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Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

Attention: Mr. Mark Detterman, PG, CEG, Senior Hazardous Materials Specialist

**TRANSMITTAL LETTER
SUPPLEMENTAL OFF-SITE SUBSURFACE INVESTIGATION REPORT
6701, 6705, and 6707 SHELLMOUND STREET
EMERYVILLE, CALIFORNIA
Fuel Leak Case No. RO0000548
Geotracker Global ID T0600100894**

Dear Mr. Detterman:

Submitted herewith for your review is the *Supplemental Off-Site Subsurface Investigation Report, 6701, 6705, and 6707 Shellmound Street, Emeryville, California* dated July 6, 2017, prepared by PES Environmental, Inc.

I have read and acknowledge the content, recommendations and/or conclusions contained in the attached document or report submitted on my behalf to ACDEH's FTP server and the SWRCB's GeoTracker website.

Very truly yours,

ANTON EMERYVILLE, LLC



Rachel Green
Senior Development Manager



A Report Prepared For:

Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

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EMERYVILLE, CALIFORNIA
FUEL LEAK CASE NO. RO0000548
GEOTRACKER GLOBAL ID T0600100894**

JULY 6, 2017

By:

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DISTRIBUTION

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1.0 INTRODUCTION

This report has been prepared by PES Environmental, Inc. (PES) on behalf of Anton Emeryville, LLC (Anton) to present the results of a supplemental off-site subsurface investigation conducted at the 6601-6603 Shellmound Street property in Emeryville, California. The off-site building is located adjacent to the southern property boundary of the 6701-6707 Shellmound Street property (the subject property or site). The subject property consists of a single legal parcel identified by Alameda County Assessor's Parcel Number (APN) 049-14906-02, covering approximately 2.27 acres. The site location is shown on Plate 1.

The subject property is currently listed as an open Spills, Leaks, Investigation and Cleanup (SLIC) case under a former site occupant (Mike Roberts Color Production) using the former site address of (6707 Bay Street) with Alameda County Environmental Health (ACEH) as the lead environmental regulatory agency. PES is assisting Anton in working with ACEH to obtain SLIC case closure as part of the site redevelopment process. PES understands Anton is seeking to acquire the site for redevelopment purposes and the development plans include demolition of existing buildings; grading and soil excavation for utilities and building foundations; and construction of a new multi-story multi-use building and associated parking, driveway, and landscaped areas.

Numerous investigations have been conducted at the subject property to assess conditions in soil, soil gas, and groundwater as part of pre-construction site characterization activities. On behalf of Anton, PES conducted an off-site subsurface investigation in October 2016 at the 6601-6603 Shellmound Street property. The off-site investigation was conducted in accordance with PES' *Work Plan for Off-Site Subsurface Investigation* dated August 29, 2016 (PES, 2016f) and conditionally approved in a letter from ACEH dated September 4, 2015. The primary objective of the off-site investigation included delineation of the extent of volatile organic compound (VOC) contamination, primarily vinyl chloride, affecting soil, soil gas, and groundwater at the 6601-6603 Shellmound Street property.

After completion of the off-site investigation, implementation of an interim remedial measure (IRM) consisting of soil vapor extraction (SVE) commenced November 8, 2016 under a Bay Area Air Quality Management District (BAAQMD) permit and ACEH approval of operation of the SVE system (ACEH, 2016b). The utilization of SVE as an IRM was conducted to reduce concentrations of VOCs in the subsurface prior to, and possibly during, the initiation of the planned development activities and to reduce potential exposure to future site users. Based on concentrations below site-specific risk-based concentrations, the SVE system was shut down on February 28, 2017 to permit assessment of vapor rebound VOC concentrations. Vapor rebound sampling was conducted on June 1, 2017; based on indications of rebounding vapor concentrations in select wells, PES recommended that the SVE system be restarted and operated for approximately one week per month to limit potential repropagation of pre-SVE subsurface vapor conditions (PES, 2017b).

The results of the off-site subsurface investigation were presented in a report entitled *Off-Site Sub-Surface Investigation Report* dated December 21, 2016 (PES, 2016g; Off-Site Report). Subsurface conditions with respect to the magnitude and horizontal and vertical extent of VOCs at the western portion of the off-site property were substantially characterized. With the exception of chlorinated VOCs (in particular, vinyl chloride), the laboratory analytical detections of VOCs and lithologic observations were generally consistent with the known presence of fill material in the site vicinity. As noted in the Off-Site Report (and shown in Plate 5a, presented in Appendix D), there were several locations where detected concentrations of vinyl chloride in soil gas (one location at 5 feet below ground surface (bgs) [PSV10], and three locations at 10 feet bgs [PSV1, PSV6, and PSV10]) exceeded the Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) Environmental Screening Level (ESL) for vapor intrusion for a commercial setting. As such, additional investigation was recommended to laterally define concentrations of vinyl chloride-affected soil vapor.

The supplemental off-site investigation tasks described herein were conducted in accordance with methods and procedures presented in PES' *Draft Corrective Action Plan* (PES, 2017a; Draft CAP). Implementation of the supplemental off-site investigation work was approved by Alameda County Environmental Health (ACEH) in correspondence dated February 2, 2017 (ACEH, 2017).

2.0 BACKGROUND INFORMATION

The existing building at 6601-6603 Shellmound Street was constructed in 1959 with a slab-on-grade concrete flooring and pre-fabricated exterior concrete walls. The exterior of the property consists of asphalt paved parking and driving areas on the south and west sides of the building.

Available historical information indicates the building was initially in use as a warehouse and wholesale distribution facility for sugar and liquor items. The original warehouse building was converted to office space during various renovations performed between the 1970s to 1990s. Beginning in 1998 and continuing presently, the site is occupied by the Ex'pression College for Digital Arts.

2.1 Site Geology and Hydrogeology

The off-site investigation identified subsurface soil generally consistent with the findings of previous investigations conducted at the subject property.

Sandy and gravelly clay and sandy and gravelly silt were encountered across the site to depths up to 9 feet bgs, underlain in portions of the site by dark green to black clay of medium to high plasticity. Lenses of fine-to coarse-grained gray to black sand and gravelly sand were also observed within the fine-grained material in most borings. Variable amounts of wood debris, asphaltic and tar-like materials, glass, brick, and concrete were encountered at various depths.

Observations recorded during the off-site investigation, including the presence of hydrocarbon-enriched fluids observed within fill materials, are consistent with the widespread presence of artificial fill within the vicinity containing abundant quantities of debris.

Saturated soil (indicative of shallow groundwater level) was encountered during the October 2016 off-site investigation at depths ranging from approximately 12.5 to 16 feet bgs.

3.0 INVESTIGATION METHODS

On May 30 and 31, 2017, soil vapor sampling activities, and installation of permanent multi-depth vapor monitoring probes was conducted using direct push drilling methods at six locations at the off-site property, as shown on Plate 2. To minimize potential disturbance to the occupants while conducting intrusive investigation activities, the investigation was conducted outside of normal business hours (e.g., from 12:00 a.m. to 8:00 a.m.).

Supplemental investigation activities included:

- Installing and sampling 2 temporary soil vapor probes (PSV12 and PSV13) at two exterior locations adjacent to the off-site building (Plate 2); and
- Installing permanent multi-depth soil vapor monitoring probes (with vapor probe inlets at 5 and up to 9 feet bgs) at four locations inside the 6601-6603 Shellmound Street building.

The preliminary field activities, sampling and analytical methods, and investigation results are discussed below. Drilling and sampling activities were conducted with oversight by a licensed California Professional Geologist.

3.1 Field Preparation Activities

Drilling and sampling activities were conducted in accordance with the Site-specific Health and Safety Plan conforming to applicable federal, California Occupational Safety and Health Administration (OSHA) and Title 29 CFR 1910.120 guidelines. Drilling permits were obtained from the Alameda County Public Works Agency, Water Resources Section (ACPWA). Copies of the drilling permits are presented in Appendix A.

PES contacted Underground Service Alert (USA North) before beginning drilling activities to locate and mark utilities at the site. C. Cruz Locators, Inc., of Milpitas, California was retained to clear the boring locations for subsurface utilities, and Pacific Coast Cutters, Inc. of Petaluma, California, was retained to core the concrete slab at interior locations in advance of drilling activities.

Environmental Control Associates (ECA) of Aptos, California, a drilling contractor possessing a valid C-57 water well contractor's license issued by the State of California, was retained to install the permanent and temporary soil vapor probes.

3.2 Soil Vapor Field Activities

Soil vapor sampling activities were conducted in accordance with procedures outlined in the guidance document titled *Advisory – Active Soil Gas Investigations* (ASGI; DTSC, 2015).

3.2.1 Temporary Soil Vapor Probe Installation, Sampling, and Analysis

On May 31, 2017, ECA utilized a truck-mounted direct push Geoprobe™ drilling rig to install temporary soil vapor probes PSV-12 (7 feet bgs) and PSV-13 (5 and 8 feet bgs). Due to saturated conditions identified at approximately 8 feet bgs at PSV12, the soil vapor probe was installed at 7 feet bgs; based on saturated conditions identified at approximately 9 feet bgs at PSV13, the deeper soil vapor probe was installed at 8 feet bgs.

Soil samples were collected continuously for lithologic description, field screening for VOCs using a photoionization detector (PID). Reusable drilling and soil sampling equipment coming in contact with subsurface material were decontaminated between sampling points using an Alconox™ wash and potable water rinse.

Upon reaching the target depth, a new ceramic soil vapor probe was placed within a filter pack constructed with #2/12 sand extending 3 inches above and below the sampling interval, and attached to ¼-inch diameter Teflon™ tubing extending to ground surface. One-foot of dry granular bentonite was placed on top of the sand pack to preclude the infiltration of hydrated bentonite grout into the sand pack. The borehole annular space between above the dry granular bentonite was filled with hydrated bentonite.

A shallower soil vapor probe was installed within the same borehole at PSV13. The shallow ceramic probe tip was placed at approximately 5 feet bgs within a #2/12 sand pack extending 3 inches above and below the sampling interval, and attached to ¼-inch diameter Teflon™ tubing extending to ground surface. One-foot of dry granular bentonite was placed on top of the sand pack. The borehole annular space from approximately 3.75 feet bgs to ground surface was filled with hydrated bentonite. The upper end of the tubing for each probe was capped with a vapor-tight fitting and marked at the surface to identify the probe location and depth. Boring logs and soil vapor probe construction details are included in Appendix B.

