

AllWest Environmental

FIRST QUARTER 2020 INDOOR AIR QUALITY MONITORING REPORT

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



PREPARED FOR:

Police Credit Union
2550 Irving Street
San Francisco, CA 94122

ALLWEST PROJECT 19086.28.3
February 13, 2020

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FIRST QUARTER 2020 INDOOR AIR QUALITY MONITORING REPORT

2550 Irving Street, San Francisco, California 94122

I. EXECUTIVE SUMMARY

AllWest Environmental, Inc. (AllWest) conducted an indoor air quality monitoring event on February 2 and 3, 2020, at the subject site referenced above (Figures 1 and 2). The purpose of the investigation was to assess the indoor air concentrations of the dry cleaning solvent tetrachloroethene (PCE) at the subject site following modifications to the building heating, ventilation and air conditioning (HVAC) system and interior doors. Previous sampling events were conducted in August and December 2019.

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.

In March 2019 PCU significantly reduced their occupancy of the subject building restricting employee use to the western half of the ground-floor where retail financial services are provided to PCU members. Use of the second floor and eastern half of the first floor were curtailed to PCU staff. Since PCU was not using 75% of the building, modifications to the HVAC system were enacted to reduce energy use and operating costs.

Modifications to the HVAC system included powering down the equipment servicing all of the 2nd floor and the eastern half of the 1st floor and replacing/adding MERV 13 particulate air filters and purifiers to help eliminate harmful pollutants, odors, bacteria, etc. The HVAC economizer was also shutdown to insure the unit was only re-circulating interior air. HVAC flow levels were increased to maximum to increase circulation. Four interior locking doors were installed on the first floor of the subject site, including three office access doors north of the waiting area and one office access door adjacent to the public restroom. Thermostats were checked and programmed as needed for operational areas. The building envelope was not sealed and the HVAC system was not operating in a positive pressure ventilation mode.

To assess indoor air quality within the subject building, four indoor air quality (IAQ) samples (IAQ-1 to IAQ-4) were collected within the first floor of the Police Credit Union (PCU) building. The location of the indoor and outdoor air samples collected in February 2020 were the same as those collected in December and August 2019.

Sample IAQ-1 was located adjacent to the bank teller counter, IAQ-2 was located in the central portion of the bank floor, IAQ-3 was located in the bathroom, and IAQ-4 was located near the southwest corner of the PCU building. One outdoor ambient air (OAA) control sample (OAA-1) was collected within a fenced-in area adjacent to the western exterior wall of the PCU building. Samples IAQ-1 and IAQ-2 were located in the portion of the building with operating HVAC system and samples IAQ-3 and IAQ-4 were located in the portion of the building where the HVAC system was shutdown. The IAQ and OAA samples were collected over a 24-hour period from February 2 to February 3, 2020. IAQ and OAA sample locations are shown on Figure 2.

The IAQ and OAA samples were analyzed by EPA Method TO-15 SIM for PCE and its breakdown products trichloroethene (TCE), cis-1,2-dichloroethene (cis-1,2-DCE), trans-1,2-dichloroethene (trans-1,2-DCE) and vinyl chloride.

PCE was detected in each IAQ sample at concentrations ranging from 0.90 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) in sample IAQ-1 to 3.3 $\mu\text{g}/\text{m}^3$ in IAQ-4. Detected PCE concentrations samples IAQ-3 and IAQ-4, located in the portion of the building where the HVAC system was shutdown, exceeded the applicable San Francisco Regional Water Quality Control Board (SFRWQCB) commercial/industrial indoor air Environmental Screening Level (ESL) of 2.0 $\mu\text{g}/\text{m}^3$ (based on direct exposure human health risk).

PCE concentrations in IAQ 1 & 2, located in the portion of the building with operating HVAC system, did not exceed the ESL. PCE was not detected in the outdoor ambient air control sample OAA-1. The PCE breakdown product TCE was detected in sample IAQ-3, but at a concentration below its respective commercial/industrial ESL. No other analyzed constituents were detected above their respective laboratory detection limits in either indoor or outdoor samples.

PCE concentrations detected in samples IAQ-1 and IAQ-2 did not exceed the applicable commercial/industrial ESL and were significantly less than those concentrations detected in the previous August and December 2019 events. PCE concentrations in IAQ-3 and IAQ-4 were similar to the August and December 2019 events.

Indoor air quality within the non-ventilated eastern portion of the subject property building is impacted to levels above commercial/industrial ESLs by soil vapor intrusion of PCE, and presents a potential human health risk to subject building occupants.

AllWest recommends continuing semiannual indoor air monitoring in summer 2020 in accordance with Department of Toxic Substances Control (DTSC) protocols (DTSC, 2011) after the winter rainy season has concluded.

II. PROJECT BACKGROUND

A. Site Location and Description

The subject property, addressed as 2500-2500 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 (PCU). 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. Previous 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 PCU 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 PCU 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 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, AllWest assess possibility a dry cleaning solvent release has 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 total petroleum hydrocarbons as diesel and motor oil (TPH-d and TPH-mo) with silica gel cleanup, total petroleum hydrocarbons as gasoline (TPH-g), volatile organic compounds (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 tetrachloroethene (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, and the leak detection gas helium.

No COCs were detected in any soil samples at concentrations exceeding applicable SFRWQCB 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 ($\mu\text{g}/\text{m}^3$) and $480 \mu\text{g}/\text{m}^3$ exceeding the applicable commercial/industrial SFRWQCB ESL of $67 \mu\text{g}/\text{m}^3$. 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.

Phase II Environmental Site Assessment for 2525 Irving Street, San Francisco, CA, AllWest Environmental (August 2019)

AllWest conducted a subsurface investigation of the employee parking lot parcels on the south side of Irving Street at 2525 Irving Street on July 17, 2019, consisting of the advancement of two borings (B-6 and B-7) to 12 feet below ground surface (bgs) in the central portion of the parking lot and one boring (B-8) to approximately 47 feet bgs in the northeast corner of the parking lot. Two additional borings (SVP-1 and SVP-2) were advanced to 5.5 feet bgs on the northeast side of the parking lot adjacent to the former dry cleaner at 2511 Irving Street. Two temporary soil vapor probes were installed at a depth of 5 feet bgs within these borings. Groundwater was not encountered in any of the borings.

Sixteen soil samples were collected from the five borings. Ten selected soil samples collected from borings B-6, B-7, SVP-1 and SVP-2 at depth intervals of 1-1.5 feet bgs and 4.5-5 feet bgs, and from borings B-6 and B-7 at depth intervals of 9.5-10 feet bgs, were analyzed for TPH-d and TPH-mo with silica gel cleanup, total petroleum TPH-g, VOCs and LUFT-5 metals. Two selected soil samples collected from boring B-8 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. Soil vapor samples collected from temporary probes SVP-1 and SVP-2 were analyzed for PCE, its degradation products TCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride, and the leak detection gas helium.

No constituents of concern (COCs) were detected in any soil samples at concentrations exceeding applicable San Francisco Bay Regional Water Quality Control Board (SFRWQCB) Environmental Screening Level (ESLs) and/or State of California Title 22 Total Threshold Limit Concentration (TTLC), Soluble Threshold Limit Concentration (STLC) or Toxic Characteristic Leaching Procedure (TCLP levels).

PCE was detected in soil vapor samples collected from borings SVP-1 and SVP-2 at $1,800 \mu\text{g}/\text{m}^3$ and $1,300 \mu\text{g}/\text{m}^3$, exceeding the applicable commercial/industrial SFRWQCB ESL of $67 \mu\text{g}/\text{m}^3$. No other COCs were detected in soil vapor samples.

AllWest concluded the subject 2525 Irving Street parcel had been impacted by a PCE soil vapor plume likely originating from the adjacent former dry cleaner at 2511 Irving Street. AllWest recommended additional investigation to delineate the extent and origin of the PCE soil vapor plume and potential impact to groundwater at the subject 2525 Irving Street parcel.

