Site Management Plan

REPORT DATE: December 23, 2025

SITE INFORMATION
Sunnyvale Park Place
510 De Guigne Drive
Sunnyvale, California 94085

PROJECT INFORMATION
AEI Project No. 500004

PREPARED FOR
TC III SPP North, LLC
351 California Street, Suite 1100
San Francisco, California 94104

PREPARED BY
AEI Consultants
3880 South Bascom Avenue, Suite 104
San Jose, California 95124

AEI Consultants
3880 South Bascom Avenue, Suite 104
San Jose, California 95124

December 23, 2025

Emma Hoffman-Davies
San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, California

Subject: **Site Management Plan**
Sunnyvale Park Place
510 De Guigne Drive, Sunnyvale, California
AEI Project No. 500004

Dear Emma Hoffman-Davies,

On behalf of TC III SPP North, LLC, AEI Consultants has prepared this Site Management Plan (SMP) for the proposed Site redevelopment taking place at Sunnyvale Park Place to be located at 510, 920, 930, 950 De Guigne Dr. & 935, 945 Stewart Drive in Sunnyvale, California (the Site). The SMP includes a summary of planned development and earthwork, summary of known and potential environmental conditions, and measures to address environmental impacts that may be encountered. The SMP also includes provisions for health and safety, proper handling of soil, contingency measures, and construction best practices as they relate to potentially impacted soil. Although groundwater is not expected to be encountered as part of the construction activities, groundwater management measures, should groundwater be encountered, are included in the SMP.

AEI appreciates the opportunity to work with the San Francisco Bay Regional Water Board and trust that this report meets with your approval. If you have any questions, please do not hesitate to contact me at (408) 656-1738 or tweise@aeiconsultants.com.

Sincerely,

Trent A. Weise
Senior Vice President

Copies:
TC III SPP North, LLC

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1.0 INTRODUCTION

On behalf of TC III SPP North, LLC ("the Developer"), AEI Consultants (AEI) has prepared this Site Management Plan (SMP) for the proposed residential development known as Sunnyvale Park Place at 510 DeGuigne Drive in Sunnyvale, California ("the Site"). This SMP applies to subsurface disturbances at the Site during the planned grading and construction activities. The purpose of this SMP is to:

- Assess and communicate the presence of contaminants of potential concern (COPCs) that are known or may potentially exist at the Site.
- Provide protocols for appropriate soil management procedures, as they relate to the COPCs in soil.
- Provide measures to mitigate potential exposure risks to on-site workers, nearby residents, and pedestrians from potential exposure to hazardous substances that may be encountered during on-Site soil intrusive activities such as excavation and grading.
- Propose appropriate mitigation measures to address residual volatile organic compounds (VOCs) in groundwater that are affecting soil vapor and pose a potential vapor intrusion risk to new residential buildings proposed for portions of the Site.
- Provide for the proper management of previously unknown environmental conditions if identified during redevelopment activities at the Site.

This SMP is not intended to replace federal, state, or local regulations dictating the handling of contaminated media or regulations addressing worker exposure including Federal and California Occupational Safety and Health Administration (OSHA) training and worker protection rules and regulations, Code of Federal Regulations (CFR) Title 29, Part 1910.120 and California Code of Regulations (CCR) Title 8, § 5192.

2.0 BACKGROUND

This section presents the current Site description, historical uses, and a summary of the investigations performed at the Site.

2.1 Current Site Description

The approximately 20.55-acre site is located northeast of the intersection of DeGuigne Drive and Stewart Drive within a mixed commercial and residential area of the City of Sunnyvale. A Site Location Map is provided as Figure 1.

The Site comprises two commercial properties and is currently developed with five commercial office buildings with street addresses 510, 920, 930, 950 DeGuigne Drive & 935, 945 Stewart Drive. The remainder of the Site is further improved with asphalt-paved parking areas, dumpster and storage enclosures, and associated landscaping. The current Site configuration is depicted on Figure 2.

2.2 Geology and Hydrogeology

Subsurface conditions observed during prior environmental investigations at the Site (see Section 2.4) indicated that soils underlaying the Site consisted primarily of clay, silty clay, and sand to the maximum depth explored of 10.5 feet bgs.

The Site is graded to relatively level and is situated at an elevation approximately 41 feet above mean sea level with a topographical gradient towards the northeast. The groundwater flow direction beneath the Site is to the northeast as presented in regional plume monitoring reports (see Section 2.3). Groundwater is first encountered between 7 and 8 feet bgs (AEI 2025).

2.3 Brief Site and Vicinity History

Based on information reviewed as part of Phase I Environmental Site Assessments (ESAs) conducted for the Site (AEI, 2024a and 2024b), the Site was agricultural land from at least 1939 to 1956. By the late 1960s, the Site had been developed with several commercial structures. The Site generally appeared to have been developed with its current configuration of buildings by the late 1990s. The Site has historically been used for office, research, and development spaces for various technological companies such as Proxim, Vitalone, Trimble, Analog Bits, Advanced Micro Systems, Illumio, etc. Research conducted as part of the Phase I ESAs did not identify use and/or storage of large quantities of halogenated volatile organic compounds (VOCs), such as tetrachloroethene (PCE), trichloroethene (TCE), or cis-1,2-dichloroethene (cis-1,2-DCE) as part of historic or current land use. Reported use and/or storage of these compounds at the Site appeared consistent with semiconductor laboratory activities and not indicative of mass production of computer equipment which utilizes large quantities of VOCs as part of the fabrication process.

The Site is located within an area of Sunnyvale historically occupied by numerous technology companies. Several contaminated groundwater plumes have been identified in the vicinity of the Site and are attributed to past industrial activities in this region. According to a review of agency records and prior reports (AEI, 2024a and 2024b), the Site is located within Commercial Street Operable Unit (CSOU) Subunit 1 which is a designated VOC groundwater plume associated with a release at the former Mohawk Laboratories at 932 Kifer Road. The Site is also located immediately west of Stewart Drive Operable Subunit 5 which is a designated VOC groundwater plume associated with a release at 999 East Arques Avenue. These plumes are currently undergoing remedial activities and groundwater monitoring with assigned Responsible Parties. The predominant contaminants of interest associated with these groundwater plumes include PCE, TCE, cis-1,2-DCE, and total petroleum hydrocarbons (TPH). There are currently multiple groundwater monitoring wells at the Site associated with the Mohawk Laboratories and 999 East Arques Avenue regional plumes, including:

- Mohawk Laboratories: MW-09 (DEGUINE), NMW-12B, 46-S, and 46-D (see Figure 2).
- 999 Arques Corporation Wells: MW-2, MW-5, MW-6, MW-7, MW-8, MW-9, 13-S, 13-D S-39A, S-39B, S-38A, and S-38B (see Figure 2).

The Site is located within the Commercial Street Operable Unit (CSOU) of the Mohawk Laboratories Cleanup Site.

2.4 Previous Site Investigation Activities

Between 2010 and 2025, several environmental investigations were conducted at the Site by Cornerstone and AEI (Cornerstone, 2010 and AEI, 2019, 2024c, and 2025). As part of these investigations, soil, soil vapor, and groundwater samples were collected at several on-site borings. AEI additionally conducted an indoor air sampling event within the on-site building addressed as 945 Stewart Drive in 2018 (AEI, 2019); notably PCE and related halogenated VOCs were either not detected above laboratory limits or were detected at concentrations below applicable ESLs. The previous soil, soil vapor, and groundwater investigation data are included herein as Appendix A, and a summary of the findings are presented below:

2.4.1 Soil Sample Results

Soil samples were collected from 63 boring locations, including 21 previously advanced by Cornerstone in 2010 (EB-1 through EB-10 and SB-1 through SB-11) and 42 by AEI in 2024 and 2025 (SB-1 through SB-19, SB-21 through SB-33, and SB-36 through SB-45), at the approximate locations as depicted on Figure 2. Soil samples collected were analyzed for mercury, arsenic, lead, and organochlorine pesticides (OCPs). The results can be summarized as follows:

- Mercury was not detected above laboratory reporting limits.
- Though arsenic was detected above the San Francisco Bay Regional Water Quality Control Board (Regional Water Board) residential Environmental Screening Levels (ESLs) of 0.067 milligrams per kilogram (mg/kg) and/or the construction worker ESL of 2.00 mg/kg , the concentrations detected were consistent with typical background concentrations of up to 11 mg/kg for the Bay Area (Duvergé, 2011). The concentrations of arsenic detected ranged from 2.3 mg/kg to 10.2 mg/kg.
- Elevated concentrations of lead were detected above its residential ESL of 80 mg/lg and construction worker ESL of 160 mg/kg in select soil samples collected during the 2010 investigation event. Elevated concentrations between 110 and 1,900 mg/kg were detected in shallow soils up to 1.5 feet bgs. Subsequent soil samples collected and analyzed during the 2024 and 2025 investigations, including soil samples collected from the previous 2010 sampling locations and composited prior to analysis, did not detect lead above applicable screening levels. Table 1 presents a summary of the soil sample analytical results for lead.
- With the exception of elevated concentrations of dieldrin, OCPs were either not detected above laboratory reporting limits or were detected at concentrations below applicable ESLs. The residential ESL for dieldrin is 0.037 mg/kg, and the ESL for construction worker exposure is 1.1 mg/kg. Elevated concentrations of dieldrin, ranging from 0.0388 mg/kg to 0.0826 mg/kg, were detected in shallow soils at depths of up to 4.5 feet bgs. Table 2 presents a summary of the soil sample analytical results for pesticides.

2.4.2 Soil Vapor

Soil vapor samples were collected from 34 temporary and semi-permanent soil gas probe locations, including 4 previously installed by Cornerstone in 2010 (temporary probes SV-1 through SV-4) and 30 installed by AEI in 2018, 2024, and 2025 (temporary probes SG-5 through SG-27 and 14 semi-permanent probes SV-1 through SV-10, SV-13, SV-14, SV-19, and SV-22), at the approximate locations as depicted on Figure 2. Soil vapor samples were collected at depths ranging between 4.5 and 9.5 feet bgs and were analyzed for VOCs. Table 3 presents a summary of the soil vapor sample analytical results for select VOCs. The soil vapor sample results can be summarized as follows:

- With the exception of benzene, ethylbenzene, PCE, TCE, cis-1,2-DCE, and chloroform, remaining VOCs analyzed were either not detected above laboratory reporting limits or were detected at concentrations below applicable ESLs.
- Benzene was detected in soil vapor samples analyzed in 25 of the 47 soil gas samples, and detected at elevated concentrations above the residential ESL of 3.2 µg/m^3 in 21 of those locations. Elevated concentrations of benzene detected were between 4.2 and 210 µg/m^3. However, the ESLs are based on a conservative attenuation factor of 0.03 to be generically applied to existing building slabs and does not assume bioattenuation. The *Supplemental Guidance: Screening and Evaluating Vapor Intrusion, Final Draft* (Department of Toxic Substances Control [DTSC] and California State Water Resources Board, 2023) presents alternative attenuation factors for petroleum vapor intrusion (PVI) accounting for bioattenuation factors (BAF). The Supplemental Guidance outlines appropriate BAF for oxygen concentrations in the subsurface. Oxygen was detected in soil vapor samples at concentrations between 2.9% and 20%, with most of the concentrations above 4% suggesting a strong bioattenuation zone. Assuming a strong bioattenuation zone, the Supplemental Guidance provides for a BAF of 0.01, which translates to a residential screening level of 320 µg/m^3. Therefore, the benzene concentrations observed in the samples collected at the Site do not pose an unacceptable risk to future residential users of the Site.
- Ethylbenzene was detected in soil vapor samples analyzed from 19 of the 47 soil gas probe locations and detected at elevated concentrations above the residential ESL of 37 µg/m^3 in 5 of those locations. Elevated concentrations of ethylbenzene detected were between 61 and 1,700 µg/m^3. However, similar to benzene, assuming a strong bioattenuation zone and corresponding BAF of 0.01 calculates a residential screening level of 3,700 µg/m^3. Therefore, the ethylbenzene concentrations observed in the samples collected at the Site do not pose an unacceptable risk to future residential users of the Site.
- PCE was detected in soil vapor samples analyzed from 28 of the 37 soil gas probe locations and detected at slightly elevated concentrations above the residential ESL of 15 µg/m^3 in 7 of those locations. Elevated concentrations of PCE detected were between 17 and 66 µg/m^3.
- TCE was detected in soil vapor samples analyzed from 13 of the 30 soil gas probe locations, and detected at slightly elevated concentrations above the residential ESL of 16 µg/m^3 in seven of those locations. Elevated concentrations of TCE detected were between 18 and 340 µg/m^3.

- Chloroform was detected in soil vapor samples analyzed from 2 of the 27 soil gas probe locations and detected at slightly elevated concentrations above the residential ESL of 4.1 µg/m^3 in each of those locations. Elevated concentrations of chloroform detected were 5.9 µg/m^3 and 33 µg/m^3. Chloroform is commonly found in chlorinated municipal water supplies, and chloroform detected in soil vapor is likely from chlorinated municipal water supply leaks at the Site. It is often detected in groundwater and shallow soil vapor at properties where irrigation provides a pathway for chloroform to enter the subsurface. In general, chloroform should not be considered a risk driver for the vapor intrusion pathway (Eklund, 2024). As such, chloroform is not considered to present an unacceptable risk to future users of the Site through the vapor intrusion pathway and is not considered a COC.

A range of concentrations of PCE and TCE were observed in soil vapor samples collected and analyzed, likely from the presence of these compounds in groundwater beneath the Site from the regional groundwater plume(s). The most elevated concentrations of TCE were observed in soil vapor samples collected from locations SV-4, SV-5, and SV-9. In these areas, a vapor intrusion mitigation system (VIMS) is proposed to control the potential for vapor intrusion as presented in Section 6. Beyond this area, PCE and TCE concentrations are generally low and only slightly exceed the residential ESL.

Evaluation of Soil Vapor Attenuation

The soil vapor ESLs established by the Water Board (January 2019) were developed to be conservative screening levels for use in initially screening sites for potential vapor intrusion concerns. The soil vapor ESLs were developed to be protective of an overlying structure's indoor air using a default attenuation factor (AF) of 0.03 derived from a nationwide study performed by the United States Environmental Protection Agency (US EPA). The soil vapor ESLs were calculated by applying the AF of 0.03 to the indoor air direct exposure ESL (ESL_{IA}) as follows:

$$ESL_{SV} = \frac{ESL_{IA}}{AF}$$

The default AF (0.03) used in developing the 2025 ESLs is based on the US EPA empirical vapor intrusion (VI) database and are 95th percentile values deemed appropriate for screening evaluations as they provide a high degree of protectiveness (USEPA, 2012), appropriate for initial screening purposes. The US EPA database included indoor air data paired with groundwater, exterior soil vapor, sub-slab vapor, or crawlspace measurements from 913 buildings at 74 sites in 15 states. The building types in the database included 85% residential, 10% commercial, and 5% mixed use (residential and non-residential). The buildings were constructed prior to 2006 (latest data collection date) and did not include structures with engineered vapor control measures.

DTSC (2023) and Water Board (2019 and 2022) indicate that the default AF is protective of most building occupancy scenarios and is appropriate for the initial screening of sites in California. However, as noted in the US EPA database, building construction plays an important role in determining the actual or building-specific attenuation factor. The AFs calculated from the US EPA database ranged across several orders of magnitude from 0.03 (95th percentile or the default AF) to 0.0003 (5th percentile) and are likely due to the differing building construction

types and associated vapor intrusion characteristics. The median (50th percentile) AF was calculated to be 0.003.

Abbasi et al. (2023) and Lahvis and Ettinger (2021) identified challenges with applying the default AFs to sites in California; those included (1) the US EPA database contains few sites in California; (2) most soil vapor data were collected from sites in colder climates (New York, Colorado, Connecticut, and Montana) where building performance is inherently different; and (3) more than 75% of the indoor air samples were collected in residential homes with basements whereas fewer than 5% of homes in California have basements (National Association of Home Builders, 2014), which also changes vapor intrusion performance. For residential sites in California with no vapor intrusion mitigation (VIM) controls installed, Abbasi et al. (2023) calculated attenuation factors ranging from 0.0025 (50th percentile) to 0.018 (95th percentile) and Lahvis and Ettinger (2021) calculated AFs ranging from 0.00012 (50th percentile) to 0.00081 (95th percentile). The AFs calculated by Abbasi et al. (2022) and Lahvis and Ettinger (2021) are consistent with the average AF of 0.001 for future residential buildings published in the *Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air* (Vapor Intrusion Guidance) (DTSC, 2011). Abbasi et al. (2022) concluded that the AFs calculated in their study may not be consistent with those in the US EPA's nation-wide study but are consistent with the Lahvis and Ettinger (2021) California-specific study and that the differences may be due to climatic differences and foundation types specific to California. The range in AFs are attributed to foundation type, sample type (soil vapor vs. sub-slab vapor), soil vapor sample depth, surface cover adjacent to the structure, heating, ventilation, and air conditioning (HVAC) operation during indoor air sample collection, and source concentration. The 95th percentile represents the upper concentration at which 95% of measurements are expected to be at or below, and the 50th percentile represents the median measurement. Although the use of the 95th percentile AF is appropriate for screening evaluations where limited site-specific data are present and/or where the future land use or building construction/type are unknown, its application is overly conservative for well characterized sites and new buildings constructed with modern foundations, building envelopes, and HVAC systems.

The planned development will be new single and multi-family residential buildings with modern foundations, building envelopes, and HVAC systems installed. Based on the Abbasi et al. (2022), Lahvis and Ettinger (2021), and the previous 2011 DTSC guidance, an AF of 0.001 for new residential building construction in California appears to be more appropriate than the overly conservative 0.03 default AF. The reported PCE concentrations are below the residential ESLs when applying the California-specific AFs and the vapor intrusion risk to future occupants appears to be low. Using an AF of 0.001, site-specific PCE and TCE screening levels are calculated as follows:

Table A – Site Specific Screening Levels

Chemical	Residential Indoor Air ESL ($\mu g/m^3$)	Residential Soil Vapor ESL ($\mu g/m^3$)	Calculated Site-Specific Soil Vapor Screening Level ($\mu g/m^3$)
PCE	0.46	15	460
TCE	0.48	16	480

The following hypothetical excess cancer risk evaluation is presented below:

- Using the maximum PCE concentration detected in soil vapor samples of 66 $\mu g/m^3$, the estimated risk to a future hypothetical residential user is 4.4 x-10^{-6}, with an AF of 0.03 and 1.4 x 10^{-7} with an AF of 0.001.
- Using the maximum TCE concentration detected in soil vapor samples (outside of the area of soil vapor probes SV-4, SV-5, and SV-9) of 50 $\mu g/m^3$, the estimated risk to a future hypothetical residential user using the maximum concentration observed is 3.1 x 10^{-6} with an attenuation factor of 0.03, and 1.0 x 10^{-7} with an AF of 0.001.

The United States Environmental Protection Agency (US EPA) recognizes the range of 1x10^{-4} to 1x10^{-6} as an acceptable risk management range for carcinogenic risk (US EPA, 2024). With an attenuation factor of 0.001, the calculated excess cancer risk to a future hypothetical residential user of the Site is estimated at 1.0 x10^{-7}, which is a full order of magnitude below the target excess cancer risk of 1 x 10^{-6}. Therefore, residual PCE and TCE in soil vapor from the regional groundwater plume(s) outside the area of SV-4, SV-5, and SV-6 does not represent an unacceptable risk to the further residential users of the Site and installation of a VIMS or indoor air testing within the future buildings beyond soil vapor probes SV-4, SV-5, and SV-9 is not warranted. Protection for new buildings in the vicinity of probes SV-4, SV-5, and SV-9 is proposed in Section 6.

2.4.3 Groundwater

Four grab groundwater samples (GW-1 through GW-4) were collected during the 2010 investigation. Sample locations are depicted on Figure 2. Grab groundwater data revealed elevated concentrations of cis-1,2-dichloroethene in three of the four groundwater samples at concentrations ranging from 13 micrograms per liter (µg/L) to 390 µg/L, and TCE in one groundwater sample at a concentration of 8.4 µg/L. However, no significant TCE or 1,2-DCE concentrations were observed in nearby soil vapor samples.

In addition, the most recent four years of groundwater sample results are provided for the Mohawk Laboratories Site wells, including MW-09 (DeGuigne), NMW-09, NMW-12B, and 46-S as shown on Figures 3A and 3B. The most recent sampling event was performed in

October 24, 2024, and PCE was detected in one of the wells, observed at a concentration of 1.1 µg/L in monitoring well 46-S, TCE was detected in each of the monitoring wells, observed at a maximum concentration of 38 µg/L in monitoring well NMW-09. As presented in the April 9, 2025, *Semi-Annual Self-Monitoring Report, Quarter 3 and Quarter 4, 2024* for the Mohawk Laboratories Site, "North of the Central Expressway, the generally stable and declining PCE and TCE concentration trends observed are consistent with ongoing natural attenuation." On-site groundwater concentrations are anticipated to continue to decline, which will also act as a reduced source to soil vapor. Based on this evidence, PCE and TCE concentrations in soil vapor are anticipated to further decline.

3.0 PROPOSED REDEVELOPMENT

The Site is slated for redevelopment as "Sunnyvale Park Place" a new residential development to include mixed multi- and single-family residential structures. The proposed development will include an estimated 329 units generally comprised of small lot single family homes, attached row homes, attached interlocking townhomes, and 41 attached ADUs. No basements are planned, so planned excavations for the redevelopment are not expected to extend deeper than 5 feet bgs for planned foundational elements, utilities, etc. The estimated depth to groundwater at the Site is 7 to 8 feet bgs (AEI, 2025), therefore groundwater is not expected to be encountered during development activities. The proposed development Site Plan is included in Appendix B.

4.0 CONTAMINANTS AND AREAS OF POTENTIAL CONCERN

This section presents the known contaminants that have been identified at the Site through the investigation activities that may be of potential concern to the new development, including construction worker and/or future residential users of the Site.

4.1 Contaminants of Potential Concern

Based upon historical research and the previous investigation activities performed, the following COPCs have been identified for the Site:

- Elevated lead and dieldrin concentrations in shallow soils, which have been detected above their respective residential ESLs of 80 and 0.037 mg/kg. These contaminants are likely a result of former agricultural activities at the Site.
- Halogenated VOCs, specifically PCE, TCE, and cis-1,2-DCE, are present in groundwater and soil vapor beneath the Site. These compounds are the predominant contaminants of interest associated with the Mohawk Laboratories and 999 East Arques Avenue regional groundwater plumes, and these plumes are understood to be the source of these compounds in on-site groundwater and/or soil vapor. Elevated concentrations of TCE and cis-1,2-DCE have previously been detected in grab-groundwater samples collected on-site and continued to be detected in regional plume monitoring wells.