Each soil vapor probe was allowed to equilibrate for a minimum of two hours after installation. Prior to purging and collecting the soil vapor samples, shut-in leak testing, as described above in Section 3.2.1, was performed.

The volume of the sampling tubing, soil vapor probes, and sand pack void space was then calculated and a minimum of three volumes were purged using a six-liter SUMMA™ canister prior to collecting each soil vapor sample.

Following completion of the shut-in leak test and purging, sample train leak testing was performed using helium gas as a tracer in combination with a shroud box.

Upon completion of soil vapor sampling activities, the probes and annular materials were removed to the total installed depth using the direct push drilling rig, each boring was filled to the ground surface with neat cement grout, and the surface was restored using concrete to match the surrounding material.

A total of three soil vapor samples were transported to TestAmerica Laboratories, Inc. (TestAmerica) of Pleasanton, California, a state-certified analytical laboratory, under chain-of-custody protocol for analysis for vinyl chloride using U.S. Environmental Protection Agency (EPA) Test Method TO-15 and helium using ASTM Test Method D1946.

3.2.2 Installation of Permanent Soil Vapor Monitoring Probes

Eight (8) soil vapor monitoring probes were installed at four locations (PSGP1 through PSGP4), as shown on Plate 2. Installation procedures are summarized below. Soil vapor monitoring probe lithologic logs and construction details are presented in Table 2 and Appendix B.

Two probes were nested within each boring. The borings were continuously cored using a track-mounted, direct-push drill rig by driving a 4-foot long by 2-inch outside-diameter sampler into undisturbed soil. A PES geologist supervised the drilling activities and prepared field lithologic and well completion logs.

The monitoring probes were constructed using Geoprobe AT86 vapor sampling implants with a 6-inch screen length. A total of four (4) shallow vapor monitoring probes were placed with screened intervals from at approximately 4.75 to 5.25 feet bgs (PSGP1-5.0 through PSGP4-5.0). A total of four (4) deeper vapor monitoring probes were installed at depths between 7 and 9 feet bgs. The deeper probes were installed shallower than the planned 10-foot bgs screened midpoint due to saturated soil conditions observed during continuous core drilling. As shown in Table 2 and Appendix B, PSGP1 was screened from 8.75 to 9.25 feet bgs; PSGP2 was screened from 7.75 to 8.25 feet bgs; and PSGP3 and PSGP4 were screened from 6.75 to 7.25 feet bgs.

Each soil vapor probe was fitted with 0.25-inch outside-diameter nylon tubing. The filter pack consisted of No. 3 sand extending 3 inches below to 6 inches above the top of each screened probe interval. Uncoated bentonite chip seals were placed between each filter pack interval and subsequently hydrated. A bentonite-cement seal was placed from the top of the shallow probe filter pack to the surface. Each monitoring probe was labeled and fitted with a compression fitting, and a flush-mounted aluminum 2-inch diameter by 6-inch deep well box was installed.

As noted in the Draft CAP (PES, 2017a), the off-site soil vapor monitoring probes will provide data suitable for assessing SVE influence in areas to the south of the on-site SVE system. Based on the planned future operation of the SVE system (e.g., one week of operation per month; PES, 2017b), PES anticipates collecting vacuum measurements to further assess SVE influence on the subsurface from the permanent multi-depth probes. PES further anticipates collection and analysis of soil vapor samples after final shut down of the on-site SVE system.

3.3 Decontamination and Waste Management

Reusable downhole drilling and sampling equipment used for soil, soil vapor, and groundwater sampling were cleaned using an Alconox™ wash and triple rinsed before use. Upon completion of sampling activities, each borehole was grouted to the ground surface with neat cement grout in accordance with ACPWA requirements, and the surface was restored using concrete dyed to match the surrounding material. Investigation-derived waste (IDW) from the drilling activities was stored in secured, labeled 55-gallon steel drums pending profiling and off-site disposal.

4.0 RESULTS

The results of the supplemental off-site subsurface investigation activities are summarized below. Laboratory analytical reports and chain-of-custody documents for soil vapor samples collected from the soil vapor probes are presented in Appendix C.

4.1 Off-Site Subsurface Physical Conditions Observations

The off-site investigation identified subsurface soil generally consistent with the findings of previous investigations conducted at the subject property. Soil boring/well construction logs are presented in Appendix B.

Sandy and gravelly clay and sandy and gravelly silt were encountered across the site to depths up to 9 feet bgs, underlain in portions of the site by dark green to black clay of medium to high plasticity. Lenses of fine-to coarse-grained gray to black sand and gravelly sand were also observed within the fine-grained material in most borings. Variable amounts of wood debris, asphaltic and tar-like materials, glass, brick, and concrete were encountered at various depths. Observations recorded during the off-site investigation were consistent with the widespread presence of artificial fill within the vicinity containing abundant quantities of debris.

Saturated soil (indicative of shallow groundwater level) was encountered at depths ranging from approximately 7.5 to 9.5 feet bgs¹.

¹ During the previous investigation (October 2016; PES, 2016), the depth to saturated soil ranged from 12.5 to 16 feet bgs; the significantly shallower depth to saturated materials is likely attributable to well-above-average precipitation levels received in the region over the 2016-2017 winter.

4.2 Soil Vapor Analytical Results

Analytical results for the soil vapor samples are presented on Table 3. Soil vapor sampling locations and laboratory analytical results for vinyl chloride are presented on Plate 2. Laboratory analytical reports and chain-of-custody documents for the soil vapor samples are presented in Appendix C. Soil vapor analytical results for the off-site property were compared with commercial/industrial ESLs for soil gas for evaluation of potential vapor intrusion (RWQCB, 2016).

As shown on Table 3, vinyl chloride was detected in the vapor sample collected at 7 feet bgs at PSV12 at a concentration of 2.5 micrograms per cubic meter of air ($\mu\text{g}/\text{m}^3$), below the commercial/industrial ESL of $160 \mu\text{g}/\text{m}^3$. Vinyl chloride was detected equivalent to the commercial/industrial ESL in the vapor sample collected at 5 feet bgs at PSV13, and at $370 \mu\text{g}/\text{m}^3$ in the deeper soil vapor sample collected at 8 feet bgs.

4.3 Evaluation of Leak Detection Compound in Shroud and Vapor Samples

As indicated on Tables 3 and 4, the leak check gas (helium) was detected at or above laboratory reporting limits in one soil vapor sample (PSV12-7.0). Real-time field monitoring of reported helium percentages within the shroud during vapor sampling was conducted to permit quantification of potential leakages in vapor sample trains. The integrity of soil vapor sample results was evaluated using the following formula to calculate an ambient air breakthrough factor, where C_{samp} is the concentration of leak check compound detected in the soil vapor sample, C_{shroud} is the concentration of leak check compound detected in the shroud sample, and f_{break} is the breakthrough factor:

$$f_{\text{break}} = 100\% * \frac{C_{\text{samp}}}{C_{\text{shroud}}}$$

The calculated breakthrough factor was compared with the 5% breakthrough acceptable limit² for ambient air dilution. None of the samples exhibited a breakthrough factor above the recommended 5% limit; as such, the leak check compound analytical results do not indicate concerns with respect to sample train leaks or atmospheric dilution.

4.4 QA/QC Evaluation of Analytical Results

Data quality for the soil vapor samples was assessed by implementing appropriate quality assurance/quality control (QA/QC) procedures and through review of analytical data, including evaluation of laboratory QA/QC data. The following is a summary of the data quality review:

- All samples were analyzed within the required holding times for the requested analyses;

² In accordance with the California Environmental Protection Agency/Department of Toxic Substances Control *Advisory – Active Soil Gas Investigations*, July 2015 – Appendix C: Quantitative Leak Testing Using a Tracer Gas.

- The method blanks did not contain target VOCs at or above the laboratory reporting limits; and
- With the exception of one surrogate recovery compound slightly outside control limits for PSV13-5 and PSV13-8 (4-bromofluorobenzene), the results of the laboratory control and laboratory control duplicate samples were within acceptable recovery ranges.

Based on the QA/QC procedures and results, the laboratory analytical results are considered representative and of good quality.

5.0 SUMMARY AND CONCLUSIONS

5.1 Summary and Discussion of Findings

PES conducted supplemental off-site subsurface investigation activities on May 30 and 31, 2017 at the 6601-6603 Shellmound Street property. The primary objective of the supplemental off-site investigation activities included: (1) delineation of the lateral extent of vinyl chloride in soil gas above the commercial/industrial ESL at the 6601-6603 Shellmound Street property through installation, sampling, and laboratory analysis of soil vapor samples; and (2) installation of permanent soil vapor monitoring probes to provide data suitable for assessing SVE influence in areas to the south of the SVE system through collection of periodic vacuum measurements (during SVE operation) and collection and analysis of soil vapor samples after final shut down of the SVE system.

Soil vapor sampling was conducted using direct push drilling technology to install two (2) temporary soil vapor probes at exterior locations at the off-site property. The supplemental off-site investigation activities were conducted in accordance the scope, methods, and procedures presented in PES' *Draft CAP* dated January 30, 2017 and conditionally approved in a letter from ACEH dated February 2, 2017. Due to the increase in the groundwater elevation surface compared to the previous off-site investigation (conducted in October 2016), the deeper vapor probes (both temporary and permanent) were constructed at shallower depths than anticipated.

Findings based on the supplemental off-site subsurface investigation indicate:

- As indicated on Plate 2, the western lateral extent of vinyl chloride in deeper soil vapor was delineated (based on the results from sample PSV12-7) to concentrations less than the vapor intrusion ESL for commercial settings. The southern lateral extent of vinyl chloride in shallow soil vapor (5 feet bgs) was delineated, based on the results from sample PSV13-5, to a concentration equivalent to the vapor intrusion ESL for commercial settings; however, the results for the deeper soil vapor sample at 8 feet bgs was above the vapor intrusion ESL; and

- The results are consistent with the prior observation of vinyl chloride concentrations in soil vapor attenuating with shallowing of depth (i.e., VOC concentrations generally decrease with increasing vertical depth).