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

AllWest conducted a subsurface investigation on July 17 and 18, 2019 at 2500-2550 Irving Street. On July 17, 2019, boring B-9 was advanced to a depth of approximately 52 feet bgs in the northeast corner of the driveway west of the PCU building (2550 Irving Street). Boring B-8 was advanced to approximately 47 feet bgs at the northeast corner of the 2525 Irving Street employee parking lot parcel.

On July 18, 2019, four semi-permanent sub-slab Vapor Pins™ (VP-1A, VP-2A, VP-3 and VP-4) were installed within the PCU building at 2550 Irving Street and one 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 TCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride. No 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 $\mu\text{g}/\text{m}^3$, exceeding the applicable commercial/industrial SFRWQCB sub-slab soil gas vapor intrusion ESL of 67 $\mu\text{g}/\text{m}^3$.

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 recommended an indoor air quality assessment be conducted at the property to evaluate PCE concentrations above the slab within the Credit Union building. AllWest also recommended another attempt be made to collect groundwater samples at the property.

Indoor Air Quality Monitoring, 2500-2550 Irving Street, San Francisco, CA, AllWest Environmental (August & December 2019)

AllWest conducted indoor air quality monitoring events in August 19-20 and December 29-30, 2019 at the subject site. Four IAQ samples were collected within the first floor of the PCU building and one OAA control sample was collected adjacent to the western exterior wall of the PCU building. The IAQ and OAA samples were collected over a 24-hour period. During both August and December 2019 events, PCE detected in all four of the IAQ samples exceeded the applicable SFRWQCB commercial/industrial indoor air ESL of 2.0 $\mu\text{g}/\text{m}^3$.

Maximum PCE concentrations of 3.85 $\mu\text{g}/\text{m}^3$ were detected in samples IAQ-1 and IAQ-2 during the August 2019 event. A maximum PCE concentration of 4.3 $\mu\text{g}/\text{m}^3$ was detected in sample IAQ-2 during the December 2019 event. AllWest concluded that soil vapor intrusion from PCE is a potential risk to the human health of building occupants. AllWest determined that, since differences in PCE concentrations between the August and December indoor air monitoring events are insignificant, there is no significant seasonal variation in indoor air PCE concentrations. AllWest recommended indoor air quality and sub-slab vapor monitoring of existing Vapor Pin™ probes be conducted during the 2020 summer season in accordance with the DTSC protocols.

C. HVAC System Modifications

Reflecting PCU's significantly reduced use of the building and a desire to reduce operating costs modifications were made to the PCU HVAC system by Cool Tech Mechanic, Inc. (CMT) in January 2020. CMT powered down the HVAC equipment servicing all of the 2nd floor and the eastern half of the 1st floor. The MERV 13 particulate air filters on the HVAC unit were replaced and air purifiers added to return air ducts to help eliminate dust, particles, odors, bacteria, etc. The HVAC economizer, used to bring outside air into the building, was shutdown to insure the unit was only recirculating the interior air. HVAC flow settings were increased to maximum levels to increase circulation. The modified HVAC system was operating during the February 2020 indoor air sampling event.

III. PURPOSE AND SCOPE OF WORK

The purpose of the work was to further evaluate vapor intrusion impact to indoor air quality due to the release of PCE dry cleaning solvents.

The scope of work as performed consisted of the following tasks:

- 1) Performed a survey of building characteristics and inventory of household chemicals and hazardous materials stored in the subject building.
- 2) Collected four indoor air quality (IAQ) samples (IAQ-1 through IAQ-4) on the first floor of the PCU building and one outdoor ambient air (OAA) control sample (OAA-1). IAQ-1 was located adjacent to the bank teller counter, IAQ-2 was located in the central portion of the bank floor, IAQ-3 was located in the bathroom, and IAQ-4 was located near the southwest corner of the PCU building. The OAA sample OAA-1 was collected from within a fenced-in area situated adjacent to the western exterior wall of the PCU building. Sample locations are shown on Figure 2. The IAQ and OAA samples were collected over a 24-hour period per procedures outlined in the DTSC *Final – Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*, October 2011;
- 3) Maintained samples under chain-of-custody and transported the samples to a certified analytical laboratory (Eurofins/Calscience of Garden Grove, California) for chemical analyses. Analyzed IAQ and OAA samples for PCE and its degradation products TCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride.
- 4) Prepared a written report describing the field activities, summarizing the laboratory data, presenting investigation findings, and providing conclusions and recommendations.

IV. MONITORING ACTIVITIES

A. Hazardous Materials Audit

Prior to indoor air quality sampling activities on February 2, 2020, AllWest surveyed building characteristics and household chemicals and hazardous materials potentially containing VOCs stored at the subject property. Several chemical products were stored in a janitorial closet and break room located on the second floor of the PCU. Products included household cleaners, paint, rust remover, etc. The products contained various VOCs, but were not observed to contain PCE or its breakdown products. Building survey forms are included in Appendix B. Hazardous material survey forms are included in Appendix C.

B. Indoor Air Quality and Outdoor Ambient Air Sampling

Four IAQ samples (IAQ-1 through IAQ-4) were collected from the first floor of the PCU building on February 2 and 3, 2020. IAQ-1 was located adjacent to the bank teller counter in the western portion of the building, IAQ-2 was located in the central portion of the bank floor, IAQ-3 was located in the bathroom, and IAQ-4 was located near the southeast corner of the PCU building. Samples IAQ-3 and IAQ-4 were located in the eastern portion of the building where the HVAC system had been shutdown.

One OAA control sample (OAA-1) was collected within a fenced-in area situated adjacent to the western exterior wall of the PCU building in the presumed upwind direction.

AllWest collected air quality samples in laboratory prepared 6-liter capacity SUMMA canisters. Flow rates of approximately 3.47 milliliters per minute (ml/min) were used to fill the canisters over an 24-hour period. The canisters were filled to approximately 80% of capacity, or 5 inches of mercury (in Hg) vacuum.

Pertinent field observations, pressure, times and readings were recorded. Air quality field sampling logs are included in Appendix B. Sampling was conducted in general accordance with the DTSC *Final, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)* (DTSC, 2011).

C. Sample Preservation, Storage and Handling

To prevent the loss of constituents of interest, all SUMMA canisters were removed from the manifold, labeled with sampling information, including initial and final vacuum pressures, and placed in a dark container for transport to the analytical laboratory.

D. Chain-Of-Custody Program

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, SUMMA canister and flow controller ID numbers, initial and final SUMMA canister vacuums, parameters requested for analysis, 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 the person receiving the samples, and date and time samples were received. Chain of custody documents are included in Appendix D.

V. ASSESSMENT FINDINGS

A. Laboratory Analyses and Sampling Data

Air sample analysis was performed by a State of California ELAP certified independent analytical laboratory, Eurofins/Calscience of Garden Grove, California. Four IAQ samples and one OAA control sample were analyzed for PCE and its degradation products TCE, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE and vinyl chloride.

- PCE was detected in all IAQ samples at concentrations ranging from 0.90 $\mu\text{g}/\text{m}^3$ in sample IAQ-1 to 3.3 $\mu\text{g}/\text{m}^3$ in sample IAQ-4. PCE was not detected in OAA sample OAA-1.
- TCE was detected in sample IAQ-3, but at a concentration below its respective applicable ESL. No other COCs were detected in any indoor air samples analyzed. Indoor and outdoor air analytical data is summarized in Table 1. The laboratory analytical report is included in Appendix D.

B. Laboratory Quality Assurance and Quality Control

A review of laboratory internal 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 Eurofins/Calscience is considered to be of good quality. Laboratory QA/QC reports and chain-of-custody records are included in Appendix D.