4.2 Areas of Potential Concern

Areas of potential concern can be summarized as follows:

- Figure 3A and Figure 3B present benzene, PCE, and TCE in soil vapor and, where available, groundwater, at the Site. Slightly elevated concentrations of PCE are present in soil gas at central portions of the Site and along the southern portion of the Site. TCE is detected at elevated concentrations in soil gas along the northwestern property boundary and along the southern portion of the Site. PCE, TCE, and cis-1,2-DCE have primarily been detected in groundwater on the southwest portion of the Site; areas of previously detected PCE, TCE, and cis-1,2-DCE detected in groundwater based on grab-groundwater samples collected from the Site and groundwater monitoring of the regional plumes are highlighted in the figures. Figure 3A depicts the Site in its current configuration, and Figure 3B depicts the proposed residential development layout.
- As shown on Figures 4A and 4B, elevated concentrations of lead have been measured in shallow soils to a depth of up to 1.5 feet bgs along the southern property boundary and in the vicinity of SB-11. Additional sampling in that area did not duplicate the elevated concentrations. Figure 4A depicts the Site in its current configuration, and Figure 4B depicts the proposed residential development layout.
- As shown on Figures 5A and 5B, elevated concentrations of dieldrin are present in sporadic shallow soils at depths of up to 3.5 feet bgs. Figure 5A depicts the Site in its current configuration, and Figure 5B depicts the proposed residential development layout.

4.3 Planned Management and Mitigation Actions and Goals

Exposure to soil and groundwater during redevelopment activities will be managed under this SMP to mitigate potential health and safety risks associated with the COPCs identified in subsurface media at the Site. Mitigation measures to address potential health and safety risks post-development are outlined in Section 6.0 of this SMP.

Regarding elevated concentrations of lead and dieldrin in shallow soils, it is expected that these soils will be removed or managed during the redevelopment activities (see Section 5.4.1). Should residual lead and dieldrin remain post-development (see Section 5.4.4), they will be encapsulated on-site under roadways or other hardscape to be determined. The necessity for a Cap Management Plan, based on confirmation sampling results, will be discussed in the SMP Implementation Report (see Section 8.0).

5.0 RISK MANAGEMENT MEASURES

This section presents risk management measures to address the identified COPCs in soil, soil vapor, and groundwater at the Site during redevelopment activities.

5.1 SMP Applicability

This SMP presents protocols for the following construction activities that may encounter COPCs, including the following:

- Removal of existing foundations, utility lines, and other surfacing;
- General earthwork;
- Targeted and mass excavation activities;
- Installation of utility corridors; and
- Rough grading.

Contractors and their subcontractors shall follow the protocols presented in this SMP while performing the above activities at the Site. Contractors and their subcontractors are responsible for the health and safety of their employees.

5.2 Pre-Construction Planning and Notification

Prior to the start of any construction activity that involves below ground work (e.g., foundation removal, subsurface utility removal, or excavating), the Developer shall provide information regarding Site risk management procedures (i.e., a copy of this SMP) to the General Contractor and the General Contractor shall provide this SMP to all relevant subcontractors for their review and acknowledgement, likewise for subsequent tier subcontractors.

5.3 Health and Safety

A written health and safety plan (HSP) may be necessary for Site activities in accordance with California OSHA Construction Safety Orders within Title 8 of the CCR, following a review of this SMP. The General Contractor is to review the information provided within this SMP and determine whether an HSP is necessary for the proposed construction activities. If deemed necessary, the HSP will be prepared by the General Contractor and/or their subcontractor for their work. At a minimum, the HSP should include:

- A description of proper entry to the Site and all work activities to be conducted at the Site.
- A list of project contacts including the Health and Safety Officer.
- A list of hazardous materials information.
- Emergency information, including the location of the nearest emergency hospital location.
- Identification of on-site health and safety hazards and hazard analysis.
- Exposure prevention, safety requirements, hazard exposure guidelines, and safe work practices.
- Safety training procedures and guidelines.
- Levels of personal protective equipment (PPE) needed.
- Waste handling procedures.

The purpose of a HSP is to inform all field personnel of proper safety procedures and potential health risks while on-site. All project personnel should familiarize themselves with the HSP and adhere to its established procedures and recommendations. A copy of the HSP should be kept on-site and made available to all personnel. The HSP should be updated if on-site conditions change. The General Contractor will be responsible for preparing and implementing the safety

procedures identified in the HSP. Implementing the HSP will minimize potential health risks to on-site construction workers and the general public.

Each contractor shall be responsible for the health and safety of their own workers, as required by CAL-OSHA, including but not limited to preparation of their own HSP and injury and illness prevention plan. The purpose of these documents is to provide general guidance relating to the work hazards that may be encountered during each phase of Site construction activities. Contractors are also required to determine the requirements for worker training, based on the level of expected contact to potentially impacted soil and/or groundwater associated with the contractor's activities and locations with respect to COPCs described in Section 3.1. The HSP(s) will contain provisions for limiting and monitoring chemical exposure to construction workers, chemical and non-chemical hazards, emergency procedures, and standard safety protocols.

5.4 Soil Management

This section presents the appropriate soil management procedures for soils at the Site during redevelopment activities. Areas of known soil impacts, lead and/or dieldrin, are shown on Figures 4B and 5B. General soil handling procedures are presented below.

5.4.1 Soil Handling Procedures

According to the current plans, the proposed development will encompass the entire Site footprint. The construction activities will involve excavation and mass grading, generating soils that require off-site exportation. Surplus soil excavated from the Site, intended for off-site disposal, will be managed as outlined in Section 5.4.4 below.

The previously identified elevated lead and/or dieldrin in shallow soils (i.e., primarily the upper 3.5 feet) will likely be excavated as part of the planned demolition and grading activities needed for the construction. Because elevated lead concentrations could not be confirmed, additional sampling in the elevated lead concentration areas is recommended prior to site grading. Confirmation samples will be collected after the demolition and grading activities to evaluate whether elevated lead and/or dieldrin concentrations remain, post-excavation. Confirmation sampling would be conducted as described in Section 5.5.3 below. The results of the confirmation samples will be used to evaluate whether additional excavation and or a Cap Management Plan may be required upon completion of the project. If upon completion of the development project soil exceeding the applicable residential ESLs remain on-site, a Cap Management Plan will be prepared and submitted to the Regional Water Board for review. The need for a Cap Management Plan would be discussed in the SMP Implementation Report (see Section 8.0).

5.4.2 Field Screening

Soil may be field screened by the Environmental Consultant in areas of potential environmental impact during demolition and excavation work on an as needed basis to assess whether impacted soil may be present. At this time, field screening is not anticipated; however, the Environmental Consultant will be notified if potentially petroleum hydrocarbon impacted soil or other previously unidentified conditions as detailed in Section 5.8 are identified through visual and olfactory observation. Should any field screening or inspections performed by the Environmental Consultant identify potentially impacted soil or other previously unidentified conditions, analytical testing will be performed. Significantly impacted soils (i.e., above applicable residential ESLs identified as such by analytical testing performed by the

Environmental Consultant, shall be handled and managed in conformance with and by OSHA Hazardous Waste Operations and Emergency Response trained personnel.

5.4.3 Soil Segregation and Stockpile Management

Excavated soils from the Site will either be loaded directly into trucks and removed from the Site for off-site disposal based on existing soil analytical data or stockpiled on-site for further testing if required by the appropriately licensed receiving facility. If needed, the Environmental Consultant will perform sampling of stockpiled soil as appropriate for acceptance for off-site disposal.

If stockpiled on-site, all excavated soils will be stockpiled at the Site in a secure location, segregated as appropriate, maintained to prevent excessive dust and to prevent off-site soil migration due to wind and rain erosion, and placed away from storm drains and surface-water drainage courses to prevent potential runoff. Stockpiles will be moistened or covered with 10-mil polyethylene sheeting (e.g., in compliance with Bay Area Air Quality Management District [BAAQMD] Rule 8-40) as needed for purposes of dust mitigation.

Stockpiles of potentially petroleum hydrocarbon impacted soil, or soils with impacts from other previously unidentified conditions as detailed in Section 5.7 identified through visual and olfactory observation, will be segregated from other stockpiled soils and additionally placed on top of as well as covered with 10-mil polyethylene sheeting.

5.4.4 Off-site Soil Disposal

Soil to be disposed off-site will be profiled for waste characterization based on samples already collected and supplemented with additional sampling data as needed by the appropriately licensed receiving facility.

Soil profiled as non-hazardous will be transported and disposed at a licensed Class II/III landfill. Soil classified as California hazardous waste will be transported either out of state to an appropriate licensed facility or to a Class I facility in California. Soil classified as Federal hazardous waste, if any, will be transported to a Class I RCRA facility. Additional segregation of excavated soil may be conducted by the excavation contractor (e.g., “clean” soil), depending upon off-site receiving facility acceptance criteria. Soil transporters and specific disposal locations will be identified prior to construction and summarized in the SMP Implementation Report (see Section 7.0).

5.4.5 Import Criteria

If import materials are needed, an evaluation of import materials brought to the Site will be conducted to ensure such fill meets the geotechnical and environmental requirements for the Site. To minimize the potential introduction of impacted fill onto the Site, all selected sources of import fill shall have adequate documentation or certification to verify that the fill source is appropriate for the Site prior to delivery of such soil to the Site. Acceptable documentation would include detailed information on previous land use of the fill source, any Phase I ESAs performed and the findings, and the results of any analytical testing performed. If no documentation is available, the documentation is inadequate, or if no analytical testing has been performed, samples of the potential fill material will be collected and analyzed prior to delivery of such soil to the Site. The analyses will be based on the fill source and knowledge of the previous land use. The sample frequency for potential fill material be conducted in

accordance with that outlined in the *Information Advisory on Clean Imported Fill Material* by the DTSC dated October 2001, included herein as Appendix C. Sampling will be conducted as described in Section 5.5. No fill material will be accepted if contaminant levels exceed applicable residential ESLs, and/or regional background concentrations.

5.5 Soil Sampling

5.5.1 General Methodology

When samples are needed, the Environmental Consultant will collect soil samples utilizing a slide hammer fitted with 2-inch diameter 6-inch stainless steel sleeves to obtain a sample, or alternative industry accepted sampling practices. Soil intervals saved for analysis will be immediately kept in the stainless-steel sampling tubes, with each end covered with polyethylene sheeting and tight-fitting plastic caps, labeled, placed in re-sealable plastic bags. Samples will be placed in a pre-chilled insulated container and prepared for transport and analysis using standard chain of custody protocol. Soil samples collected for analysis will be sealed and cooled as soon as feasible to minimize potential volatilization. All samples will be maintained in a locked vehicle or in direct observation at all times. The Environmental Consultant will generally follow regulatory methods for collecting the soil samples and preparing them for analysis and will submit all soil samples to a California certified laboratory.

5.5.2 Soil Profiling for Off-haul

Soil profiling criteria depends on the proposed receiving facility location. These procedures should be established by the excavation contractor and coordinated with the proposed receiving facility prior to initiating soil excavation. Typical soil profiling requirements are one four-point composite sample per 500 to 750 cubic yards to be disposed.

If needed, the Environmental Consultant will perform sampling of stockpiled soil as appropriate for acceptance at appropriate off-site “fill sites” or for landfill disposal. Soil samples for waste characterization purposes will be collected and analyzed according to the profiling requirements of the fill site or disposal facility. The profiling of the waste and surplus soil is typically required by all facilities considering acceptance of “clean” soil and for impacted soil to determine proper disposal methods, verify that the waste meets all acceptance criteria of the facility, and ensure compliance with all federal, state, and local regulations. Characterization information will be documented on profile forms provided by the off-site facility. The General Contractor will coordinate with the Environmental Consultant regarding all off-site soil disposal activities.

5.5.3 Confirmation Sampling

Confirmation samples will be collected at the base of the planned excavation at the previous sample locations which detected elevated concentrations of lead or dieldrin. The confirmation samples will be analyzed at a California certified laboratory, as appropriate, for:

- Total Lead using US EPA Test Method 6010B/7471A; or
- Dieldrin using US EPA Test Method 8081A.

The results of the confirmation samples will be used to evaluate if a Cap Management Plan may be required upon completion of the project. If upon completion of the development project, soil exceeding the applicable ESLs remains on-site, a Cap Management Plan will be prepared

and submitted to the Regional War Board for review. The need for a Cap Management Plan would be evaluated in the SMP Implementation Report (see Section 8.0).

5.6 Groundwater Management

The planned redevelopment does not include a subterranean component, and therefore no large excavations are proposed. However, grading operations, trenching, and small excavations to depths of up to approximately 5 feet bgs for planned foundational elements such as footings, grade beams, utilities, etc. are expected. The measured depth to groundwater at the Site is first encountered between 7 and 8 feet bgs, and groundwater is not anticipated to be encountered during construction activities. However, if groundwater is encountered in quantities that need to be pumped and removed from excavations, such groundwater would need to be profiled for proper off-site disposal or discharged under permit to the local sanitary sewer system and/or storm sewer in accordance with best practices and applicable regulations. A settling tank, or other treatment as necessary, may be used to achieve the necessary discharge requirements. All permitting and regulatory requirements shall be followed prior to discharge or off-site disposal.

5.7 Removal/Relocation of Existing Monitoring Wells

There are currently multiple known groundwater monitoring wells at the Site (see Figure 2) associated with regional groundwater plumes in the area, including:

- Mohawk Laboratories: MW-09 (DEGUINE), NMW-12B, 46-S, and 46-D; and
- 999 Arques Corporation Wells: MW-2, MW-5, MW-6, MW-7, MW-8, MW-9, 13-S, 13-D S-39A, S-39B, S-38A, and S-38B.

There are existing groundwater wells at the Site used to monitor the regional plumes that will need to be removed or relocated as part of the redevelopment activities. The Developer will work with each Responsible Party to develop a well removal/relocation plan to be submitted to the Regional Water Board for review and approval. Note that a permit from the Santa Clara Valley Water District will be required prior to the destruction of wells.

5.8 Unknown Conditions

If a UST, UST related piping, former previously unidentified wells, significantly impacted soils (indicative by soil staining and suspicious odors), sumps, or underground vaults are discovered during soil excavation the following work shall be conducted:

- Stop all activities in proximity to the subsurface structure or condition of concern.
- Cover the area with plastic sheeting and segregate the work area with safety cones or safety tape.
- Notify the superintendent and Environmental Consultant for inspection and follow up procedures.
- Note that a permit from the Santa Clara Valley Water District will be required prior to the destruction of wells.

5.9 Construction Impact Mitigation Measures

During construction activities, measures will be taken by contractors to minimize construction related impacts. The construction impact mitigation measures are described below.

5.9.1 Site Control

The General Contractor shall implement Site control procedures to prevent unwanted public access and control the flow of personnel, vehicles, and materials in and out of the Site while working with potentially contaminated materials. In addition, Site control measures will help control the spread of COPCs from the Site, if they are present. Site control measures to be implemented by the General Contractor include, but are not limited to:

- Fencing the Site perimeter, including installation of construction fence screen.
- Controlling access and egress at selected locations.
- Posting signs at all Site entrances.
- Instructing visitors to sign in at the project support area.

5.9.2 Equipment Decontamination

The General Contractor shall establish and implement decontamination procedures to reduce the potential for construction equipment and vehicles to release potentially impacted soil onto public roadways or other inadvertent off-site transfer. At a minimum, contractors shall place gravel at all Site access points and remove excess soil from construction equipment using dry methods (e.g., brushing or scraping) prior to moving the equipment to off-site locations.

5.9.3 Personal Protective Equipment

Contractors shall use PPE, including appropriate clothing, to isolate workers from COPCs and physical hazards. Each contractor shall evaluate the level of PPE and modify the level of PPE, if warranted, based upon conditions encountered at the Site and/or type of work activity in accordance with their own HSP (see Section 5.3). The minimum level of protection for workers coming into direct contact with potentially contaminated materials is Level D, as described below:

- Coveralls or similar construction work clothing;
- Reflective safety vests;
- Steel-toed boots;
- Hard hat;
- Work gloves, as necessary;
- Safety glasses, as necessary; and
- Hearing protection, as necessary.

5.9.4 Storm Water Pollution Prevention

A Construction Storm Water Pollution Prevention Plan (SWPPP) will be prepared for the project as required by the City of Sunnyvale. Contractors and their subcontractors shall comply with

the provisions and protocols of the SWPPP. Storm water pollution prevention procedures may include, but are not limited to the following:

- Constructing temporary berms or erecting silt fences around exposed soil;
- Placing straw bale barriers or sediment traps around catch basins or other entrances to storm drains;
- Covering soil stockpiles with plastic sheeting or tarps during rainfall events; and
- Implementing other appropriate best management practices (BMPs) as identified in the SWPPP.

Implementation of the SWPPP as required by the City will be sufficient to also protect the potential of off-site migration of affected soils during storm events.

5.9.5 Dust Control

Mitigation measures to minimize the creation and dispersion of dust during soil handling and earthwork activities at the Site will include, but not be limited to, the following measures in accordance with the City of Sunnyvale ordinances:

- Exposed on-site soils to be moistened as needed to prevent visible airborne dust.
- Moistening of all soils during truck loading for disposal or off-haul purposes.
- Application of water while grading, excavating, and loading, as needed.
- If visible dust is present, conducting dust suppression activities such as soil moistening.
- Covering stockpiles with 10-mil polyethylene sheeting (or equivalent).
- Limiting vehicle speeds on unpaved portions of the Site.
- Covering all disposal trucks and/or off haul trucks with a tarpaulin.
- Sweeping excess soil off disposal trucks and/or off haul trucks and rinsing of truck tires before leaving the Site.
- Minimizing drop heights while loading/unloading soil.
- On-site soil disturbance and/or loading actives will be suspended if winds exceed 20 miles per hour.
- Dust suppression shall not produce excess storm water and runoff.
- Dewatered groundwater may not be used for dust control unless previously sampled and analyzed for the Site COPCs, and COPCs are identified as below the applicable screening levels.

Implementation of the City required dust control efforts will be sufficient to also protect the potential of off-site migration of affected soils through airborne migration.

6.0 NEW STRUCTURE VAPOR INTRUSION MITIGATION

This section presents the proposed vapor intrusion mitigation measures for potentially affected structures within the proposed new development.

6.1 Additional Characterization

To provide additional characterization of VOCs in soil vapor beneath the Site prior to construction, AEI proposes to perform additional soil vapor sampling outside of the area surrounding sampling locations SV-4, SV-5, and SV-9 at the Site. Thirteen (13) additional soil vapor probe locations are shown on Figures 3A and 3B. The proposed locations fill gaps in the current data set that exist primarily due to access issues associated with the presence of the existing commercial buildings at the Site. Soil vapor samples will be collected via sub-slab probes, through the existing commercial building floor slab or in five (5) foot probes outside of existing building locations of if sampling is done following demolition of the buildings. The soil vapor sampling probes will be installed and sampled in general accordance with the guidelines presented in the *Advisory: Active Soil Vapor Investigations*, prepared by the California Department of Toxic Substances Control (DTSC), et al., dated July 2015. The sampling and data evaluation procedures are presented below.

6.1.1 Sub-Slab Soil Vapor Sampling

At locations within the footprints of the existing commercial buildings sub-slab soil vapor samples may be collected instead of soil vapor probes, as described here. Prior to installation, private utility locating will be performed to identify and located underground utilities in the areas of proposed drilling which were adjusted accordingly when encountered.

Installation of the semi-permanent sub-slab soil gas probes will include coring the concrete slab or tiled surface using a rotary hammer drill with a 1.5-inch diameter drill bit that was advanced to approximately 1.5 inches to create the proper seating for the vapor pin's protective cover. A 5/8-inch diameter drill bit will then be used to extend beneath the slab. A Vapor Pin® will then be installed in each of the drilled locations, with the silicone sleeve of the Vapor Pin® providing the air-tight vapor seal for the locations. A stainless steel cover will be secured to each Vapor Pin® at ground surface. The soil gas probes will be allowed to stabilize for approximately 48 hours before sampling.

After waiting a minimum of 48-hours, the soil vapor sample will be collected from the newly installed soil vapor probes and existing probes using laboratory-supplied 1-liter, batch-certified, evacuated canisters with integrated flow-controllers in accordance with AEI's Standard Operating Procedure (SOP) for soil vapor sampling, included in Appendix D. The collected sample will be analyzed for volatile organic compounds (VOCs) using US EPA Testing Method TO-15 and oxygen and helium using ASTM D-1946-90.

6.1.2 Soil Vapor Sampling

Prior to installation, private utility locating was conducted by Cal-West Concrete Cutting of Union City, California under subcontract to AEI to identify and located underground utilities in the areas of proposed drilling which were adjusted accordingly when encountered.

AEI will contract a State of California-licensed driller to install the proposed seven (7) soil vapor probes using a drill rig equipped with direct push capabilities. If necessary, due to access limitations, select soil vapor probes may be installed in borings advanced with a hand auger. After drilling each soil boring to a depth of approximately 5.5 feet bgs, semi-permanent soil vapor sampling probes will be constructed in each boring.

The soil vapor probes will be constructed using a screen-lined probe tip attached to ¼-inch diameter Teflon™ tubing. The probe tips will be installed at a depth of approximately 5 feet bgs. A 1-foot sand pack will be placed from 5.5 to 4.5 feet bgs followed by an approximately 1-foot layer of dry granular bentonite, followed by an approximately 1-foot layer of hydrated bentonite. The remaining annular space will be sealed with neat cement to grade. At the soil vapor probe location, a traffic-rated wellbox will be installed for protection and to allow access to the probe if the probe will remain in-place beyond 48-hours.

After waiting a minimum of 48-hours, the soil vapor sample will be collected from the newly installed soil vapor probes and existing probes using laboratory-supplied 1-liter, batch-certified, evacuated canisters with integrated flow-controllers in accordance with AEI's Standard Operating Procedure (SOP) for soil vapor sampling, included in Appendix D. The collected sample will be analyzed for volatile organic compounds (VOCs) using US EPA Testing Method TO-15 and oxygen and helium using ASTM D-1946-90.

6.1.3 Data Evaluation

The collected soil vapor sample results will be evaluated to understand whether the VOCs detected in soil vapor would trigger vapor mitigation at additional buildings at the Site. As presented in Section 2.4.2, the current maximum PCE and TCE concentrations outside of where mitigation is proposed are 66 and 50 µg/m^3, respectively. The calculated Site-Specific soil vapor screening levels for PCE and TCE are 460 and 480 µg/m^3, respectively. Therefore, AEI proposes more protective screening levels of 70 and 55 for PCE and TCE, respectively, to include a factor of safety to account for potential variation from a one-time sampling event. Based upon the soil vapor sample distribution, new residential buildings within a radius of approximately 100-feet from an elevated detection, as defined here, would include a vapor mitigation system, unless additional sampling points demonstrate that additional mitigation is not required.

