AllWest Environmental

PHASE II SUBSURFACE INVESTIGATION REPORT

2500-2550 Irving Street, San Francisco, California 94122

PREPARED FOR:

San Francisco Police Credit Union
2550 Irving Street
San Francisco, CA 94122

ALLWEST PROJECT 19086.23.1
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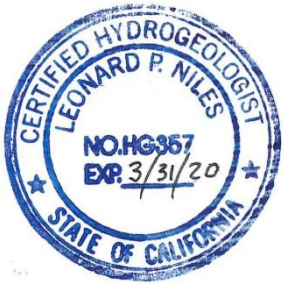

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I. EXECUTIVE SUMMARY

AllWest Environmental, Inc. has completed a Phase II subsurface investigation to characterize soil, soil vapor and groundwater quality at the subject property referenced above (Figures 1 and 2). The purpose of our work was to further delineate the extent and origin of the dry cleaning solvent tetrachloroethene (PCE) in soil and soil vapor as identified in our June 21, 2019 *Phase II Subsurface Investigation Report.* We were also tasked to evaluate potential PCE impact to groundwater.

This executive summary is provided solely for the purpose of overview. Any party who relies on this report must read the full report. The executive summary may omit details, any one of which could be crucial to the proper understanding and risk assessment of the subject matter.

On July 17, 2019, Boring B-8 was advanced by truck-mounted Geoprobe® DPT methods to approximately 47 feet bgs in the northeast corner of the employee parking lot at 2525 Irving Street, across the street from the subject credit union building and adjacent to the former dry cleaner at 2511 Irving Street. Boring B-9 was advanced to a depth of approximately 52 feet below ground surface (bgs) in the northeast corner of the driveway west of the subject building (2550 Irving Street).

On July 18, 2019, four semi-permanent sub-slab Vapor Pins™ (VP-1A, VP-2A, VP-3 and VP-4) were installed within the San Francisco Police Credit Union building at 2550 Irving Street. A third soil boring (B-10) was advanced to approximately 40 feet bgs within the landscaped sidewalk area of the subject site parcel (2550 Irving Street). Boring and vapor pin locations are shown on Figure 2. Groundwater was not encountered during the investigation.

Soil samples were collected from borings B-8, B-9 and B-10 at depth intervals of 1-1.5 feet bgs, 4-4.5 feet bgs, 9.5-10 feet bgs, 19.5-20 feet bgs, 29.5-30 feet bgs and 39.5-40 feet bgs. Samples were analyzed for PCE and its degradation products trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE) and vinyl chloride. Surface and near surface samples were not analyzed.

No constituents of concern (COCs) were detected in analyzed soil samples. No groundwater samples were collected or analyzed.

One soil vapor sample was collected from each sub-slab Vapor Pin™ probe (VP-1A, VP-2A, VP-3 and VP-4) on July 19, 2019. Collected soil vapor samples were analyzed for PCE and its degradation products TCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride and the leak detection gas helium.

PCE was detected in all soil vapor samples at concentrations ranging from 270 to 1,100 micrograms per cubic meter ($\mu g/m^3$), exceeding the applicable commercial/industrial San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Level (ESL) of 67 $\mu g/m^3$. The sample with the highest concentration (VP-1A) was located at the building's southwest corner.

No other COCs were detected in any soil vapor samples at concentrations exceeding applicable ESLs.

In addition to collecting semi-annual sub slab soil vapor samples in early 2020, AllWest recommends an indoor air quality assessment be conducted at the property to evaluate PCE concentrations above the slab within the Credit Union building. We also recommend another attempt be made to collect groundwater samples at the property.

II. PROJECT BACKGROUND

A. Site Location and Description

The subject property, addressed as 2500-2550 Irving Street, is an irregularly-shaped parcel totaling approximately 0.44 acre, located in a mixed residential and commercial area in the Sunset district of San Francisco. The subject property is bound by 26th Avenue to the east, 27th Avenue to the west, Irving Street to the south and residential homes to the north. Access to the property is from Irving Street and/or 27th Avenue. The subject property is developed with a two-story approximately 18,561 square-foot office building and parking lot. The subject building is occupied by the San Francisco Police Credit Union (SFPCU). The subject property also includes two contiguous, rectangular undeveloped parcels, together comprising 0.12 acres, on the south side of Irving Street (employee parking lot parcels) between 26th and 27th Avenues at 2525 Irving Street. A site vicinity map is presented as Figure 1, and a site plan as Figure 2.

B. Site Geology and Hydrogeology

Based on a review of the USGS Note 36 California Geomorphic Provinces map, the property is located in the Coast Ranges geomorphic province of California. The coastline is uplifted, terraced and wave-cut. The Coast Ranges are composed of thick Mesozoic and Cenozoic sedimentary strata. The northern and southern ranges are separated by a depression containing the San Francisco Bay.

The northern Coast Ranges are dominated by the irregular, knobby landslide-topography of the Franciscan Complex. The eastern border is characterized by strike-ridges and valleys in Upper Mesozoic strata. In several areas, Franciscan rocks are overlain by volcanic cones and flows of the Quien Sabe, Sonoma and Clear Lake volcanic fields. The Coast Ranges is subparallel to the active San Andreas Fault. The San Andreas is more than 600 miles long, extending from Point Arena to the Gulf of California. West of the San Andreas is the Salinian Block, a granitic core extending from the southern extremity of the Coast Ranges to north of the Farallon Islands. Geologically, the area of the subject property is underlain by Mesozoic era Eugeosynclinal Deposits.

Soils encountered during the subsurface investigations in May and July 2019, in borings B-4 and B-8, B-9 and B-10 consisted of very fine to fine-grained, poorly-graded sands from beneath surface pavement/ground surface to the maximum explored depth of approximately 52 feet bgs. Fill material consisting of fine to coarse-grained well-graded sand with gravel was encountered in borings B-1, B-2 and B-3, from beneath surface pavement/ground surface to approximately 2.5 feet bgs; underlain by very fine to fine-grained, poorly-graded sand to the maximum explored depth of approximately 10 feet bgs..

According to California's Groundwater Bulletin 118, the subject property is located in the San Francisco Bay Hydrologic Region and lies in the Merced Valley Groundwater Basin (Basin No. 2-035). The Merced Valley groundwater basin is located on the western portion of the San Francisco Peninsula (Phillips, et al. 1993).

According to the California Regional Water Quality Control Board (CRWQCB), San Francisco Bay Region *San Francisco Bay Basin (Region 2) Water Quality Control Plan (Basin Plan)*, Table 2-2, the subject property lies in the Westside A Groundwater Basin (Basin ID Number 2-35A), which has designated existing and potential beneficial uses including municipal, process, industrial and agricultural.

Based on data obtained through the Geotracker database, depth to ground water is expected to be approximately 33 to 40 feet below ground surface. The ground water flow direction is anticipated towards the north-northwest, making properties located to the south-southeast up-gradient.

Groundwater was not encountered during the AllWest July 17 and 18, 2019 subsurface investigation at the maximum explored depth of approximately 52 feet bgs.

The nearest significant surface water to the subject property are Elk Glen Lake and Mallard Lake in Golden Gate Park, approximately ¼ mile north-northwest. Stow Lake, also in Golden Gate Park, is approximately 1/3 mile northeast. The Pacific Ocean is approximately 1½ miles west.

C. Previous Site Investigations

Phase I Environmental Site Assessment for 2525 and 2550 Irving Street, San Francisco, CA, AllWest Environmental (February 2019)

AllWest performed a Phase I Environmental Site Assessment (ESA) at the subject property in January and February 2019. The ESA conclusions were presented in the AllWest report titled *Environmental Site Assessment, 2525 & 2550 Irving Street, San Francisco, CA 94122* dated February 8, 2019. AllWest's land use review for the property indicates the SFPCU employee parking lot parcels on the south side of Irving Street as undeveloped prior to paving and striping as a parking lot in the early-1960s.

The credit union parcel was undeveloped prior to construction of two commercial structures on the middle of the parcel circa 1927 with occupancies including a variety of stores/shops and a clothes cleaner. Another building was constructed on the credit union parcel between the late-1920 and 1932, housing an undertaker through at least the mid-1950s.

From at least 1940 to the mid-1960s, gas stations operated at the 26th (2500 Irving) and 27th Avenue (2550 Irving) corners of the credit union parcel. In 1965, the original, eastern portion of the existing building was constructed on the parcel, occupied by a mortuary/funeral chapel. By 1968, the building increased in size to the current configuration and the customer parking lot added. The mortuary operated at the parcel through the mid-1980s. In 1988, the SFPCU initiated occupancy on the credit union parcel.

Significant quantities of hazardous materials are not present at the subject property; hazardous waste is not generated. Previous operators of the two gas stations, clothes cleaner and mortuary/undertaker at the subject property are expected to have stored/used hazardous materials in their site operations, although no documentation was available to confirm these assertions. There is no documentation or visual evidence of existing underground storage tanks (USTs) at the subject property.

With the exception of one building permit for installation of a waste oil UST at the 2550 Irving Street gas station (27th Avenue corner) in 1941, no records were available related to UST installations or removals at either subject property gas station. Following cessation of gas station operations, a 1963 aerial photograph of the 2550 Irving Street gas station location showed the concrete slabs associated with the former building and pump island(s) remaining but the structures removed. Subsequently, this area of the property was paved for the customer parking lot. The former location of the 2500 Irving Street gas station was redeveloped with the existing building (AllWest, 2019).

The approximate location of the former service station buildings, concrete slabs and presumed former USTs on the subject property are shown in Figure 2.

AllWest has identified Recognized Environmental Conditions (REC) at the property from its historical land use activities as two gas stations (1940 – 1963) and clothes cleaner (1928 – 1949). AllWest also identified a REC on the subject property from an off-site concern, the former operation of a dry cleaning facility on an up-gradient/adjoining property (2511 Irving Street) for nearly 75 years. Based on the period of time in operation, as well as operation into the 2010s, there is a moderate possibility a dry cleaning solvent release occurred. Based on the location of the site with respect to the subject property, there is a moderately-low likelihood that impacted ground water from the subject property has migrated beneath the subject property.

Although not considered RECs, AllWest identified a moderate likelihood that USTs remain present on the 2550 Irving Street portion (27th Avenue/Irving Street corner) of the parcel, because concrete slab foundations of the station remained present following demolition of the gas station structures prior to paving of the area as the existing parking lot, and no construction has been completed on that area of the subject property.

AllWest recommended further assessment be performed at the subject property (AllWest, 2019).

Phase II Environmental Site Assessment for 2500-2550 Irving Street, San Francisco, CA, AllWest Environmental (May 2019)

AllWest conducted a subsurface investigation at the subject property on May 21, 2019, consisting of the advancement of five soil borings (B-1 through B-5) to 10 feet bgs and the installation of two temporary sub-slab Vapor Pin™ type probes inside the subject building (San Francisco Police Credit Union).

Five selected soil samples (collected from each of the borings at approximately 4.5-5 feet bgs) were analyzed for TPH-d and TPH-mo with silica gel cleanup, TPH-g, VOCs, polynuclear aromatics (PNAs) and polyaromatic hydrocarbons (PAHs), and LUFT-5 metals (cadmium, chromium, lead, nickel and zinc). The two soil vapor samples were analyzed for PCE, TPH-g, VOCs, and the leak detection gas helium.

No COCs were detected in any soil samples at concentrations exceeding applicable SFBRWQCB ESLs and/or State of California Title 22 TTLC, STLC or TCLP levels. PCE was detected in the sub-slab soil vapor samples collected from VP-1 and VP-2 at 530 micrograms per cubic meter (µg/m^3) and 480 µg/m^3 exceeding the applicable commercial/industrial SFRWQCB ESL of 67 µg/m^3. None of the other analyzed constituents were detected above their respective laboratory detection limits.

A ground penetrating radar (GPR) scan of the western parking lot at 2550 Irving Street revealed no evidence of current or former underground storage tanks (USTs); however, a long, narrow anomaly was detected in the southwest corner that may be the former fuel dispenser island concrete slab.

AllWest recommended additional investigation at the subject property to delineate the extent and origin of PCE detected in soil vapor samples.

III. PURPOSE AND SCOPE OF WORK

The purpose of this investigation was to further delineate the extent of PCE in site soils and soil vapor from historical land use activities, and potential impact to site groundwater, as recommended in our *Phase II Subsurface Investigation* report dated June 21, 2019. The scope of work as performed included:

1) Prepared site safety plan and organized and scheduled field activities, procured equipment and coordinated with utility locating, drilling and analytical laboratory subcontractors;

2) Engaged the services of Underground Service Alert (USA) to locate and clear underground utilities within the proposed investigation area so the potential of accidental damage to underground utilities would be reduced.

- Retained the services of a C-57 licensed drilling contractor (Environmental Control Associates, Inc.) for the advancement by truck-mounted Geoprobe® Direct Push Technology (DPT) methods of three borings (B-8, B-9 and B-10) to respective depths of approximately 47, 40 and 52 feet bgs while attempting to encounter groundwater.

- Cored building interior concrete floor slab in the San Francisco Police Credit Union (SFPCU) using portable electric Rotohammer drilling equipment and installed four semi-permanent sub-slab Vapor Pin™ soil vapor probes (VP-1A, VP-2A, VP-3 and VP-4). Returned the next day and collected soil vapor samples from the semi-permanent sub-slab probes.

- Collected soil samples from borings B-8, B-9 and B-10 at depth intervals of 1-1.5 feet bgs, 4-4.5 feet bgs, 9.5-10 feet bgs, 19.5-20 feet bgs, 29.5-30 feet bgs and 39.5-40 feet bgs. Groundwater was not encountered or sampled in any of the borings.

8) At the completion of drilling and sampling activities, borings were backfilled with a “neat” cement grout slurry;

9) Maintained samples under chain-of-custody and transported the samples to a California State Water Resources Control Board (SWRCB) Environmental Laboratory Accreditation Program (ELAP) certified analytical laboratory for chemical analyses per SFHC Article 22A.

- Soil samples collected from borings B-8, B-9 and B-10 at depth intervals of 4.5-5 feet bgs and 9.5-10 feet bgs were analyzed for PCE and its degradation products TCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride.

- Analyzed four soil gas samples (VP-1A, VP-2A, VP-3 and VP-4) for PCE and its degradation products TCE, cis-1,2-DCE, trans-1,2-DCE, vinyl chloride and the leak detection gas helium.

10) Contained all soil spoils generated during the assessment in an onsite 5-gallon bucket pending profiling for disposal; and

12) Prepared a written *Phase II Subsurface Investigation Report* describing the field activities, summarizing the laboratory data, presenting investigation findings, and providing conclusions and recommendations.

IV. INVESTIGATIVE ACTIVITIES

A. Health and Safety Plan

AllWest prepared a site specific health and safety plan prior to mobilizing to the site. A tailgate safety meeting was held prior to commencing work. All site personnel were required to review the health and safety plan.

B. Drilling and Permit Application

Prior to the start of subsurface activities, a drilling permit was obtained from San Francisco Department of Public Health (SFDPW) Environmental Health Branch (EHB) for the exploratory soil borings a minimum of 10 working days prior to field activities. Forty eight hours advance notice was given to the SFDPH EHB for inspection of soil sampling and grout sealing. The drilling permit is included in Appendix A.

C. Underground Utility Inspection

To avoid damage to underground utility installations during the course of the subsurface investigation, AllWest contacted USA, an organization for public utility information, on the pending subsurface investigation. USA then notified public and private entities that maintain underground utilities within the site vicinity to locate and marked their installations for field identification.

D. Geoprobe® DPT Boring Advancement and Soil Sampling

On July 17, 2019, ECA advanced one boring (B-9) in the northeast corner of the driveway in front of the west side of the subject building. One boring (B-8) was advanced in the northeast corner of the employee parking lot at 2125 Irving Street, across the street from the subject credit union building and adjacent to the former dry cleaner at 2511 Irving Street. It was intended that these borings be advanced to groundwater; however drilling refusal in dense sands was encountered before first encountered groundwater. On July 18, 2019, ECA advanced one boring (B-10) within the landscaped sidewalk area of the subject property. Boring locations are shown on Figure 2.

Continuous DPT soil coring and sampling methods were conducted in general accordance with standard Geoprobe® DPT soil boring advancement and sampling procedures (Appendix B.)

Soil samples were collected from borings B-9 and B-10 at depth intervals of 1-1.5 feet bgs, 4-4.5 feet bgs, 9.5-10 feet bgs, 19.5-20 feet bgs, 29.5-30 feet bgs and 39.5-40 feet bgs. Boring B-8, B-9 and B-10 were advanced respective total depths to approximately 47, 52 and 40 feet bgs; however, groundwater was not encountered or sampled.

No obvious indications of soil contamination such as staining, odors or elevated organic vapor concentrations as measured by a photo-ionization detector (PID) were observed. Boring logs with sample interval locations and PID measurement data are included in Appendix D.

E. Temporary Soil Vapor Probe Installation

On July 18, 2019, the concrete floor slabs inside the SFPCU building were cored using electric Rotohammer™ drilling equipment, and four semi-permanent sub-slab Vapor Pins™ (VP-1A, VP-2A, VP-3 and VP-4) were installed by a C-57 licensed drilling contractor, ECA. Probes VP-1A and VP-2A were installed adjacent to the

former temporary sub-slab Vapor Pins™ (VP-1 and VP-2). Probe VP-3 was installed adjacent to the western interior wall of the SFPCU building and VP-4 was installed adjacent to the southern entrance of the SFPCU building. The Vapor Pin™ probes were installed in counter-sunk boreholes within the floor slab and protected with stainless steel covers mounted flush with the floor slab. AllWest returned to the subject property on July 19, 2019 to sample the semi-permanent sub-slab soil vapor probes. Sub-slab probe locations are shown on Figure 2.

Sub-slab soil vapor probe installations were in general accordance with the California Department of Toxic Substance Control (DTSC) *Advisory – Active Soil Gas Investigations*, July, 2015. AllWest allowed a minimum 2-hour equilibrium period between the Vapor Pin™ installation and soil vapor sampling activities to ensure compliance with the equilibrium times recommended in DTSC *Frequently Asked Questions, 2012 Advisory – Active Soil Gas Investigations (ASGI)*, March 2013. AllWest Vapor Pin™ sub-slab soil vapor probe installation and sampling procedures are included in Appendix D. The Vapor Pin™ probes were left in place following completion of soil vapor sampling, for potential future monitoring events.

F. Soil Vapor Sampling

Soil vapor samples were collected from semi-permanent vapor probes VP-1A, VP-2A, VP-3 and VP-4 on July 19, 2019. Soil vapor sampling procedures were performed in general accordance with the DTSC *Vapor Intrusion Guidance* (DTSC, October 2011) and the DTSC *Advisory - Active Soil Gas Investigations*, (DTSC, 2015). Soil gas samples were collected in laboratory prepared 1-liter capacity SUMMA canisters in general accordance with standard soil vapor sampling procedures and the manifold system schematic diagram included in Appendix D, except as noted below. Prior to sample collection and following the manifold leak check, three system volumes (approximately 128 milliliters) of soil vapor were purged at a flow rate of approximately 150-200 milliliters per minute (ml/min) from each sub-slab gas probe using a dedicated 6-liter capacity SUMMA purge canister. The soil vapor sampling field logs are included in Appendix E.

G. Borehole Backfilling

At the completion of drilling and sampling activities and removal of all rods, probes, samplers, and other equipment, the borings were backfilled with a “neat” Portland Type I or II cement grout slurry to ground surface level. The asphalt area over the exterior parking lot borings were restored to match their previous condition as closely as possible.

H. Investigative Derived Waste Containment and Disposal

All investigative derived wastes, consisting of soil (unused sample intervals) were stored at the property in a 5-gallon bucket, awaiting test results to determine the proper disposal method.

I. Sample Preservation, Storage, Handling and Chain-Of-Custody Procedures

To prevent the loss of constituents of interest, all soil samples were preserved by storing in an ice chest cooled to 4ºC with crushed ice immediately after their collection and during transportation to the laboratory. After filling and closing the sample valve, all SUMMA canisters were removed from the manifold, labeled with sampling information, including initial and final vacuum pressures, placed in a dark container and transported under chain-of-custody to the analytical laboratory. The standard chain-of-custody protocols will be followed through all stages of sample handling.

All samples collected for this project were transported under chain-of-custody protocol. The chain-of-custody program allows for the tracing of possession and handling of individual samples from the time of field collection through laboratory analysis. The document includes the signature of the collector, date and time of collection, sample number, number and type of sample containers including preservatives, parameters requested for analysis, initial and final SUMMA canister vacuum pressures, signatures of persons and inclusive dates involved in the chain of possession. Upon delivery to the laboratory the document will also include the name of person receiving the samples, and date and time samples were received.

V. ASSESSMENT FINDINGS AND DISCUSSION

A. Subsurface Conditions

Soil

Soils encountered during this subsurface investigation consisted of fine -grained, poorly-graded sands from beneath surface pavement/ground surface to the maximum explored depth of approximately 52 feet bgs. Boring logs are provided in Appendix C.

Groundwater

Groundwater was not encountered in any of the borings advanced to the total explored depth of 52 feet bgs during the investigation.

B. Environmental Screening Levels

To assess if the identified COCs in soil pose a risk to human health and the environment, AllWest compared analytical data generated during this investigation to Environmental Screening Levels (ESLs) for residential and commercial/industrial land use. The ESLs are compiled by the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) in *User's Guide: Derivation and Application of Environmental Screening Levels (ESLs)*, Interim Final – January 24, 2019.

Tier 1 ESLs used in this investigation were established using the *Tier 1 ESL* summary table based on a generic conceptual model designed for use at most sites. The Tier 1 generic conceptual model input settings are: residential land use, groundwater use as a drinking water resource, MCL priority over risk-based levels, discharge to surface water, substantial vegetation level, and shallow soil exposure depth.

Commercial/industrial land use Tier 2 ESLs used in this investigation were established for soil using *Table S-1 - Direct Exposure Human Health Risk Levels, Table S-2 – Terrestrial Habitat Levels, Table S-3 – Leaching to Groundwater Levels, Table S-4 - Gross Contamination Levels, Table S-5 - Odor Nuisance Levels*, for soil vapor using *Table SG-1 - Subslab/Soil Gas Vapor Intrusion:Human Health Risk Levels,* and using the site-specific Tier 2 Interactive Tool, *Table T2-1: Tier 2 ESL Input and Output* (RWQCB, 2019).

Under most circumstances, the presence of a chemical at a concentration below the corresponding ESL is presumed to not pose a significant risk to human health or the environment. The ESLs for the subject suite were established with the following assumptions: current commercial/industrial property use, a 'fine to coarse' soil type, deep groundwater (>10 feet bgs) which is a potential drinking water resource, and shallow direct exposure, soil depths (≤10 ft bgs). The SFPUC considers groundwater resources within the Westside A Groundwater Basin to be a beneficial resource for potential municipal or domestic use. The nearest surface water is Elk Glen Lake and Mallard Lake in Golden Gate Park, approximately ¼ mile north-northwest of the subject site. Therefore, aquatic habitat goal-derived ESLs are not applicable to the subject site.