VI. DISCUSSION

A. Environmental Screening Levels

To assess if the identified COCs in indoor air pose a risk to human health and the environment, AllWest compared analytical data generated during this investigation to ESLs for commercial/industrial land use. The ESLs are compiled by the Regional Water Quality Control Board, San Francisco Bay Region (SFRWQCB) in *User's Guide: Derivation and Application of Environmental Screening Levels (ESLs)*, Interim Final – January 24, 2019 Revision 2 (updated July 25, 2019). ESLs used in this investigation were established using *Table IA-1: Indoor Air: Direct*

Exposure Human Health Risk Levels, and Table IA-2: Indoor Air: Odor Nuisance Levels, (SFRWQCB, 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 site were established with the assumption of commercial/industrial property use.

B. Indoor Air Analytical Data Compared to Screening Levels

- PCE was detected in all IAQ samples at concentrations ranging from 0.90 $\mu\text{g}/\text{m}^3$ in sample IAQ-1 to 3.3 $\mu\text{g}/\text{m}^3$ in sample IAQ-4. PCE concentrations in indoor air samples IAQ-3 and IAQ-4 exceeded the applicable commercial/industrial ESL of 2.0 $\mu\text{g}/\text{m}^3$ for PCE. PCE was detected in samples IAQ-1 and IAQ-2 at concentrations below the ESL. None of the other analyzed constituents were detected above their respective laboratory detection limits in the air samples collected.

Analytical data and applicable ESLs are summarized in Table 1. The laboratory analytical report is included in Appendix D.

VII. CONCLUSIONS AND RECOMMENDATIONS

PCE concentrations detected in samples IAQ-1 and IAQ-2, located in the western portion of the subject building with a currently operating HVAC system, did not exceed the applicable commercial/industrial ESL, and were significantly less than those concentrations detected in the previous August and December 2019 events. PCE concentrations in IAQ-3 and IAQ-4 were similar to the August and December 2019 events.

Indoor air quality within the non-ventilated eastern portion of the subject property building is impacted to levels above commercial/industrial ESLs by soil vapor intrusion of PCE, and presents a potential human health risk to subject building occupants.

AllWest recommends continuing semiannual indoor air monitoring in summer 2020 in accordance with Department of Toxic Substances Control (DTSC) protocols (DTSC, 2011) after the winter rainy season has concluded.

VIII. LIMITATIONS

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.

IX. REFERENCES

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TABLES

Table 1
Summary of Indoor and Outdoor Air Analytical Data
2550 Irving Street
San Francisco, California 94122
AllWest Project No. 19086.28.3

Sample ID	Air Sample Start Date	Air Sample End Date	Tetrachloroethane (PCE) µg/m ³	Trichloroethene (TCE) µg/m ³	1,1-Dichloroethene (1,1-DCE) µg/m ³	cis-1,2-Dichloroethene (cis-1,2-DCE) µg/m ³	trans-1,2-Dichloroethene (trans-1,2-DCE) µg/m ³	Vinyl Chloride µg/m ³
OAQ-1	8/19/2019	8/20/2019	0.305	0.0483	0.0357	ND (<0.0198)	ND (<0.0198)	ND (<0.00768)
OAQ-1	12/29/2019	12/30/2019	ND (<0.017)	ND (<0.013)	NA	ND (<0.099)	ND (<0.099)	ND (<0.013)
OAQ-1	2/2/2020	2/3/2020	ND (<0.017)	ND (<0.013)	NA	ND (<0.099)	ND (<0.099)	ND (<0.013)
IAQ-1	8/19/2019	8/20/2019	3.85	0.0644	1.70	ND (<0.0198)	ND (<0.0198)	ND (<0.00768)
IAQ-1	12/29/2019	12/30/2019	3.6	ND (<0.013)	NA	ND (<0.099)	ND (<0.099)	ND (<0.13)
IAQ-1	2/2/2020	2/3/2020	0.90	ND (<0.013)	NA	ND (<0.099)	ND (<0.099)	ND (<0.13)
IAQ-2	8/19/2019	8/20/2019	3.85	0.161	1.56	ND (<0.0198)	ND (<0.0198)	ND (<0.00768)
IAQ-2	12/29/2019	12/30/2019	4.3	ND (<0.013)	NA	ND (<0.099)	ND (<0.099)	ND (<0.13)
IAQ-2	2/2/2020	2/3/2020	1.7	ND (<0.013)	NA	ND (<0.099)	ND (<0.099)	ND (<0.13)
IAQ-3	8/19/2019	8/20/2019	2.67	0.0859	2.63	ND (<0.0198)	ND (<0.0198)	ND (<0.00768)
IAQ-3	12/29/2019	12/30/2019	2.9	ND (<0.013)	NA	ND (<0.099)	ND (<0.099)	ND (<0.13)
IAQ-3	2/2/2020	2/3/2020	2.4	0.53	NA	ND (<0.099)	ND (<0.099)	ND (<0.13)
IAQ-4	8/19/2019	8/20/2019	2.87	0.0698	1.41	ND (<0.0198)	ND (<0.0198)	ND (<0.00768)
IAQ-4	12/29/2019	12/30/2019	3.5	ND (<0.013)	NA	ND (<0.099)	ND (<0.099)	ND (<0.13)
IAQ-4	2/2/2020	2/3/2020	3.3	ND (<0.013)	NA	ND (<0.099)	ND (<0.099)	ND (<0.13)
SFRWQCB Tier 2 Commercial/Industrial ESLs, Direct Exposure			2.0	3.0	310	35	350	0.16

Table 1
Summary of Indoor and Outdoor Air Analytical Data
2550 Irving Street
San Francisco, California 94122
AllWest Project No. 19086.28.3

Sample ID	Air Sample Start Date	Air Sample End Date	Tetrachloroethane (PCE) µg/m ³	Trichloroethene (TCE) µg/m ³	1,1-Dichloroethene (1,1-DCE) µg/m ³	cis-1,2-Dichloroethene (cis-1,2-DCE) µg/m ³	trans-1,2-Dichloroethene (trans-1,2-DCE) µg/m ³	Vinyl Chloride µg/m ³
-----------	-----------------------	---------------------	--	--	---	---	---	-------------------------------------

Notes:

Laboratory analyses by Eurofins Calscience, LLC, Garden Grove, CA, except 8/29/19 analysis by Torrent Laboratory, Inc., Milpitas, CA

OAQ = Outdoor Air Quality (ambient air control sample)

IAQ = Indoor Air Quality

NA = Not analyzed

µg/m³ = micrograms per cubic meter

1,1-DCE = 1,1-Dichloroethene by EPA Method TO-15 (only analyzed by Torrent as a PCE breakdown product)