5.2 Conclusions and Recommendations

The results of the investigation materially address the stated investigation objectives, including delineation of the western and southern lateral extent of vinyl chloride, at the off-site property. While the deeper soil vapor sample at PSV13 had a detected vinyl chloride concentration above the commercial ESL, based on: (1) the result of the shallow (overlying) vapor sample at the same location equivalent to the ESL; and (2) the area south of PSV13 is currently used as an exterior driving lane and parking lot, no further investigation is recommended.

PES recommends the following;

- As noted in the *Draft CAP* (PES, 2017a), SVE as an IRM commenced at the subject property on November 8, 2016, and is currently operated on a one-week per month basis. PES recommends periodically documenting observations of measurable vacuum in the subsurface from each of the permanent vapor monitoring probes during weekly operation periods. To further assess the SVE system influence on improving soil vapor conditions, PES also recommends collecting vapor samples from probes PSGP1 through PSGP4 to be analyzed for vinyl chloride by U.S. EPA Test Method TO-15 after cessation of the SVE system.

6.0 REFERENCES

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- PES, 2017a. *Corrective Action Plan for Soil Vapor Extraction, 6701, 6705, and 6707 Shellmound Street, Emeryville, California, Fuel Leak Case No. RO0000548, Geotracker Global ID T0600100894.* January 30.
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TABLES

Table 1
Soil Vapor Probe Installation and Analytical Program
Supplemental Off-Site Subsurface Investigation Report
6601-6603 Shellmound Street, Emeryville, California

Sample Location ID	Sample Rationale	Target Sample Depth (feet bgs)	Analytical Program		Comments
			Vinyl Chloride (by U.S. EPA Test Method TO-15)	Helium (ASTM 1946D) - leak check compound	
Soil Vapor					
PSV12	Assess westernmost extent of vinyl chloride in vicinity of PSV6	10	X	X	Probe installed at 7 feet bgs due to presence of saturated soil below 7.5 feet bgs. Analytical reporting for vinyl chloride only
PSV13	Assess southernmost extent of vinyl chloride in vicinity of PSV10	5 and 10	X	X	Deeper probe installed at 8 feet bgs due to presence of saturated soil below 8.5 feet bgs. Analytical reporting for vinyl chloride only
Soil Vapor Monitoring Probe					
PSGP1	Monitor vapor conditions at 6601-6603 Shellmound Street subsurface	5 and 10	X		Probe installed at 9 feet bgs due to presence of saturated soil below 9.5 feet bgs. Vapor samples for laboratory analysis to be collected upon completion of SVE operations.
PSGP2	Monitor vapor conditions at 6601-6603 Shellmound Street subsurface	5 and 10	X		Probe installed at 8 feet bgs due to presence of saturated soil below 8.5 feet bgs. Vapor samples for laboratory analysis to be collected upon completion of SVE operations.
PSGP3	Monitor vapor conditions at 6601-6603 Shellmound Street subsurface	5 and 10	X		Probe installed at 7 feet bgs due to presence of saturated soil below 7.5 feet bgs. Vapor samples for laboratory analysis to be collected upon completion of SVE operations.
PSGP4	Monitor vapor conditions at 6601-6603 Shellmound Street subsurface	5 and 10	X		Probe installed at 7 feet bgs due to presence of saturated soil below 7.5 feet bgs. Vapor samples for laboratory analysis to be collected upon completion of SVE operations.

Notes:

bgs = Below ground surface.

X = Scheduled for Analytical.

Table 2
Summary of Soil Vapor Monitoring Probe Construction Details
Supplemental Off-Site Subsurface Investigation Report
6601-6603 Shellmound Street, Emeryville, California

Vapor Probe Identification	Date Installed	Borehole Depth (feet bgs)	Borehole Diameter (inches)	Screen Interval (feet bgs)	Sand Pack Interval (feet bgs)	Screen Diameter (inches)
PSGP1-5.0	5/31/17	10.5	2.0	4.75 to 5.25	4 to 5.5	0.375
PSGP1-9.0	5/31/17	10.5	2.0	8.75 to 9.25	8 to 9.5	0.375
PSGP2-5.0	5/31/17	10.5	2.0	4.75 to 5.25	4 to 5.5	0.375
PSGP2-8.0	5/31/17	10.5	2.0	7.75 to 8.25	7 to 8.5	0.375
PSGP3-5.0	5/31/17	10.0	2.0	4.75 to 5.25	4 to 5.5	0.375
PSGP3-7.0	5/31/17	10.0	2.0	6.75 to 7.25	6 to 7.5	0.375
PSGP4-5.0	5/31/17	8.0	2.0	4.75 to 5.25	4 to 5.5	0.375
PSGP4-7.0	5/31/17	8.0	2.0	6.75 to 7.25	6 to 7.5	0.375

Notes:

bgs =below ground surface.

Table 3
Summary of Soil Vapor Analytical Results
Supplemental Off-Site Subsurface Investigation Report
6601-6603 Shellmound Street, Emeryville, California

Sample Location	Sample ID	Sample Depth (feet bgs)	Date Sampled	Vinyl chloride ($\mu\text{g}/\text{m}^3$)	Helium (% v/v)
PSV12	PSV12-7	7.0	5/31/2017	2.5	26
PSV13	PSV13-5	5.0	5/31/2017	160	25
	PSV13-8	8.0	5/31/2017	370	25
<i>RWQCB Commercial/Industrial Land Use VI ESL (Subslab / Soil Gas)</i> ¹				<i>160</i>	<i>NE</i>

Notes:

Detections are shown in bold. Results equal to or exceeding applicable regulatory screening levels are shaded.

bgs = Below ground surface.

$\mu\text{g}/\text{m}^3$ = Micrograms per cubic meter.

% v/v = Percent by volume.

< 2.9 = Not detected at or above the indicated laboratory method reporting limit.

ND = Not detected at or above the respective laboratory method reporting limits.

NE = Not established.

-- = Not applicable/not analyzed.

1. ESL = February 2016 Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) Environmental Screening Levels (ESLs), Table SG-1 Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels. Commercial/Industrial Final VI Screening Level.

Table 4
Summary of Soil Vapor Leak Check Results
Supplemental Off-Site Subsurface Investigation Report
6601-6603 Shellmound Street, Emeryville, California

Sample Location	Sample ID	Sample Depth (feet bgs)	Date Sampled	Helium Detected in Sample (% v/v)	Helium Detected in Shroud (% v/v)	Breakthrough Factor (%)
PSV12	PSV12-7	5	10/21/2016	0.17	26	0.7
PSV13	PSV13-5	10	10/21/2016	0.10	25	0.4
	PSV13-8	5	10/21/2016	0.10	25	0.4
Acceptable Ambient Air Breakthrough Limit ¹				--	--	5%

Notes:

Detections are shown in bold. Results equal to or exceeding applicable RPD limits are shaded.

bgs = Below ground surface.

% v/v = Percent by volume.

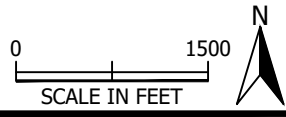
-- = Not applicable.

1. In accordance with California Environmental Protection Agency/Department of Toxic Substances Control Advisory - Active Soil Gas Investigations, July 2015 - Appendix C: Quantitative Leak Testing Using a Tracer Gas.

ILLUSTRATIONS



PROJECT SITE



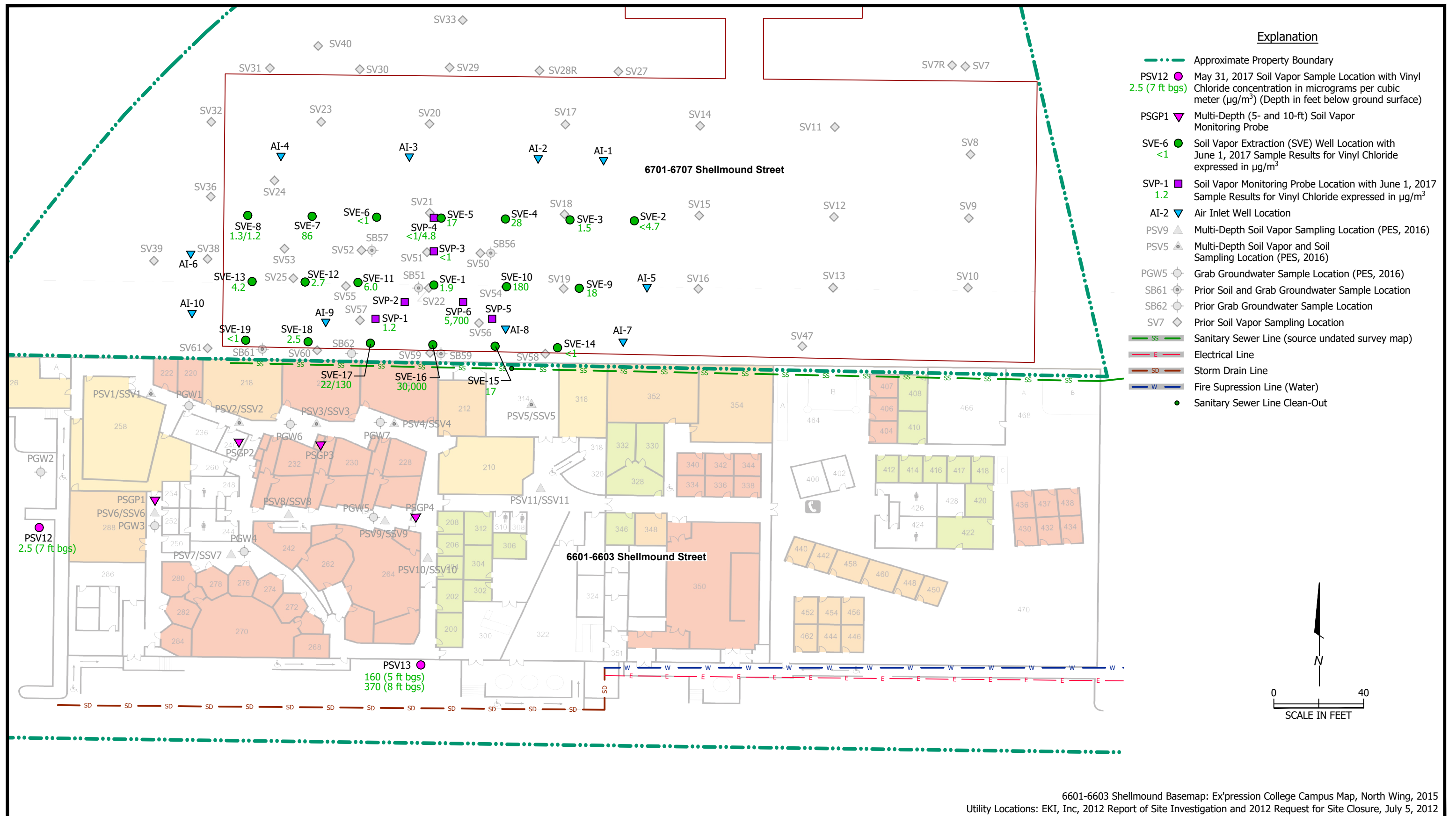
Aerial Photo: October 30, 2015 (Google 2016)