Since the majority of the subject property is either asphalt paved or occupied by a building with a concrete floor slab, with a minor amount of landscaped area, the minimally vegetated area terrestrial habitat goal-derived ESLs are applicable to the subject site.

C. Soil Sample Analytical Data and Screening Levels

Soil samples selected for analysis were analyzed by a State of California certified independent analytical laboratory, McCampbell Analytical, Inc. of Pittsburg, California. All samples were analyzed on standard 5-day turn-around time. Analytical methods were in general accordance with those specified in SFHC Article 22A.

- Soil samples were collected from borings B-8, B-9 and B-10 at depth intervals of 1-1.5 feet bgs, 4-4.5 feet bgs, 9.5-10 feet bgs, 19.5-20 feet bgs, 29.5-30 feet bgs and 39.5-40 feet bgs, and submitted to the laboratory for potential analysis.

- Soil samples collected from borings B-8, B-9 and B-10 at depth intervals of 4.5-5 feet bgs and 9.5-10 feet bgs were analyzed for PCE and its degradation products TCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride.

No COCs were detected in any soil samples analyzed during this investigation. Soil sample analytical results are summarized in Table 1 and laboratory analytical reports are included in Appendix F.

D. Soil Vapor Analytical Data and Screening Levels

All soil vapor sample analysis was performed by a State of California certified independent analytical laboratory, Eurofins/Calscience, Inc. (ECI) of Garden Grove, California on standard 5-day turn-around time.

- PCE was detected in all four soil vapor samples at concentrations exceeding the applicable SFRWQCB commercial/industrial ESL of 67 µg/m^3 for vapor intrusion human health risk (see table below).

- No other COCs were detected in the soil vapor samples at concentrations exceeding applicable SFRWQCB commercial/industrial ESLs.

Probe & Sample ID Number	Date	Tetrachloroethene (PCE) µg/m3
VP-1A	7/19/2019	**1,100**
VP-2A	7/19/2019	**650**
VP-3	7/19/2019	**270**
VP-4	7/19/2019	**660**
SFRWQCB ESL		**67**

Soil vapor sample analytical results are summarized in Table 2 and laboratory analytical reports are included in Appendix F.

E. Analytical Laboratory QA/QC

A review of laboratory internal quality assurance/quality control (QA/QC) report indicates the method blank and sample spike data for all analyses were within the laboratory recovery limits. The samples were also analyzed within the acceptable EPA holding times. The data from McCampbell Analytical and Eurofins/CalScience are considered to be of good quality. Laboratory QA/QC reports and chain-of-custody records are included in Appendix F.

VI. CONCLUSIONS AND RECOMMENDATIONS

AllWest's subsurface assessment identified PCE concentrations in soil vapor samples VP-1A, VP-2A, VP-3 and VP-4 exceeding the SFRWQCB ESL for commercial/industrial vapor intrusion human health risk. PCE and its degradation products were not detected in any soil samples analyzed during this investigation

AllWest recommends additional investigation that includes advancing borings to groundwater and collecting groundwater samples at the subject property and adjoining the offsite former dry cleaner at 2511 Irving Street. The groundwater analytical data will help to further delineate the extent and origin of PCE detected in soil vapor samples.

AllWest also recommends performing indoor air quality monitoring and continuing semi-annual sub-slab soil vapor monitoring activities inside the SFPCU to evaluate potential vapor intrusion impact to indoor air.

VII. LIMITATIONS

The work described in this report was performed in accordance with the Environmental Consulting Agreement between San Francisco Police Credit Union (Client) and AllWest Environmental, Inc, dated June 13, 2019. AllWest has prepared this report for the exclusive use of the Client for this particular project and in accordance with generally accepted practices at the time of the work. No other warranties, certifications or representations, either expressed or implied are made as to the professional advice offered. The services provided for the Client were limited to their specific requirements; the limited scope allows for AllWest to form no more than an opinion of the actual site conditions. No matter how much research and sampling may be performed, the only way to know about the actual composition and condition of the subsurface of a site is through excavation.

The conclusions and recommendations contained in this report are made based on observed conditions existing at the site, laboratory test results of the submitted samples, and interpretation of a limited data set. It must be recognized that changes can occur in subsurface conditions due to site use or other reasons. Furthermore, the distribution of chemical concentrations in the subsurface can vary spatially and over time. The results of chemical analysis are valid as of the date and at the sampling location only. AllWest is not responsible for the accuracy of the test data from an independent laboratory, or for any analyte quantities falling below the recognized standard detection limits or for the method utilized by the independent laboratories.

Background information that AllWest has used in preparing this report, including but not limited to previous field measurements, analytical results, site plans, and other data, has been furnished to AllWest by the Client, its previous consultants, and/or third parties. AllWest has relied on this information as furnished. AllWest is not responsible, for nor has it confirmed, the accuracy of this information.

VIII. REFERENCES

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FIGURES

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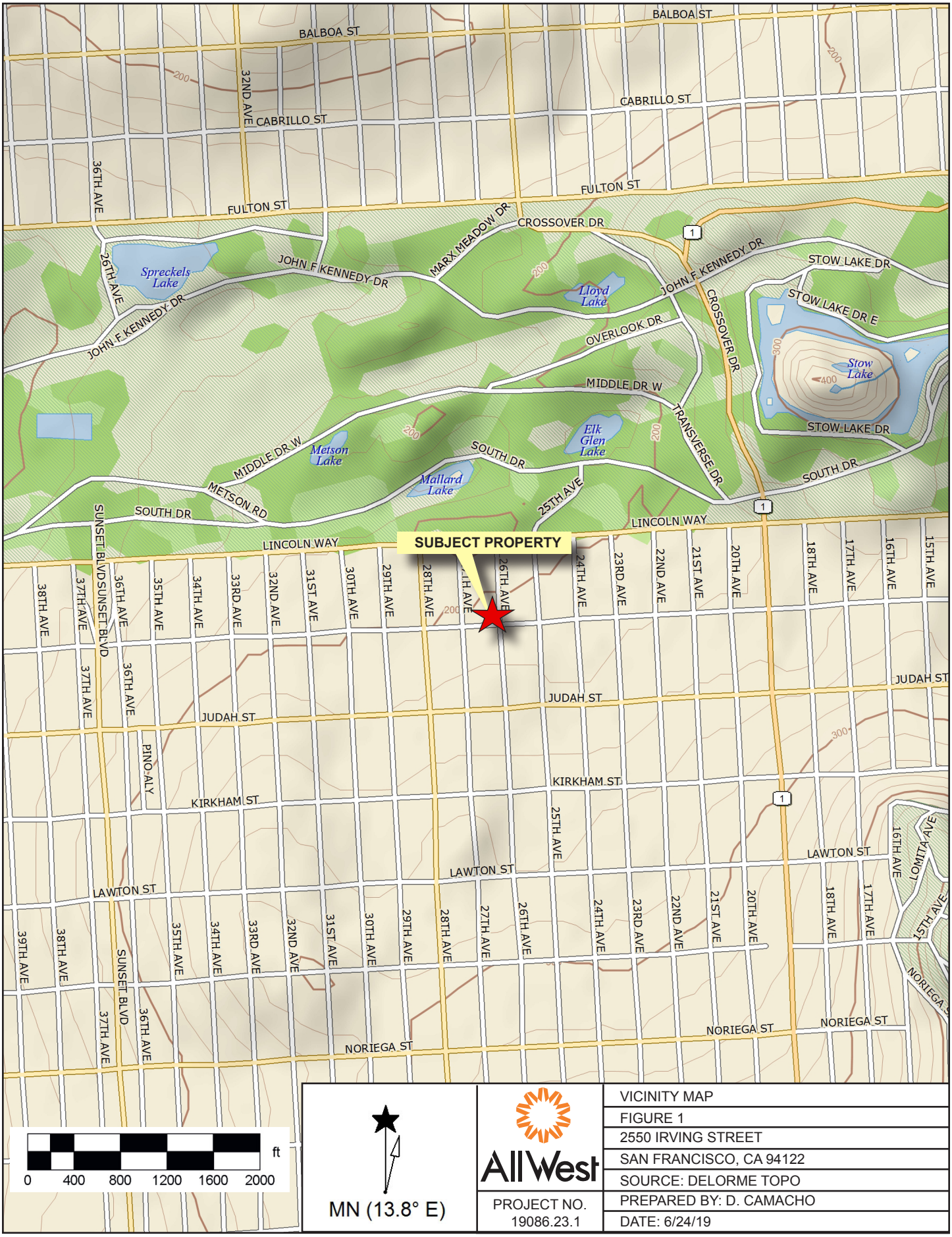
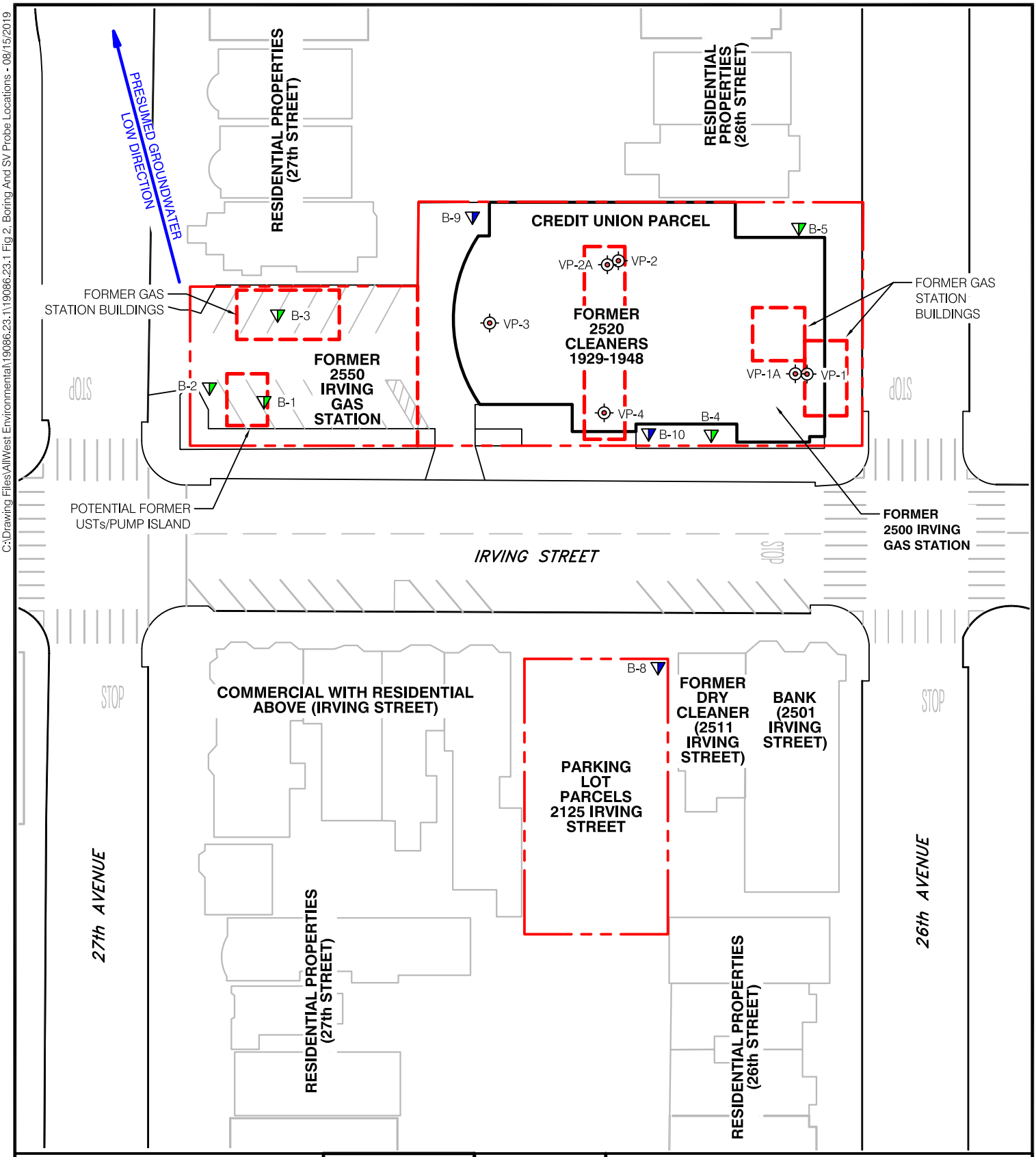
Topo USA® 8



AllWest

PROJECT NO. 19086.23.1

VICINITY MAP
FIGURE 1
2550 IRVING STREET
SAN FRANCISCO, CA 94122
SOURCE: DELORME TOPO
PREPARED BY: D. CAMACHO
DATE: 6/24/19



LEGEND

- B-5 ▽ Geoprobe Boring to 10-Feet bgs (AllWest, B1 thru B5, 5/21/19)
- B-10 ▽ Geoprobe Boring to 40 to 52-Feet bgs (AllWest, B-8 thru B10, 7/17/2019)
- VP-4 ⊙ Sub-Slab Vapor Pin (AllWest, VP-1 and VP-2, 5/21/19, VP-1A, VP-2A, VP-3 and VP-4, 7/17/19)
- Approximate Property Boundaries

N

0 25 50

APPROXIMATE SCALE (FEET)

AllWest

PROJECT NO. 19086.23.1

FIGURE 2
BORING AND SOIL VAPOR PROBE LOCATIONS

2500-2525 Irving Street

San Francisco, California

SOURCE: AllWest

DRAWN BY: CM (08/15/2019)

TABLES

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA
2500-2550 Irving Street
San Francisco, California
AllWest Project No. 19089.23.1

Sample Name and Depth in feet bgs	Date Sampled	TPH-g (C6-C12) (mg/kg)	TPH-d (C10-C23) (mg/kg)	TPH-mo (C18-C36) (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Tetrachloroethene (PCE) (mg/kg)	Other VOCs (mg/kg)
B-1 (4.5-5)	5/21/2019	ND (<1.0)	13	**210**	ND (<0.25)	44	9.0	24	28	ND (<0.0050)	ND (varies)
B-2 (4.5-5)	5/21/2019	ND (<1.0)	3.6	70	ND (<0.25)	57	4.6	26	24	ND (<0.0050)	ND (varies)
B-3 (4.5-5)	5/21/2019	ND (<1.0)	1.1	19	ND (<0.25)	49	**39**	26	68	ND (<0.0050)	ND (varies)
B-4 (4.5-5)	5/21/2019	ND (<1.0)	ND (<1.0)	ND (<5.0)	ND (<0.25)	57	10	30	45	ND (<0.0050)	ND (varies)
B-5 (4.5-5)	5/21/2019	ND (<1.0)	ND (<1.0)	ND (<5.0)	ND (<0.25)	45	2.5	24	21	ND (<0.0050)	ND (varies)
B-8 (4.5-5)	7/17/2019	NA	NA	NA	NA	NA	NA	NA	NA	ND (<0.0050)	ND (varies)
B-8 (9.5-10)	7/17/2019	NA	NA	NA	NA	NA	NA	NA	NA	ND (<0.0050)	ND (varies)
B-9 (4.5-5)	7/17/2019	NA	NA	NA	NA	NA	NA	NA	NA	ND (<0.0050)	ND (varies)
B-9 (9.5-10)	7/17/2019	NA	NA	NA	NA	NA	NA	NA	NA	ND (<0.0050)	ND (varies)
B-10 (4.5-5)	7/18/2019	NA	NA	NA	NA	NA	NA	NA	NA	ND (<0.0050)	ND (varies)
B-10 (9.5-10)	7/18/2019	NA	NA	NA	NA	NA	NA	NA	NA	ND (<0.0050)	ND (varies)
SFRWQCB Tier 1 ESLs		**100 (Res-ON)**	**260 (Res-DE)**	**100 (Res-ON)**	**1.9 (TH)**	**160 (TH)**	**32 (TH)**	**86 (CW-DE)**	**340 (TH)**	**0.080 (TH)**	**Varies or NE**
SFRWQCB Tier 2 Commercial/Industrial ESLs		**500 (Com-ON)**	**1,000 (Com-ON)**	**500 (Com-ON)**	**1,100 (Com-DE)**	**1,800,000* (Com-DE)**	**320 (Com-DE)**	**11,000 (Com-DE)**	**350,000 (Com-DE)**	**1,000 (Com-ON)**	**Varies or NE**
SFRWQCB Tier 2 Construction Worker ESLs		**500 (CW-ON)**	**1,000 (CW-ON)**	**500 (CW-ON)**	**51 (CW-DE)**	**530,000* (CW-DE)**	**180 (CW-DE)**	**86 (CW-DE)**	**110,000 (CW-DE)**	**350 (CW-DE)**	**Varies or NE**
Title 22 TTLC (mg/kg)		**NE**	**NE**	**NE**	**100**	**2,500**	**1,000**	**2,000**	**5,000**	**NE**	**Varies or NE**
Title 22 STLC (mg/L)		**NE**	**NE**	**NE**	**1.0**	**5.0 (Cr III & total)**	**5.0**	**20**	**250**	**NE**	**Varies or NE**

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA
2500-2550 Irving Street
San Francisco, California
AllWest Project No. 19089.23.1

Sample Name and Depth in feet bgs	Date Sampled	TPH-g (C6-C12) (mg/kg)	TPH-d (C10-C23) (mg/kg)	TPH-mo (C18-C36) (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Tetrachloroethene (PCE) (mg/kg)	Other VOCs (mg/kg)
Title 22 TCLP (mg/L)		**NE**	**NE**	**NE**	**1.0**	**5.0**	**5.0**	**NE**	**NE**	**0.70**	**Varies or NE**
LBNL Mean/Median Background Concentrations		**NE**	**NE**	**NE**	**1.1**	**58 (total)**	**7.0**	**68**	**64**	**NE**	**NE**

Notes:

All samples analyzed at McCampbell Analytical, Inc., Pittsburg, California.
All results are reported in milligrams per kilogram (mg/kg)
bgs = below ground surface
VOCs - Volatile Organic Compounds, analytical method SW8260B
TPH-g - Total Petroleum Hydrocarbons as Gasoline, analytical method SW8260B
TPH-d - Total Petroleum Hydrocarbons as Diesel, analytical method SW8015 without Silica Gel cleanup
TPH-mo - Total Petroleum Hydrocarbons as Motor Oil, analytical method SW8015 without Silica Gel cleanup
PCE = Tetrachloroethene, analytical method SW8260B
ND - Not Detected above laboratory reporting limit (listed in paranthesis)
NA - Not Analyzed
NE - Not Established
* = Chromium III; ESL not established for total chromium

SFRWQCB ESLs = San Francisco Bay Regional Water Quality Control Board, *User's Guide: Derivation and Application of Environmental Screening Levels (ESLs)* , Tier 1 Environmental Screening Levels (ESLs), January 23, 2019

Tier 1 Environmental Screening Levels (ESLs) for residential land use and soil disposal acceptance profiling were established using the Tier 1 ESL Summary Table based on a generic conceptual site model designed for use at most sites. These ESLs were established with the following assumptions: Land Use = Residential, Groundwater Use = Drinking Water Resource, MCL Priority over RIsk-

Tier 2 Environmental Screening Levels (ESLs) for residential and commercial/industrial and construction worker/any land use where groundwater IS a potential drinking water resource were established using the site-specific Tier 2 Interactive Tool, Table T2-1: Tier 2 ESL Input and Output. These ESLs were established with the following assumptions: Commercial property use,

Res-DE = Residential Direct Exposure Human Health Risk Levels (*Table S-1*)
Com-DE = Commercial/Industrial Direct Exposure Human Health Risk Levels (*Table S-1*)
CW-DE = Construction Worker / Any Site Use Direct Exposure Human Health Risk Levels (*Table S-1*)
Res-ON = Residential Odor Nuisance Levels (*Table S-5*)
Com-ON = Residential Odor Nuisance Levels (*Table S-5*)
CW-ON = Construction Worker / Any Land Use Odor Nuisance Levels (*Table S-5*)

TABLE 1
SUMMARY OF SOIL ANALYTICAL DATA
2500-2550 Irving Street
San Francisco, California
AllWest Project No. 19089.23.1

Sample Name and Depth in feet bgs	Date Sampled	TPH-g (C6-C12) (mg/kg)	TPH-d (C10-C23) (mg/kg)	TPH-mo (C18-C36) (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Lead (mg/kg)	Nickel (mg/kg)	Zinc (mg/kg)	Tetrachloroethene (PCE) (mg/kg)	Other VOCs (mg/kg)

Concentrations exceeding the applicable ESLs are indicated in **bold font**

TTLC - Total Threshold Limit Concentration value for hazardous waste established by State of California Code of Regulations Title 22, Chapter 11, Article 3, Tables II and III.

STLC - Soluble Threshold Limit Concentration value for hazardous waste established by State of California Code of Regulations Title 22, Chapter 11, Article 3, Tables II and III.

TCLP - Toxicity Characteristic Leaching Procedure value for hazardous waste established by State of California Code of Regulations Title 22, Chapter 11, Article 3, Tables II and III.

Lawrence Berkeley National Laboratory (LBNL) *Analysis of Background Distributions of Metals in the Soil at Lawrence Berkeley National Laboratory, Table 3: Summary Statistics for Background Data Sets After Removal of Outliers.* April, 2009. Arithmetic mean used where available; otherwise median concentration.

Table 2
Soil Vapor Analytical Data Summary
2500-2550 Irving Street
San Francisco, California
AllWest Project 19089.23.1

Probe & Sample ID Number	Date	Depth (feet bgs)	Probe Type	Acetone µg/m^3	2-Butanone (MEK) µg/m^3	Chloroform µg/m^3	cis-1,2-DCE µg/m^3	Isopropanol µg/m^3	PCE µg/m^3	Toluene µg/m^3	TCE µg/m^3	trans-1,2-DCE µg/m^3	Vinyl Chloride µg/m^3	Other VOCs µg/m^3	TPH-g µg/m^3	Helium (Leak detect gas) (% v/v)
VP-1	5/21/2019	0.5	TSS	56	ND (<10)	8.6	ND (<4.5)	46	**530**	ND (<4.3)	NA	ND (<4.5)	ND (<2.9)	ND (varies)	ND (<9,300)	ND (<0.0100)
VP-2	5/21/2019	0.5	TSS	57	9.5	ND (<2.4)	ND (<2.3)	27	**480**	3.6	NA	ND (<2.3)	ND (<1.3)	ND (varies)	ND (<9,300)	ND (<0.0100)
VP-1A	7/19/2019	0.5	SPVP	NA	NA	NA	ND (<6.3)	NA	**1,100**	NA	ND (<8.6)	ND (<6.3)	ND (<4.1)	NA	NA	ND (<0.025)
VP-2A	7/19/2019	0.5	SPVP	NA	NA	NA	ND (<6.3)	NA	**650**	NA	ND (<8.6)	ND (<6.3)	ND (<4.1)	NA	NA	ND (<0.025)
VP-3	7/19/2019	0.5	SPVP	NA	NA	NA	ND (<6.3)	NA	**270**	NA	ND (<8.6)	ND (<6.3)	ND (<4.1)	NA	NA	ND (<0.025)
VP-4	7/19/2019	0.5	SPVP	NA	NA	NA	ND (<2.0)	NA	**660**	NA	ND (<2.7)	ND (<2.0)	ND (<1.3)	NA	NA	ND (<0.025)
SFRWQCB ESL	Commercial Soil Gas			**1,000,000 (ON)**	**730,000 (DE)**	**18 (DE)**	**1,200 VI**	**NL**	**67 (DE)**	**44,000 (DE)**	**100 (DE)**	**12,000 VI**	**5.2 VI**	**Varies or NE**	**330 (ON)**	**NE**

Notes:

Laboratory analyses by Eurofins Calscience, Garden Grove, CA
µg/m^3 = micrograms per cubic meter
TPH-g = total petroleum hydrocarbons as gasoline, analytical method TO-3M
VOCs = volatile organic compounds, analytical method TO-15 SIM
cis-1,2-DCE = cis-1,2-Dichloroethene
trans-1,2-DCE =trans-1,2-Dichloroethene
PCE = perchloroethylene / tetrachloroethene
TCE = trichloroethene
MEK = Methyl Ethyl Ketone (2-Butanone)
ND = Not detected above the listed reporting limit
NL = Not listed
NE = Not established
Bold Font = Detected values exceed regulatory screening levels.
TSS = Temporary Sub-Slab Vapor Pin
SPVP = Semi-Permanent Sub-Slab Vapor Pin
NA = Not Analyzed

SFRWQCB ESLs = San Francisco Regional Water Quality Control Board, *User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), Tier 2 ESLs from Table SG-1 - Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels, Commercial/Industrial* , and *Table SG-2 - Subslab/Soil Gas Vapor Intrusion: Odor Nuisance Levels* , Interim Final - January 23, 2019.