6.1.4 Reporting

Upon completion of the sampling, a summary report will be prepared that presents the sampling methodology, tables summarizing the sample results, figures presenting the data, and an evaluation of the data. The report may propose additional buildings to have vapor mitigation as described below, based upon the screening levels presented in Section 6.1.3.

6.2 Vapor Mitigation at Select Structures

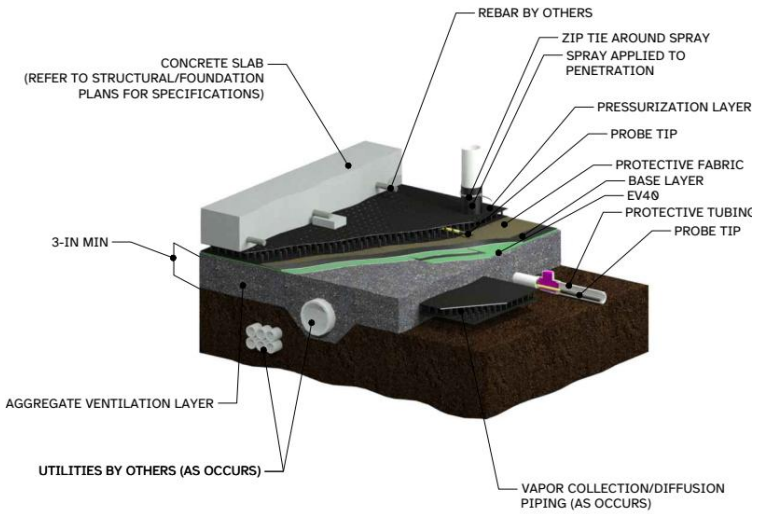
As discussed in Section 2.4 above, PCE detected in soil vapor does not represent an unacceptable risk to the future residential users of the Site. Elevated TCE concentrations present in soil vapor are limited to a specific area of the northwestern portion of Site as shown on Figure 5B. AEI proposes that only the buildings identified on Figure 5B, within the Proposed Mitigation Area, will be protected with a vapor intrusion mitigation system (VIMS) to include a passive venting system and low-permeability barrier. Prior to construction, a VIMS design and Operation, Maintenance, and Monitoring Plan (OMMP) will be prepared and submitted to the Regional Water Board for review. The design and performance monitoring of the VIMS will be in general accordance with the June 2022 *Vapor Intrusion Mitigation Guidance, Technical Resource Document* issued by the Regional Water Board, October 2011 *Vapor Intrusion Mitigation Advisory, Revision 1, Final (VIMA)* issued by the DTSC; June 2015 *Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to*

Indoor Air issued by the US EPA; and 2010 *Methane Mitigation Standards* established by the Los Angeles Department of Building and Safety (LADBS).

The passive venting system will be designed to collect soil gas that may migrate towards the building foundation and direct it through piping to the atmosphere to limit the potential for VOC-affected soil gas from entering the indoor air of the building. It will be designed to facilitate conversion to an active system if deemed necessary post-construction. Subslab components of the venting system will generally include:

- Subslab vapor collection piping embedded within a continuous, permeable 4-inch-thick aggregate base layer directly beneath the building slab and low-permeability barrier system.
- The subslab vapor collection piping will be connected to vertical vent risers that trend through the building interior, conveying the collected soil gas to the roof for discharge to the atmosphere. The vent risers will be 3-inch diameter, solid, ductile iron pipe (DIP) or cast-iron pipe (CIP) within the building envelope.

The low-permeability barrier engineered barrier system will be a composite membrane system composed of a spray-applied vapor barrier combined with a base layer and protection course. The barrier system will be installed underneath the building floor slab across the entire building footprint. The typical configuration of the proposed venting and low-permeability barrier system is shown below (from GeoKinetics, June 30, 2025). The final design will be prepared appropriate for the building foundation design and then current VIMS design state of practice.



A TYPICAL CONFIGURATION
Not to Scale

Additionally, utility trenches that pass under the concrete slab of the buildings will be sealed at or near the building perimeter via the installation of trench dams. Mechanical and electrical conduits originating from beneath the building slab will also be sealed with a conduit seal to prevent migration of VOC-affected soil gas into the building through open conduits.

7.0 NOTIFICATIONS

7.1 Notifications

The Developer, the General Contractor, and Environmental Consultant shall be notified immediately of the discovery of COPCs (via field screening, observations, or analytical results) or other conditions of potential environmental concern. If analytical testing identifies COPCs above applicable residential screening levels, the Environmental Consultant shall notify the Developer and General Contractor. If such discovery or conditions require notification to other contractors or subcontractors, the General Contractor shall make such notifications.

7.2 Project Contacts

Relevant project contacts for notifications, including in the case of discovery of COPCs or other conditions of potential environmental concern, include the following:

- **Developer:**
  TBD

- **Environmental Consultant:**
  AEI Consultants
  3880 South Bascom Avenue, Suite 104
  San Jose, California 95124
  Phone: (408) 559-7600
  Attn: Trent Weise
  Phone: (408) 656-1738
  Email: tweise@aeiconsultants.com

- **Regulator:**
  San Francisco Bay Regional Water Quality Control Board
  1515 Clay Street, Suite 1400
  Oakland, California 94612
  Attn: Emma Hoffman-Davies
  Phone: (510) 622-2313
  Email: emma.hoffman-davies@waterboards.ca.gov

- **General Contractor:**
  TBD

8.0 COMPLETION REPORTING

The Environmental Consultant will prepare an SMP Implementation Report upon completion of excavation and earthwork performed per the SMP. The report will include a summary of the work conducted, tables summarizing any analytical data generated as part of the work, and a Site map showing areas of excavation/fill and sample locations, if any. The report will include appendices with copies of permits, including any dewatering permits, manifests or bills of lading for impacted soil and/or groundwater removed, and laboratory reports for soil and water profiling not previously submitted. The report will also include a certification statement that

indicates the activities were performed in accordance with this SMP. The report will be submitted to the Regional Water Board for review and approval.

9.0 REFERENCES

AEI Consultants (AEI), 2019. Limited Phase II Subsurface Investigation, Oakmead West, 490 and 510 De Guigne Drive; 920, 935, 940, 945, and 960 Stewart Drive, Sunnyvale, California 94085. January 15.

AEI, 2024a. Phase I Environmental Site Assessment, 490, 510 De Guigne Drive; 920, 935, 940, 945, 960 Stewart Drive, Sunnyvale, California 94085. March 14.

AEI, 2024b. Phase I Environmental Site Assessment, 920-950 De Guigne Drive, Sunnyvale, California 94085. August 22.

AEI, 2024c. Draft Limited Phase II Subsurface Investigation Report, 510 De Guigne Drive & 920, 930, 935, 945, and 950 Stewart Drive, Sunnyvale, California 94085. November 13.

AEI, 2025. Draft Additional Site Investigation Report, 510 De Guigne Drive and 920, 930, 935, 945, and 960 Stewart Drive, Sunnyvale, California 94085. February 28.

AEI, 2025. Additional Soil Vapor Investigation Report, 510 De Guigne Drive and 920, 930, 935, 945, and 960 Stewart Drive, Sunnyvale, California 94085. August 19.

Bradford, G.R., et al., 1996. Background Concentrations of Trace and Major Elements in California Soils. March.

Cornerstone Earth Group, 2010. Phase I Environmental Site Assessment and Preliminary Phase II Investigation, 920, 930 and 950 De Guigne Drive, Sunnyvale, California. May 17.

Department of Toxic Substances Control (DTSC), 2001. Information Advisory on Clean Imported Fill Material. October.

DTSC, 2011. Vapor Intrusion Mitigation Advisory, Revision 1, Final (VIMA). October.

DTSC and California State Water Resources Board, 2023. Supplemental Guidance: Screening and Evaluating Vapor Intrusion, Final Draft. February 2023.

Duvergé, Dylan Jacques, 2011. Establishing Background Arsenic in Soil of the Urbanized San Francisco Bay Region. December.

Eklund, Bart and Rich Rago, 2024. Fate and Transport of Chloroform in VI Evaluations. August 5.

Los Angeles Department of Building and Safety (LADBS), 2010. Methane Mitigation Standards.

San Francisco Bay Regional Water Quality Control Board (Regional Water Board), 2019. User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final. dated July 2019, revision 2.

Regional Water Board, 2022. Vapor Intrusion Mitigation Guidance, Technical Resource Document. June.

United States Environmental Protection Agency (US EPA), 2015. Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air. June.

10.0 REPORT LIMITATIONS AND RELIANCE

The General Contractor and subcontractors are responsible for review of this Site Management Plan prior to commencing work at the Site and for the health and safety of their own employees and subcontractors. The Developer is responsible for review of the provisions of this Site Management Plan and for incorporating its guidelines into their project planning and specifications. This document was prepared for the sole use and benefit of TC III SPP North, LLC and their contractors and consultants at the Site. Neither this document, nor any of the information contained herein shall be used or relied upon for any purpose by any person or entities. Where information prepared by others has been provided, AEI cannot be responsible for its accuracy or completeness or for the availability of all information that may be relevant to the preparation of this document.

The completed work includes observations and descriptions of Site conditions encountered by AEI and others. Where appropriate, it includes analytical results for samples taken during the course of the work. This report should not be regarded as a guarantee that no further contamination beyond that which is reported is present beneath the Site. Undocumented, unauthorized releases of hazardous material, the remains of which are not readily identifiable by visual inspection and are of different chemical constituents, are difficult and often impossible to detect within the scope of a chemical specific investigation. Any conclusions and/or recommendations are based on these analyses and observations, and the governing regulations. Conclusions beyond those stated and reported herein should not be inferred from this document. Services were performed in accordance with generally accepted practices, in the environmental engineering and construction field, which existed at the time and location of the work. No other warranty, either expressed or implied, has been made.

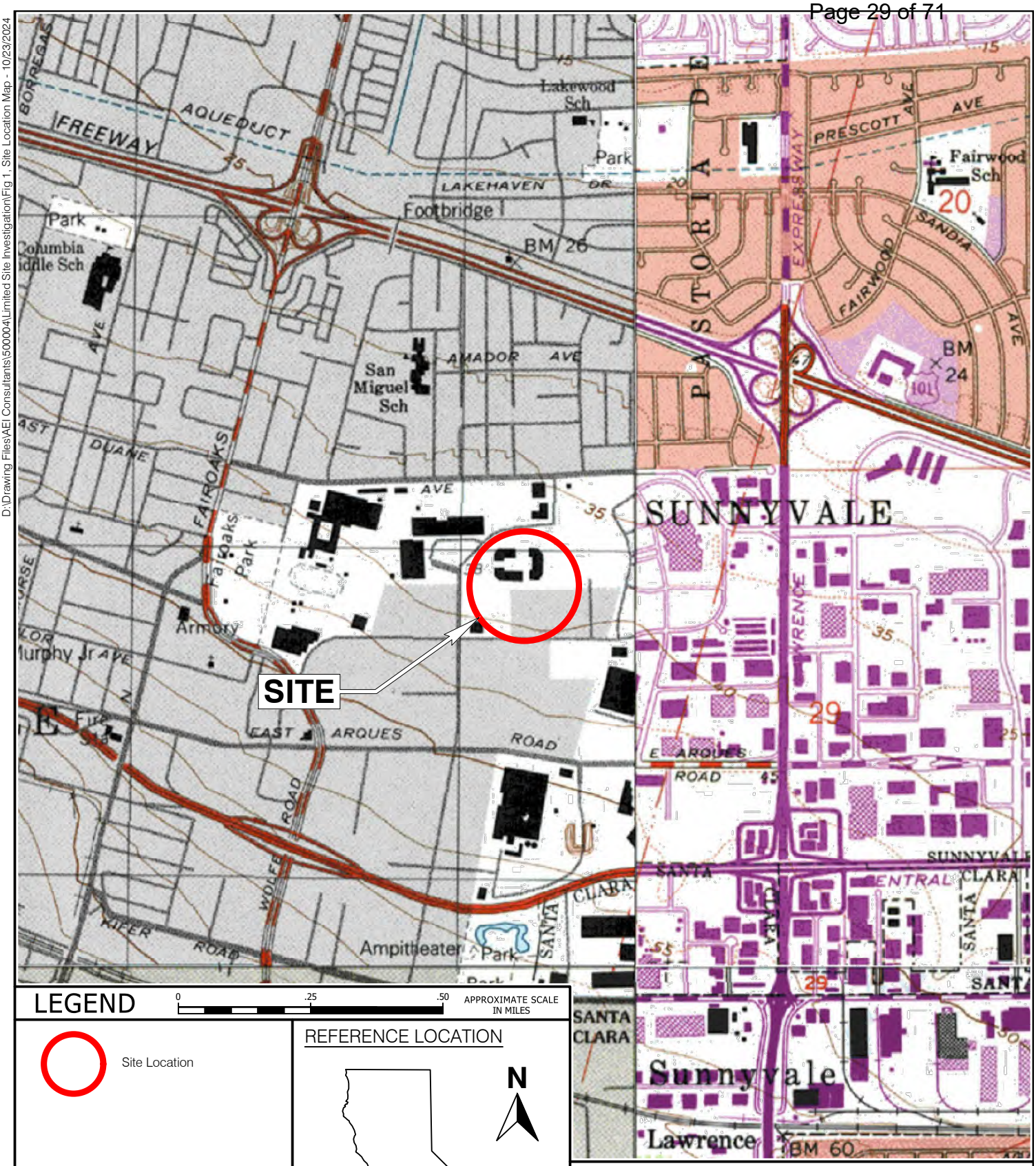
11.0 SIGNATURES

This document was prepared by, or under the direction of, the undersigned.

Trent A. Weise, P.E.
Senior Vice President

FIGURES

D:\Drawing Files\AEI Consultants\500004\Limited Site Investigation\Fig 1. Site Location Map - 10/23/2024

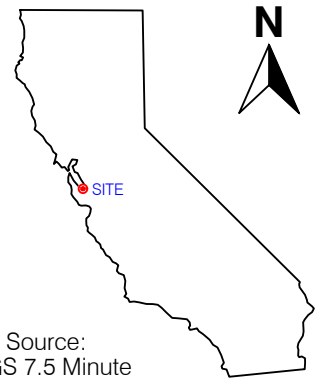


LEGEND

0 .25 .50 APPROXIMATE SCALE IN MILES

Site Location

REFERENCE LOCATION



Map Source:
USGS 7.5 Minute
Topographic Quadrangle Map,
Mountain View, CA - 1997

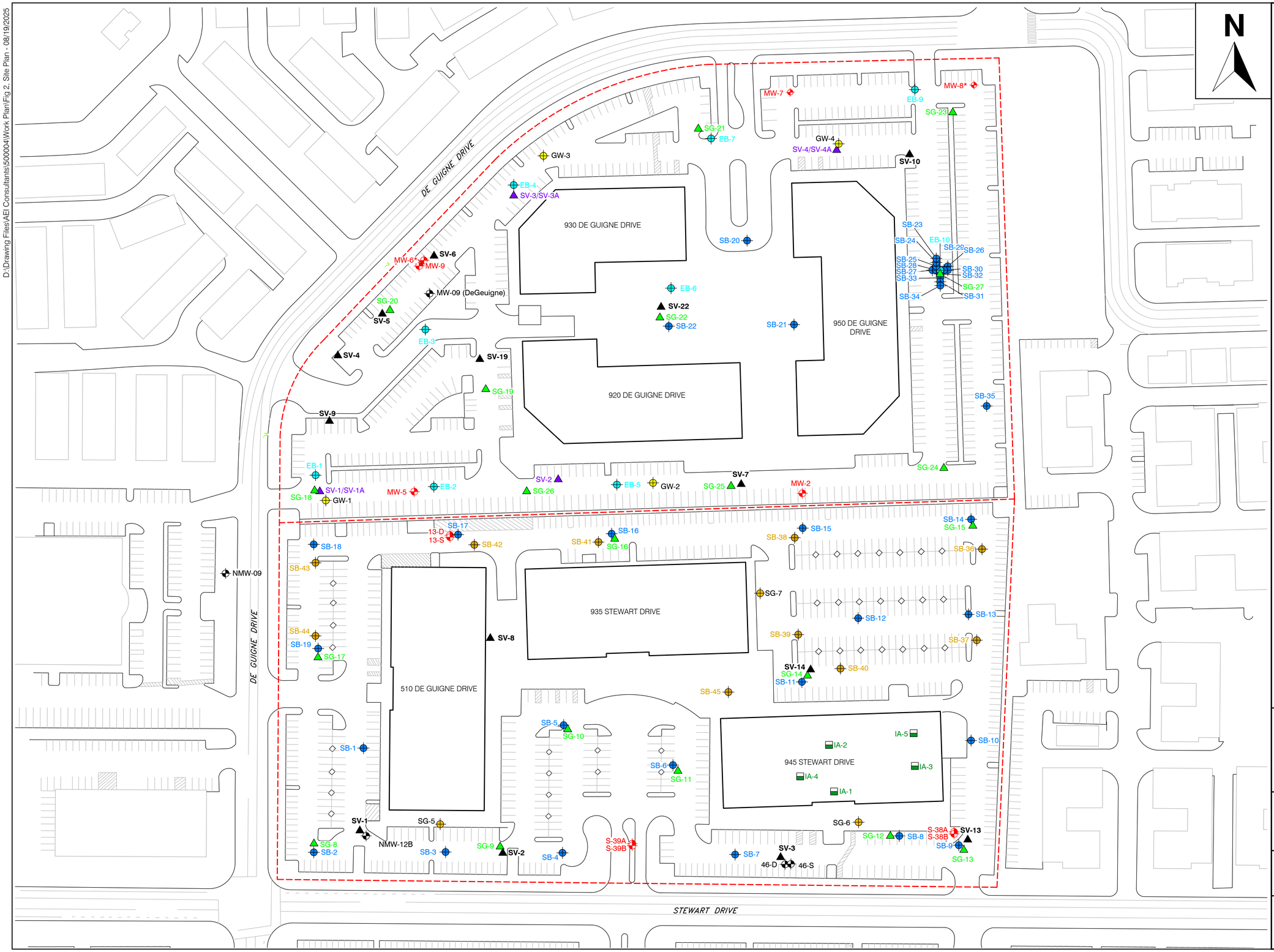
SITE LOCATION MAP

AEI

510 De Guigne Drive and 920, 930, 935, 945 & 950 Stewart Drive
Sunnyvale, Caliornia 94085

FIGURE 1
Project No. 500004

D:\Drawing Files\AEI Consultants\500004\Work Plan\Fig 2. Site Plan - 08/19/2025



EXPLANATION BLOCK

- NMW-09 — Regional Plume(s) Monitoring Well Location (Mohawk Laboratories)
- MW-2 — Regional Plume(s) Monitoring Well Location
- SG-5 — Soil Gas Sample Location (December 2018)
- IA-1 — Indoor Air Sample Location (January 2019)
- SB-19 — Soil Boring Location
- SB-45 — Soil Boring Location (January 2025)
- SG-17 — Soil Gas Probe Location
- SV-3 — Semi-Permanent Soil Gas Probe Location
- EB-1 — Exploration Boring
- GW-1 — Groundwater Grab Sample
- SV-3/SV-3a — Temporary Soil Vapor Well

60 0 60 120 180
APPROXIMATE SCALE IN FEET

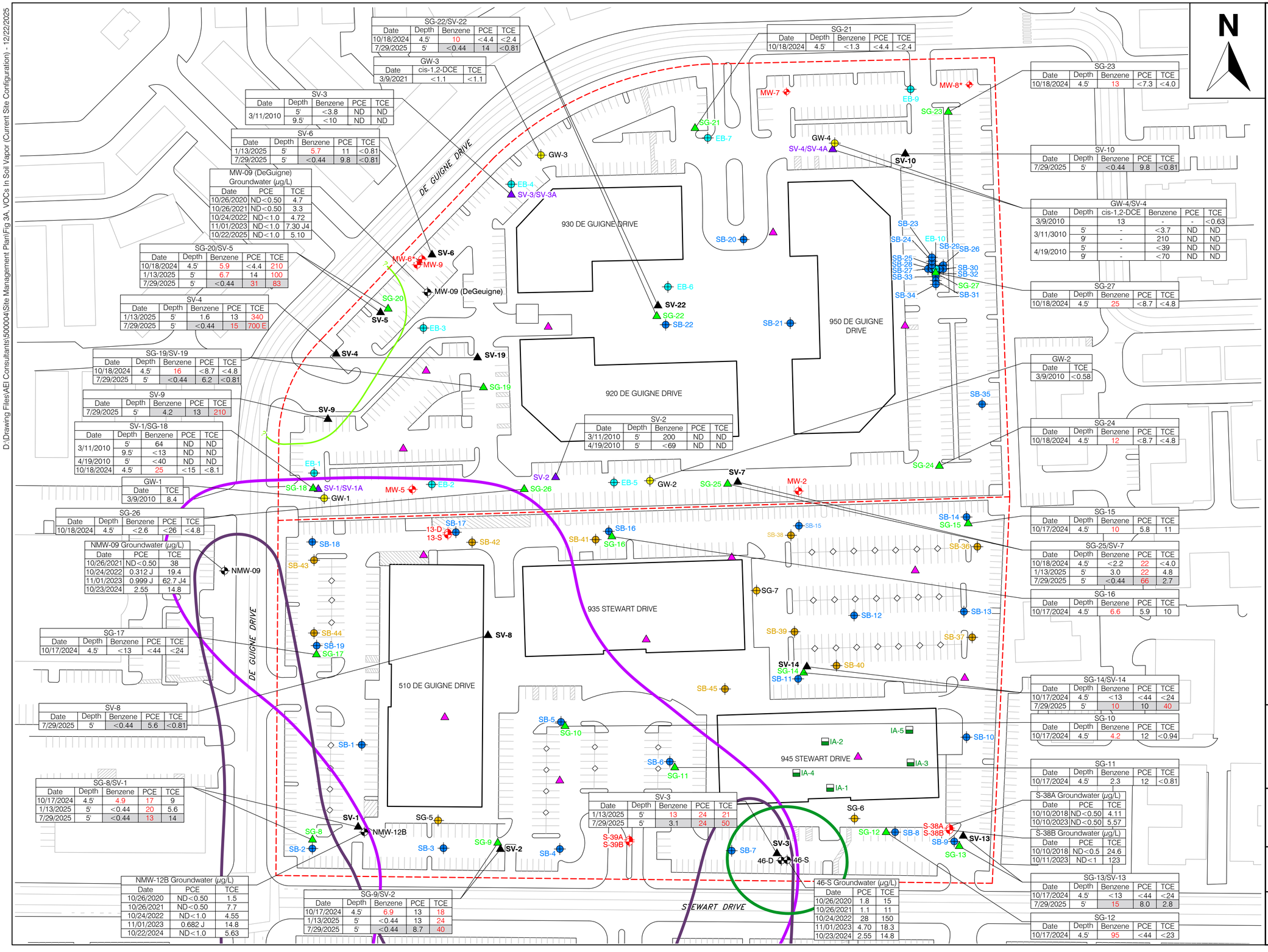
AEI

SITE PLAN

920 and 950 De Guigne Drive
Sunnyvale, California 94085

FIGURE 2
Project No. 500004

D:\Drawing Files\AEI Consultants\500004\Site Management Plan\Fig 3A, VOCs In Soil Vapor (Current Site Configuration) - 12/22/2025



