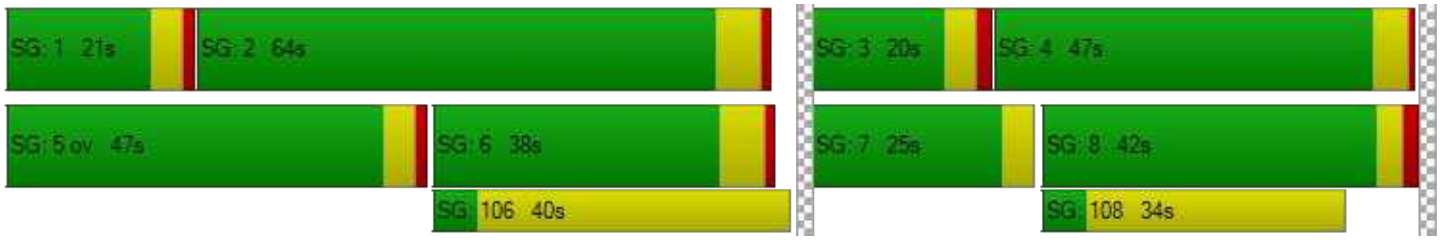
d_M, Delay for Movement [s/veh]	56.66	44.79	515.77	153.86	78.41	43.22	7.96	108.46	30.08	25.08	13.08	11.25
Movement LOS	E	D	F	F	E	D	A	F	C	C	B	B
d_A, Approach Delay [s/veh]	453.14			101.39			95.11			18.09		
Approach LOS	F			F			F			B		
d_I, Intersection Delay [s/veh]	180.86											
Intersection LOS	F											
Intersection V/C	1.317											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	68.76	0.00	68.76	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.502	0.000	3.258	0.000
Crosswalk LOS	D	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	484	413	748
d_b, Bicycle Delay [s]	40.77	44.60	48.80	30.35
l_b,int, Bicycle LOS Score for Intersection	3.026	1.980	3.014	2.325
Bicycle LOS	C	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 110: Marsh Road/101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.808

Intersection Setup

Name	Marsh Road		Marsh Road		101 NB Ramps	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road		101 NB Ramps	
Base Volume Input [veh/h]	1842	0	0	824	570	420
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.40	0.00	0.00	3.00	5.10	12.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	80	0	0	434	0	43
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1922	0	0	1258	570	463
Peak Hour Factor	0.9900	1.0000	1.0000	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	485	0	0	318	144	117
Total Analysis Volume [veh/h]	1941	0	0	1271	576	468
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		1	
v_ci, Inbound Pedestrian Volume crossing mi	1		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		7		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	1
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	0
Maximum Green [s]	32	0	0	32	26	0
Amber [s]	4.1	0.0	0.0	4.1	3.2	0.0
All red [s]	0.5	0.0	0.0	0.5	1.0	0.0
Split [s]	50	0	0	50	30	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	0	0	5	0
Pedestrian Clearance [s]	12	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	58	58	18	18
g / C, Green / Cycle	0.72	0.72	0.22	0.22
(v / s)_i Volume / Saturation Flow Rate	0.56	0.36	0.17	0.18
s, saturation flow rate [veh/h]	3492	3532	3373	2585
c, Capacity [veh/h]	2516	2544	753	577
d1, Uniform Delay [s]	7.02	4.87	29.03	29.39
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.36	0.70	0.62	1.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.77	0.50	0.77	0.81
d, Delay for Lane Group [s/veh]	9.39	5.58	29.65	30.45
Lane Group LOS	A	A	C	C
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.09	3.55	5.05	4.18
50th-Percentile Queue Length [ft/ln]	202.32	88.76	126.22	104.62
95th-Percentile Queue Length [veh/ln]	12.76	6.39	8.73	7.53
95th-Percentile Queue Length [ft/ln]	318.96	159.77	218.34	188.31

Movement, Approach, & Intersection Results

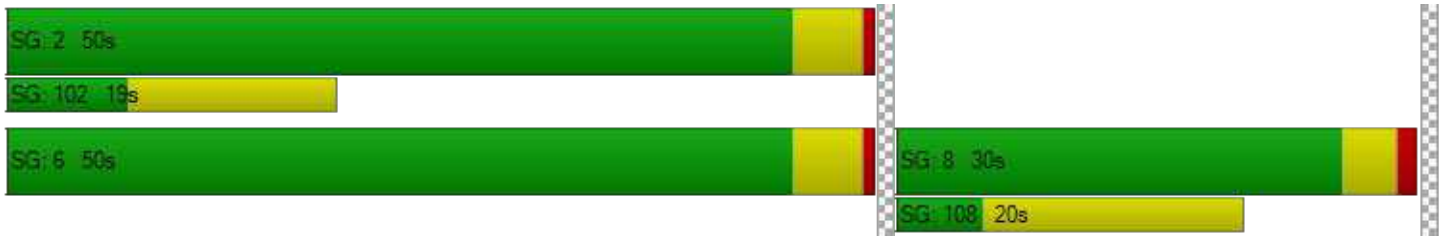
d_M, Delay for Movement [s/veh]	9.39	0.00	0.00	5.58	29.65	30.45
Movement LOS	A			A	C	C
d_A, Approach Delay [s/veh]	9.39		5.58		30.01	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	13.31					
Intersection LOS	B					
Intersection V/C	0.808					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.024	2.379
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.48	7.51	18.36
I_b,int, Bicycle LOS Score for Intersection	3.161	2.608	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	35.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.942

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	179	40	1834	12	31	5	9	505	208	1822	119	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.20	0.00	2.90	0.00	0.00	0.00	0.00	0.40	2.20	2.90	14.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	32	0	0	0	0	4	1	599	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	40	1866	12	31	5	9	509	209	2421	123	14
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	10	486	3	8	1	2	133	54	630	32	4
Total Analysis Volume [veh/h]	188	42	1944	13	32	5	9	530	218	2522	128	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			4			4			0	
v_di, Inbound Pedestrian Volume crossing m		0			4			4			0	
v_co, Outbound Pedestrian Volume crossing		0			13			0			13	
v_ci, Inbound Pedestrian Volume crossing mi		0			13			0			13	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			13			8			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	1	2	8
Auxiliary Signal Groups			2,3									
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	10	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	10	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	69	24	24	25	32	25	32	35	32	35	69	0
Vehicle Extension [s]	4.5	2.0	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	4.5	0.0
Walk [s]	5	0	0	10	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	10	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.1	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	27	128	10	10	26	26	26	87	87
g / C, Green / Cycle	0.17	0.80	0.06	0.06	0.16	0.16	0.16	0.54	0.54
(v / s)_i Volume / Saturation Flow Rate	0.13	0.46	0.02	0.01	0.15	0.15	0.14	0.49	0.09
s, saturation flow rate [veh/h]	1825	4190	1707	1588	1891	1724	1551	5150	1646
c, Capacity [veh/h]	312	3260	137	97	310	282	254	2803	896
d1, Uniform Delay [s]	62.91	7.36	71.59	71.55	65.73	65.73	64.83	32.56	18.20
k, delay calibration	0.33	0.50	0.04	0.04	0.25	0.25	0.21	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.97	0.81	0.27	0.45	19.46	20.85	14.45	5.17	0.38
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.74	0.60	0.20	0.23	0.91	0.91	0.86	0.90	0.16
d, Delay for Lane Group [s/veh]	72.88	8.17	71.86	72.00	85.19	86.58	79.28	37.72	18.58
Lane Group LOS	E	A	E	E	F	F	E	D	B
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.81	8.69	1.10	0.89	13.03	11.99	9.68	29.92	2.81
50th-Percentile Queue Length [ft/ln]	245.20	217.21	27.52	22.30	325.86	299.71	242.04	747.97	70.29
95th-Percentile Queue Length [veh/ln]	14.94	13.52	1.98	1.61	18.96	17.67	14.78	38.89	5.06
95th-Percentile Queue Length [ft/ln]	373.60	338.07	49.54	40.15	473.88	441.67	369.62	972.23	126.53

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	72.88	72.88	8.17	71.86	71.94	72.00	85.19	85.86	79.28	37.72	18.58	18.58
Movement LOS	E	E	A	E	E	E	F	F	E	D	B	B
d_A, Approach Delay [s/veh]	15.01			71.92			83.96			36.70		
Approach LOS	B			E			F			D		
d_I, Intersection Delay [s/veh]	35.00											
Intersection LOS	C											
Intersection V/C	0.942											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.006	2.422	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	243	349	393	791
d_b, Bicycle Delay [s]	61.78	54.89	51.89	29.24
I_b,int, Bicycle LOS Score for Intersection	5.147	1.601	2.184	5.957
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.942

Intersection Setup

Name	Chilco Street		Bayfront Expy			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy			
Base Volume Input [veh/h]	234	245	2182	206	129	1011
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.50	3.10	3.10	1.30	21.10	4.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	100	34	0	16	255
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	234	345	2216	206	145	1266
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	63	93	596	55	39	340
Total Analysis Volume [veh/h]	252	371	2383	222	156	1361
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	8		1		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	4	3	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	5	10
Maximum Green [s]	20	10	50	0	10	50
Amber [s]	3.2	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	8.0	1.0	0.0	0.0	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	1.7	9.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	3.70	3.70	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	4.20	4.20	0.00	4.20
g_i, Effective Green Time [s]	20	20	45	45	55	55
g / C, Green / Cycle	0.24	0.24	0.54	0.54	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.08	0.27	0.52	0.16	0.56	0.30
s, saturation flow rate [veh/h]	3025	1390	4544	1421	279	4481
c, Capacity [veh/h]	714	328	2439	763	241	2900
d1, Uniform Delay [s]	26.99	32.18	19.12	10.75	19.19	7.57
k, delay calibration	0.04	0.50	0.04	0.04	0.38	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	89.95	2.09	0.08	9.95	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.35	1.13	0.98	0.29	0.65	0.47
d, Delay for Lane Group [s/veh]	27.10	122.14	21.22	10.83	29.14	7.62
Lane Group LOS	C	F	C	B	C	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.08	14.63	13.87	2.12	1.62	3.54
50th-Percentile Queue Length [ft/ln]	52.06	365.75	346.63	53.03	40.51	88.60
95th-Percentile Queue Length [veh/ln]	3.75	22.32	19.97	3.82	2.92	6.38
95th-Percentile Queue Length [ft/ln]	93.72	557.94	499.29	95.46	72.93	159.48

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.10	122.14	21.22	10.83	29.14	7.62
Movement LOS	C	F	C	B	C	A
d_A, Approach Delay [s/veh]	83.69		20.33		9.83	
Approach LOS	F		C		A	
d_I, Intersection Delay [s/veh]	25.29					
Intersection LOS	C					
Intersection V/C	0.942					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.619	3.181	3.188
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.33	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.992	2.394
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	20.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.863

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	605	59	2220	125	38	1242
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.80	0.00	2.80	0.90	0.00	4.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	358	0	34	2	10	245
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	963	59	2254	127	48	1487
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	246	15	575	32	12	379
Total Analysis Volume [veh/h]	983	60	2300	130	49	1517
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	10
Pedestrian Clearance [s]	26	0	21	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	24	24	37	37	3	45
g / C, Green / Cycle	0.30	0.30	0.47	0.47	0.04	0.56
(v / s)_i Volume / Saturation Flow Rate	0.28	0.04	0.45	0.08	0.03	0.30
s, saturation flow rate [veh/h]	3464	1615	5061	1604	1810	4975
c, Capacity [veh/h]	1049	489	2375	752	75	2797
d1, Uniform Delay [s]	27.13	20.18	20.64	12.25	37.73	11.02
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.92	0.04	1.67	0.04	3.48	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.12	0.97	0.17	0.65	0.54
d, Delay for Lane Group [s/veh]	29.05	20.22	22.31	12.29	41.22	11.09
Lane Group LOS	C	C	C	B	D	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.06	0.80	11.90	1.17	0.96	4.48
50th-Percentile Queue Length [ft/ln]	226.59	20.08	297.38	29.22	24.08	112.10
95th-Percentile Queue Length [veh/ln]	14.00	1.45	17.55	2.10	1.73	7.96
95th-Percentile Queue Length [ft/ln]	350.03	36.15	438.78	52.60	43.34	198.92

Movement, Approach, & Intersection Results

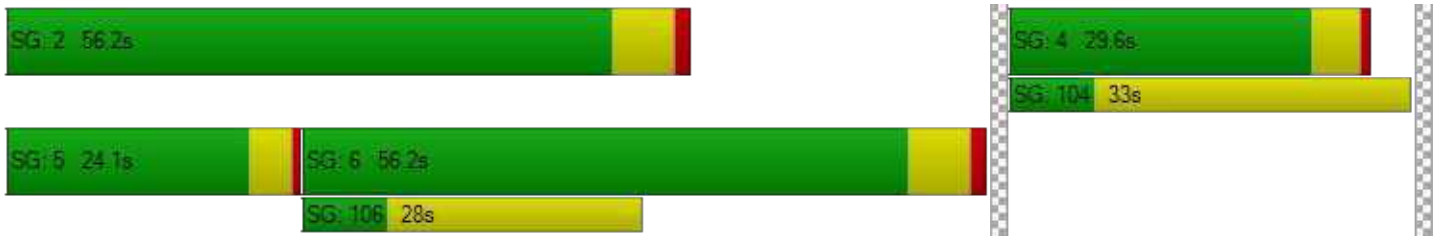
d_M, Delay for Movement [s/veh]	29.05	20.22	22.31	12.29	41.22	11.09
Movement LOS	C	C	C	B	D	B
d_A, Approach Delay [s/veh]	28.54		21.77		12.03	
Approach LOS	C		C		B	
d_I, Intersection Delay [s/veh]	20.15					
Intersection LOS	C					
Intersection V/C	0.863					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.379	3.626	3.414
Crosswalk LOS	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.896	2.421
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 20 Near Term + 3723 Haven AM (2019 vols)
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.938	24.1	C
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	0.816	12.8	B
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Left	1.231	193.6	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NB Thru	1.005	25.9	C
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.868	63.9	E
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.840	22.0	C
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.692	9.5	A

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	24.1
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.938

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	893	1464	217	1130	436
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.30	3.60	2.15	5.10	3.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	345	50	0	246	34
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1238	1514	217	1376	470
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	316	386	54	351	120
Total Analysis Volume [veh/h]	0	1263	1545	217	1404	480
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	3		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	0
Maximum Green [s]	0	32	32	0	32	0
Amber [s]	0.0	4.1	4.1	0.0	3.1	0.0
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	7	10	0	5	0
Pedestrian Clearance [s]	0	16	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	42	40	33	33
g / C, Green / Cycle	0.53	0.50	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.32	0.44	0.42	0.31
s, saturation flow rate [veh/h]	4000	3515	3373	1572
c, Capacity [veh/h]	2121	1772	1394	650
d1, Uniform Delay [s]	12.87	17.53	23.43	19.79
k, delay calibration	0.50	0.50	0.06	0.28
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.24	6.25	10.04	4.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.87	1.01	0.74
d, Delay for Lane Group [s/veh]	14.11	23.78	33.47	24.06
Lane Group LOS	B	C	F	C
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	7.11	12.42	14.00	7.79
50th-Percentile Queue Length [ft/ln]	177.76	310.38	350.12	194.63
95th-Percentile Queue Length [veh/ln]	11.48	18.19	20.24	12.36
95th-Percentile Queue Length [ft/ln]	287.08	454.84	506.10	309.03

Movement, Approach, & Intersection Results

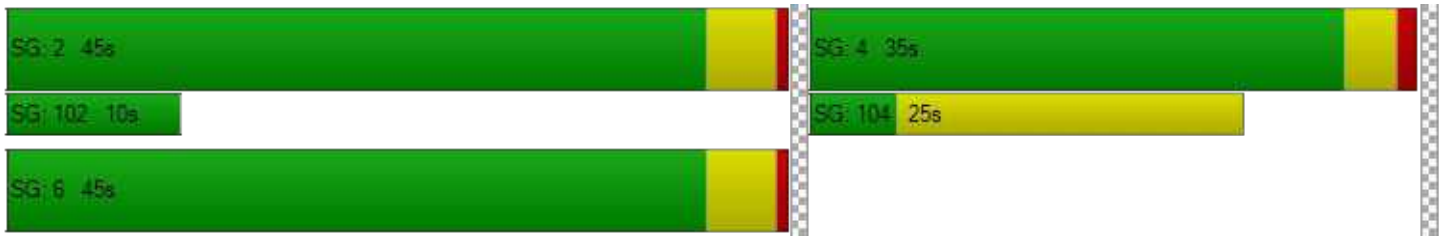
d_M, Delay for Movement [s/veh]	0.00	14.11	23.78	0.00	33.47	24.06
Movement LOS		B	C		F	C
d_A, Approach Delay [s/veh]	14.11		23.78		31.07	
Approach LOS	B		C		C	
d_I, Intersection Delay [s/veh]	24.11					
Intersection LOS	C					
Intersection V/C	0.938					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	14.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	27.23
I_p,int, Pedestrian LOS Score for Intersection	3.062	0.000	2.580
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.82	9.80	15.07
I_b,int, Bicycle LOS Score for Intersection	2.602	2.834	1.560
Bicycle LOS	B	C	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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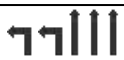
Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	12.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	830	68	1148	2696	206	416
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.40	3.50	1.60	3.10	2.20	3.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	55	6	6	341	45	2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	885	74	1154	3037	251	418
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	228	19	297	783	65	108
Total Analysis Volume [veh/h]	912	76	1190	3131	259	431
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	6		0		7	
v_ci, Inbound Pedestrian Volume crossing mi	7		0		6	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	35	110	75	110	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	3.9	1.5	3.9	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	68	68	68	68	68	68
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	5.90	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	3.90	2.00	0.00
g_i, Effective Green Time [s]	20	20	27	50	8	38
g / C, Green / Cycle	0.29	0.29	0.39	0.74	0.12	0.57
(v / s)_i Volume / Saturation Flow Rate	0.18	0.05	0.34	0.62	0.08	0.10
s, saturation flow rate [veh/h]	4955	1549	3470	5049	3453	4166
c, Capacity [veh/h]	1445	452	1359	3718	406	2367
d1, Uniform Delay [s]	20.85	17.88	19.09	6.20	28.55	7.05
k, delay calibration	0.13	0.13	0.04	0.13	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.55	0.21	0.74	0.67	0.63	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.63	0.17	0.88	0.84	0.64	0.18
d, Delay for Lane Group [s/veh]	21.41	18.09	19.83	6.87	29.17	7.06
Lane Group LOS	C	B	B	A	C	A
Critical Lane Group	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	3.54	0.77	6.86	2.81	1.92	0.81
50th-Percentile Queue Length [ft/ln]	88.52	19.24	171.56	70.28	48.09	20.16
95th-Percentile Queue Length [veh/ln]	6.37	1.39	11.16	5.06	3.46	1.45
95th-Percentile Queue Length [ft/ln]	159.33	34.63	278.97	126.50	86.56	36.28

Movement, Approach, & Intersection Results

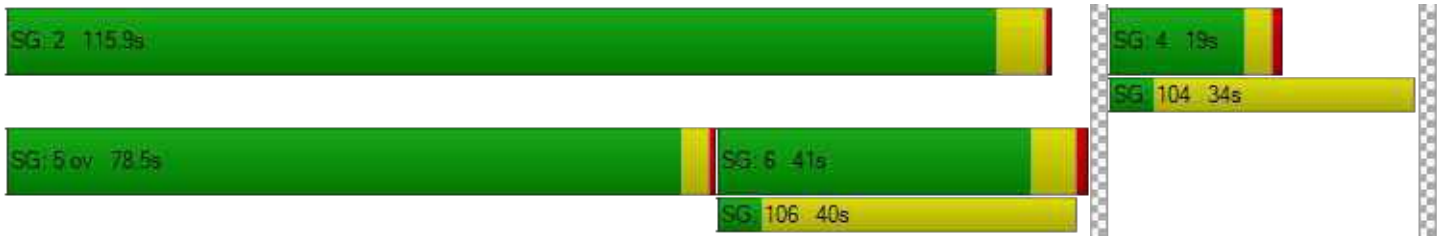
d_M, Delay for Movement [s/veh]	21.41	18.09	19.83	6.87	29.17	7.06
Movement LOS	C	B	B	A	C	A
d_A, Approach Delay [s/veh]	21.15		10.44		15.36	
Approach LOS	C		B		B	
d_I, Intersection Delay [s/veh]	12.77					
Intersection LOS	B					
Intersection V/C	0.816					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
l_p,int, Pedestrian LOS Score for Intersection	3.680	0.000	2.880
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1458	583	625
d_b, Bicycle Delay [s]	1.76	12.05	11.34
l_b,int, Bicycle LOS Score for Intersection	2.103	3.936	1.670
Bicycle LOS	B	D	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	193.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.231

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	2	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Base Volume Input [veh/h]	196	425	277	35	67	73	342	412	173	1021	2219	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.90	4.20	10.20	37.50	30.50	40.50	4.60	6.20	12.30	6.70	3.80	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	494	0	18	0	0	0	0	43	50	57	329	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	16	0	0	106	0	0	0
Total Hourly Volume [veh/h]	690	425	295	35	67	57	342	455	117	1078	2548	72
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	176	108	75	9	17	15	87	116	30	275	650	18
Total Analysis Volume [veh/h]	704	434	301	36	68	58	349	464	119	1100	2600	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			2			3			0		
v_di, Inbound Pedestrian Volume crossing m	0			3			2			0		
v_co, Outbound Pedestrian Volume crossing	4			0			3			0		
v_ci, Inbound Pedestrian Volume crossing mi	3			0			4			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			0			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	8	8	15	15	8	6	10	10	6	10	10
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.6	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	15	25	25	20	20	25	25	55	70	40	70	55
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	5	7	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	10	0	29	10	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	3.1	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		No	Yes		No	Yes	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	5.10	5.10	4.60	6.00	6.00	4.60	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	3.10	3.10	2.60	4.00	4.00	2.60	4.00	4.00
g_i, Effective Green Time [s]	22	21	51	9	9	9	14	39	39	25	50	50
g / C, Green / Cycle	0.19	0.18	0.44	0.08	0.08	0.08	0.13	0.34	0.34	0.22	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.43	0.28	0.17	0.03	0.06	0.05	0.10	0.09	0.08	0.33	0.52	0.05
s, saturation flow rate [veh/h]	1654	1565	1764	1273	1228	1077	3386	4922	1458	3328	5020	1615
c, Capacity [veh/h]	316	288	777	100	97	85	426	1692	501	726	2190	704
d1, Uniform Delay [s]	46.36	46.76	21.62	50.09	51.52	51.38	48.85	27.25	26.87	44.82	32.32	19.09
k, delay calibration	0.50	0.43	0.11	0.11	0.11	0.12	0.11	0.11	0.11	0.25	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	562.10	242.40	0.32	2.17	9.00	10.03	3.96	0.09	0.24	235.69	85.47	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	2.23	1.51	0.39	0.36	0.70	0.69	0.82	0.27	0.24	1.52	1.19	0.10
d, Delay for Lane Group [s/veh]	608.46	289.15	21.93	52.26	60.52	61.41	52.80	27.34	27.12	280.51	117.79	19.15
Lane Group LOS	F	F	C	D	E	E	D	C	C	F	F	B
Critical Lane Group	Yes	No	No	No	Yes	No	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	58.13	13.71	1.77	1.06	1.09	1.88	5.09	3.09	2.37	33.98	36.84	1.16
50th-Percentile Queue Length [ft/ln]	1453.20	342.67	44.31	26.43	27.23	47.09	127.28	77.28	59.22	849.38	920.91	29.12
95th-Percentile Queue Length [veh/ln]	91.44	23.15	3.19	1.90	1.96	3.39	8.79	5.56	4.26	52.47	52.71	2.10
95th-Percentile Queue Length [ft/ln]	2285.93	578.77	79.76	47.58	49.02	84.76	219.79	139.10	106.60	1311.75	1317.70	52.42

Movement, Approach, & Intersection Results

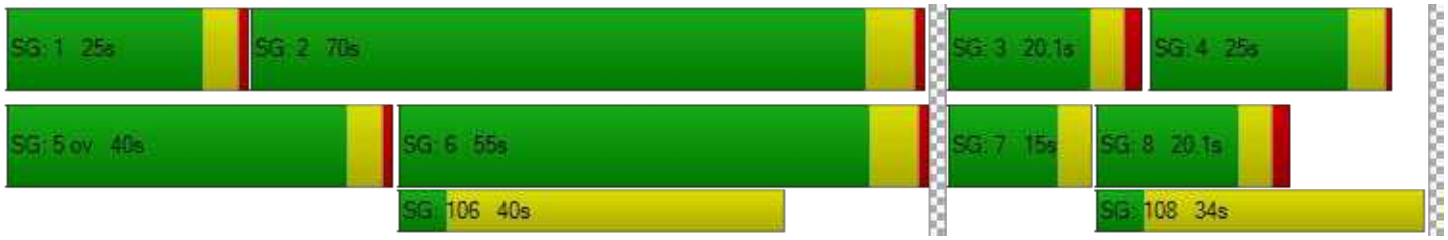
d_M, Delay for Movement [s/veh]	608.46	289.15	21.93	52.26	60.52	61.41	52.80	27.34	27.12	280.51	117.79	19.15
Movement LOS	F	F	C	D	E	E	D	C	C	F	F	B
d_A, Approach Delay [s/veh]	389.47			59.00			36.84			163.32		
Approach LOS	F			E			D			F		
d_I, Intersection Delay [s/veh]	193.56											
Intersection LOS	F											
Intersection V/C	1.231											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.29	0.00	61.29	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.164	0.000	3.364	0.000
Crosswalk LOS	C	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	294	214	700	914
d_b, Bicycle Delay [s]	50.92	55.80	29.58	20.63
l_b,int, Bicycle LOS Score for Intersection	2.747	1.706	2.131	3.635
Bicycle LOS	B	A	B	D

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 110: Marsh Road and US 101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	25.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.005

Intersection Setup

Name	Marsh Road		Marsh Road			
Approach	Northbound		Southbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road			
Base Volume Input [veh/h]	1424	0	0	866	771	663
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.50	0.00	0.00	5.20	1.90	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	571	0	0	87	0	214
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1995	0	0	953	771	877
Peak Hour Factor	0.9700	1.0000	1.0000	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	514	0	0	246	199	226
Total Analysis Volume [veh/h]	2057	0	0	982	795	904
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	1		0		2	
v_ci, Inbound Pedestrian Volume crossing mi	2		0		1	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	1
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	0
Maximum Green [s]	32	0	0	32	26	0
Amber [s]	4.1	0.0	0.0	4.1	3.2	0.0
All red [s]	0.5	0.0	0.0	0.5	1.0	0.0
Split [s]	50	0	0	50	30	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	0	10	5	0
Pedestrian Clearance [s]	12	0	0	10	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	47	47	28	28
g / C, Green / Cycle	0.59	0.59	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.59	0.28	0.23	0.33
s, saturation flow rate [veh/h]	3489	3469	3461	2761
c, Capacity [veh/h]	2070	2058	1212	967
d1, Uniform Delay [s]	16.07	9.20	21.87	25.04
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	18.34	0.80	0.23	2.09
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.99	0.48	0.66	0.93
d, Delay for Lane Group [s/veh]	34.41	10.00	22.09	27.13
Lane Group LOS	C	A	C	C
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	20.65	4.43	5.99	8.04
50th-Percentile Queue Length [ft/ln]	516.23	110.75	149.81	200.88
95th-Percentile Queue Length [veh/ln]	28.10	7.88	10.01	12.68
95th-Percentile Queue Length [ft/ln]	702.55	197.04	250.17	317.10