PES Environmental, Inc.
Engineering & Environmental Services

Site Location
Supplemental Off-Site Investigation Report
6601-6603 Shellmound Street
Emeryville, California

PLATE
1



6601-6603 Shellmound Basemap: Ex'pression College Campus Map, North Wing, 2015
 Utility Locations: EKI, Inc, 2012 Report of Site Investigation and 2012 Request for Site Closure, July 5, 2012

APPENDIX A

ALAMEDA COUNTY PUBLIC WORKS AGENCY DRILLING PERMITS

Alameda County Public Works Agency - Water Resources Well Permit



Public Works Agency
—Alameda County—

399 Elmhurst Street
Hayward, CA 94544-1395
Telephone: (510)670-6633 Fax:(510)782-1939

Application Approved on: 05/26/2017 By jamesy

Permit Numbers: W2017-0448 to W2017-0449
Permits Valid from 05/30/2017 to 05/31/2017

Application Id: 1494888176357
Site Location: 6601 Shellmound Street, Emeryville CA
Project Start Date: 05/30/2017
Assigned Inspector: Contact Lindsay Furuyama at (925) 956-2311 or Lfuruyama@groundzonees.com

City of Project Site: Emeryville

Completion Date: 05/31/2017

Applicant: PES Environmental, Inc., - Christopher

Phone: 415-899-1600

Baldassari
7665 Redwood Bl., Suite 200, Novato, CA 94945

Property Owner: Griffin Capital Shellmound, c/o Julie Treinen

Phone: 310-469-6107

1520 East Grand Avenue, El Segundo, CA 90245

Client: Anton Evolve Emeryville, c/o Rachel Green

Phone: 650-549-1607

950 Tower Lane, Suite 1225, Foster City, CA 94404

Contact: James Phillips

Phone: 415-899-1600

Cell: 415-250-2864

Receipt Number: WR2017-0249 Total Due: \$530.00
Payer Name : Christopher Baldassari Total Amount Paid: \$530.00
Paid By: VISA PAID IN FULL

Works Requesting Permits:

Borehole(s) for Investigation-Vapor Sampling 24 to 48 hours only - 2 Boreholes
Driller: Environmental Control Associates - Lic #: 695970 - Method: DP

Work Total: \$265.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2017-0448	05/26/2017	08/28/2017	2	2.00 in.	10.25 ft

Specific Work Permit Conditions

1. Boreholes shall not be left open for a period of more than 24 hours. All boreholes left open more than 24 hours will need approval from Alameda County Public Works Agency, Water Resources Section. All boreholes shall be backfilled according to permit destruction requirements and all concrete material and asphalt material shall be to Caltrans Spec or County/City Codes. No borehole(s) shall be left in a manner to act as a conduit at any time.
2. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
3. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.
4. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and

Alameda County Public Works Agency - Water Resources Well Permit

all expense, cost and liability in connection with or resulting from the exercise of this Permit including, but not limited to, property damage, personal injury and wrongful death.

5. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.

7. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.

8. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.

9. NOTE:

Under California laws, the owner/operator are responsible for reporting the contamination to the governmental regulatory agencies under Section 25295(a). The owner/operator is liable for civil penalties under Section 25299(a)(4) and criminal penalties under Section 25299(d) for failure to report a leak. The owner/operator is liable for civil penalties under Section 25299(b)(4) for knowing failure to ensure compliance with the law by the operator. These penalty provisions do not apply to a potential buyer.

10. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Temp Vapor wells shall not be converted to monitoring Vapor wells, without a separate permit application process.

11. Vapor monitoring wells constructed with tubing shall be decommissioned by complete removal of tubing, grout seal, and fill material of sand or bentonite. Fill material may be removed by hand auger if material can be removed completely.

Vapor monitoring wells constructed with pvc pipe less than 2" shall be overdrilled to total depth.

Vapor monitoring wells constructed with 2" pvc pipe or larger may be grouted by tremie pipe (any depth) or pressure grouted (less than 30', 25 psi for 5 min).

Remediation Well Construction-Vapor Remediation Well - 4 Wells

Driller: Environmental Control Associates - Lic #: 695970 - Method: DP

Work Total: \$265.00

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2017-0449	05/26/2017	08/28/2017	PSGP1	2.00 in.	0.25 in.	4.50 ft	10.25 ft
W2017-	05/26/2017	08/28/2017	PSGP2	2.00 in.	0.25 in.	4.50 ft	10.25 ft

Alameda County Public Works Agency - Water Resources Well Permit

0449

W2017- 05/26/2017 08/28/2017 PSGP3 2.00 in. 0.25 in. 4.50 ft 10.25 ft
0449

W2017- 05/26/2017 08/28/2017 PSGP4 2.00 in. 0.25 in. 4.50 ft 10.25 ft
0449

Specific Work Permit Conditions

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to, properly damage, personal injury and wrongful death.
 2. Permittee, permittee's contractors, consultants or agents shall be responsible to assure that all material or waters generated during drilling, boring destruction, and/or other activities associated with this Permit will be safely handled, properly managed, and disposed of according to all applicable federal, state, and local statutes regulating such. In no case shall these materials and/or waters be allowed to enter, or potentially enter, on or off-site storm sewers, dry wells, or waterways or be allowed to move off the property where work is being completed.
 3. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 30 days. Include permit number and site map.
 4. Applicant shall contact assigned inspector listed on the top of the permit at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.
 5. Minimum seal depth (Neat Cement Seal) is 2 feet below ground surface (BGS).
 6. Minimum surface seal thickness is two inches of cement grout placed by tremie.
 7. Copy of approved drilling permit must be on site at all times. Failure to present or show proof of the approved permit application on site shall result in a fine of \$500.00.
 8. Electronic Reporting Regulations (Chapter 30, Division 3 of Title 23 & Division 3 of Title 27, CCR) require electronic submission of any report or data required by a regulatory agency from a cleanup site. Submission dates are set by a Regional Water Board or by a regulatory agency. Once a report/data is successfully uploaded, as required, you have met the reporting requirement (i.e. the compliance measure for electronic submittals is the actual upload itself). The upload date should be on or prior to the regulatory due date.
 9. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.
-

APPENDIX B

SOIL BORING AND WELL CONSTRUCTION LOGS

MAJOR DIVISIONS					TYPICAL NAMES
COARSE-GRAINED SOILS MORE THAN HALF IS COARSER THAN NO. 200 SIEVE	GRAVELS MORE THAN HALF COARSE FRACTION IS LARGER THAN NO. 4 SIEVE	CLEAN GRAVELS WITH LESS THAN 15% FINES	GW		WELL-GRADED GRAVELS WITH OR WITHOUT SAND
			GP		POORLY-GRADED GRAVELS WITH OR WITHOUT SAND
		GRAVELS WITH 15% OR MORE FINES	GM		SILTY GRAVELS WITH OR WITHOUT SAND
			GC		CLAYEY GRAVELS WITH OR WITHOUT SAND
	SANDS MORE THAN HALF COARSE FRACTION IS FINER THAN NO. 4 SIEVE SIZE	CLEAN SANDS WITH LESS THAN 15% FINES	SW		WELL-GRADED SANDS WITH OR WITHOUT GRAVEL
			SP		POORLY-GRADED SANDS WITH OR WITHOUT GRAVEL
		SANDS WITH 15% OR MORE FINES	SM		SILTY SANDS WITH OR WITHOUT GRAVEL
			SC		CLAYEY SANDS WITH OR WITHOUT GRAVEL
FINE-GRAINED SOILS MORE THAN HALF IS FINER THAN NO. 200 SIEVE	SILTS AND CLAYS LIQUID LIMIT 50% OR LESS		ML		INORGANIC SILTS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			CL		INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			OL		ORGANIC SILTS OR CLAYS OF LOW TO MEDIUM PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
	SILTS AND CLAYS LIQUID LIMIT GREATER THAN 50%		MH		INORGANIC SILTS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			CH		INORGANIC CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
			OH		ORGANIC SILTS OR CLAYS OF HIGH PLASTICITY WITH OR WITHOUT SAND OR GRAVEL
HIGHLY ORGANIC SOILS		PT		PEAT AND OTHER HIGHLY ORGANIC SOILS	

ABBREVIATION KEY

- PID (PPM) - Photo Ionization Detector readings in parts per million from field headspace sample screening.
- BLOWS/6" - Blows required to drive sampler 6 inches as indicated on the logs using sample drive hammer weight of 140 pounds falling 30 inches.
- 2.5YR 6/2 - Soil Color according to Munsell Soil Color Charts (1994 Revised Edition)
- feet MSL - feet above Mean Seal Level
- feet BGS - feet below ground surface

SYMBOLS KEY

- No Soil Sample Recovered
- Partial Soil Sample Recovered
- Undisturbed Soil Sample Recovered
- Soil Sample Submitted for Laboratory Analysis
- Hydropunch Sample
- First Encountered Groundwater Level
- Piezometric Groundwater level