DE = Direct Exposure (*Table SG-1 - Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels*)
ON = Odor Nuisance (*Table SG-2 - Subslab/Soil Gas Vapor Intrusion: Odor Nuisance Levels*)

APPENDIX A

RECEIVED
JUL 01 2019
SFDPH - ENVIRONMENTAL HEALTH BRANCH

City and County of San Francisco
DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH

Application for Monitoring Well Construction/Destruction or Soil Borings

Application Date: 7/1/19 Start Date: 07/17/2019 Completion Date: 07/18/2019

Job Address/Location: 2550 IRVING STREET, SAN FRANCISCOM CA 94122 ✓

To be completed by Owner, Consultant or Driller

Property Owner	Well Owner (If Different)	Consultant/Engineer & Geologist Name
SFPDCU		ALLWEST ENVIRONMENTAL
Address 2550 IRVING STREET	Address	Address 2141 MISSION STREET
City, State, Zip SAN FRANCISCO, CA 94122	City, State, Zip	City, State, Zip SAN FRANCISCO, CA 94110
Telephone Number (800) 222-1391	Telephone Number	Telephone Number (415) 391-2510
Fax Number	Fax Number	Fax Number Email SAM@ALLWEST1.COM / LEONARD@ALLWEST1.COM

Please indicate **Type and Number** of Proposed Wells/Borings

Geotechnical Investigation:
- ☐ Exploratory Wells/borings
- ☐ Cathodic Wells
- ☐ Cone Penetrometer Test
- ☐ Shallow Anodes
- ☐ Other:

Environmental Investigation:
- ☒ Exploratory borings
- ☐ Water/Vapor Extraction Wells
- ☐ Hydropunch
- ☐ LOP Workplan

Monitoring Wells Construction:
- ☐ Chemical Leaks
- ☐ Compliance Well
- ☐ Baseline Study
- ☐ Well Destruction
- ☐ LOP Workplan

Topographic Features – Well to be constructed:
☐ In a Public Sidewalk ☐ In a Public Road ☒ On Private Property ☐ On City Property

Construction Specifications:

Diameter of Well Casing: N/A
Gauge of Casing: N/A
Casing Depth: N/A
Annular Seal Depth: 5.5 TO 40 FEET BGS
Annular Seal Material: NEAT CEMENT
Other Information: BOREHOLE GROUT SEAL

Destruction Specifications: Well Diameter: Approximate Depth:

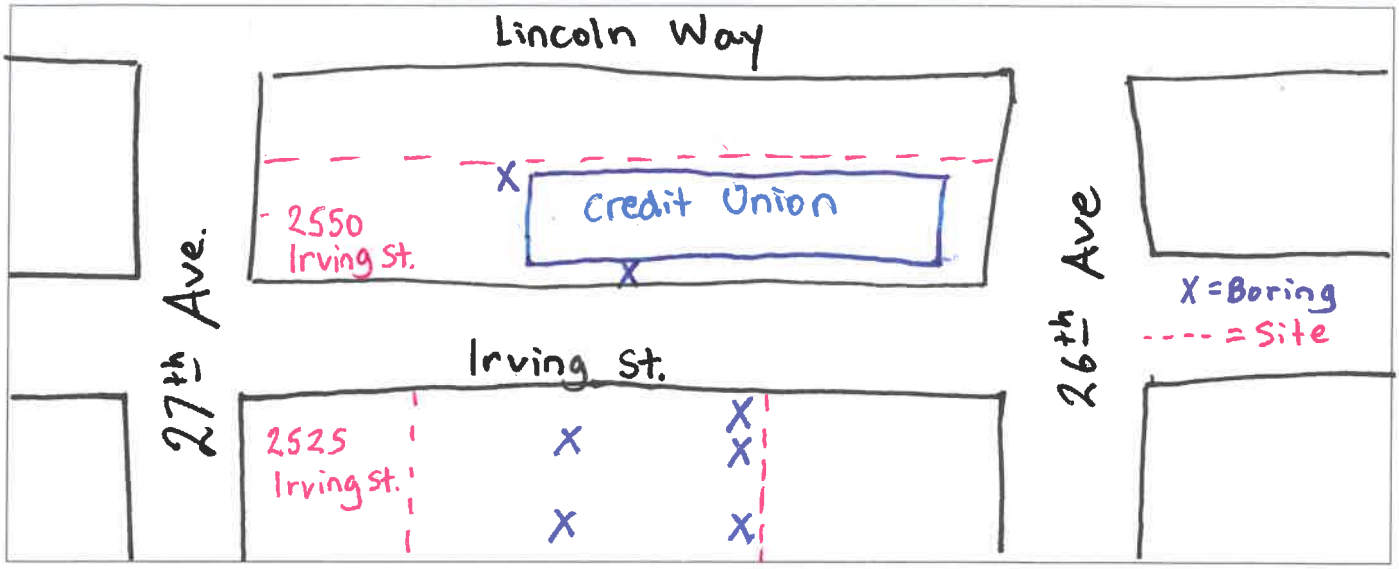
Materials and Procedures to be Used: 2 GEOPROBE BORINGS TO 35-40 FEET AT 2550 IRVING ST. 1 GEOPROBE BORING TO 35-40 FEET AT 2525 IRVING ST.

2 GEOPROBE BORINGS TO 10 FT AND 2 TO 5.5 FT AT 2525 IRVING STREET ✓

BORINGS GROUTED WITH CEMENT AND ASPHALT RESTORED. ALL 7 BORINGS ARE THE SAME JOB.

Well Location: On the following site plan accurately draw the well location. (Recommend Assessor's Map)
1. Sketch well location to scale, show dimensions to nearest foot.
2. Show a minimum of two dimensions at right angles. Dimensions shall be from the centerline of the closest named street, road or highway.
3. Show location of any existing wells.

LOC ID 3445



Certification by Well Owner/Agent or Driller/Agent:
I certify the information above is correct to the best of my knowledge. I certify that the well will be constructed in compliance with the conditions of this permit, the San Francisco Health Code and, if applicable, the Hazardous Materials Permit and Discloser Ordinance of the City/County. It is my responsibility as the responsible party to notify the Department of any changes in the purpose of the well that is indicated on this application form.

If proposed well is to meet compliance with a Hazardous Materials Permit & Disclosure Ordinance, has the Hazardous Materials Unified Program been contacted? ☐ Yes ☐ No

Environmental Control Associates 3011 TWIN PALMS DR. ALTOS, CA 95003 (R)
Name and Address of Well/Drilling Company

695970 ✓
C-57 Driller's License Number

Leonard Miles
Signature of Responsible Professional
(Wet signature; **No** substitution of Signature will be accepted)

7/1/19
Date

P.G. 5774 / C.H.G 357
Civil Engineer Registration Number or Engineering Geologist Certificate Number

Email to whom the approved Application should be sent: sam@allwest1.com / leonard@allwest1.com

Based on information on the application and attachment(s) hereto (if any) and subject to approval noted below, permission is hereby granted to commence the described project. Permission to start may be withheld until a field check verifies all statements made on application by Permittee and is also subject to any "General" and "Special" conditions attached.

For Department of Public Health Office Use Only

Project Number: 7323
Issue Date: WTR JUL 03 2019
Number of Wells: ZERO (0)
Number of Soil Borings: SEVEN (7)

This project to construct/destruct is **approved** ☑
This project to construct/destruct is **disapproved** ☐

E. SANTIAGO
Inspector

E-MAILED
WTR JUL 03 2019

SAN FRANCISCO DEPARTMENT OF PUBLIC HEALTH
ENVIRONMENTAL HEALTH BRANCH
1390 Market Street, Suite 210, San Francisco, CA 94102
www.sfdph.org/dph/EH/
Phone: (415) 252-3800 Fax: (415) 252-3842

WATER PROGRAM

Receipt Number: **WTR7323**

Date: 7/3/2019

Received From: AllWest Environmental, Inc.

Depositor Address: 2141 Mission St., Suite 100

San Francisco, CA 94110

Fee Type	Sub-Object No.	Amount	Check #
Application Fee	20110	$376.00	18867
Deposit	63540	$454.00	18867
	TOTAL PAYMENT	**$830.00**	

Project Number: 7323

Project Location: 2550 Irving St.

San Francisco, CA 94122

Payment Received by: Eurich Santiago

HD/Program: Water GF

Notes:

Environmental borings (7)
Project site includes 2550 Irving St/2525 Irving St

APPENDIX B

AllWest

STANDARD GEOPROBE™ DPT SAMPLING PROCEDURES

Soil Sampling

Direct push technology (DPT) soil core sampling using Geoprobe™ or similar methods is accomplished using a nominal 4-foot long, 2-inch outside diameter (OD) stainless steel core barrel drive probe and extension rods. The drive probe is equipped with nominal 1 ½-inch inside diameter (ID) clear PVC plastic tubes that line the interior of the probe. The probe and insert tubes are together hydraulically driven using a percussion hammer in 4-foot intervals to the specified depth. After each drive interval the drive probe and rods are retrieved to the surface. The PVC tube containing subsurface soil is then removed. Selected soil sample intervals can be cut from the 4-foot PVC tube for possible analytical or geotechnical testing, or other purposes.

The drive probe is then cleaned, equipped with a new PVC tube and reinserted into the boring with extension rods as required. The apparatus is then driven following the above procedure until the desired depth is obtained. The PVC tubes and recovered soil are inspected after each drive interval with lithologic and relevant drilling observations recorded. Soil samples are screened for organic vapors using an organic vapor meter (OVM), photo-ionization detector (PID) or other appropriate device. OVM/PID readings, soil staining and other relevant observations are recorded. The soils contained in the sample liners are then classified according to the Uniform Soil Classification System and recorded on the soil boring logs.

Sample liners selected for laboratory analyses are sealed with Teflon™ sheets, plastic end caps, and silicon tape. Samples can also be collected from inside the liner using an EnCore™ type sampler per EPA Method 5035. The sealed sample liner is then labeled, sealed in a plastic bag, and placed in an ice chest cooled to 4°C with crushed ice for temporary field storage and transportation. The standard chain-of-custody protocol is maintained for all soil samples from the time of collection to arrival at the laboratory.

Groundwater Sampling

Groundwater sampling is performed after the completion of soil sampling and when the boring has reached its desired depth. The steel probe and rods are then removed from the boring and new, nominal 1-inch diameter PVC solid and perforated temporary casing is lowered into the borehole. Alternatively, a retractable screen sampling device such as a Hydropunch™ can be driven to the desired depth and pulled back to expose the screened interval. Depth to water is then measured using an electronic groundwater sounding probe. Groundwater samples are collected using a stainless steel bailer, disposable polyethylene bailer, or check valve or peristaltic pump with disposable Teflon™ or polyethylene sample tubing.

After the retrieval of the bailer, groundwater contained in the bailer (or discharged from sample tubing) is decanted into laboratory provided containers. The containers are then sealed with Teflon™ coated caps with no headspace, labeled, and placed in an ice chest for field storage and transportation to a state certified analytical laboratory. The standard chain-of-custody protocols are followed from sample collection to delivery to the laboratory. A new bailer (or sample tubing) is used for each groundwater sampling location to avoid cross contamination.

APPENDIX C

AllWest Environmental
2141 Mission Street, Suite 100
San Francisco, CA 94110
Telephone: 415.391.2510

BORING NUMBER B-8

CLIENT SFPCU
PROJECT NAME Irving II
PROJECT NUMBER 19086.23.1
PROJECT LOCATION 2550 Irving Street, San Francisco, CA
DATE STARTED 7/17/19 **COMPLETED** 7/17/19
GROUND ELEVATION _____ **HOLE SIZE** 2"
DRILLING CONTRACTOR ECA
GROUND WATER LEVELS:
DRILLING METHOD Direct Push Technology
AT TIME OF DRILLING ---
LOGGED BY Sam Calloway **CHECKED BY** Leonard Niles, PG, CHG
AT END OF DRILLING ---
NOTES Borehole grouted with neat cement
AFTER DRILLING ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data
0					0.1 Asphalt 1-1.5" thick	
	MC B-8@1-1.5	100	SP		(SP) Sand, brown, fine-grained, moist, no plasticity, no odor or staining	PID = 0
					4.0	
5	MC B-8@4.5-5	100	SP		(SP) Same as above	PID = 0
					8.0	
					(SP) Same as above	
10	MC B-8@9.5-10	100	SP			PID = 0
					12.0	
			SP		(SP) Same as above, color becoming lighter brown	
15						PID = 0
					16.0	
			SP		(SP) Same as above, sand, brown, fine-grained, no plasticity, moist, no odor or staining	PID = 0
20	MC B-8@19.5-20	100			20.0	
			SP		(SP) Sand, light brown to brown, fine-grained, no plasticity, moist, no odor or staining	PID = 0
					24.0	
25			SP		(SP) Same as above	
					28.0	
			SP		(SP) Same as above, sand is medium-grained	
30	MC B-8@29.5-30	100			30.0	PID = 0
			SP		(SP) Same as above	
					32.0	
			SP		(SP) Same as above, no signs of moisture have been encountered	
35						PID = 0

(Continued Next Page)

AllWest Environmental
2141 Mission Street, Suite 100
San Francisco, CA 94110
Telephone: 415.391.2510

BORING NUMBER B-8

CLIENT SFPCU **PROJECT NAME** Irving II

PROJECT NUMBER 19086.23.1 **PROJECT LOCATION** 2550 Irving Street, San Francisco, CA

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data
35			SP		(SP) Same as above, no signs of moisture have been encountered *(continued)*	
				36.0		
			SP		(SP) Same as above, sand is still showing no sign of being in groundwater	
40	MC B-8@39.5-40	100		40.0		PID = 0
			SP		(SP) Same as above. Drilling refusal encountered at 47' bgs. Put PVC casing in boring screen from 27' to 47' bgs, no water in casing. Grouted hole after determining no groundwater was going to be encountered.	
45				47.0		

Bottom of borehole at 47.0 feet.

AllWest Environmental
2141 Mission Street, Suite 100
San Francisco, CA 94110
Telephone: 415.391.2510

BORING NUMBER B-9

CLIENT SFPCU **PROJECT NAME** Irving II

PROJECT NUMBER 19086.23.1 **PROJECT LOCATION** 2550 Irving Street, San Francisco, CA

DATE STARTED 7/17/19 **COMPLETED** 7/17/19 **GROUND ELEVATION** _____ **HOLE SIZE** 2"

DRILLING CONTRACTOR ECA **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push Technology **AT TIME OF DRILLING** ---

LOGGED BY Sam Calloway **CHECKED BY** Leonard Niles, PG, CHG **AT END OF DRILLING** ---

NOTES Borehole grouted with neat cement **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data
0					0.1 Ashpalt 1.5" thick	
	MC B-9@1-1.5	100	SP		(SP) Sand, brown, fine-grained, no plasticity, moist, no odor or staining	PID = 0
					4.0	
5			SP		(SP) Same as above	
					8.0	
					(SP) Same as above, color becoming lighter brown	PID = 0
10	MC B-9@9.5-10	100	SP			
					12.0	
					(SP) Same as above, sand is becoming slightly more coarse	PID = 0
			SP			PID = 0
15						
					16.0	
					(SP) Same as above, color changing to a tan brown	
			SP			PID = 0
20	MC B-9@19.5-20	100			20.0	
			SP		(SP) Sand, brown to light brown, fine-grained, moist, no plasticity, no odor or staining	
						PID = 0
					24.0	
25			SP		(SP) Same as above, sand is becoming medium-grained	
					28.0	
					(SP) Same as above	PID = 0
30	MC B-9@29.5-30	100	SP			
					32.0	
			SP		(SP) Same as above, no groundwater is noticed, the core itself has no sign of moisture	
35						

(Continued Next Page)

AllWest Environmental
2141 Mission Street, Suite 100
San Francisco, CA 94110
Telephone: 415.391.2510

BORING NUMBER B-9

CLIENT SFPCU **PROJECT NAME** Irving II

PROJECT NUMBER 19086.23.1 **PROJECT LOCATION** 2550 Irving Street, San Francisco, CA

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data
35			SP		(SP) Same as above, no groundwater is noticed, the core itself has no sign of moisture *(continued)*	PID = 0
				36.0		
			SP		(SP) Same as above, no groundwater encountered	PID = 0
40	MC B-9@39.5-40	100		40.0		
			SP		(SP) Same as above	
				42.0		
45			SP		(SP) Sand, brown/light brown, fine-grained, moist, no plasticity, no odor or staining, no saturation and no sign of moisture on core. Refusal at 52' bgs. Casing set at 52' bgs, screen from 32'-52', no groundwater encountered. Casing removed and borehole grouted.	PID = 0
50						
				52.0		

Bottom of borehole at 52.0 feet.

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BORING NUMBER B-10

CLIENT SFPCU **PROJECT NAME** Irving II

PROJECT NUMBER 19086.23.1 **PROJECT LOCATION** 2550 Irving Street, San Francisco, CA

DATE STARTED 7/18/19 **COMPLETED** 7/18/19 **GROUND ELEVATION** _____ **HOLE SIZE** 2"

DRILLING CONTRACTOR ECA **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push Technology **AT TIME OF DRILLING** ---

LOGGED BY Sam Calloway **CHECKED BY** Leonard Niles, PG, CHG **AT END OF DRILLING** ---

NOTES Borehole grouted with neat cement **AFTER DRILLING** ---

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data
0						
	MC B-10@1-1.5	100	SP		(SP) (no asphalt, boring in landscaped area) Sand, light brown, fine-grained, dry, no plasticity, no odor or staining, minor tree/plant matter from 0-2' bgs	PID = 0
					4.0	
5	MC B-10@4.5-5	100	SP		(SP) Sand, light brown to brown, fine-grained, dry, no plasticity, no odor or staining	PID = 0.1
					8.0	
10	MC B-10@9.5-10	100	SP		(SP) Same as above, sand is still very dry	PID = 0
					12.0	
15			SP		(SP) Same as above	
					16.0	
			SP		(SP) Sand, brown/tan, fine-grained, moist, no plasticity, no odor or staining	
20	MC B-10@19.5-20	100			20.0	PID = 0
			SP		(SP) Same as above	
					24.0	PID = 0
25			SP		(SP) Sand, brown, fine-grained, no plasticity, moist, no odor or staining	
					28.0	
30	MC B-10@29.5-30	100	SP		(SP) Same as above, sand is light brown to brown with no sign of groundwater	PID = 0
					32.0	
35			SP		(SP) Same as above	

(Continued Next Page)

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2141 Mission Street, Suite 100
San Francisco, CA 94110
Telephone: 415.391.2510

BORING NUMBER B-10

CLIENT SFPCU **PROJECT NAME** Irving II

PROJECT NUMBER 19086.23.1 **PROJECT LOCATION** 2550 Irving Street, San Francisco, CA

DEPTH (ft)	SAMPLE TYPE NUMBER	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	Environmental Data
35			SP		(SP) Same as above *(continued)*	
				36.0		
			SP		(SP) Sand, brown, fine-grained, moist, no plasticity, no odor or staining, no apparent signs of moisture on the core. Installed casing, screen from 20'-40' bgs, casing in place for ~1.5 hours, no sign of groundwater. Removed casing and grouted borehole.	
40	MC B-10@39.5-40	100		40.0		PID = 0.1
					Bottom of borehole at 40.0 feet.	

APPENDIX D

STANDARD GEOPROBE® AND VAPOR PIN™ SOIL VAPOR PROBE INSTALLATION AND SAMPLING PROCEDURES

Geoprobe® DPT PRT Temporary Soil Vapor Probe Advancement

The Geoprobe® Direct Push Technology (DPT) Post Run Tubing (PRT) soil vapor sampling process involves driving into the subsurface a disposable Geoprobe® DPT sampling probe with expendable tip and a PRT adapter that are connected to 4-foot sections of Geoprobe® 1.25-inch inside diameter (ID) extension rods. The PRT adapter has a reverse-thread adapter at the upper end to allow the connection of flexible soil vapor sampling tubing with a PRT tubing adaptor after the installation (post-run) of the tip. The entire sampling assembly, the sampling tip, PRT adapter, and the Geoprobe® extension rods, is driven into the subsurface by a truck-mounted hydraulic percussion hammer. The sampler is driven to the desired depth as additional rods are connected. At the desired sampling depth, typically 5 feet below ground surface (bgs) a sufficient length of disposable flexible 0.25-inch OD polyethylene, Nylaflow™ or Teflon™ sample tubing is first lowered through the center of the extension rod and connected to the PRT adapter. Only Teflon™ sample tubing is to be used if naphthalene analysis is intended. The extension rod is then retracted 3 to 4 inches to create a small void around the PRT adapter and the expendable sampling tip for extracting a soil vapor sample from that location. Bentonite chips will be used to fill the annular space between the probe and the subgrade material to the ground surface. The bentonite will then be hydrated with distilled water. The temporary Geoprobe® PRT soil vapor probe will be sampled at least 2 hours following driving of the probe, to allow vapor conditions to equalize in subsurface materials and the bentonite surface seal to hydrate in general accordance with guidelines presented in the CalEPA Department of Toxic Substance Control (DTSC) *Advisory – Active Soil Gas Investigations*, July, 2015.

Geoprobe® DPT Borehole Advancement and Temporary Soil Vapor Probe Installation

Alternatively, borings can be advanced using truck-mounted or limited access Geoprobe® DPT continuous coring equipment using a nominal 4-foot long, 2-inch OD stainless steel core barrel drive sampler and extension rods. The drive probe will be equipped with nominal 1 ½-inch inside diameter (ID) clear PETG plastic tubes that line the interior of the probe. Continuous soil sample cores are recovered for potential lithologic characterization and laboratory analysis. Alternatively, borings can be advanced using truck-mounted or limited access Geoprobe® DPT equipment, or a hand-operated slide hammer, to drive 1-inch outside diameter (OD) rods and probes with expendable steel tips without recovering soil cores. After the probes or core barrels are advanced to the specified depth, typically 5.5 feet bgs, the probes and drive rods are removed, leaving the borehole open with the expendable probe tip (if used) at the bottom.