Movement, Approach, & Intersection Results

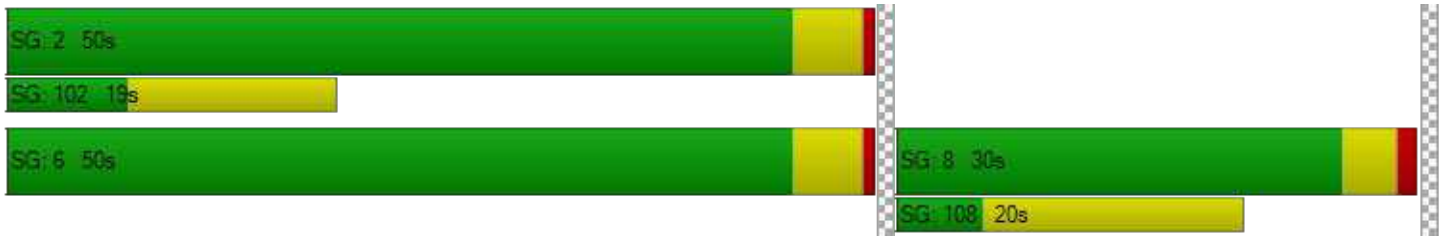
d_M, Delay for Movement [s/veh]	34.41	0.00	0.00	10.00	22.09	27.13
Movement LOS	C			A	C	C
d_A, Approach Delay [s/veh]	34.41		10.00		24.77	
Approach LOS	C		A		C	
d_I, Intersection Delay [s/veh]	25.90					
Intersection LOS	C					
Intersection V/C	1.005					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.088	2.539
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.49	7.49	18.36
I_b,int, Bicycle LOS Score for Intersection	3.257	2.370	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	63.9
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.868

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	176	27	1502	10	30	7	8	204	312	1931	378	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	4.60	0.00	0.00	16.70	0.00	18.20	9.10	4.70	4.90	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	342	0	0	0	0	11	8	115	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	181	27	1844	10	30	7	8	215	320	2046	384	34
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	7	480	3	8	2	2	56	83	533	100	9
Total Analysis Volume [veh/h]	189	28	1921	10	31	7	8	224	333	2131	400	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			1			1			0	
v_di, Inbound Pedestrian Volume crossing m		0			1			1			0	
v_co, Outbound Pedestrian Volume crossing		0			22			0			22	
v_ci, Inbound Pedestrian Volume crossing mi		0			22			0			22	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		1			13			25			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	7	4	6	4	1	4	1	2	8
Auxiliary Signal Groups		3	2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	0	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	0	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	67	21	21	0	32	25	32	40	32	40	67	0
Vehicle Extension [s]	4.5	0.0	0.0	0.0	0.0	3.0	0.0	3.0	0.0	3.0	4.5	0.0
Walk [s]	5	0	0	0	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		Yes			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	20	87	29	29	36	36	36	65	65
g / C, Green / Cycle	0.13	0.54	0.18	0.18	0.23	0.23	0.23	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.12	0.47	0.01	0.01	0.07	0.07	0.23	0.42	0.24
s, saturation flow rate [veh/h]	1821	4112	1863	1610	1621	1480	1444	5075	1788
c, Capacity [veh/h]	229	2138	339	293	368	336	328	2057	724
d1, Uniform Delay [s]	69.43	34.41	54.28	54.32	51.63	51.63	61.16	47.58	37.41
k, delay calibration	0.50	0.50	0.04	0.04	0.11	0.11	0.48	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	47.49	6.53	0.03	0.04	0.52	0.57	52.26	29.93	3.66
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.90	0.07	0.08	0.33	0.33	1.01	1.04	0.60
d, Delay for Lane Group [s/veh]	116.93	40.94	54.31	54.36	52.15	52.20	113.42	77.51	41.07
Lane Group LOS	F	D	D	D	D	D	F	F	D
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	11.89	23.36	0.86	0.78	4.18	3.82	17.98	32.82	14.27
50th-Percentile Queue Length [ft/ln]	297.18	584.08	21.43	19.47	104.43	95.40	449.59	820.53	356.65
95th-Percentile Queue Length [veh/ln]	17.54	31.29	1.54	1.40	7.52	6.87	25.15	43.37	20.46
95th-Percentile Queue Length [ft/ln]	438.54	782.26	38.58	35.04	187.97	171.72	628.80	1084.16	511.51

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	116.93	116.93	40.94	54.31	54.34	54.36	52.15	52.17	113.42	77.51	41.07	41.07
Movement LOS	F	F	D	D	D	D	D	D	F	F	D	D
d_A, Approach Delay [s/veh]	48.65			54.33			88.27			71.33		
Approach LOS	D			D			F			E		
d_I, Intersection Delay [s/veh]	63.86											
Intersection LOS	E											
Intersection V/C	0.868											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.007	2.442	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	205	349	455	766
d_b, Bicycle Delay [s]	64.47	54.89	48.34	30.46
l_b,int, Bicycle LOS Score for Intersection	5.087	1.599	2.026	5.794
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	4	3	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	22.0
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.840

Intersection Setup

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	1	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	49.21	0.00	0.00
Speed [mph]	30.00		50.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	104	221	1178	495	287	1967
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.40	23.10	5.10	5.30	6.30	3.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	33	343	0	88	76
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	104	254	1521	495	375	2043
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	27	67	400	130	99	538
Total Analysis Volume [veh/h]	109	267	1601	521	395	2151
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	4	3	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	5	10
Maximum Green [s]	20	10	50	0	25	50
Amber [s]	3.2	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	8.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	1.7	9.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	82	82	82	82	82	82
L, Total Lost Time per Cycle [s]	3.70	3.70	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	4.20	4.20	0.00	4.20
g_i, Effective Green Time [s]	20	20	32	32	52	52
g / C, Green / Cycle	0.24	0.24	0.39	0.39	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.04	0.22	0.36	0.37	0.55	0.48
s, saturation flow rate [veh/h]	3078	1188	4470	1393	721	4518
c, Capacity [veh/h]	747	288	1744	543	491	2879
d1, Uniform Delay [s]	24.51	30.49	23.89	24.50	20.14	10.35
k, delay calibration	0.04	0.37	0.04	0.10	0.35	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.03	30.03	0.90	10.31	9.50	0.15
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.15	0.93	0.92	0.96	0.81	0.75
d, Delay for Lane Group [s/veh]	24.54	60.52	24.79	34.81	29.64	10.50
Lane Group LOS	C	E	C	C	C	B
Critical Lane Group	No	Yes	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	0.82	7.38	8.60	10.02	3.81	6.53
50th-Percentile Queue Length [ft/ln]	20.48	184.43	214.98	250.48	95.21	163.17
95th-Percentile Queue Length [veh/ln]	1.47	11.83	13.41	15.21	6.86	10.72
95th-Percentile Queue Length [ft/ln]	36.86	295.78	335.21	380.26	171.38	267.91

Movement, Approach, & Intersection Results

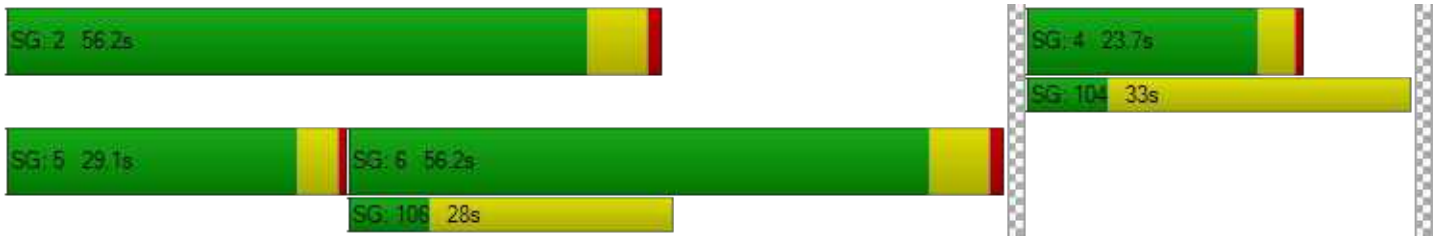
d_M, Delay for Movement [s/veh]	24.54	60.52	24.79	34.81	29.64	10.50
Movement LOS	C	E	C	C	C	B
d_A, Approach Delay [s/veh]	50.09		27.25		13.47	
Approach LOS	D		C		B	
d_I, Intersection Delay [s/veh]	22.00					
Intersection LOS	C					
Intersection V/C	0.840					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.784	3.615	3.516
Crosswalk LOS	C	D	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.22	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.727	2.960
Bicycle LOS	A	B	C

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	9.5
Analysis Method:	HCM 6th Edition	Level Of Service:	A
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.692

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	116	47	1517	118	101	2056
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	12.30	8.30	5.30	7.10	0.00	3.70
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	96	0	343	10	51	25
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	212	47	1860	128	152	2081
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	55	12	479	33	39	536
Total Analysis Volume [veh/h]	219	48	1918	132	157	2145
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	10
Pedestrian Clearance [s]	26	0	21	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	42	42	42	42	42	42
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	5	5	17	17	5	26
g / C, Green / Cycle	0.11	0.11	0.42	0.42	0.11	0.63
(v / s)_i Volume / Saturation Flow Rate	0.07	0.03	0.39	0.09	0.09	0.43
s, saturation flow rate [veh/h]	3173	1509	4959	1493	1810	5024
c, Capacity [veh/h]	363	173	2071	623	203	3153
d1, Uniform Delay [s]	17.63	16.95	11.57	7.77	18.07	5.06
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.60	0.32	0.85	0.06	2.39	0.10
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	0.28	0.93	0.21	0.77	0.68
d, Delay for Lane Group [s/veh]	18.23	17.28	12.42	7.83	20.46	5.16
Lane Group LOS	B	B	B	A	C	A
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	0.93	0.39	3.50	0.47	1.29	0.98
50th-Percentile Queue Length [ft/ln]	23.16	9.83	87.40	11.82	32.34	24.51
95th-Percentile Queue Length [veh/ln]	1.67	0.71	6.29	0.85	2.33	1.76
95th-Percentile Queue Length [ft/ln]	41.68	17.69	157.33	21.28	58.22	44.11

Movement, Approach, & Intersection Results

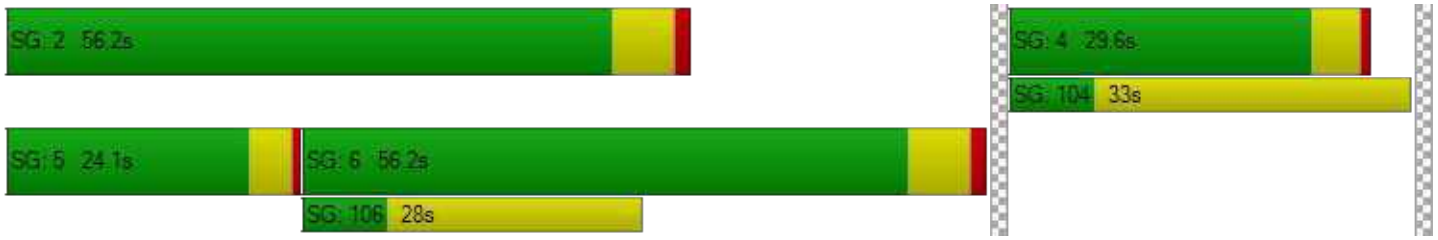
d_M, Delay for Movement [s/veh]	18.23	17.28	12.42	7.83	20.46	5.16
Movement LOS	B	B	B	A	C	A
d_A, Approach Delay [s/veh]	18.06		12.13		6.20	
Approach LOS	B		B		A	
d_I, Intersection Delay [s/veh]	9.52					
Intersection LOS	A					
Intersection V/C	0.692					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.244	3.532	3.485
Crosswalk LOS	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.687	2.826
Bicycle LOS	A	B	C

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 20 Near Term + 3723 Haven PM (2019 vols)
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.797	17.8	B
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.097	113.2	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Right	1.317	180.9	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Right	0.816	13.5	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	EB Right	0.941	36.4	D
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	0.943	25.3	C
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.864	20.3	C

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	17.8
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.797

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	963	1003	279	1187	296
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.60	2.70	2.15	3.60	0.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	61	255	0	34	3
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1024	1258	279	1221	299
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	261	321	70	311	76
Total Analysis Volume [veh/h]	0	1045	1284	279	1246	305
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		4		5	
v_ci, Inbound Pedestrian Volume crossing mi	0		5		4	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	6		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	0
Maximum Green [s]	0	32	32	0	32	0
Amber [s]	0.0	4.1	4.1	0.0	3.1	0.0
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	7	0	5	0
Pedestrian Clearance [s]	0	0	16	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	44	42	32	32
g / C, Green / Cycle	0.55	0.52	0.40	0.40
(v / s)_i Volume / Saturation Flow Rate	0.26	0.36	0.36	0.19
s, saturation flow rate [veh/h]	4000	3540	3414	1609
c, Capacity [veh/h]	2186	1841	1356	639
d1, Uniform Delay [s]	11.12	14.43	22.85	17.91
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.75	2.22	1.16	0.21
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.48	0.70	0.92	0.48
d, Delay for Lane Group [s/veh]	11.88	16.65	24.01	18.11
Lane Group LOS	B	B	C	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	5.16	8.18	10.51	3.98
50th-Percentile Queue Length [ft/ln]	128.96	204.39	262.78	99.62
95th-Percentile Queue Length [veh/ln]	8.88	12.86	15.83	7.17
95th-Percentile Queue Length [ft/ln]	222.07	321.62	395.70	179.32

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	11.88	16.65	0.00	24.01	18.11
Movement LOS		B	B		C	B
d_A, Approach Delay [s/veh]	11.88		16.65		22.85	
Approach LOS	B		B		C	
d_I, Intersection Delay [s/veh]	17.84					
Intersection LOS	B					
Intersection V/C	0.797					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.876	0.000	2.438
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.83	9.81	15.07
I_b,int, Bicycle LOS Score for Intersection	2.422	2.619	1.560
Bicycle LOS	B	B	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

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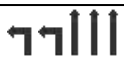
Intersection Level Of Service Report

Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	113.2
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.097

Intersection Setup

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	3308	22	359	971	70	1803
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	16.10	4.90	3.80	9.00	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	245	0	2	48	4	6
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	3553	22	361	1019	74	1809
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	906	6	92	260	19	461
Total Analysis Volume [veh/h]	3626	22	368	1040	76	1846
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	7		0		8	
v_ci, Inbound Pedestrian Volume crossing mi	8		0		7	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	90	140	50	140	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	5.8	1.5	5.8	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	153	153	153	153	153	153
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	7.80	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	5.80	2.00	0.00
g_i, Effective Green Time [s]	90	90	34	126	15	53
g / C, Green / Cycle	0.59	0.59	0.22	0.82	0.10	0.35
(v / s)_i Volume / Saturation Flow Rate	0.71	0.02	0.11	0.21	0.02	0.44
s, saturation flow rate [veh/h]	5077	1399	3378	5020	3264	4237
c, Capacity [veh/h]	2995	825	754	4138	321	1474
d1, Uniform Delay [s]	31.29	13.03	51.64	2.97	63.50	49.75
k, delay calibration	0.13	0.13	0.04	0.13	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	95.68	0.02	0.18	0.04	0.14	114.11
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.21	0.03	0.49	0.25	0.24	1.25
d, Delay for Lane Group [s/veh]	126.97	13.05	51.83	3.01	63.64	163.86
Lane Group LOS	F	B	D	A	E	F
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	59.02	0.30	5.99	1.51	1.37	34.05
50th-Percentile Queue Length [ft/ln]	1475.59	7.55	149.65	37.79	34.29	851.25
95th-Percentile Queue Length [veh/ln]	83.14	0.54	10.00	2.72	2.47	50.06
95th-Percentile Queue Length [ft/ln]	2078.57	13.58	249.96	68.02	61.71	1251.40

Movement, Approach, & Intersection Results

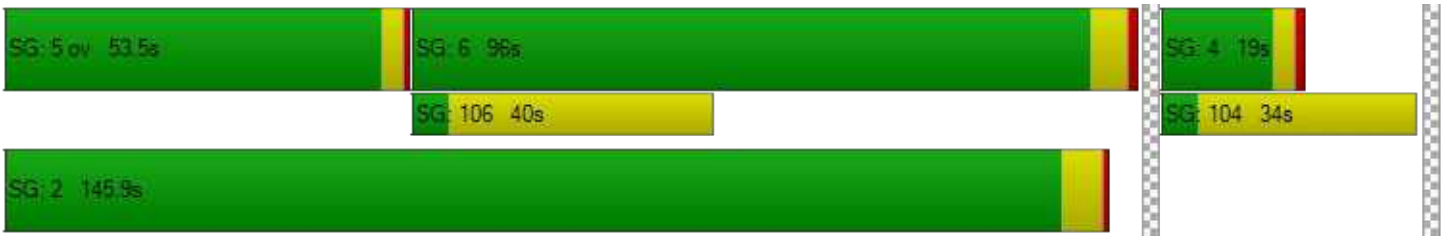
d_M, Delay for Movement [s/veh]	126.97	13.05	51.83	3.01	63.64	163.86
Movement LOS	F	B	D	A	E	F
d_A, Approach Delay [s/veh]	126.28		15.77		159.90	
Approach LOS	F		B		F	
d_I, Intersection Delay [s/veh]	113.24					
Intersection LOS	F					
Intersection V/C	1.097					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
l_p,int, Pedestrian LOS Score for Intersection	3.779	0.000	2.938
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1750	1833	625
d_b, Bicycle Delay [s]	0.38	0.17	11.34
l_b,int, Bicycle LOS Score for Intersection	3.566	2.334	1.670
Bicycle LOS	D	B	A

Sequence

Ring 1	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	180.9
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.317

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Base Volume Input [veh/h]	90	95	1462	159	204	134	77	1901	120	559	707	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.20	10.90	3.30	4.30	1.00	1.70	37.10	2.50	12.00	6.40	5.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	50	0	30	0	0	0	0	215	260	9	43	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	70	0	0	45	0	0	1
Total Hourly Volume [veh/h]	140	95	1492	159	204	64	77	2116	335	568	750	33
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	36	24	385	41	53	16	20	545	86	146	193	9
Total Analysis Volume [veh/h]	144	98	1538	164	210	66	79	2181	345	586	773	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			11			11			0		
v_di, Inbound Pedestrian Volume crossing m	0			11			11			0		
v_co, Outbound Pedestrian Volume crossing	8			0			8			0		
v_ci, Inbound Pedestrian Volume crossing mi	8			0			8			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	1			3			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	155
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	ProtPer	Permiss	Permiss	ProtPer	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	5	5	5	4	5	5	5	4
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.0	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	47	47	20	42	47	21	38	64	47	64	38
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	5	5	0	5	5	0	5	0	0	0	5
Pedestrian Clearance [s]	0	0	0	0	29	0	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	2.5	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		Yes	No		Yes	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	108	108	108	108	108	108	108	108	108	108	108	108
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	4.50	4.50	6.00	6.00	6.00	6.00	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	2.50	2.50	0.00	4.00	4.00	0.00	4.00	4.00
g_i, Effective Green Time [s]	11	15	44	9	15	15	69	40	40	69	60	60
g / C, Green / Cycle	0.10	0.14	0.40	0.08	0.13	0.13	0.64	0.37	0.37	0.64	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.08	0.07	0.83	0.09	0.13	0.04	0.07	0.43	0.24	0.39	0.16	0.02
s, saturation flow rate [veh/h]	1749	1479	1853	1748	1606	1490	1133	5073	1462	1504	4959	1615
c, Capacity [veh/h]	177	205	745	145	215	199	746	1875	540	958	2725	887
d1, Uniform Delay [s]	47.76	43.07	32.19	49.72	46.81	42.44	7.90	34.18	28.20	24.45	13.04	11.24
k, delay calibration	0.11	0.11	0.50	0.38	0.20	0.11	0.11	0.11	0.17	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.81	1.72	483.58	104.14	33.73	0.96	0.06	74.76	2.00	0.64	0.06	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.48	2.06	1.13	0.98	0.33	0.11	1.16	0.64	0.61	0.28	0.04
d, Delay for Lane Group [s/veh]	56.57	44.79	515.77	153.86	80.54	43.41	7.97	108.94	30.19	25.08	13.10	11.26
Lane Group LOS	E	D	F	F	F	D	A	F	C	C	B	B
Critical Lane Group	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No
50th-Percentile Queue Length [veh/ln]	4.16	1.23	39.41	8.18	3.86	1.68	0.34	28.94	7.56	2.96	3.27	0.37
50th-Percentile Queue Length [ft/ln]	103.92	30.85	985.25	204.45	96.48	41.99	8.42	723.45	189.12	74.04	81.68	9.36
95th-Percentile Queue Length [veh/ln]	7.48	2.22	67.08	13.43	6.95	3.02	0.61	41.67	12.08	5.33	5.88	0.67
95th-Percentile Queue Length [ft/ln]	187.06	55.54	1676.93	335.65	173.67	75.59	15.15	1041.87	301.88	133.27	147.03	16.85

Movement, Approach, & Intersection Results

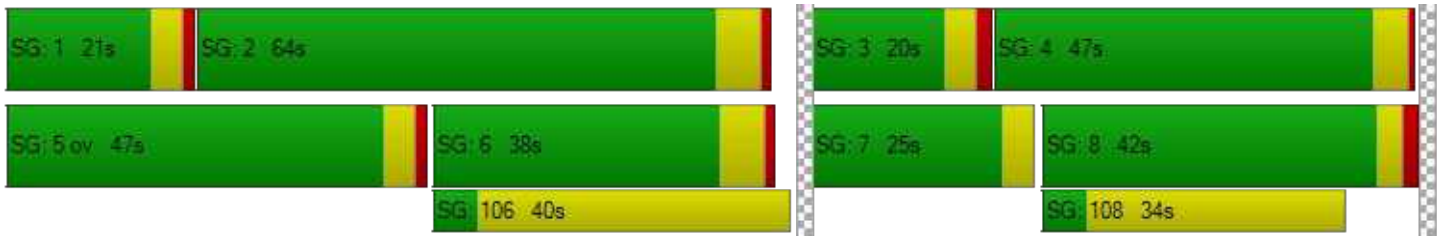
d_M, Delay for Movement [s/veh]	56.57	44.79	515.77	153.86	80.54	43.41	7.97	108.94	30.19	25.08	13.10	11.26
Movement LOS	E	D	F	F	F	D	A	F	C	C	B	B
d_A, Approach Delay [s/veh]	452.69			102.30			95.45			18.09		
Approach LOS	F			F			F			B		
d_I, Intersection Delay [s/veh]	180.87											
Intersection LOS	F											
Intersection V/C	1.317											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	68.76	0.00	68.76	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.502	0.000	3.258	0.000
Crosswalk LOS	D	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	484	413	748
d_b, Bicycle Delay [s]	40.77	44.60	48.80	30.35
l_b,int, Bicycle LOS Score for Intersection	3.028	1.980	3.017	2.326
Bicycle LOS	C	A	C	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 110: Marsh Road/101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	13.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.816

Intersection Setup

Name	Marsh Road		Marsh Road		101 NB Ramps	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road		101 NB Ramps	
Base Volume Input [veh/h]	1857	0	0	833	570	429
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.40	0.00	0.00	3.00	5.10	12.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	80	0	0	434	0	43
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1937	0	0	1267	570	472
Peak Hour Factor	0.9900	1.0000	1.0000	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	489	0	0	320	144	119
Total Analysis Volume [veh/h]	1957	0	0	1280	576	477
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		1	
v_ci, Inbound Pedestrian Volume crossing mi	1		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		7		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	1
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	0
Maximum Green [s]	32	0	0	32	26	0
Amber [s]	4.1	0.0	0.0	4.1	3.2	0.0
All red [s]	0.5	0.0	0.0	0.5	1.0	0.0
Split [s]	50	0	0	50	30	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	0	0	5	0
Pedestrian Clearance [s]	12	0	0	0	15	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	57	57	18	18
g / C, Green / Cycle	0.72	0.72	0.23	0.23
(v / s)_i Volume / Saturation Flow Rate	0.56	0.36	0.17	0.18
s, saturation flow rate [veh/h]	3492	3532	3373	2585
c, Capacity [veh/h]	2504	2533	764	585
d1, Uniform Delay [s]	7.26	5.01	28.79	29.27
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.51	0.72	0.58	1.07
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.78	0.51	0.75	0.81
d, Delay for Lane Group [s/veh]	9.77	5.73	29.37	30.34
Lane Group LOS	A	A	C	C
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	8.44	3.67	5.02	4.26
50th-Percentile Queue Length [ft/ln]	210.94	91.65	125.49	106.55
95th-Percentile Queue Length [veh/ln]	13.20	6.60	8.69	7.65
95th-Percentile Queue Length [ft/ln]	330.03	164.97	217.35	191.20

Movement, Approach, & Intersection Results

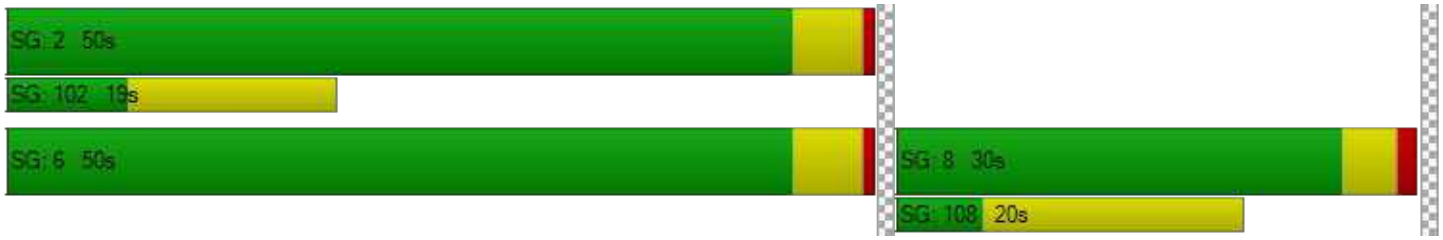
d_M, Delay for Movement [s/veh]	9.77	0.00	0.00	5.73	29.37	30.34
Movement LOS	A			A	C	C
d_A, Approach Delay [s/veh]	9.77		5.73		29.81	
Approach LOS	A		A		C	
d_I, Intersection Delay [s/veh]	13.48					
Intersection LOS	B					
Intersection V/C	0.816					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.032	2.381
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.48	7.51	18.36
l_b,int, Bicycle LOS Score for Intersection	3.174	2.616	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	36.4
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.941

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	203	40	1834	12	31	5	9	513	224	1822	131	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.20	0.00	2.90	0.00	0.00	0.00	0.00	0.40	2.20	2.90	14.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	32	0	0	0	0	4	1	599	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	40	1866	12	31	5	9	517	225	2421	135	14
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	10	486	3	8	1	2	135	59	630	35	4
Total Analysis Volume [veh/h]	213	42	1944	13	32	5	9	539	234	2522	141	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			4			4			0	
v_di, Inbound Pedestrian Volume crossing m		0			4			4			0	
v_co, Outbound Pedestrian Volume crossing		0			13			0			13	
v_ci, Inbound Pedestrian Volume crossing mi		0			13			0			13	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			13			8			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	1	2	8
Auxiliary Signal Groups			2,3									
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	10	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	10	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	70	25	25	25	32	25	32	33	32	33	70	0
Vehicle Extension [s]	4.5	2.0	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	4.5	0.0
Walk [s]	5	0	0	10	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	10	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.1	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	20.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	26	128	10	10	26	26	26	88	88
g / C, Green / Cycle	0.16	0.80	0.06	0.06	0.17	0.17	0.17	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.14	0.46	0.02	0.01	0.15	0.15	0.15	0.49	0.09
s, saturation flow rate [veh/h]	1824	4190	1707	1588	1891	1724	1551	5150	1649
c, Capacity [veh/h]	298	3253	137	97	313	285	256	2835	908
d1, Uniform Delay [s]	65.11	7.45	71.59	71.55	65.69	65.69	65.37	31.68	17.85
k, delay calibration	0.46	0.50	0.04	0.04	0.30	0.30	0.30	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	24.17	0.82	0.27	0.45	23.46	25.06	26.14	4.67	0.41
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.60	0.20	0.23	0.92	0.92	0.91	0.89	0.17
d, Delay for Lane Group [s/veh]	89.28	8.27	71.86	72.00	89.15	90.76	91.51	36.35	18.27
Lane Group LOS	F	A	E	E	F	F	F	D	B
Critical Lane Group	No	Yes	Yes	No	Yes	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	12.18	8.77	1.10	0.89	13.60	12.52	11.25	29.35	3.05
50th-Percentile Queue Length [ft/ln]	304.38	219.19	27.52	22.30	339.96	313.00	281.29	733.71	76.13
95th-Percentile Queue Length [veh/ln]	17.90	13.62	1.98	1.61	19.65	18.32	16.75	38.23	5.48
95th-Percentile Queue Length [ft/ln]	447.44	340.59	49.54	40.15	491.15	458.08	418.81	955.82	137.03