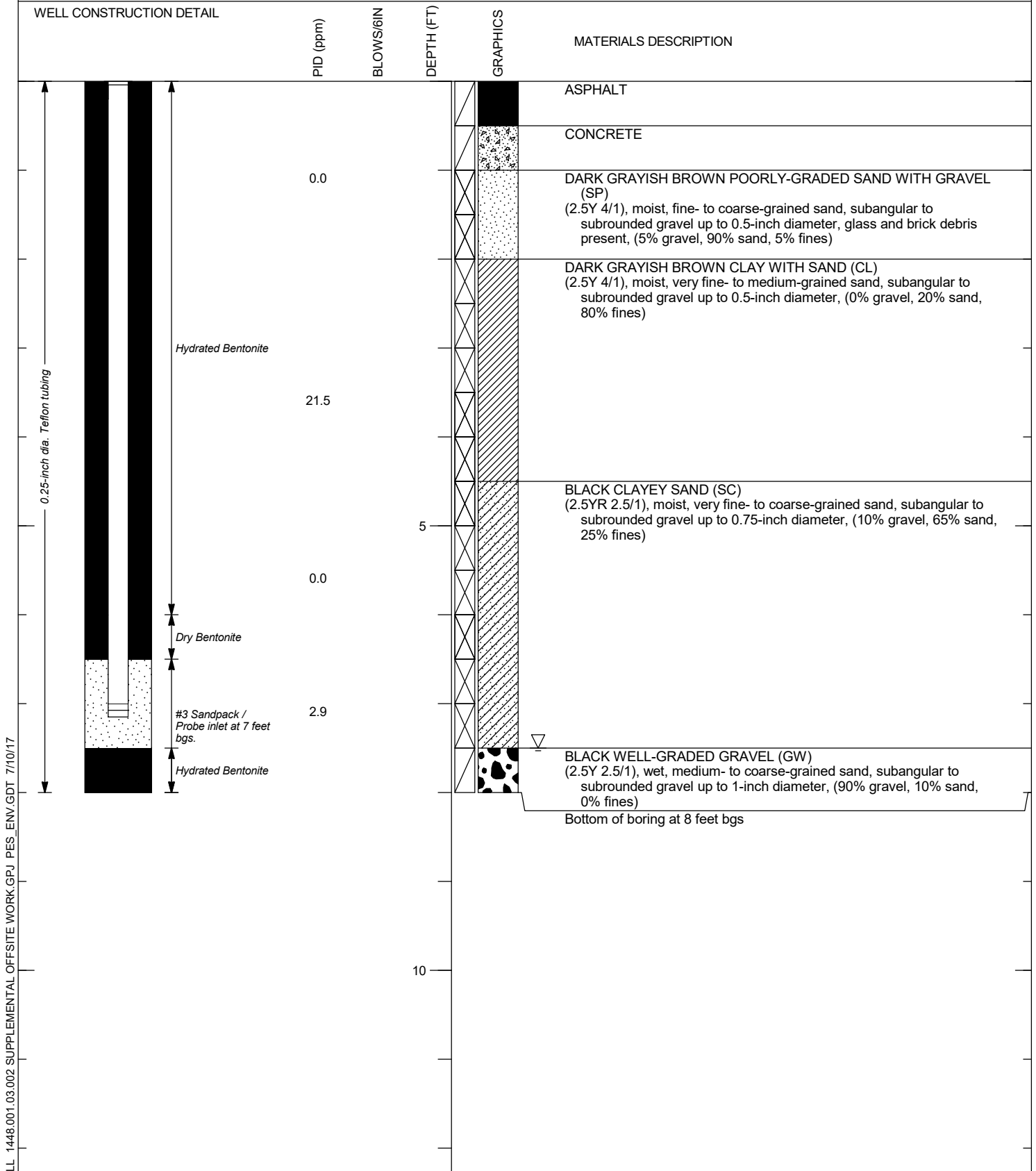


PES Environmental, Inc.
Engineering & Environmental Services

Unified Soil Classification System Chart
6601 - 6603 Shellmound Street
Emeryville, California

PLATE

B0



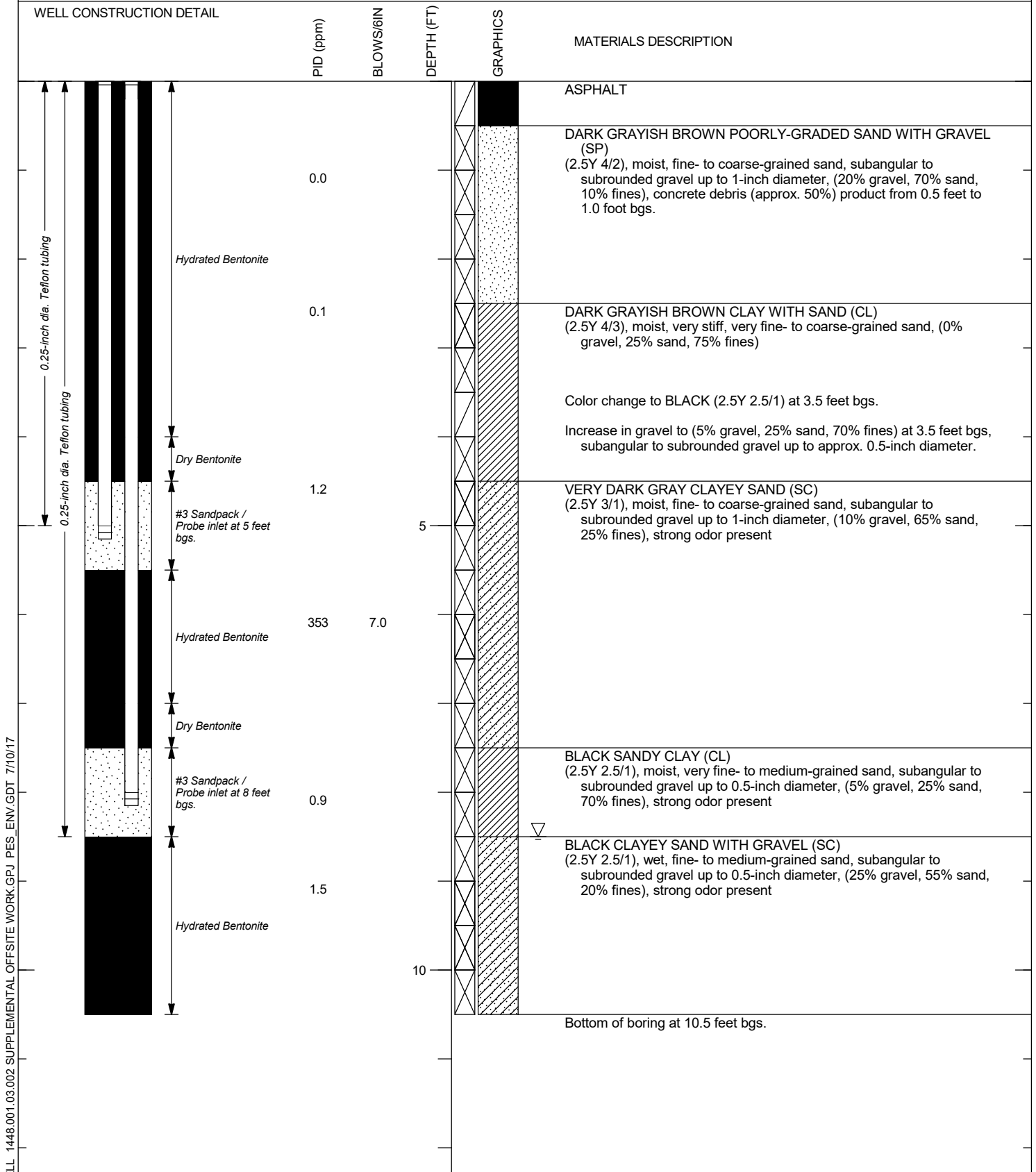
LOG OF BORING/WELL - 1448.001.03.002 SUPPLEMENTAL OFFSITE WORK.GPJ PES_ENV.GDT 7/10/17

PROJECT Anton Evolve
 LOCATION 6601 - 6603 Shellmound Street
 JOB NUMBER 1448.001.03.002
 LOGGED BY James Phillips
 REVIEWED BY CJB

DIAMETER OF HOLE 2.25 inches
 TOTAL DEPTH OF HOLE 8 feet
 DRILL RIG Geoprobe 54 LT
 DATE STARTED 5/31/17
 DATE COMPLETED 5/31/17

PLATE

B1



LOG OF BORING/WELL: 1448.001.03.002 SUPPLEMENTAL OFFSITE WORK.GPJ PES_ENV.GDT 7/10/17

PROJECT Anton Evolve
 LOCATION 6601 - 6603 Shellmound Street
 JOB NUMBER 1448.001.03.002
 LOGGED BY James Phillips
 REVIEWED BY CJB

DIAMETER OF HOLE 2.25 inches
 TOTAL DEPTH OF HOLE 10.5 feet
 DRILL RIG Geoprobe 54 LT
 DATE STARTED 5/31/17
 DATE COMPLETED 5/31/17

PLATE

B2



WELL CONSTRUCTION DETAIL	PID (ppm)	BLOWS/6IN	DEPTH (FT)	GRAPHICS	MATERIALS DESCRIPTION
Christy Box					CONCRETE
Flush-mounted Well Box					
Grout	3.9				STRONG BROWN CLAY WITH SAND (CL) (7.5YR 4/6), moist, stiff, very fine- to medium-grained sand, subangular to subrounded gravel up to 0.5-inch diameter, (10% gravel, 20% sand, 70% fines)
0.25-inch dia. Teflon tubing					
Hydrated Bentonite	0.3				BLACK CLAY WITH SAND (CL) (2.5Y 2.5/1), moist, stiff, fine- to medium-grained sand, (0% gravel, 15% sand, 85% fines), brick and glass debris, concrete debris present from 2.5 feet to 4 feet bgs.
0.25-inch dia. Teflon tubing					
#3 Sandpack / Probe inlet at 5 feet bgs.	1.0		5		Increase in sand to (0% gravel, 20% sand, 80% fines) at 4 feet bgs.
Hydrated Bentonite	3.7				BLACK CLAY (CL) (2.5Y 2.5/1), moist, stiff, very fine- to medium-grained sand, (0% gravel, 10% sand, 90% fines)
#3 Sandpack / Probe inlet at 9 feet bgs.	1.1				Change in color to BROWN (7.5YR 4/3) at 7 feet bgs.
Hydrated Bentonite	21.0		10		Increase in gravel to (5% gravel, 5% sand, 90% fines) at 8.5 feet bgs, subangular to subrounded gravel up to 1.25-inch diameter
Hydrated Bentonite					BLACK POORLY-GRADED SAND (SP) (2.5Y 2.5/1), moist, coarse-grained sand, (0% gravel, 100% sand, 0% fines), glass debris present
					Bottom of boring at 10.5 feet bgs.