Plastic or stainless steel soil vapor probes, ½-inch diameter by 2-inches long and tipped with porous plastic membranes, are then inserted to the bottom of the 1-inch diameter boreholes at 5 feet bgs. The probe tips are attached to 7-foot lengths of flexible 0.25-inch OD polyethylene, Nylaflow™ or Teflon™ tubing extending to the top of the floor slab. Only Teflon™ sample tubing is to be used if naphthalene analysis is intended. A 1-foot interval of fine sand filter pack is placed in the borehole annulus around the probe, typically from approximately 4.5 to 5.5 feet bgs. A 1-foot interval of the annular space above the filter pack is then filled with non-hydrated granular bentonite. Hydrated granular bentonite or bentonite chips are then used to fill the annular space above the non-hydrated granular bentonite to the top of the floor slab or surface pavement. The bentonite is allowed to hydrate and borehole conditions to equalize for 2 hours prior to sampling activities, per DTSC vapor sampling guidelines. Temporary soil vapor probe installation procedures will be performed in general accordance with guidelines presented in the DTSC *Advisory – Active Soil Gas Investigations*, July, 2015.

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Vapor Pin™ Sub-Slab Soil Vapor Probe Installation

The Cox-Colvin Vapor Pin™ semi-permanent sub-slab soil vapor probes are emplaced as follows: For a flush-mount installation, a 1 ½-inch diameter countersunk hole is drilled at least 1 3/4 inches into the concrete floor slab using a portable electric drill. A 5/8-inch diameter hole is then drilled below the countersunk hole through the concrete floor slab using a portable electric drill, and approximately 1-inch into the underlying soil to form a void. The concrete corings are removed using a brush or vacuum. Place the lower end of Vapor Pin™ assembly into the drilled hole. Place the small hole located in the handle of the extraction/installation tool over the Vapor Pin™ to protect the barb fitting and cap, and tap the Vapor Pin™ into place using a dead blow hammer. Make sure the extraction/installation tool is aligned parallel to the Vapor Pin™ to avoid damaging the barb fitting.

For flush mount installations, unscrew the threaded coupling from the installation/extraction handle and use the hole in the end of the tool to assist with the installation. During installation, the silicone sleeve will form a slight bulge between the slab and the Vapor Pin™ shoulder. Place the protective plastic cap on the Vapor Pin™ barbed fitting to prevent vapor loss prior to sampling. For flush mount installations, cover the Vapor Pin™ with a threaded metal flush mount cover. Allow 2 hours or more (per DTSC sub-slab vapor sampling guidelines) for the sub-slab soil-gas conditions to equilibrate prior to sampling.

Soil Vapor Sampling via Summa Canister

Soil vapor sampling procedures will be similar for Geoprobe® PRT and continuously cored temporary soil vapor probes, and semi-permanent sub-slab soil vapor probes, and will be in general accordance with *DTSC Advisory – Active Soil Gas Investigations*, July 2015. Soil vapor sampling will not be performed if significant precipitation (greater than ½ inch in a 24 hour period) has occurred within the previous five days. The soil vapor probe Teflon™ sample tubing will be connected to the sample manifold system via threaded SwageLok™ connectors.

AllWest will collect soil vapor samples in laboratory prepared 1-liter capacity SUMMA canisters. Prior to vapor purging and sample collection, a vacuum leak shut-in test of the flow-controller/gauge manifold assembly will be performed for a minimum of 1 minute, with a no allowable observed vacuum drop of 0.2 inches of mercury (in Hg). If any noticeable vacuum drop is observed, the manifold fittings will be tightened or manifold replaced and the shut-in test redone. Vacuum gauge sensitivity will register a minimum of 0.5 inches of mercury (in Hg). The sampling system configuration is shown in the attached schematic diagram.

Prior to sample collection, approximately 3 sampling system volumes of soil vapor will be purged at a flow rate of approximately 150-200 milliliters per minute (ml/min) from each vapor probe using a dedicated 6-liter capacity SUMMA purge canister (approximately 200 ml per in Hg vacuum). A 3-way valve (with the handle mounted outside the leak detection shroud) will be opened to divert the flow of purged soil vapor from the probe to the purge Summa canister, after opening the purge Summa valve.

Typical sampling system volumes for Geoprobe® installed soil vapor probes are 4.5 ml/feet for ¼-inch OD/0.17-inch ID tubing, and 200 ml/feet for a 2-inch diameter borehole with sand filter pack (minus tubing volume). Assuming a 2-inch diameter borehole with a 1 foot sand filter pack interval, the typical system volume would be approximately 235 ml for a 5-feet bgs temporary probe, including 6 feet of tubing

above grade. Therefore, 3 system volumes would typically be approximately 705 milliliters (ml) depending on tubing length and borehole diameter, depth and filter pack interval.

Typical sampling system volumes for sub-slab Vapor Pin™ probes are 4.5 ml/feet for ¼-inch OD/0.17-inch ID tubing and 0.17-inch ID Vapor Pin™ probe, and approximately 60 ml/feet for a 5/8-inch diameter borehole within the concrete floor slab. Assuming a 5/8-inch diameter borehole with a 3-inch deep void space in the floor slab below the Vapor Pin™ probe, the typical system volume would be approximately 43 ml including 5 feet of tubing and manifold above grade. Therefore, 3 system volumes would typically be approximately 128 ml depending on sample tubing and manifold length, borehole diameter, and floor slab borehole void depth below the installed Vapor Pin™ probe.

Alternatively, for large purge volumes due to larger diameter and deeper boreholes, an electric battery-powered vacuum pump may be used for purging. The vacuum pump is located outside of the leak detection shroud and connected to the flow-controller/gauge manifold assembly inside the shroud by ¼-inch OD/0.17-inch ID Teflon tubing passing through a 2-way valve (with the handle mounted outside the leak detection shroud). During the purging operation, the valve is opened to allow soil vapor to be purged by the pump. The pump is equipped with a variable rate flow controller, in addition to the flow regulator on the manifold, and the flow rate is set at 150-200 ml/min. The purge volume is determined by the purge time multiplied by the flow rate. When the required soil vapor volume has been purged, the 2-way valve is closed to isolate the pump from the sampling manifold, and the pump turned off.

During purging and sampling, a leak detection test is conducted using helium as a leak tracer inside an airtight plastic shroud covering the entire sampling apparatus, as recommended in the DTSC *Advisory – Active Soil Gas Investigations* (DTSC Appendix C, 2015). The leak detection shroud configuration is shown in the attached schematic diagram. The helium concentration within the shroud is monitored with a helium gas detection meter with a minimum precision of 0.1% to keep the ambient concentration at approximately 10% to 20% (or at least two orders of magnitude above the minimum meter detection limit). The helium tracer gas will be infused into the shroud at the required concentration at least 5 minutes prior to purging and sample collection. The ambient helium concentration within the shroud will be maintained throughout the purge and sample periods to within ±10% of the target concentration.

Depending upon helium availability, other leak detection gases such as isopropyl alcohol (IPA) or difluoroethane (DFA, commonly known as DustOff) may be substituted. Ambient concentrations of IPA within the shroud or purged soil vapor will be measured with a photo-ionization detector (PID); DFA concentrations are not measurable with a PID. The same volume of IPA (typically a cotton ball soaked with 5 milliliters of IPA) or DFA (typically a 5-second aerosol can discharge) will be used for each sample to maintain consistent ambient concentrations within the shroud.

Immediately following purging of 3 sampling system volumes of soil vapor, the 3-way and purge Summa valves will be closed, the sample Summa valve opened, and additional helium added to the shroud to bring the ambient concentration back up to within ±10% of the target concentration. The 3-way valve will then be turned to divert soil vapor from the probe to the sample Summa canister. Flow rates of approximately 150-200 ml/min are used to fill the sample canisters. The canisters are filled to approximate 80% of capacity (approximately 5 inches of mercury vacuum remaining), at which point first the 3-way valve, then the sample Summa valve are closed. All pertinent field observations, pressure, times and readings are recorded.

To verify helium detection (or PID if used) meter accuracy, one (1) ambient air sample per day may collected using a 1-liter SUMMA canister with a 150-200 ml/min flow restrictor inside the leak detection shroud during the sampling of one probe to measure ambient helium (or IPA or DFA if used as leak detection agents instead) concentrations inside the shroud.

After filling the sample Summa canister and closing the sample valve, a leak test of the probe seal will be conducted by using the 3-way valve to divert the flow of purged soil vapor from the probe to the helium detection meter via a monitoring port on the outside of the shroud. If the measured purged soil vapor helium concentration is less than 5% of the ambient shroud concentration, the soil vapor probe seal is presumed to be acceptable (per DTSC Appendix C, 2015). If the measured purged soil vapor helium concentration is greater than 5% of the ambient shroud concentration, the soil vapor probe seal is presumed to be defective, and the probe should be reinstalled and re-sampled.

Following sampling and leak test activities, all SUMMA canisters are removed from the manifold, labeled with sampling information, including initial and final vacuum pressures, placed in a dark container and transported under chain-of-custody to the analytical laboratory. The analytical laboratory will record the final SUMMA canister vacuum upon receipt.

Soil Vapor Sampling via Tenax™ Sorbent Tubes

For collecting soil vapor samples in sorbent tubes for analysis by EPA Method TO-17, the sampling manifold setup, shut-in leak checks, system purging and leak detect shroud setup are similar to that using Summa canisters. However, instead of using Summa canisters for sample collection, samples are collected in stainless steel sample tubes filled with Tenax™ sorbent material. The sorbent tubes are attached with Swagelock™ fittings to the sample manifold downstream from the gauges, filters, flow restrictors, and purge canister or pump, and within the leak detection shroud. In areas of suspected high contaminant concentrations, two (2) Tenax™ sorbent tubes may be placed in series to prevent contaminant breakthrough. A vacuum pump, 100 ml syringe or second SUMMA sample purge canister is attached to the downstream end of the Tenax™ sorbent tubes. If the sample manifold train is too large to fit in the leak detection shroud, the pump, syringe or second sample purge SUMMA may be located outside the shroud with the sample train tubing passing through the shroud wall.

A cotton ball saturated with approximately 5 ml isopropyl alcohol (IPA) and placed inside the shroud will be used as the leak detection gas agent. A photo-ionization detector (PID) is used to monitor IPA concentrations within the leak detection shroud, or purged soil vapor through access ports in the shroud via the 3-way valve. The 3-way valve is used to divert purged soil vapor to either the purge Summa canister during purging, or to the purged soil vapor monitoring port following purging for probe seal leak detection by monitoring IPA concentrations with a PID, as described in the Summa canister sampling section.

Flow rates of approximately 50 to 100 ml/min are used to fill the sorbent tubes with a total sample volume of approximately 1 to 4 liters, depending on the desired laboratory detection limits. The sampling system vacuum should not exceed 100 inches of water (or 7.4 in Hg). All pertinent field observations, pressure, times, and ambient and soil vapor IPA (PID) concentration readings are recorded. After the desired sample volume is withdrawn through the sorbent tubes, the tubes are removed from the manifold, capped with Swagelock™ caps, wrapped in aluminum foil, placed in a sealed plastic tube container, labeled with sampling information, placed in an ice chest cooled to 4°C with crushed ice, and transported under chain-of-custody to the analytical laboratory.

Soil Gas Probe Emplacement Methods

Figure 1
Permanent/Semi-permanent Gas Probe Construction

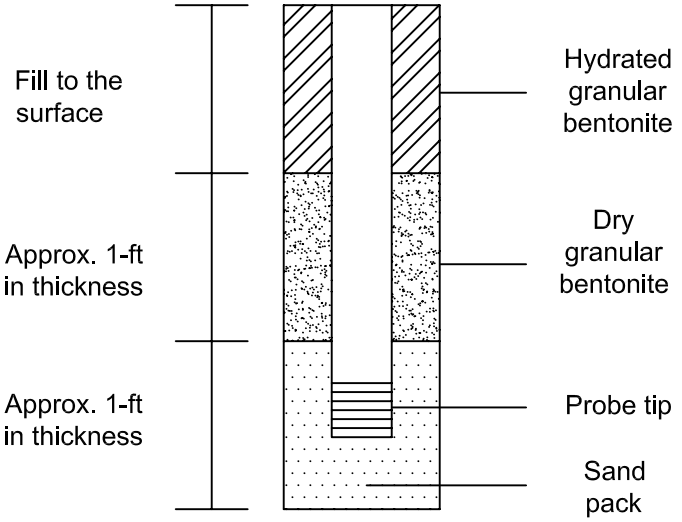
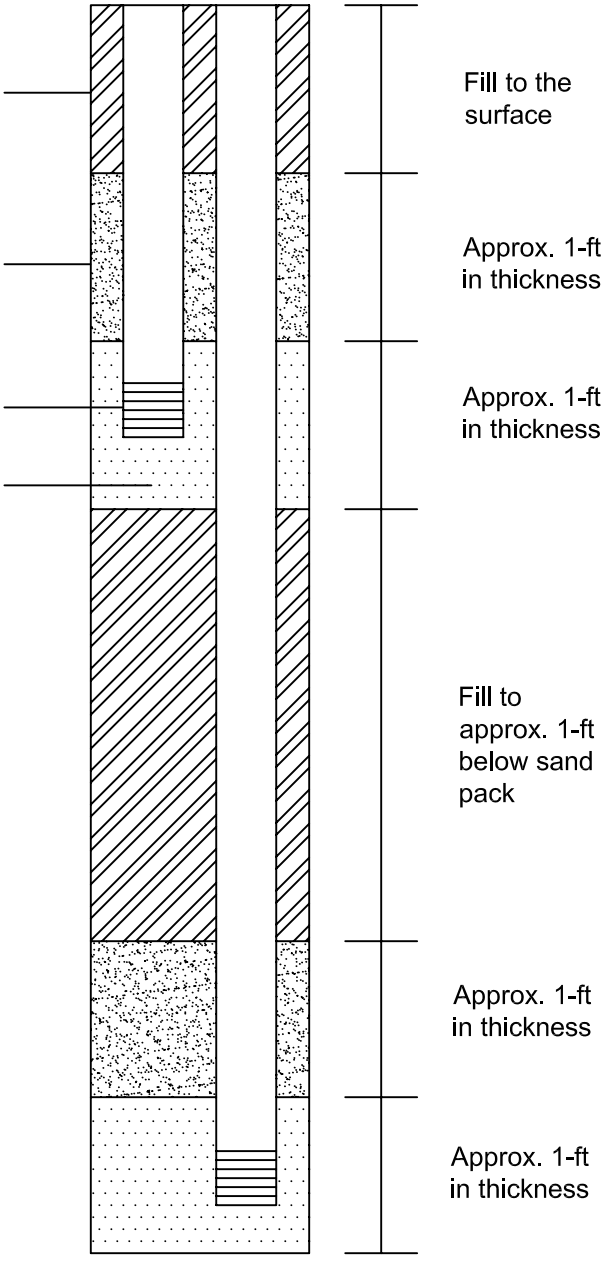
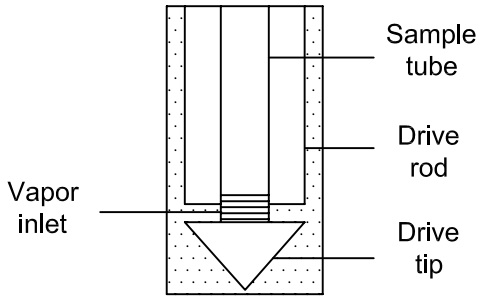


Figure 2
Multi-depth Gas Probe Construction

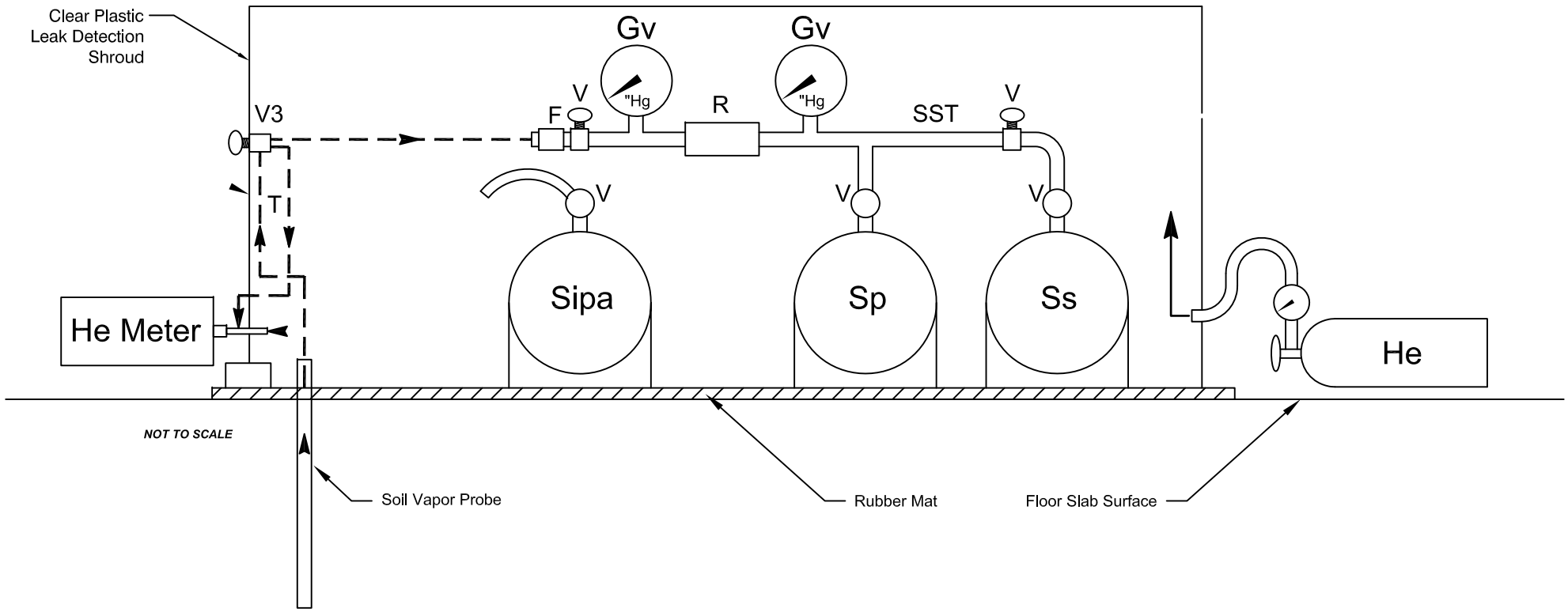


Temporary Gas Probe Method



Sub-Slab Cox-Colvin Vapor Pin® Installation Sectional View

General Soil Gas Sampling Manifold Schematic with Leak Detection Shroud



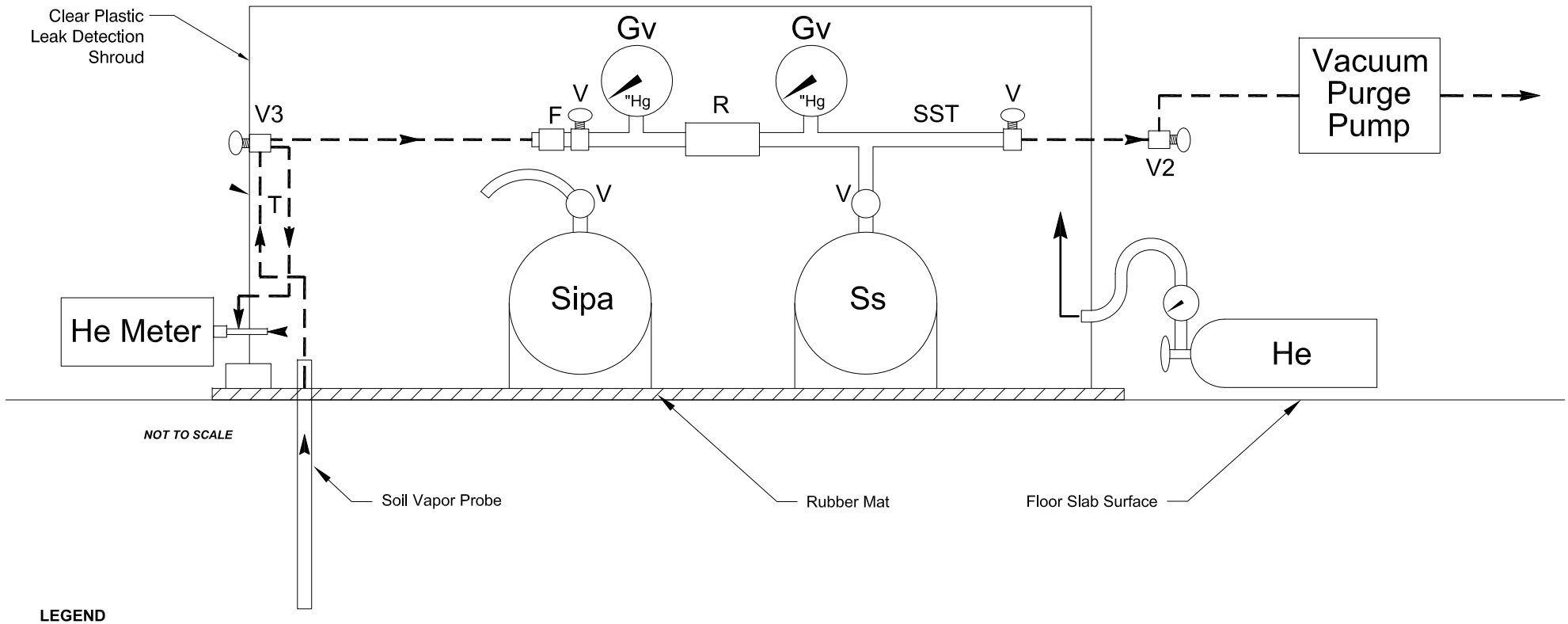
LEGEND

F	=	Filter
V	=	Valve
V3	=	Valve - 3-Way
Gp	=	Pressure Gauge
R	=	Flow Regulator
Gv	=	Vacuum Gauge
Sp	=	Purge Summa Canister
Ss	=	Sample Summa Canister
Sipa	=	Ambient Air Helium Leak Detect Gas Summa Canister
He Meter	=	Helium detector for He concentration readings - Shroud Ambient & Purged Soul Vapor
T	=	Disposable Teflon or Polyethylene Tubing
SST	=	Stainless Steel Tubing and Fittings
He	=	Helium tank, leak detect gas, regulator and tubing