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	89.28	89.28	8.27	71.86	71.94	72.00	89.15	89.93	91.51	36.35	18.27	18.27
Movement LOS	F	F	A	E	E	E	F	F	F	D	B	B
d_A, Approach Delay [s/veh]	17.66			71.92			90.40			35.29		
Approach LOS	B			E			F			D		
d_I, Intersection Delay [s/veh]	36.37											
Intersection LOS	D											
Intersection V/C	0.941											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.006	2.438	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	255	349	368	804
d_b, Bicycle Delay [s]	60.90	54.89	53.52	28.63
l_b,int, Bicycle LOS Score for Intersection	5.188	1.601	2.205	5.978
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	25.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.943

Intersection Setup

Name	Chilco Street		Bayfront Expy			
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy			
Base Volume Input [veh/h]	238	245	2187	209	129	1018
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.50	3.10	3.10	1.30	21.10	4.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	100	34	0	16	255
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	238	345	2221	209	145	1273
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	64	93	597	56	39	342
Total Analysis Volume [veh/h]	256	371	2388	225	156	1369
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	8		1		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Permissive	Permissive	Permissive	ProtPerm	Permissive
Signal Group	4	3	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	5	10
Maximum Green [s]	20	10	50	0	10	50
Amber [s]	3.2	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	8.0	1.0	0.0	0.0	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	1.7	9.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	85	85	85	85	85	85
L, Total Lost Time per Cycle [s]	3.70	3.70	6.20	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	4.20	4.20	0.00	4.20
g_i, Effective Green Time [s]	20	20	46	46	55	55
g / C, Green / Cycle	0.24	0.24	0.54	0.54	0.65	0.65
(v / s)_i Volume / Saturation Flow Rate	0.08	0.27	0.53	0.16	0.56	0.31
s, saturation flow rate [veh/h]	3025	1390	4544	1421	278	4481
c, Capacity [veh/h]	713	328	2442	763	240	2902
d1, Uniform Delay [s]	27.07	32.23	19.14	10.76	19.23	7.59
k, delay calibration	0.04	0.50	0.04	0.04	0.39	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.11	90.40	2.15	0.08	10.13	0.04
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.36	1.13	0.98	0.29	0.65	0.47
d, Delay for Lane Group [s/veh]	27.18	122.62	21.29	10.84	29.36	7.63
Lane Group LOS	C	F	C	B	C	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	2.12	14.67	13.94	2.15	1.63	3.57
50th-Percentile Queue Length [ft/ln]	53.10	366.72	348.39	53.87	40.78	89.35
95th-Percentile Queue Length [veh/ln]	3.82	22.38	20.06	3.88	2.94	6.43
95th-Percentile Queue Length [ft/ln]	95.58	559.47	501.44	96.97	73.40	160.83

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	27.18	122.62	21.29	10.84	29.36	7.63
Movement LOS	C	F	C	B	C	A
d_A, Approach Delay [s/veh]	83.66		20.39		9.85	
Approach LOS	F		C		A	
d_I, Intersection Delay [s/veh]	25.34					
Intersection LOS	C					
Intersection V/C	0.943					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.620	3.184	3.190
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.33	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.997	2.398
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	20.3
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.864

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	607	59	2227	126	38	1253
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.80	0.00	2.80	0.90	0.00	4.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	358	0	34	2	10	245
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	965	59	2261	128	48	1498
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	246	15	577	33	12	382
Total Analysis Volume [veh/h]	985	60	2307	131	49	1529
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	10
Pedestrian Clearance [s]	26	0	21	0	0	10
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	24	24	38	38	3	45
g / C, Green / Cycle	0.30	0.30	0.47	0.47	0.04	0.56
(v / s)_i Volume / Saturation Flow Rate	0.28	0.04	0.46	0.08	0.03	0.31
s, saturation flow rate [veh/h]	3464	1615	5061	1604	1810	4975
c, Capacity [veh/h]	1050	490	2381	755	75	2800
d1, Uniform Delay [s]	27.35	20.33	20.77	12.31	38.08	11.12
k, delay calibration	0.04	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.93	0.04	1.67	0.04	3.53	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.94	0.12	0.97	0.17	0.65	0.55
d, Delay for Lane Group [s/veh]	29.29	20.37	22.45	12.35	41.60	11.18
Lane Group LOS	C	C	C	B	D	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	9.18	0.81	12.06	1.19	0.97	4.59
50th-Percentile Queue Length [ft/ln]	229.39	20.27	301.62	29.73	24.33	114.63
95th-Percentile Queue Length [veh/ln]	14.14	1.46	17.76	2.14	1.75	8.10
95th-Percentile Queue Length [ft/ln]	353.58	36.49	444.04	53.51	43.80	202.43

Movement, Approach, & Intersection Results

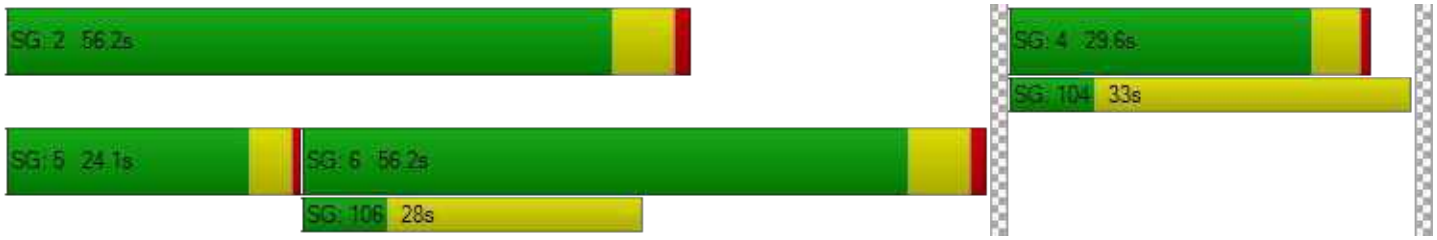
d_M, Delay for Movement [s/veh]	29.29	20.37	22.45	12.35	41.60	11.18
Movement LOS	C	C	C	B	D	B
d_A, Approach Delay [s/veh]	28.78		21.90		12.13	
Approach LOS	C		C		B	
d_I, Intersection Delay [s/veh]	20.27					
Intersection LOS	C					
Intersection V/C	0.864					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.379	3.630	3.418
Crosswalk LOS	B	D	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.901	2.428
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 19 3723 Haven Ave - Cum No Proj AM
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	1.043	37.1	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	1.170	100.8	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Thru	1.570	325.1	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NB Thru	1.065	33.9	C
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.925	75.7	E
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	WB Left	1.137	61.5	E
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.795	12.4	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	37.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.043

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	1259	1750	279	1461	470
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.30	3.60	2.15	5.10	3.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	8	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1270	1758	279	1458	470
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	324	448	70	372	120
Total Analysis Volume [veh/h]	0	1296	1794	279	1488	480
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	3		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	4
Maximum Green [s]	0	32	32	0	32	10
Amber [s]	0.0	3.6	3.6	0.0	3.1	3.1
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	21
Vehicle Extension [s]	0.0	2.0	2.0	0.0	2.0	1.5
Walk [s]	0	7	0	0	5	0
Pedestrian Clearance [s]	0	16	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.1	0.0	0.0	1.1
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.00	4.10	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.10	0.00	0.00
g_i, Effective Green Time [s]	43	41	33	33
g / C, Green / Cycle	0.54	0.51	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.32	0.51	0.44	0.31
s, saturation flow rate [veh/h]	4000	3515	3373	1572
c, Capacity [veh/h]	2146	1794	1394	650
d1, Uniform Delay [s]	12.69	19.56	23.43	19.79
k, delay calibration	0.50	0.50	0.09	0.28
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.27	21.31	33.55	4.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	1.00	1.07	0.74
d, Delay for Lane Group [s/veh]	13.96	40.87	56.98	24.05
Lane Group LOS	B	F	F	C
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	7.25	19.51	18.56	7.78
50th-Percentile Queue Length [ft/ln]	181.27	487.66	463.92	194.61
95th-Percentile Queue Length [veh/ln]	11.67	26.76	26.80	12.36
95th-Percentile Queue Length [ft/ln]	291.67	668.88	670.07	309.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	13.96	40.87	0.00	56.98	24.05
Movement LOS		B	F		F	C
d_A, Approach Delay [s/veh]	13.96		40.87		48.95	
Approach LOS	B		D		D	
d_I, Intersection Delay [s/veh]	37.12					
Intersection LOS	D					
Intersection V/C	1.043					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	40.9
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	9.56
I_p,int, Pedestrian LOS Score for Intersection	3.142	0.000	2.528
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1023	1023	773
d_b, Bicycle Delay [s]	9.57	9.56	15.07
I_b,int, Bicycle LOS Score for Intersection	2.629	3.040	1.560
Bicycle LOS	B	C	A

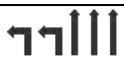
Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	100.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.170

Intersection Setup

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	1166	112	1450	3961	887	384
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.40	3.50	1.60	3.10	2.20	3.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	24	14	59	37	8	34
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1190	126	1509	3998	895	418
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	307	32	389	1030	231	108
Total Analysis Volume [veh/h]	1227	130	1556	4122	923	431
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	6		0		7	
v_ci, Inbound Pedestrian Volume crossing mi	7		0		6	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	35	110	75	110	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	3.9	1.5	3.9	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	6.0	6.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	5.90	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	3.90	2.00	0.00
g_i, Effective Green Time [s]	42	42	64	110	15	83
g / C, Green / Cycle	0.31	0.31	0.47	0.82	0.11	0.62
(v / s)_i Volume / Saturation Flow Rate	0.25	0.08	0.45	0.82	0.27	0.10
s, saturation flow rate [veh/h]	4955	1551	3470	5049	3453	4166
c, Capacity [veh/h]	1556	487	1648	4118	384	2565
d1, Uniform Delay [s]	42.24	34.64	33.75	12.45	60.02	11.12
k, delay calibration	0.13	0.13	0.04	0.13	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.11	0.35	1.40	7.39	640.83	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.27	0.94	1.00	2.41	0.17
d, Delay for Lane Group [s/veh]	43.35	34.99	35.15	19.84	700.85	11.14
Lane Group LOS	D	C	D	F	F	B
Critical Lane Group	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	11.95	3.12	22.43	24.38	40.66	1.81
50th-Percentile Queue Length [ft/ln]	298.82	78.05	560.79	609.42	1016.41	45.36
95th-Percentile Queue Length [veh/ln]	17.62	5.62	30.20	32.50	63.62	3.27
95th-Percentile Queue Length [ft/ln]	440.57	140.49	754.97	812.62	1590.46	81.65

Movement, Approach, & Intersection Results

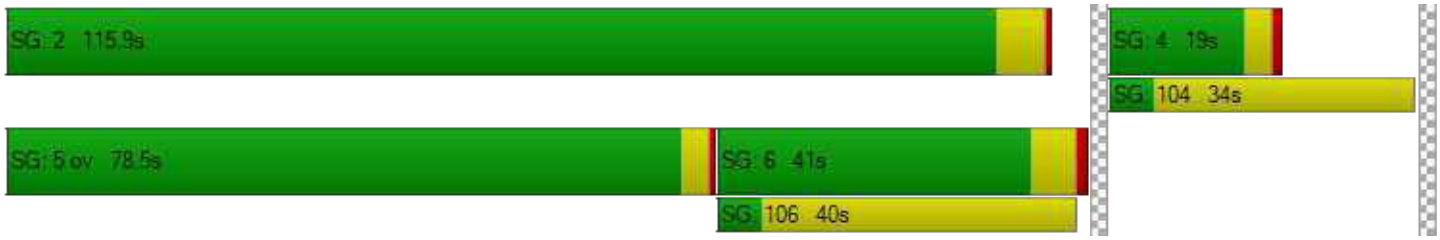
d_M, Delay for Movement [s/veh]	43.35	34.99	35.15	19.84	700.85	11.14
Movement LOS	D	C	D	F	F	B
d_A, Approach Delay [s/veh]	42.55		24.04		481.30	
Approach LOS	D		C		F	
d_I, Intersection Delay [s/veh]	100.84					
Intersection LOS	F					
Intersection V/C	1.170					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
I_p,int, Pedestrian LOS Score for Intersection	4.197	0.000	3.056
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1458	583	625
d_b, Bicycle Delay [s]	1.76	12.05	11.34
I_b,int, Bicycle LOS Score for Intersection	2.306	4.683	1.560
Bicycle LOS	B	E	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	325.1
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.570

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	2	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Base Volume Input [veh/h]	696	714	445	35	67	141	340	817	214	1039	3641	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.90	4.20	10.20	37.50	30.50	40.50	4.60	6.20	12.30	6.70	3.80	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	23	0	0	0	0	15	30	39	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	16	0	0	106	0	0	0
Total Hourly Volume [veh/h]	713	714	468	35	67	125	340	832	138	1078	3647	72
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	182	182	119	9	17	32	87	212	35	275	930	18
Total Analysis Volume [veh/h]	728	729	478	36	68	128	347	849	141	1100	3721	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			2			3			0		
v_di, Inbound Pedestrian Volume crossing m	0			3			2			0		
v_co, Outbound Pedestrian Volume crossing	4			0			3			0		
v_ci, Inbound Pedestrian Volume crossing mi	3			0			4			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	17			6			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	8	8	15	15	8	6	10	10	6	10	10
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.6	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	15	25	25	20	20	25	25	55	70	40	70	55
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	5	7	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	10	0	29	10	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	3.1	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		No	Yes		No	Yes	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	5.10	5.10	4.60	6.00	6.00	4.60	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	3.10	3.10	2.60	4.00	4.00	2.60	4.00	4.00
g_i, Effective Green Time [s]	22	21	51	9	9	9	14	39	39	25	50	50
g / C, Green / Cycle	0.19	0.18	0.44	0.08	0.08	0.08	0.13	0.34	0.34	0.22	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.44	0.47	0.28	0.03	0.06	0.12	0.10	0.17	0.10	0.33	0.74	0.05
s, saturation flow rate [veh/h]	1654	1565	1735	1273	1228	1046	3386	4922	1458	3328	5020	1615
c, Capacity [veh/h]	316	288	763	100	96	82	428	1695	502	725	2187	704
d1, Uniform Delay [s]	46.41	46.81	24.65	50.15	51.58	52.66	48.77	29.80	27.30	44.88	32.38	19.14
k, delay calibration	0.50	0.50	0.19	0.11	0.11	0.50	0.11	0.11	0.11	0.25	0.13	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	596.48	698.55	1.49	2.18	9.05	302.36	3.71	0.23	0.30	236.37	316.02	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	2.30	2.53	0.63	0.36	0.71	1.56	0.81	0.50	0.28	1.52	1.70	0.10
d, Delay for Lane Group [s/veh]	642.90	745.36	26.15	52.33	60.63	355.03	52.48	30.03	27.60	281.25	348.39	19.20
Lane Group LOS	F	F	C	D	E	F	D	C	C	F	F	B
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	61.13	31.96	3.27	1.06	1.09	9.29	5.05	6.20	2.86	34.02	83.52	1.17
50th-Percentile Queue Length [ft/ln]	1528.25	799.01	81.82	26.46	27.27	232.18	126.17	155.00	71.39	850.52	2087.93	29.18
95th-Percentile Queue Length [veh/ln]	96.12	53.01	5.89	1.91	1.96	16.11	8.73	10.28	5.14	52.55	130.85	2.10
95th-Percentile Queue Length [ft/ln]	2403.04	1325.35	147.28	47.63	49.09	402.71	218.28	257.09	128.50	1313.66	3271.19	52.52

Movement, Approach, & Intersection Results

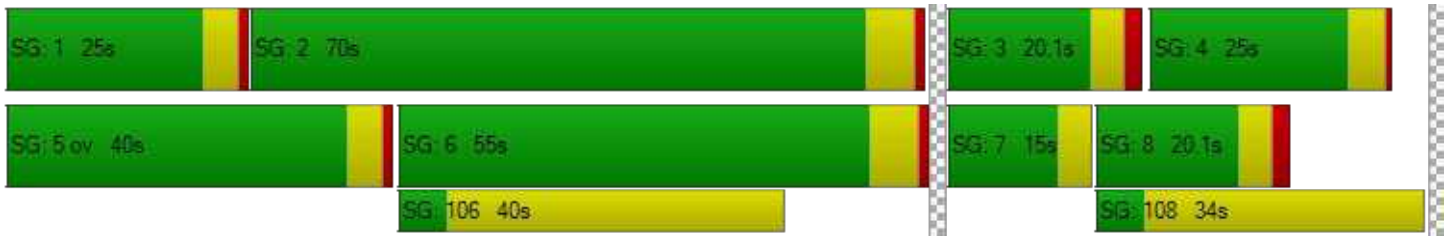
d_M, Delay for Movement [s/veh]	642.90	745.36	26.15	52.33	60.63	355.03	52.48	30.03	27.60	281.25	348.39	19.20
Movement LOS	F	F	C	D	E	F	D	C	C	F	F	B
d_A, Approach Delay [s/veh]	529.14			221.77			35.60			328.39		
Approach LOS	F			F			D			F		
d_I, Intersection Delay [s/veh]	325.09											
Intersection LOS	F											
Intersection V/C	1.570											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.29	0.00	61.29	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.292	0.000	3.676	0.000
Crosswalk LOS	C	F	D	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	294	214	700	914
d_b, Bicycle Delay [s]	51.35	55.97	29.58	20.63
l_b,int, Bicycle LOS Score for Intersection	3.156	1.764	2.353	4.251
Bicycle LOS	C	A	B	E

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 110: Marsh Road and US 101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	33.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.065

Intersection Setup

Name	Marsh Road		Marsh Road			
Approach	Northbound		Southbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road			
Base Volume Input [veh/h]	2101	0	0	1286	1024	935
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.50	0.00	0.00	5.20	1.90	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	10	0	-2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2109	0	0	1296	1024	933
Peak Hour Factor	0.9700	1.0000	1.0000	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	544	0	0	334	264	240
Total Analysis Volume [veh/h]	2174	0	0	1336	1056	962
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	1		0		2	
v_ci, Inbound Pedestrian Volume crossing mi	2		0		1	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	8
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	6
Maximum Green [s]	32	0	0	32	26	26
Amber [s]	4.1	0.0	0.0	4.1	3.2	3.2
All red [s]	0.5	0.0	0.0	0.5	1.0	1.0
Split [s]	50	0	0	50	30	30
Vehicle Extension [s]	3.0	0.0	0.0	3.0	2.0	2.0
Walk [s]	7	0	0	0	5	5
Pedestrian Clearance [s]	12	0	0	0	15	15
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	47	47	28	28
g / C, Green / Cycle	0.59	0.59	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.62	0.39	0.31	0.35
s, saturation flow rate [veh/h]	3489	3469	3461	2761
c, Capacity [veh/h]	2070	2058	1213	968
d1, Uniform Delay [s]	16.25	10.75	24.25	25.86
k, delay calibration	0.50	0.50	0.04	0.07
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	34.57	1.60	0.79	9.72
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.05	0.65	0.87	0.99
d, Delay for Lane Group [s/veh]	50.82	12.35	25.04	35.58
Lane Group LOS	F	B	C	D
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	25.57	7.13	8.91	9.83
50th-Percentile Queue Length [ft/ln]	639.17	178.32	222.64	245.72
95th-Percentile Queue Length [veh/ln]	35.25	11.51	13.80	14.97
95th-Percentile Queue Length [ft/ln]	881.34	287.82	344.99	374.26

Movement, Approach, & Intersection Results

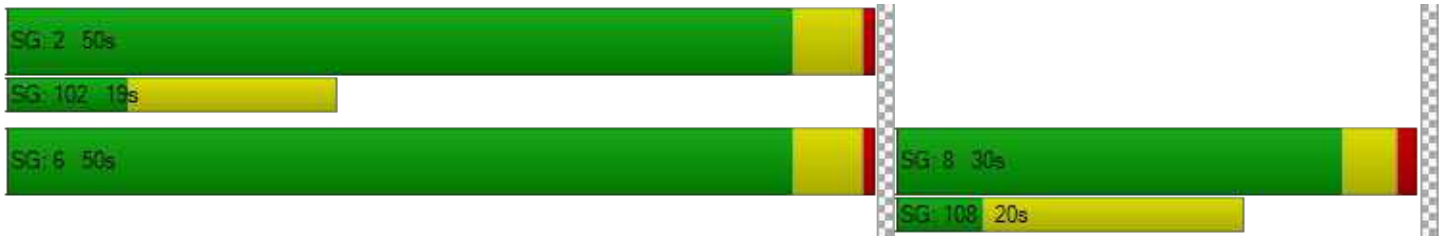
d_M, Delay for Movement [s/veh]	50.82	0.00	0.00	12.35	25.04	35.58
Movement LOS	F			B	C	D
d_A, Approach Delay [s/veh]	50.82		12.35		30.07	
Approach LOS	D		B		C	
d_I, Intersection Delay [s/veh]	33.95					
Intersection LOS	C					
Intersection V/C	1.065					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.217	2.616
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.49	7.49	18.36
I_b,int, Bicycle LOS Score for Intersection	3.353	2.662	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	75.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.925

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	185	49	1832	10	35	8	9	205	369	2694	402	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	4.60	0.00	0.00	16.70	0.00	18.20	9.10	4.70	4.90	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	12	0	0	0	0	23	0	12	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	185	49	1844	10	35	8	9	228	369	2706	416	34
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	48	13	480	3	9	2	2	59	96	705	108	9
Total Analysis Volume [veh/h]	193	51	1921	10	36	8	9	238	384	2819	433	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			1			1			0	
v_di, Inbound Pedestrian Volume crossing m		0			1			1			0	
v_co, Outbound Pedestrian Volume crossing		0			22			0			22	
v_ci, Inbound Pedestrian Volume crossing mi		0			22			0			22	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		1			13			25			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	8	2	8
Auxiliary Signal Groups		3	2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	10	6	6	0	4	0	4	12	4	0	10	0
Maximum Green [s]	0	0	0	0	0	0	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	0.0	3.6	3.6	3.6	0.0	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.0	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	82	11	11	0	32	0	32	35	32	0	82	0
Vehicle Extension [s]	4.5	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	4.5	0.0
Walk [s]	5	0	0	0	5	0	5	5	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	0	22	26	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		Yes			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	15	97	29	29	28	28	28	80	80
g / C, Green / Cycle	0.10	0.61	0.18	0.18	0.17	0.17	0.17	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.13	0.47	0.02	0.02	0.14	0.15	0.15	0.56	0.26
s, saturation flow rate [veh/h]	1828	4119	1867	1608	1624	1223	1433	5075	1792
c, Capacity [veh/h]	176	2408	340	293	280	211	247	2534	895
d1, Uniform Delay [s]	72.28	25.74	54.37	54.41	63.84	64.49	64.04	40.06	27.15
k, delay calibration	0.50	0.50	0.04	0.04	0.25	0.29	0.29	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	204.02	2.86	0.04	0.05	12.62	23.59	21.55	56.91	2.18
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.38	0.80	0.08	0.09	0.82	0.87	0.88	1.11	0.52
d, Delay for Lane Group [s/veh]	276.30	28.60	54.41	54.46	76.46	88.08	85.59	96.97	29.34
Lane Group LOS	F	C	D	D	E	F	F	F	C
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	17.27	19.26	0.97	0.88	10.08	8.73	10.06	46.00	12.80
50th-Percentile Queue Length [ft/ln]	431.65	481.40	24.16	21.93	251.97	218.16	251.51	1149.91	320.09
95th-Percentile Queue Length [veh/ln]	26.97	26.45	1.74	1.58	15.29	13.57	15.26	62.10	18.67
95th-Percentile Queue Length [ft/ln]	674.19	661.31	43.49	39.48	382.13	339.27	381.55	1552.55	466.80

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Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	276.30	276.30	28.60	54.41	54.43	54.46	76.46	77.27	86.61	96.97	29.34	29.34
Movement LOS	F	F	C	D	D	D	E	E	F	F	C	C
d_A, Approach Delay [s/veh]	56.52			54.43			82.98			87.34		
Approach LOS	E			D			F			F		
d_I, Intersection Delay [s/veh]	75.73											
Intersection LOS	E											
Intersection V/C	0.925											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.017	2.468	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	80	349	393	954
d_b, Bicycle Delay [s]	73.76	54.89	52.34	21.90
l_b,int, Bicycle LOS Score for Intersection	5.132	1.604	2.080	6.983
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	4	3	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	61.5
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.137

Intersection Setup

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Westbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	50.00	520.00	100.00	100.00	660.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		50.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	203	281	514	2725	1509	532
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.40	23.10	6.30	3.80	5.10	5.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	39	-16	33	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	203	293	553	2709	1542	532
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	77	146	713	406	140
Total Analysis Volume [veh/h]	214	308	582	2852	1623	560
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		2		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	4	4	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lag	-	Lead	-	-	-
Minimum Green [s]	5	5	5	10	10	0
Maximum Green [s]	20	20	25	50	50	0
Amber [s]	3.2	3.2	3.6	5.2	5.2	0.0
All red [s]	0.5	0.5	0.5	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	3.0	3.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	26	26	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.7	1.7	2.1	4.2	4.2	0.0
Minimum Recall	No		No	Yes	Yes	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	107	107	107	107	107	107
L, Total Lost Time per Cycle [s]	3.70	3.70	4.10	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	2.10	4.20	4.20	4.20
g_i, Effective Green Time [s]	20	20	25	77	48	48
g / C, Green / Cycle	0.19	0.19	0.23	0.72	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.07	0.26	0.38	0.63	0.36	0.40
s, saturation flow rate [veh/h]	3078	1171	1548	4518	4470	1393
c, Capacity [veh/h]	574	219	361	3258	2010	626
d1, Uniform Delay [s]	38.11	43.45	41.09	11.31	25.49	27.16
k, delay calibration	0.04	0.50	0.50	0.11	0.11	0.34
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	209.20	288.14	0.83	0.80	12.99
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.37	1.41	1.61	0.88	0.81	0.89
d, Delay for Lane Group [s/veh]	38.26	252.65	329.23	12.14	26.30	40.15
Lane Group LOS	D	F	F	B	C	D
Critical Lane Group	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.46	18.41	37.96	12.47	10.85	14.06
50th-Percentile Queue Length [ft/ln]	61.62	460.28	948.94	311.75	271.21	351.44
95th-Percentile Queue Length [veh/ln]	4.44	29.44	59.26	18.26	16.25	20.21
95th-Percentile Queue Length [ft/ln]	110.92	736.11	1481.61	456.53	406.26	505.16