cis-1,2-DCE = cis-1,2-Dichloroethene by EPA Method TO-15

trans-1,2-DCE = trans-1,2-Dichloroethene by EPA Method TO-15

PCE = perchloroethylene / tetrachloroethene by EPA Method TO-15

TCE = Trichloroethene by EPA Method TO-15

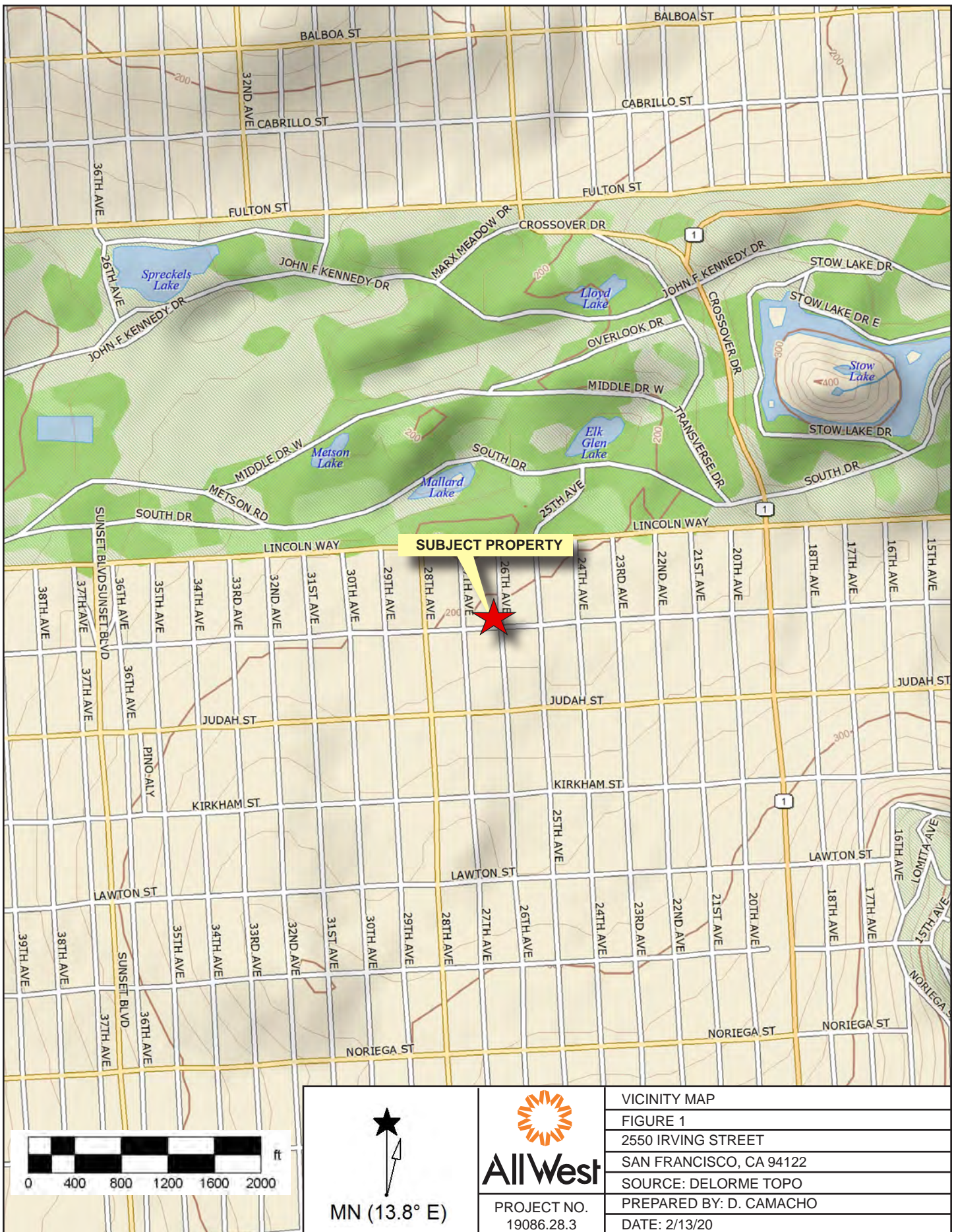
Vinyl chloride by EPA Method TO-15

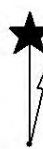

ND = Not detected above the listed reporting limit

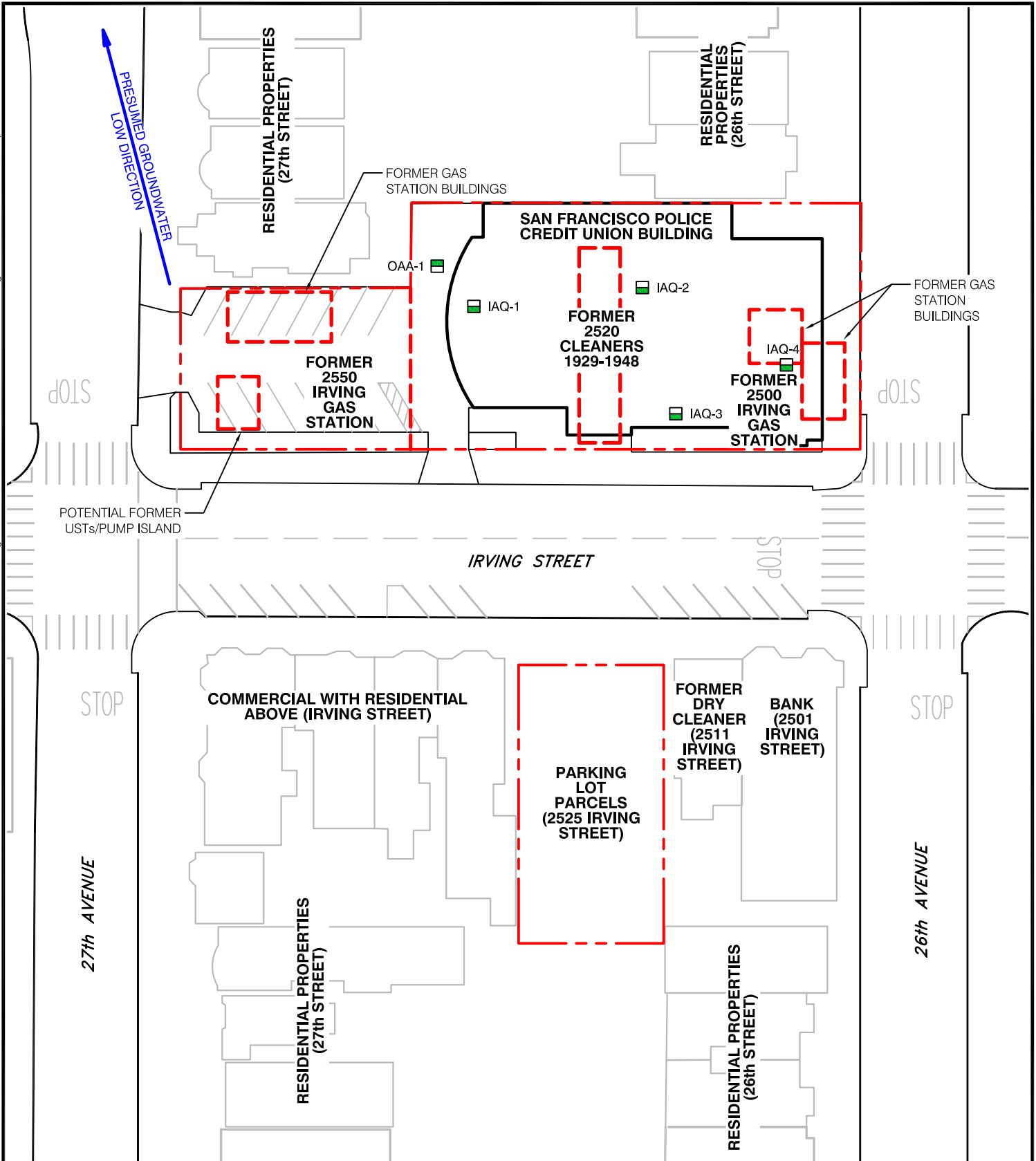
Bold Font = Detected values exceed regulatory screening levels.