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- Proposed Additional Soil Vapor Probe
- TCE Concentrations in Soil Gas Greater Than the Residential ESL (µg/m³)
- PCE in Groundwater (>10 µg/L), A-1 Zone, Quarters 1 and 2, 2004
- TCE in Groundwater (>10 µg/L), A-1 Zone, Quarters 1 and 2, 2004
- cis-1,2-DCE in Groundwater (>10 µg/L), A-1 Zone, Quarters 1 and 2, 2004

Notes:
- VOCs US EPA Testing Method TO-15
- Depth in Feet Below Ground Surface (bgs)
- Data displayed in micrograms per cubic meter (µg/m³)
- PCE - Tetrachloroethene
- TCE - Trichloroethene
- cis-1,2-DCE - cis-1,2-Dichloroethene
- E - Indicates that the reportable value is outside the instrument calibration range and the value should be considered as estimated
- Grey - Denotes most recent sampling event

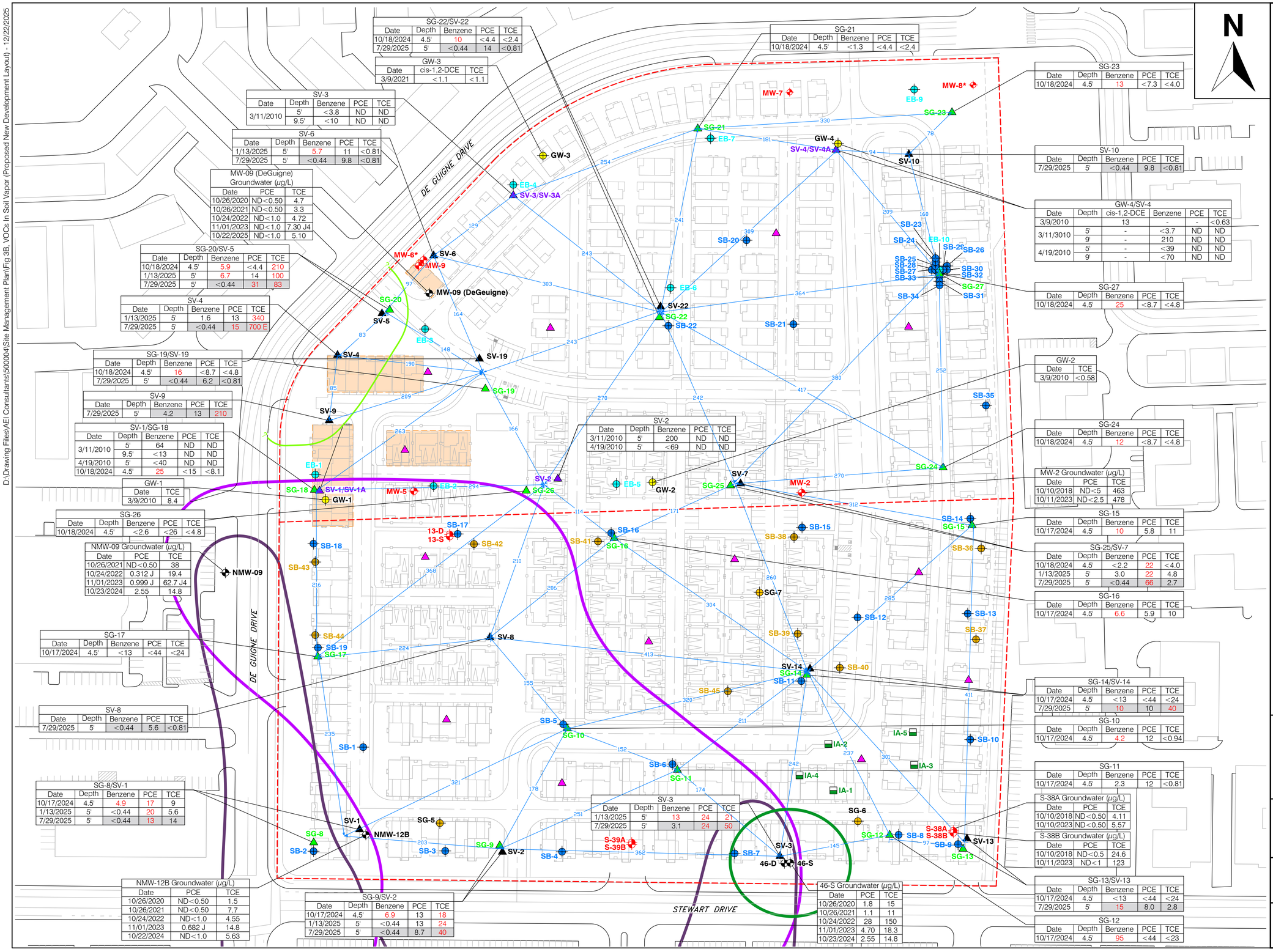
AEI

VOCs IN SOIL VAPOR (CURRENT SITE CONFIGURATION)

920 and 950 De Guigne Drive
Sunnyvale, California 94085

FIGURE 3A
Project No. 500004

D:\Drawing Files\AEI Consultants\500004\Site Management Plan\Fig 3B, VOCs In Soil Vapor (Proposed New Development Layout) - 12/22/2025



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- TCE Concentrations in Soil Gas Greater Than the Residential ESL (µg/m³)
- PCE in Groundwater (>10 µg/L), A-1 Zone, Quarters 1 and 2, 2004
- TCE in Groundwater (>10 µg/L), A-1 Zone, Quarters 1 and 2, 2004
- cis-1,2-DCE in Groundwater (>10 µg/L), A-1 Zone, Quarters 1 and 2, 2004
- Buildings Where VIMS is Required

Notes:
- VOCs US EPA Testing Method TO-15
- Depth in Feet Below Ground Surface (bgs)
- Data displayed in micrograms per cubic meter (µg/m³)
- PCE - Tetrachloroethene
- TCE - Trichloroethene
- cis-1,2-DCE - cis-1,2-Dichloroethene
- E - Indicates that the reportable value is outside the instrument calibration range and the value should be considered as estimated
- Grey - Denotes most recent sampling event

AEI

VOCs IN SOIL VAPOR (PROPOSED NEW DEVELOPMENT LAYOUT)

920 and 950 De Guigne Drive
Sunnyvale, California 94085

FIGURE 3B
Project No. 500004

D:\Drawing Files\AEI Consultants\500004\Site Management Plan\Fig 4A, Lead Concentrations In Soil (Current Site Configuration) - 10/08/2025

EB-7		
Date	Depth	Lead (mg/kg)
3/11/2010	2.5'-3'	3.5
	3.5'-4'	<1.0

SB-24		
Date	Depth	Lead (mg/kg)
10/18/2024	4.5'	- - -

EB-9		
Date	Depth	Lead (mg/kg)
3/11/2010	2.5'-3'	1.4
2/23/2010	1'-1.5'	3.3

EB-4		
Date	Depth	Lead (mg/kg)
3/11/2010	2'-2.5'	7.9
	3'-3.5'	8

EB-10		
Date	Depth	Lead (mg/kg)
2/23/2010	2.5'-3'	6.9
	4'-4.5'	8.8

EB-6		
Date	Depth	Lead (mg/kg)
2/23/2010	1.5'-2'	9.7

EB-3		
Date	Depth	Lead (mg/kg)
3/11/2010	1.5'-2'	5.6
	2.5'-3'	1.3

EB-5		
Date	Depth	Lead (mg/kg)
3/11/2010	1.5'-2'	5.4
	2.5'-3'	<1.0

SB-21		
Date	Depth	Lead (mg/kg)
10/18/2024	3.5'	- - -

EB-2		
Date	Depth	Lead (mg/kg)
3/11/2010	1'-1.5'	10
	2'-2.5'	4.6

SB-42		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	21.4
	1'	9.6

SB-41		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	30.1
	1'	8.20

SB-38		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	23.3
	1	<0.12

EB-1		
Date	Depth	Lead (mg/kg)
3/11/2010	1'-1.5'	8.6
	2'-2.5'	6.6

SB-43		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	14.5
	1	4.64

COMP 5A (12.8)		
Date	Soil Boring	Lead (mg/kg)
5/19/2010	SB-16	4
	SB-17	2
	SB-18	1.5
	SB-19	1.5

SB-39		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	11.6
	1	5.15

COMP 4A (8.09)		
Date	Soil Boring	Lead (mg/kg)
5/19/2010	SB-12	2
	SB-13	2.5
	SB-14	2.45
	SB-15	2

SB-36		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	7.80
	1	11.8

SB-44		
Date	Depth	Lead (mg/kg)
1/9/2025	0.5'	10.4
	1	3.79

SB-11		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	1,100
	1'-1.5'	5.6
	3'-3.5'	35
	5'-5.5'	7.3

SB-37		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	13.0
	1	6.60

SB-40		
Date	Depth	Lead (mg/kg)
1/9/2025	0.5'	7.45
	1	7.65

SB-1		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	31
	1'-1.5'	41
	3'-3.5'	7.5
	5'-5.5'	6.9

SB-5		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	30

SB-6		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	6.5

SB-45		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	7.10
	1	6.60

SB-10		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	33
	1'-1.5'	16
	3'-3.5'	43
	5'-5.5'	4.7

SB-2		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	1,900
	1'-1.5'	13
	3'-3.5'	44
	5'-5.5'	6.3

SB-9		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	310
	1'-1.5'	5.4
	3'-3.5'	7.1
	5'-5.5'	7.4

SB-3		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	6.7
	1'-1.5'	1,200
	2'-2.5'	11
	3'-3.5'	26
	5'-5.5'	7.2

SB-4		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	880
	1'-1.5'	18
	3'-3.5'	31
	5'-5.5'	7

SB-7		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	61
	1'-1.5'	21
	3'-3.5'	14
	5'-5.5'	9.4

SB-8		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	110
	1'-1.5'	15
	3'-3.5'	8.5
	5'-5.5'	6

930 DE GUIGNE DRIVE
950 DE GUIGNE DRIVE
920 DE GUIGNE DRIVE
935 STEWART DRIVE
510 DE GUIGNE DRIVE
945 STEWART DRIVE
DE GUIGNE DRIVE
STEWART DRIVE

EXPLANATION BLOCK

- NMW-09 — Regional Plume(s) Monitoring Well Location (Mohawk Laboratories)
- MW-2 — Regional Plume(s) Monitoring Well Location
- SG-5 — Soil Gas Sample Location (December 2018)
- IA-1 — Indoor Air Sample Location (January 2019)
- SB-19 — Soil Boring Location
- SB-45 — Soil Boring Location (January 2025)
- SG-17 — Soil Gas Probe Location
- AEI-SV-3 — Semi-Permanent Soil Gas Probe Location
- EB-1 — Exploration Boring
- GW-1 — Groundwater Grab Sample
- SV-3/SV-3a — Temporary Soil Vapor Well

Notes:
- Lead US EPA Testing Method 60108
- Depth in Feet Below Ground Surface (bgs)
- Data displayed in micrograms per kilogram (mg/kg)

60 0 60 120 180
APPROXIMATE SCALE IN FEET

AEI

LEAD CONCENTRATIONS IN SOIL (CURRENT SITE CONFIGURATION)

920 and 950 De Guigne Drive
Sunnyvale, California 94085

FIGURE 4A
Project No. 500004

D:\Drawing Files\AEI Consultants\500004\Site Management Plan\Fig 4B. Lead Concentrations In Soil (Proposed New Development Layout) - 10/07/2025

EB-7		
Date	Depth	Lead (mg/kg)
3/11/2010	2.5'-3'	3.5
	3.5'-4'	<1.0

SB-24		
Date	Depth	Lead (mg/kg)
10/18/2024	4.5'	- - -

EB-9		
Date	Depth	Lead (mg/kg)
3/11/2010	2.5'-3'	1.4
2/23/2010	1'-1.5'	3.3

EB-4		
Date	Depth	Lead (mg/kg)
3/11/2010	2'-2.5'	7.9
	3'-3.5'	8

EB-10		
Date	Depth	Lead (mg/kg)
2/23/2010	2.5'-3'	6.9
	4'-4.5'	8.8

EB-6		
Date	Depth	Lead (mg/kg)
2/23/2010	1.5'-2'	9.7

EB-3		
Date	Depth	Lead (mg/kg)
3/11/2010	1.5'-2'	5.6
	2.5'-3'	1.3

EB-5		
Date	Depth	Lead (mg/kg)
3/11/2010	1.5'-2'	5.4
	2.5'-3'	<1.0

SB-21		
Date	Depth	Lead (mg/kg)
10/18/2024	3.5'	- - -

EB-2		
Date	Depth	Lead (mg/kg)
3/11/2010	1'-1.5'	10
	2'-2.5'	4.6

SB-42		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	21.4
	1'	9.6

SB-41		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	30.1
	1'	8.20

SB-38		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	23.3
	1	<0.12

EB-1		
Date	Depth	Lead (mg/kg)
3/11/2010	1'-1.5'	8.6
	2'-2.5'	6.6

SB-43		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	14.5
	1	4.64

COMP 5A (12.8)		
Date	Soil Boring	Lead (mg/kg)
5/19/2010	SB-16	4
	SB-17	2
	SB-18	1.5
	SB-19	1.5

SB-39		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	11.6
	1	5.15

COMP 4A (8.09)		
Date	Soil Boring	Lead (mg/kg)
5/19/2010	SB-12	2
	SB-13	2.5
	SB-14	2.45
	SB-15	2

SB-44		
Date	Depth	Lead (mg/kg)
1/9/2025	0.5'	10.4
	1	3.79

SB-11		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	1,100
	1'-1.5'	5.6
	3'-3.5'	35
	5'-5.5'	7.3

SB-36		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	7.80
	1	11.8

SB-37		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	13.0
	1	6.60

SB-1		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	31
	1'-1.5'	41
	3'-3.5'	7.5
	5'-5.5'	6.9

SB-5		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	30

SB-6		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	6.5

SB-40		
Date	Depth	Lead (mg/kg)
1/9/2025	0.5'	7.45
	1	7.65

SB-45		
Date	Depth	Lead (mg/kg)
1/10/2025	0.5'	7.10
	1	6.60

SB-2		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	1,900
	1'-1.5'	13
	3'-3.5'	44
	5'-5.5'	6.3

SB-10		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	33
	1'-1.5'	16
	3'-3.5'	43
	5'-5.5'	4.7

SB-9		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	310
	1'-1.5'	5.4
	3'-3.5'	7.1
	5'-5.5'	7.4

SB-3		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	6.7
	1'-1.5'	1,200
	2'-2.5'	11
	3'-3.5'	26
	5'-5.5'	7.2

SB-4		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	880
	1'-1.5'	18
	3'-3.5'	31
	5'-5.5'	7

SB-7		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	61
	1'-1.5'	21
	3'-3.5'	14
	5'-5.5'	9.4

SB-8		
Date	Depth	Lead (mg/kg)
5/19/2010	0'-0.5'	110
	1'-1.5'	15
	3'-3.5'	8.5
	5'-5.5'	6

DE GUIGNE DRIVE

HART DRIVE

MW-09 (DeGeuigne)

NMW-09

NMW-12B

46-D 46-S

13-D 13-S

EXPLANATION BLOCK

- NMW-09 — Regional Plume(s) Monitoring Well Location (Mohawk Laboratories)
- MW-2 — Regional Plume(s) Monitoring Well Location
- SG-5 — Soil Gas Sample Location (December 2018)
- IA-1 — Indoor Air Sample Location (January 2019)
- SB-19 — Soil Boring Location
- SB-45 — Soil Boring Location (January 2025)
- SG-17 — Soil Gas Probe Location
- AEI-SV-3 — Semi-Permanent Soil Gas Probe Location
- EB-1 — Exploration Boring
- GW-1 — Groundwater Grab Sample
- SV-3/SV-3a — Temporary Soil Vapor Well
- Proposed Area where Soil Testing is Warranted to Finalize Soil Management Plan

Notes:
- Lead US EPA Testing Method 60108
- Depth in Feet Below Ground Surface (bgs)
- Data displayed in micrograms per kilogram (mg/kg)

60 0 60 120 180
APPROXIMATE SCALE IN FEET

AEI

LEAD CONCENTRATIONS IN SOIL (PROPOSED NEW DEVELOPMENT LAYOUT)

920 and 950 De Guigne Drive
Sunnyvale, California 94085

FIGURE 4B
Project No. 500004

D:\Drawing Files\AEI Consultants\500004\Site Management Plan\Fig 5A_OCP Concentrations In Soil (Current Site Configuration) - 10/07/2025

EB-7				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	2.5-3'	<0.002	<0.002	<0.002
	3.5-4'	<0.002	<0.002	<0.002

EB-4				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	2.5-3'	<0.002	<0.002	<0.002
	3.5-4'	<0.002	<0.002	<0.002

EB-6				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
2/23/2010	1.5-2'	0.16	<0.008	0.012

EB-3				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	1.5-2'	0.0021	<0.0032	<0.0017
	2.5-3'	<0.002	<0.002	<0.002

EB-2				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	1-1.5'	0.014	<0.016	<0.0085
	2-2.5'	<0.0022	<0.0032	<0.0017

EB-1				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	1-1.5'	<0.002	<0.002	<0.002
	2-2.5'	<0.002	<0.002	<0.002

EB-9				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
2/23/2010	1-1.5'	<0.002	<0.002	<0.002
3/11/2010	2.5-3'	<0.0095	<0.016	<0.0085

SB-25				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-25				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-27				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-28				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-21				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	3.5'	1.16	0.0338	0.046

EB-10				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
2/23/2010	2.5-3'	0.66	0.097	0.041
	4-4.5'	1.3	0.12	0.077
3/11/2010	5.5-6'	<0.008	<0.008	<0.008

EB-5				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	1.5-2'	<0.0095	<0.016	<0.0085
	2.5-3'	<0.02	<0.02	<0.02

SB-30				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-29				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-32				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-33				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

COMP 5A SB-16-4', SB-17-2', SB-18-1.5', SB-19-1.5'					
Date	Depth (feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	1.5'-4'	0.713	0.0375	0.0399	10.2

COMP 4A SB-12-2', SB-13-2.5', SB-14-2.75', SB-15-2'					
Date	Depth (feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	2'-2.75	0.730	<0.0074	0.0389	5.57

COMP 3A SB-8-3.25', SB-9-1', SB-10-1.5', SB-11-3'					
Date	Depth (feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	1'-3.25'	0.110	0.00381 J	0.0145	4.57

COMP 2A SB-5-1.25', SB-6-1.25', SB-7-2'					
Date	Depth (feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	1.25'-2'	0.035	<0.0074	<0.0025	1.63

COMP 1A SB-1-1', SB-2-1', SB-3-1.25', SB-4-1.5'					
Date	Depth(feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	1'-1.5'	0.0151	<0.0022	<0.00074	1.37

930 DE GUIGNE DRIVE
950 DE GUIGNE DRIVE
920 DE GUIGNE DRIVE
935 STEWART DRIVE
510 DE GUIGNE DRIVE
945 STEWART DRIVE
DE GUIGNE DRIVE
STEWART DRIVE

EXPLANATION BLOCK

- NMW-09 — Regional Plume(s) Monitoring Well Location (Mohawk Laboratories)
- MW-2 — Regional Plume(s) Monitoring Well Location
- SG-5 — Soil Gas Sample Location (December 2018)
- IA-1 — Indoor Air Sample Location (January 2019)
- SB-19 — Soil Boring Location
- SB-45 — Soil Boring Location (January 2025)
- SG-17 — Soil Gas Probe Location
- AEI-SV-3 — Semi-Permanent Soil Gas Probe Location
- EB-1 — Exploration Boring
- GW-1 — Groundwater Grab Sample
- SV-3/SV-3a — Temporary Soil Vapor Well

Notes:
- Depth in Feet Below Ground Surface (bgs)
- Data displayed in milligrams per kilogram (mg/kg)
- p,p-DDE - Dichlorodiphenyldichloroethylene
- p,p-DDT - Dichlorodiphenyltrichloroethane

* Location may have been destroyed

60 0 60 120 180
APPROXIMATE SCALE IN FEET

AEI

OCP CONCENTRATIONS IN SOIL (CURRENT SITE CONFIGURATION)

920 and 950 De Guigne Drive
Sunnyvale, California 94085

FIGURE 5A
Project No. 500004

D:\Drawing Files\AEI Consultants\500004\Site Management Plan\Fig 5B_OCP Concentrations In Soil (Proposed New Development Layout) - 10/07/2025

EB-7				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	2.5-3'	<0.002	<0.002	<0.002
	3.5-4'	<0.002	<0.002	<0.002

EB-4				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	2.5-3'	<0.002	<0.002	<0.002
	3.5-4'	<0.002	<0.002	<0.002

EB-6				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
2/23/2010	1.5-2'	0.16	<0.008	0.012

EB-3				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	1.5-2'	0.0021	<0.0032	<0.0017
	2.5-3'	<0.002	<0.002	<0.002

EB-2				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	1-1.5'	0.014	<0.016	<0.0085
	2-2.5'	<0.0022	<0.0032	<0.0017

EB-1				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	1-1.5'	<0.002	<0.002	<0.002
	2-2.5'	<0.002	<0.002	<0.002

EB-5				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
3/11/2010	1.5-2'	<0.0095	<0.016	<0.0085
	2.5-3'	<0.02	<0.02	<0.02

SB-21				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	3.5'	1.16	0.0338	0.046

EB-9				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
2/23/2010	1-1.5'	<0.002	<0.002	<0.002
3/11/2010	2.5-3'	<0.0095	<0.016	<0.0085

SB-25				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-25				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-27				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-28				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