Movement, Approach, & Intersection Results

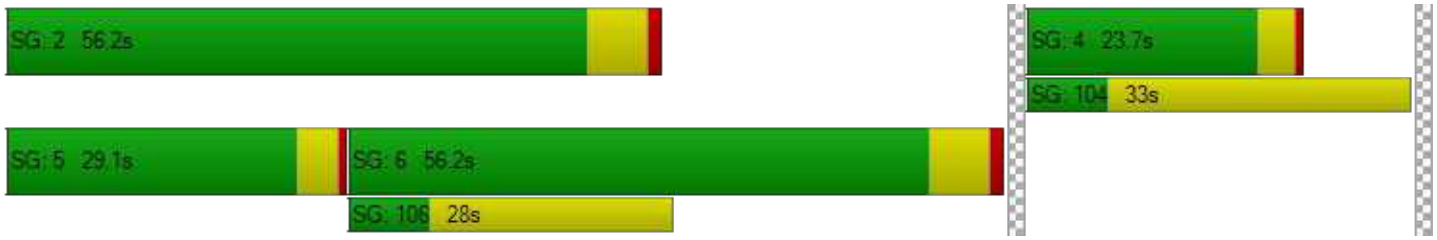
d_M, Delay for Movement [s/veh]	38.26	252.65	329.23	12.14	26.30	40.15
Movement LOS	D	F	F	B	C	D
d_A, Approach Delay [s/veh]	164.75		65.88		29.85	
Approach LOS	F		E		C	
d_I, Intersection Delay [s/veh]	61.48					
Intersection LOS	E					
Intersection V/C	1.137					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.624	3.714	3.812
Crosswalk LOS	B	D	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.25	8.90	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	3.448	2.760
Bicycle LOS	A	C	C

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	12.4
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.795

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	316	79	1810	156	194	2908
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	12.30	8.30	5.30	7.10	0.00	3.70
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	-3	36	-1	-37	21
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	321	76	1846	155	157	2929
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	20	476	40	40	755
Total Analysis Volume [veh/h]	331	78	1903	160	162	3020
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	7	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	7	10
Maximum Green [s]	25	30	50	0	20	50
Amber [s]	4.1	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	1.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	2.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	79	79	79	79	79	79
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	11	11	45	45	9	58
g / C, Green / Cycle	0.14	0.14	0.56	0.56	0.11	0.72
(v / s)_i Volume / Saturation Flow Rate	0.10	0.05	0.38	0.11	0.09	0.60
s, saturation flow rate [veh/h]	3173	1509	4959	1493	1810	5024
c, Capacity [veh/h]	443	211	2785	838	202	3641
d1, Uniform Delay [s]	32.89	31.07	12.42	8.55	34.51	7.57
k, delay calibration	0.11	0.11	0.11	0.11	0.04	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.53	1.08	0.30	0.11	2.81	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.37	0.68	0.19	0.80	0.83
d, Delay for Lane Group [s/veh]	35.42	32.15	12.72	8.66	37.32	8.08
Lane Group LOS	D	C	B	A	D	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.18	1.41	6.37	1.12	3.01	6.52
50th-Percentile Queue Length [ft/ln]	79.38	35.18	159.17	27.94	75.36	162.94
95th-Percentile Queue Length [veh/ln]	5.72	2.53	10.50	2.01	5.43	10.70
95th-Percentile Queue Length [ft/ln]	142.88	63.32	262.62	50.30	135.66	267.61

Movement, Approach, & Intersection Results

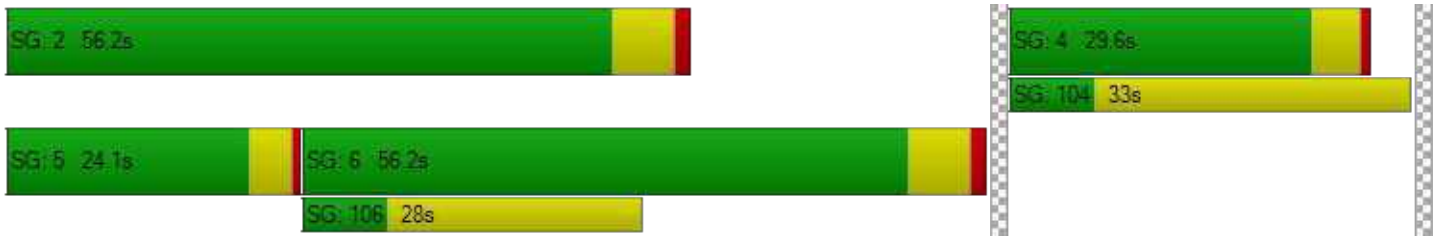
d_M, Delay for Movement [s/veh]	35.42	32.15	12.72	8.66	37.32	8.08
Movement LOS	D	C	B	A	D	A
d_A, Approach Delay [s/veh]	34.80		12.40		9.57	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	12.43					
Intersection LOS	B					
Intersection V/C	0.795					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.279	3.715	3.672
Crosswalk LOS	B	D	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.694	3.310
Bicycle LOS	A	B	C

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 19 3723 Haven Ave - Cum No Proj PM
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.923	40.7	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.395	215.3	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	SB Thru	2.077	372.4	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Right	0.924	17.3	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.942	34.4	C
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	1.174	67.2	E
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	NB Left	1.015	62.6	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	40.7
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.923

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	1030	1285	279	1564	401
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.60	2.70	2.15	3.60	0.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	14	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1030	1299	279	1564	401
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	263	331	70	399	102
Total Analysis Volume [veh/h]	0	1051	1326	279	1596	409
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	4
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	6
Maximum Green [s]	0	32	32	0	60	60
Amber [s]	0.0	4.1	4.1	0.0	3.1	3.1
All red [s]	0.0	0.5	0.5	0.0	1.0	1.0
Split [s]	0	45	45	0	35	35
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	7	0	5	5
Pedestrian Clearance [s]	0	0	16	0	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	42	40	33	33
g / C, Green / Cycle	0.53	0.50	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.26	0.37	0.47	0.25
s, saturation flow rate [veh/h]	4000	3540	3414	1609
c, Capacity [veh/h]	2121	1785	1412	665
d1, Uniform Delay [s]	11.98	15.74	23.48	18.47
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.83	2.85	59.60	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.74	1.13	0.61
d, Delay for Lane Group [s/veh]	12.81	18.59	83.08	18.81
Lane Group LOS	B	B	F	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	5.46	9.08	23.92	5.64
50th-Percentile Queue Length [ft/ln]	136.59	227.12	598.05	140.99
95th-Percentile Queue Length [veh/ln]	9.30	14.03	34.72	9.53
95th-Percentile Queue Length [ft/ln]	232.42	350.70	867.91	238.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	12.81	18.59	0.00	83.08	18.81
Movement LOS		B	B		F	B
d_A, Approach Delay [s/veh]	12.81		18.59		69.97	
Approach LOS	B		B		E	
d_I, Intersection Delay [s/veh]	40.71					
Intersection LOS	D					
Intersection V/C	0.923					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.919	0.000	2.585
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.80	9.80	15.07
I_b,int, Bicycle LOS Score for Intersection	2.427	2.654	1.560
Bicycle LOS	B	B	A

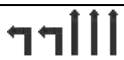
Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	215.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.395

Intersection Setup

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	4204	572	504	1013	110	2326
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	16.10	4.90	3.80	9.00	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	44	1	43	28	15	66
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4248	573	547	1041	125	2392
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1084	146	140	266	32	610
Total Analysis Volume [veh/h]	4335	585	558	1062	128	2441
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	4		0		4	
v_ci, Inbound Pedestrian Volume crossing mi	4		0		4	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	1		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	90	140	50	140	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	5.8	1.5	5.8	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	6.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	144	144	144	144	144	144
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	7.80	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	5.80	2.00	0.00
g_i, Effective Green Time [s]	90	90	26	117	15	45
g / C, Green / Cycle	0.62	0.62	0.18	0.81	0.10	0.31
(v / s)_i Volume / Saturation Flow Rate	0.85	0.42	0.17	0.21	0.04	0.58
s, saturation flow rate [veh/h]	5077	1387	3378	5020	3264	4237
c, Capacity [veh/h]	3172	866	600	4086	340	1311
d1, Uniform Delay [s]	27.04	17.35	58.37	3.16	60.18	49.75
k, delay calibration	0.13	0.24	0.04	0.13	0.04	0.07
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	165.60	2.03	2.94	0.04	0.26	388.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.37	0.68	0.93	0.26	0.38	1.86
d, Delay for Lane Group [s/veh]	192.64	19.38	61.32	3.20	60.44	438.09
Lane Group LOS	F	B	E	A	E	F
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	79.57	11.47	9.90	1.55	2.19	62.66
50th-Percentile Queue Length [ft/ln]	1989.21	286.82	247.56	38.81	54.80	1566.48
95th-Percentile Queue Length [veh/ln]	118.13	17.03	15.06	2.79	3.95	99.25
95th-Percentile Queue Length [ft/ln]	2953.15	425.69	376.58	69.86	98.64	2481.31

Movement, Approach, & Intersection Results

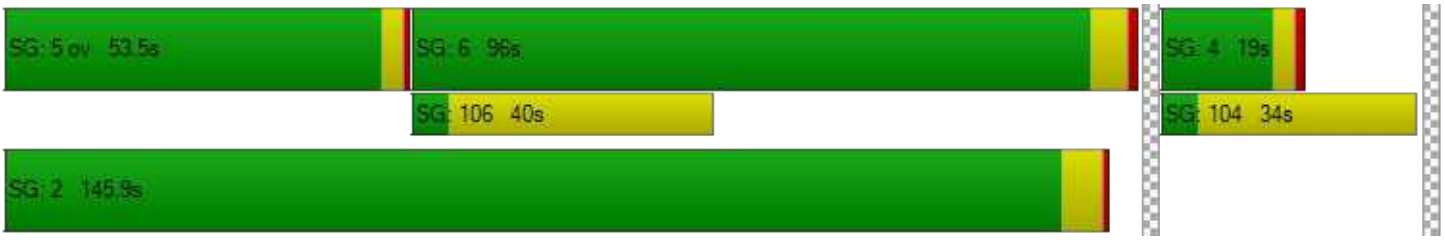
d_M, Delay for Movement [s/veh]	192.64	19.38	61.32	3.20	60.44	438.09
Movement LOS	F	B	E	A	E	F
d_A, Approach Delay [s/veh]	172.04		23.22		419.28	
Approach LOS	F		C		F	
d_I, Intersection Delay [s/veh]	215.30					
Intersection LOS	F					
Intersection V/C	1.395					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
I_p,int, Pedestrian LOS Score for Intersection	4.122	0.000	3.165
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1750	1833	625
d_b, Bicycle Delay [s]	0.38	0.17	11.34
I_b,int, Bicycle LOS Score for Intersection	4.266	2.451	1.560
Bicycle LOS	E	B	A

Sequence

Ring 1	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	372.4
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.077

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Base Volume Input [veh/h]	111	94	1645	316	591	164	75	2939	935	540	883	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.20	10.90	3.30	4.30	1.00	1.70	37.10	2.50	12.00	6.40	5.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	1	44	0	0	0	0	1	3	28	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	70	0	0	45	0	0	1
Total Hourly Volume [veh/h]	145	95	1689	316	591	94	75	2940	893	568	897	33
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	37	24	435	81	152	24	19	758	230	146	231	9
Total Analysis Volume [veh/h]	149	98	1741	326	609	97	77	3031	921	586	925	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			3			4			0		
v_di, Inbound Pedestrian Volume crossing m	0			4			3			0		
v_co, Outbound Pedestrian Volume crossing	1			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			7			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	155
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	4	5	4	4	5	5	5	4
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.0	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	47	47	20	42	47	21	38	64	47	64	38
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	5	7	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	10	0	29	10	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	2.5	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	20.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	109	109	109	109	109	109	109	109	109	109	109	109
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	4.50	4.50	4.60	6.00	6.00	4.60	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	2.50	2.50	2.60	4.00	4.00	2.60	4.00	4.00
g_i, Effective Green Time [s]	11	15	44	9	14	14	5	40	40	25	60	60
g / C, Green / Cycle	0.10	0.14	0.41	0.08	0.13	0.13	0.05	0.37	0.37	0.23	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.09	0.07	0.93	0.19	0.38	0.06	0.03	0.60	0.63	0.18	0.19	0.02
s, saturation flow rate [veh/h]	1749	1479	1868	1748	1606	1530	2484	5073	1462	3336	4959	1615
c, Capacity [veh/h]	181	204	757	145	209	199	118	1867	538	755	2713	883
d1, Uniform Delay [s]	47.79	43.28	32.37	49.91	47.33	43.84	50.97	34.39	34.39	39.50	13.72	11.40
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.19	0.11	0.11	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.91	1.74	589.36	586.31	873.94	3.15	6.05	281.24	328.38	1.75	0.07	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.48	2.30	2.26	2.91	0.49	0.66	1.62	1.71	0.78	0.34	0.04
d, Delay for Lane Group [s/veh]	56.71	45.01	621.73	636.22	921.26	46.98	57.02	315.63	362.78	41.25	13.80	11.42
Lane Group LOS	E	D	F	F	F	D	E	F	F	D	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	4.32	1.24	47.51	27.53	28.24	2.64	1.13	64.57	62.86	7.47	4.10	0.38
50th-Percentile Queue Length [ft/ln]	107.97	31.02	1187.71	688.23	705.93	65.91	28.22	1614.24	1571.54	186.64	102.60	9.47
95th-Percentile Queue Length [veh/ln]	7.73	2.23	80.86	43.64	46.48	4.75	2.03	100.10	99.05	11.95	7.39	0.68
95th-Percentile Queue Length [ft/ln]	193.17	55.84	2021.62	1091.05	1162.09	118.64	50.80	2502.61	2476.32	298.67	184.68	17.04

Movement, Approach, & Intersection Results

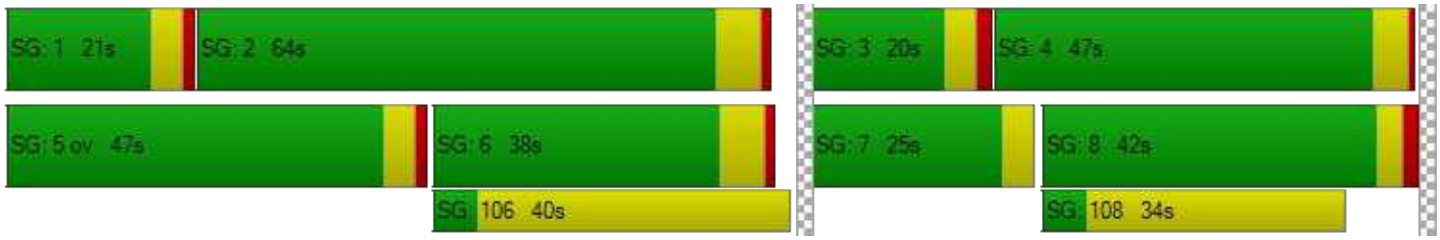
d_M, Delay for Movement [s/veh]	56.71	45.01	621.73	636.22	921.26	46.98	57.02	315.63	362.78	41.25	13.80	11.42
Movement LOS	E	D	F	F	F	D	E	F	F	D	B	B
d_A, Approach Delay [s/veh]	550.95			749.05			321.47			24.16		
Approach LOS	F			F			F			C		
d_I, Intersection Delay [s/veh]	372.45											
Intersection LOS	F											
Intersection V/C	2.077											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	68.76	0.00	68.76	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.271	0.000	3.312	0.000
Crosswalk LOS	C	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	484	413	748
d_b, Bicycle Delay [s]	40.75	44.69	48.80	30.35
l_b,int, Bicycle LOS Score for Intersection	3.200	2.469	3.800	2.410
Bicycle LOS	C	B	D	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 110: Marsh Road/101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	17.3
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.924

Intersection Setup

Name	Marsh Road		Marsh Road		101 NB Ramps	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road		101 NB Ramps	
Base Volume Input [veh/h]	2265	0	0	1371	570	481
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.40	0.00	0.00	3.00	5.10	12.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	14	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2265	0	0	1385	570	481
Peak Hour Factor	0.9900	1.0000	1.0000	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	572	0	0	350	144	121
Total Analysis Volume [veh/h]	2288	0	0	1399	576	486
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	1		2		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	8
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	6
Maximum Green [s]	0	0	0	0	0	0
Amber [s]	3.6	0.0	0.0	3.6	3.2	3.2
All red [s]	0.5	0.0	0.0	0.5	1.0	1.0
Split [s]	50	0	0	50	30	30
Vehicle Extension [s]	3.0	0.0	0.0	3.0	2.0	2.0
Walk [s]	7	0	0	0	5	5
Pedestrian Clearance [s]	12	0	0	0	15	15
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	56	56	19	19
g / C, Green / Cycle	0.70	0.70	0.24	0.24
(v / s)_i Volume / Saturation Flow Rate	0.66	0.40	0.17	0.19
s, saturation flow rate [veh/h]	3492	3532	3373	2585
c, Capacity [veh/h]	2447	2476	819	628
d1, Uniform Delay [s]	10.36	5.91	27.61	28.20
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.24	0.94	0.42	0.78
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.93	0.57	0.70	0.77
d, Delay for Lane Group [s/veh]	18.60	6.86	28.03	28.98
Lane Group LOS	B	A	C	C
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	15.30	4.69	4.88	4.23
50th-Percentile Queue Length [ft/ln]	382.57	117.19	122.02	105.82
95th-Percentile Queue Length [veh/ln]	21.72	8.24	8.50	7.61
95th-Percentile Queue Length [ft/ln]	542.96	205.96	212.61	190.18

Movement, Approach, & Intersection Results

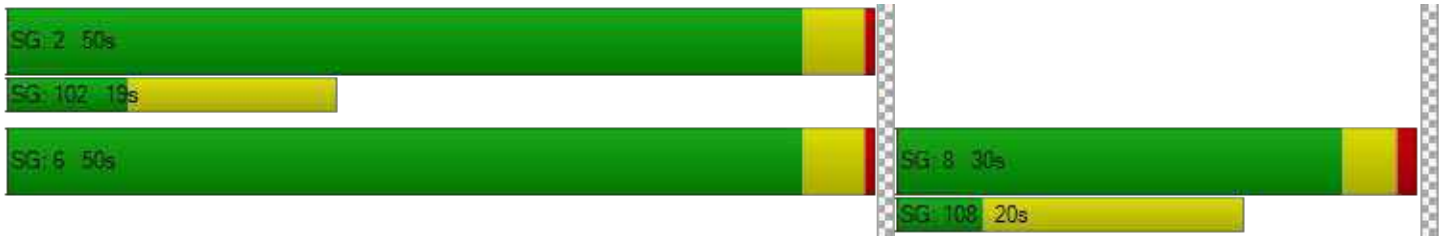
d_M, Delay for Movement [s/veh]	18.60	0.00	0.00	6.86	28.03	28.98
Movement LOS	B			A	C	C
d_A, Approach Delay [s/veh]	18.60		6.86		28.47	
Approach LOS	B		A		C	
d_I, Intersection Delay [s/veh]	17.35					
Intersection LOS	B					
Intersection V/C	0.924					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
l_p,int, Pedestrian LOS Score for Intersection	0.000	3.144	2.383
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1148	1148	645
d_b, Bicycle Delay [s]	7.27	7.27	18.36
l_b,int, Bicycle LOS Score for Intersection	3.447	2.714	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	34.4
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.942

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	156	40	2131	16	31	5	9	512	193	2668	121	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.20	0.00	2.90	0.00	0.00	0.00	0.00	0.40	2.20	2.90	14.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	14	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	156	40	2131	16	31	5	9	512	193	2682	148	14
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	41	10	555	4	8	1	2	133	50	698	39	4
Total Analysis Volume [veh/h]	163	42	2220	17	32	5	9	533	201	2794	154	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			1			0			1	
v_ci, Inbound Pedestrian Volume crossing mi		0			1			0			1	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			2			0			2	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	8	2	8
Auxiliary Signal Groups			2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	10	6	6	0	4	0	4	12	4	0	10	0
Maximum Green [s]	0	0	0	0	0	0	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	0.0	3.6	3.6	3.6	0.0	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.0	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	82	11	11	0	32	0	32	35	32	0	82	0
Vehicle Extension [s]	4.5	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	4.5	0.0
Walk [s]	5	0	0	0	5	0	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	0	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	13	127	7	7	27	27	27	103	103
g / C, Green / Cycle	0.08	0.79	0.04	0.04	0.17	0.17	0.17	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.11	0.53	0.02	0.01	0.14	0.16	0.13	0.54	0.10
s, saturation flow rate [veh/h]	1827	4190	1522	1652	1891	1724	1587	5150	1655
c, Capacity [veh/h]	151	3229	101	72	324	295	272	3311	1064
d1, Uniform Delay [s]	73.39	8.94	74.69	74.28	64.10	65.29	62.94	22.30	11.36
k, delay calibration	0.50	0.50	0.04	0.04	0.22	0.29	0.15	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	197.65	1.22	0.60	1.01	10.49	24.68	5.25	2.82	0.32
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.36	0.69	0.30	0.33	0.83	0.92	0.74	0.84	0.16
d, Delay for Lane Group [s/veh]	271.03	10.16	75.30	75.29	74.59	89.98	68.19	25.13	11.68
Lane Group LOS	F	B	E	E	E	F	E	C	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	14.53	11.86	1.23	0.98	11.61	13.02	8.21	27.25	2.53
50th-Percentile Queue Length [ft/ln]	363.34	296.56	30.85	24.57	290.28	325.39	205.26	681.35	63.35
95th-Percentile Queue Length [veh/ln]	22.98	17.51	2.22	1.77	17.20	18.93	12.91	35.82	4.56
95th-Percentile Queue Length [ft/ln]	574.58	437.77	55.53	44.23	429.98	473.31	322.74	895.39	114.04

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	271.03	271.03	10.16	75.30	75.29	75.29	74.59	82.46	68.19	25.13	11.68	11.68
Movement LOS	F	F	B	E	E	E	E	F	E	C	B	B
d_A, Approach Delay [s/veh]	32.21			75.29			78.50			24.36		
Approach LOS	C			E			E			C		
d_I, Intersection Delay [s/veh]	34.39											
Intersection LOS	C											
Intersection V/C	0.942											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.008	2.419	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	80	349	393	954
d_b, Bicycle Delay [s]	73.73	54.59	51.68	21.91
l_b,int, Bicycle LOS Score for Intersection	5.561	1.604	2.173	6.449
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	67.2
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.174

Intersection Setup

Name	Chilco Street		Bayfront Expy		Bayfront Expressway (SR 84)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy		Bayfront Expressway (SR 84)	
Base Volume Input [veh/h]	382	576	2416	203	159	1336
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.50	3.10	3.10	1.30	21.10	4.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	40	-36	0	17	31
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	382	616	2380	203	176	1367
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	103	166	640	55	47	367
Total Analysis Volume [veh/h]	411	662	2559	218	189	1470
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	5		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	10	0	10	0	4	10
Maximum Green [s]	20	0	50	0	10	50
Amber [s]	3.0	0.0	5.0	0.0	3.0	5.0
All red [s]	0.5	0.0	0.5	0.0	0.0	0.5
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	3.5	0.0	1.0	3.5
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	92	92	92	92	92	92
L, Total Lost Time per Cycle [s]	2.00	2.00	5.50	5.50	3.00	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	3.50	3.50	1.00	3.50
g_i, Effective Green Time [s]	22	22	50	50	10	63
g / C, Green / Cycle	0.24	0.24	0.54	0.54	0.11	0.68
(v / s)_i Volume / Saturation Flow Rate	0.12	0.43	0.51	0.14	0.13	0.30
s, saturation flow rate [veh/h]	3361	1549	5049	1579	1508	4979
c, Capacity [veh/h]	804	371	2743	858	164	3409
d1, Uniform Delay [s]	30.32	34.80	19.45	11.10	40.98	6.49
k, delay calibration	0.04	0.50	0.04	0.04	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	364.54	0.71	0.06	117.28	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.51	1.79	0.93	0.25	1.15	0.43
d, Delay for Lane Group [s/veh]	30.51	399.34	20.16	11.16	158.26	6.52
Lane Group LOS	C	F	C	B	F	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.90	45.55	15.37	2.23	9.00	3.61
50th-Percentile Queue Length [ft/ln]	97.40	1138.70	384.30	55.76	224.99	90.14
95th-Percentile Queue Length [veh/ln]	7.01	71.83	21.80	4.02	14.69	6.49
95th-Percentile Queue Length [ft/ln]	175.32	1795.70	545.05	100.38	367.22	162.25

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.51	399.34	20.16	11.16	158.26	6.52
Movement LOS	C	F	C	B	F	A
d_A, Approach Delay [s/veh]	258.07		19.45		23.81	
Approach LOS	F		B		C	
d_I, Intersection Delay [s/veh]	67.24					
Intersection LOS	E					
Intersection V/C	1.174					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.588	3.242	3.273
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.29	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	3.087	2.472
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	62.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.015

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	1259	119	2509	168	85	1705
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.80	0.00	2.80	0.90	0.00	4.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-36	0	0	-10	41
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1259	83	2509	168	75	1746
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	321	21	640	43	19	445
Total Analysis Volume [veh/h]	1285	85	2560	171	77	1782
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		2		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	25	25	50	50	5	59
g / C, Green / Cycle	0.26	0.26	0.53	0.53	0.06	0.62
(v / s)_i Volume / Saturation Flow Rate	0.37	0.05	0.51	0.11	0.04	0.36
s, saturation flow rate [veh/h]	3464	1615	5061	1569	1810	4975
c, Capacity [veh/h]	909	424	2657	824	102	3105
d1, Uniform Delay [s]	35.11	27.33	21.75	12.03	44.31	10.49
k, delay calibration	0.17	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	188.07	0.09	1.33	0.05	4.29	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.41	0.20	0.96	0.21	0.76	0.57
d, Delay for Lane Group [s/veh]	223.18	27.42	23.08	12.08	48.59	10.55
Lane Group LOS	F	C	C	B	D	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	34.13	1.52	15.84	1.73	1.84	5.92
50th-Percentile Queue Length [ft/ln]	853.34	38.00	396.01	43.25	46.05	148.05
95th-Percentile Queue Length [veh/ln]	52.06	2.74	22.37	3.11	3.32	9.91
95th-Percentile Queue Length [ft/ln]	1301.38	68.40	559.20	77.86	82.89	247.82

Movement, Approach, & Intersection Results

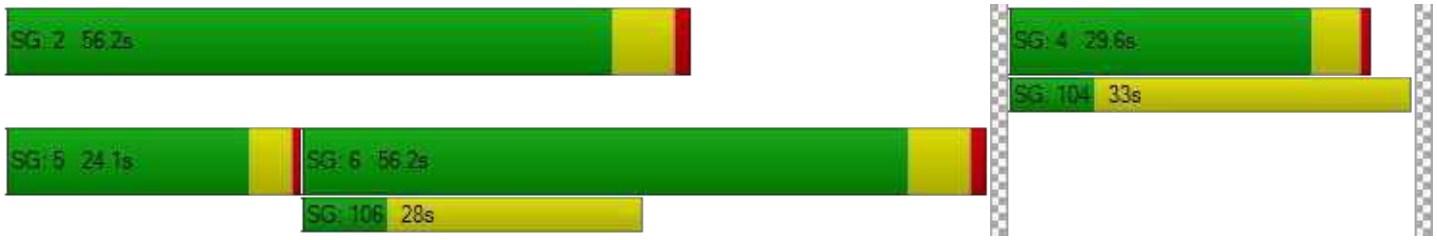
d_M, Delay for Movement [s/veh]	223.18	27.42	23.08	12.08	48.59	10.55
Movement LOS	F	C	C	B	D	B
d_A, Approach Delay [s/veh]	211.04		22.39		12.12	
Approach LOS	F		C		B	
d_I, Intersection Delay [s/veh]	62.55					
Intersection LOS	E					
Intersection V/C	1.015					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.459	3.785	3.534
Crosswalk LOS	B	D	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.90	8.89
I_b,int, Bicycle LOS Score for Intersection	1.560	3.062	2.582
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Scenario 18 3723 Haven Ave - Cum Plus Proj AM
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	1.046	37.9	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Left	1.171	101.0	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	NB Thru	1.573	325.6	F
110	Marsh Road and US 101 NB Ramps	Signalized	HCM 6th Edition	NB Thru	1.070	34.9	C
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.940	79.6	E
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	WB Left	1.139	61.6	E
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	WB Left	0.797	12.5	B