SFRWQCB Tier 2 ESLs = San Francisco Regional Water Quality Control Board, *User's Guide: Derivation and Application of Environmental Screening Levels (ESLs)*, Tier 2 ESLs from Table IA-1 - Indoor Air Direct Exposure: Human Health Risk Levels, Interim Final - January 23, 2019, Revision 2 (updated July 25, 2019)




FIGURES

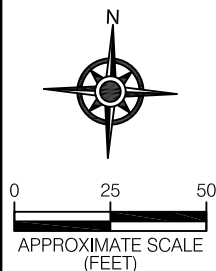


 MN (13.8° E)	 AllWest	VICINITY MAP
		FIGURE 1
		2550 IRVING STREET
		SAN FRANCISCO, CA 94122
		SOURCE: DELORME TOPO
PROJECT NO. 19086.28.3		PREPARED BY: D. CAMACHO
		DATE: 2/13/20



LEGEND

- IAQ-1  Indoor Air Sample (AllWest, 2/2/2020)
- OAA-1  Outdoor Air Sample (AllWest, 2/2/2020)
-  Approximate Property Boundaries



PROJECT NO.
19086.28.3

**FIGURE 2
INDOOR AND OUTDOOR
AIR SAMPLE LOCATIONS**

2500-2550 Irving Street

San Francisco, California

SOURCE: AllWest

DRAWN BY: CM (02/10/2020)

APPENDIX A



STANDARD INDOOR AIR QUALITY SAMPLING PROCEDURES

Indoor air quality (IAQ) sampling is conducted in general accordance with the DTSC *Final, Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air (Vapor Intrusion Guidance)*, October 2011. Prior to collecting IAQ samples, AllWest will perform a survey of the building layout and conditions to determine optimum IAQ sample locations, and conduct an inventory of chemicals at the site that may affect IAQ sample data. Building and chemical survey forms per the DTSC *Vapor Intrusion Guidance* will be utilized.

To evaluate the potential indoor air quality impact of intrusion of petroleum hydrocarbons and VOCs in the vapor phase from soil beneath the concrete floor slab in site buildings, IAQ samples and typically one outdoor ambient air (OAA) control sample will be collected during two semiannual monitoring events at the subject site. IAQ samples will typically be located in the center of building spaces to evaluate conditions in primary work areas, addition to locations in restrooms or near floor drains to evaluate preferential pathway conduits such as sewer lines. IAQ and OAA samples will be collected in approximately the same locations during both sampling events.

During each sampling event, at least one outdoor OAA sample will be collected in a secure exterior area in the presumed upwind direction away from building walls or foundation slabs, inaccessible to the public, chosen to ensure that the SUMMA canister is not stolen or tampered with overnight. The OAA sample will be secured by lock and chain to an immovable object. OAA sample collection will start at least 30 minutes prior to the start of IAQ sampling, and will be terminated 30 minutes after the last IAQ sample.

AllWest will collect air quality samples in laboratory prepared SIM-certified 6-liter capacity SUMMA canisters. Flow rates of approximately 3.5 milliliters per minute (ml/min) are used to fill the canisters over a 24 hour period. The canisters are filled to approximate 80% of capacity. All pertinent field observations, pressure, times and readings are recorded. Sample containers are labeled, placed in a dark container and transported under chain-of-custody control to the California State-certified analytical laboratory, Calscience Environmental Laboratories, Inc. (Calscience) in Garden Grove, California. Other certified analytical laboratories may be used if necessary. An example of an indoor air quality field sampling log is included in Appendix C.

A second IAQ monitoring event will be performed approximately six months from the first event in order to evaluate any seasonal variability in sub-slab vapor conditions, as recommended in the DTSC *Vapor Intrusion Guidance* (DTSC, October 2011). The scope of work, number of samples and sampling methodology will be similar to those described above, except that samples will be collected over an 8-hour period at flow rates of 10.4 ml/min.

APPENDIX B

BUILDING SURVEY FORM

Preparer's Name: Sam Calloway Date/Time Prepared: 2/2/20
Affiliation: Allwest Environmental Phone Number: 415-391-2510

Occupant Information

Occupant Name: Police Credit Union Interviewed: ☐ Yes ☐ No
Mailing Address: 2550 Irving St.
City: SF State: CA Zip Code: 94122
Phone: _____ Email: _____

Owner/Landlord Information (Check if same as occupant ☒)

Occupant Name: _____ Interviewed: ☐ Yes ☐ No
Mailing Address: _____
City: _____ State: _____ Zip Code: _____
Phone: _____ Email: _____

Building Type (Check appropriate boxes)

☐ Residential ☐ Residential Duplex ☐ Apartment Building ☐ Mobile Home ☒ Commercial (office)
☐ Commercial (warehouse) ☐ Industrial ☐ Strip Mall ☐ Split Level ☐ Church ☐ School

Building Characteristics

Approximate Building Age (years): 55 Number of Stories: 2
Approximate Building Area (square feet): 18,560 Number of Elevators: 1

Foundation Type (Check appropriate boxes)

☒ Slab-on-Grade ☐ Crawl Space ☐ Basement

Basement Characteristics (Check appropriate boxes)

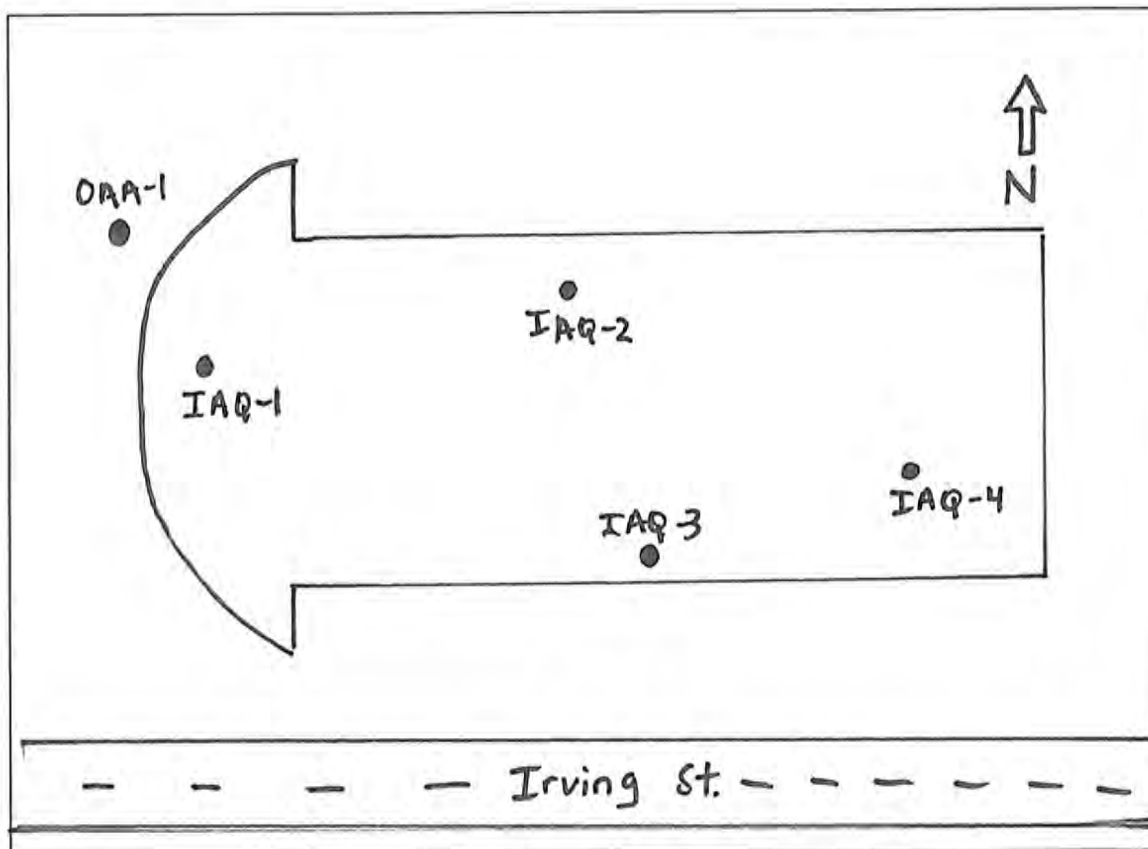
☐ Dirt Floor ☐ Sealed ☐ Wet Surfaces ☐ Sump Pump ☐ Concrete Cracks ☐ Floor Drains

Factors Influencing Indoor Air Quality

Is there an attached garage?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is there smoking in the building?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is there new carpet or furniture?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Describe: _____
Have clothes or drapes been recently dry cleaned?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Describe: _____
Has painting or staining been done with the last six months?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Describe: _____
Has the building been recently remodeled?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Describe: _____
Has the building ever had a fire?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is there a hobby or craft area in the building?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Describe: _____
Is gun cleaner stored in the building?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is there a fuel oil tank on the property?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Is there a septic tank on the property?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Has the building been fumigated or sprayed for pests recently?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Describe: _____
Do any building occupants use solvents at work?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Describe: <u>cleaning supplies</u>

Sampling Locations

Draw the general floor plan of the building and denote locations of sample collection. Indicate locations of doors, windows, indoor air contaminant sources and field instrument readings.