AllWest

STANDARD OPERATING PROCEDURE
SOIL VAPOR SAMPLING
HELIUM SHROUD
SOURCE: ALLWEST
PREPARED BY: C. RAMELB / C. MONAHAN

General Soil Gas Sampling Manifold Schematic with Leak Detection Shroud



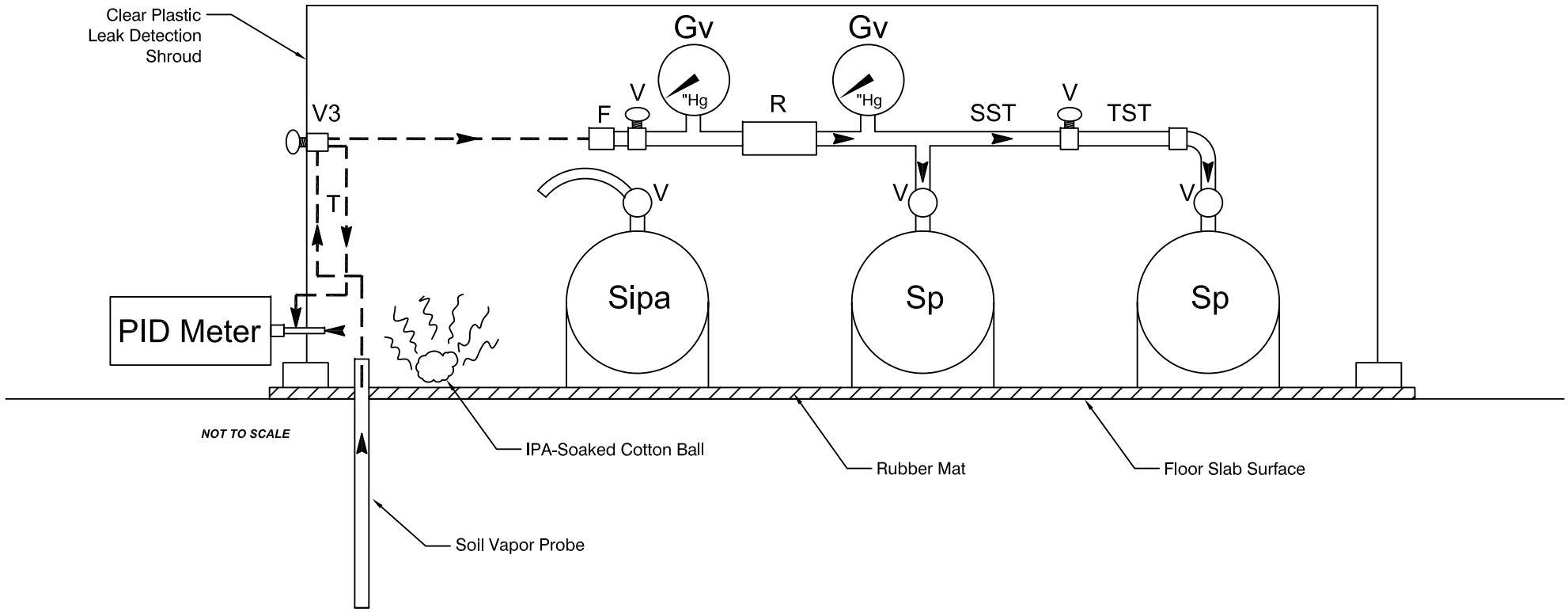
LEGEND

F	=	Filter
V	=	Valve
V3	=	Valve - 3-Way
Gp	=	Pressure Gauge
R	=	Flow Regulator
Gv	=	Vacuum Gauge
Sp	=	Purge Summa Canister
Ss	=	Sample Summa Canister
Sipa	=	Ambient Air Helium Leak Detect Gas Summa Canister
He Meter	=	Helium detector for He concentration readings - Shroud Ambient & Purged Soul Vapor
T	=	Disposable Teflon or Polyethylene Tubing
SST	=	Stainless Steel Tubing and Fittings
He	=	Helium tank, leak detect gas, regulator and tubing
V2	=	Valve, 2-Way
Vacuum Purge Pump	=	Electric Battery-Powered Vacuum Pump wirh Flow Regulator

AllWest

STANDARD OPERATING PROCEDURE
SOIL VAPOR SAMPLING
HELIUM SHROUD
SOURCE: ALLWEST
PREPARED BY: C. RAMELB / C. MONAHAN

General Soil Gas Sampling Manifold Schematic
For Sorbent Tubes with Leak Detection Shroud



LEGEND

F	=	Filter
V	=	Valve
V3	=	Valve - 3-Way
Gp	=	Pressure Gauge
R	=	Flow Regulator
Gv	=	Vacuum Gauge
Sp	=	Purge Summa Canister
TST	=	Tenax Sorbent Tube
Sipa	=	Ambient Air IPA Leak Detect Gas Summa Canister
PID Meter	=	Photo-ionization detector for IPA concentration readings - Shroud Ambient & Purged Soul Vapor
T	=	Disposable Teflon or Polyethylene Tubing
SST	=	Stainless Steel Tubing and Fittings
IPA	=	Isopropyl Alcohol-soaked cotton ball

AllWest

STANDARD OPERATING PROCEDURE
SOIL VAPOR SAMPLING - SORBENT TUBES
HELIUM SHROUD
SOURCE: ALLWEST
PREPARED BY: C. RAMELB / C. MONAHAN

APPENDIX E

AllWest

Specialists in Physical Due Diligence and Remedial Services

1520 Brookhollow Drive, Suite 30
Santa Ana, CA 92705

714-541-5303 AllWest1.com

SOIL GAS VAPOR FIELD LOG

Date: 7/19/19

Project No: 19086.23 Project Name: Irving 11

Vapor Probe #: ~~SGVP~~ VP-1A Purge Summa #: DS18 Sample Summa #: LC245

Regulatory Agencies:

Contractor: AllWest

Hole Diameter: VP Total Depth: VP Grout/Bentonite: VP

Probe Diameter: VP Line Length: VP Purge Volume: 127ml / 0.64 "Hg

Tracer Gas: Helium Flow Regulator No: SGM008 Flow Rate: 150/200 (ml/min)

Laboratory Name and Number: Eurofins

SAMPLE COLLECTION

Leak Test: (Pass)/Fail

Start Time	Time Elapsed	Pressure	Tracer Gas Conc. (in shroud)	Remarks
0954	6	-13	13%	Start Purge
1000		-12	17%	Stop Purge
1015	6	-29	18%	Start Sample
1021		-5	21%	Stop Sample

Remarks: Post sample He = 0.0ppm

Sampler: Sam Calloway

AllWest Environmental, Inc.

Specialists in Physical Due Diligence and Remedial Services

1520 Brookhollow Drive, Suite 30
Santa Ana, CA 92705

714-541-5303 AllWest1.com

AllWest

SOIL GAS VAPOR FIELD LOG

Date: 7-19-19

Project No: 19086.28 **Project Name:** Irving 11

Vapor Probe #: VP-2A **Purge Summa #:** DS18 **Sample Summa #:** LC022

Regulatory Agencies:

Contractor: AllWest

Hole Diameter: VP **Total Depth:** VP **Grout/Bentonite:** VP

Probe Diameter: VP **Line Length:** VP **Purge Volume:** 127 ml / 0.64 "Hg

Tracer Gas: Helium **Flow Regulator No:** SGM464 **Flow Rate:** 150 / 200 (ml/min)

Laboratory Name and Number: Eurofins

SAMPLE COLLECTION

Leak Test: Pass/Fail

Start Time	Time Elapsed	Pressure	Tracer Gas Conc. (in shroud)	Remarks
0859	3	-14	16%	Start purge
0902		-13	9%	Stop purge
0915	8	-29	15%	Start sample
0923		-5	13%	Stop Sample

Remarks: Post sample He = 0.0 ppm

Sampler: Sam Calloway

AllWest Environmental, Inc.

Specialists in Physical Due Diligence and Remedial Services

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Santa Ana, CA 92705

714-541-5303 AllWest1.com

AllWest

SOIL GAS VAPOR FIELD LOG

Date: 7/19/19

Project No: 19086.23 **Project Name:** Irving II

Vapor Probe #: VP-3 **Purge Summa #:** D518 **Sample Summa #:** LC176

Regulatory Agencies:

Contractor: AllWest

Hole Diameter: VP **Total Depth:** VP **Grout/Bentonite:** VP

Probe Diameter: VP **Line Length:** VP **Purge Volume:** 127 ml / 0.64" Hg

Tracer Gas: Helium **Flow Regulator No:** SGM557 **Flow Rate:** 150/200 (ml/min)

Laboratory Name and Number: Eurofins

SAMPLE COLLECTION

Leak Test: Pass/Fail

Start Time	Time Elapsed	Pressure	Tracer Gas Conc. (in shroud)	Remarks
0808	2	-15	15%	Start Purge
0810	2	-14	16%	Stop Purge
0823	7	-29	10%	Start Sample
0830	7	-5	19%	Stop Sample

Remarks: post Sample He = 0.0 ppm

Sampler: Sam Calloway

AllWest Environmental, Inc.

Specialists in Physical Due Diligence and Remedial Services

1520 Brookhollow Drive, Suite 30
Santa Ana, CA 92705

714-541-5303 AllWest1.com

AllWest

SOIL GAS VAPOR FIELD LOG

Date: 7/19/19

Project No: 19086.23 **Project Name:** Irving 11

Vapor Probe #: VP-4 **Purge Summa #:** D518 **Sample Summa #:** LC1135

Regulatory Agencies:

Contractor: AllWest

Hole Diameter: **Total Depth:** VP **Grout/Bentonite:** VP

Probe Diameter: VP **Line Length:** VP **Purge Volume:** 127ml / 0.64"Hg

Tracer Gas: Helium **Flow Regulator No:** SGM537 **Flow Rate:** 150/200 (ml/min)

Laboratory Name and Number: Eurofins

SAMPLE COLLECTION

Leak Test: Pass/Fail

Start Time	Time Elapsed	Pressure	Tracer Gas Conc. (in shroud)	Remarks
0730	2	-16	19%	Start & Purge
0732		-15	18%	Stop Purge
0742	7	-29	10%	Start Sample
0749		-5	11%	Stop Sample

Remarks: post sample He = 0.0ppm

Sampler: Sam Calloway

APPENDIX F

McCampbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 1907889

Report Created for: All West Environmental, Inc

2141 Mission Street, Ste 100
San Francisco, CA 94110

Project Contact: Samuel Calloway
Project P.O.:
Project: 19086.23.1; Irving Street III

Project Received: 07/18/2019

Analytical Report reviewed & approved for release on 07/24/2019 by:

Jennifer Lagerbom
Project Manager

McCampbell Analytical, Inc.
"When Quality Counts"

1534 Willow Pass Road, Pittsburg, CA 94565-1701
Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Glossary of Terms & Qualifier Definitions

Client: All West Environmental, Inc
Project: 19086.23.1; Irving Street III
WorkOrder: 1907889

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Glossary of Terms & Qualifier Definitions

Client: All West Environmental, Inc
Project: 19086.23.1; Irving Street III
WorkOrder: 1907889

Quality Control Qualifiers

F2	LCS/LCSD recovery and/or RPD/RSD is out of acceptance criteria.
F3	The surrogate standard recovery and/or RPD is outside of acceptance limits.

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Analytical Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907889
Date Received:	7/18/19 15:25	**Extraction Method:**	SW5030B
Date Prepared:	7/18/19	**Analytical Method:**	SW8260B
Project:	19086.23.1; Irving Street III	**Unit:**	mg/kg

Halogenated Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8 (4.5-5)	1907889-002A	Soil	07/17/2019 09:05	GC18 07221928.D	181875

Analytes	Result	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	0.0050	1	07/23/2019 01:40
trans-1,2-Dichloroethene	ND	0.0050	1	07/23/2019 01:40
Tetrachloroethene	ND	0.0050	1	07/23/2019 01:40
Trichloroethene	ND	0.0050	1	07/23/2019 01:40
Vinyl Chloride	ND	0.0050	1	07/23/2019 01:40

Surrogates	REC (%)	Limits	
Dibromofluoromethane	94	66-116	07/23/2019 01:40
Toluene-d8	88	86-110	07/23/2019 01:40
4-BFB	89	71-114	07/23/2019 01:40
Benzene-d6	81	62-122	07/23/2019 01:40
Ethylbenzene-d10	91	69-130	07/23/2019 01:40
1,2-DCB-d4	74	55-108	07/23/2019 01:40

Analyst(s): KF

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-8 (9.5-10)	1907889-003A	Soil	07/17/2019 09:10	GC18 07221929.D	181875

Analytes	Result	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	0.0050	1	07/23/2019 02:21
trans-1,2-Dichloroethene	ND	0.0050	1	07/23/2019 02:21
Tetrachloroethene	ND	0.0050	1	07/23/2019 02:21
Trichloroethene	ND	0.0050	1	07/23/2019 02:21
Vinyl Chloride	ND	0.0050	1	07/23/2019 02:21

Surrogates	REC (%)	Limits	
Dibromofluoromethane	93	66-116	07/23/2019 02:21
Toluene-d8	89	86-110	07/23/2019 02:21
4-BFB	88	71-114	07/23/2019 02:21
Benzene-d6	90	62-122	07/23/2019 02:21
Ethylbenzene-d10	107	69-130	07/23/2019 02:21
1,2-DCB-d4	81	55-108	07/23/2019 02:21

Analyst(s): KF

(Cont.)

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Analytical Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907889
Date Received:	7/18/19 15:25	**Extraction Method:**	SW5030B
Date Prepared:	7/18/19	**Analytical Method:**	SW8260B
Project:	19086.23.1; Irving Street III	**Unit:**	mg/kg

Halogenated Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-9 (4.5-5)	1907889-008A	Soil	07/17/2019 10:55	GC18 07221930.D	181875

Analytes	Result	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	0.0050	1	07/23/2019 03:01
trans-1,2-Dichloroethene	ND	0.0050	1	07/23/2019 03:01
Tetrachloroethene	ND	0.0050	1	07/23/2019 03:01
Trichloroethene	ND	0.0050	1	07/23/2019 03:01
Vinyl Chloride	ND	0.0050	1	07/23/2019 03:01

Surrogates	REC (%)	Limits	
Dibromofluoromethane	90	66-116	07/23/2019 03:01
Toluene-d8	89	86-110	07/23/2019 03:01
4-BFB	86	71-114	07/23/2019 03:01
Benzene-d6	91	62-122	07/23/2019 03:01
Ethylbenzene-d10	107	69-130	07/23/2019 03:01
1,2-DCB-d4	81	55-108	07/23/2019 03:01

Analyst(s): KF

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-9 (9.5-10)	1907889-009A	Soil	07/17/2019 11:00	GC18 07221931.D	181875

Analytes	Result	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	0.0050	1	07/23/2019 03:41
trans-1,2-Dichloroethene	ND	0.0050	1	07/23/2019 03:41
Tetrachloroethene	ND	0.0050	1	07/23/2019 03:41
Trichloroethene	ND	0.0050	1	07/23/2019 03:41
Vinyl Chloride	ND	0.0050	1	07/23/2019 03:41

Surrogates	REC (%)	Limits	
Dibromofluoromethane	92	66-116	07/23/2019 03:41
Toluene-d8	89	86-110	07/23/2019 03:41
4-BFB	87	71-114	07/23/2019 03:41
Benzene-d6	87	62-122	07/23/2019 03:41
Ethylbenzene-d10	103	69-130	07/23/2019 03:41
1,2-DCB-d4	78	55-108	07/23/2019 03:41

Analyst(s): KF

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Quality Control Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907889
Date Prepared:	7/18/19	**BatchID:**	181875
Date Analyzed:	7/20/19 - 7/21/19	**Extraction Method:**	SW5030B
Instrument:	GC10	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	19086.23.1; Irving Street III	**Sample ID:**	MB/LCS/LCSD-181875

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Bromobenzene	ND	0.0030	0.0050	-	-	-
Bromochloromethane	ND	0.0015	0.0050	-	-	-
Bromodichloromethane	ND	0.0012	0.0050	-	-	-
Bromoform	ND	0.0012	0.0050	-	-	-
Bromomethane	ND	0.0020	0.0050	-	-	-
Carbon Tetrachloride	ND	0.0017	0.0050	-	-	-
Chlorobenzene	ND	0.0018	0.0050	-	-	-
Chloroethane	ND	0.0016	0.0050	-	-	-
Chloroform	ND	0.0016	0.0050	-	-	-
Chloromethane	ND	0.0017	0.0050	-	-	-
2-Chlorotoluene	ND	0.0022	0.0050	-	-	-
4-Chlorotoluene	ND	0.0024	0.0050	-	-	-
Dibromochloromethane	ND	0.0011	0.0050	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.0037	0.0050	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0013	0.0040	-	-	-
Dibromomethane	ND	0.0014	0.0050	-	-	-
1,2-Dichlorobenzene	ND	0.0032	0.0050	-	-	-
1,3-Dichlorobenzene	ND	0.0018	0.0050	-	-	-
1,4-Dichlorobenzene	ND	0.0018	0.0050	-	-	-
Dichlorodifluoromethane	ND	0.0011	0.0050	-	-	-
1,1-Dichloroethane	ND	0.0017	0.0050	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0014	0.0040	-	-	-
1,1-Dichloroethene	ND	0.0017	0.0050	-	-	-
cis-1,2-Dichloroethene	ND	0.0015	0.0050	-	-	-
trans-1,2-Dichloroethene	ND	0.0016	0.0050	-	-	-
1,2-Dichloropropane	ND	0.0014	0.0050	-	-	-
1,3-Dichloropropane	ND	0.0016	0.0050	-	-	-
2,2-Dichloropropane	ND	0.0013	0.0050	-	-	-
1,1-Dichloropropene	ND	0.0018	0.0050	-	-	-
cis-1,3-Dichloropropene	ND	0.0015	0.0050	-	-	-
trans-1,3-Dichloropropene	ND	0.0014	0.0050	-	-	-
Freon 113	ND	0.0016	0.0050	-	-	-
Hexachlorobutadiene	ND	0.0050	0.0050	-	-	-
Hexachloroethane	ND	0.0025	0.0050	-	-	-
Methylene chloride	ND	0.010	0.020	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.0016	0.0050	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.0013	0.0050	-	-	-
Tetrachloroethene	ND	0.0023	0.0050	-	-	-

(Cont.)

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Quality Control Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907889
Date Prepared:	7/18/19	**BatchID:**	181875
Date Analyzed:	7/20/19 - 7/21/19	**Extraction Method:**	SW5030B
Instrument:	GC10	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	19086.23.1; Irving Street III	**Sample ID:**	MB/LCS/LCSD-181875

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
1,2,3-Trichlorobenzene	ND	0.0030	0.0050	-	-	-
1,2,4-Trichlorobenzene	ND	0.0029	0.0050	-	-	-
1,1,1-Trichloroethane	ND	0.0018	0.0050	-	-	-
1,1,2-Trichloroethane	ND	0.0019	0.0050	-	-	-
Trichloroethene	ND	0.0017	0.0050	-	-	-
Trichlorofluoromethane	ND	0.0016	0.0050	-	-	-
1,2,3-Trichloropropane	ND	0.0019	0.0050	-	-	-
Vinyl Chloride	ND	0.0015	0.0050	-	-	-
Surrogate Recovery						
Dibromofluoromethane	0.10			0.12	83	66-112
Toluene-d8	0.11			0.12	87,F3	92-109
4-BFB	0.011			0.012	85	72-112
Benzene-d6	0.078			0.10	78,F3	81-126
Ethylbenzene-d10	0.091			0.10	91,F3	92-138
1,2-DCB-d4	0.072			0.10	72	68-108

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Quality Control Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907889
Date Prepared:	7/18/19	**BatchID:**	181875
Date Analyzed:	7/20/19 - 7/21/19	**Extraction Method:**	SW5030B
Instrument:	GC10	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	19086.23.1; Irving Street III	**Sample ID:**	MB/LCS/LCSD-181875

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Bromobenzene	0.017	0.016	0.020	87	81	69-120	6.88	20
Bromochloromethane	0.017	0.016	0.020	85	82	63-117	3.42	20
Bromodichloromethane	0.017	0.016	0.020	86	82	61-109	5.02	20
Bromoform	0.013	0.012	0.020	64	61	46-87	4.32	20
Bromomethane	0.011	0.012	0.020	56	59	22-195	4.33	20
Carbon Tetrachloride	0.018	0.017	0.020	88	86	69-124	3.04	20
Chlorobenzene	0.017	0.016	0.020	87	82	73-116	5.53	20
Chloroethane	0.013	0.014	0.020	67	70	47-140	3.48	20
Chloroform	0.018	0.018	0.020	92	89	69-118	4.10	20
Chloromethane	0.0084	0.010	0.020	42	51	30-132	18.7	20
2-Chlorotoluene	0.020	0.018	0.020	98	90	75-147	8.39	20
4-Chlorotoluene	0.020	0.018	0.020	99	92	75-137	7.19	20
Dibromochloromethane	0.016	0.015	0.020	78	75	57-105	3.78	20
1,2-Dibromo-3-chloropropane	0.0073	0.0071	0.010	73	71	36-103	3.34	20
1,2-Dibromoethane (EDB)	0.0083	0.0080	0.010	83	80	66-101	3.88	20
Dibromomethane	0.016	0.016	0.020	81	79	61-103	2.82	20
1,2-Dichlorobenzene	0.015	0.014	0.020	74	71	59-104	3.61	20
1,3-Dichlorobenzene	0.018	0.017	0.020	89	84	70-133	6.27	20
1,4-Dichlorobenzene	0.017	0.016	0.020	85	81	68-123	4.75	20
Dichlorodifluoromethane	0.0025	0.0031	0.020	12, F2	16	13-107	22.7,F2	20
1,1-Dichloroethane	0.018	0.018	0.020	90	88	69-118	2.32	20
1,2-Dichloroethane (1,2-DCA)	0.018	0.017	0.020	89	86	59-112	3.41	20
1,1-Dichloroethene	0.015	0.015	0.020	75	76	69-126	1.41	20
cis-1,2-Dichloroethene	0.018	0.017	0.020	90	86	69-116	4.35	20
trans-1,2-Dichloroethene	0.017	0.017	0.020	85	84	73-116	1.75	20
1,2-Dichloropropane	0.018	0.017	0.020	88	83	65-111	6.01	20
1,3-Dichloropropane	0.018	0.017	0.020	89	85	67-110	4.71	20
2,2-Dichloropropane	0.018	0.018	0.020	91	88	65-125	3.28	20
1,1-Dichloropropene	0.018	0.017	0.020	89	86	70-123	3.53	20
cis-1,3-Dichloropropene	0.018	0.017	0.020	90	84	68-126	6.57	20
trans-1,3-Dichloropropene	0.016	0.016	0.020	82	78	69-117	4.74	20
Freon 113	0.014	0.014	0.020	69	71	60-108	2.96	20
Hexachlorobutadiene	0.023	0.021	0.020	115	104	67-182	9.26	20
Hexachloroethane	0.021	0.019	0.020	105	96	85-156	9.09	20
Methylene chloride	0.017	0.017	0.020	87	85	71-117	2.77	20
1,1,1,2-Tetrachloroethane	0.018	0.017	0.020	90	85	69-117	5.51	20
1,1,2,2-Tetrachloroethane	0.014	0.013	0.020	71	67	53-96	6.69	20
Tetrachloroethene	0.020	0.019	0.020	100	94	78-128	6.77	20

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Quality Control Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907889
Date Prepared:	7/18/19	**BatchID:**	181875
Date Analyzed:	7/20/19 - 7/21/19	**Extraction Method:**	SW5030B
Instrument:	GC10	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	19086.23.1; Irving Street III	**Sample ID:**	MB/LCS/LCSD-181875