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	37.9
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.046

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	1261	1752	279	1468	470
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	3.30	3.60	2.15	5.10	3.40
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	11	8	0	-3	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1272	1760	279	1465	470
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	324	449	70	374	120
Total Analysis Volume [veh/h]	0	1298	1796	279	1495	480
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	3		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	5
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	4
Maximum Green [s]	0	32	32	0	32	10
Amber [s]	0.0	3.6	3.6	0.0	3.1	3.1
All red [s]	0.0	0.5	0.5	0.0	1.0	0.0
Split [s]	0	45	45	0	35	21
Vehicle Extension [s]	0.0	2.0	2.0	0.0	2.0	1.5
Walk [s]	0	7	0	0	5	0
Pedestrian Clearance [s]	0	16	0	0	20	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	2.1	0.0	0.0	1.1
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	20.0	20.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.00	4.10	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	2.10	0.00	0.00
g_i, Effective Green Time [s]	43	41	33	33
g / C, Green / Cycle	0.54	0.51	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.32	0.51	0.44	0.31
s, saturation flow rate [veh/h]	4000	3515	3373	1572
c, Capacity [veh/h]	2146	1794	1394	650
d1, Uniform Delay [s]	12.70	19.56	23.43	19.79
k, delay calibration	0.50	0.50	0.09	0.28
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.27	21.58	35.71	4.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.60	1.00	1.07	0.74
d, Delay for Lane Group [s/veh]	13.97	41.14	59.14	24.05
Lane Group LOS	B	F	F	C
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	7.27	19.57	18.98	7.78
50th-Percentile Queue Length [ft/ln]	181.70	489.31	474.39	194.61
95th-Percentile Queue Length [veh/ln]	11.69	26.86	27.41	12.36
95th-Percentile Queue Length [ft/ln]	292.23	671.43	685.28	309.00

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	13.97	41.14	0.00	59.14	24.05
Movement LOS		B	F		F	C
d_A, Approach Delay [s/veh]	13.97		41.14		50.61	
Approach LOS	B		D		D	
d_I, Intersection Delay [s/veh]	37.87					
Intersection LOS	D					
Intersection V/C	1.046					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	40.9
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	9.56
I_p,int, Pedestrian LOS Score for Intersection	3.143	0.000	2.530
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1023	1023	773
d_b, Bicycle Delay [s]	9.57	9.56	15.07
I_b,int, Bicycle LOS Score for Intersection	2.630	3.041	1.560
Bicycle LOS	B	C	A

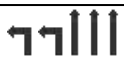
Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	101.0
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.171

Intersection Setup

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expy (SR84)		Bayfront Expy (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	1167	113	1450	3962	888	384
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.40	3.50	1.60	3.10	2.20	3.60
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	24	14	59	37	8	34
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1191	127	1509	3999	896	418
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	307	33	389	1031	231	108
Total Analysis Volume [veh/h]	1228	131	1556	4123	924	431
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	6		0		7	
v_ci, Inbound Pedestrian Volume crossing mi	7		0		6	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	35	110	75	110	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	3.9	1.5	3.9	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	6.0	6.0	20.0	20.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	135	135	135	135	135	135
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	5.90	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	3.90	2.00	0.00
g_i, Effective Green Time [s]	42	42	64	110	15	83
g / C, Green / Cycle	0.31	0.31	0.47	0.82	0.11	0.62
(v / s)_i Volume / Saturation Flow Rate	0.25	0.08	0.45	0.82	0.27	0.10
s, saturation flow rate [veh/h]	4955	1551	3470	5049	3453	4166
c, Capacity [veh/h]	1556	487	1648	4118	384	2565
d1, Uniform Delay [s]	42.25	34.67	33.75	12.45	60.02	11.12
k, delay calibration	0.13	0.13	0.04	0.13	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	1.12	0.35	1.40	7.45	642.00	0.01
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.79	0.27	0.94	1.00	2.41	0.17
d, Delay for Lane Group [s/veh]	43.36	35.02	35.15	19.90	702.02	11.14
Lane Group LOS	D	D	D	F	F	B
Critical Lane Group	No	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	11.97	3.15	22.43	24.40	40.72	1.81
50th-Percentile Queue Length [ft/ln]	299.16	78.71	560.79	609.97	1017.96	45.36
95th-Percentile Queue Length [veh/ln]	17.64	5.67	30.20	32.54	63.71	3.27
95th-Percentile Queue Length [ft/ln]	440.99	141.67	754.97	813.44	1592.80	81.65

Movement, Approach, & Intersection Results

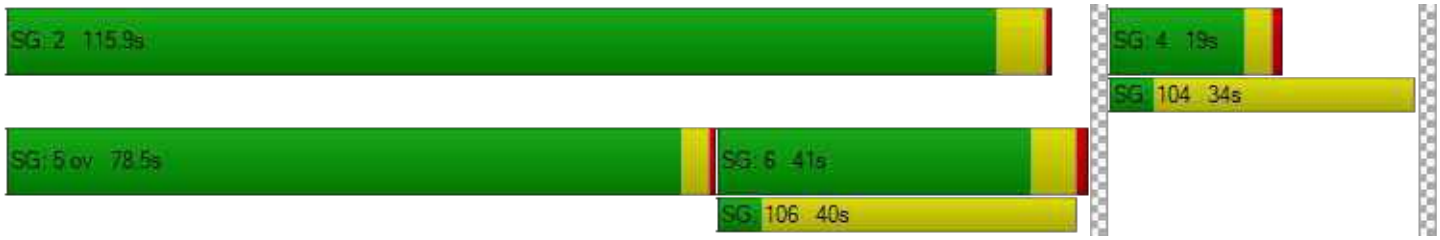
d_M, Delay for Movement [s/veh]	43.36	35.02	35.15	19.90	702.02	11.14
Movement LOS	D	D	D	F	F	B
d_A, Approach Delay [s/veh]	42.56		24.08		482.26	
Approach LOS	D		C		F	
d_I, Intersection Delay [s/veh]	101.04					
Intersection LOS	F					
Intersection V/C	1.171					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
I_p,int, Pedestrian LOS Score for Intersection	4.198	0.000	3.056
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1458	583	625
d_b, Bicycle Delay [s]	1.76	12.05	11.34
I_b,int, Bicycle LOS Score for Intersection	2.307	4.683	1.560
Bicycle LOS	B	E	A

Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	325.6
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.573

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	2	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Bayfront Expy (SR 84)			Bayfront Expy (SR 84)		
Base Volume Input [veh/h]	697	714	445	35	67	142	341	819	215	1039	3643	72
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	10.90	4.20	10.20	37.50	30.50	40.50	4.60	6.20	12.30	6.70	3.80	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	17	0	23	0	0	0	0	15	30	39	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	16	0	0	106	0	0	0
Total Hourly Volume [veh/h]	714	714	468	35	67	126	341	834	139	1078	3649	72
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	182	182	119	9	17	32	87	213	35	275	931	18
Total Analysis Volume [veh/h]	729	729	478	36	68	129	348	851	142	1100	3723	73
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			2			3			0		
v_di, Inbound Pedestrian Volume crossing m	0			3			2			0		
v_co, Outbound Pedestrian Volume crossing	4			0			3			0		
v_ci, Inbound Pedestrian Volume crossing mi	3			0			4			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	17			6			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	140
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	6	8	8	15	15	8	6	10	10	6	10	10
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.6	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	15	25	25	20	20	25	25	55	70	40	70	55
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	5	7	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	10	0	29	10	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	3.1	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		No	Yes		No	Yes	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	20.0	20.0	20.0	20.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	115	115	115	115	115	115	115	115	115	115	115	115
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	5.10	5.10	4.60	6.00	6.00	4.60	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	3.10	3.10	2.60	4.00	4.00	2.60	4.00	4.00
g_i, Effective Green Time [s]	22	21	51	9	9	9	15	40	40	25	50	50
g / C, Green / Cycle	0.19	0.18	0.44	0.08	0.08	0.08	0.13	0.34	0.34	0.22	0.44	0.44
(v / s)_i Volume / Saturation Flow Rate	0.44	0.47	0.28	0.03	0.06	0.12	0.10	0.17	0.10	0.33	0.74	0.05
s, saturation flow rate [veh/h]	1654	1565	1735	1273	1228	1046	3386	4922	1458	3328	5020	1615
c, Capacity [veh/h]	316	288	763	100	96	82	429	1696	502	725	2187	703
d1, Uniform Delay [s]	46.43	46.83	24.67	50.17	51.60	52.68	48.77	29.81	27.31	44.90	32.40	19.15
k, delay calibration	0.50	0.50	0.19	0.11	0.11	0.50	0.11	0.11	0.11	0.25	0.13	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	598.24	698.93	1.50	2.18	9.06	307.65	3.71	0.23	0.30	236.60	316.69	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	2.31	2.53	0.63	0.36	0.71	1.57	0.81	0.50	0.28	1.52	1.70	0.10
d, Delay for Lane Group [s/veh]	644.68	745.76	26.17	52.35	60.66	360.33	52.48	30.04	27.62	281.50	349.08	19.22
Lane Group LOS	F	F	C	D	E	F	D	C	C	F	F	B
Critical Lane Group	Yes	No	No	No	No	Yes	Yes	No	No	No	Yes	No
50th-Percentile Queue Length [veh/ln]	61.27	31.97	3.28	1.06	1.09	9.41	5.06	6.22	2.88	34.04	83.63	1.17
50th-Percentile Queue Length [ft/ln]	1531.69	799.17	81.88	26.47	27.28	235.13	126.58	155.44	71.95	850.92	2090.84	29.20
95th-Percentile Queue Length [veh/ln]	96.33	53.02	5.90	1.91	1.96	16.30	8.75	10.31	5.18	52.57	131.05	2.10
95th-Percentile Queue Length [ft/ln]	2408.37	1325.57	147.39	47.65	49.11	407.59	218.83	257.67	129.51	1314.32	3276.19	52.56

Movement, Approach, & Intersection Results

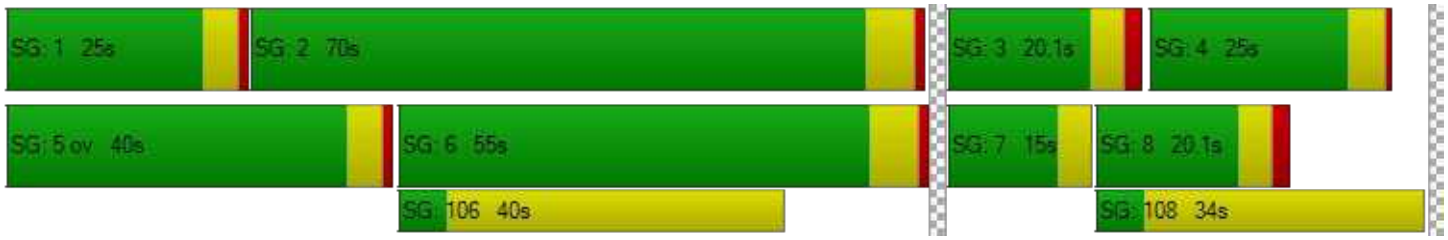
d_M, Delay for Movement [s/veh]	644.68	745.76	26.17	52.35	60.66	360.33	52.48	30.04	27.62	281.50	349.08	19.22
Movement LOS	F	F	C	D	E	F	D	C	C	F	F	B
d_A, Approach Delay [s/veh]	530.03			225.29			35.61			328.98		
Approach LOS	F			F			D			F		
d_I, Intersection Delay [s/veh]	325.61											
Intersection LOS	F											
Intersection V/C	1.573											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	61.29	0.00	61.29	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.292	0.000	3.677	0.000
Crosswalk LOS	C	F	D	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	294	214	700	914
d_b, Bicycle Delay [s]	51.35	55.97	29.58	20.63
l_b,int, Bicycle LOS Score for Intersection	3.157	1.765	2.355	4.252
Bicycle LOS	C	A	B	E

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	5	6	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Version 2020 (SP 0-3)

Intersection Level Of Service Report

Intersection 110: Marsh Road and US 101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	34.9
Analysis Method:	HCM 6th Edition	Level Of Service:	C
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.070

Intersection Setup

Name	Marsh Road		Marsh Road			
Approach	Northbound		Southbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road			
Base Volume Input [veh/h]	2110	0	0	1294	1024	941
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.50	0.00	0.00	5.20	1.90	4.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	8	0	0	10	0	-2
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2118	0	0	1304	1024	939
Peak Hour Factor	0.9700	1.0000	1.0000	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	546	0	0	336	264	242
Total Analysis Volume [veh/h]	2184	0	0	1344	1056	968
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	1		0		2	
v_ci, Inbound Pedestrian Volume crossing mi	2		0		1	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	8
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	6
Maximum Green [s]	32	0	0	32	26	26
Amber [s]	4.1	0.0	0.0	4.1	3.2	3.2
All red [s]	0.5	0.0	0.0	0.5	1.0	1.0
Split [s]	50	0	0	50	30	30
Vehicle Extension [s]	3.0	0.0	0.0	3.0	2.0	2.0
Walk [s]	7	0	0	0	5	5
Pedestrian Clearance [s]	12	0	0	0	15	15
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	47	47	28	28
g / C, Green / Cycle	0.59	0.59	0.35	0.35
(v / s)_i Volume / Saturation Flow Rate	0.63	0.39	0.31	0.35
s, saturation flow rate [veh/h]	3489	3469	3461	2761
c, Capacity [veh/h]	2070	2058	1213	968
d1, Uniform Delay [s]	16.25	10.79	24.25	25.95
k, delay calibration	0.50	0.50	0.04	0.08
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	36.25	1.63	0.79	11.30
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.06	0.65	0.87	1.00
d, Delay for Lane Group [s/veh]	52.50	12.42	25.04	37.24
Lane Group LOS	F	B	C	F
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	26.05	7.21	8.91	10.12
50th-Percentile Queue Length [ft/ln]	651.22	180.14	222.64	253.00
95th-Percentile Queue Length [veh/ln]	35.97	11.61	13.80	15.34
95th-Percentile Queue Length [ft/ln]	899.21	290.20	344.99	383.48

Movement, Approach, & Intersection Results

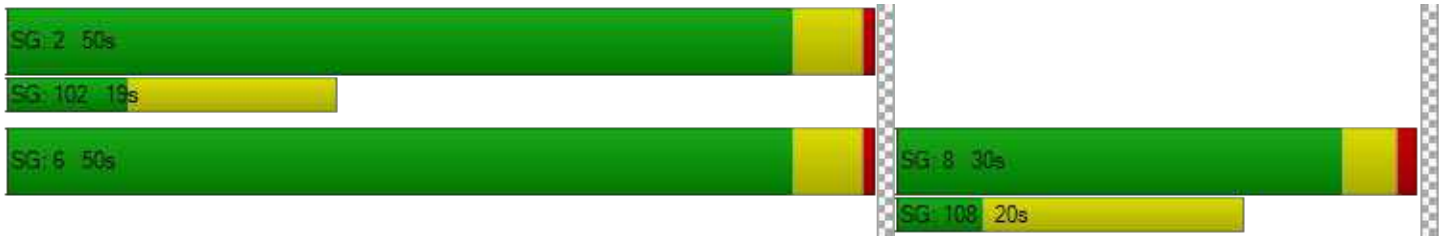
d_M, Delay for Movement [s/veh]	52.50	0.00	0.00	12.42	25.04	37.24
Movement LOS	F			B	C	F
d_A, Approach Delay [s/veh]	52.50		12.42		30.88	
Approach LOS	D		B		C	
d_I, Intersection Delay [s/veh]	34.91					
Intersection LOS	C					
Intersection V/C	1.070					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.223	2.618
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1135	1135	645
d_b, Bicycle Delay [s]	7.49	7.49	18.36
I_b,int, Bicycle LOS Score for Intersection	3.361	2.668	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	79.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.940

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	199	49	1832	10	35	8	9	213	385	2694	409	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	4.60	0.00	0.00	16.70	0.00	18.20	9.10	4.70	4.90	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	12	0	0	0	0	23	0	12	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	199	49	1844	10	35	8	9	236	385	2706	423	34
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	52	13	480	3	9	2	2	61	100	705	110	9
Total Analysis Volume [veh/h]	207	51	1921	10	36	8	9	246	401	2819	441	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			1			1			0	
v_di, Inbound Pedestrian Volume crossing m		0			1			1			0	
v_co, Outbound Pedestrian Volume crossing		0			22			0			22	
v_ci, Inbound Pedestrian Volume crossing mi		0			22			0			22	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		1			13			25			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	8	2	8
Auxiliary Signal Groups		3	2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	10	6	6	0	4	0	4	12	4	0	10	0
Maximum Green [s]	0	0	0	0	0	0	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	0.0	3.6	3.6	3.6	0.0	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.0	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	82	11	11	0	32	0	32	35	32	0	82	0
Vehicle Extension [s]	4.5	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	4.5	0.0
Walk [s]	5	0	0	0	5	0	5	5	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	0	22	26	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		Yes			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
g_i, Effective Green Time [s]	14	96	29	29	28	28	28	80	80
g / C, Green / Cycle	0.09	0.60	0.18	0.18	0.18	0.18	0.18	0.50	0.50
(v / s)_i Volume / Saturation Flow Rate	0.14	0.47	0.02	0.02	0.15	0.16	0.16	0.56	0.27
s, saturation flow rate [veh/h]	1827	4119	1867	1608	1624	1222	1434	5075	1793
c, Capacity [veh/h]	166	2386	340	293	289	218	255	2534	895
d1, Uniform Delay [s]	72.72	26.44	54.37	54.41	63.42	64.06	63.60	40.06	27.32
k, delay calibration	0.50	0.50	0.04	0.04	0.27	0.31	0.32	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	276.46	3.02	0.04	0.05	14.03	25.44	23.10	56.95	2.26
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.55	0.81	0.08	0.09	0.83	0.88	0.88	1.11	0.53
d, Delay for Lane Group [s/veh]	349.19	29.45	54.41	54.46	77.45	89.50	86.70	97.01	29.58
Lane Group LOS	F	C	D	D	E	F	F	F	C
Critical Lane Group	Yes	No	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	19.61	19.58	0.97	0.88	10.60	9.15	10.55	46.00	13.11
50th-Percentile Queue Length [ft/ln]	490.29	489.53	24.16	21.93	265.01	228.83	263.70	1150.01	327.68
95th-Percentile Queue Length [veh/ln]	30.89	26.84	1.74	1.58	15.94	14.12	15.87	62.11	19.04
95th-Percentile Queue Length [ft/ln]	772.23	670.96	43.49	39.48	398.50	352.88	396.86	1552.76	476.12

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	349.19	349.19	29.45	54.41	54.43	54.46	77.45	78.19	87.86	97.01	29.58	29.58
Movement LOS	F	F	C	D	D	D	E	E	F	F	C	C
d_A, Approach Delay [s/veh]	67.31			54.43			84.13			87.27		
Approach LOS	E			D			F			F		
d_I, Intersection Delay [s/veh]	79.62											
Intersection LOS	E											
Intersection V/C	0.940											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.017	2.479	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	80	349	393	954
d_b, Bicycle Delay [s]	73.76	54.89	52.34	21.90
l_b,int, Bicycle LOS Score for Intersection	5.155	1.604	2.101	6.996
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	4	3	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	61.6
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.139

Intersection Setup

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Westbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Right	Left	Thru	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	1	0	0	1
Entry Pocket Length [ft]	100.00	50.00	520.00	100.00	100.00	660.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		45.00		50.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	205	281	514	2729	1513	535
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	3.40	23.10	6.30	3.80	5.10	5.30
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	12	39	-16	33	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	205	293	553	2713	1546	535
Peak Hour Factor	0.9500	0.9500	0.9500	0.9500	0.9500	0.9500
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	54	77	146	714	407	141
Total Analysis Volume [veh/h]	216	308	582	2856	1627	563
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	2		2		0	

Intersection Settings

Located in CBD	Yes
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Permissive
Signal Group	4	4	5	2	6	0
Auxiliary Signal Groups						
Lead / Lag	Lag	-	Lead	-	-	-
Minimum Green [s]	5	5	5	10	10	0
Maximum Green [s]	20	20	25	50	50	0
Amber [s]	3.2	3.2	3.6	5.2	5.2	0.0
All red [s]	0.5	0.5	0.5	1.0	1.0	0.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	2.0	2.0	2.0	3.0	3.0	0.0
Walk [s]	7	7	0	0	7	0
Pedestrian Clearance [s]	26	26	0	0	21	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	1.7	1.7	2.1	4.2	4.2	0.0
Minimum Recall	No		No	Yes	Yes	
Maximum Recall	No		No	No	No	
Pedestrian Recall	No		No	No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	20.0	20.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	L	C	C	R
C, Cycle Length [s]	107	107	107	107	107	107
L, Total Lost Time per Cycle [s]	3.70	3.70	4.10	6.20	6.20	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.70	1.70	2.10	4.20	4.20	4.20
g_i, Effective Green Time [s]	20	20	25	77	48	48
g / C, Green / Cycle	0.19	0.19	0.23	0.72	0.45	0.45
(v / s)_i Volume / Saturation Flow Rate	0.07	0.26	0.38	0.63	0.36	0.40
s, saturation flow rate [veh/h]	3078	1171	1548	4518	4470	1393
c, Capacity [veh/h]	574	218	360	3259	2013	627
d1, Uniform Delay [s]	38.21	43.52	41.16	11.32	25.50	27.22
k, delay calibration	0.04	0.50	0.50	0.11	0.11	0.34
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.15	209.99	289.07	0.83	0.81	13.42
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.38	1.41	1.61	0.88	0.81	0.90
d, Delay for Lane Group [s/veh]	38.36	253.51	330.23	12.15	26.30	40.65
Lane Group LOS	D	F	F	B	C	D
Critical Lane Group	No	Yes	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	2.49	18.44	38.02	12.52	10.89	14.24
50th-Percentile Queue Length [ft/ln]	62.36	461.10	950.41	312.95	272.27	356.05
95th-Percentile Queue Length [veh/ln]	4.49	29.50	59.36	18.32	16.30	20.43
95th-Percentile Queue Length [ft/ln]	112.24	737.51	1484.07	458.02	407.57	510.78

Movement, Approach, & Intersection Results

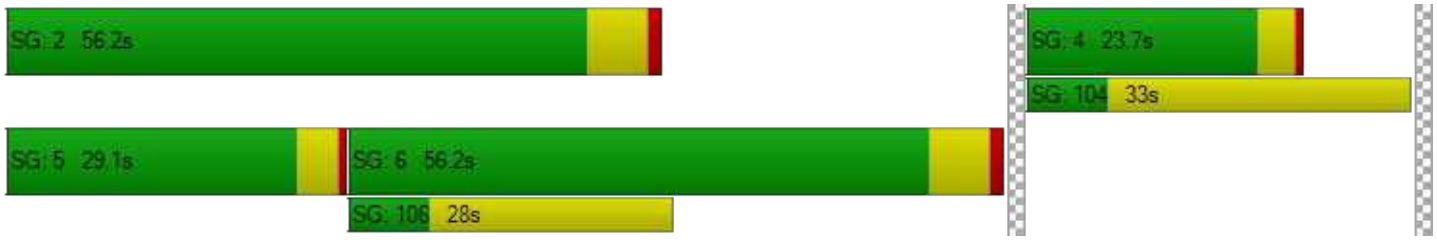
d_M, Delay for Movement [s/veh]	38.36	253.51	330.23	12.15	26.30	40.65
Movement LOS	D	F	F	B	C	D
d_A, Approach Delay [s/veh]	164.82		66.00		29.99	
Approach LOS	F		E		C	
d_I, Intersection Delay [s/veh]	61.60					
Intersection LOS	E					
Intersection V/C	1.139					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.625	3.716	3.815
Crosswalk LOS	B	D	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.25	8.90	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	3.451	2.764
Bicycle LOS	A	C	C

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	12.5
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.797

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	317	79	1817	157	194	2914
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	12.30	8.30	5.30	7.10	0.00	3.70
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	-3	36	-1	-37	21
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	322	76	1853	156	157	2935
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	83	20	478	40	40	756
Total Analysis Volume [veh/h]	332	78	1910	161	162	3026
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		1		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	7	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	5	10	0	7	10
Maximum Green [s]	25	30	50	0	20	50
Amber [s]	4.1	3.0	5.2	0.0	3.6	5.2
All red [s]	0.5	1.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	3.0	3.0	3.0	0.0	2.0	3.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	2.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	0.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	80	80	80	80	80	80
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	11	11	45	45	9	58
g / C, Green / Cycle	0.14	0.14	0.56	0.56	0.11	0.73
(v / s)_i Volume / Saturation Flow Rate	0.10	0.05	0.39	0.11	0.09	0.60
s, saturation flow rate [veh/h]	3173	1509	4959	1493	1810	5024
c, Capacity [veh/h]	444	211	2789	840	202	3643
d1, Uniform Delay [s]	33.04	31.20	12.46	8.56	34.67	7.60
k, delay calibration	0.11	0.11	0.11	0.11	0.04	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	2.55	1.08	0.30	0.11	2.83	0.52
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.75	0.37	0.68	0.19	0.80	0.83
d, Delay for Lane Group [s/veh]	35.59	32.27	12.76	8.67	37.50	8.12
Lane Group LOS	D	C	B	A	D	A
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	3.20	1.41	6.43	1.13	3.03	6.59
50th-Percentile Queue Length [ft/ln]	80.06	35.35	160.82	28.26	75.79	164.87
95th-Percentile Queue Length [veh/ln]	5.76	2.55	10.59	2.03	5.46	10.81
95th-Percentile Queue Length [ft/ln]	144.10	63.63	264.81	50.86	136.43	270.16

Movement, Approach, & Intersection Results

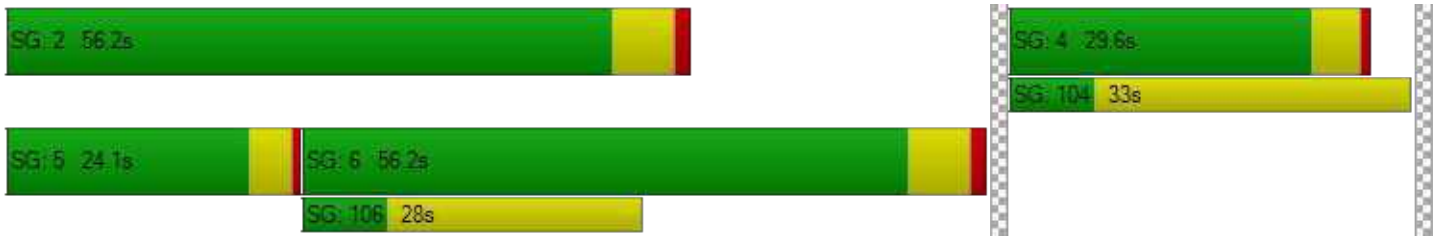
d_M, Delay for Movement [s/veh]	35.59	32.27	12.76	8.67	37.50	8.12
Movement LOS	D	C	B	A	D	A
d_A, Approach Delay [s/veh]	34.96		12.44		9.61	
Approach LOS	C		B		A	
d_I, Intersection Delay [s/veh]	12.48					
Intersection LOS	B					
Intersection V/C	0.797					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.279	3.717	3.675
Crosswalk LOS	B	D	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	2.699	3.313
Bicycle LOS	A	B	C