Primary Type of Energy Used (Check appropriate boxes)

☐ Natural Gas ☐ Fuel Oil ☐ Propane ☒ Electricity ☐ Wood ☐ Kerosene

Meteorological Conditions

Describe the general weather conditions during the indoor air sampling event.

Sunny, 50°

General Comments

Provide any other information that may be of importance in understanding the indoor air quality of this building.

Modifications to the HVAC unit were made to reduce operating costs and eliminate harmful odors and bacteria from entering the building. Air filters and purifiers added.

The HVAC system powering all of 2nd floor and eastern half of the 1st floor was shutdown. The HVAC economizer was shutdown to insure the unit was only recirculating the indoor air. HVAC settings were increased to maximum levels to increase circulation.

INDOOR/AMBIENT AIR SAMPLING FIELD LOG

Project No: 19086.28 Project Name: IRVING IAQ 3
 Date: 2/2-3/2020 Site Location: 2520 IRVING STREET, SF, CA
 Sample ID No: IAQ- 1 Canister Type: SIM Serial No: D836
 Regulatory Agencies: _____ Contractor: ALLWEST
 Indoor/Outdoor: INDOOR Building Name/Location: SFPCU
 Initial Vacuum: -30 ("Hg) Final Vacuum: -8 ("Hg) Canister Volume: 6 (L)
 Sampling Interval (hrs): 24 Flow Regulator: _____ (ml/min) Regulator Serial No: FC416
 Laboratory Name and Location: EUROFINS
 Laboratory Analyses: PCE + BREAKDOWNS

SAMPLE COLLECTION

Start/Stop Time	Time Elapsed	Pressure	Remarks
<u>0837</u>	<u>24 hours</u>	<u>-30</u>	<u>start 2/2</u>
<u>0838</u>		<u>-8</u>	<u>stop 2/3</u>

Remarks: _____

Sampler: SAM CALLOWAY

INDOOR/AMBIENT AIR SAMPLING FIELD LOG

Project No: 19086-28 Project Name: IRVING IAQ 3
 Date: 2/2-3/2020 Site Location: 2520 IRVING STREET, SF, CA
 Sample ID No: IAQ- 2 Canister Type: SIM Serial No: D578
 Regulatory Agencies: _____ Contractor: ALLWEST
 Indoor/Outdoor: INDOOR Building Name/Location: SFPCU
 Initial Vacuum: -30 ("Hg) Final Vacuum: -7 ("Hg) Canister Volume: 6 (L)
 Sampling Interval (hrs): 24 Flow Regulator: _____ (ml/min) Regulator Serial No: FC272
 Laboratory Name and Location: EUROFINS
 Laboratory Analyses: PCE + BREAKDOWNS

SAMPLE COLLECTION

Start/Stop Time	Time Elapsed	Pressure	Remarks
<u>0835</u>	<u>24 hours</u>	<u>-30</u>	<u>start 2/2/20</u>
<u>0836</u>		<u>-7</u>	<u>stop 2/3/20</u>

Remarks: _____

Sampler: SAM CALLOWAY

INDOOR/AMBIENT AIR SAMPLING FIELD LOG

Project No: 19086.28 Project Name: IRVING IAQ 3
 Date: 2/2-3/2020 Site Location: 2520 IRVING STREET, SF, CA
 Sample ID No: IAQ-3 Canister Type: SIM Serial No: D449
 Regulatory Agencies: _____ Contractor: ALLWEST
 Indoor/Outdoor: INDOOR Building Name/Location: SFPCU
 Initial Vacuum: -30 ("Hg) Final Vacuum: -6 ("Hg) Canister Volume: 6 (L)
 Sampling Interval (hrs): 24 Flow Regulator: _____ (ml/min) Regulator Serial No: FC350
 Laboratory Name and Location: EUROFINS
 Laboratory Analyses: PCE + BREAKDOWNS

SAMPLE COLLECTION

Start/Stop Time	Time Elapsed	Pressure	Remarks
<u>0839</u>	<u>24 hours</u>	<u>-30</u>	<u>start 2/2</u>
<u>0841</u>		<u>-6</u>	<u>stop 2/3</u>

Remarks: _____

Sampler: SAM CALLOWAY

INDOOR/AMBIENT AIR SAMPLING FIELD LOG

Project No: 19086.28 Project Name: IRVING IAQ 3
 Date: 2/2-3/2020 Site Location: 2520 IRVING STREET, SF, CA
 Sample ID No: IAQ- 4 Canister Type: SIM Serial No: D501
 Regulatory Agencies: _____ Contractor: ALLWEST
 Indoor/Outdoor: INDOOR Building Name/Location: SFPCU
 Initial Vacuum: -30 ("Hg) Final Vacuum: -5 ("Hg) Canister Volume: 6 (L)
 Sampling Interval (hrs): 24 Flow Regulator: _____ (ml/min) Regulator Serial No: FC477
 Laboratory Name and Location: EUROFINS
 Laboratory Analyses: PCE + BREAKDOWNS

SAMPLE COLLECTION

Start/Stop Time	Time Elapsed	Pressure	Remarks
<u>0838</u>	<u>24 hours</u>	<u>-30</u>	<u>Start 2/2</u>
<u>0840</u>		<u>-5</u>	<u>stop 2/3</u>

Remarks: _____

Sampler: SAM CALLOWAY

INDOOR/AMBIENT AIR SAMPLING FIELD LOG

Project No: 19086.28 Project Name: IRVING IAQ 3
 Date: 2/2-3/2020 Site Location: 2520 IRVING STREET, SF, CA
 Sample ID No. OAA-1 Canister Type: SIM Serial No: D710
 Regulatory Agencies: _____ Contractor: ALLWEST
 Indoor/Outdoor: INDOOR Building Name/Location: SFPCU
 Initial Vacuum: -30 ("Hg) Final Vacuum: -2 ("Hg) Canister Volume: 6 (L)
 Sampling Interval (hrs): 24 Flow Regulator: _____ (ml/min) Regulator Serial No: FC318
 Laboratory Name and Location: EUROFINS
 Laboratory Analyses: PCE + BREAKDOWNS

SAMPLE COLLECTION

Start/Stop Time	Time Elapsed	Pressure	Remarks
<u>0830</u>	<u>24 hours</u>	<u>-30</u>	<u>start 2/2</u>
<u>0845</u>		<u>-2</u>	<u>stop 2/3</u>

Remarks: _____

Sampler: SAM CALLOWAY

APPENDIX C

BUILDING SCREENING FORM

Occupant of Building Police Credit Union

Address 2550 Irving St.

City SF, CA

Field Investigator Sam Calloway Date 2/2/20

Field Instrument Reading	Measurement Location (Ambient Air, Foundation Opening, or Consumer Product)	If Consumer Product, Potential Volatile Ingredients
	1 bottle Windex - 12 oz.	
	2 bottles disinfectant spray - 12 oz.	
	2 paint cans - 1 gallon	
	≈ 10 light bulbs	
	1 can of WD-40 8 oz	
	3 cans of spray paint - 8 oz.	
	2 bottles of hand sanitizer	
	≈ 20 urinal cakes	
	1 bottle rubbing alcohol - 16 oz.	
	1 can computer duster - 8 oz.	
	1 can acetone - 32 oz.	