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	0.012	0.012	0.020	58	58	35-80	0	20
1,2,4-Trichlorobenzene	0.015	0.015	0.020	73	73	46-101	0	20
1,1,1-Trichloroethane	0.018	0.017	0.020	89	87	69-121	3.10	20
1,1,2-Trichloroethane	0.016	0.015	0.020	79	76	64-104	3.45	20
Trichloroethene	0.019	0.018	0.020	93	88	73-118	5.37	20
Trichlorofluoromethane	0.014	0.015	0.020	70	74	31-119	5.93	20
1,2,3-Trichloropropane	0.0084	0.0079	0.010	84	79	65-107	6.05	20
Vinyl Chloride	0.0042	0.0051	0.010	42	51	40-125	20.2,F2	20
Surrogate Recovery								
Dibromofluoromethane	0.10	0.10	0.12	83	83	66-112	0	20
Toluene-d8	0.11	0.11	0.12	87, F3	87, F3	92-109	0	20
4-BFB	0.011	0.010	0.012	84	82	72-112	2.70	20
Benzene-d6	0.079	0.075	0.10	79, F3	75, F3	81-126	5.35	20
Ethylbenzene-d10	0.090	0.082	0.10	90, F3	82, F3	92-138	8.98	20
1,2-DCB-d4	0.072	0.069	0.10	72	69	68-108	5.56	20

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CHAIN-OF-CUSTODY RECORD

WorkOrder: 1907889 **ClientCode: AWE**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☑ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☑ Detection Summary ☑ Dry-Weight

Report to:
Samuel Calloway
All West Environmental, Inc
2141 Mission Street, Ste 100
San Francisco, CA 94110
(360) 618-2789 FAX: (415) 391-2008

Email: sam@allwest1.com
cc/3rd Party:
PO:
Project: 19086.23.1; Irving Street III

Bill to:
Darlene Torio
All West Environmental, Inc
2141 Mission Street, Ste 100
San Francisco, CA 94110
darlene@allwest1.com

Requested TAT: **5 days;**

Date Received: **07/18/2019**
Date Logged: **07/18/2019**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1907889-002	B-8 (4.5-5)	Soil	7/17/2019 09:05	☐	A											
1907889-003	B-8 (9.5-10)	Soil	7/17/2019 09:10	☐	A											
1907889-008	B-9 (4.5-5)	Soil	7/17/2019 10:55	☐	A											
1907889-009	B-9 (9.5-10)	Soil	7/17/2019 11:00	☐	A											

Test Legend:

1	8010_S	2		3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Heidi Fruhlinger

Prepared by: Lilly Ortiz

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: ALL WEST ENVIRONMENTAL, INC
Client Contact: Samuel Calloway
Contact's Email: sam@allwest1.com

Project: 19086.23.1; Irving Street III
Comments

Work Order: 1907889
QC Level: LEVEL 2
Date Logged: 7/18/2019

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1907889-001A	B-8 (1-1.5)	Soil		1	Acetate Liner	☐	7/17/2019 9:00			☑	
1907889-002A	B-8 (4.5-5)	Soil	SW8260B (HVOCs List) <1,3-Dichloropropene, Total, cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Acetate Liner	☐	7/17/2019 9:05	5 days		☐	
1907889-003A	B-8 (9.5-10)	Soil	SW8260B (HVOCs List) <1,3-Dichloropropene, Total, cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Acetate Liner	☐	7/17/2019 9:10	5 days		☐	
1907889-004A	B-8 (19.5-20)	Soil		1	Acetate Liner	☐	7/17/2019 9:20			☑	
1907889-005A	B-8 (29.5-30)	Soil		1	Acetate Liner	☐	7/17/2019 9:50			☑	
1907889-006A	B-8 (39.5-40)	Soil		1	Acetate Liner	☐	7/17/2019 10:05			☑	
1907889-007A	B-9 (1-1.5)	Soil		1	Acetate Liner	☐	7/17/2019 10:45			☑	
1907889-008A	B-9 (4.5-5)	Soil	SW8260B (HVOCs List) <1,3-Dichloropropene, Total, cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Acetate Liner	☐	7/17/2019 10:55	5 days		☐	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

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WORK ORDER SUMMARY

Client Name: ALL WEST ENVIRONMENTAL, INC
Client Contact: Samuel Calloway
Contact's Email: sam@allwest1.com

Project: 19086.23.1; Irving Street III
Comments

Work Order: 1907889
QC Level: LEVEL 2
Date Logged: 7/18/2019

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1907889-009A	B-9 (9.5-10)	Soil	SW8260B (HVOCs List) <1,3-Dichloropropene, Total, cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Acetate Liner	☐	7/17/2019 11:00	5 days		☐	
1907889-010A	B-9 (19.5-20)	Soil		1	Acetate Liner	☐	7/17/2019 11:20			☑	
1907889-011A	B-9 (29.5-30)	Soil		1	Acetate Liner	☐	7/17/2019 11:20			☑	
1907889-012A	B-9 (39.5-40)	Soil		1	Acetate Liner	☐	7/17/2019 11:30			☑	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

General COC

MAI Work Order # 1907889

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush		2 Day Rush		3 Day Rush		STD	●
Quote #							
J-Flag / MDL		ESL		Cleanup Approved		Bottle Order #	
Delivery Format: PDF	●	GeoTracker EDF		EDD		Write On (DW)	
EQuIS							

Report To: SAM CALLOWAY Bill To: DARLENE TORIO
Company: ALLWEST ENVIRONMENTAL
Email: SAM@ALLWEST1.COM
Alt Email: LEONARD@ALLWEST1.COM Tele: 415-391-2510
Project Name: IRVING STREET III Project #: 19086.23.1
Project Location: 2550 IRVING STREET, SF, CA PO #
Sampler Signature: [signature]

Analysis Requested

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	PCE & Breakdowns	~~Vinyl Chloride (8260B)~~
B-8 (1-1.5)	7/17/19	0900	1	S	1		
B-8 (4.5-5)	7/17/19	0905	1	S	1	●	●
B-8 (9.5-10)	7/17/19	0910	1	S	1	●	●
B-8 (19.5-20)	7/17/19	0920	1	S	1		
B-8 (29.5-30)	7/17/19	0950	1	S	1		
B-8 (39.5-40)	7/17/19	1005	1	S	1		
B-9 (1-1.5)	7/17/19	1045	1	S	1		
B-9 (4.5-5)	7/17/19	1055	1	S	1	●	●
B-9 (9.5-10)	7/17/19	1100	1	S	1	●	●
B-9 (19.5-20)	7/17/19	1120	1	S	1		

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
[signature] / Allwest	7/17/19	1610	[signature] UAP	7/18/19	1100
UAP	7/18/19	1528	[signature]	7/18/19	1528

Comments / Instructions

Hold all samples at depth intervals 1-1.5, 19.5-20, 29.5-30, 39.5-40

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 1.6°C Initials LO

Page 1 of 2

General COC

MAI Work Order # 1907889

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CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush		2 Day Rush		3 Day Rush		STD	●	Quote #	
J-Flag / MDL		ESL		Cleanup Approved				Bottle Order #	
Delivery Format:	PDF	●	GeoTracker EDF		EDD		Write On (DW)		EQuIS

Report To: SAM CALLOWAY Bill To: DARLENE TORIO
Company: ALLWEST ENVIRONMENTAL
Email: SAM@ALLWEST1.COM
Alt Email: LEONARD@ALLWEST1.COM Tele: 415-391-2510
Project Name: IRVING STREET III Project #: 19086.23.1
Project Location: 2550 IRVING STREET, SF, CA PO #
Sampler Signature: [signature]

Analysis Requested: PCE & Breakdowns; ~~Vinyl Chloride (8260B)~~

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	PCE & Breakdowns	~~Vinyl Chloride (8260B)~~
B-9 (29.5-30)	7/17/19	1120	1	S	1		
B-9 (39.5-40)	7/17/19	1130	1	S	1		

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
Sam Calloway / AllWest	~~7/17~~ 7/17	1610	LAP	7/18/19	1100
LAP	7/18/19	1525	[signature]	7/18/19	1525

Comments / Instructions: Hold all samples at depth intervals 1-1.5, 19.5-20, 29.5-30, 39.5-40

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other

Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 1.6 wet °C Initials LO

Page 2 of 2

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Sample Receipt Checklist

Client Name:	**All West Environmental, Inc**	Date and Time Received:	**7/18/2019 15:25**
Project:	**19086.23.1; Irving Street III**	Date Logged:	**7/18/2019**
		Received by:	Lilly Ortiz
WorkOrder №:	**1907889** Matrix: Soil	Logged by:	Lilly Ortiz
Carrier:	Lorenzo Perez (MAI Courier)		

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐	
Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
Chain of custody agrees with sample labels?	Yes	☑	No	☐	
Sample IDs noted by Client on COC?	Yes	☑	No	☐	
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐	
Sampler's name noted on COC?	Yes	☑	No	☐	
COC agrees with Quote?	Yes	☐	No	☐	NA ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA ☑
Shipping container/cooler in good condition?	Yes	☑	No	☐	
Samples in proper containers/bottles?	Yes	☑	No	☐	
Sample containers intact?	Yes	☑	No	☐	
Sufficient sample volume for indicated test?	Yes	☑	No	☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA ☐
Samples Received on Ice?	Yes	☑	No	☐	
(Ice Type: WET ICE)					
Sample/Temp Blank temperature	Temp: 1.6°C				NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☐	No	☐	NA ☑
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
UCMR Samples:					
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes	☐	No	☐	NA ☑

Comments:

McCampbell Analytical, Inc.
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Analytical Report

WorkOrder: 1907987

Report Created for: All West Environmental, Inc

2141 Mission Street, Ste 100
San Francisco, CA 94110

Project Contact: Samuel Calloway
Project P.O.:
Project: 19086.23.1; Irving ST III

Project Received: 07/19/2019

Analytical Report reviewed & approved for release on 07/29/2019 by:

Yen Cao
Project Manager

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Glossary of Terms & Qualifier Definitions

Client: All West Environmental, Inc
Project: 19086.23.1; Irving ST III
WorkOrder: 1907987

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
DF	Dilution Factor
DI WET	(DISTLC) Waste Extraction Test using DI water
DISS	Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)
DLT	Dilution Test (Serial Dilution)
DUP	Duplicate
EDL	Estimated Detection Limit
ERS	External reference sample. Second source calibration verification.
ITEF	International Toxicity Equivalence Factor
LCS	Laboratory Control Sample
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	Method Detection Limit
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
N/A	Not Applicable
ND	Not detected at or above the indicated MDL or RL
NR	Data Not Reported due to matrix interference or insufficient sample amount.
PDS	Post Digestion Spike
PDSD	Post Digestion Spike Duplicate
PF	Prep Factor
RD	Relative Difference
RL	Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.)
RPD	Relative Percent Deviation
RRT	Relative Retention Time
SPK Val	Spike Value
SPKRef Val	Spike Reference Value
SPLP	Synthetic Precipitation Leachate Procedure
ST	Sorbent Tube
TCLP	Toxicity Characteristic Leachate Procedure
TEQ	Toxicity Equivalents
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)

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Detection Summary

Client: All West Environmental, Inc **WorkOrder:** 1907987

Project: 19086.23.1; Irving ST III

Client ID: B-10 (4.5-5) **Lab ID: 1907987-002A**

No Detections for Method: SW8260B.

Client ID: B-10 (9.5-10) **Lab ID: 1907987-003A**

No Detections for Method: SW8260B.

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Analytical Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907987
Date Received:	7/19/19 17:50	**Extraction Method:**	SW5030B
Date Prepared:	7/22/19	**Analytical Method:**	SW8260B
Project:	19086.23.1; Irving ST III	**Unit:**	mg/kg

Halogenated Volatile Organics

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-10 (4.5-5)	1907987-002A	Soil	07/18/2019 08:55	GC18 07281911.D	182049

Analytes	Result	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	0.0050	1	07/28/2019 19:32
trans-1,2-Dichloroethene	ND	0.0050	1	07/28/2019 19:32
Tetrachloroethene	ND	0.0050	1	07/28/2019 19:32
Trichloroethene	ND	0.0050	1	07/28/2019 19:32
Vinyl Chloride	ND	0.0050	1	07/28/2019 19:32

Surrogates	REC (%)	Limits	
Dibromofluoromethane	101	66-116	07/28/2019 19:32
Toluene-d8	91	86-110	07/28/2019 19:32
4-BFB	89	71-114	07/28/2019 19:32
Benzene-d6	77	62-122	07/28/2019 19:32
Ethylbenzene-d10	82	69-130	07/28/2019 19:32
1,2-DCB-d4	64	55-108	07/28/2019 19:32

Analyst(s): AK

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
B-10 (9.5-10)	1907987-003A	Soil	07/18/2019 09:00	GC18 07281912.D	182049

Analytes	Result	RL	DF	Date Analyzed
cis-1,2-Dichloroethene	ND	0.0050	1	07/28/2019 20:14
trans-1,2-Dichloroethene	ND	0.0050	1	07/28/2019 20:14
Tetrachloroethene	ND	0.0050	1	07/28/2019 20:14
Trichloroethene	ND	0.0050	1	07/28/2019 20:14
Vinyl Chloride	ND	0.0050	1	07/28/2019 20:14

Surrogates	REC (%)	Limits	
Dibromofluoromethane	101	66-116	07/28/2019 20:14
Toluene-d8	91	86-110	07/28/2019 20:14
4-BFB	91	71-114	07/28/2019 20:14
Benzene-d6	79	62-122	07/28/2019 20:14
Ethylbenzene-d10	82	69-130	07/28/2019 20:14
1,2-DCB-d4	65	55-108	07/28/2019 20:14

Analyst(s): AK

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Quality Control Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907987
Date Prepared:	7/22/19	**BatchID:**	182049
Date Analyzed:	7/22/19 - 7/27/19	**Extraction Method:**	SW5030B
Instrument:	GC16, GC28, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	19086.23.1; Irving ST III	**Sample ID:**	MB/LCS/LCSD-182049

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Bromobenzene	ND	0.0030	0.0050	-	-	-
Bromochloromethane	ND	0.0015	0.0050	-	-	-
Bromodichloromethane	ND	0.0012	0.0050	-	-	-
Bromoform	ND	0.0012	0.0050	-	-	-
Bromomethane	ND	0.0020	0.0050	-	-	-
Carbon Tetrachloride	ND	0.0017	0.0050	-	-	-
Chlorobenzene	ND	0.0018	0.0050	-	-	-
Chloroethane	ND	0.0016	0.0050	-	-	-
Chloroform	ND	0.0016	0.0050	-	-	-
Chloromethane	ND	0.0017	0.0050	-	-	-
2-Chlorotoluene	ND	0.0022	0.0050	-	-	-
4-Chlorotoluene	ND	0.0024	0.0050	-	-	-
Dibromochloromethane	ND	0.0011	0.0050	-	-	-
1,2-Dibromo-3-chloropropane	ND	0.0037	0.0050	-	-	-
1,2-Dibromoethane (EDB)	ND	0.0013	0.0040	-	-	-
Dibromomethane	ND	0.0014	0.0050	-	-	-
1,2-Dichlorobenzene	ND	0.0032	0.0050	-	-	-
1,3-Dichlorobenzene	ND	0.0018	0.0050	-	-	-
1,4-Dichlorobenzene	ND	0.0018	0.0050	-	-	-
Dichlorodifluoromethane	ND	0.0011	0.0050	-	-	-
1,1-Dichloroethane	ND	0.0017	0.0050	-	-	-
1,2-Dichloroethane (1,2-DCA)	ND	0.0014	0.0040	-	-	-
1,1-Dichloroethene	ND	0.0017	0.0050	-	-	-
cis-1,2-Dichloroethene	ND	0.0015	0.0050	-	-	-
trans-1,2-Dichloroethene	ND	0.0016	0.0050	-	-	-
1,2-Dichloropropane	ND	0.0014	0.0050	-	-	-
1,3-Dichloropropane	ND	0.0016	0.0050	-	-	-
2,2-Dichloropropane	ND	0.0013	0.0050	-	-	-
1,1-Dichloropropene	ND	0.0018	0.0050	-	-	-
cis-1,3-Dichloropropene	ND	0.0015	0.0050	-	-	-
trans-1,3-Dichloropropene	ND	0.0014	0.0050	-	-	-
Freon 113	ND	0.0016	0.0050	-	-	-
Hexachlorobutadiene	ND	0.0050	0.0050	-	-	-
Hexachloroethane	ND	0.0025	0.0050	-	-	-
Methylene chloride	ND	0.010	0.020	-	-	-
1,1,1,2-Tetrachloroethane	ND	0.0016	0.0050	-	-	-
1,1,2,2-Tetrachloroethane	ND	0.0013	0.0050	-	-	-
Tetrachloroethene	ND	0.0023	0.0050	-	-	-

(Cont.)

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Quality Control Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907987
Date Prepared:	7/22/19	**BatchID:**	182049
Date Analyzed:	7/22/19 - 7/27/19	**Extraction Method:**	SW5030B
Instrument:	GC16, GC28, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	19086.23.1; Irving ST III	**Sample ID:**	MB/LCS/LCSD-182049

QC Summary Report for SW8260B

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
1,2,3-Trichlorobenzene	ND	0.0030	0.0050	-	-	-
1,2,4-Trichlorobenzene	ND	0.0029	0.0050	-	-	-
1,1,1-Trichloroethane	ND	0.0018	0.0050	-	-	-
1,1,2-Trichloroethane	ND	0.0019	0.0050	-	-	-
Trichloroethene	ND	0.0017	0.0050	-	-	-
Trichlorofluoromethane	ND	0.0016	0.0050	-	-	-
1,2,3-Trichloropropane	ND	0.0019	0.0050	-	-	-
Vinyl Chloride	ND	0.0015	0.0050	-	-	-
Surrogate Recovery						
Dibromofluoromethane	0.12			0.125	93	66-112
Toluene-d8	0.13			0.125	100	92-109
4-BFB	0.011			0.0125	90	72-112
Benzene-d6	0.098			0.1	98	81-126
Ethylbenzene-d10	0.11			0.1	109	92-138
1,2-DCB-d4	0.080			0.1	80	68-108

(Cont.)

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Quality Control Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907987
Date Prepared:	7/22/19	**BatchID:**	182049
Date Analyzed:	7/22/19 - 7/27/19	**Extraction Method:**	SW5030B
Instrument:	GC16, GC28, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	19086.23.1; Irving ST III	**Sample ID:**	MB/LCS/LCSD-182049

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Bromobenzene	0.018	0.019	0.020	89	93	69-120	4.37	20
Bromochloromethane	0.018	0.019	0.020	92	96	63-117	4.75	20
Bromodichloromethane	0.017	0.018	0.020	85	90	61-109	5.92	20
Bromoform	0.012	0.013	0.020	61	63	46-87	3.54	20
Bromomethane	0.014	0.015	0.020	68	75	22-195	9.22	20
Carbon Tetrachloride	0.019	0.021	0.020	96	103	69-124	7.02	20
Chlorobenzene	0.018	0.019	0.020	90	94	73-116	4.78	20
Chloroethane	0.015	0.016	0.020	75	82	47-140	8.71	20
Chloroform	0.019	0.020	0.020	95	101	69-118	6.28	20
Chloromethane	0.0098	0.0099	0.020	49	49	30-132	0	20
2-Chlorotoluene	0.020	0.021	0.020	99	105	75-147	5.89	20
4-Chlorotoluene	0.020	0.021	0.020	99	103	75-137	4.18	20
Dibromochloromethane	0.015	0.015	0.020	73	77	57-105	4.95	20
1,2-Dibromo-3-chloropropane	0.0067	0.0069	0.010	67	69	36-103	2.54	20
1,2-Dibromoethane (EDB)	0.0079	0.0083	0.010	79	83	66-101	4.78	20
Dibromomethane	0.018	0.019	0.020	88	93	61-103	5.24	20
1,2-Dichlorobenzene	0.016	0.016	0.020	78	81	59-104	3.86	20
1,3-Dichlorobenzene	0.019	0.020	0.020	94	100	70-133	6.36	20
1,4-Dichlorobenzene	0.017	0.018	0.020	87	92	68-123	5.09	20
Dichlorodifluoromethane	0.0033	0.0035	0.020	16	17	13-107	6.29	20
1,1-Dichloroethane	0.019	0.020	0.020	94	101	69-118	6.63	20
1,2-Dichloroethane (1,2-DCA)	0.019	0.020	0.020	93	99	59-112	6.25	20
1,1-Dichloroethene	0.018	0.019	0.020	88	94	69-126	6.79	20
cis-1,2-Dichloroethene	0.019	0.020	0.020	93	100	69-116	7.24	20
trans-1,2-Dichloroethene	0.019	0.020	0.020	93	99	73-116	6.10	20
1,2-Dichloropropane	0.019	0.020	0.020	93	99	65-111	6.19	20
1,3-Dichloropropane	0.019	0.020	0.020	97	102	67-110	5.22	20
2,2-Dichloropropane	0.022	0.024	0.020	112	120	65-125	7.44	20
1,1-Dichloropropene	0.020	0.021	0.020	99	105	70-123	6.04	20
cis-1,3-Dichloropropene	0.019	0.020	0.020	95	101	68-126	5.89	20
trans-1,3-Dichloropropene	0.019	0.020	0.020	95	100	69-117	4.72	20
Freon 113	0.016	0.017	0.020	78	84	60-108	6.69	20
Hexachlorobutadiene	0.023	0.024	0.020	113	120	67-182	6.07	20
Hexachloroethane	0.018	0.020	0.020	91	99	85-156	8.67	20
Methylene chloride	0.018	0.020	0.020	92	98	71-117	6.56	20
1,1,1,2-Tetrachloroethane	0.017	0.018	0.020	87	92	69-117	6.35	20
1,1,2,2-Tetrachloroethane	0.015	0.016	0.020	77	82	53-96	6.83	20
Tetrachloroethene	0.019	0.021	0.020	97	104	78-128	6.17	20

(Cont.)