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: P:\...\Cumul+Proj PM.pdf

Scenario 18 3723 Haven Ave - Cum Plus Proj PM
12/21/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
1	Marsh Rd (SR 84)/US 101 SB Offramp	Signalized	HCM 6th Edition	SEB Left	0.927	42.1	D
15	Bayfront Expy (SR 84) /University Ave (SR 109)	Signalized	HCM 6th Edition	NWB Right	1.395	215.3	F
16	Bayfront Expy (SR 84)/Willow Rd (SR 114)	Signalized	HCM 6th Edition	SB Thru	2.080	373.8	F
110	Marsh Road/101 NB Ramps	Signalized	HCM 6th Edition	WB Right	0.933	18.0	B
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.942	38.3	D
195	Bayfront Expy/Chilco St	Signalized	HCM 6th Edition	NB Right	1.176	67.1	E
196	Bayfront Expy/Chrysler Drive	Signalized	HCM 6th Edition	NB Left	1.018	62.7	E

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 1: Marsh Rd (SR 84)/US 101 SB Offramp

Control Type:	Signalized	Delay (sec / veh):	42.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.927

Intersection Setup

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Approach	Northeastbound		Southwestbound		Southeastbound	
Lane Configuration						
Turning Movement	Left	Thru	Thru	Right	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	420.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	35.00		35.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Marsh Road		Marsh Road (SR 84)		US 101 SB Offramp	
Base Volume Input [veh/h]	0	1034	1288	279	1575	401
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	0.00	2.60	2.70	2.15	3.60	0.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	14	0	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	0	1034	1302	279	1575	401
Peak Hour Factor	1.0000	0.9800	0.9800	1.0000	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	0	264	332	70	402	102
Total Analysis Volume [veh/h]	0	1055	1329	279	1607	409
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	52.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	0	6	2	0	4	4
Auxiliary Signal Groups						1,4
Lead / Lag	-	-	-	-	Lead	-
Minimum Green [s]	0	8	8	0	6	6
Maximum Green [s]	0	32	32	0	60	60
Amber [s]	0.0	4.1	4.1	0.0	3.1	3.1
All red [s]	0.0	0.5	0.5	0.0	1.0	1.0
Split [s]	0	45	45	0	35	35
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	0	0	7	0	5	5
Pedestrian Clearance [s]	0	0	16	0	20	20
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No	No		No	
I1, Start-Up Lost Time [s]	0.0	2.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.5	2.6	0.0	0.0	0.0
Minimum Recall		Yes	Yes		No	
Maximum Recall		No	No		No	
Pedestrian Recall		No	No		No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	4.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	2.60	0.00	0.00
g_i, Effective Green Time [s]	42	40	33	33
g / C, Green / Cycle	0.53	0.50	0.41	0.41
(v / s)_i Volume / Saturation Flow Rate	0.26	0.38	0.47	0.25
s, saturation flow rate [veh/h]	4000	3540	3414	1609
c, Capacity [veh/h]	2121	1785	1412	665
d1, Uniform Delay [s]	12.00	15.77	23.48	18.47
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.84	2.87	63.06	0.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.50	0.74	1.14	0.61
d, Delay for Lane Group [s/veh]	12.83	18.64	86.54	18.81
Lane Group LOS	B	B	F	B
Critical Lane Group	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	5.49	9.12	24.60	5.64
50th-Percentile Queue Length [ft/ln]	137.31	228.03	615.03	140.99
95th-Percentile Queue Length [veh/ln]	9.34	14.07	35.74	9.53
95th-Percentile Queue Length [ft/ln]	233.39	351.85	893.38	238.36

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	0.00	12.83	18.64	0.00	86.54	18.81
Movement LOS		B	B		F	B
d_A, Approach Delay [s/veh]	12.83		18.64		72.80	
Approach LOS	B		B		E	
d_I, Intersection Delay [s/veh]	42.06					
Intersection LOS	D					
Intersection V/C	0.927					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	31.51	0.00	29.76
I_p,int, Pedestrian LOS Score for Intersection	2.921	0.000	2.589
Crosswalk LOS	C	F	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1010	1010	773
d_b, Bicycle Delay [s]	9.80	9.80	15.07
I_b,int, Bicycle LOS Score for Intersection	2.430	2.656	1.560
Bicycle LOS	B	B	A

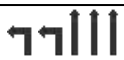
Sequence

Ring 1	-	2	-	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 15: Bayfront Expy (SR 84)/University Ave (SR 109)

Control Type:	Signalized	Delay (sec / veh):	215.3
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.395

Intersection Setup

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Approach	Northeastbound		Southwestbound		Northwestbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	2	0	0	1
Entry Pocket Length [ft]	100.00	100.00	830.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	1
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	100.00
Speed [mph]	55.00		55.00		35.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		No		Yes	

Volumes

Name	Bayfront Expressway (SR84)		Bayfront Expressway (SR84)		University Avenue (SR109)	
Base Volume Input [veh/h]	4205	574	504	1014	112	2326
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	2.40	16.10	4.90	3.80	9.00	1.50
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	44	1	43	28	15	66
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	4249	575	547	1042	127	2392
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	1084	147	140	266	32	610
Total Analysis Volume [veh/h]	4336	587	558	1063	130	2441
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	4		0		4	
v_ci, Inbound Pedestrian Volume crossing mi	4		0		4	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	1		0		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	48
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	8.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	10.00

Phasing & Timing

Control Type	Permissive	Permissive	Protected	Permissive	Permissive	Overlap
Signal Group	6	2	5	2	4	4
Auxiliary Signal Groups						4,5
Lead / Lag	-	-	Lead	-	Lead	-
Minimum Green [s]	10	10	4	10	4	4
Maximum Green [s]	90	140	50	140	15	15
Amber [s]	5.0	5.4	3.0	5.4	3.0	3.0
All red [s]	1.0	0.5	0.5	0.5	1.0	1.0
Split [s]	30	0	0	0	30	30
Vehicle Extension [s]	3.5	3.5	2.0	3.5	2.0	2.0
Walk [s]	5	0	0	0	5	5
Pedestrian Clearance [s]	35	0	0	0	29	29
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	4.0	5.8	1.5	5.8	2.0	2.0
Minimum Recall	Yes		No	Yes	No	No
Maximum Recall	No		No	No	No	No
Pedestrian Recall	No		No	No	No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	6.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	L	C	L	R
C, Cycle Length [s]	144	144	144	144	144	144
L, Total Lost Time per Cycle [s]	6.00	6.00	3.50	7.80	4.00	3.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	4.00	4.00	1.50	5.80	2.00	0.00
g_i, Effective Green Time [s]	90	90	26	117	15	45
g / C, Green / Cycle	0.62	0.62	0.18	0.81	0.10	0.31
(v / s)_i Volume / Saturation Flow Rate	0.85	0.42	0.17	0.21	0.04	0.58
s, saturation flow rate [veh/h]	5077	1387	3378	5020	3264	4237
c, Capacity [veh/h]	3172	866	600	4086	340	1311
d1, Uniform Delay [s]	27.04	17.39	58.37	3.16	60.22	49.75
k, delay calibration	0.13	0.24	0.04	0.13	0.04	0.07
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	165.74	2.07	2.94	0.04	0.26	388.34
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.37	0.68	0.93	0.26	0.38	1.86
d, Delay for Lane Group [s/veh]	192.78	19.46	61.32	3.20	60.48	438.09
Lane Group LOS	F	B	E	A	E	F
Critical Lane Group	Yes	No	No	No	No	Yes
50th-Percentile Queue Length [veh/ln]	79.61	11.55	9.90	1.55	2.23	62.66
50th-Percentile Queue Length [ft/ln]	1990.25	288.64	247.56	38.86	55.70	1566.48
95th-Percentile Queue Length [veh/ln]	118.20	17.12	15.06	2.80	4.01	99.25
95th-Percentile Queue Length [ft/ln]	2954.95	427.95	376.58	69.94	100.25	2481.31

Movement, Approach, & Intersection Results

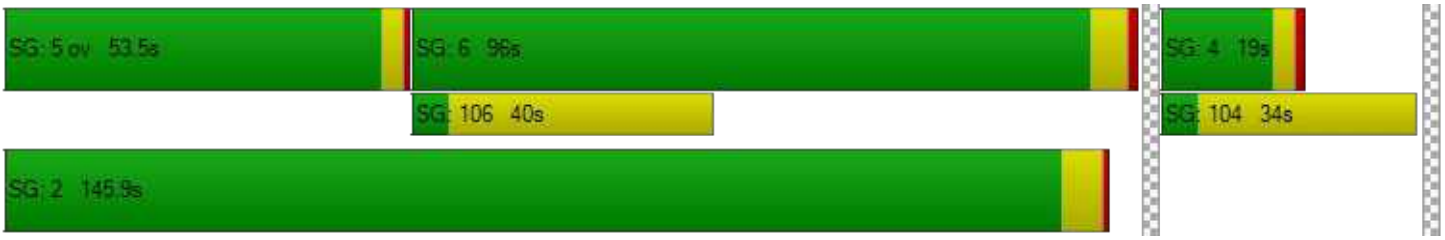
d_M, Delay for Movement [s/veh]	192.78	19.46	61.32	3.20	60.48	438.09
Movement LOS	F	B	E	A	E	F
d_A, Approach Delay [s/veh]	172.12		23.21		419.00	
Approach LOS	F		C		F	
d_I, Intersection Delay [s/veh]	215.27					
Intersection LOS	F					
Intersection V/C	1.395					

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	15.84	0.00	15.84
I_p,int, Pedestrian LOS Score for Intersection	4.124	0.000	3.166
Crosswalk LOS	D	F	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1750	1833	625
d_b, Bicycle Delay [s]	0.38	0.17	11.34
I_b,int, Bicycle LOS Score for Intersection	4.267	2.451	1.560
Bicycle LOS	E	B	A

Sequence

Ring 1	5	6	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 16: Bayfront Expy (SR 84)/Willow Rd (SR 114)

Control Type:	Signalized	Delay (sec / veh):	373.8
Analysis Method:	HCM 6th Edition	Level Of Service:	F
Analysis Period:	15 minutes	Volume to Capacity (v/c):	2.080

Intersection Setup

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	3	0	1	0	0	0	2	0	1	1	0	1
Entry Pocket Length [ft]	265.00	100.00	200.00	100.00	100.00	100.00	530.00	100.00	630.00	1500.00	100.00	600.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	40.00			20.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	Yes			No			Yes			No		

Volumes

Name	Willow Road (SR 114)			Willow Road			Ba Ex			Ba Ex		
Base Volume Input [veh/h]	113	94	1645	316	591	165	76	2941	937	540	886	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.20	10.90	3.30	4.30	1.00	1.70	37.10	2.50	12.00	6.40	5.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	34	1	44	0	0	0	0	1	3	28	14	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	70	0	0	45	0	0	1
Total Hourly Volume [veh/h]	147	95	1689	316	591	95	76	2942	895	568	900	33
Peak Hour Factor	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700	0.9700
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	38	24	435	81	152	24	20	758	231	146	232	9
Total Analysis Volume [veh/h]	152	98	1741	326	609	98	78	3033	923	586	928	34
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0			3			4			0		
v_di, Inbound Pedestrian Volume crossing m	0			4			3			0		
v_co, Outbound Pedestrian Volume crossing	1			0			0			0		
v_ci, Inbound Pedestrian Volume crossing mi	0			0			1			0		
v_ab, Corner Pedestrian Volume [ped/h]	0			0			0			0		
Bicycle Volume [bicycles/h]	0			7			0			0		

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	155
Coordination Type	Time of Day Pattern Isolated
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Protecte	Permiss	Overlap	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss	Protecte	Permiss	Permiss
Signal Group	7	4	4	3	8	4	1	6	2	5	2	6
Auxiliary Signal Groups			4,5									
Lead / Lag	Lead	-	-	Lead	-	-	Lead	-	-	Lead	-	-
Minimum Green [s]	5	5	5	5	4	5	4	4	5	5	5	4
Maximum Green [s]	22	15	15	9	9	15	26	40	50	25	50	40
Amber [s]	3.6	3.9	3.9	3.6	3.0	3.9	3.6	5.0	5.0	3.6	5.0	5.0
All red [s]	0.0	0.5	0.5	1.5	1.5	0.5	1.0	1.0	1.0	1.0	1.0	1.0
Split [s]	25	47	47	20	42	47	21	38	64	47	64	38
Vehicle Extension [s]	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Walk [s]	0	7	7	0	5	7	0	5	0	0	0	5
Pedestrian Clearance [s]	0	10	10	0	29	10	0	35	0	0	0	35
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	1.6	2.4	2.4	3.1	2.5	2.4	2.6	4.0	4.0	2.6	4.0	4.0
Minimum Recall	No	No	No	No	No		No	No		No	No	
Maximum Recall	No	No	No	No	No		No	No		No	No	
Pedestrian Recall	No	No	No	No	No		No	No		No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	20.0	20.0	20.0	20.0	6.0	6.0	20.0	6.0	6.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	C	R	L	C	R	L	C	R	L	C	R
C, Cycle Length [s]	109	109	109	109	109	109	109	109	109	109	109	109
L, Total Lost Time per Cycle [s]	3.60	4.40	4.60	5.10	4.50	4.50	4.60	6.00	6.00	4.60	6.00	6.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	1.60	2.40	0.00	3.10	2.50	2.50	2.60	4.00	4.00	2.60	4.00	4.00
g_i, Effective Green Time [s]	11	15	44	9	14	14	5	40	40	25	60	60
g / C, Green / Cycle	0.10	0.14	0.41	0.08	0.13	0.13	0.05	0.37	0.37	0.23	0.55	0.55
(v / s)_i Volume / Saturation Flow Rate	0.09	0.07	0.93	0.19	0.38	0.06	0.03	0.60	0.63	0.18	0.19	0.02
s, saturation flow rate [veh/h]	1749	1479	1868	1748	1606	1530	2484	5073	1462	3336	4959	1615
c, Capacity [veh/h]	184	204	757	145	206	196	119	1867	538	755	2710	883
d1, Uniform Delay [s]	47.69	43.28	32.37	49.91	47.43	44.04	50.93	34.39	34.39	39.50	13.76	11.43
k, delay calibration	0.11	0.11	0.50	0.50	0.50	0.19	0.11	0.11	0.50	0.11	0.11	0.11
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	8.90	1.74	589.36	586.31	892.20	3.44	6.02	281.72	330.04	1.75	0.07	0.02
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.82	0.48	2.30	2.26	2.95	0.50	0.66	1.62	1.72	0.78	0.34	0.04
d, Delay for Lane Group [s/veh]	56.59	45.01	621.73	636.22	939.63	47.48	56.95	316.11	364.43	41.25	13.84	11.45
Lane Group LOS	E	D	F	F	F	D	E	F	F	D	B	B
Critical Lane Group	Yes	No	Yes	No	Yes	No	No	No	Yes	No	No	No
50th-Percentile Queue Length [veh/ln]	4.40	1.24	47.51	27.53	28.37	2.68	1.14	64.65	63.11	7.47	4.13	0.38
50th-Percentile Queue Length [ft/ln]	110.05	31.02	1187.71	688.23	709.37	67.06	28.56	1616.33	1577.71	186.64	103.16	9.48
95th-Percentile Queue Length [veh/ln]	7.84	2.23	80.86	43.64	46.66	4.83	2.06	100.24	99.47	11.95	7.43	0.68
95th-Percentile Queue Length [ft/ln]	196.07	55.84	2021.62	1091.05	1166.55	120.71	51.41	2506.11	2486.76	298.67	185.69	17.07

Movement, Approach, & Intersection Results

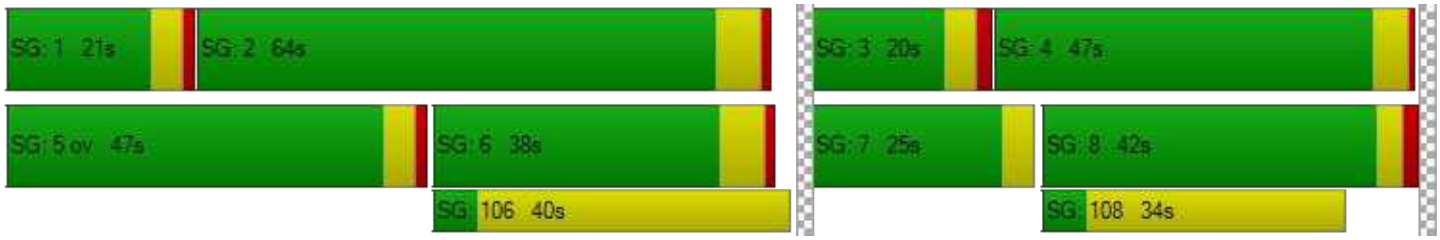
d_M, Delay for Movement [s/veh]	56.59	45.01	621.73	636.22	939.63	47.48	56.95	316.11	364.43	41.25	13.84	11.45
Movement LOS	E	D	F	F	F	D	E	F	F	D	B	B
d_A, Approach Delay [s/veh]	550.20			759.24			322.16			24.16		
Approach LOS	F			F			F			C		
d_I, Intersection Delay [s/veh]	373.78											
Intersection LOS	F											
Intersection V/C	2.080											

Other Modes

g_Walk,mi, Effective Walk Time [s]	9.0	0.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	68.76	0.00	68.76	0.00
l_p,int, Pedestrian LOS Score for Intersection	3.272	0.000	3.312	0.000
Crosswalk LOS	C	F	C	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	550	484	413	748
d_b, Bicycle Delay [s]	40.75	44.69	48.80	30.35
l_b,int, Bicycle LOS Score for Intersection	3.202	2.470	3.803	2.412
Bicycle LOS	C	B	D	B

Sequence

Ring 1	1	2	3	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	6	5	7	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 110: Marsh Road/101 NB Ramps

Control Type:	Signalized	Delay (sec / veh):	18.0
Analysis Method:	HCM 6th Edition	Level Of Service:	B
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.933

Intersection Setup

Name	Marsh Road		Marsh Road		101 NB Ramps	
Approach	Northbound		Southbound		Westbound	
Lane Configuration						
Turning Movement	Thru	Right	Left	Thru	Left	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	1	1
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	500.00	360.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	No		Yes		Yes	

Volumes

Name	Marsh Road		Marsh Road		101 NB Ramps	
Base Volume Input [veh/h]	2280	0	0	1380	570	490
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	4.40	0.00	0.00	3.00	5.10	12.10
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	14	0	0
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	2280	0	0	1394	570	490
Peak Hour Factor	0.9900	1.0000	1.0000	0.9900	0.9900	0.9900
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	576	0	0	352	144	124
Total Analysis Volume [veh/h]	2303	0	0	1408	576	495
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	1		2		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	80
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	40.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	7.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Permissive	Permissive
Signal Group	2	0	0	6	8	8
Auxiliary Signal Groups						
Lead / Lag	-	-	-	-	Lag	-
Minimum Green [s]	8	0	0	8	6	6
Maximum Green [s]	0	0	0	0	0	0
Amber [s]	3.6	0.0	0.0	3.6	3.2	3.2
All red [s]	0.5	0.0	0.0	0.5	1.0	1.0
Split [s]	50	0	0	50	30	30
Vehicle Extension [s]	3.0	0.0	0.0	3.0	2.0	2.0
Walk [s]	7	0	0	0	5	5
Pedestrian Clearance [s]	12	0	0	0	15	15
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No			No	No	
I1, Start-Up Lost Time [s]	2.0	0.0	0.0	2.0	2.0	2.0
I2, Clearance Lost Time [s]	0.5	0.0	0.0	0.5	0.0	0.0
Minimum Recall	Yes			Yes	No	
Maximum Recall	No			No	No	
Pedestrian Recall	No			No	No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	20.0	0.0	0.0	20.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	C	L	R
C, Cycle Length [s]	80	80	80	80
L, Total Lost Time per Cycle [s]	2.50	2.50	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.50	0.50	0.00	0.00
g_i, Effective Green Time [s]	56	56	20	20
g / C, Green / Cycle	0.70	0.70	0.25	0.25
(v / s)_i Volume / Saturation Flow Rate	0.66	0.40	0.17	0.19
s, saturation flow rate [veh/h]	3492	3532	3373	2585
c, Capacity [veh/h]	2436	2464	830	636
d1, Uniform Delay [s]	10.72	6.07	27.38	28.08
k, delay calibration	0.50	0.50	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	9.28	0.97	0.39	0.79
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.95	0.57	0.69	0.78
d, Delay for Lane Group [s/veh]	20.01	7.04	27.77	28.87
Lane Group LOS	C	A	C	C
Critical Lane Group	Yes	No	No	Yes
50th-Percentile Queue Length [veh/ln]	16.13	4.83	4.85	4.31
50th-Percentile Queue Length [ft/ln]	403.24	120.69	121.34	107.69
95th-Percentile Queue Length [veh/ln]	22.72	8.43	8.47	7.71
95th-Percentile Queue Length [ft/ln]	567.91	210.78	211.67	192.79

Movement, Approach, & Intersection Results

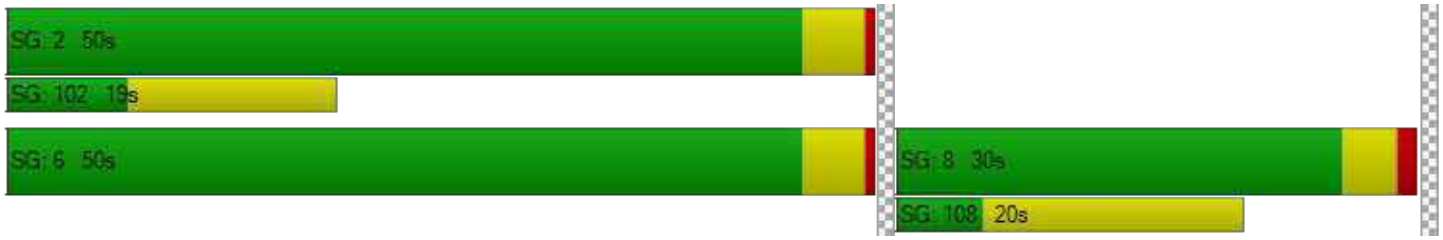
d_M, Delay for Movement [s/veh]	20.01	0.00	0.00	7.04	27.77	28.87
Movement LOS	C			A	C	C
d_A, Approach Delay [s/veh]	20.01		7.04		28.28	
Approach LOS	C		A		C	
d_I, Intersection Delay [s/veh]	18.04					
Intersection LOS	B					
Intersection V/C	0.933					

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	31.51	29.76
I_p,int, Pedestrian LOS Score for Intersection	0.000	3.152	2.386
Crosswalk LOS	F	C	B
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	1148	1148	645
d_b, Bicycle Delay [s]	7.27	7.27	18.36
I_b,int, Bicycle LOS Score for Intersection	3.460	2.721	1.560
Bicycle LOS	C	B	A

Sequence

Ring 1	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	6	-	8	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	38.3
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.942

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	180	40	2131	16	31	5	9	520	209	2668	133	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.20	0.00	2.90	0.00	0.00	0.00	0.00	0.40	2.20	2.90	14.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	0	0	0	0	0	0	0	0	14	27	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	180	40	2131	16	31	5	9	520	209	2682	160	14
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	10	555	4	8	1	2	135	54	698	42	4
Total Analysis Volume [veh/h]	188	42	2220	17	32	5	9	542	218	2794	167	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			0			0			0	
v_di, Inbound Pedestrian Volume crossing m		0			0			0			0	
v_co, Outbound Pedestrian Volume crossing		0			1			0			1	
v_ci, Inbound Pedestrian Volume crossing mi		0			1			0			1	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			2			0			2	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	8	2	8
Auxiliary Signal Groups			2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	-	-	-
Minimum Green [s]	10	6	6	0	4	0	4	12	4	0	10	0
Maximum Green [s]	0	0	0	0	0	0	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	0.0	3.6	3.6	3.6	0.0	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.0	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	82	11	11	0	32	0	32	35	32	0	82	0
Vehicle Extension [s]	4.5	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	4.5	0.0
Walk [s]	5	0	0	0	5	0	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	0	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	0.0	2.0	2.0	2.0	0.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6	0.0	0.0	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	13	127	7	7	27	27	27	103	103
g / C, Green / Cycle	0.08	0.79	0.04	0.04	0.17	0.17	0.17	0.64	0.64
(v / s)_i Volume / Saturation Flow Rate	0.13	0.53	0.02	0.01	0.15	0.16	0.14	0.54	0.11
s, saturation flow rate [veh/h]	1825	4190	1522	1652	1891	1724	1587	5150	1658
c, Capacity [veh/h]	151	3230	101	72	323	295	271	3311	1066
d1, Uniform Delay [s]	73.38	8.93	74.69	74.28	64.51	65.30	63.75	22.29	11.46
k, delay calibration	0.50	0.50	0.04	0.04	0.24	0.28	0.19	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	265.72	1.21	0.60	1.01	13.71	24.47	9.47	2.82	0.35
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.52	0.69	0.30	0.33	0.86	0.92	0.80	0.84	0.17
d, Delay for Lane Group [s/veh]	339.10	10.14	75.29	75.29	78.22	89.76	73.22	25.12	11.81
Lane Group LOS	F	B	E	E	E	F	E	C	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	17.40	11.85	1.23	0.98	12.35	12.97	9.30	27.25	2.75
50th-Percentile Queue Length [ft/ln]	434.92	296.20	30.85	24.57	308.68	324.26	232.41	681.25	68.82
95th-Percentile Queue Length [veh/ln]	27.58	17.49	2.22	1.77	18.11	18.88	14.30	35.81	4.96
95th-Percentile Queue Length [ft/ln]	689.42	437.33	55.53	44.23	452.75	471.92	357.42	895.28	123.88

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	339.10	339.10	10.14	75.29	75.29	75.29	78.22	84.02	73.22	25.12	11.81	11.81
Movement LOS	F	F	B	E	E	E	E	F	E	C	B	B
d_A, Approach Delay [s/veh]	41.02			75.29			80.89			24.30		
Approach LOS	D			E			F			C		
d_I, Intersection Delay [s/veh]	38.26											
Intersection LOS	D											
Intersection V/C	0.942											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.008	2.435	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	80	349	393	954
d_b, Bicycle Delay [s]	73.73	54.59	51.68	21.91
I_b,int, Bicycle LOS Score for Intersection	5.602	1.604	2.194	6.470
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 195: Bayfront Expy/Chilco St

Control Type:	Signalized	Delay (sec / veh):	67.1
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.176

Intersection Setup

Name	Chilco Street		Bayfront Expy		Bayfront Expressway (SR 84)	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	50.00	100.00	660.00	520.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00		30.00		30.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chilco Street		Bayfront Expy		Bayfront Expressway (SR 84)	
Base Volume Input [veh/h]	386	576	2421	206	159	1343
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	5.50	3.10	3.10	1.30	21.10	4.80
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	40	-36	0	17	31
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	386	616	2385	206	176	1374
Peak Hour Factor	0.9300	0.9300	0.9300	0.9300	0.9300	0.9300
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	104	166	641	55	47	369
Total Analysis Volume [veh/h]	415	662	2565	222	189	1477
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	5		1		1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Permissive	Permissive	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	10	0	10	0	4	10
Maximum Green [s]	20	0	50	0	10	50
Amber [s]	3.0	0.0	5.0	0.0	3.0	5.0
All red [s]	0.5	0.0	0.5	0.0	0.0	0.5
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	0.0	0.0	3.5	0.0	1.0	3.5
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	92	92	92	92	92	92
L, Total Lost Time per Cycle [s]	2.00	2.00	5.50	5.50	3.00	5.50
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	3.50	3.50	1.00	3.50
g_i, Effective Green Time [s]	22	22	50	50	10	63
g / C, Green / Cycle	0.24	0.24	0.54	0.54	0.11	0.68
(v / s)_i Volume / Saturation Flow Rate	0.12	0.43	0.51	0.14	0.13	0.30
s, saturation flow rate [veh/h]	3361	1549	5049	1579	1508	4979
c, Capacity [veh/h]	804	371	2743	858	164	3409
d1, Uniform Delay [s]	30.36	34.80	19.50	11.14	40.98	6.50
k, delay calibration	0.04	0.50	0.04	0.04	0.50	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	0.19	364.50	0.74	0.06	117.26	0.03
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.52	1.79	0.94	0.26	1.15	0.43
d, Delay for Lane Group [s/veh]	30.55	399.30	20.23	11.20	158.24	6.53
Lane Group LOS	C	F	C	B	F	A
Critical Lane Group	No	Yes	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	3.94	45.55	15.45	2.28	9.00	3.63
50th-Percentile Queue Length [ft/ln]	98.48	1138.65	386.27	56.95	224.97	90.75
95th-Percentile Queue Length [veh/ln]	7.09	71.82	21.90	4.10	14.69	6.53
95th-Percentile Queue Length [ft/ln]	177.26	1795.61	547.43	102.52	367.19	163.35