Comments:

APPENDIX D

ANALYTICAL REPORT

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

Laboratory Job ID: 570-19710-1
Client Project/Site: Irving IAQ3 - 19086.28

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

Attn: Sam Calloway

Vik Patel

Authorized for release by:
2/6/2020 5:20:46 PM

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

The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

Results relate only to the items tested and the sample(s) as received by the laboratory.

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Definitions/Glossary

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

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)

Case Narrative

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

Job ID: 570-19710-1

Laboratory: Eurofins Calscience LLC

Narrative

Job Narrative
570-19710-1

Comments

No additional comments.

Receipt

The samples were received on 2/4/2020 11:25 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 22.0° C.

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 IAQ3 - 19086.28

Job ID: 570-19710-1

Client Sample ID: IAQ-1

Lab Sample ID: 570-19710-1

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	0.90		0.17	ug/m3	1		TO-15 SIM	Total/NA

Client Sample ID: IAQ-2

Lab Sample ID: 570-19710-2

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	1.7		0.17	ug/m3	1		TO-15 SIM	Total/NA

Client Sample ID: IAQ-3

Lab Sample ID: 570-19710-3

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	2.4		0.17	ug/m3	1		TO-15 SIM	Total/NA
Trichloroethene	0.53		0.13	ug/m3	1		TO-15 SIM	Total/NA

Client Sample ID: IAQ-4

Lab Sample ID: 570-19710-4

Analyte	Result	Qualifier	RL	Unit	Dil Fac	D	Method	Prep Type
Tetrachloroethene	3.3		0.17	ug/m3	1		TO-15 SIM	Total/NA

Client Sample ID: OAA-1

Lab Sample ID: 570-19710-5

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Calscience LLC

Client Sample Results

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

Method: TO-15 SIM - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Client Sample ID: IAQ-1
Date Collected: 02/03/20 08:38
Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-1
Matrix: Air

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 12:35	1
trans-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 12:35	1
Tetrachloroethene	0.90		0.17	ug/m3			02/06/20 12:35	1
Trichloroethene	ND		0.13	ug/m3			02/06/20 12:35	1
Vinyl chloride	ND		0.13	ug/m3			02/06/20 12:35	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		37 - 163				02/06/20 12:35	1
4-Bromofluorobenzene (Surr)	100		45 - 153				02/06/20 12:35	1
Toluene-d8 (Surr)	108		73 - 121				02/06/20 12:35	1

Client Sample ID: IAQ-2
Date Collected: 02/03/20 08:36
Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-2
Matrix: Air

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 13:26	1
trans-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 13:26	1
Tetrachloroethene	1.7		0.17	ug/m3			02/06/20 13:26	1
Trichloroethene	ND		0.13	ug/m3			02/06/20 13:26	1
Vinyl chloride	ND		0.13	ug/m3			02/06/20 13:26	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	91		37 - 163				02/06/20 13:26	1
4-Bromofluorobenzene (Surr)	99		45 - 153				02/06/20 13:26	1
Toluene-d8 (Surr)	107		73 - 121				02/06/20 13:26	1

Client Sample ID: IAQ-3
Date Collected: 02/03/20 08:41
Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-3
Matrix: Air

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 14:17	1
trans-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 14:17	1
Tetrachloroethene	2.4		0.17	ug/m3			02/06/20 14:17	1
Trichloroethene	0.53		0.13	ug/m3			02/06/20 14:17	1
Vinyl chloride	ND		0.13	ug/m3			02/06/20 14:17	1
Surrogate	%Recovery	Qualifier	Limits			Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	92		37 - 163				02/06/20 14:17	1
4-Bromofluorobenzene (Surr)	101		45 - 153				02/06/20 14:17	1
Toluene-d8 (Surr)	107		73 - 121				02/06/20 14:17	1

Client Sample ID: IAQ-4
Date Collected: 02/03/20 08:40
Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-4
Matrix: Air

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 15:08	1
trans-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 15:08	1
Tetrachloroethene	3.3		0.17	ug/m3			02/06/20 15:08	1
Trichloroethene	ND		0.13	ug/m3			02/06/20 15:08	1
Vinyl chloride	ND		0.13	ug/m3			02/06/20 15:08	1

Eurofins Calscience LLC

Client Sample Results

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

Method: TO-15 SIM - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS) (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		37 - 163		02/06/20 15:08	1
4-Bromofluorobenzene (Surr)	99		45 - 153		02/06/20 15:08	1
Toluene-d8 (Surr)	108		73 - 121		02/06/20 15:08	1

Client Sample ID: OAA-1

Date Collected: 02/03/20 08:45

Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-5

Matrix: Air

Analyte	Result	Qualifier	RL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 15:58	1
trans-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 15:58	1
Tetrachloroethene	ND		0.17	ug/m3			02/06/20 15:58	1
Trichloroethene	ND		0.13	ug/m3			02/06/20 15:58	1
Vinyl chloride	ND		0.13	ug/m3			02/06/20 15:58	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	90		37 - 163		02/06/20 15:58	1
4-Bromofluorobenzene (Surr)	102		45 - 153		02/06/20 15:58	1
Toluene-d8 (Surr)	106		73 - 121		02/06/20 15:58	1

Surrogate Summary

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

Method: TO-15 SIM - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Matrix: Air

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCA (37-163)	BFB (45-153)	TOL (73-121)
570-19710-1	IAQ-1	92	100	108
570-19710-2	IAQ-2	91	99	107
570-19710-3	IAQ-3	92	101	107
570-19710-4	IAQ-4	90	99	108
570-19710-5	OAA-1	90	102	106
LCS 570-49086/1029	Lab Control Sample	100	98	100
LCSD 570-49086/30	Lab Control Sample Dup	101	102	109
MB 570-49086/31	Method Blank	97	98	107

Surrogate Legend

DCA = 1,2-Dichloroethane-d4 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

Method: TO-15 SIM - Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)

Lab Sample ID: MB 570-49086/31

Matrix: Air

Analysis Batch: 49086

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		0.099	ug/m3			02/06/20 10:02	1
trans-1,2-Dichloroethene	ND		0.099	ug/m3			02/06/20 10:02	1
Tetrachloroethene	ND		0.17	ug/m3			02/06/20 10:02	1
Trichloroethene	ND		0.13	ug/m3			02/06/20 10:02	1
Vinyl chloride	ND		0.13	ug/m3			02/06/20 10:02	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
1,2-Dichloroethane-d4 (Surr)	97		37 - 163		02/06/20 10:02	1
4-Bromofluorobenzene (Surr)	98		45 - 153		02/06/20 10:02	1
Toluene-d8 (Surr)	107		73 - 121		02/06/20 10:02	1

Lab Sample ID: LCS 570-49086/1029

Matrix: Air

Analysis Batch: 49086

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	1.98	2.079		ug/m3		105	35 - 165
trans-1,2-Dichloroethene	1.98	2.236		ug/m3		113	50 - 150
Tetrachloroethene	3.39	3.597		ug/m3		106	34 - 154
Trichloroethene	2.69	2.869		ug/m3		107	43 - 139
Vinyl chloride	1.28	1.415		ug/m3		111	44 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	100		37 - 163
4-Bromofluorobenzene (Surr)	98		45 - 153
Toluene-d8 (Surr)	100		73 - 121

Lab Sample ID: LCSD 570-49086/30

Matrix: Air

Analysis Batch: 49086

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	1.98	2.116		ug/m3		107	35 - 165	2	35
trans-1,2-Dichloroethene	1.98	2.278		ug/m3		115	50 - 150	2	30
Tetrachloroethene	3.39	3.604		ug/m3		106	34 - 154	0	33
Trichloroethene	2.69	2.900		ug/m3		108	43 - 139	1	31
Vinyl chloride	1.28	1.417		ug/m3		111	44 - 140	0	33