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Toll Free Telephone: (877) 252-9262 / Fax: (925) 252-9269
http://www.mccampbell.com / E-mail: main@mccampbell.com

Quality Control Report

Client:	All West Environmental, Inc	**WorkOrder:**	1907987
Date Prepared:	7/22/19	**BatchID:**	182049
Date Analyzed:	7/22/19 - 7/27/19	**Extraction Method:**	SW5030B
Instrument:	GC16, GC28, GC38	**Analytical Method:**	SW8260B
Matrix:	Soil	**Unit:**	mg/kg
Project:	19086.23.1; Irving ST III	**Sample ID:**	MB/LCS/LCSD-182049

QC Summary Report for SW8260B

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
1,2,3-Trichlorobenzene	0.012	0.012	0.020	61	61	35-80	0	20
1,2,4-Trichlorobenzene	0.015	0.015	0.020	75	76	46-101	0.746	20
1,1,1-Trichloroethane	0.019	0.020	0.020	93	100	69-121	7.32	20
1,1,2-Trichloroethane	0.018	0.019	0.020	89	94	64-104	5.47	20
Trichloroethene	0.020	0.021	0.020	99	104	73-118	5.00	20
Trichlorofluoromethane	0.016	0.017	0.020	79	84	31-119	6.15	20
1,2,3-Trichloropropane	0.0086	0.0091	0.010	86	91	65-107	5.31	20
Vinyl Chloride	0.0058	0.0062	0.010	58	62	40-125	6.17	20
Surrogate Recovery								
Dibromofluoromethane	0.13	0.13	0.12	103	103	66-112	0	20
Toluene-d8	0.13	0.13	0.12	100	100	92-109	0	20
4-BFB	0.012	0.011	0.012	93	91	72-112	2.45	20
Benzene-d6	0.10	0.11	0.10	100	106	81-126	5.00	20
Ethylbenzene-d10	0.10	0.11	0.10	105	109	92-138	4.36	20
1,2-DCB-d4	0.079	0.081	0.10	79	81	68-108	2.68	20

McCampbell Analytical, Inc.
1534 Willow Pass Rd
Pittsburg, CA 94565-1701
(925) 252-9262

CHAIN-OF-CUSTODY RECORD

WorkOrder: 1907987 **ClientCode: AWE**

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag
☐ Detection Summary ☐ Dry-Weight

Report to:
Samuel Calloway
All West Environmental, Inc
2141 Mission Street, Ste 100
San Francisco, CA 94110
(360) 618-2789 FAX: (415) 391-2008

Email: sam@allwest1.com
cc/3rd Party:
PO:
Project: 19086.23.1; Irving ST III

Bill to:
Darlene Torio
All West Environmental, Inc
2141 Mission Street, Ste 100
San Francisco, CA 94110
darlene@allwest1.com

Requested TAT: **5 days;**

Date Received: **07/19/2019**
Date Logged: **07/22/2019**

Lab ID	Client ID	Matrix	Collection Date	Hold	Requested Tests (See legend below) 1	2	3	4	5	6	7	8	9	10	11	12
1907987-002	B-10 (4.5-5)	Soil	7/18/2019 08:55	☐	A											
1907987-003	B-10 (9.5-10)	Soil	7/18/2019 09:00	☐	A											

Test Legend:

1	8010_S	2		3		4	
5		6		7		8	
9		10		11		12	

Project Manager: Heidi Fruhlinger

Prepared by: Lilly Ortiz

Comments:

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).
Hazardous samples will be returned to client or disposed of at client expense.

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WORK ORDER SUMMARY

Client Name: ALL WEST ENVIRONMENTAL, INC
Client Contact: Samuel Calloway
Contact's Email: sam@allwest1.com

Project: 19086.23.1; Irving ST III
Comments

Work Order: 1907987
QC Level: LEVEL 2
Date Logged: 7/22/2019

☐ WaterTrax ☐ WriteOn ☐ EDF ☐ Excel ☐ EQuIS ☑ Email ☐ HardCopy ☐ ThirdParty ☐ J-flag

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	De-chlorinated	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1907987-001A	B-10 (1-1.5)	Soil		1	Acetate Liner	☐	7/18/2019 8:50			☑	
1907987-002A	B-10 (4.5-5)	Soil	SW8260B (HVOCs List) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Acetate Liner	☐	7/18/2019 8:55	5 days		☐	
1907987-003A	B-10 (9.5-10)	Soil	SW8260B (HVOCs List) <cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride>	1	Acetate Liner	☐	7/18/2019 9:00	5 days		☐	
1907987-004A	B-10 (19.5-20)	Soil		1	Acetate Liner	☐	7/18/2019 9:05			☑	
1907987-005A	B-10 (29.5-30)	Soil		1	Acetate Liner	☐	7/18/2019 9:10			☑	
1907987-006A	B-10 (39.5-40)	Soil		1	Acetate Liner	☐	7/18/2019 9:20			☑	

NOTES: - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).

- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.

General COC

MAI Work Order # 1907987

6

McCAMPBELL ANALYTICAL, INC.

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www.mccampbell.com main@mccampbell.com

CHAIN OF CUSTODY RECORD

Turn Around Time: 1 Day Rush | 2 Day Rush | 3 Day Rush | STD ● | Quote #
J-Flag / MDL | ESL | Cleanup Approved | Bottle Order #
Delivery Format: PDF ● | GeoTracker EDF | EDD | Write On (DW) | EQuIS

Report To: SAM CALLOWAY — Bill To: DARLENE TORIO
Company: ALLWEST ENVIRONMENTAL
Email: SAM@ALLWEST1.COM
Alt Email: LEONARD@ALLWEST1.COM — Tele: 415-391-2510
Project Name: IRVING ST III — Project #:19086.23.1
Project Location: 2550 IRVING STREET, SF, CA — PO #
Sampler Signature:

SAMPLE ID Location / Field Point	Sampling Date	Sampling Time	#Containers	Matrix	Preservative	PCE & Breakdowns	Analysis Requested
B-10 (1-1.5)	7/18/19	0850	1	S	1		
B-10 (4.5-5)	7/18/19	0855	1	S	1	●	
B-10 (9.5-10)	7/18/19	0900	1	S	1	●	
B-10 (19.5-20)	7/18/19	0905	1	S	1		
B-10 (29.5-30)	7/18/19	0910	1	S	1		
B-10 (39.5-40)	7/18/19	0920	1	S	1		

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate $250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name	Date	Time	Received By / Company Name	Date	Time
Sam Calloway / AllWest	7/18/19	1430		7/19/19	0800
	7/19/19	1750		7/19/19	1750

Comments / Instructions

Please hold sample intervals 1-1.5, 19.5-20, 29.5-30, 39.5-40

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other
Preservative Code: 1=4°C 2=HCl 3=H_2SO_4 4=HNO_3 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 3.8 °C Initials

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Sample Receipt Checklist

Client Name:	**All West Environmental, Inc**	Date and Time Received:	**7/19/2019 17:50**
Project:	**19086.23.1; Irving ST III**	Date Logged:	**7/22/2019**
		Received by:	Lilly Ortiz
WorkOrder №:	**1907987** Matrix: Soil	Logged by:	Lilly Ortiz
Carrier:	Benjamin Yslas (MAI Courier)		

Chain of Custody (COC) Information

Chain of custody present?	Yes	☑	No	☐	
Chain of custody signed when relinquished and received?	Yes	☑	No	☐	
Chain of custody agrees with sample labels?	Yes	☑	No	☐	
Sample IDs noted by Client on COC?	Yes	☑	No	☐	
Date and Time of collection noted by Client on COC?	Yes	☑	No	☐	
Sampler's name noted on COC?	Yes	☑	No	☐	
COC agrees with Quote?	Yes	☐	No	☐	NA ☑

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes	☐	No	☐	NA ☑
Shipping container/cooler in good condition?	Yes	☑	No	☐	
Samples in proper containers/bottles?	Yes	☑	No	☐	
Sample containers intact?	Yes	☑	No	☐	
Sufficient sample volume for indicated test?	Yes	☑	No	☐	

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes	☑	No	☐	NA ☐
Samples Received on Ice?	Yes	☑	No	☐	
(Ice Type: WET ICE)					
Sample/Temp Blank temperature	Temp: 3.8°C				NA ☐
Water - VOA vials have zero headspace / no bubbles?	Yes	☐	No	☐	NA ☑
Sample labels checked for correct preservation?	Yes	☑	No	☐	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes	☐	No	☐	NA ☑
UCMR Samples:					
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes	☐	No	☐	NA ☑
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes	☐	No	☐	NA ☑

Comments:

ANALYTICAL REPORT

Eurofins Calscience LLC
7440 Lincoln Way
Garden Grove, CA 92841
Tel: (714)895-5494

Laboratory Job ID: 570-2859-1
Client Project/Site: Irving Subsurface II

For:
Allwest Environmental
2141 Mission Street
Suite 100
San Francisco, California 94110

Attn: Sam Calloway

Authorized for release by:
8/5/2019 5:39:32 PM
Erick Ovalle, Project Manager I
erickovalle@eurofinsus.com

Designee for

Vikas Patel, Project Manager I
(714)895-5494
vikaspatel@eurofinsus.com

Table of Contents

Definitions/Glossary

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Job ID: 570-2859-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative
570-2859-1

Comments
No additional comments.

Receipt
The samples were received on 7/25/2019 9:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 22.0º C.

Receipt Exceptions

The Chain-of-Custody (COC) was incomplete as received and/or improperly completed. No time/date relinquished.

Air Toxics
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Detection Summary

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Client Sample ID: VP-1A — Lab Sample ID: 570-2859-1

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	1100		11		ug/m3	3.2		TO-15	Total/NA

Client Sample ID: VP-2A — Lab Sample ID: 570-2859-2

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	650		11		ug/m3	3.2		TO-15	Total/NA

Client Sample ID: VP-3 — Lab Sample ID: 570-2859-3

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	270		11		ug/m3	3.2		TO-15	Total/NA

Client Sample ID: VP-4 — Lab Sample ID: 570-2859-4

Analyte	Result	Qualifier	RL		Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene - DL	660		8.4		ug/m3	2.488		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Client Sample ID: VP-1A
Date Collected: 07/18/19 10:21
Date Received: 07/25/19 09:25

Lab Sample ID: 570-2859-1
Matrix: Air

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		6.3		ug/m3			07/27/19 18:40	3.2
trans-1,2-Dichloroethene	ND		6.3		ug/m3			07/27/19 18:40	3.2
Tetrachloroethene	**1100**		11		ug/m3			07/27/19 18:40	3.2
Trichloroethene	ND		8.6		ug/m3			07/27/19 18:40	3.2
Vinyl chloride	ND		4.1		ug/m3			07/27/19 18:40	3.2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*88*		*67 - 133*		*07/27/19 18:40*	*3.2*
4-Bromofluorobenzene (Surr)	*93*		*68 - 134*		*07/27/19 18:40*	*3.2*
Toluene-d8 (Surr)	*103*		*70 - 130*		*07/27/19 18:40*	*3.2*

Client Sample ID: VP-2A
Date Collected: 07/18/19 09:23
Date Received: 07/25/19 09:25

Lab Sample ID: 570-2859-2
Matrix: Air

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		6.3		ug/m3			07/27/19 17:51	3.2
trans-1,2-Dichloroethene	ND		6.3		ug/m3			07/27/19 17:51	3.2
Tetrachloroethene	**650**		11		ug/m3			07/27/19 17:51	3.2
Trichloroethene	ND		8.6		ug/m3			07/27/19 17:51	3.2
Vinyl chloride	ND		4.1		ug/m3			07/27/19 17:51	3.2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*103*		*67 - 133*		*07/27/19 17:51*	*3.2*
4-Bromofluorobenzene (Surr)	*94*		*68 - 134*		*07/27/19 17:51*	*3.2*
Toluene-d8 (Surr)	*107*		*70 - 130*		*07/27/19 17:51*	*3.2*

Client Sample ID: VP-3
Date Collected: 07/18/19 08:30
Date Received: 07/25/19 09:25

Lab Sample ID: 570-2859-3
Matrix: Air

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		6.3		ug/m3			07/27/19 17:02	3.2
trans-1,2-Dichloroethene	ND		6.3		ug/m3			07/27/19 17:02	3.2
Tetrachloroethene	**270**		11		ug/m3			07/27/19 17:02	3.2
Trichloroethene	ND		8.6		ug/m3			07/27/19 17:02	3.2
Vinyl chloride	ND		4.1		ug/m3			07/27/19 17:02	3.2

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*99*		*67 - 133*		*07/27/19 17:02*	*3.2*
4-Bromofluorobenzene (Surr)	*103*		*68 - 134*		*07/27/19 17:02*	*3.2*
Toluene-d8 (Surr)	*111*		*70 - 130*		*07/27/19 17:02*	*3.2*

Client Sample ID: VP-4
Date Collected: 07/18/19 07:49
Date Received: 07/25/19 09:25

Lab Sample ID: 570-2859-4
Matrix: Air

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		2.0		ug/m3			07/26/19 19:28	1
trans-1,2-Dichloroethene	ND		2.0		ug/m3			07/26/19 19:28	1
Trichloroethene	ND		2.7		ug/m3			07/26/19 19:28	1
Vinyl chloride	ND		1.3		ug/m3			07/26/19 19:28	1

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	98		67 - 133		07/26/19 19:28	1
4-Bromofluorobenzene (Surr)	109		68 - 134		07/26/19 19:28	1
Toluene-d8 (Surr)	93		70 - 130		07/26/19 19:28	1

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air - DL

Client Sample ID: VP-4
Date Collected: 07/18/19 07:49
Date Received: 07/25/19 09:25

Lab Sample ID: 570-2859-4
Matrix: Air

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	660		8.4		ug/m3			07/27/19 20:20	2.488

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*86*		*67 - 133*		*07/27/19 20:20*	*2.488*
4-Bromofluorobenzene (Surr)	*100*		*68 - 134*		*07/27/19 20:20*	*2.488*
Toluene-d8 (Surr)	*102*		*70 - 130*		*07/27/19 20:20*	*2.488*

Client: Allwest Environmental
Job ID: 570-2859-1
Project/Site: Irving Subsurface II

Method: D1946 - Fixed Gases in Air (GC)

Client Sample ID: VP-1A
Lab Sample ID: 570-2859-1
Date Collected: 07/18/19 10:21
Matrix: Air
Date Received: 07/25/19 09:25

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Helium	ND		0.025		% v/v			07/25/19 17:22	1

Client Sample ID: VP-2A
Lab Sample ID: 570-2859-2
Date Collected: 07/18/19 09:23
Matrix: Air
Date Received: 07/25/19 09:25

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Helium	ND		0.025		% v/v			07/25/19 18:00	1

Client Sample ID: VP-3
Lab Sample ID: 570-2859-3
Date Collected: 07/18/19 08:30
Matrix: Air
Date Received: 07/25/19 09:25

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Helium	ND		0.025		% v/v			07/25/19 18:26	1

Client Sample ID: VP-4
Lab Sample ID: 570-2859-4
Date Collected: 07/18/19 07:49
Matrix: Air
Date Received: 07/25/19 09:25

Analyte	Result	Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Helium	ND		0.025		% v/v			07/25/19 18:49	1

Surrogate Summary

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Matrix: Air

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	DCA (67-133)	BFB (68-134)	TOL (70-130)
570-2859-1	VP-1A	88	93	103
570-2859-2	VP-2A	103	94	107
570-2859-3	VP-3	99	103	111
570-2859-4	VP-4	98	109	93
570-2859-4 - DL	VP-4	86	100	102
LCS 570-8060/6	Lab Control Sample	96	99	102
LCS 570-8280/4	Lab Control Sample	95	98	105
LCSD 570-8060/5	Lab Control Sample Dup	95	94	107
LCSD 570-8280/5	Lab Control Sample Dup	94	116	102
MB 570-8060/8	Method Blank	94	103	108
MB 570-8280/7	Method Blank	83	104	104

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)
BFB = 4-Bromofluorobenzene (Surr)
TOL = Toluene-d8 (Surr)

Method: TO-15 - Volatile Organic Compounds in Ambient Air

Lab Sample ID: MB 570-8060/8
Matrix: Air
Analysis Batch: 8060

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		2.0		ug/m3			07/26/19 15:44	1
trans-1,2-Dichloroethene	ND		2.0		ug/m3			07/26/19 15:44	1
Tetrachloroethene	ND		3.4		ug/m3			07/26/19 15:44	1
Trichloroethene	ND		2.7		ug/m3			07/26/19 15:44	1
Vinyl chloride	ND		1.3		ug/m3			07/26/19 15:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*94*		*67 - 133*		*07/26/19 15:44*	*1*
4-Bromofluorobenzene (Surr)	*103*		*68 - 134*		*07/26/19 15:44*	*1*
Toluene-d8 (Surr)	*108*		*70 - 130*		*07/26/19 15:44*	*1*

Lab Sample ID: LCS 570-8060/6
Matrix: Air
Analysis Batch: 8060

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
cis-1,2-Dichloroethene			99.1	99.75		ug/m3		101	70 - 130		
trans-1,2-Dichloroethene			99.1	116.2		ug/m3		117	70 - 130		
Tetrachloroethene			170	183.9		ug/m3		108	70 - 130		
Trichloroethene			134	153.0		ug/m3		114	70 - 130		
Vinyl chloride			63.9	66.06		ug/m3		103	70 - 134		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*96*		*67 - 133*
4-Bromofluorobenzene (Surr)	*99*		*68 - 134*
Toluene-d8 (Surr)	*102*		*70 - 130*

Lab Sample ID: LCSD 570-8060/5
Matrix: Air
Analysis Batch: 8060

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene			99.1	105.1		ug/m3		106	70 - 130	0	30
trans-1,2-Dichloroethene			99.1	107.2		ug/m3		108	70 - 130	5	30
Tetrachloroethene			170	175.0		ug/m3		103	70 - 130	9	30
Trichloroethene			134	161.3		ug/m3		120	70 - 130	2	30
Vinyl chloride			63.9	72.67		ug/m3		114	70 - 134	13	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*67 - 133*
4-Bromofluorobenzene (Surr)	*94*		*68 - 134*
Toluene-d8 (Surr)	*107*		*70 - 130*

Method: TO-15 - Volatile Organic Compounds in Ambient Air (Continued)

Lab Sample ID: MB 570-8280/7
Matrix: Air
Analysis Batch: 8280

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		2.0		ug/m3			07/27/19 14:58	1
trans-1,2-Dichloroethene	ND		2.0		ug/m3			07/27/19 14:58	1
Tetrachloroethene	ND		3.4		ug/m3			07/27/19 14:58	1
Trichloroethene	ND		2.7		ug/m3			07/27/19 14:58	1
Vinyl chloride	ND		1.3		ug/m3			07/27/19 14:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*83*		*67 - 133*		*07/27/19 14:58*	*1*
4-Bromofluorobenzene (Surr)	*104*		*68 - 134*		*07/27/19 14:58*	*1*
Toluene-d8 (Surr)	*104*		*70 - 130*		*07/27/19 14:58*	*1*

Lab Sample ID: LCS 570-8280/4
Matrix: Air
Analysis Batch: 8280

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
cis-1,2-Dichloroethene			99.1	103.8		ug/m3		105	70 - 130		
trans-1,2-Dichloroethene			99.1	102.1		ug/m3		103	70 - 130		
Tetrachloroethene			170	200.3		ug/m3		118	70 - 130		
Trichloroethene			134	155.6		ug/m3		116	70 - 130		
Vinyl chloride			63.9	58.79		ug/m3		92	70 - 134		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*95*		*67 - 133*
4-Bromofluorobenzene (Surr)	*98*		*68 - 134*
Toluene-d8 (Surr)	*105*		*70 - 130*

Lab Sample ID: LCSD 570-8280/5
Matrix: Air
Analysis Batch: 8280

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
cis-1,2-Dichloroethene			99.1	103.3		ug/m3		104	70 - 130	0	30
trans-1,2-Dichloroethene			99.1	117.2		ug/m3		118	70 - 130	14	30
Tetrachloroethene			170	212.3		ug/m3		125	70 - 130	6	30
Trichloroethene			134	160.3		ug/m3		119	70 - 130	3	30
Vinyl chloride			63.9	59.47		ug/m3		93	70 - 134	1	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*94*		*67 - 133*
4-Bromofluorobenzene (Surr)	*116*		*68 - 134*
Toluene-d8 (Surr)	*102*		*70 - 130*

QC Sample Results

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Method: D1946 - Fixed Gases in Air (GC)

Lab Sample ID: MB 570-7827/4
Matrix: Air
Analysis Batch: 7827

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL		Unit	D	Prepared	Analyzed	Dil Fac
Helium	ND		0.025		% v/v			07/25/19 10:54	1

Lab Sample ID: LCS 570-7827/2
Matrix: Air
Analysis Batch: 7827

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Helium			1.00	0.8993		% v/v		90	80 - 120		

Lab Sample ID: LCSD 570-7827/3
Matrix: Air
Analysis Batch: 7827

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Helium			1.00	0.9226		% v/v		92	80 - 120	3	20

QC Association Summary

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Air - GC/MS VOA

Analysis Batch: 8060

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-2859-4	VP-4	Total/NA	Air	TO-15	
MB 570-8060/8	Method Blank	Total/NA	Air	TO-15	
LCS 570-8060/6	Lab Control Sample	Total/NA	Air	TO-15	
LCSD 570-8060/5	Lab Control Sample Dup	Total/NA	Air	TO-15	

Analysis Batch: 8280

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-2859-1	VP-1A	Total/NA	Air	TO-15	
570-2859-2	VP-2A	Total/NA	Air	TO-15	
570-2859-3	VP-3	Total/NA	Air	TO-15	
570-2859-4 - DL	VP-4	Total/NA	Air	TO-15	
MB 570-8280/7	Method Blank	Total/NA	Air	TO-15	
LCS 570-8280/4	Lab Control Sample	Total/NA	Air	TO-15	
LCSD 570-8280/5	Lab Control Sample Dup	Total/NA	Air	TO-15	

Air - GC VOA

Analysis Batch: 7827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-2859-1	VP-1A	Total/NA	Air	D1946	
570-2859-2	VP-2A	Total/NA	Air	D1946	
570-2859-3	VP-3	Total/NA	Air	D1946	
570-2859-4	VP-4	Total/NA	Air	D1946	
MB 570-7827/4	Method Blank	Total/NA	Air	D1946	
LCS 570-7827/2	Lab Control Sample	Total/NA	Air	D1946	
LCSD 570-7827/3	Lab Control Sample Dup	Total/NA	Air	D1946	

Lab Chronicle

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Client Sample ID: VP-1A
Date Collected: 07/18/19 10:21
Date Received: 07/25/19 09:25

Lab Sample ID: 570-2859-1
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		3.2	400 mL	400 mL	8280	07/27/19 18:40	UPY2	ECL 2
	Instrument ID: GCMSAA									
Total/NA	Analysis	D1946		1	1 mL	1 mL	7827	07/25/19 17:22	WMI4	ECL 2
	Instrument ID: GC55									

Client Sample ID: VP-2A
Date Collected: 07/18/19 09:23
Date Received: 07/25/19 09:25

Lab Sample ID: 570-2859-2
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		3.2	400 mL	400 mL	8280	07/27/19 17:51	UPY2	ECL 2
	Instrument ID: GCMSAA									
Total/NA	Analysis	D1946		1	1 mL	1 mL	7827	07/25/19 18:00	WMI4	ECL 2
	Instrument ID: GC55									

Client Sample ID: VP-3
Date Collected: 07/18/19 08:30
Date Received: 07/25/19 09:25

Lab Sample ID: 570-2859-3
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		3.2	400 mL	400 mL	8280	07/27/19 17:02	UPY2	ECL 2
	Instrument ID: GCMSAA									
Total/NA	Analysis	D1946		1	1 mL	1 mL	7827	07/25/19 18:26	WMI4	ECL 2
	Instrument ID: GC55									

Client Sample ID: VP-4
Date Collected: 07/18/19 07:49
Date Received: 07/25/19 09:25

Lab Sample ID: 570-2859-4
Matrix: Air

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	TO-15		1	400 mL	400 mL	8060	07/26/19 19:28	UPY2	ECL 2
	Instrument ID: GCMSAA									
Total/NA	Analysis	TO-15	DL	2.488	400 mL	400 mL	8280	07/27/19 20:20	UPY2	ECL 2
	Instrument ID: GCMSAA									
Total/NA	Analysis	D1946		1	1 mL	1 mL	7827	07/25/19 18:49	WMI4	ECL 2
	Instrument ID: GC55									

Laboratory References:
ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Accreditation/Certification Summary

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Laboratory: Eurofins Calscience LLC

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Arizona	State Program	9	AZ0781	03-13-20
California	SCAQMD LAP	9	N/A	11-30-19
California	State Program	9	2944	09-30-19
Guam	State Program	9	19-004R	10-31-19
Hawaii	State Program	9	N/A	01-29-20
Nevada	State Program	9	CA00111	07-31-19
Oregon	NELAP Primary AB	10	CA300001	01-20-20
Washington	State Program	10	C916	10-11-19

Method Summary

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Method	Method Description	Protocol	Laboratory
TO-15	Volatile Organic Compounds in Ambient Air	EPA	ECL 2
D1946	Fixed Gases in Air (GC)	ASTM	ECL 2

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

Laboratory References:

ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

Client: Allwest Environmental
Project/Site: Irving Subsurface II

Job ID: 570-2859-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
570-2859-1	VP-1A	Air	07/18/19 10:21	07/25/19 09:25	Air Canister (1-Liter) #LC245
570-2859-2	VP-2A	Air	07/18/19 09:23	07/25/19 09:25	Air Canister (1-Liter) #LC022
570-2859-3	VP-3	Air	07/18/19 08:30	07/25/19 09:25	Air Canister (1-Liter) #LC176
570-2859-4	VP-4	Air	07/18/19 07:49	07/25/19 09:25	Air Canister (1-Liter) #LC1135

eurofins | Calscience

7440 Lincoln Way, Garden Grove, CA 92841-1427 • (714) 895-5494
For courier service / sample drop off information, contact us26_sales@eurofinsus.com or call us.