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	30.55	399.30	20.23	11.20	158.24	6.53
Movement LOS	C	F	C	B	F	A
d_A, Approach Delay [s/veh]	257.21		19.51		23.74	
Approach LOS	F		B		C	
d_I, Intersection Delay [s/veh]	67.08					
Intersection LOS	E					
Intersection V/C	1.176					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
l_p,int, Pedestrian LOS Score for Intersection	2.590	3.245	3.275
Crosswalk LOS	B	C	C
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	444	1111	1111
d_b, Bicycle Delay [s]	27.29	8.89	8.89
l_b,int, Bicycle LOS Score for Intersection	1.560	3.092	2.476
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Intersection Level Of Service Report
Intersection 196: Bayfront Expy/Chrysler Drive

Control Type:	Signalized	Delay (sec / veh):	62.7
Analysis Method:	HCM 6th Edition	Level Of Service:	E
Analysis Period:	15 minutes	Volume to Capacity (v/c):	1.018

Intersection Setup

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Approach	Northbound		Eastbound		Westbound	
Lane Configuration						
Turning Movement	Left	Right	Thru	Right	Left	Thru
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	1	0	1	1	0
Entry Pocket Length [ft]	100.00	280.00	100.00	290.00	345.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	25.00		45.00		45.00	
Grade [%]	0.00		0.00		0.00	
Curb Present	No		No		No	
Crosswalk	Yes		Yes		Yes	

Volumes

Name	Chrysler Drive		Bayfront Expy		Bayfront Expy	
Base Volume Input [veh/h]	1261	119	2516	169	85	1716
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	1.80	0.00	2.80	0.90	0.00	4.90
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0
Site-Generated Trips [veh/h]	0	-36	0	0	-10	41
Diverted Trips [veh/h]	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0
Total Hourly Volume [veh/h]	1261	83	2516	169	75	1757
Peak Hour Factor	0.9800	0.9800	0.9800	0.9800	0.9800	0.9800
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	322	21	642	43	19	448
Total Analysis Volume [veh/h]	1287	85	2567	172	77	1793
Presence of On-Street Parking	No	No	No	No	No	No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing	0		0		0	
v_di, Inbound Pedestrian Volume crossing m	0		0		0	
v_co, Outbound Pedestrian Volume crossing	0		0		0	
v_ci, Inbound Pedestrian Volume crossing mi	0		0		0	
v_ab, Corner Pedestrian Volume [ped/h]	0		0		0	
Bicycle Volume [bicycles/h]	0		2		0	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	90
Coordination Type	Free Running
Actuation Type	Fully actuated
Offset [s]	0.0
Offset Reference	Lead Green - Beginning of First Green
Permissive Mode	SingleBand
Lost time [s]	9.00

Phasing & Timing

Control Type	Split	Split	Permissive	Permissive	Protected	Permissive
Signal Group	4	0	6	0	5	2
Auxiliary Signal Groups						
Lead / Lag	Lag	-	-	-	Lead	-
Minimum Green [s]	5	0	10	0	5	10
Maximum Green [s]	25	0	50	0	20	50
Amber [s]	4.1	0.0	5.2	0.0	3.6	5.2
All red [s]	0.5	0.0	1.0	0.0	0.5	1.0
Split [s]	0	0	0	0	0	0
Vehicle Extension [s]	0.0	0.0	0.0	0.0	0.0	0.0
Walk [s]	7	0	7	0	0	0
Pedestrian Clearance [s]	26	0	21	0	0	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk	No		No			No
I1, Start-Up Lost Time [s]	2.0	0.0	2.0	0.0	2.0	2.0
I2, Clearance Lost Time [s]	2.6	0.0	4.2	0.0	2.1	4.2
Minimum Recall	No		Yes		No	Yes
Maximum Recall	No		No		No	No
Pedestrian Recall	No		No		No	No
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	20.0	0.0	20.0	20.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	L	R	C	R	L	C
C, Cycle Length [s]	95	95	95	95	95	95
L, Total Lost Time per Cycle [s]	4.60	4.60	6.20	6.20	4.10	6.20
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	2.60	2.60	4.20	4.20	2.10	4.20
g_i, Effective Green Time [s]	25	25	50	50	5	59
g / C, Green / Cycle	0.26	0.26	0.53	0.53	0.06	0.62
(v / s)_i Volume / Saturation Flow Rate	0.37	0.05	0.51	0.11	0.04	0.36
s, saturation flow rate [veh/h]	3464	1615	5061	1569	1810	4975
c, Capacity [veh/h]	909	424	2657	824	102	3105
d1, Uniform Delay [s]	35.11	27.33	21.81	12.04	44.31	10.52
k, delay calibration	0.17	0.04	0.04	0.04	0.04	0.04
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	189.08	0.09	1.42	0.05	4.29	0.06
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	1.42	0.20	0.97	0.21	0.76	0.58
d, Delay for Lane Group [s/veh]	224.19	27.42	23.23	12.08	48.59	10.58
Lane Group LOS	F	C	C	B	D	B
Critical Lane Group	Yes	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	34.26	1.52	15.95	1.74	1.84	5.98
50th-Percentile Queue Length [ft/ln]	856.50	38.00	398.73	43.54	46.05	149.48
95th-Percentile Queue Length [veh/ln]	52.26	2.74	22.50	3.13	3.32	9.99
95th-Percentile Queue Length [ft/ln]	1306.48	68.40	562.47	78.37	82.89	249.73

Movement, Approach, & Intersection Results

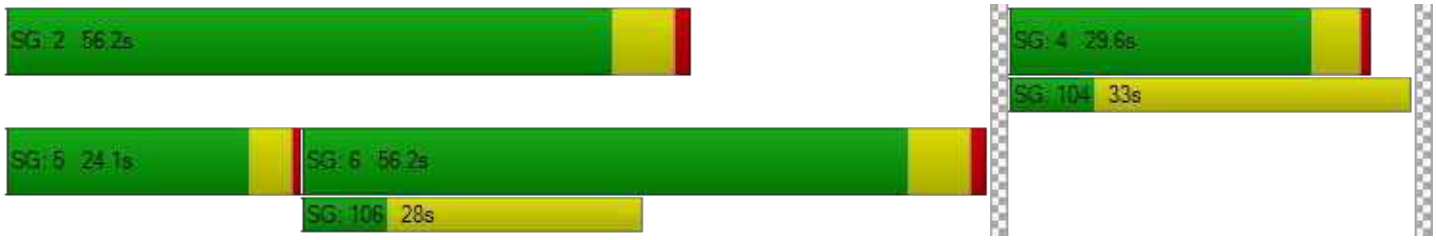
d_M, Delay for Movement [s/veh]	224.19	27.42	23.23	12.08	48.59	10.58
Movement LOS	F	C	C	B	D	B
d_A, Approach Delay [s/veh]	212.00		22.53		12.15	
Approach LOS	F		C		B	
d_I, Intersection Delay [s/veh]	62.75					
Intersection LOS	E					
Intersection V/C	1.018					

Other Modes

g_Walk,mi, Effective Walk Time [s]	11.0	11.0	11.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	34.67	34.67	34.67
I_p,int, Pedestrian LOS Score for Intersection	2.460	3.789	3.538
Crosswalk LOS	B	D	D
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	556	1111	1111
d_b, Bicycle Delay [s]	23.47	8.90	8.89
I_b,int, Bicycle LOS Score for Intersection	1.560	3.066	2.588
Bicycle LOS	A	C	B

Sequence

Ring 1	-	-	2	4	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	5	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-



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Report File: P:\...\Bkgrd+AM - Mitigated.pdf
11/10/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.780	43.8	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

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Intersection Level Of Service Report

Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	43.8
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.780

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	176	27	1502	10	30	7	8	204	312	1931	378	34
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	7.00	0.00	4.60	0.00	0.00	16.70	0.00	18.20	9.10	4.70	4.90	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	5	0	342	0	0	0	0	11	8	115	6	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	181	27	1844	10	30	7	8	215	320	2046	384	34
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	47	7	480	3	8	2	2	56	83	533	100	9
Total Analysis Volume [veh/h]	189	28	1921	10	31	7	8	224	333	2131	400	35
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			1			1			0	
v_di, Inbound Pedestrian Volume crossing m		0			1			1			0	
v_co, Outbound Pedestrian Volume crossing		0			22			0			22	
v_ci, Inbound Pedestrian Volume crossing mi		0			22			0			22	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		1			13			25			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	7	4	6	4	1	4	1	2	8
Auxiliary Signal Groups		3	2,3									
Lead / Lag	Lag	-	-	-	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	0	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	0	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	0.0	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.0	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	77	15	15	0	32	25	32	36	32	36	77	0
Vehicle Extension [s]	4.5	0.0	0.0	0.0	0.0	3.0	0.0	3.0	0.0	3.0	4.5	0.0
Walk [s]	5	0	0	0	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	0	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	0.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	0.0	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		Yes			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	22	99	29	29	24	24	24	75	75
g / C, Green / Cycle	0.14	0.62	0.18	0.18	0.15	0.15	0.15	0.47	0.47
(v / s)_i Volume / Saturation Flow Rate	0.12	0.47	0.01	0.01	0.13	0.13	0.14	0.42	0.24
s, saturation flow rate [veh/h]	1821	4113	1863	1610	1624	1236	1426	5075	1789
c, Capacity [veh/h]	253	2449	339	293	246	187	216	2374	837
d1, Uniform Delay [s]	67.37	24.42	54.28	54.31	65.87	66.52	66.13	39.07	29.95
k, delay calibration	0.48	0.50	0.04	0.04	0.18	0.21	0.22	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	28.79	2.60	0.03	0.04	11.34	22.31	21.55	5.90	2.31
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.86	0.78	0.07	0.08	0.83	0.89	0.90	0.90	0.52
d, Delay for Lane Group [s/veh]	96.16	27.03	54.31	54.36	77.21	88.83	87.68	44.97	32.25
Lane Group LOS	F	C	D	D	E	F	F	D	C
Critical Lane Group	No	Yes	No	Yes	No	No	Yes	Yes	No
50th-Percentile Queue Length [veh/ln]	10.75	18.64	0.86	0.78	8.93	7.85	9.05	26.71	12.46
50th-Percentile Queue Length [ft/ln]	268.63	465.91	21.43	19.47	223.23	196.33	226.33	667.63	311.57
95th-Percentile Queue Length [veh/ln]	16.12	25.72	1.54	1.40	13.83	12.45	13.99	35.18	18.25
95th-Percentile Queue Length [ft/ln]	403.03	642.90	38.58	35.04	345.75	311.23	349.70	879.50	456.31

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	96.16	96.16	27.03	54.31	54.33	54.36	77.21	78.63	88.14	44.97	32.25	32.25
Movement LOS	F	F	C	D	D	D	E	E	F	D	C	C
d_A, Approach Delay [s/veh]	34.04			54.33			84.23			42.81		
Approach LOS	C			D			F			D		
d_I, Intersection Delay [s/veh]	43.79											
Intersection LOS	D											
Intersection V/C	0.780											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
l_p,int, Pedestrian LOS Score for Intersection	0.000	2.007	2.442	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	130	349	405	891
d_b, Bicycle Delay [s]	69.97	54.89	51.52	24.60
l_b,int, Bicycle LOS Score for Intersection	5.087	1.599	2.026	5.794
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	4	3	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Vistro File: P:\...\Existing Conditions_PM-3723 Haven Ave - Miti.vistro
Scenario 20 20 Near Term + 3723 Haven PM (2019 vols) w Improvements
Report File: P:\...\Bkgrd+PM - Mitigated.pdf
11/10/2020

Intersection Analysis Summary

ID	Intersection Name	Control Type	Method	Worst Mvmt	V/C	Delay (s/veh)	LOS
163	Bayfront Expy/Marsh Rd	Signalized	HCM 6th Edition	NB Left	0.940	36.1	D

V/C, Delay, LOS: For two-way stop, these values are taken from the movement with the worst (highest) delay value. For all other control types, they are taken for the whole intersection.

Intersection Level Of Service Report
Intersection 163: Bayfront Expy/Marsh Rd

Control Type:	Signalized	Delay (sec / veh):	36.1
Analysis Method:	HCM 6th Edition	Level Of Service:	D
Analysis Period:	15 minutes	Volume to Capacity (v/c):	0.940

Intersection Setup

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Approach	Northbound			Southbound			Eastbound			Westbound		
Lane Configuration												
Turning Movement	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
Lane Width [ft]	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00	12.00
No. of Lanes in Entry Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Entry Pocket Length [ft]	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
No. of Lanes in Exit Pocket	0	0	0	0	0	0	0	0	0	0	0	0
Exit Pocket Length [ft]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Speed [mph]	30.00			30.00			30.00			30.00		
Grade [%]	0.00			0.00			0.00			0.00		
Curb Present	No			No			No			No		
Crosswalk	No			Yes			Yes			No		

Volumes

Name				Marsh Road			Haven Avenue			Bayfront Expressway		
Base Volume Input [veh/h]	203	40	1834	12	31	5	9	513	224	1822	131	14
Base Volume Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Heavy Vehicles Percentage [%]	19.20	0.00	2.90	0.00	0.00	0.00	0.00	0.40	2.20	2.90	14.30	0.00
Growth Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
In-Process Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Site-Generated Trips [veh/h]	1	0	32	0	0	0	0	4	1	599	4	0
Diverted Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Pass-by Trips [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Existing Site Adjustment Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Other Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Right Turn on Red Volume [veh/h]	0	0	0	0	0	0	0	0	0	0	0	0
Total Hourly Volume [veh/h]	204	40	1866	12	31	5	9	517	225	2421	135	14
Peak Hour Factor	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600	0.9600
Other Adjustment Factor	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Total 15-Minute Volume [veh/h]	53	10	486	3	8	1	2	135	59	630	35	4
Total Analysis Volume [veh/h]	213	42	1944	13	32	5	9	539	234	2522	141	15
Presence of On-Street Parking	No		No	No		No	No		No	No		No
On-Street Parking Maneuver Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
Local Bus Stopping Rate [/h]	0	0	0	0	0	0	0	0	0	0	0	0
v_do, Outbound Pedestrian Volume crossing		0			4			4			0	
v_di, Inbound Pedestrian Volume crossing m		0			4			4			0	
v_co, Outbound Pedestrian Volume crossing		0			13			0			13	
v_ci, Inbound Pedestrian Volume crossing mi		0			13			0			13	
v_ab, Corner Pedestrian Volume [ped/h]		0			0			0			0	
Bicycle Volume [bicycles/h]		0			13			8			1	

Intersection Settings

Located in CBD	No
Signal Coordination Group	-
Cycle Length [s]	160
Coordination Type	Time of Day Pattern Coordinated
Actuation Type	Fully actuated
Offset [s]	125.0
Offset Reference	LagCoordGreen
Permissive Mode	SingleBand
Lost time [s]	12.00

Phasing & Timing

Control Type	Split	Split	Overlap	Split	Split	Split	Split	Split	Split	Split	Split	Split
Signal Group	2	3	3	6	4	6	4	1	4	1	2	8
Auxiliary Signal Groups			2,3									
Lead / Lag	Lag	-	-	Lag	-	-	Lag	-	-	Lead	-	-
Minimum Green [s]	10	6	6	10	4	10	4	12	4	12	10	0
Maximum Green [s]	0	0	0	10	0	10	0	0	0	0	0	0
Amber [s]	4.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.7	0.0
All red [s]	1.0	1.0	1.0	0.5	0.5	0.5	0.5	0.0	0.5	0.0	1.0	0.0
Split [s]	71	24	24	25	32	25	32	33	32	33	71	0
Vehicle Extension [s]	4.5	2.0	2.0	3.0	2.0	3.0	2.0	2.0	2.0	2.0	4.5	0.0
Walk [s]	5	0	0	10	5	10	5	0	5	0	5	0
Pedestrian Clearance [s]	16	0	0	10	22	10	22	0	22	0	16	0
Delayed Vehicle Green [s]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest In Walk		No			No			No			No	
I1, Start-Up Lost Time [s]	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	0.0
I2, Clearance Lost Time [s]	0.0	0.0	0.0	2.1	0.0	2.1	0.0	1.6	0.0	1.6	0.0	0.0
Minimum Recall		No	No		No			No			Yes	
Maximum Recall		No	No		No			No			No	
Pedestrian Recall		No	No		No			No			No	
Detector Location [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Detector Length [ft]	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Exclusive Pedestrian Phase

Pedestrian Signal Group	0
Pedestrian Walk [s]	0
Pedestrian Clearance [s]	0

Lane Group Calculations

Lane Group	C	R	C	C	C	C	R	L	C
C, Cycle Length [s]	160	160	160	160	160	160	160	160	160
L, Total Lost Time per Cycle [s]	2.00	2.00	2.00	2.00	3.60	3.60	3.60	2.00	2.00
l1_p, Permitted Start-Up Lost Time [s]	0.00	0.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00
l2, Clearance Lost Time [s]	0.00	0.00	0.00	0.00	1.60	1.60	1.60	0.00	0.00
g_i, Effective Green Time [s]	25	128	10	10	27	27	27	89	89
g / C, Green / Cycle	0.16	0.80	0.06	0.06	0.17	0.17	0.17	0.56	0.56
(v / s)_i Volume / Saturation Flow Rate	0.14	0.46	0.02	0.01	0.15	0.15	0.15	0.49	0.09
s, saturation flow rate [veh/h]	1824	4190	1707	1588	1891	1724	1551	5150	1649
c, Capacity [veh/h]	285	3250	137	97	314	286	258	2868	918
d1, Uniform Delay [s]	66.22	7.50	71.59	71.56	65.46	65.71	65.26	30.78	17.35
k, delay calibration	0.50	0.50	0.04	0.04	0.29	0.31	0.30	0.50	0.50
I, Upstream Filtering Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
d2, Incremental Delay [s]	32.12	0.82	0.27	0.45	21.18	26.39	25.46	4.24	0.40
d3, Initial Queue Delay [s]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Rp, platoon ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PF, progression factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Lane Group Results

X, volume / capacity	0.90	0.60	0.20	0.23	0.90	0.92	0.91	0.88	0.17
d, Delay for Lane Group [s/veh]	98.34	8.32	71.86	72.00	86.64	92.10	90.72	35.03	17.75
Lane Group LOS	F	A	E	E	F	F	F	D	B
Critical Lane Group	No	Yes	Yes	No	No	Yes	No	Yes	No
50th-Percentile Queue Length [veh/ln]	12.81	8.81	1.10	0.89	13.26	12.76	11.20	28.79	3.00
50th-Percentile Queue Length [ft/ln]	320.27	220.18	27.52	22.30	331.50	319.05	280.05	719.64	74.88
95th-Percentile Queue Length [veh/ln]	18.68	13.67	1.98	1.61	19.23	18.62	16.69	37.58	5.39
95th-Percentile Queue Length [ft/ln]	467.01	341.85	49.54	40.15	480.80	465.52	417.28	939.61	134.79

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Version 2020 (SP 0-3)

Movement, Approach, & Intersection Results

d_M, Delay for Movement [s/veh]	98.34	98.34	8.32	71.86	71.94	72.00	86.64	89.31	90.72	35.03	17.75	17.75
Movement LOS	F	F	A	E	E	E	F	F	F	D	B	B
d_A, Approach Delay [s/veh]	18.76			71.92			89.70			34.02		
Approach LOS	B			E			F			C		
d_I, Intersection Delay [s/veh]	36.10											
Intersection LOS	D											
Intersection V/C	0.940											

Other Modes

g_Walk,mi, Effective Walk Time [s]	0.0	9.0	9.0	0.0
M_corner, Corner Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
M_CW, Crosswalk Circulation Area [ft²/ped]	0.00	0.00	0.00	0.00
d_p, Pedestrian Delay [s]	0.00	71.25	71.25	0.00
I_p,int, Pedestrian LOS Score for Intersection	0.000	2.006	2.438	0.000
Crosswalk LOS	F	B	B	F
s_b, Saturation Flow Rate of the bicycle lane	2000	2000	2000	2000
c_b, Capacity of the bicycle lane [bicycles/h]	243	349	368	816
d_b, Bicycle Delay [s]	61.78	54.89	53.52	28.04
I_b,int, Bicycle LOS Score for Intersection	5.188	1.601	2.205	5.978
Bicycle LOS	F	A	B	F

Sequence

Ring 1	-	2	1	3	4	-	-	-	-	-	-	-	-	-	-	-
Ring 2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ring 4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Appendix C
Transportation Demand Management (TDM) Plan

Walker California:

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Los Angeles, CA 90014

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December 4, 2019

Stephanie Mielbye
Executive Assistant to Richard Mielbye
FPG Hospitality Inc.
222 Lakeview Avenue, Suite 200
West Palm Beach, FL 33401

Submitted via email; to: stmielbye@fpg-corp.com

Re: *TDM Plan Consulting*
3723 Haven Avenue
Menlo Park, CA
Walker Project Number 33-2123.00

Dear Ms. Mielbye,

Walker is pleased to submit for your review the Transportation Demand Management (TDM) Plan for a new hotel at 3723 Haven Avenue in Menlo Park, CA.

We appreciate the opportunity to be of service to you on this project. We look forward to discussing the report at your earliest convenience.

Sincerely,

WALKER CONSULTANTS

Manuel A. Soto
Consultant

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EXECUTIVE SUMMARY

FPG Hospitality Inc. is proposing to build a hotel at 3723 Haven Avenue in Menlo Park, CA. and Walker has been tasked with development of a Transportation Demand Management (TDM) Plan to comply with City of Menlo Park requirements for project approval. City regulations ask for a TDM Plan that can reduce peak hour trips by at least 20 percent.

Walker conducted a parking analysis of the proposed hotel to determine typical peak day and peak hour demand for parking, and we developed an estimate of trip generation for the project based on the latest edition (10th edition) of the ITE's Trip Generation Manual to determine peak hour trips and establish a baseline for the TDM Plan.

The TDM measures and strategies that are recommended for the project were selected based on the physical attributes of the site and the proposed building, the transportation facilities and services currently planned and available near the site, and applicability of measures to hotel guests and employees. TDM measures fall into two categories:

- **Design elements**: TDM measures that the developer of the property, FPG Hospitality Inc., will put into place in the architectural design and construction of the project. These measures include direct access to the hotel lobby from the sidewalk, hotel façade and gardens facing the street, bike parking, and a coffee shop and co-working space fronting Haven Avenue, that will become neighborhood amenities and increase the utility of alternative modes of transportation to access the development land uses.
- **Program operations**: TDM measures that would be tailored to the end user (employees and hotel guests) to incentivize and change transportation behaviors, and that may change or adapt during the life of the project, such as providing a shuttle service to transport guests to nearby destinations and connect both employees and guests with nearby transportation centers like the Menlo Park Caltrain Station. TDM program operations would be required of the property manager and future tenants throughout the life of the project.

The TDM measures that were identified and recommended for implementation add up to 70 trip credits (based on City of Menlo Park TDM Guidelines) and have the potential to largely exceed the 20 percent peak hour trip reduction that is required by the City for this site and development proposal.[1] Thus, their recommended implementation has been broken down into two phases of implementation:

- **Phase 1** – TDM measures included in this phase add up to 35 trip credits and have the potential to meet or exceed the goal of reducing 20 percent of trips.
- **Phase 2** – TDM measures included in this phase also add up to 35 trip credits. Implementation of these measures can be treated as optional if the 20 percent trip reduction goal is met, or as additional implementation measures to strengthen the TDM program if reduction goals have not been met.

[1] It is important to note that trip credits are not the same as trip reductions. Trip credits are intended to quantify a proposed project's capacity to reduce the demand for new peak hour trips and are not used to directly subtract from the project trips. Consequently, it is important to have a good monitoring program in place to report on the TDM program success in achieving the 20 percent peak-hour trip reductions.

The hotel manager or property owner will be required to submit an annual monitoring report to the City of Menlo Park summarizing the success of the TDM programs for hotel guests and employees. The details of the reporting will be determined in collaboration with the City but could include metrics of success related to parking occupancy and single occupancy vehicle (SOV) mode share, to ensure that parking occupancy does not exceed demand for a typical day, and that driving ratios meet or exceed a 20 percent reduction target.

1. PROJECT DESCRIPTION

INTRODUCTION

This plan describes the TDM program that is recommended for a proposed hotel development at 3723 Haven Avenue in Menlo Park, California. The purpose of the TDM plan is to document a series of design and operational programs that are recommended for the project, and to provide an estimate of peak-hour trip reductions associated with the TDM plan, to comply with City of Menlo Park development requirements.

The plan includes a series of commonly used TDM measures to offer guests and employees of the hotel a menu of transportation programs that would make it easier and more convenient to use transportation modes other than driving alone. These measures include those to address the mobility needs of guests while visiting the hotel and the commute-to-work needs of employees.

The plan also serves as a guide for how the property owner intends to implement TDM measures and monitor their progress and effectiveness over time. The plan includes design elements that are incorporated in the architectural design of the development (provided by the developer), and programmatic elements that will be provided by the operator of the hotel. In this regard, the TDM plan is expected to be a living document that will be reviewed and updated over time to respond to changes in behavior and preferences of employees and guests of the hotel.

PROJECT DESCRIPTION

The project proposed at 3723 Haven Avenue will redevelop an existing site that contains a one-story building with office and light industrial land uses into an eight-story building that contains a 5-story boutique hotel on top of 3 levels of above-ground parking that includes the following program:

- 166 guest rooms
- 1,200 square foot indoor and outdoor bar with 38 seats
- 900 square foot indoor dining area with 36 seats
- 1,000 square foot indoor and outdoor coffee shop with 46 seats
- A 3-story parking garage that can accommodate up to 132 vehicles, including 6 tandem parking spaces and 20 parking stackers

Figure 1 below provides a view of the project's architectural design from Haven Avenue. The project proposes an urban building that fronts the street and is directly accessible from the sidewalk, as opposed to siting behind a parking lot and away from the street. Additionally, the project proposes a small coffee shop and co-working space on the ground floor that includes landscaping, outdoor sitting and bicycle parking that is directly accessible from the sidewalk. In this regard, the project design is proposing an urban feel and a much more attractive configuration for the operation and utilization of public transit and shuttle services, and access to the property on foot, a bicycle or electric scooter.

The main entrance of the building also fronts the street and is directly accessible from an off-street *porte cochère* where guests arriving in a taxi or ride-hailing service are dropped off, and those that choose to drive valet their cars. Car parking and access to the hotel project is controlled by operation of a valet, which can make more efficient use of parking capacity than would an entirely self-parking operation and which can also increase capacity of the parking garage through the use of tandem spaces and mechanical parking stackers.