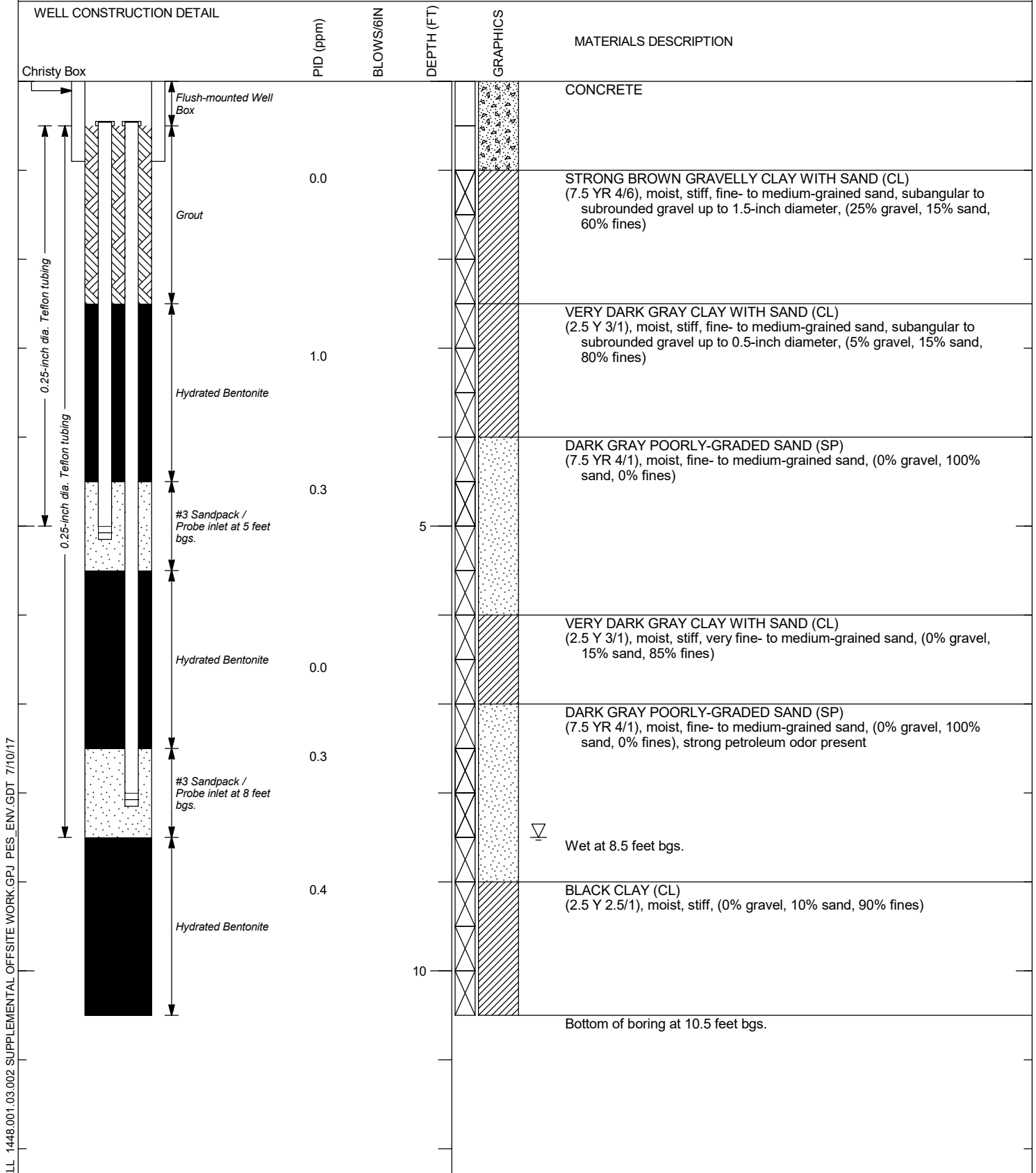
LOG OF BORING/WELL: 1448.001.03.002 SUPPLEMENTAL OFFSITE WORK.GPJ PES_ENV.GDT 7/10/17

PROJECT Anton Evolve
 LOCATION 6601 - 6603 Shellmound Street
 JOB NUMBER 1448.001.03.002
 LOGGED BY James Phillips
 REVIEWED BY CJB

DIAMETER OF HOLE 2.25 inches
 TOTAL DEPTH OF HOLE 10.5 feet
 DRILL RIG Geoprobe 54 LT
 DATE STARTED 5/31/17
 DATE COMPLETED 5/31/17

PLATE

B3

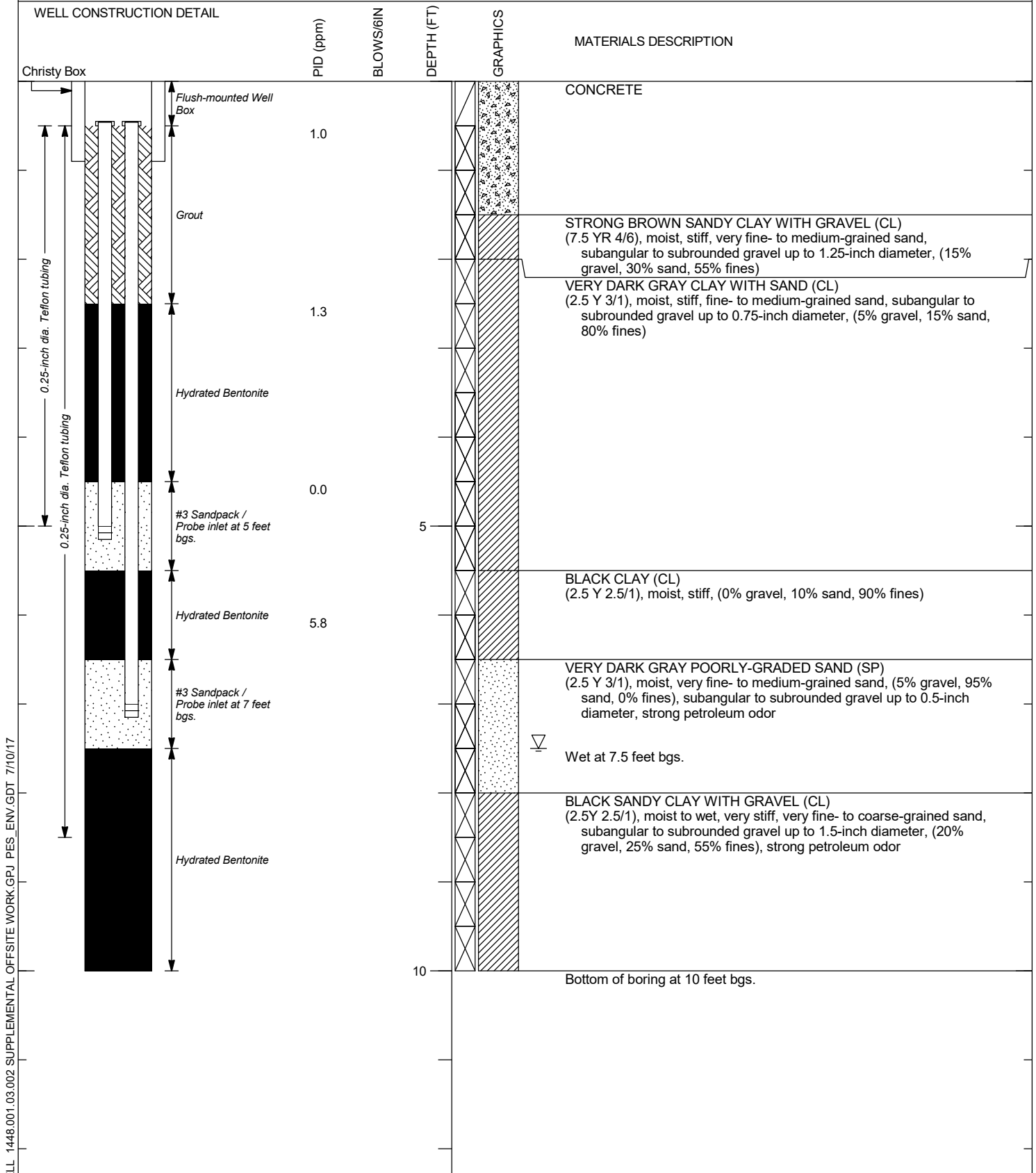


LOG OF BORING/WELL: 1448.001.03.002 SUPPLEMENTAL OFFSITE WORK.GPJ PES_ENV.GDT 7/10/17

PROJECT Anton Evolve
 LOCATION 6601 - 6603 Shellmound Street
 JOB NUMBER 1448.001.03.002
 LOGGED BY James Phillips
 REVIEWED BY CJB

DIAMETER OF HOLE 2.25 inches
 TOTAL DEPTH OF HOLE 10.5 feet
 DRILL RIG Geoprobe 54 LT
 DATE STARTED 5/31/17
 DATE COMPLETED 5/31/17