EB-10				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
2/23/2010	2.5-3'	0.66	0.097	0.041
	4-4.5'	1.3	0.12	0.077
3/11/2010	5.5-6'	<0.008	<0.008	<0.008

SB-30				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-29				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-32				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

SB-33				
Date	Depth	p,p-DDE	p,p-DDT	Dieldrin
10/18/2024	4.5'	<0.00061	<0.00074	<0.00025

COMP 5A					
SB-16-4', SB-17-2', SB-18-1.5', SB-19-1.5'					
Date	Depth (feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	1.5'-4'	0.713	0.0375	0.0399	10.2

COMP 1A					
SB-1-1', SB-2-1', SB-3-1.25', SB-4-1.5'					
Date	Depth(feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	1'-1.5'	0.0151	<0.0022	<0.00074	1.37

COMP 2A					
SB-5-1.25', SB-6-1.25', SB-7-2'					
Date	Depth (feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	1.25'-2'	0.035	<0.0074	<0.0025	1.63

COMP 4A					
SB-12-2', SB-13-2.5', SB-14-2.75', SB-15-2'					
Date	Depth (feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	2'-2.75	0.730	<0.0074	0.0389	5.57

COMP 3A					
SB-8-3.25', SB-9-1', SB-10-1.5', SB-11-3'					
Date	Depth (feet bgs)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Arsenic (mg/kg)
10/17/2024	1'-3.25'	0.110	0.00381 J	0.0145	4.57

DE GUIGNE DRIVE

STEWART DRIVE

NMW-09

MW-09 (DeGeuigne)

GW-1 GW-2 GW-3 GW-4

MW-2 MW-5 MW-6* MW-7 MW-8* MW-9

EB-1 EB-2 EB-3 EB-4 EB-5 EB-6 EB-7 EB-9

SV-1/SV-1A SV-2 SV-3/SV-3A SV-4/SV-4A

AEI-SV-1 AEI-SV-2 AEI-SV-3 AEI-SV-4 AEI-SV-5 AEI-SV-6 AEI-SV-7

NMW-12B 46-D 46-S S-38A S-38B S-39A S-39B 13-D 13-S

SG-1 SG-2 SG-3 SG-4 SG-5 SG-6 SG-7 SG-8 SG-9 SG-10 SG-11 SG-12 SG-13 SG-14 SG-15 SG-16 SG-17 SG-18 SG-19 SG-20 SG-21 SG-22 SG-23 SG-24 SG-25 SG-26 SG-27

SB-1 SB-2 SB-3 SB-4 SB-5 SB-6 SB-7 SB-8 SB-9 SB-10 SB-11 SB-12 SB-13 SB-14 SB-15 SB-16 SB-17 SB-18 SB-19 SB-20 SB-21 SB-22 SB-23 SB-26 SB-31 SB-32 SB-33 SB-34 SB-35 SB-36 SB-37 SB-38 SB-39 SB-40 SB-41 SB-42 SB-43 SB-44 SB-45

IA-1 IA-2 IA-3 IA-4 IA-5

EXPLANATION BLOCK

- NMW-09 — Regional Plume(s) Monitoring Well Location (Mohawk Laboratories)
- MW-2 — Regional Plume(s) Monitoring Well Location
- SG-5 — Soil Gas Sample Location (December 2018)
- IA-1 — Indoor Air Sample Location (January 2019)
- SB-19 — Soil Boring Location
- SB-45 — Soil Boring Location (January 2025)
- SG-17 — Soil Gas Probe Location
- AEI-SV-3 — Semi-Permanent Soil Gas Probe Location
- EB-1 — Exploration Boring
- GW-1 — Groundwater Grab Sample
- SV-3/SV-3a — Temporary Soil Vapor Well
- Proposed Area where Soil Testing is Warranted to Finalized Soil Management Plan

Notes:
- Depth in Feet Below Ground Surface (bgs)
- Data displayed in milligrams per kilogram (mg/kg)
- p,p-DDE - Dichlorodiphenyldichloroethylene
- p,p-DDT - Dichlorodiphenyltrichloroethane

* Location may have been destroyed

60 0 60 120 180
APPROXIMATE SCALE IN FEET

AEI

OCP CONCENTRATIONS IN SOIL (PROPOSED NEW DEVELOPMENT LAYOUT)

920 and 950 De Guigne Drive
Sunnyvale, California 94085

FIGURE 5B
Project No. 500004

TABLES

TABLE 1: SUMMARY OF SOIL SAMPLE RESULTS - LEAD
Oakmead West, Sunnyvale, California 94085

Location ID	Date	Depth (feet bgs)	Lead (mg/kg)
		Residential ESL	80
		Commercial ESL	320
		Maximum Background Concentration	97.1
SB-36	1/10/2025	0.5	7.80
SB-36	1/10/2025	1	11.8
SB-37	1/10/2025	0.5	13.0
SB-37	1/10/2025	1	6.60
SB-38	1/10/2025	0.5	23.3
SB-38	1/10/2025	1	<0.12
SB-39	1/10/2025	0.5	11.6
SB-39	1/10/2025	1	5.15
SB-40	1/9/2025	0.5	7.45
SB-40	1/9/2025	1	7.65
SB-41	1/10/2025	0.5	30.1
SB-41	1/10/2025	1	8.20
SB-42	1/10/2025	0.5	21.4
SB-42	1/10/2025	1	9.60
SB-43	1/10/2025	0.5	14.5
SB-43	1/10/2025	1	4.64
SB-44	1/9/2025	0.5	10.4
SB-44	1/9/2025	1	3.79
SB-45	1/10/2025	0.5	7.10
SB-45	1/10/2025	1	6.60
COMP 1A	10/17/2024	1-1.5	2.89
COMP 2A	10/17/2024	1.25-2	4.71
COMP 3A	10/17/2024	1-3.25	7.99
COMP 4A	10/17/2024	2-2.75	8.09
COMP 5A	10/17/2024	1.5-4	12.8

TABLE 1: SUMMARY OF SOIL SAMPLE RESULTS - LEAD
Oakmead West, Sunnyvale, California 94085

Location ID	Date	Depth (feet bgs)	Lead (mg/kg)
		Residential ESL	80
		Commercial ESL	320
		Maximum Background Concentration	97.1
SB-1	5/19/2010	0-0.5	31
SB-1	5/19/2010	1-1.5	41
SB-1	5/19/2010	3-3.5	7.5
SB-1	5/19/2010	5-5.5	6.9
SB-2	5/19/2010	0-0.5	**1,900**
SB-2	5/19/2010	1-1.5	13
SB-2	5/19/2010	3-3.5	44
SB-2	5/19/2010	5-5.5	6.3
SB-3	5/19/2010	0-0.5	6.7
SB-3	5/19/2010	2-2.5	11
SB-3	5/19/2010	1-1.5	**1,200**
SB-3	5/19/2010	3-3.5	26
SB-3	5/19/2010	5.5-6	7.2
SB-4	5/19/2010	0-0.5	**880**
SB-4	5/19/2010	1-1.5	18
SB-4	5/19/2010	3-3.5	31
SB-4	5/19/2010	5-5.5	7
SB-5	5/19/2010	0-0.5	30
SB-6	5/19/2010	0-0.5	6.5
SB-7	5/19/2010	0-0.5	61
SB-7	5/19/2010	1-1.5	21
SB-7	5/19/2010	3-3.5	14
SB-7	5/19/2010	6-6.5	9.4
SB-8	5/19/2010	0-0.5	**110**
SB-8	5/19/2010	1-1.5	15
SB-8	5/19/2010	3-3.5	8.5
SB-8	5/19/2010	5-5.5	6
SB-9	5/19/2010	0-0.5	**310**
SB-9	5/19/2010	1-1.5	5.4
SB-9	5/19/2010	3-3.5	7.1
SB-9	5/19/2010	5-5.5	7.4
SB-10	5/19/2010	0-0.5	33
SB-10	5/19/2010	1-1.5	16
SB-10	5/19/2010	3-3.5	43
SB-10	5/19/2010	5-5.5	4.7
SB-11	5/19/2010	0-0.5	**1,100**
SB-11	5/19/2010	1-1.5	5.6
SB-11	5/19/2010	3-3.5	35
SB-11	5/19/2010	5-5.5	7.3

TABLE 1: SUMMARY OF SOIL SAMPLE RESULTS - LEAD
Oakmead West, Sunnyvale, California 94085

Location ID	Date	Depth (feet bgs)	Lead (mg/kg)
		Residential ESL	80
		Commercial ESL	320
		Maximum Background Concentration	97.1
EB-1	3/11/2010	1-1.5	8.6
EB-1	3/11/2010	2-2.5	6.6
EB-2	3/11/2010	1-1.5	10
EB-2	3/11/2010	2-2.5	4.6
EB-3	3/11/2010	1.5-2	5.6
EB-3	3/11/2010	2.5-3	1.3
EB-4	3/11/2010	2-2.5	7.9
EB-4	3/11/2010	3-3.5	8
EB-5	3/11/2010	1.5-2	5.4
EB-5	3/11/2010	2.5-3	<1.0
EB-6	2/23/2010	1.5-2	9.7
EB-7	3/11/2010	2.5-3	3.5
EB-7	3/11/2010	3.5-4	<1.0
EB-9	3/11/2010	2.5-3	1.4
EB-9	2/23/2010	1-1.5	3.3
EB-10	2/23/2010	2.5-3	6.9
EB-10	2/23/2010	4-4.5	8.8
EB-10	3/11/2010	5.5-6	--

Notes:

mg/kg	Milligrams per kilogram
COMP 1A	SB-1-1', SB-2-1', SB-3-1.25', SB-4-1.5'
COMP 2A	SB-5-1.25', SB-6-1.25', SB-7-2'
COMP 3A	SB-8-3.25', SB-9-1', SB-10-1.5', SB-11-3'
COMP 4A	SB-12-2', SB-13-2.5', SB-14-2.75', SB-15-2'
COMP 5A	SB-16-4', SB-17-2', SB-18-1.5', SB-19-1.5'
<	Less than the stated method detection limit
bgs	Below ground surface
Bold	Result exceeds a regulatory screening level
ESL	Environmental Screening Level, based on direct exposure human health risk levels. From San Francisco Bay Regional Water Quality Control Board (Regional Water Board), User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final, Revision 2, dated July 2019.
Maximum Background Concentration	Typical maximum background concentration provided based on "Background Concentrations of Trace and Major Elements in California Soils" by Bradford, G.R., et. al., dated March 1996.

TABLE 2: SOIL SAMPLE RESULTS - PESTICIDES
Oakmead West, Sunnyvale, California 94085

Location ID	Date	Depth (feet bgs)	Heptachlor Epoxide (mg/kg)	p,p-DDD (mg/kg)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Endrin (mg/kg)	Endrin Ketone (mg/kg)	Remaining OCPs (mg/kg)
		Residential ESL	0.062	2.7	1.8	1.9	0.037	21	--	Various
		Commercial ESL	0.28	12.0	8.3	8.5	0.160	290	--	Various
COMP 1A	10/17/2024	1-1.5	<0.00092	<0.0019	0.0151	<0.0022	<0.00074	<0.0024	<0.0013	<MDL
COMP 2A	10/17/2024	1.25-2	<3.1	<0.0064	0.035	<0.0074	<0.0025	<0.0079	<0.0043	<MDL
COMP 3A	10/17/2024	1-3.25	<0.00092	<0.0019	0.110	0.00381 J	0.0145	0.00503 J	<0.0013	<MDL
COMP 4A	10/17/2024	2-2.75	<0.0031	0.0148 J	0.230	<0.0074	**0.0389**	<0.0079	<0.0043	<MDL
SB-12	10/17/2024	2	<0.0030	<0.0063	0.00777 J	<0.0073	<0.0024	<0.0078	<0.0043	<MDL
SB-13	10/17/2024	2.5	<0.0031	0.0236	0.699	<0.0074	**0.0826**	<0.0079	<0.0043	<MDL
SB-14	10/17/2024	2.75	<0.0030	0.0113 J	0.190	<0.0073	0.0298	<0.0078	<0.0043	<MDL
SB-15	10/17/2024	2	<0.0030	<0.0063	<0.0060	<0.0073	<0.0025	<0.0078	<0.0043	<MDL
COMP 5A	10/17/2024	1.5-4	<0.0031	<0.0064	0.713	0.0376	**0.0399**	<0.0079	<0.0043	<MDL
SB-16	10/17/2024	4	<0.0030	<0.0063	0.0986	<0.0073	0.00616 J	<0.0078	<0.0043	<MDL
SB-17	10/17/2024	2	<0.0030	<0.0063	0.0618	<0.0073	<0.0025	<0.0078	<0.0043	<MDL
SB-18	10/17/2024	1.5	<0.0030	<0.0063	<0.0060	<0.0073	<0.0025	<0.0078	<0.0043	<MDL
SB-19	10/17/2024	1.5	<0.0031	<0.0063	0.209	0.0201	0.00763 J	<0.0079	<0.0043	<MDL
SB-21	10/18/2024	3.5	0.00254 J	0.0629	1.16	0.0338	**0.046**	<0.0024	<0.0013	<MDL
SB-22	10/18/2024	2.5	0.00512 J	0.0307	0.452	0.0345	0.0246	0.00631	<0.0013	<MDL
SB-22	10/18/2024	4.5	0.00498 J	0.0188	0.630	0.0255	0.0155	0.00752	<0.0013	<MDL
SB-24	10/18/2024	4.5	<0.00031	<0.00064	<0.00061	<0.00074	<0.00025	<0.00079	<0.00043	<MDL
SB-25	10/18/2024	3	<0.00091	0.00750	0.633	0.0939	**0.0762**	0.0477	0.00594 J	<MDL
SB-25	10/18/2024	4.5	<0.00031	<0.00064	<0.00061	<0.00074	<0.00025	<0.00079	<0.00043	<MDL
SB-27	10/18/2024	3	<0.00091	0.00661	1.48	0.114	**0.0644**	0.0308	<0.0013	<MDL
SB-27	10/18/2024	4.5	<0.00031	<0.00064	<0.00061	<0.00074	<0.00025	<0.00079	<0.00043	<MDL
SB-28	10/18/2024	3	<0.00091	<0.0019	0.548	0.0507	**0.0388**	0.0158	0.00238 J	<MDL
SB-28	10/18/2024	4.5	0.00247	<0.00064	<0.00061	<0.00074	<0.00025	<0.00079	<0.00043	<MDL
SB-29	10/18/2024	4.5	<0.00031	<0.00064	<0.00061	<0.00074	<0.00025	<0.00079	<0.00043	<MDL
SB-30	10/18/2024	4.5	<0.00031	<0.00064	<0.00061	<0.00074	<0.00025	<0.00079	<0.00043	<MDL
SB-32	10/18/2024	4.5	<0.00031	<0.00064	0.160	0.00781	<0.00025	<0.00079	<0.00043	<MDL
SB-33	10/18/2024	4.5	<0.00031	<0.00064	<0.00061	<0.00074	<0.00025	<0.00079	<0.00043	<MDL

TABLE 2: SOIL SAMPLE RESULTS - PESTICIDES
Oakmead West, Sunnyvale, California 94085

Location ID	Date	Depth (feet bgs)	Heptachlor Epoxide (mg/kg)	p,p-DDD (mg/kg)	p,p-DDE (mg/kg)	p,p-DDT (mg/kg)	Dieldrin (mg/kg)	Endrin (mg/kg)	Endrin Ketone (mg/kg)	Remaining OCPs (mg/kg)
		Residential ESL	0.062	2.7	1.8	1.9	0.037	21	--	Various
		Commercial ESL	0.28	12.0	8.3	8.5	0.160	290	--	Various
EB-1	3/11/2010	1-1.5	--	<0.002	<0.002	<0.002	<0.002	<0.002	--	<MDL
EB-1	3/11/2010	2-2.5	--	<0.002	<0.002	<0.002	<0.002	<0.002	--	<MDL
EB-2	3/11/2010	1-1.5	--	<0.0094	0.014	<0.016	<0.0085	<0.011	--	<MDL
EB-2	3/11/2010	2-2.5	--	<0.0019	0.0022	<0.0032	<0.0017	<0.0023	--	<MDL
EB-3	3/11/2010	1.5-2	--	<0.0019	0.0021	<0.0032	<0.0017	<0.0023	--	<MDL
EB-3	3/11/2010	2.5-3	--	<0.002	<0.002	<0.002	<0.002	<0.002	--	<MDL
EB-4	3/11/2010	2-2.5	--	0.098	0.56	<0.016	**0.05**	<0.011	--	<MDL
EB-4	3/11/2010	3-3.5	--	<0.0094	0.31	0.06	0.035	<0.011	--	<MDL
EB-5	3/11/2010	1.5-2	--	<0.0094	<0.0095	<0.016	<0.0085	<0.011	--	<MDL
EB-5	3/11/2010	2.5-3	--	<0.02	<0.02	<0.02	<0.02	<0.02	--	<MDL
EB-6	2/23/2010	1.5-2	--	0.022	0.16	<0.008	0.012	<0.008	--	<MDL
EB-7	3/11/2010	2.5-3	--	<0.002	<0.002	<0.002	<0.002	<0.002	--	<MDL
EB-7	3/11/2010	3.5-4	--	<0.002	<0.002	<0.002	<0.002	<0.002	--	<MDL
EB-9	3/11/2010	2.5-3	--	<0.0094	<0.0095	<0.016	<0.0085	<0.011	--	<MDL
EB-9	2/23/2010	1-1.5	--	<0.002	<0.002	<0.002	<0.002	<0.002	--	<MDL
EB-10	2/23/2010	2.5-3	--	<0.008	0.66	0.097	**0.041**	0.02	--	<MDL
EB-10	2/23/2010	4-4.5	--	0.013	1.3	0.12	**0.077**	0.035	--	<MDL
EB-10	3/11/2010	5.5-6	--	<0.008	<0.008	<0.008	<0.008	<0.008	--	<MDL

Notes:

mg/kg	Milligrams per kilogram
COMP 1A	SB-1-1', SB-2-1', SB-3-1.25', SB-4-1.5'
COMP 2A	SB-5-1.25', SB-6-1.25', SB-7-2'
COMP 3A	SB-8-3.25', SB-9-1', SB-10-1.5', SB-11-3'
COMP 4A	SB-12-2', SB-13-2.5', SB-14-2.75', SB-15-2'
COMP 5A	SB-16-4', SB-17-2', SB-18-1.5', SB-19-1.5'
<MDL	Less than the laboratory method detection limit
bgs	Below ground surface
DDE	Dichlorodiphenyldichloroethylene
DDT	Dichlorodiphenyltrichloroethane
DDD	Dichlorodiphenyldichloroethane
OCPs	Organochlorine Pesticides
Bold	Result exceeds a regulatory screening level
J	Indicates a value between the MDL and practical quantitation limit (PQL); the reported concentration should be considered as estimated rather the quantitative
--	Not established and/or not analyzed
ESL	Environmental Screening Level, based on direct exposure human health risk levels. From San Francisco Bay Regional Water Quality Control Board (Regional Water Board), User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final, Revision 2, dated July 2019.

TABLE 3: SUMMARY OF SOIL GAS SAMPLE RESULTS
Sunnyvale Park Place, Sunnyvale, California

Location ID	Date	Depth (feet bgs)	Benzene (µg/m³)	Toluene (µg/m³)	Ethylbenzene (µg/m³)	Total Xylenes (µg/m³)	PCE (µg/m³)	TCE (µg/m³)	cis-1,2-DCE (µg/m³)	trans-1,2-DCE (µg/m³)	Acetone (µg/m³)	Carbon Disulfide (µg/m³)	Chloroform (µg/m³)	1,1-Dichloroethane (µg/m³)	4-Ethyltoluene (µg/m³)	Freon 113 (µg/m³)	Trichlorofluoro-methane (µg/m³)
		Residential ESL	3.2	15,000	37	3,500	15	16	1,400	1,400	1,100,000	--	4.1	58	--	--	--
		Commercial ESL	14	61,000	160	15,000	67	100	5,800	5,800	4,500,000	--	18	260	--	--	--
SG-8	10/17/2024	4.5	**4.9**	11	<1.9	13	**17**	9.0	<2.5	<1.4	86	13	<2.9	<1.6	<1.6	38	<1.7
AEI-SV-1	1/13/2025	5	<0.44	<0.75	3.0	17.7	**20**	5.6	<0.83	<0.48	<0.40	4.0	<0.97	<0.54	<0.55	28	3.8
AEI-SV-1	7/29/2025	5	<0.44	4.5	<0.63	<1.28	13	14	<0.83	<0.48	<0.40	<0.37	<0.97	<0.83	<0.55	19	5.8
SG-9	10/17/2024	4.5	**6.9**	11	2.2	11	13	**18**	<0.83	<0.48	99	2.5	<0.97	<0.54	<0.55	8	4.6
AEI-SV-2	1/13/2025	5	<0.44	2.5	2.4	12.9	13	**24**	<0.83	2.9	<0.40	10	<0.97	<0.54	<0.55	7.7	3.5
AEI-SV-2	7/29/2025	5	<0.44	2.9	<0.63	<1.28	8.7	**40**	<0.83	<0.48	17	<0.37	<0.97	<0.83	<0.55	6.0	3.8
AEI-SV-3	1/13/2025	5	**13**	16	6.5	31	**24**	**21**	6.6	3.6	48	130	**33**	<0.54	<0.55	16	<0.56
AEI-SV-3	7/29/2025	5	3.1	4.1	<0.63	<1.28	**24**	**50**	<0.83	<0.48	14	5.2	<0.97	<0.83	<0.55	8.7	<0.56
AEI-SV-4	1/13/2025	5	1.6	3.0	2.2	12	13	**340**	31	27	12	22	<0.97	4.6	<0.55	82	7.9
AEI-SV-4	7/29/2025	5	<0.44	4.2	<0.63	6.1	**15**	**700 E**	34	42	<0.40	<0.37	**24**	6.9	<0.55	73	7.2
SG-20	10/18/2024	4.5	**5.9**	10	<1.9	7.9	<4.4	**210**	<2.5	12	120	60	<2.9	<1.6	<1.6	470	37
AEI-SV-5	1/13/2025	5	**6.7**	13	4.3	20.9	14	**100**	8.8	21	<0.40	130	**5.9**	2.6	<0.55	320	28
AEI-SV-5	7/29/2025	5	<0.44	4.3	5.5	32.1	**31**	**83**	<0.83	4.3	40	<0.37	<0.97	<0.83	<0.55	170	<0.56
AEI-SV-6	1/13/2025	5	**5.7**	13	3.1	14.5	11	<0.81	14	18	24	140	<0.97	3.9	<0.55	<1.0	<0.56
AEI-SV-6	7/29/2025	5	<0.44	3.8	<0.63	3.9	9.8	<0.81	2.0	24	16	<0.37	<0.97	<0.83	<0.55	23	3.3
AEI-SV-7	1/13/2025	5	3.0	8.3	3.1	15.8	**22**	4.8	3.0	<0.48	33	62	<0.97	<0.54	<0.55	41	<0.56
AEI-SV-7	7/29/2025	5	<0.44	3.7	<0.63	2.8	**66**	2.7	<0.83	<0.48	17	<0.37	<0.97	<0.83	<0.55	74	3.4
SV-8	7/29/2025	5	<0.44	3.6	<0.63	2.3	5.6	<0.81	<0.83	<0.48	12	6.9	<0.97	<0.83	<0.55	25	4.5
SV-9	7/29/2025	5	**4.2**	18	5.6	19.4	13	**210**	<0.83	2.8	<0.40	54	<0.97	<0.83	<0.55	88	7.1
SV-10	7/29/2025	5	<0.44	3.5	<0.63	3.4	9.8	<0.81	<0.83	<0.48	19	15	**11**	<0.83	<0.55	13	<0.56
SG-13	10/17/2024	4.5	<13	<23	<19	<38.1	<44	<24	<25	<14	<12	<11	<29	<16	<16	<31	<17
SV-13	7/29/2025	5	**15**	65.0	16	70	8.0	2.8	<0.83	<0.48	<0.40	220	<0.97	<0.83	22	26	3.0
SG-14	10/17/2024	4.5	<13	<23	<19	<38.1	<44	<24	63	<14	<12	<11	<29	<16	<16	<31	<17
SV-14	7/29/2025	5	**10**	26	6.6	30.2	10	**40**	<0.83	<0.48	<0.40	9.0	<0.97	<0.83	9.7	19	<0.56
SG-19	10/18/2024	4.5	**16**	49	<3.8	22	<8.7	<4.8	<5.0	<2.9	110	150	<5.8	<3.3	<3.3	<6.1	<3.3
SV-19	7/29/2025	5	<0.44	29	<0.63	3.3	6.2	<0.81	<0.83	<0.48	15	10	<0.97	<0.83	<0.55	<1.0	<0.56
SG-22	10/18/2024	4.5	**10**	30	<1.9	33.7	<4.4	<2.4	<2.5	<1.4	150	32	<2.9	<1.6	17	<3.1	<1.7
SV-22	7/29/2025	5	<0.44	5.5	<0.63	4.2	14	<0.81	<0.83	<0.48	13	11	<0.97	<0.83	<0.55	11	60