Figure 1: Street-level view of proposed hotel project from Haven Avenue & FedEx Shipping Center

Source: FPG Hospitality Inc., Leo A. Daily Architects

Figure 2: Aerial view of proposed hotel project from Menlo-Atherton Storage & Tyson Kennels

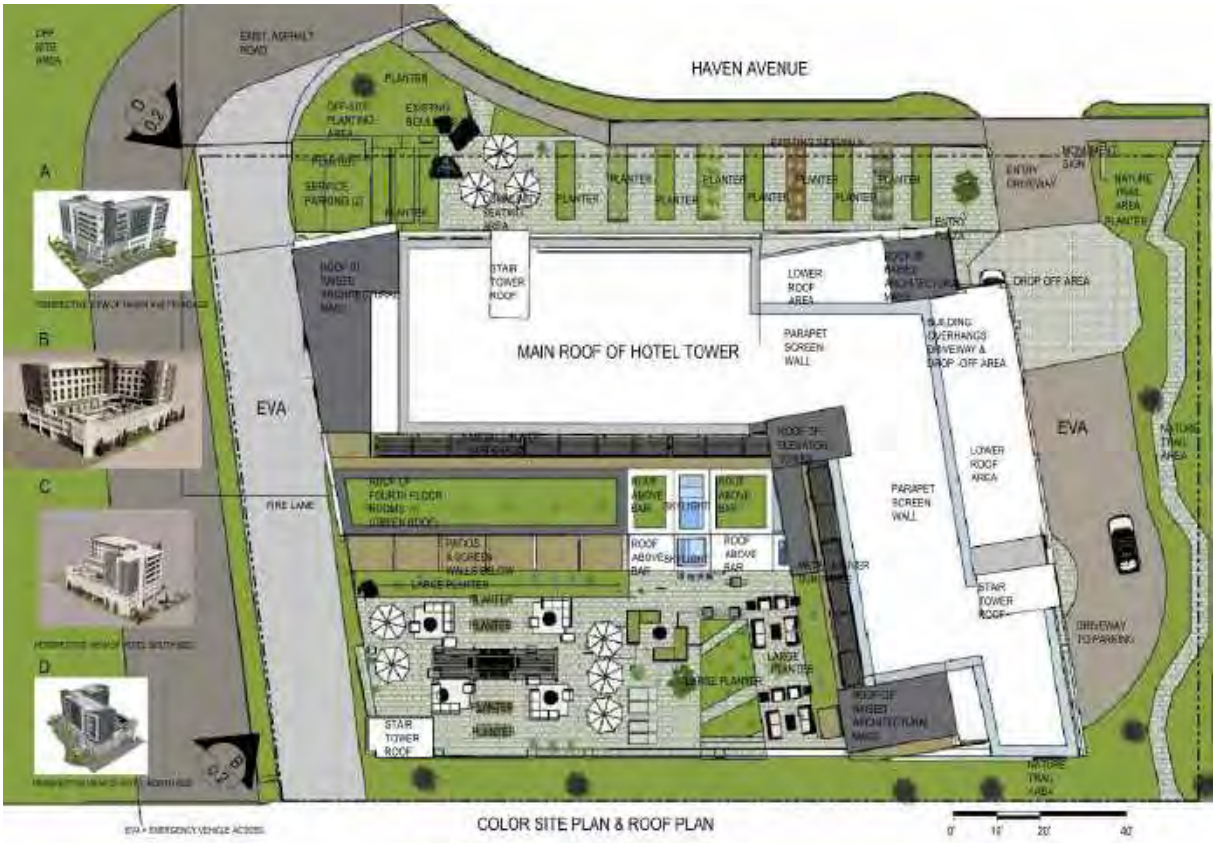
Source: FPG Hospitality Inc., Leo A. Daily Architects

Figure 2 below provides a view of the project from the opposite side (from Menlo-Atherton Storage and Tyson Kennels) showing the terrace and outdoor bar on the roof of the parking garage.

Both the bar and terrace will be publicly accessible through the reception lobby, which is also an added amenity to the residential apartments on the back side of the property, Elan Menlo Apartments (3645 Haven Avenue) and Anton Menlo Apartments (3639 Haven Avenue).

Figure 3 below provides a site plan of the hotel building showing its frontage on Haven Avenue and direct access relationship with the sidewalk, driveway and vehicular entrance, and guest drop-off area and access to valet parking.

Figure 3: Site plan and roof plan view of hotel project



Source: FPG Hospitality Inc., Leo A. Daily Architects

PROJECT LOCATION

The proposed project site is located within the City of Menlo Park on the boundary with Redwood City, just north of U.S. Highway 101 – Bayshore Freeway and one block from the intersection of U.S. Highway 101 (connecting with San Francisco and San Jose) and State Road 84 – Bayfront Expressway (connecting with Fremont via the Dumbarton Bridge). The exact location of the development is shown in Figure 4 below.

The property is in close proximity to Facebook World Headquarters and many office and light industrial business parks that house other technology and communications companies, which are reasonable to believe would be frequent destinations of hotel guests. The site is approximately 16 miles south of the San Francisco International Airport and 19 miles north of the Norman Y. Mineta San Jose International Airport.

The site is also close to several stations of the Caltrain commuter rail service that provides year-round service to downtown San Francisco and San Jose and extends as far south as Gilroy. The closest station is

Menlo Park, three miles away from the project site. The next closest stations are Palo Alto and Redwood City, about 4.5 miles away, but which offer more express trains to both San Francisco and San Jose.

Figure 4: Location of project site

Source: Google Maps, Walker Consultants

2. EXISTING PARKING AND MOBILITY CONDITIONS

PUBLIC TRANSIT SERVICE

The site is accessible via SamTrans bus route 270 operated by the San Mateo County Transit District. The Route 270 bus service runs every hour from the project site to the Redwood City Transit Center and Caltrain station, from 7:00 a.m. to 7:00 p.m. on weekdays and from 8:00 a.m. to 7:00 p.m. om Saturdays. Travel time to the Redwood City station is 15 minutes and 30 minutes coming back from the station.

COMMUTER SHUTTLES

Commute.org is San Mateo County's Transportation Demand Management Agency. The agency funds the Commute.org Shuttle Program which operates as a mini-transit agency that provides first/last mile transportation services during peak commute hours, linking commuters and residents to rail and transit stations throughout the county.

The vast majority of Commute.org shuttle passengers are employees who use the service between BART or Caltrain stations and their places of work. Additionally, the shuttles provide "reverse commute" service to residents that live near shuttle routes.

Commute.org operates one shuttle route that provides service along Haven Avenue, the Marsh Road Shuttle M3, which provides service between the Menlo Park Caltrain Station and business parks in Marsh Road and U.S. Highway 101 during weekdays. The service is free and open to everyone.

The M3 shuttle provides timed transfers with Caltrain service at the Menlo Park station for reverse commute service, useful for employees commuting to the project site, but not for guests wanting to reach Caltrain in the morning and return to the hotel in the evening.

- Morning rush hour service is from 7:00 to 10:00 a.m., departing Menlo Park Caltrain and arriving at the hotel 30 minutes later, on 7 different trips.
- Evening rush hour service is from 3:20 to 6:00 p.m., departing the hotel and arriving at Menlo Park Caltrain 25 minutes later, on 6 different trips.
- Hotel guests wanting to use the service can only use 5 trips in the morning, between 7:30 and 9:30 a.m. to Menlo Park Caltrain that take about 15 minutes.

COMMUTER RAIL SERVICE (CALTRAIN)

The hotel operator plans to supplement SamTrans and Commute.org services with its own shuttle operation to connect with Caltrain and other nearby destinations such as Facebook's Headquarters. Hotel shuttle service would provide convenient access to Caltrain trains. Below is a summary of rush hour service for the Palo Alto, Menlo Park and Redwood City stations, for trips to both San Francisco and San Jose.

SERVICE IN THE MORNING RUSH HOUR (6:00 – 9:30 A.M.)

Northbound departures to San Francisco:

- Palo Alto Station – every 15-20 minutes
- Menlo Park Station – every 30 minutes with M3 shuttle timed transfers
- Redwood City Station – every 15-20 minutes

Southbound departures to San Jose/Gilroy:

- Redwood City Station – every 15-20 minutes
- Menlo Park Station – every 20-25 minutes
- Palo Alto Station – every 15-20 minutes

SERVICE IN THE EVENING RUSH HOUR (4:00 – 7:30 P.M.)

Northbound departures to San Francisco:

- Palo Alto Station – every 15-20 minutes
- Menlo Park Station – every 20-25 minutes
- Redwood City Station – every 15-20 minutes

Southbound departures to San Jose/Gilroy:

- Redwood City Station – every 15-20 minutes
- Menlo Park Station – every 30 minutes with M3 shuttle timed transfers
- Palo Alto Station – every 15-20 minutes

BICYCLE FACILITIES

The project site is also close to good bicycle facilities that include:

- **Class 1 facility** – separated path along the Bayfront Expressway connecting Haven Avenue with Facebook Headquarters and Willow Road.

- **Class 2 facility** – clearly striped and buffered bike path along segments of Haven Avenue, and "preferred bike route" as suggested by the county bicycle coalition, along Haven Avenue between Woodside Road and Marsh Road.

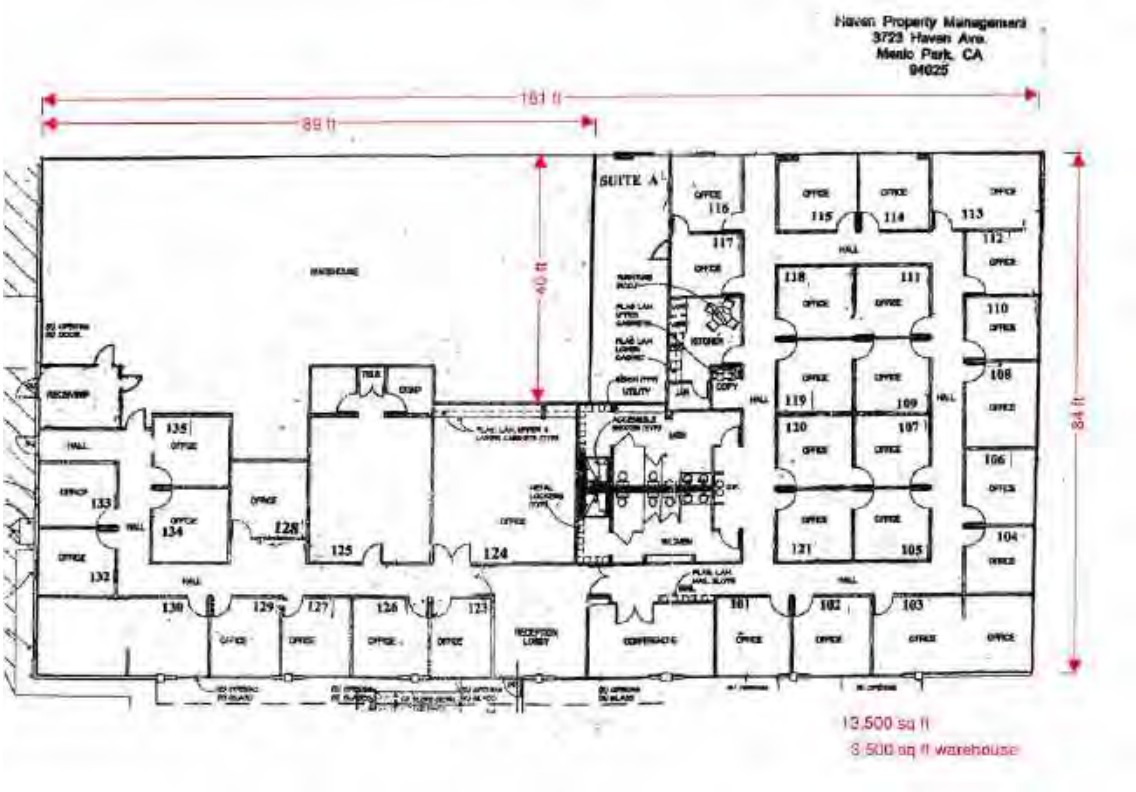
OTHER SERVICES

Facebook operates a shuttle service that runs along Haven Avenue providing commuter service to FB employees that live in the housing developments near the site, Anton Menlo Apartments at 3639 Haven Avenue and Elan Menlo Apartments at 3945 Haven Avenue, and that may be available to hotel guests conducting business at Facebook's Headquarters while staying at the hotel.

EXISTING LAND USE

The site is currently occupied by a one-story building that houses roughly 13,500 square feet of office space and 3,500 square feet of warehouse. The building floor plan has 35 private offices plus warehouse and common areas. Figure 5 below shows the existing building floor plan.

Figure 5: Existing building use and floor plan



Source: FPG Hospitality Inc., City of Menlo Park

Field observations conducted by Walker Consultants in the morning of Wednesday, June 5, 2019 show that 32 vehicles were parked on site at 10:30 a.m., right after the morning rush hour, an increase from two parked vehicles observed at 7:00 a.m. Using the 10th edition of the Institute of Transportation Engineers (ITE) Traffic Generation Manual, and methodology to determine trip generation, Walker estimates that existing uses at the site generate 15 trips in the peak hour of the morning and evening rush hour periods, which means the peak hour captures about 50 percent of the parking events observed at the site.

3. TDM PROGRAMMING

PROJECT TRIP GENERATION AND PARKING ANALYSIS

According to City of Menlo Park Zoning Code, Section 16.43.090 Parking Standards, a minimum of 0.75 parking spaces per hotel guest room is required, which results in a minimum requirement of 125 parking spaces (166 guest rooms x 0.75 spaces = 124.5 spaces). The development proposal is providing a total of 132 parking spaces, of which 6 are tandem spaces, which if subtracted from the total provide a supply of 126 spaces.

Walker Consultants conducted a parking analysis and estimated demand through a shared parking model, utilizing the 2nd edition of the Urban Land Institute (ULI) Shared Parking Model, to determine the recommended parking supply on a typical peak day (85th percentile), which is the level of parking demand for which Walker typically recommends the on-site parking supply be designed.

The shared parking model recommends that a typical peak day supply of 91 spaces be provided, or about 25 percent fewer parking spaces than in the development proposal. The model assumes that hotel guests will drive themselves 49 percent to 53 percent of the time on weekday and weekend days, respectively, similar to driving ratios recently observed at hotels near airports and major employment districts, such as major corporate centers in Silicon Valley (and documented by Walker and ULI in the development of the 3rd edition of the shared parking model that will be available in early 2020).

The model also assumes that hotel employees will drive themselves 80 percent of the time on both weekdays and weekends. A rate that is higher than commute-to-work estimates from the U.S. Census American Community Survey, which estimate driving alone at 69 percent for San Mateo County and 76 percent for Santa Clara County.

Finally, based on ITE's 10th edition of the Trip Generation Manual, standard trip generation rates for the project programming for the peak hour are 90 trips in the morning rush hour and 101 trips in the evening rush hour periods.

TDM PROGRAM APPROACH

The goal of this TDM Plan is to identify and recommend a suite of TDM measures that working in concert can reduce peak hour trips by at least 20 percent, as required by the City of Menlo Park for this site.

The TDM measures and strategies for 3723 Haven Avenue were selected based on the physical attributes of the site and the proposed building, the transportation facilities and services currently planned and available near the site, and applicability of measures to hotel guests and employees.

These measures follow and expand upon industry best practices, measures implemented in similar hotel developments in the Bay Area, and state of the practice and regulatory framework in San Mateo County. The goal is that the property owner and hotel operator will be able to build upon this TDM plan and provide strategies tailored to user needs and patterns of demand.

TDM measures fall into two categories:

- **Design elements**: TDM measures that the developer of the property – FPG Hospitality Inc., will put into place in the architectural design and construction of the project. These include such measures as direct access to hotel lobby from the sidewalk, hotel façade and gardens facing the street, bike

parking, and a coffee shop and co-working space fronting Haven Avenue, that will become neighborhood amenities and increase the utility of alternative modes of transportation to access the development land uses.

- **Program operations**: TDM measures that would be tailored to the end user (employees and hotel guests) to incentivize and change transportation behaviors, and that may change or adapt during the life of the project, such as providing a shuttle service to transport guests to nearby destinations and connect both employees and guests with nearby transportation centers like the Menlo Park Caltrain Station, or incentives to carpool and use public transit options for employees to reduce drive alone rates and parking demand on site. TDM program operations would be required of the property manager and future tenants throughout the life of the project.

A monitoring and evaluation program will need to be developed and put in place by property managers and future tenants to gauge the effectiveness of the TDM program overtime. This is described in more detail in Chapter 4.

RECOMMENDED TDM STRATEGIES

The Moxy Hotel brand appeals to a younger generation that values experiences, social interaction, sharing and environmental sustainability. In that regard, their views, values and consumption of alternative transportation options is different and higher than previous generations.

The TDM plan supports these values and culture by proposing a valet parking only experience and a passenger drop off and pick up area by the front door of the hotel, which makes it suitable for the use of ride-hailing services and access through alternative transportation modes, such as first/last mile shuttle operations, micro-transit services, public transit service, people riding bicycles and walking, shared scooters and other personal mobility devices.

The TDM strategies that are recommended to be offered by this development include measures to encourage transit use, walking, biking and car sharing for commute trips as well as trips off-site during the day. As the part of the ethos of the Moxy brand, it is recommended the hotel includes in its marketing efforts a strong emphasis on providing tools and information to employees and hotel guests to help them plan their commute by bike, transit, or ridesharing as well as encouraging them to use these modes for short-distance trips to nearby destinations.

Table 1 below shows a full list of TDM measures that have been selected from the City of Menlo Park TDM guidelines (which are based on San Mateo County C/CAG Guidelines for Congestion Management Program), that would be appropriate for implementation at the site, and compatible with the Moxy Hotel brand and vision for transportation sustainability.

The transportation outcomes of the selected TDM measures have the potential to largely exceed the 20 percent trip reduction required by the City of Menlo Park for this site and development proposal. Thus, their recommended implementation has been broken down in two phases of implementation:

- Phase 1 that can be implemented at the outset to achieve a 20 percent trip reduction.
- Phase 2 that is optional and can be implemented in the future, according to results and/or property management objectives.

TDM measures are identified by the implementing party and target user.

Table 1: TDM measures that are recommended for the site by implementation phase

#	TDM Measure	Implement by Owner or Manager	Target User		Description/Rationale	Phase
			Employee	Guest		
1	Subsidizing transit passes for employees.	X	X		Manager subsidizes cost of monthly pass on SamTrans ($96.00), or Caltrain 2-Zone ($163.50) to travel anywhere in Bay Area by bus or commuter rail.	1
2	Preferential parking for carpoolers.	X	X		Manager reserves a certain number of parking spaces for employees that carpool at least 3 times a week. Parking spaces will be clearly marked and in prime locations.	1
3	Operation of a dedicated shuttle service.	X	X	X	Manager will operate a shuttle service to provide transit service within 5 miles of hotel site to both guests and employees, connecting them with Caltrain stations, transit centers and major business districts.	1
4	Install and maintain alternative transportation kiosk at lobby.	X	X	X	Manager will provide information and collateral materials to all guests and employees, explaining how to get to hotel on alternative modes of transportation. All commute and travel information will also be available on a website and include: shuttle services, walking and biking routes, bike facilities and bus/rail transit schedules.	1
5	Survey employees and guests to monitor use.	X	X	X	Manager will survey employees once a year and guests twice a year to measure travel mode share and monitor progress toward reductions in parking demand.	1
6	Secure bicycle storage - racks.	X	X		Manager will provide secured bike storage for employees, such as a bike room or bike cage, for up to 12 bikes within the building.	2
7	Showers and changing room.	X	X		Manager will provide changing room facilities (showers and lockers) for employees that bike and walk to work.	2
8	Subsidizing employees that walk or bike to work.	X	X		Manager will reward employees that bike or walk to work to compensate for not using parking or requiring a transit subsidy.	2
9	Operation of commute assistance center at concierge/reception desk.	X	X	X	Manager will operate a workstation or desk where employees and guests can obtain personalized trip plans to travel to/from hotel on alternative transportation modes.	2
10	Provide access to motor vehicles on site for employee/guest use.	X	X	X	Manager will host 2 car-sharing vehicles for use of hotel guests and/or employees for trips to nearby destinations or personal errands during workday.	2
11	Join Commute.org's guaranteed ride home (GRH) program.	X	X		Manager will join the region's GRH program to provide employees with peace of mind. When a GRH Program is added to a TDM program, average use of alternative modes increases by about 50%.	2

Source: Walker Consultants, City of Menlo Park TDM Guidelines

ESTIMATED TRIP CREDITS

Based on the City of Menlo Park's development regulations, the project is required to submit a Transportation Demand Management program that will reduce its single-occupant vehicle (SOV) trip generation rate by a minimum of 20 percent of peak hour trips. Development of the TDM plan presented herein follows the City's TDM Program Guidelines for identification and evaluation of TDM measures, and for calculation of peak-hour trip reduction credits.

TDM Guidelines trip credits must sum to at least 20 percent of the project's trip generation for the peak-hour. Based on the 10th edition of ITE's Trip Generation Manual, the project's trip generation is 90 trips in the peak hour of the morning rush hour and 101 trips in the peak hour of the afternoon rush hour. Therefore, the TDM Guidelines trip credits outlined in Table 1 must add up to at least 20 trip credits.

As indicated earlier, the TDM measures that were identified and recommended for implementation add up to 70 trip credits and largely exceed the 20 trip credits required by the City of Menlo Park for this site and development proposal. Thus, their recommended implementation has been broken down into two phases of implementation. Tables 2 and 3 below show the TDM measures that are recommended for Phase 1 and TDM measures that are recommended for Phase 2.

- TDM measures included in Phase 1 add up to 35 trip credits and have the potential to meet or exceed the goal of reducing 20 percent of peak hour trips. The TDM program that is implemented by the property owner or hotel manager/operator will be required to include a monitoring program to evaluate whether the goal has been achieved or maintained over time.
- TDM measures included in Phase 2 also add up to 35 trip credits. Implementation of these measures can be treated as optional if the 20 percent peak hour trip reduction goal is met, or as additional implementation measures to strengthen the TDM program if reduction goals have not been met.

The hotel manager/operator can choose to implement all TDM measures in Phase 2 and other measures, if deemed appropriate to achieve other property management objectives and strengthen hotel brand identity.

Additional strategies that were considered in the project's TDM program that cannot be directly quantified in the TDM guidelines include:

- Providing an Employee Transportation Coordinator to promote TDM plan incentives and help employees change their commute habits
- Operating a bike share program for employees and guests
- Supporting and promoting on-demand ridesharing applications
- Allowing on-demand reservation of a shuttle trip and seat
- Providing smartphone apps to track shuttle vehicle location and get ETA notifications
- Providing credits for usage of Uber and Lyft for short distance trips to/from the hotel

Table 2: Phase 1 TDM Measures that are recommended for implementation

#	TDM Measure	Number of trips credited	No. of Units	Trips per Unit	Total Trips	Notes/Assumptions
1	Subsidizing transit passes for employees.	One peak hour trip will be credited for each transit pass that is subsidized at least $20 per month for one year.	5	1.00	5.0	Assume $100 Clipper Card subsidy per month for 5 employees to pay for any transit system.
2	Preferential parking for carpoolers.	Two peak hour trips will be credited for each parking spot reserved.	5	2.00	10.0	Assume 10 employees carpool and use 5 reserved spaces. Property manager will work to achieve this goal.
3	Operation of a dedicated shuttle service.	One peak hour trip will be credited for each peak-hour round trip seat on the shuttle. Increases to two trips if a Guaranteed Ride Home Program is also in place.	12	1.00	12.0	Assume one 7-seat van (including driver) making 2 roundtrips per hour (12 passenger seat trips per hour) to Menlo Park Caltrain Station or to Facebook headquarters.
4	Install and maintain alternative transportation kiosk at lobby.	Five trips will be credited for each kiosk.	1	5.00	5.0	One "Transit Screen" and one transportation information brochure rack to be provided in jump lobby.
5	Survey employees and guests to monitor use.	Three peak hour trips will be credited for a survey developed to be administered twice yearly.	1	3.00	3.0	Conduct at least once a year to both employees and guests; two separate surveys, one for each group. Recommendation is to survey guests at least twice a year.
	Subtotal Trip Credits				**35.0**	

Source: Walker Consultants, City of Menlo Park TDM Guidelines

Table 3: Phase 2 TDM measures that are for optional or future implementation

#	TDM Measure	Number of trips credited	No. of Units	Trips per Unit	Total Trips	Notes/Assumptions
6	Secure bicycle storage - racks.	One peak hour trip will be credited for every 3 new bike lockers/racks installed and maintained. Lockers/racks must be installed within 100 feet of the building.	12	0.33	4.0	Development includes storage space for at least 12 bicycles. Secure bike racks or cages can be added at a later time.
7	Showers and changing room.	Ten peak hour trips will be credited for each new combination shower and changing room installed.	1	10.00	10.0	Property manager can provide lockers, showers and changing room within property for bikers and walkers.
8	Subsidizing employees that walk or bike to work.	One peak hour trip will be credited for each employee that is subsidized at least $20 per month for one year.	5	1.00	5.0	Assume $50 incentive per month for 5 employees that walk or bike to work regularly, at least 3 times a week.
9	Operation of commute assistance center at concierge/reception desk.	One peak hour trip will be credited for each feature added to the information center; and an additional one peak hour trip will be credited for each hour the center is staffed with a live person, up to 20 trips per each 200 tenants.	4	1.00	4.0	Provide transit information brochure rack, computer access to plan trips, free bus passes and an additional "Transit Screen" on reception lobby (2nd floor).
10	Provide access to motor vehicles on site for employee/guest use.	Five trips will be credited for each vehicle provided.	2	5.00	10.0	Provide two carshare vehicles such as Zipcar or other service, on site. Consider implementation of an EV carsharing service.
11	Join Commute.org's guaranteed ride home (GRH) program.	Two peak hour trips will be credited for every 2 slots purchased in the program.	2	1.00	2.0	Commute.org's GRH program reimburses commuters who carpool, vanpool, take transit, shuttle, bike, or walk to work up to $60 per event, up to 4 times per calendar year. Alternatively, setup a reimbursement credit with Uber, Lyft and other ride-hailing services.
	Subtotal Trip Credits				**35.0**	

Source: Walker Consultants, City of Menlo Park TDM Guidelines

4. MONITORING AND REPORTING

MONITORING AND REPORTING

This TDM Plan identifies employee priorities and effective TDM strategies designed to achieve a reduction in drive-alone trips of 20 percent of the peak hour. However, it is anticipated that the TDM program may need to evolve over time as guests and employee travel habits change.

The property owner will be required to submit an annual monitoring report to the City of Menlo Park summarizing the success of the TDM programs for hotel guest and employees. The details of the reporting will be determined in collaboration with the City but could include metrics of success related to parking occupancy and SOV mode share, to ensure that both parking occupancy does not exceed shared model estimates for a typical day, and that guests and employees driving ratios meet or exceed model estimates.

For instance, the shared parking model estimates peak parking demand at 91 spaces for a typical weekend day (or the 15th busiest day of the year) at 7:00 a.m. or 11:00 p.m. when most guests are in the hotel and both restaurant and bar uses are in operation. And the model assumes that weekend driving ratios are 53 percent and 80 percent for guests and employees respectively.

Below are methods that can be used to help evaluate the effectiveness of the TDM program based on parking occupancy and SOV mode share metrics, on an annual basis.

- Hotel Employees
    - Provide a description of the current TDM programs and services offered to employees, and number of employees utilizing them on a monthly basis, as well as the cost of program and subsidies and incentives used.
    - Conduct an annual employee survey that captures data on how employees access the site and their attitudes toward alternative commute modes.
- Hotel Guests
    - Provide a description of the current TDM programs and services that are available to guests, and number of guests using them on a monthly basis, as well as the cost of program and subsidies and incentives used.
    - Conduct a guest survey twice a year, designed to capture data on how guests access the hotel, what transportation modes and services do they use during their visit.
- Hotel Manager/Operator
    - Compile a report summarizing programs cost and utilization, and results of employee and guests surveys and provide to the City of Menlo Park.
    - Conduct periodic parking occupancy counts to understand variation throughout the year and correspondence with hotel room occupancy and special events if any.

If the findings in the report show that the TDM reduction goal has not been met, the owner and future property manager/tenants would work with City staff to identify if there are additional TDM measures that could feasibly be implemented to further reduce trip generation from the project.