570-2859 Chain of Custody

2859
AIR CHAIN-OF-CUSTODY RECORD

DATE: 7-17-19
PAGE: 1 OF 1

LABORATORY CLIENT: ALLWEST ENVIRONMENTAL		Irving Subsurface II	P.O. NO.: 19086.23.1
ADDRESS: 2141 MISSION STREET		PROJECT CONTACT: Sam Calloway	LAB CONTACT OR QUOTE NO.:
CITY: SAN FRANCISCO	STATE: CA ZIP: 94110	PROJECT ADDRESS: 2550 Irving St..	SAMPLER(S): (PRINT) Sam Calloway
TEL: 415-391-2510	E-MAIL: SAM@LEONARD@ALLWEST1.COM	CITY: SF	STATE: CA ZIP: 94110

TURNAROUND TIME (Rush surcharges may apply to any TAT not "STANDARD"):
☐ SAME DAY ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAYS ☑ STANDARD

EDD: ☐ COELT EDF ☐ OTHER

UNITS:

SPECIAL INSTRUCTIONS:

REQUESTED ANALYSES: PCE + Breakdowns - TO15; Helium - ASTM D1946

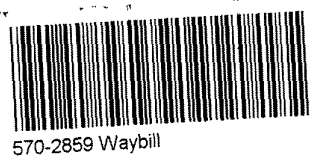
LAB USE ONLY	SAMPLE ID	FIELD ID / POINT OF COLLECTION	MATRIX (Indoor (I) Soil Vap. (SV) Ambient (A))	SAMPLING EQUIPMENT: Media ID	Canister Size 6L or 1L	Flow Controller ID	START SAMPLING INFORMATION: Date	Time (24 hr clock)	Canister Pressure (in Hg)	STOP SAMPLING INFORMATION: Date	Time (24 hr clock)	Canister Pressure (in Hg)	PCE + Breakdowns - TO15	Helium - ASTM D1946
~~1~~	~~SVP-1~~	~~SVP-1~~	~~SV~~	LC1218	1	SGM448	7/17/19	1420	-30	7/17/19	1431	-5	✓	✓
~~2~~	~~SVP-2~~	~~SVP-2~~	~~SV~~	~~LC1235~~	1	SGM402	7/17/19	1313	-30	7/17/19	1319	-5	✓	✓
1	VP-1A	VP-1A	SV	LC245	1	SGM008	7/18/19	1015	-30	7/18/19	1021	-5	✓	✓
2	VP-2A	VP-2A	SV	LC022	1	SGM464	7/18/19	0915	-30	7/18/19	0923	-5	✓	✓
3	VP-3	VP-3	SV	LC176	1	SGM557	7/18/19	0823	-30	7/18/19	0830	-5	✓	✓
4	VP-4	VP-4	SV	LC1135	1	SGM537	7/18/19	0742	-30	7/18/19	0749	-5	✓	✓

Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:
Relinquished by: (Signature) (GSO)	Received by: (Signature/Affiliation) EL	Date: 7/25/19	Time: 0925

2014-07-01 Revision

8/5/2019

570-2859 Waybill



7/17/2019

GSO GLS

800-322-5555
www.gso.com

Ship From
ALLWEST
SAM CALLOWAY
2141 MISSION STREET
SUITE 100
SAN FRANCISCO, CA 94110

Ship To
CEL
SAMPLE RECEIVING
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD: $0.00
Weight: 0 lb(s)
Reference:
ALLWEST
Delivery Instructions:

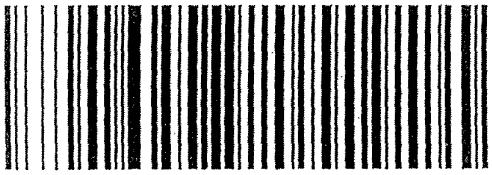
Signature Type: STANDARD

Tracking #: 545524560

NPS

GARDEN GROVE

S92841A



5782418

ORC CA927-C 0

Print Date: 7/17/2019 4:25 PM

Package 1 of 2

LABEL INSTRUCTIONS:

Do not copy or reprint this label for additional shipments - each package must have a unique barcode.
Step 1: Use the "Print Label" button on this page to print the shipping label on a laser or inkjet printer.

Login Sample Receipt Checklist

Client: Allwest Environmental

Job Number: 570-2859-1

Login Number: 2859

List Source: Eurofins Calscience

List Number: 1

Creator: Ramos, Maribel

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	Thermal preservation not required.
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	False	No time/date relinquished.
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX G

APPLICATION FOR AUTHORIZATION TO USE

REPORT TITLE: **Phase II Subsurface Investigation Report**

2500-2550 Irving Street
San Francisco, CA 941022

PROJECT NUMBER: 19086.23.1

To: AllWest Environmental, Inc.
2141 Mission Street, Suite 100
San Francisco, CA 94110

From (Applicant): _____

_____

_____

(Please clearly identify name and address of person/entity applying for permission to use or copy this document)

Ladies and Gentlemen:

Applicant states they have thoroughly reviewed the report and had the opportunity to discuss with AllWest the report's methodology, findings and conclusion(s).

Applicant hereby applies for permission to rely upon AllWest's work product, as described above, for the purpose of (state here the purpose for which you wish to rely upon the work product):

Applicant only can accept and rely upon AllWest work product under the strict understanding that Applicant is bound by all provisions in the General Conditions to the Work Authorization Agreement provided below. Every report, recommendation, finding, or conclusion issued by AllWest shall be subject to the limitations stated in the Agreement and subject report(s). If this is agreeable, please sign below and return one copy of this letter to us along with the applicable fees. Upon receipt and if acceptable, our signed letter will be returned. AllWest may withhold permission at its sole discretion or require additional re-use fees or terms.

FEES: A $1,650 coordination and reliance fee, payable in advance, will apply. If desired, for an additional $150 report reproduction fee, we will reissue the report in the name of the Applicant; the report date, however, will remain the same. All checks will be returned if your request for reliance is not approved.

REQUESTED BY	**APPROVED BY**
_____	**AllWest Environmental, Inc.**
Applicant Company	
_____	_____
Print Name and Title	Print Name and Title
_____	_____
Signature and Date	Signature and Date

GENERAL CONDITIONS TO THE WORK AUTHORIZATION AGREEMENT

It is hereby agreed that the Client retains AllWest to provide services as set forth in the Work Authorization attached hereto (the "Work"). This contract shall be controlled by the following terms and conditions, and these terms and conditions shall also control any further assignments performed pursuant to this Work Authorization. Client's signature on this Work Authorization constitutes Client's agreement to the all terms to this contract, including these General Conditions.

FEES AND COSTS

1. AllWest shall charge for work performed by its personnel at the rates identified in the Work Authorization. These rates are subject to reasonable increases by AllWest upon giving Client 30 days advance notice. Reimbursable Costs will be charged to the Client in addition to the fees for the basic services under this Agreement and all Additional Services (defined below) under the Agreement. Reimbursable Costs include, but are not limited to, expenses for travel, including transportation, meals, lodging, long distance telephone and other related expenses, as well as the costs of reproduction of all drawings for the Client's use, costs for specifications and type-written reports, permit and approval fees, automobile travel reimbursement, costs and fees of subcontractors, and soil and other materials testing. No overtime is accrued for time spent in travel. All costs incurred which relate to the services or materials provided by a contractor or subcontractor to AllWest shall be invoiced by AllWest on the basis of cost plus twenty percent (20%). Automobile travel reimbursement shall be at the rate of fifty- eight cents ($0.58) per mile. All other reimbursable costs shall be invoiced and billed by AllWest at the rate of 1.1 times the direct cost to AllWest. Reimbursable costs will be charged to the client only as outlined in the Work Authorization if the scope of work is for Phase I Environmental Site Assessment, Property Condition Assessment, Seismic Assessment or ALTA survey. Invoices for work performed shall be submitted monthly. Payment will be due upon receipt of invoice. Client shall pay interest on the balance of unpaid invoices which are overdue by more than 30 days, at a rate of 18% per annum as well as all attorney fees and costs incurred by AllWest to secure payment of unpaid invoices. AllWest may waive such fees at its sole discretion.

STANDARD OF CARE

2. AllWest will perform its work in accordance with the standard of care of its industry, as it is at the time of the work being performed, and applicable in the locale of the work being performed. AllWest makes no other warranties, express or implied regarding its work.

LIMITATION OF REMEDIES

3. Client expressly agrees that to the fullest extent permitted by law, Client's remedies for any liability incurred by AllWest, and/or its employees or agents, for any and all claims arising from AllWest's services, shall be $50,000 or its fees, whichever is greater.

Client may request a higher limitation of remedies, but must do so in writing. Upon such written request, AllWest may agree to increase this limit in exchange for a mutually negotiated higher fee commensurate with the increased risk to AllWest. Any such agreed increase in fee and limitation of remedies amount must be memorialized by written agreement which expressly amends the terms of this clause.

As used in this section, the term "limitation of remedies" shall apply to claims of any kind, including, but not limited to, claims brought in contract, tort, strict liability, or otherwise, for any and all injuries, claims, losses, expenses, or damages whatsoever arising out of or in any way related to AllWest's services or the services of AllWest's subcontractors, consultants, agents, officers, directors, and employees from any cause(s). AllWest shall not be liable for any claims of loss of profits or any other indirect, incidental, or consequential damages of any nature whatsoever. Client & AllWest have specifically negotiated this limitation.

INDEMNIFICATION

4. Notwithstanding any other provision of this Agreement, Client agrees, to the fullest extent permitted by law, to waive any claim against, release from any liability or responsibility for, and , indemnify and hold harmless AllWest, its employees, agents and sub-consultants (collectively, Consultant) from and against any and all damages, liabilities, claims, actions or costs of any kind, including reasonable attorney's fees and defense costs, arising or alleged to arise out of or to be in any way connected with the Project or the performance or non-performance of Consultant of any services under this Agreement, excepting only any such liabilities determined by a court or other forum of competent jurisdiction to have been caused by the negligence or willful misconduct of Consultant. This provision shall be in addition to any rights of indemnity that Consultant may have under the law and shall survive and remain in effect following the termination of this Agreement for any reason. Should any part of this provision be determined to be unenforceable, AllWest and Client agree that the rest of the provision shall apply to the maximum extent permitted by law. The Client's duty to defend AllWest shall arise immediately upon tender of any matter potentially covered by the above obligations to indemnify and hold harmless.

MEDIATION & JUDICIAL REFERENCE

5. In an effort to resolve any conflicts or disputes that arise regarding the performance of this agreement, the Client & AllWest agree that all such disputes shall be submitted to non-binding mediation, using a mutually agreed upon mediation service experienced in the resolution of construction disputes. Unless the parties mutually agree otherwise, such mediation shall be a condition precedent to the initiation of any other adjudicative proceedings. It is further agreed that any dispute that is not settled pursuant to such mediation shall be adjudicated by a court appointed referee in accordance with the Judicial Reference procedures as set forth in California Code of Civil Procedure Section 638 et seq. The parties hereby mutually agree to waive any right to a trial by jury regarding any dispute arising out of this agreement.

The parties further agree to include a similar mediation, Judicial Reference & waiver of jury trial provision in their agreements with other independent contractors & consultants retained for the project and require them to similarly agree to these dispute resolution procedures. The cost of said Mediation shall be split equally between the parties. This agreement to mediate shall be specifically enforceable under the prevailing law of the jurisdiction in which this agreement was signed.

HAZARDOUS WASTE

6. Client acknowledges that AllWest and its sub-contractors have played no part in the creation of any hazardous waste, pollution sources, nuisance, or chemical or industrial disposal problem, which may exist, and that AllWest has been retained for the sole purpose of performing the services set out in the scope of work within this Agreement, which may include, but is not necessarily limited to such services as assisting the Client in assessing any problem which may exist and in assisting the

Client in formulating a remedial program. Client acknowledges that while necessary for investigations, commonly used exploration methods employed by AllWest may penetrate through contaminated materials and serve as a connecting passageway between the contaminated material and an uncontaminated aquifer or groundwater, possibly inducing cross contamination. While back-filling with grout or other means, according to a state of practice design is intended to provide a seal against such passageway, it is recognized that such a seal may be imperfect and that there is an inherent risk in drilling borings of performing other exploration methods in a hazardous waste site.

AllWest will not sign or execute hazardous waste manifests or other waste tracking documents on behalf of Client unless Client specifically establishes AllWest as an express agent of Client under a written agency agreement approved by AllWest. In addition, Client agrees that AllWest shall not be required to sign any documents, no matter requested by whom, that would have the effect of AllWest providing any form of certification, guarantee, or warranty as to any matter or to opine on conditions for which the existence AllWest cannot ascertain. Client also agrees that it shall never seek or otherwise attempt to have AllWest provide any form of such certification, guarantee or warranty in exchange for resolution of any disputes between Client and AllWest, or as a condition precedent to making payment to AllWest for fees and costs owing under this Agreement.

Client understands and agrees that AllWest is not, and has no responsibility as, a generator, operator, treater, storer, transporter , arranger or disposer of hazardous or toxic substances found or identified at the site, including investigation-derived waste. The Client shall undertake and arrange for the removal, treatment, storage, disposal and/or treatment of hazardous material and investigation derived waste (such as drill cuttings) and further, assumes full responsibility for such wastes to the complete exclusion of any responsibility, duty or obligation upon AllWest. AllWest's responsibilities shall be limited to recommendations regarding such matters and assistance with appropriate arrangements if authorized by Client.

FORCE MAJUERE

7. Neither party shall be responsible for damages or delays in performance under this Agreement caused by acts of God, strikes, lockouts, accidents or other events or condition (other than financial inability) beyond the other Party's reasonable control.

TERMINATION

8. This Agreement may be terminated by either party upon ten (10) days' written notice should the other party substantially fail to perform in accordance with its duties and responsibilities as set forth in this Agreement and such failure to perform is through no fault of the party initiating the termination. Client agrees that if it chooses to terminate AllWest for convenience, and AllWest has otherwise satisfactorily performed its obligations under this Agreement to that point, AllWest shall be paid no less than eighty percent (80%) of the contract price, provided, however, that if AllWest shall have completed more than eighty percent of the Work at the time of said termination, AllWest shall be compensated as provided in the Work Authorization for all services performed prior to the termination date which fall within the scope of work described in the Work Authorization and may as well, at its sole discretion and in accordance with said Schedule of Fees, charge Client, and Client agrees to pay AllWest's reasonable costs and labor in winding up its files and removing equipment and other materials from the Project.

Upon notice of termination by Client to AllWest, AllWest may issue notice of such termination to other consultants, contractors, subcontractors and to governing agencies having jurisdiction over the Project, and take such other actions as are reasonably necessary in order to give notice that AllWest is no longer associated with the Project and to protect AllWest from claims of liability from the work of others.

DOCUMENTS

9. Any documents prepared by AllWest, including, but not limited to proposals, project specifications, drawings, calculations, plans and maps, and any ideas and designs incorporated therein, as well as any reproduction of the above are instruments of service and shall remain the property of AllWest and AllWest retains copyrights to these instruments of service. AllWest grants to Client a non-exclusive license to use these instruments of service for the purpose of completing and maintaining the Project. The Client shall be permitted to retain a copy of any instruments of service, but Client expressly agrees and acknowledges that the instruments of service may not be used by the Client on other projects, or for any other purpose, except the project for which they were prepared, unless Client first obtains a written agreement expanding the license to such use from AllWest, and with appropriate compensation to AllWest. Client further agrees that such instruments of service shall not be provided to any third parties without the express written permission of AllWest.

Client shall furnish, or cause to be furnished to AllWest all documents and information known to Client that relate to the identity, location, quantity, nature, or characteristics of any asbestos, PCBs, or any other hazardous materials or waste at, on or under the site. In addition, Client will furnish or cause to be furnished such reports, data, studies, plans, specifications, documents and other information on surface or subsurface site conditions, e.g., underground tanks, pipelines and buried utilities, required by AllWest for proper performance of its services. IF Client fails to provide AllWest with all hazardous material subject matter reports including geotechnical assessments in its possession during the period that AllWest is actively providing its services (including up to 30 days after its final invoice), Client shall release AllWest from any and all liability for risks and damages the Client incurs resulting from its reliance on AllWest's professional opinion. AllWest shall be entitled to rely upon Client - provided documents and information in performing the services required in this Agreement; however, AllWest assumes no responsibility or liability for the accuracy or completeness of Client-provided documents. Client-provided documents will remain the property of the Client.

ACCESS TO PROJECT

10. Client grants to AllWest the right of access and entry to the Project at all times necessary for AllWest to perform the Work. If Client is not the owner of the Project, then Client represents that Client has full authority to grant access and right of entry to AllWest for the purpose of AllWest's performance of the Work. This right of access and entry extends fully to any agents, employees, contractors or subcontractors of AllWest upon reasonable proof of association with AllWest. Client's failure to provide such timely access and permission shall constitute a material breach of this Agreement excusing AllWest from performance of its duties under this Agreement.

CONFIDENTIAL INFORMATION

11. Both Client and AllWest understand that in conjunction with AllWest's performance of the Work on the project, both Client and AllWest may receive or be exposed to Proprietary Information of the other. As used herein, the term "Proprietary Information" refers to any and all information of a confidential, proprietary or secret nature which may be either applicable to, or relate in any way to: (a) the personal, financial or other affairs of the business of each of the Parties, or (b) the

research and development or investigations of each of the Parties. Proprietary Information includes, for example and without limitation, trade secrets, processes, formulas, data, know-how, improvements, inventions, techniques, software technical data, developments, research projects, plans for future development, marketing plans and strategies. Each of the Parties agrees that all Proprietary Information of the other party is and shall remain exclusively the property of that other party. The parties further acknowledge that the Proprietary Information of the other party is a special, valuable and unique asset of that party, and each of the Parties agrees that at all times during the terms of this Agreement and thereafter to keep in confidence and trust all Proprietary Information of the other party, whether such Proprietary Information was obtained or developed by the other party before, during or after the term of this Agreement. Each of the Parties agrees not to sell, distribute, disclose or use in any other unauthorized manner the Proprietary Information of the other party. AllWest further agrees that it will not sell, distribute or disclose information or the results of any testing obtained by AllWest during the performance of the Work without the prior written approval of Client unless required to do so by federal, state or local statute, ordinance or regulation.

INDEPENDENT CONTRACTOR

12. Both Client and AllWest agree that AllWest is an independent contractor in the performance of the Work under this Agreement. All persons or parties employed by AllWest in connection with the Work are the agents, employees or subcontractors of AllWest and not of Client. Accordingly, AllWest shall be responsible for payment of all taxes arising out of AllWest's activities in performing the Work under this Agreement.

ENTIRE AGREEMENT

13. This Agreement contains the entire agreement between the Parties pertaining to the subject matter contained in it and supersedes and replaces in its entirety all prior and contemporaneous proposals, agreements, representations and understandings of the Parties. The Parties have carefully read and understand the contents of this Agreement and sign their names to the same as their own free act.

INTEGRATION

14. This is a fully integrated Agreement. The terms of this Agreement may be modified only by a writing signed by both Parties. The terms of this Agreement were fully negotiated by the Parties and shall not be construed for or against the Client or AllWest but shall be interpreted in accordance with the general meaning of the language in an effort to reach the intended result.

MODIFICATION / WAIVER / PARTIAL INVALIDITY

15. Failure on the part of either party to complain of any act or omission of the other, or to declare the other party in default, shall not constitute a waiver by such party of its rights hereunder. If any provision of this Agreement or its application be unenforceable to any extent, the Parties agree that the remainder of this Agreement shall not be affected and shall be enforced to the greatest extent permitted by law.

INUREMENT / TITLES

16. Subject to any restrictions on transfers, assignments and encumbrances set forth herein, this Agreement shall inure to the benefit of and be binding upon the undersigned Parties and their respective heirs, executors, legal representatives, successors and assigns. Paragraph titles or captions contained in this Agreement are inserted only as a matter of convenience, and for reference only, and in no way limit, define or extend the provisions of any paragraph. , et al., incurred in that action or proceeding, in addition to any other relief to which it or they may be entitled.

AUTHORITY

17. Each of the persons executing this Agreement on behalf of a corporation does hereby covenant and warrant that the corporation is duly authorized and existing under the laws of its respective state of incorporation, that the corporation has and is qualified to do business in its respective state of incorporation, that the corporation has the full right and authority to enter into this Agreement, and that each person signing on behalf of the corporation is authorized to do so. If the Client is a joint venture, limited liability company or a partnership, the signatories below warrant that said entity is properly and duly organized and existing under the laws of the state of its formation and pursuant to the organizational and operating document of the entity, and the laws of the state of its formation, said signatory has authority act on behalf of and commit the entity to this Agreement.

COUNTERPARTS

18. This Agreement may be signed in counterparts by each of the Parties hereto and, taken together, the signed counterparts shall constitute a single document.

THIRD PARTY BENEFICIARIES / CONTROLLING LAW

19. There are no intended third party beneficiaries of this Agreement. The services, data & opinions expressed by AllWest are for the sole use of the client, are for a particular project and may not be relied upon by anyone other than the client. This Agreement shall be controlled by the laws of the State of California and any action by either party to enforce this Agreement shall be brought in San Francisco County, California.

TIME BAR TO LEGAL ACTION

20. Any legal actions by either party against the other related to this Agreement, shall be barred after one year has passed from the time the claimant knew or should have known of its claim, and under no circumstances shall be initiated after two years have passed from the date by which AllWest completes its services.