Notes:

µg/m³	Micrograms per cubic meter
<	Less than the stated method detection limit
bgs	Below ground surface
PCE	Tetrachloroethylene/Tetrachloroethene
TCE	Trichloroethylene/ Trichloroethene
cis-1,2-DCE	cis-1,2-Dichloroethene
trans-1,2-DCE	trans-1,2-Dichloroethene
VOCs	Volatile Organic Compounds
Bold	Result exceeds a Comparison Value
--	Not analyzed or established
	Denotes most recent sampling event
ESL	Environmental Screening Level, based on subslab/soil gas vapor intrusion human health risk levels. From San Francisco Bay Regional Water Quality Control Board (Regional Water Board), User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final, dated July 2025.
J	Indicates a value between the method MDL and practical quantitation limit (PQL) and that the reported concentration should be considered as estimated rather the quantitative
E	Indicates that the reportable value is outside the instrument calibration range and the value should be considered as estimated

TABLE 3: SUMMARY OF SOIL GAS SAMPLE RESULTS
Sunnyvale Park Place, Sunnyvale, California

Location ID	Date	Depth (feet bgs)	Benzene (µg/m³)	Toluene (µg/m³)	Ethylbenzene (µg/m³)	Total Xylenes (µg/m³)	PCE (µg/m³)	TCE (µg/m³)	cis-1,2-DCE (µg/m³)	trans-1,2-DCE (µg/m³)	Acetone (µg/m³)	Carbon Disulfide (µg/m³)	Chloroform (µg/m³)	1,1-Dichloroethane (µg/m³)	4-Ethyltoluene (µg/m³)	Freon 113 (µg/m³)	Trichlorofluoro-methane (µg/m³)
		Residential ESL	3.2	15,000	37	3,500	15	16	1,400	1,400	1,100,000	--	4.1	58	--	--	--
		Commercial ESL	14	61,000	160	15,000	67	100	5,800	5,800	4,500,000	--	18	260	--	--	--
SG-10	10/17/2024	4.5	**4.2**	6.6	<0.74	8.6	12	<0.94	<0.97	<0.56	100	12	<1.1	<0.64	<0.64	7	4.3
SG-11	10/17/2024	4.5	2.3	5.2	<0.63	5.4	12	<0.81	<0.83	<0.48	83	<0.37	<1.3	<0.72	<0.55	130	18
SG-12	10/17/2024	4.5	**95**	130	<19	94	<44	<23	<25	<14	<12	130	<29	<16	<16	<31	<17
SG-15	10/17/2024	4.5	**10**	16	<0.63	11.1	5.8	11	<0.83	<0.48	110	<0.37	<0.97	<0.54	2.9	340	3.4
SG-16	10/17/2024	4.5	**6.6**	10	2.9	14.8	5.9	10	<0.83	<0.48	110	35	<0.97	<0.54	<0.55	75	17
SG-17	10/17/2024	4.5	<13	<23	<19	<38.1	<44	<24	<25	<14	<12	<11	<29	<16	<16	160	<17
SG-18	10/18/2024	4.5	**25**	55	<6.3	22	<15	<8.1	<8.3	<4.8	250	54	<9.7	<5.4	<5.5	<10	<5.6
SG-20	10/18/2024	4.5	**5.9**	10	<1.9	7.9	<4.4	**210**	<2.5	12	120	60	<2.9	<1.6	<1.6	470	37
SG-21	10/18/2024	4.5	<1.3	8.5	<1.9	7.7	<4.4	<2.4	<2.5	<1.4	130	27	<2.9	<1.6	<1.6	<3.1	<1.7
SG-23	10/18/2024	4.5	**13**	51	15	42	<7.3	<4.0	<4.2	<2.4	170	22	<4.8	<2.7	<2.7	67	<2.8
SG-24	10/18/2024	4.5	**12**	32	<3.8	16	<8.7	<4.8	<5.0	<2.9	110	62	<5.8	<3.3	<3.3	160	<3.3
SG-25	10/18/2024	4.5	<2.2	13	<3.1	12	**22**	<4.0	<4.2	<2.4	100	11	<4.8	<2.7	<2.7	72	<2.8
SG-26	10/18/2024	4.5	<2.6	13	<3.8	<7.7	<26	<4.8	<5.0	<2.9	90	20	<5.8	<3.3	<3.3	<6.1	<3.3
SG-27	10/18/2024	4.5	**25**	55	**61**	322	<8.7	<4.8	<5.0	<2.9	140	73	<5.8	<3.3	16	<6.1	<3.3
SG-5	12/21/2018	5	--				3.36	36.3	<1.59				--				
SG-6	12/21/2018	5	--				<2.72	**172**	**4,600**				--				
SG-7	12/21/2018	5	--				4.99	<2.14	8.84				--				
SV-1	3/11/2010	5	**64**	--	--	--	--	--	<4.7	--	--	--	--	--	--	--	--
SV-1	4/19/2010	5	<40	--	--	--	--	--	<50	--	--	--	--	--	--	--	--
SV-1	3/11/2010	9.5	<13	--	--	--	--	--	<16	--	--	--	--	--	--	--	--
SV-2	3/11/2010	5	**200**	--	--	--	--	--	<18	--	--	--	--	--	--	--	--
SV-2	4/19/2010	5	<69	--	--	--	--	--	<67	--	--	--	--	--	--	--	--
SV-3	3/11/2010	5	<3.8	--	--	--	--	--	<4.7	--	--	--	--	--	--	--	--
SV-3	3/11/2010	9.5	<10	--	--	--	--	--	<12	--	--	--	--	--	--	--	--
SV-4	3/11/2010	5	<3.7	--	--	--	--	--	<4.6	--	--	--	--	--	--	--	--
SV-4	4/19/2010	5	<39	--	--	--	--	--	<48	--	--	--	--	--	--	--	--
SV-4	3/11/2010	9.5	**210**	--	--	--	--	--	13	--	--	--	--	--	--	--	--
SV-4	4/19/2010	9.5	<70	--	--	--	--	--	<87	--	--	--	--	--	--	--	--

Notes:

µg/m³	Micrograms per cubic meter
<	Less than the stated method detection limit
bgs	Below ground surface
PCE	Tetrachloroethylene/Tetrachloroethene
TCE	Trichloroethylene/ Trichloroethene
cis-1,2-DCE	cis-1,2-Dichloroethene
Bold	Result exceeds a Comparison Value
--	Not analyzed or established
	Denotes most recent sampling event
ESL	Environmental Screening Level, based on subslab/soil gas vapor intrusion human health risk levels. From San Francisco Bay Regional Water Quality Control Board (Regional Water Board), User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final, dated July 2025.
J	Indicates a value between the method MDL and practical quantitation limit (PQL) and that the reported concentration should be considered as estimated rather the quantitative
E	Indicates that the reportable value is outside the instrument calibration range and the value should be considered as estimated

TABLE 3: SUMMARY OF SOIL GAS SAMPLE RESULTS
Sunnyvale Park Place, Sunnyvale, California

Location ID	Date	Depth (feet bgs)	2-Hexanone (µg/m³)	Hexane (µg/m³)	4-Methyl-2-Pentanone (µg/m³)	2-Butanone (µg/m³)	Naphthalene (µg/m³)	2-Propanol (µg/m³)	tert-Butanol (µg/m³)	1,1,1-Trichloroethane (µg/m³)	1,2,4-Trimethylbenzene (µg/m³)	1,3,5-Trimethylbenzene (µg/m³)	1,1-Difluoroethane (µg/m³)	Remaining VOCs (µg/m³)	Oxygen (%)	Helium Detected in Sample (%)	Field Helium Shroud (%)	Maximum Allowable Helium Detection in Sample (%)
Residential ESL			--	--	100,000	170,000	2.8	--	--	35,000	--	--	--	Various	--	--		
Commercial ESL			--	--	440,000	730,000	12	--	--	150,000	--	--	--	Various	--	--		
SG-8	10/17/2024	4.5	<2.0	23	100	90	<3.8	<3.8	<1.9	13	<1.8	<0.90	<1.0	<MDL	6.9	<0.13	24.1	1.21%
AEI-SV-1	1/13/2025	5	<0.65	2.5	<0.75	<0.39	<1.3	<1.3	<0.62	15	<0.60	<0.30	<0.35	<MDL	11	<0.072	29.7	1.49%
AEI-SV-1	7/29/2025	5	<0.65	<0.46	<0.75	5.9	<1.3	29	2.8	32	<0.60	<0.30	<0.35	<MDL	7.4	<0.19	34.4	1.72%
SG-9	10/17/2024	4.5	<0.65	38	38	100	<1.3	17	<0.62	6.5	2.8	<0.30	<0.35	<MDL	2.9	<0.13	24.1	1.21%
AEI-SV-2	1/13/2025	5	<0.65	3.7	<0.75	<0.39	<1.3	16	2.2	6.5	<0.60	<0.30	<0.35	<MDL	8.4	<0.050	23.9	1.20%
AEI-SV-2	7/29/2025	5	<0.65	<0.46	<0.75	<0.39	<1.3	18	<0.62	7.2	<0.60	<0.30	<0.35	<MDL	11	<0.041	25.5	1.28%
AEI-SV-3	1/13/2025	5	<0.65	160	3.4	<0.39	<1.3	<1.3	<0.62	<0.79	<0.60	<0.30	<0.35	<MDL	14	<0.034	27.3	1.37%
AEI-SV-3	7/29/2025	5	<0.65	<0.46	<0.75	<0.39	<1.3	43	1.5	<0.79	<0.60	<0.30	<0.35	<MDL	9.8	<0.081	24.9	1.25%
AEI-SV-4	1/13/2025	5	<0.65	4.1	<0.75	<0.39	<1.3	<1.3	<0.62	36	<0.60	<0.30	<0.35	<MDL	15	0.38 J	24.2	1.21%
AEI-SV-4	7/29/2025	5	<0.65	<0.46	<0.75	<0.39	<1.3	1,700	6.9	43	<0.60	<0.30	<0.35	<MDL	16	<0.027	26.7	1.34%
SG-20	10/18/2024	4.5	<2.0	9.3	220	31	<1.3	620	<1.9	75	<1.8	<0.90	<1.0	<MDL	9.8	<0.091	28.5	1.43%
AEI-SV-5	1/13/2025	5	<0.65	9.0	<0.75	<0.39	<1.3	620	2.8	53	<0.60	<0.30	<0.35	<MDL	16	<0.092	25.2	1.26%
AEI-SV-5	7/29/2025	5	<0.65	<0.46	3.2	<0.39	<1.3	160	<0.62	34	<0.60	<0.30	<0.35	<MDL	18	<0.041	27.8	1.39%
AEI-SV-6	1/13/2025	5	<0.65	9.8	2.7	<0.39	<1.3	22	<0.62	<0.79	<0.60	<0.30	<0.35	<MDL	15	<0.086	23.4	1.17%
AEI-SV-6	7/29/2025	5	<0.65	<0.46	<0.75	<0.39	<1.3	32	<0.62	<0.79	<0.60	<0.30	<0.35	<MDL	16	<0.027	24.9	1.25%
AEI-SV-7	1/13/2025	5	<0.65	15	2.3	<0.39	<1.3	18	<0.62	3.2	<0.60	<0.30	<0.35	<MDL	17	<0.028	25.2	1.26%
AEI-SV-7	7/29/2025	5	<0.65	<0.46	<0.75	<0.39	<1.3	21	4.0	7.5	<0.60	<0.30	<0.35	<MDL	9.4	<0.13	25.7	1.29%
SV-8	7/29/2025	5	<0.65	<0.46	<0.75	<0.39	<1.3	19	7.0	24	<0.60	<0.30	<0.35	<MDL	17	<0.027	23.0	1.15%
SV-9	7/29/2025	5	<0.65	<0.46	2.2	<0.39	<1.3	18	11	31	<0.60	<0.30	<0.35	<MDL	16	<0.12	25.8	1.29%
SV-10	7/29/2025	5	<0.65	<0.46	<0.75	<0.39	<1.3	55	8.0	<0.79	<0.60	<0.30	<0.35	<MDL	12	<0.082	23.9	1.20%
SG-13	10/17/2024	4.5	<20	<14	<22	<12	<38	<38	<19	<24	<18	<9.0	<10	<MDL	12	<0.045	26.7	1.34%
SV-13	7/29/2025	5	<0.65	25	<0.75	<0.39	2.7	24	<0.62	<0.79	24	11	<0.35	<MDL	15	<0.090	23.8	1.19%
SG-14	10/17/2024	4.5	<20	1,800	<22	<12	<38	<38	<19	<24	<18	<9.0	<10	<MDL	13	<0.042	27.4	1.37%
SV-14	7/29/2025	5	<0.65	50	<0.75	<0.39	<1.3	<1.3	<0.62	<0.79	10	4.9	<0.35	<MDL	15	<0.027	27.0	1.35%
SG-19	10/18/2024	4.5	85	25	710	71	<7.6	<7.7	<3.7	<4.8	<3.6	<1.8	<2.1	<MDL	15	<0.072	24.7	1.24%
SV-19	7/29/2025	5	4.6	<0.46	<0.75	<0.39	<1.3	23	4.8	<0.79	<0.60	<0.30	<0.35	<MDL	19	<0.12	27.7	1.39%
SG-22	10/18/2024	4.5	<2.0	59	430	82	<3.8	<3.8	<1.9	<2.4	32	9.8	<1.0	<MDL	18	<0.059	22.7	1.14%
SV-22	7/29/2025	5	<0.65	<0.46	<0.75	<0.39	<1.3	18	7.9	16	<0.60	<0.30	<0.35	<MDL	7.6	<0.16	29.5	1.48%

Notes:

µg/m³	Micrograms per cubic meter
<	Less than the stated method detection limit
bgs	Below ground surface
PCE	Tetrachloroethylene/Tetrachloroethene
TCE	Trichloroethylene/ Trichloroethene
cis-1,2-DCE	cis-1,2-Dichloroethene
trans-1,2-DCE	trans-1,2-Dichloroethene
VOCs	Volatile Organic Compounds
Bold	Result exceeds a Comparison Value
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E	Indicates that the reportable value is outside the instrument calibration range and the value should be considered as estimated

TABLE 3: SUMMARY OF SOIL GAS SAMPLE RESULTS
Sunnyvale Park Place, Sunnyvale, California

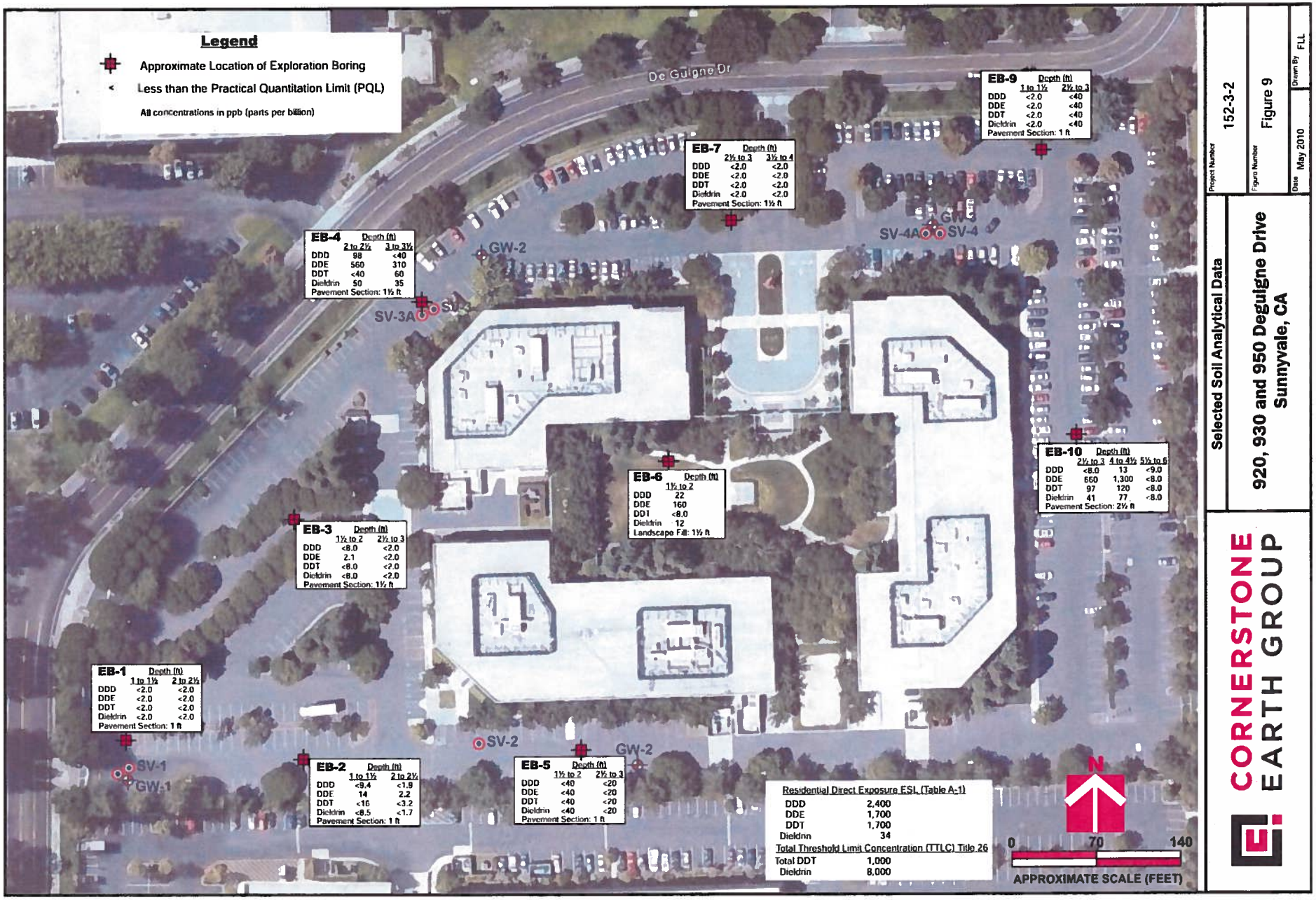
Location ID	Date	Depth (feet bgs)	2-Hexanone ($\mu g/m^3$)	Hexane ($\mu g/m^3$)	4-Methyl-2-Pentanone ($\mu g/m^3$)	2-Butanone ($\mu g/m^3$)	Naphthalene ($\mu g/m^3$)	2-Propanol ($\mu g/m^3$)	tert-Butanol ($\mu g/m^3$)	1,1,1-Trichloroethane ($\mu g/m^3$)	1,2,4-Trimethylbenzene ($\mu g/m^3$)	1,3,5-Trimethylbenzene ($\mu g/m^3$)	1,1-Difluoroethane ($\mu g/m^3$)	Remaining VOCs ($\mu g/m^3$)	Oxygen (%)	Helium Detected in Sample (%)	Field Helium Shroud (%)	Maximum Allowable Helium Detection in Sample (%)
Residential ESL			--	--	100,000	170,000	2.8	--	--	35,000	--	--	--	Various	--	--		
Commercial ESL			--	--	440,000	730,000	12	--	--	150,000	--	--	--	Various	--	--		
SG-10	10/17/2024	4.5	<0.76	11	52	69	<1.5	16	<0.72	5.5	<0.70	<0.35	<0.40	<MDL	12	<0.21	23.1	1.16%
SG-11	10/17/2024	4.5	<0.65	5.1	6.8	60	<1.7	56	<0.82	<0.79	3.2	<0.30	<0.35	<MDL	20	<0.024	22.9	1.15%
SG-12	10/17/2024	4.5	<20	1,400	<22	<12	<38	<38	<19	<24	<18	<9.0	<10	<MDL	3.6	<0.047	26.9	1.35%
SG-15	10/17/2024	4.5	27	14	35	73	<1.3	19	<0.62	14	4.4	<0.30	<0.35	<MDL	8.7	<0.21	24.4	1.22%
SG-16	10/17/2024	4.5	<0.65	38	45	83	<1.3	<1.3	<0.62	37	9.7	4.1	<0.35	<MDL	4.9	<0.12	25.3	1.27%
SG-17	10/17/2024	4.5	<20	<14	<22	100	<38	<38	<19	<24	<18	<9.0	5,300	<MDL	5.2	<0.052	29.5	1.48%
SG-18	10/18/2024	4.5	110	31	1,200	110	<13	<13	<0.62	<7.9	<6.0	<3.0	<3.5	<MDL	15	<0.056	20.2	1.01%
SG-20	10/18/2024	4.5	<2.0	9.3	220	31	<3.8	620	<1.9	75	<1.8	<0.90	<1.0	<MDL	9.8	<0.091	28.5	1.43%
SG-21	10/18/2024	4.5	55	13	420	48	<3.8	85	<1.9	15	<1.8	<0.90	<1.0	<MDL	13	<0.077	27.1	1.36%
SG-23	10/18/2024	4.5	75	53	500	79	<3.8	<6.4	<3.1	<4.0	<3.0	<1.5	<1.7	<MDL	5.7	<0.074	33.1	1.66%
SG-24	10/18/2024	4.5	51	14	770	52	<6.4	<7.7	<3.7	<4.8	<3.6	<1.8	<2.1	<MDL	14	<0.059	25.5	1.28%
SG-25	10/18/2024	4.5	48	26	500	54	<7.6	<6.4	<3.1	<4.0	<3.0	<1.5	<1.7	<MDL	13	<0.055	23.4	1.17%
SG-26	10/18/2024	4.5	45	13	600	35	<6.4	<7.7	<3.7	<4.8	<3.6	<1.8	<2.1	<MDL	13	<0.059	24.7	1.24%
SG-27	10/18/2024	4.5	120	190	1,100	<2.3	<7.6	<7.7	<3.7	<4.8	18	<1.8	<2.1	<MDL	9.1	<0.070	26.0	1.30%
SV-1	3/11/2010	5	--	--	--	--		--	<3.7	--	--	--	--	--	--	--	--	--
SV-1	4/19/2010	5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
SV-1	3/11/2010	9.5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
SV-2	3/11/2010	5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
SV-2	4/19/2010	5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
SV-3	3/11/2010	5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
SV-3	3/11/2010	9.5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
SV-4	3/11/2010	5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
SV-4	4/19/2010	5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
SV-4	3/11/2010	9.5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--
SV-4	4/19/2010	9.5	--	--	--	--		--	--	--	--	--	--	--	--	--	--	--

Notes:

$\mu g/m^3$	Micrograms per cubic meter		
<MDL	Less than the laboratory method detection limit	J	Indicates a value between the method MDL and practical quantitation limit (PQL) and that the reported concentration should be considered as estimated rather the quantitative
bgs	Below ground surface	E	Indicates that the reportable value is outside the instrument calibration range and the value should be considered as estimated
PCE	Tetrachloroethylene/Tetrachloroethene		
TCE	Trichloroethylene/ Trichloroethene		
cis-1,2-DCE	Cis-1,2-Dichloroethene		
Bold	Result exceeds a Comparison Value		
--	Not analyzed or established		
	Denotes most recent sampling event		

ESL Environmental Screening Level, based on subslab/soil gas vapor intrusion human health risk levels. From San Francisco Bay Regional Water Quality Control Board (Regional Water Board), User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Interim Final, dated July 2025.