PLATE
B4

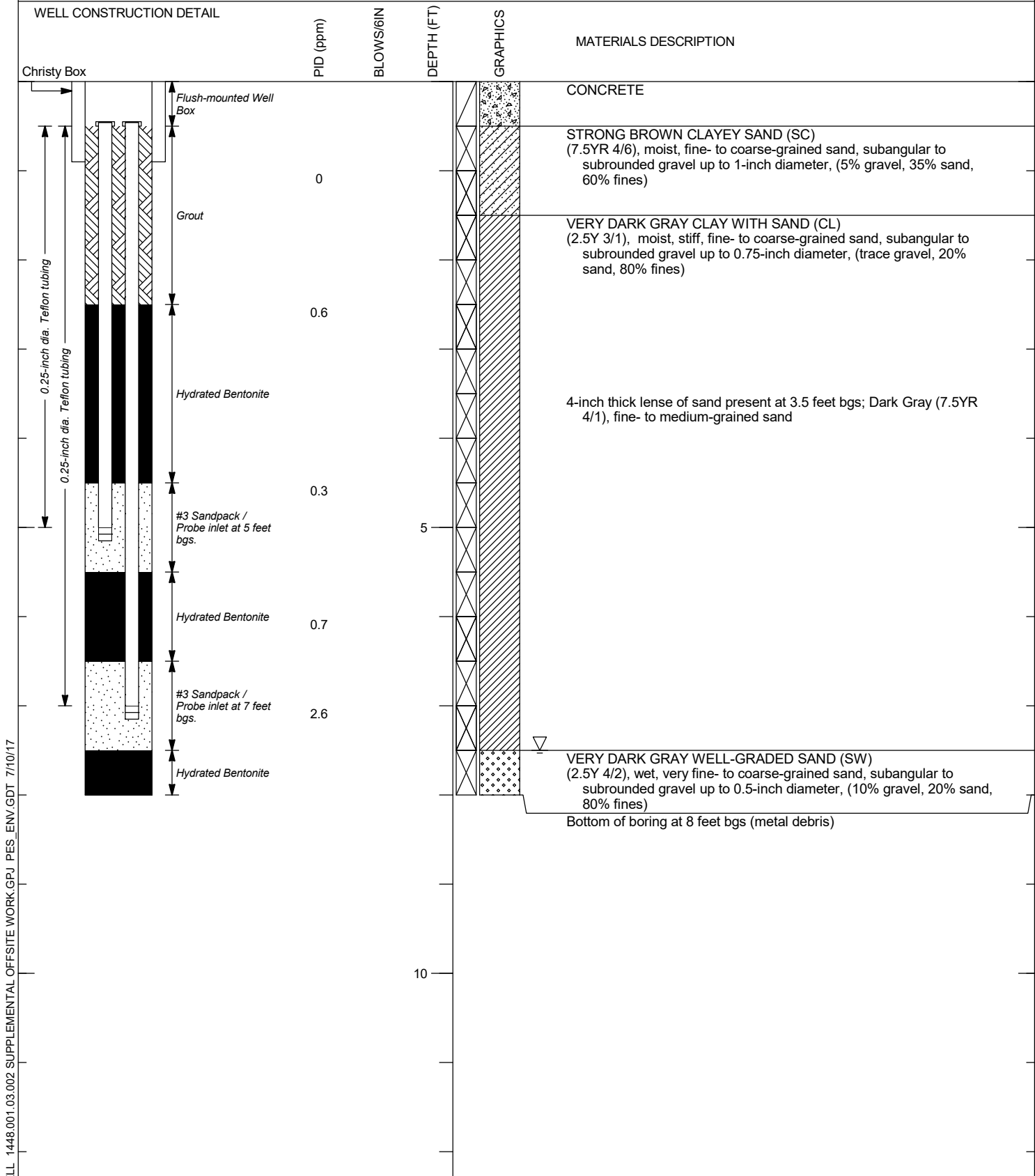


LOG OF BORING/WELL: 1448.001.03.002 SUPPLEMENTAL OFFSITE WORK.GPJ PES_ENV.GDT 7/10/17

PROJECT Anton Evolve
 LOCATION 6601 - 6603 Shellmound Street
 JOB NUMBER 1448.001.03.002
 LOGGED BY James Phillips
 REVIEWED BY CJB

DIAMETER OF HOLE 2.25 inches
 TOTAL DEPTH OF HOLE 10 feet
 DRILL RIG Geoprobe 54 LT
 DATE STARTED 5/31/17
 DATE COMPLETED 5/31/17

PLATE
B5



LOG OF BORING/WELL - 1448.001.03.002 SUPPLEMENTAL OFFSITE WORK.GPJ PES_ENV_GDT 7/10/17

PROJECT Anton Evolve
 LOCATION 6601 - 6603 Shellmound Street
 JOB NUMBER 1448.001.03.002
 LOGGED BY James Phillips
 REVIEWED BY CJB

DIAMETER OF HOLE 2.25 inches
 TOTAL DEPTH OF HOLE 8 feet
 DRILL RIG Geoprobe 54 LT
 DATE STARTED 5/31/17
 DATE COMPLETED 5/31/17

PLATE

B6

APPENDIX C

**LABORATORY ANALYTICAL REPORTS AND
CHAIN-OF-CUSTODY DOCUMENTATION**

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Sacramento
880 Riverside Parkway
West Sacramento, CA 95605
Tel: (916)373-5600

TestAmerica Job ID: 320-28797-1
Client Project/Site: Anton Emeryville Air
Revision: 1

For:
PES Environmental, Inc.
7665 Redwood Blvd
Suite 200
Novato, California 94945

Attn: Mr. Chris Baldassari



Authorized for release by:
6/20/2017 2:08:08 PM

Lee Ann Heathcote, Project Manager II
(916)373-5600
leeann.heathcote@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.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: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Qualifiers

Air - GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

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: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Job ID: 320-28797-1

Laboratory: TestAmerica Sacramento

Narrative

Job Narrative 320-28797-1

This report was revised on June 20, 2017, to report units in ug/m3.

Receipt

The samples were received on 6/3/2017 9:04 AM; the samples arrived in good condition.

Air - GC VOA

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

Air - GC/MS VOA

Method(s) TO-15: Surrogate recovery for the following samples was outside control limits: PSV13-5 (320-28797-2) and PSV13-8 (320-28797-3). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

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Detection Summary

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Client Sample ID: PSV12-7

Lab Sample ID: 320-28797-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	0.98		0.40		ppb v/v	1		TO-15	Total/NA
Helium	0.17		0.17		% v/v	1.7		D1946	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	2.5		1.0		ug/m3	1		TO-15	Total/NA

Client Sample ID: PSV13-5

Lab Sample ID: 320-28797-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	64		0.78		ppb v/v	1.96		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	160		2.0		ug/m3	1.96		TO-15	Total/NA

Client Sample ID: PSV13-8

Lab Sample ID: 320-28797-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	140		1.9		ppb v/v	4.68		TO-15	Total/NA
Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Vinyl chloride	370		4.8		ug/m3	4.68		TO-15	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Sacramento

Client Sample Results

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Client Sample ID: PSV12-7

Lab Sample ID: 320-28797-1

Date Collected: 05/31/17 06:25

Matrix: Air

Date Received: 06/03/17 09:04

Sample Container: Summa Canister 1L

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.98		0.40		ppb v/v			06/05/17 23:37	1
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	2.5		1.0		ug/m3			06/05/17 23:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	120		70 - 130					06/05/17 23:37	1
1,2-Dichloroethane-d4 (Surr)	126		70 - 130					06/05/17 23:37	1
Toluene-d8 (Surr)	93		70 - 130					06/05/17 23:37	1

Method: D1946 - Fixed Gases in Air (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Helium	0.17		0.17		% v/v			06/05/17 12:19	1.7

Client Sample ID: PSV13-5

Lab Sample ID: 320-28797-2

Date Collected: 05/31/17 06:47

Matrix: Air

Date Received: 06/03/17 09:04

Sample Container: Summa Canister 1L

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	64		0.78		ppb v/v			06/06/17 00:31	1.96
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	160		2.0		ug/m3			06/06/17 00:31	1.96
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	136	X	70 - 130					06/06/17 00:31	1.96
1,2-Dichloroethane-d4 (Surr)	121		70 - 130					06/06/17 00:31	1.96
Toluene-d8 (Surr)	97		70 - 130					06/06/17 00:31	1.96

Method: D1946 - Fixed Gases in Air (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Helium	ND		0.20		% v/v			06/05/17 12:27	1.96

Client Sample ID: PSV13-8

Lab Sample ID: 320-28797-3

Date Collected: 05/31/17 06:47

Matrix: Air

Date Received: 06/03/17 09:04

Sample Container: Summa Canister 1L

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	140		1.9		ppb v/v			06/06/17 01:23	4.68
Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	370		4.8		ug/m3			06/06/17 01:23	4.68
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	135	X	70 - 130					06/06/17 01:23	4.68
1,2-Dichloroethane-d4 (Surr)	120		70 - 130					06/06/17 01:23	4.68
Toluene-d8 (Surr)	107		70 - 130					06/06/17 01:23	4.68

TestAmerica Sacramento

Client Sample Results

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Client Sample ID: PSV13-8

Lab Sample ID: 320-28797-3

Date Collected: 05/31/17 06:47

Matrix: Air

Date Received: 06/03/17 09:04

Sample Container: Summa Canister 1L

Method: D1946 - Fixed Gases in Air (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Helium	ND		0.16		% v/v			06/05/17 12:32	1.61

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- 14
- 15
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Surrogate Summary

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

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	BFB (70-130)	12DCE (70-130)	TOL (70-130)
320-28797-1	PSV12-7	120	126	93
320-28797-2	PSV13-5	136 X	121	97
320-28797-3	PSV13-8	135 X	120	107
LCS 320-167488/3	Lab Control Sample	116	106	108
LCSD 320-167488/4	Lab Control Sample Dup	117	100	108
MB 320-167488/6	Method Blank	114	106	113

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

12DCE = 1,2-Dichloroethane-d4 (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

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

Lab Sample ID: MB 320-167488/6

Matrix: Air

Analysis Batch: 167488

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		0.40		ppb v/v			06/05/17 18:05	1

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	ND		1.0		ug/m3			06/05/17 18:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		70 - 130		06/05/17 18:05	1
1,2-Dichloroethane-d4 (Surr)	106		70 - 130		06/05/17 18:05	1
Toluene-d8 (Surr)	113		70 - 130		06/05/17 18:05	1

Lab Sample ID: LCS 320-167488/3

Matrix: Air

Analysis Batch: 167488

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	20.0	19.0		ppb v/v		95	69 - 129

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	51	48.6		ug/m3		95	69 - 129

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	116		70 - 130
1,2-Dichloroethane-d4 (Surr)	106		70 - 130
Toluene-d8 (Surr)	108		70 - 130