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
1,2-Dichloroethane-d4 (Surr)	101		37 - 163
4-Bromofluorobenzene (Surr)	102		45 - 153
Toluene-d8 (Surr)	109		73 - 121

QC Association Summary

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

Air - GC/MS VOA

Analysis Batch: 49086

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
570-19710-1	IAQ-1	Total/NA	Air	TO-15 SIM	
570-19710-2	IAQ-2	Total/NA	Air	TO-15 SIM	
570-19710-3	IAQ-3	Total/NA	Air	TO-15 SIM	
570-19710-4	IAQ-4	Total/NA	Air	TO-15 SIM	
570-19710-5	OAA-1	Total/NA	Air	TO-15 SIM	
MB 570-49086/31	Method Blank	Total/NA	Air	TO-15 SIM	
LCS 570-49086/1029	Lab Control Sample	Total/NA	Air	TO-15 SIM	
LCSD 570-49086/30	Lab Control Sample Dup	Total/NA	Air	TO-15 SIM	

Lab Chronicle

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

Client Sample ID: IAQ-1

Date Collected: 02/03/20 08:38

Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-1

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 SIM		1	250 mL	250 mL	49086	02/06/20 12:35	V2NZ	ECL 2
Instrument ID: GCMSYY										

Client Sample ID: IAQ-2

Date Collected: 02/03/20 08:36

Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-2

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 SIM		1	250 mL	250 mL	49086	02/06/20 13:26	V2NZ	ECL 2
Instrument ID: GCMSYY										

Client Sample ID: IAQ-3

Date Collected: 02/03/20 08:41

Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-3

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 SIM		1	250 mL	250 mL	49086	02/06/20 14:17	V2NZ	ECL 2
Instrument ID: GCMSYY										

Client Sample ID: IAQ-4

Date Collected: 02/03/20 08:40

Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-4

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 SIM		1	250 mL	250 mL	49086	02/06/20 15:08	V2NZ	ECL 2
Instrument ID: GCMSYY										

Client Sample ID: OAA-1

Date Collected: 02/03/20 08:45

Date Received: 02/04/20 11:25

Lab Sample ID: 570-19710-5

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 SIM		1	250 mL	250 mL	49086	02/06/20 15:58	V2NZ	ECL 2
Instrument ID: GCMSYY										

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 IAQ3 - 19086.28

Job ID: 570-19710-1

Laboratory: Eurofins Calscience LLC

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

Authority	Program	Identification Number	Expiration Date
Arizona	State	AZ0781	03-13-20
California	Los Angeles County Sanitation Districts	10109	09-29-20
California	SCAQMD LAP	17LA0919	11-30-20
California	State	2944	09-29-20
Guam	State	20-003R	10-31-20
Hawaii	State	<cert No.>	07-02-20
Nevada	State	CA00111	07-31-20
Oregon	NELAP	CA300001	01-29-21
Washington	State	C916-18	10-11-20

Method Summary

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

Method	Method Description	Protocol	Laboratory
TO-15 SIM	Volatile Organic Compounds in Ambient Air, Low Concentration (GC/MS)	EPA-21	ECL 2

Protocol References:

EPA-21 = "Compendium Of Methods For The Determination Of Toxic Organic Compounds In Ambient Air", Second Edition, EPA/625/R-96/010B, January 1999

Laboratory References:

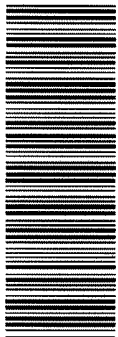
ECL 2 = Eurofins Calscience LLC Lampson, 7445 Lampson Ave, Garden Grove, CA 92841, TEL (714)895-5494

Sample Summary

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job ID: 570-19710-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
570-19710-1	IAQ-1	Air	02/03/20 08:38	02/04/20 11:25	Air Canister (6-Liter) #D836
570-19710-2	IAQ-2	Air	02/03/20 08:36	02/04/20 11:25	Air Canister (6-Liter) #D578
570-19710-3	IAQ-3	Air	02/03/20 08:41	02/04/20 11:25	Air Canister (6-Liter) #D449
570-19710-4	IAQ-4	Air	02/03/20 08:40	02/04/20 11:25	Air Canister (6-Liter) #D501
570-19710-5	OAA-1	Air	02/03/20 08:45	02/04/20 11:25	Air Canister (6-Liter) #D710



570-19710 Chain of Custody

Rush Samples - 24 hour TAT

[illegible]

1/31/2020



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

Ship To

Tracking #: 547817202

NPS



GARDEN GROVE

1/31/2020



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

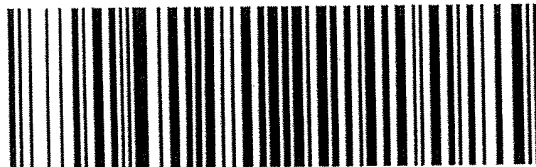
Tracking #: 547817203

NPS



GARDEN GROVE

S92841A



15170321

ORC CA927-CL0

Print Date: 1/31/2020 11:17 AM

Package 2 of 2

DELIVERY INSTRUCTIONS:

Login Sample Receipt Checklist

Client: Allwest Environmental

Job Number: 570-19710-1

Login Number: 19710

List Source: Eurofins Calscience

List Number: 1

Creator: Cruise, Noel

Question	Answer	Comment
Radioactivity wasn't checked or is \leq 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.	False	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.	True	
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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Summa Canister Dilution Worksheet

Client: Allwest Environmental
Project/Site: Irving IAQ3 - 19086.28

Job No.: 570-19710-1

Lab Sample ID	Canister Volume (L)	Presampling Pressure ("Hg)	Preadjusted Pressure ("Hg)	Preadjusted Pressure (atm)	Preadjusted Volume (L)	Adjusted Pressure (psig)	Adjusted Pressure (atm)	Adjusted Volume (L)	Initial Volume (mL)	Dilution Factor	Final Dilution Factor	Pressure Gauge ID	Date	Analyst Initials
570-19710-1	6	-29.5	-4	0.87	5.20	-1.96462	0.87	5.20		1.00	1.00	AIR MG-6	02/04/20 16:10	LEW3
570-19710-2	6	-29.5	-3.2	0.89	5.36	-1.57169	0.89	5.36		1.00	1.00	AIR MG-6	02/04/20 16:10	LEW3
570-19710-3	6	-29.5	-3	0.90	5.40	-1.47346	0.90	5.40		1.00	1.00	AIR MG-6	02/04/20 16:10	LEW3
570-19710-4	6	-29.5	-3.5	0.88	5.30	-1.71904	0.88	5.30		1.00	1.00	AIR MG-6	02/04/20 16:10	LEW3
570-19710-5	6	-29.5	-1.2	0.96	5.76	-0.58938	0.96	5.76		1.00	1.00	AIR MG-6	02/04/20 16:11	LEW3

5

Formulae:

Preadjusted Volume (L) = (Preadjusted Pressure ("Hg) + 29.92 "Hg * Vol L) / 29.92 "Hg

Adjusted Volume (L) = (Adjusted Pressure (psig) + 14.7 psig * Vol L) / 14.7 psig

Dilution Factor = Adjusted Volume (L) / Preadjusted Volume (L)

Where:

29.92 "Hg = Standard atmospheric pressure in inches of Mercury ("Hg)

14.7 psig = Standard atmospheric pressure in pounds per square inch gauge (psig)

APPENDIX E



APPLICATION FOR AUTHORIZATION TO USE

REPORT TITLE: 1Q 2020 INDOOR AIR QUALITY MONITORING REPORT

2550 Irving Street
San Francisco, CA 94122

PROJECT NUMBER: 19086.28.3

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

Applicant Company

AllWest Environmental, Inc.

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.