APPENDIX A
Historical Data

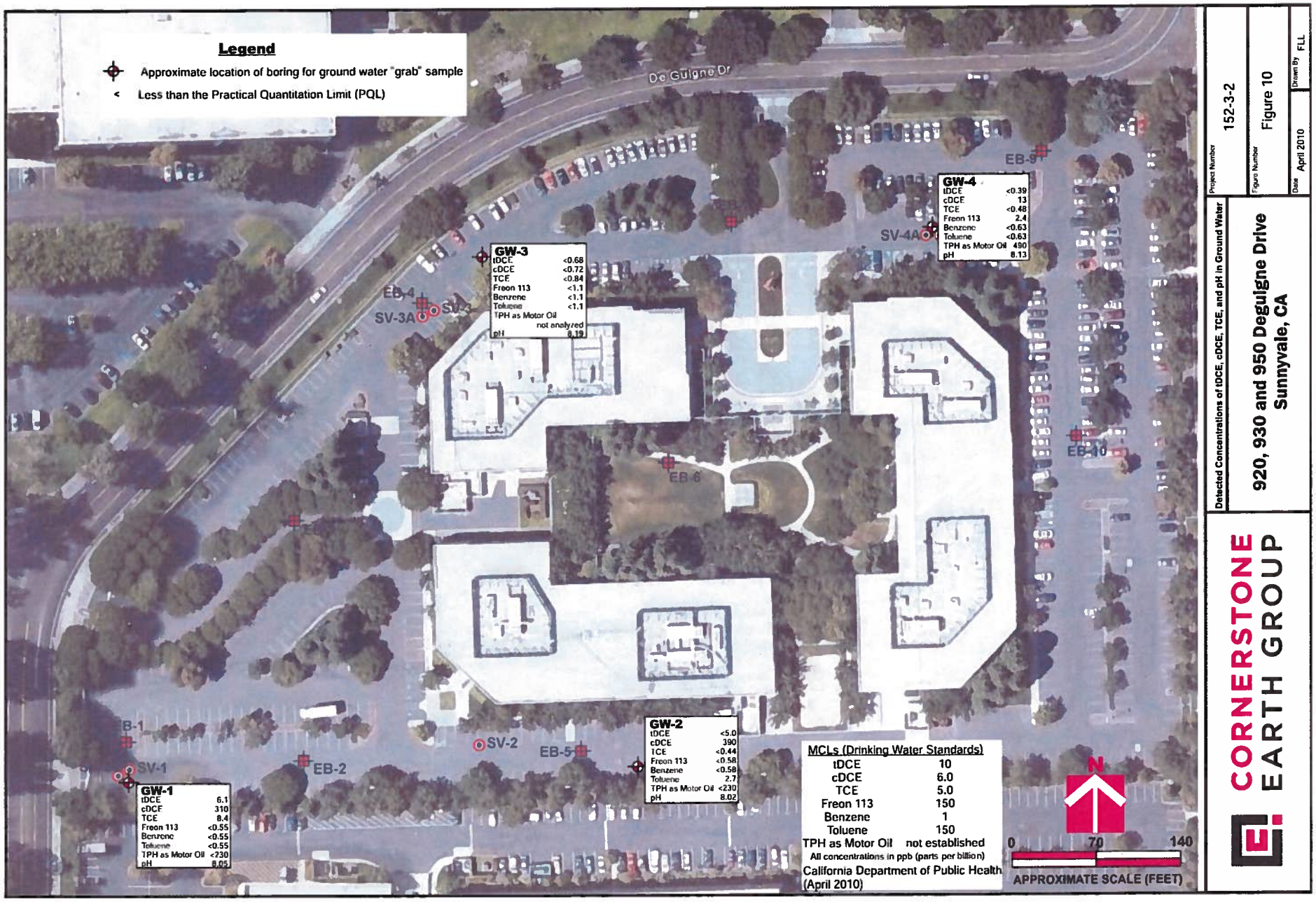


Selected Soil Analytical Data

920, 930 and 950 Deguigne Drive
Sunnyvale, CA

Project Number 152-3-2
Figure Number Figure 9
Date May 2010
Drawn By FLL

CORNERSTONE EARTH GROUP

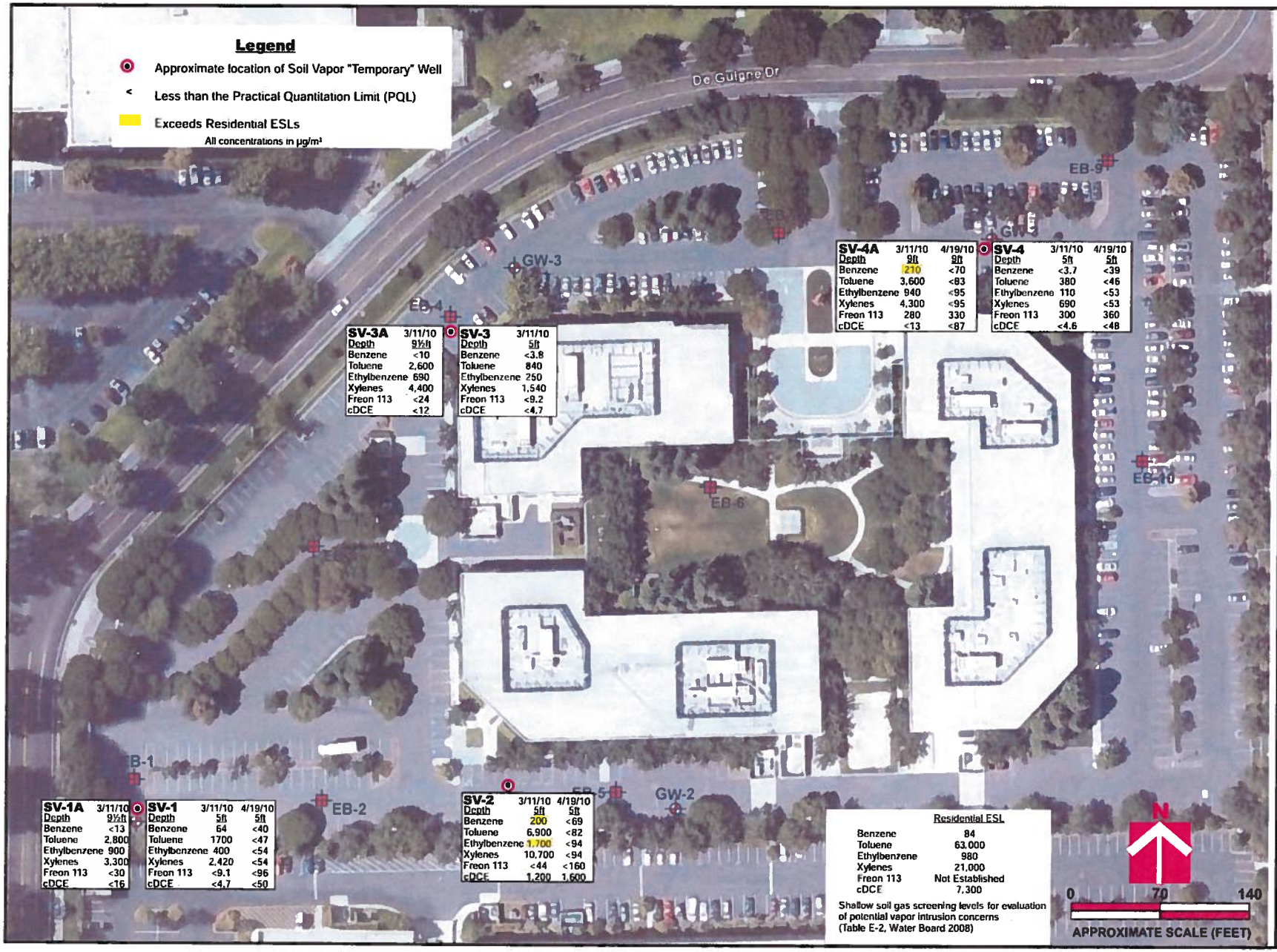


Project Number 152-3-2
Figure Number Figure 10
Date April 2010
Drawn By FLL

Detected Concentrations of tDCE, cDCE, TCE, and pH in Ground Water

920, 930 and 950 Deguigne Drive
Sunnyvale, CA

CORNERSTONE EARTH GROUP



Selected Soil Gas Analytical Data

920, 930 and 950 Degulgne Drive
Sunnyvale, CA

Project Number 152-3-2
Figure Number Figure 11
Drawn By FLL
Date May 2010

CORNERSTONE EARTH GROUP

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Table 1. Analytical Results of Selected Soil Samples
(Concentrations in ppm)

Sample Location	Sample ID	Date	Depth (feet)	Lead
SB-1	SB-1 (0-½)	5/19/2010	0-½	31
	SB-1 (1- 1 ½)	5/19/2010	1- 1½	41
	SB-1 (3-3 ½)	5/19/2010	3-3½	7.5
	SB-1 (5-5 ½)	5/19/2010	5-5½	6.9
SB-2	SB-2 (0-½)	5/19/2010	0-½	**1,900**
	SB-2 (1-1 ½)	5/19/2010	1-1½	13
	SB-2 (3-3 ½)	5/19/2010	3-3½	44
	SB-2 (5-5 ½)	5/19/2010	5-5½	6.3
SB-3	SB-3 (0-½)	5/19/2010	0-½	6.7
	SB-3 (2 - 2 ½)	5/19/2010	2-2 ½	11
	SB-3 (1-1 ½)	5/19/2010	1-1½	**1,200**
	SB-3 (3-3 ½)	5/19/2010	3-3½	26
	SB-3 (5 ½-6)	5/19/2010	5½-6	7.2
SB-4	SB-4 (0-½)	5/19/2010	0-½	**880**
	SB-4 (1-1 ½)	5/19/2010	1-1½	18
	SB-4 (3-3 ½)	5/19/2010	3-3½	31
	SB-4(5-5 ½)	5/19/2010	5-5½	7
SB-5	SB-5 (0-½)	5/19/2010	0-½	30
SB-6	SB-6 (0-½)	5/19/2010	0-½	6.5
SB-7	SB-7 (0-½)	5/19/2010	0-½	61
	SB-7 (1-1 ½)	5/19/2010	1-1½	21
	SB-7 (3-3 ½)	5/19/2010	3-3½	14
	SB-7 (6-6 ½)	5/19/2010	6-6½	9.4
SB-8	SB-8 (0-½)	5/19/2010	0-½	**110**
	SB-8 (1-1 ½)	5/19/2010	1-1½	15
	SB-8 (3-3 ½)	5/19/2010	3-3½	8.5
	SB-8 (5-5 ½)	5/19/2010	5-5½	6
SB-9	SB-9 (0-½)	5/19/2010	0-½	**310**
	SB-9 (1-1½)	5/19/2010	1-1½	5.4
	SB-9 (3-3 ½)	5/19/2010	3-3½	7.1
	SB-9 (5 ½-6)	5/19/2010	5½-6	7.4
SB-10	SB-10 (0-½)	5/19/2010	0-½	33
	SB-10 (1-1 ½)	5/19/2010	1-1½	16
	SB-10 (3-3 ½)	5/19/2010	3-3½	43
	SB-10 (5-5 ½)	5/19/2010	5-5½	4.7
SB-11	SB-11 (0-½)	5/19/2010	0-½	**1,100**
	SB-11 (1-1 ½)	5/19/2010	1-1½	5.6
	SB-11 (3-3 ½)	5/19/2010	3-3½	35
	SB-11 (5-5 ½)	5/19/2010	5-5½	7.3
Residential CHHSL[1]				80

1 California Human Health Screening Level (CHHSL), CalEPA - May 2009
BOLD Concentration exceeds CHHSL

CORNERSTONE EARTH GROUP

Table 2. Analytical Results of Selected Soil Samples - Organochlorine Pesticides and Metals
(Concentrations in ppm)

Sample Location	Sample ID	Date	Depth (feet)	4,4´-DDD	4,4´-DDE	4,4´-DDT	DDT Total	Dieldrin	Endrin	Arsenic	Lead	Mercury
EB-1	EB-1 1 to 1 1/2 Feet	3/11/2010	1-1½	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	4.5	8.6	<0.1
	EB-1 2 to 2 1/2 Feet	3/11/2010	2-2½	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	2.3	6.6	---
EB-2	EB-2 1 to 1 1/2 Feet	3/11/2010	1-1½	<0.0094	0.014	<0.016	0.014	<0.0085	<0.011	5.2	10	<0.1
	EB-2 2 to 2 1/2 Feet	3/11/2010	2-2½	<0.0019	0.0022	<0.0032	0.0022	<0.0017	<0.0023	<1.7	4.6	---
EB-3	EB-3 1 1/2 to 2 Feet	3/11/2010	1½-2	<0.0019	0.0021	<0.0032	0.0021	<0.0017	<0.0023	3.5	5.6	<0.1
	EB-3 2 1/2 to 3 Feet	3/11/2010	2½-3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<1.7	1.3	---
EB-4	EB-4 2 to 2 1/2 Feet	3/11/2010	2-2½	0.098	0.56	<0.016	0.658	**0.05**	<0.011	5.5	7.9	<0.1
	EB-4 3 to 3 1/2 Feet	3/11/2010	3-3½	<0.0094	0.31	0.06	0.37	**0.035**	<0.011	4.8	8	---
EB-5	EB-5 1 1/2 to 2 Feet	3/11/2010	1½-2	<0.0094	<0.0095	<0.016	<0.016	<0.0085	<0.011	2.6	5.4	<0.1
	EB-5 2 1/2 to 3 Feet	3/11/2010	2½-3	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<1.7	<1	---
EB-6	EB-6 1 1/2 to 2 Feet	2/23/2010	1½-2	0.022	0.16	<0.008	0.182	0.012	<0.008	5.9	9.7	<0.1
EB-7	EB-7 2 1/2 to 3 Feet	3/11/2010	2½-3	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	2.4	3.5	<0.1
	EB-7 3 1/2 to 4 Feet	3/11/2010	3½-4	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<1.7	<1	---
EB-9	EB-9 2 1/2 to 3 Feet	3/11/2010	2½-3	<0.0094	<0.0095	<0.016	<0.016	<0.0085	<0.011	<1.7	1.4	<0.1
	EB-9 1 to 1 1/2 Feet	2/23/2010	1-1½	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	4.4	3.3	<0.1
EB-10	EB-10-2 1/2 TO 3 Feet	2/23/2010	2½-3	<0.008	0.66	0.097	0.757	**0.041**	0.02	6.1	6.9	<0.1
	EB-10-4 TO 4 1/2 Feet	2/23/2010	4-4½	0.013	1.3	0.12	**1.433**	**0.077**	0.035	8.3	8.8	<0.1
	EB-10 5 1/2 to 6 Feet	3/11/2010	5½-6	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	---	---	---
Background Range [3]				NE	NE	NE	NE	NE	NE	0.2 to 5.5	6.8 to 16.1	NE
Maximum Background Detection [3]										20	54	1.3
Residential ESL[1] - Direct Exposure				2.4	1.7	1.7	1 [2]	0.034	4.1	0.39	260	1.3

1 Environmental Screening Level (ESL), RWQCB, San Francisco Bay Region – May 2008
2 Total Threshold Limit Concentration (TTLC - California's Criteria for a Hazardous Waste), Title 26 California Code of Regulations
3 "Background Metal Concentrations in Soil in Northern Santa Clara County, California", Christina M. Scott, December 1991
< Not detected at or above laboratory reporting limit
NE Not Established
--- Not Analyzed
BOLD Concentration exceeds ESL, TTLC or Maximum Background Concentration

DeGuine
152-3-2

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Table 3. Analytical Results of Selected Ground Water Samples

(Concentrations in µg/L)

Sample Location	Date	TPHg	TPHo	Benzene	Toluene	Ethylbenzene	Xylenes, Total	1,1 - DCE	1,1,1-TCA	1,1-DCA	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	Chloroform	cis-1,2-dichloroethene	Freon 113	TCE	trans-1,2-Dichloroethene	sVOCs	PAHs
GW-1	3/9/2010	210	<230	<0.55	0.66	<0.55	ND	1.2	0.89	1.1	<0.55	<0.55	<0.55	**240**	0.7	**8.4**	6.1	ND	ND
GW-2	3/9/2010	270	<230	<0.58	1.7	<0.58	ND	<0.58	0.67	<0.58	<0.58	<0.58	0.6	**390**	<0.58	<0.58	5	ND	ND
GW-3	3/9/2010	<110	---	<1.1	<1.1	<1.1	ND	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	<1.1	ND	ND
GW-4	3/9/2010	<63	490	<0.63	<0.63	<0.63	ND	<0.63	<0.63	<0.63	1.6	0.87	<0.63	**13**	2.4	<0.63	<0.63	ND	ND
Drinking Water MCL[1]		100 [2]	100 [2]	1	150	300	1,750	6	200	5	NE	NE	70	6	NE	5	10	Variable	Variable

1 Maximum Contaminant Level (MCL), California Department of Public Health – November

2 MCL does not exist; value is Enviromental Screening Level (ESL); the drinking water toxicity ESL is 210 Water Board, May 2008

< Not detected at or above laboratory reporting limit

--- Not Analyzed Due to Insufficient Sample

SVOCS Semi-Volatile Organic Compounds

PAHS Polyaromatic Hydrocarbons

ND None Detected

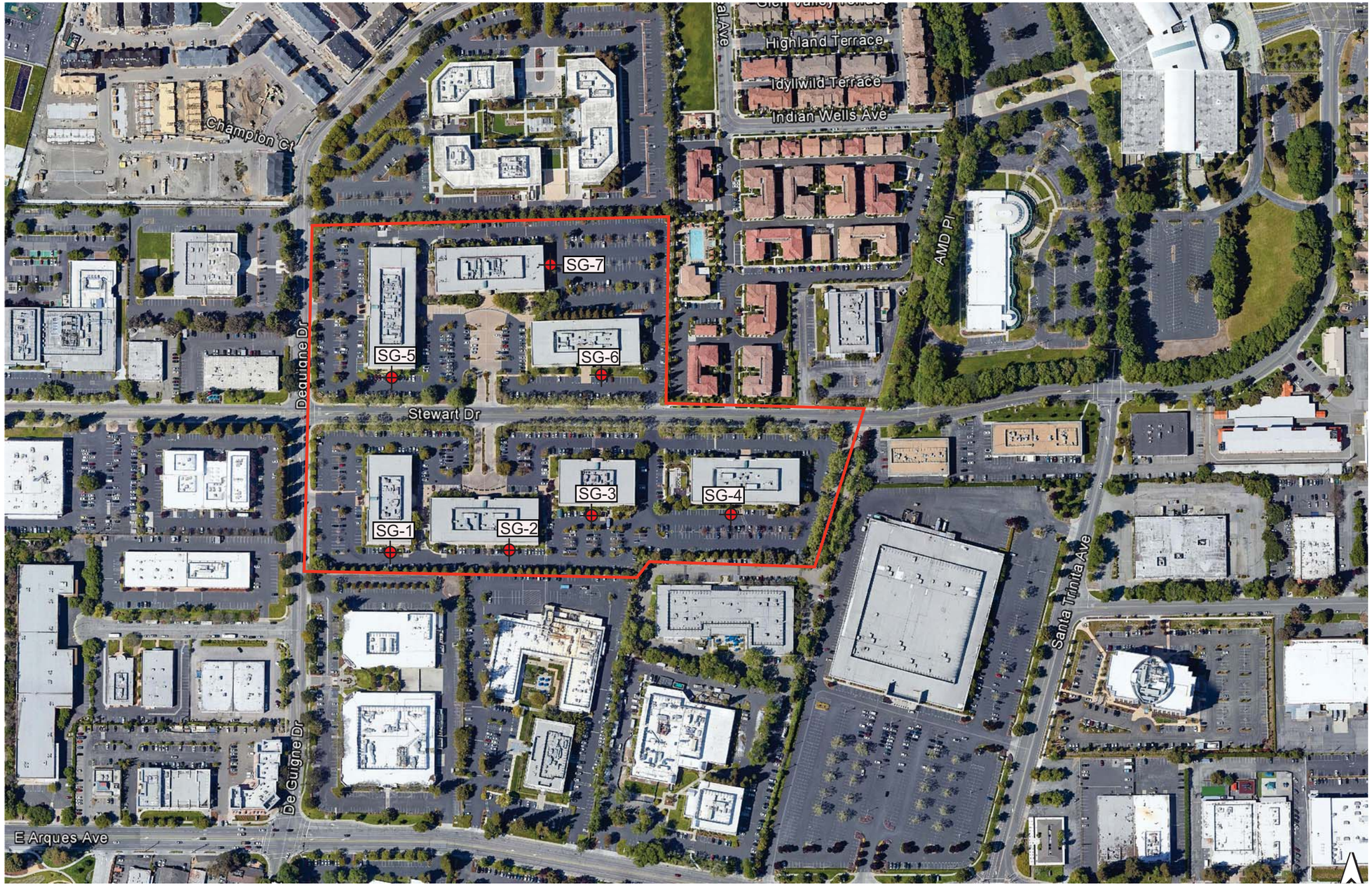
BOLD Concentration exceeds MCL

CORNERSTONE EARTH GROUP

Table 4. Analytical Results of Selected Soil Vapor Samples - VOCs
(Concentrations in µg/m³)

Sample Location	Sample ID	Date	Benzene	Toluene	Ethylbenzene	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,3-Butadiene	2,2,4-Trimethylpentane	4-Ethyl Toluene	Acetone	Carbon Disulfide	cis-1,2-dichloroethene	Cyclohexane	Freon 113	Heptane	Hexane	Isopropanol	n-Propylbenzene	o-xylene	EDB	Dibromochloromethane	Carbon Tetrachloride	Vinyl Chloride	Bromodichloromethane	1,1,2,2-Tetrachloroethane
SV-1	SV-1d 5	3/11/2010	64	1,700	400	710	440	<2.6	190	740	160	<3.7	<4.7	91	<9.1	260	190	<12	130	520	<9.1	<10	<7.4	<3.0	<7.9	<8.1
	SV-1d 5	4/19/2010	<40	<47	<54	<61	<61	<28	76	<61	<120	<39	<50	<43	<96	<51	<44	<120	<61	<54	<96	<110	<79	<32	<84	<86
	SV-1d 9.5	3/11/2010	<13	2,800	900	610	870	<8.8	400	1,100	770	<12	<16	190	<30	530	340	<39	280	1,000	<31	<34	<25	<10	<27	<27
SV-2	SV-2d 5	3/11/2010	**200**	6,900	**1,700**	2,600	1,500	<13	<27	2,800	220	<18	1,200	<20	<44	340	<20	<57	490	2,000	<44	<49	<36	<15	<39	<40
	SV-2d 5	4/19/2010	<69	<82	<94	<110	<110	<48	<100	<110	<200	<67	1,600	<74	<160	<89	<76	<210	<110	<94	<170	<180	<140	<55	<140	<150
SV-3	SV-3d 5	3/11/2010	<3.8	840	250	640	310	<2.6	68	530	350	48	<4.7	<4.1	<9.2	86	53	<12	92	340	<9.2	<10	<7.5	<3.0	<8.0	<8.2
	SV-3d 9.5	3/11/2010	<10	2,600	690	1,600	790	<7.0	<15	1,500	170	<9.8	<12	<11	<24	<13	<11	<31	250	1,000	<24	<27	<20	<8.1	<21	<22
	SV-3d 5 (IPA)	3/11/2010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	72,000	---	---	---	---	---	---	---	---
SV-4	SV-4d 5	3/11/2010	<3.7	380	110	410	190	<2.6	<5.4	320	130	<3.6	<4.6	<4.0	300	<4.7	<4.1	<11	<5.7	170	<8.9	<9.8	<7.3	<3.0	<7.7	<7.9
	SV-4d 5	4/19/2010	<39	<46	<53	<60	<60	<27	<57	<60	<120	<38	<48	<42	360	<50	<43	<120	<60	<53	<94	<100	<77	<31	<82	<84
	SV-4d 9	3/11/2010	**210**	3,600	940	1,100	960	90	300	1,500	120	<10	<13	<11	280	320	180	<32	320	1,200	<25	<28	<21	<8.4	<22	<23
	SV-4d 9	4/19/2010	<70	<83	<95	<110	<110	<48	<100	<110	<210	<68	<87	<76	330	<90	<77	<220	<110	<95	<170	<190	<140	<56	<150	<150
	SV-4d 5 (IPA)	4/19/2010	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	730,000	---	---	---	---	---	---	---	---
Quality Control Samples																										
SV-4	SV-5 *	4/19/2010	<69	<82	<94	<110	<110	<48	<100	<110	<200	<67	<86	<74	350	<89	<76	<210	<110	<94	<170	<180	<140	<55	<140	<150
Lab Blank	Lab Blank	4/16/2010	<16	<19	<22	<24	<24	<11	<23	<24	<48	<16	<20	<17	<38	<20	<18	<49	<24	<22	<38	<42	<31	<13	<34	<34
Trip Blank	Trip Blank	4/19/2010	<16	<19	<22	<24	<24	<11	<23	<24	<48	<16	<20	<17	<38	<20	<18	<49	<24	<22	<38	<42	<31	<13	<34	<34
	Residential ESL[1]		84	63,000	980	NE	NE	NE	NE	NE	660,000	NE	7,300	NE	NE	NE	NE	NE	NE	NE	4.1	NE	19	31	140	42

1 Environmental Screening Level (ESL), RWQCB, San Francisco Bay Region – May 2008
* Field duplicate sample collected at SV-4d 9
< Not detected at or above laboratory reporting limit
NE Not Established
--- Not Analyzed
BOLD Concentration exceeds ESL
Note: Red font indicates the laboratory reporting limit exceeds one or more of the selected screening levels



LEGEND

- Approximate Property Boundary
- Soil Gas Boring

AEI Consultants

SITE MAP

Oakmead West,
Sunnyvale, California

FIGURE 2
Project No. 398471

TABLE 1: SOIL GAS SAMPLE DATA SUMMARY
Oakmead West, Sunnyvale,California

Location ID	Date	Depth (feet bgs)	Tetrachloroethylene (µg/m^3)	Trichloroethylene (µg/m^3)	cis-1,2-Dichloroethene (µg/m^3)	trans-1,2-Dichloroethene (µg/m^3)	Vinyl chloride (µg/m^3)	Helium Detected in Sample (%)	Field Helium Shroud (%)	Maximum Allowable Helium Detection in Sample (%)
SG-1	12/21/2018	5	71.0	168	52.8	16.8	<1.02	<0.10	26.6	1.3
SG-2	12/21/2018	5	33.5	11.3	<6.34	<6.34	<4.09	<0.10	23.3	1.2
SG-3	12/21/2018	5	11.7	41.0	676	<1.59	4.41	<0.10	21.8	1.1
SG-4	12/21/2018	5	24.7	22.5	2.74	<1.59	<1.02	<0.10	21.6	1.1
SG-5	12/21/2018	5	3.36	36.3	<1.59	<1.59	<1.02	<0.10	30.2	1.5
SG-6	12/21/2018	5	<2.72	172	4,600	683	441	<0.10	20.4	1.0
SG-7	12/21/2018	5	4.99	<2.14	8.84	<1.59	<1.02	<0.10	30.7	1.5
		Comparison Values:								
		ESL-C/I	2,100	3,000	35,000	350,000	160	--	--	--

Notes:

bgs	below ground surface
µg/m^3	micrograms per cubic meter
<	less than the laboratory reporting limit
--	Not applicable
	Exceeds ESL-C/I

Comparison Values:

ESL-C/I	San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels based on vapor intrusion human health, under a commercial/industrial (C/I) land use scenario (RWQCB, February 2016, rev. 3, Table SG-1).

APPENDIX B
Conceptual Development Plan

Project Summary

Existing Zone:	MS
ReZone:	R3 - Medium Density Residential
Total Site Area:	**± 20.5 Gross Acres**
PHASE 1:	± 10.3 Ac.
PHASE 2:	± 6.7 Ac.
PHASE 3:	± 3.5 Ac.
Total Units:	± 354 Dwelling Units
Density:	± 17.3 Du/Gross Ac.

PHASE 1: ± 177 Units / Density ±17.18 du/ac.
- (33) 3-Story SFD Front Load
- (63) 3-Story Interlocking Townhomes
- (81) 3-Story Row Townhomes

PHASE 2: ± 113 Units / Density ±16.86 du/ac.
- (36) 3-Story SFD Front Load
- (77) 3-Story Interlocking Townhomes
- (0) 3-Story Row Townhomes

PHASE 3: ± 64 Units / Density ±18.26 du/ac.
- (4) 3-Story SFD Front Load
- (0) 3-Story Interlocking Townhomes
- (60) 3-Story Row Townhomes

Notes:

1. Site plan is for conceptual purposes only.
2. Site plan must be reviewed by planning, building, and fire departments for code compliance.
3. Base information per civil engineer.
4. Civil engineer to verify all setbacks and grading information
5. Building Footprints might change due to the final design elevation style.
6. Open space area is subject to change due to the balcony design of the elevation.
7. Building setbacks are measured from property lines to building foundation lines.

TIDEWATER CAPITAL

CONCEPTUAL SITE STUDY- ALT. 2
20-ACRE SUNNYVALE SITE
CITY OF SUNNYVALE, CA

0 40 80 160

DRAFT

| 2024168 | 08-26-24

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APPENDIX C
Information Advisory, Clean Imported Fill Material (DTSC, 2001)

Information Advisory
Clean Imported Fill Material

October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California

California Environmental Protection Agency

Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed. It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contamination and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area	Sampling Requirements
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every 1/2 acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 subsamples per location
Volume of Borrow Area Stockpile	**Samples per Volume**
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1000 cubic yards +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

terials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all compounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Richard Coffman, Ph.D., R.G., at (818) 551-2175.

APPENDIX D
Standard Operating Procedures

SOIL VAPOR SAMPLING USING USEPA TO-15

Objective The objective of this standard operating procedure is to provide equipment and procedure walkthrough information in order to complete a soil vapor sample.

Equipment
Fully read the proposal and understand the scope of work required for the project. Order sampling media from a state certified laboratory which includes:

- Evacuated sampling canister(s) – 450-milliliter, 1-liter or 6 - liter
- TO-17 sampling absorbent tubes (if part of scope)
- Flow controller(s) – calibrated by the lab to <200 mL/min flow rate
- Purge summa canister – 6 - liter (if required), one purge can per three soil vapor points
- ¼" O.D. Teflon tubing
- Stainless steel Swagelok bolts and ferrules (see Figure 1)
- Shut-in valves (if needed)
- Tee fittings (if needed)

Make sure all sampling media arrives few days before field work begins. If possible, build the sample trains and perform the shut-in test before field work.

Understand the soil vapor well construction details for the project, calculate the purge volume required prior to field work. See attached Purge Volume Calculation below.

Procedure
Field notes should document the following on a Soil Vapor/Sub-Slab Sampling Field Data Form:

- Sample, Summa™ canister, and flow controller IDs
- Pass/fail for shut-in test
- Start/finish purge time and purge canister initial and final vacuum readings
- Initial/final vacuums with date/time for sample collection
- Helium detector reading after purge

SHUT-IN TEST

Tools needed – 9/16" and 1/2" wrenches (or two adjustable wrenches), scissors/tubing cutter, PPE presented in the site-specific HASP. See Figure 2 for photos of tools and additional Swagelok parts.

ALWAYS use clean gloves when handling sampling tubes and for each new sample. Sampling personnel should not handle permanent markers/sharpies, or smoke cigarettes/cigars before and/or during the sampling event.

The purpose of the shut-in test is to ensure that all connections for the sample train are properly sealed. To conduct a shut-in test, assemble the above-ground valves, tubing, and fittings with the summa canister (see Figure 3), create a 100 in-H_2O (~7.5 in-Hg) vacuum with either a syringe or a purge summa canister. If there is any observable loss of vacuum (vacuum loss should not exceed 5% of vacuum created within one minute), the fittings are adjusted until the vacuum in the sample train does not noticeably dissipate. **After the shut-in test is validated, the sample** train should not be altered.

LEAK CHECK

To collect a soil vapor sample, connect the assembled sampling media to the soil vapor probe with Swagelok bolts, ferrules, or appropriate connections. The seal around the soil vapor sample port and the sampling train should be evaluated for leaks using either helium or isopropyl alcohol (rubbing alcohol) as a tracer gas. The tracer gas should be introduced AFTER all the connections have been made and throughout sampling (Figure 3).

Leak check using Helium

Supplies/Equipment needed - Helium and Helium Detector (order before sampling event), syringe, tedlar bag, three-way valve, silicone tubing, nitrile gloves

Connect purge can, three-way valve with syringe and Tedlar bag, and Summa™ cannister to the soil vapor probe. Once all connections (sample train, Summa™ canister, soil vapor probe) have been made, set up a shroud that covers the sample train, Summa™ canister, and soil vapor probe. Place the helium detector probe within the shroud. Open the helium flow control valve to add helium inside the shroud. Record helium content within the shroud. Helium content should be greater than 20% in the shroud to simplify the leak check process. Helium should be maintained above 20% throughout sampling.

Purge the required volume from the well and shut the purge canister. DO NOT OPEN THE SAMPLE CANISTER VALVE. Remove the helium detector probe from the shroud to allow the detector to return to a zero reading. If the helium detector does not zero out over time, zero out the detector by pressing the button on the detector.

Use a syringe to pull gas through the sample train and fill a Tedlar bag. Allow sufficient time between each syringe pull to let gas enter the syringe. Once a sufficient volume of gas is in the tedlar bag, remove the Tedlar bag and connect it to the helium detector probe to determine if a significant leak is present.

For helium in the sample train that is detected in %:

$$\frac{sample\ train\ helium\ \%}{\text{helium shroud \%}} \text{ x } 100\% = \text{Leak Check \%}$$

For helium in the sample train that is detected in ppm:

$$\frac{sample\ train\ helium\ ppm}{\text{helium shroud \%}} \text{ x } \frac{1\%}{10{,}000\ \text{ppm}} \text{x } 100\% = \text{Leak Check \%}$$

Leak check that are less than 5% are acceptable. If a significant leak is present, check the sample train for potential leaks. Make necessary adjustments to the sample train, re-apply helium to the shroud if needed, and recheck helium levels in the sample train.

Note: Moisture and other gases, such as methane, can give false positives for helium in the sample train.

If no leaks or an acceptable leak is present, close valves to the sample train (Valve 1) and open sample canister valve (see Sample Collection).

Leak check using isopropyl alcohol

Tools needed – Rubbing alcohol, cotton wipes, nitrile gloves.

Once all connections (sample train, Summa™ canister, soil vapor probe) have been made, set up a shroud that cover the sample train, Summa™ canister, and soil vapor probe. Open the isopropyl alcohol bottle and set it inside of the shroud. Do not spill or place isopropyl alcohol on the Summa™ ™ connections. Measure the isopropyl alcohol concentration inside of the shroud using a PID meter and record the value on field note. The isopropyl alcohol shroud should have a PID reading of 5 ppm during the sampling process.

SAMPLE COLLECTION

Open the Summa™ canister valve to initiate sample collection. Record the time when sampling began and the canister pressure on the sample log. If the initial vacuum pressure registers less than -25 in-Hg, the Summa™ canister is not appropriate for sampling and another canister should be used. Once the vacuum pressure reaches -5 in-Hg, record the final vacuum and time, close the valve. Disconnect the flow controller and Summa™ canister from the soil vapor probe, reinstall the brass plug on the canister fitting, and tighten with the appropriate wrench.

Notes: the valve only needs to be finger tight. Do not use a wrench to tighten. For the brass cap, twist the cap on using your fingers, until it is “finger-tight” and then use a 9/16” wrench to ensure it is snug. Do not overtighten.

Upon sample retrieval, the Summa™ canisters should be labeled with the appropriate project information, including the project name, project number, sample location and depth, date and time of sampling, sampler’s name, canister identification number, and the initial and

final canister vacuums. Chain-of-custody documentation was completed and accompanied the Summa™ canisters to the analytical laboratory. The Summa™ canister does not require preservation with ice or refrigeration during shipment.

For field sample collection, samples should be collected with an average flow rate of 200 milliliters per minute into the Tedlar bag using a syringe. Field samples should be analyzed immediately.

Figure 1 – Swagelok connection

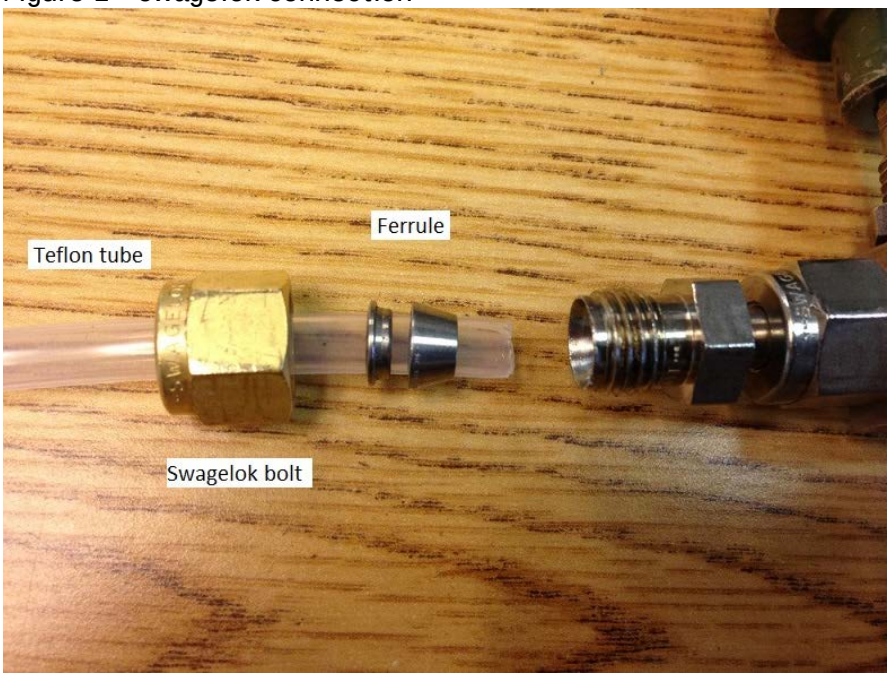
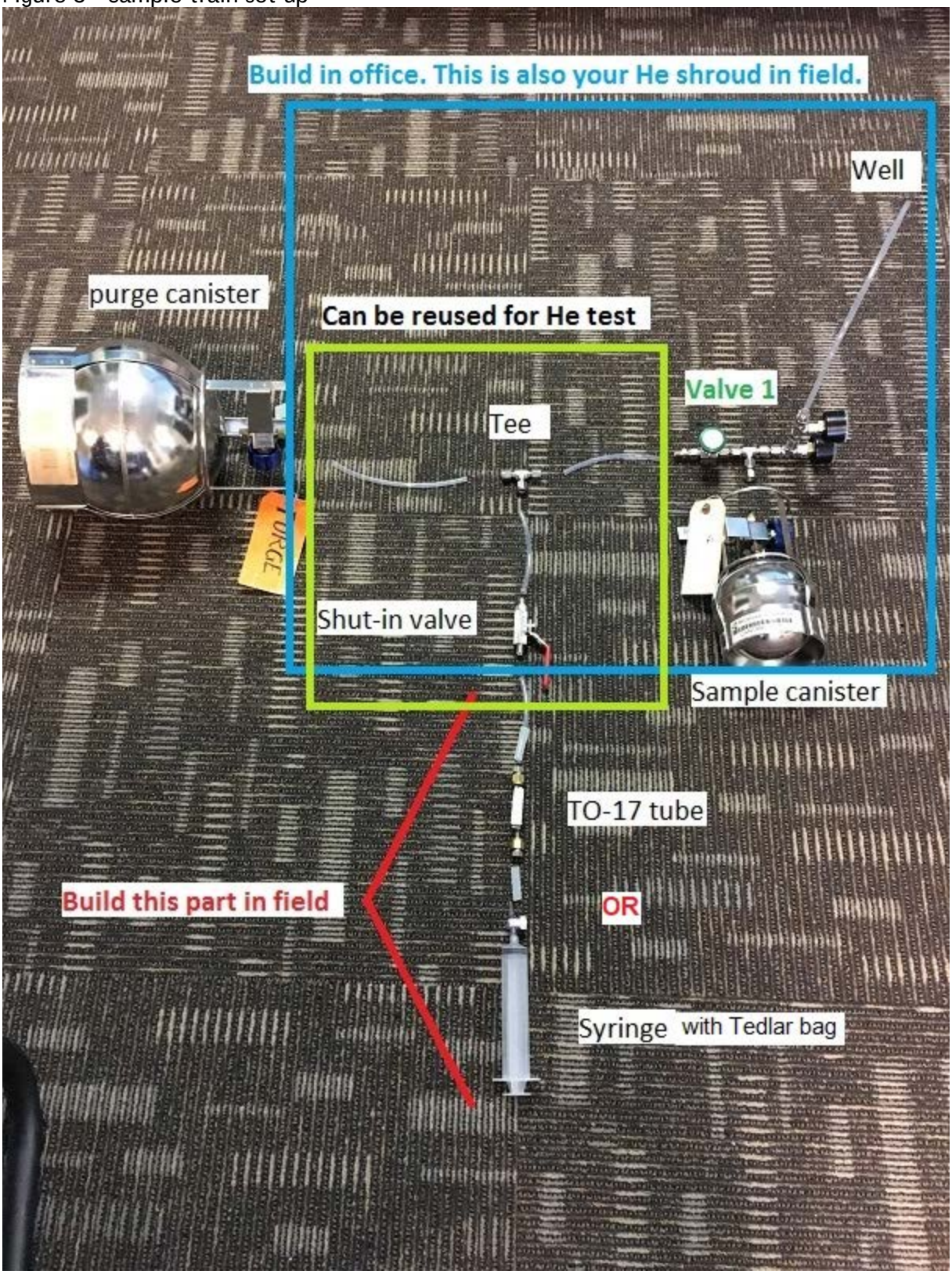


Figure 2: Tools and Additional Swagelok Fittings

Figure 3 – Sample train set up



References

California Department of Toxic Substances Control (DTSC), et al. *Advisory: Active Soil Gas Investigations*, prepared by the, dated July 2015.