Lab Sample ID: LCSD 320-167488/4

Matrix: Air

Analysis Batch: 167488

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
Vinyl chloride	20.0	18.4		ppb v/v		92	69 - 129	3	25

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl chloride	51	47.2		ug/m3		92	69 - 129	3	25

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene (Surr)	117		70 - 130
1,2-Dichloroethane-d4 (Surr)	100		70 - 130
Toluene-d8 (Surr)	108		70 - 130

TestAmerica Sacramento

QC Sample Results

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Method: D1946 - Fixed Gases in Air (GC)

Lab Sample ID: MB 320-167384/10
Matrix: Air
Analysis Batch: 167384

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Helium	ND		0.10		% v/v			06/05/17 09:11	1

Lab Sample ID: LCS 320-167384/5
Matrix: Air
Analysis Batch: 167384

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Helium	16.5	18.2		% v/v		110	80 - 120

Lab Sample ID: LCSD 320-167384/6
Matrix: Air
Analysis Batch: 167384

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	16.5	18.2		% v/v		110	80 - 120	0	20

QC Association Summary

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Air - GC/MS VOA

Analysis Batch: 167488

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28797-1	PSV12-7	Total/NA	Air	TO-15	
320-28797-2	PSV13-5	Total/NA	Air	TO-15	
320-28797-3	PSV13-8	Total/NA	Air	TO-15	
MB 320-167488/6	Method Blank	Total/NA	Air	TO-15	
LCS 320-167488/3	Lab Control Sample	Total/NA	Air	TO-15	
LCSD 320-167488/4	Lab Control Sample Dup	Total/NA	Air	TO-15	

Air - GC VOA

Analysis Batch: 167384

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
320-28797-1	PSV12-7	Total/NA	Air	D1946	
320-28797-2	PSV13-5	Total/NA	Air	D1946	
320-28797-3	PSV13-8	Total/NA	Air	D1946	
MB 320-167384/10	Method Blank	Total/NA	Air	D1946	
LCS 320-167384/5	Lab Control Sample	Total/NA	Air	D1946	
LCSD 320-167384/6	Lab Control Sample Dup	Total/NA	Air	D1946	

Lab Chronicle

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Client Sample ID: PSV12-7

Date Collected: 05/31/17 06:25

Date Received: 06/03/17 09:04

Lab Sample ID: 320-28797-1

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		1	425 mL	250 mL	167488	06/05/17 23:37	SRV	TAL SAC
Total/NA	Analysis	D1946		1.7	50 mL	50 mL	167384	06/05/17 12:19	AZ1	TAL SAC

Client Sample ID: PSV13-5

Date Collected: 05/31/17 06:47

Date Received: 06/03/17 09:04

Lab Sample ID: 320-28797-2

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		1.96	250 mL	250 mL	167488	06/06/17 00:31	SRV	TAL SAC
Total/NA	Analysis	D1946		1.96	50 mL	50 mL	167384	06/05/17 12:27	AZ1	TAL SAC

Client Sample ID: PSV13-8

Date Collected: 05/31/17 06:47

Date Received: 06/03/17 09:04

Lab Sample ID: 320-28797-3

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		4.68	86 mL	250 mL	167488	06/06/17 01:23	SRV	TAL SAC
Total/NA	Analysis	D1946		1.61	50 mL	50 mL	167384	06/05/17 12:32	AZ1	TAL SAC

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Accreditation/Certification Summary

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Laboratory: TestAmerica Sacramento

The accreditations/certifications listed below are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Oregon	NELAP	10	4040	01-28-18

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Method Summary

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

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

Protocol References:

ASTM = ASTM International

EPA = US Environmental Protection Agency

Laboratory References:

TAL SAC = TestAmerica Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600



Sample Summary

Client: PES Environmental, Inc.
Project/Site: Anton Emeryville Air

TestAmerica Job ID: 320-28797-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
320-28797-1	PSV12-7	Air	05/31/17 06:25	06/03/17 09:04
320-28797-2	PSV13-5	Air	05/31/17 06:47	06/03/17 09:04
320-28797-3	PSV13-8	Air	05/31/17 06:47	06/03/17 09:04

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PES Environmental, Inc.
Engineering & Environmental Services

CHAIN OF CUSTODY RECORD

7665 Redwood Boulevard, Suite 200
Novato, California 94945
(415) 899-1600 FAX (415) 899-1601

176274

LABORATORY: Test America
 JOB NUMBER: 1448.001.01.041
 NAME/LOCATION: Anton Emeryville, offsite Inv @ 6601-6603 Shellmound St / Emeryville, CA
 PROJECT MANAGER: C. Beldassari / K. Flury
 SAMPLERS: J. Phillips
 RECORDER: J. Phillips

DATE			SAMPLE NUMBER / DESIGNATION
YR	MO	DY	
17	05	31	0625 PSV12-7
↓	↓	↓	10647 PSV13-5
↓	↓	↓	0647 PSV13-8

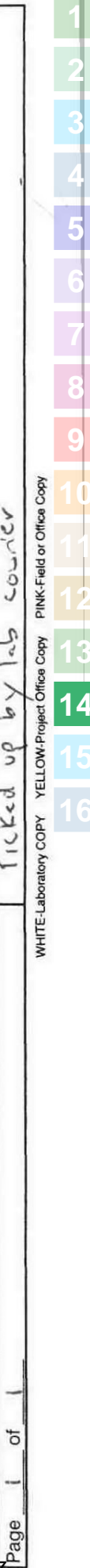
MATRIX	# of Containers & Preservatives						DEPTH IN FEET	CEN ID
	Unpres.	EnCore	H ₂ SO ₄	HNO ₃	HCl	Summa		
Vapor	X						0971	
Water	X						1219	
Soil								
Sedim't								

ANALYSIS REQUESTED	
EPA 5035/8010	X
EPA 5035/8021	X
EPA 5035/8260B	X
TPHg by 5035/8015M	X
TPHd by 8015M	X
TPHmo by 8015M	X
EPA 8270C	X
MNA Parameters (see notes)	X
Vinyl Chloride (TO-15)	
Helium (ASTM 1946B)	



320-28797 Chain of Custody

NOTES		CHAIN OF CUSTODY RECORD				
Turn Around Time: <u>Standard TAT</u>		RELINQUISHED BY: (Signature) <u>J. Phillips</u>	RECEIVED BY: (Signature) <u>[Signature]</u>	DATE	TIME	
		RELINQUISHED BY: (Signature) <u>[Signature]</u>	RECEIVED BY: (Signature) <u>[Signature]</u>	6/21/17	1245	
		RELINQUISHED BY: (Signature) <u>[Signature]</u>	RECEIVED BY: (Signature) <u>[Signature]</u>	6/21/17	1630	
		RELINQUISHED BY: (Signature) <u>[Signature]</u>	RECEIVED BY: (Signature) <u>[Signature]</u>	6/13/17	900	
DISPATCHED BY: (Signature) <u>[Signature]</u>		DATE	TIME	RECEIVED FOR LAB BY: (Signature)	DATE	TIME
METHOD OF SHIPMENT: <u>Picked up by lab courier</u>						



WHITE-Laboratory COPY YELLOW-Project Office Copy PINK-Field or Office Copy

Login Sample Receipt Checklist

Client: PES Environmental, Inc.

Job Number: 320-28797-1

Login Number: 28797

List Source: TestAmerica Sacramento

List Number: 1

Creator: Hytrek, Cheryl

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	N/A	
Cooler Temperature is acceptable.	N/A	
Cooler Temperature is recorded.	N/A	
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.	N/A	
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	

Certification Type TD-15 SCAN
 Date Cleaned/Batch ID 5/12/17 320-28241
 Date of QC 5/16/2017
 Data File Number C:\MSDCHEM\1\DATA\170516\



320-28241 Chain of Custody

MS6051605.d
CANISTER ID NUMBERS

<u>34000806 *</u>	<u>34001789</u>	
<u>34000654</u>	<u>34001965</u>	
<u>34001621</u>	<u>34000625</u>	
<u>34000802</u>	<u>34000620</u>	
<u>34000316</u>	<u>34001964</u>	
<u>34000910</u>	<u>8518</u>	
<u>34000769</u>	<u>34000679</u>	
<u>34002003</u>	<u>34001030</u>	

The above canisters were cleaned as a batch. This certifies this batch contains no target analyte concentration greater than or equal to the method criteria for the "Certification Type" indicated above.

"*" INDICATES THE CAN OR CANS WHICH WERE SCREENED.

[Signature]
1st level Reviewed By:

5/17/17
Date:

[Signature]
2nd level Reviewed By:

5/18/17
Date:

Certification Type TO-15 (SCAN)
 Date Cleaned/Batch ID 05-18-17 320-28393
 Date of QC _____
 Data File Number _____



320-28393 Chain of Custody

CANISTER ID NUMBERS

* 8318	34001000	
8504	34000948	
34000984	34001938	
3400596	34001645	
34001671	34001009	
34000971	34001498	
34001595	34001134	
34001093	34001219	

The above canisters were cleaned as a batch. This certifies this batch contains no target analyte concentration greater than or equal to the method criteria for the "Certification Type" indicated above.

"*" INDICATES THE CAN OR CANS WHICH WERE SCREENED.

1st level Reviewed By: _____ Date: _____

2nd level Reviewed By: _____ Date: _____

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28241-1
 SDG No.: _____
 Client Sample ID: 34000806 Lab Sample ID: 320-28241-1
 Matrix: Air Lab File ID: MS6051605.D
 Analysis Method: TO-15 Date Collected: 05/12/2017 00:00
 Sample wt/vol: 500 (mL) Date Analyzed: 05/16/2017 11:06
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-Volatiles ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 164631 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
67-64-1	Acetone	ND		5.0	0.18
107-02-8	Acrolein	ND		2.0	0.22
107-13-1	Acrylonitrile	ND		2.0	0.19
107-05-1	Allyl chloride	ND		0.80	0.11
71-43-2	Benzene	ND		0.40	0.079
100-44-7	Benzyl chloride	ND		0.80	0.16
75-27-4	Bromodichloromethane	ND		0.30	0.066
75-25-2	Bromoform	ND		0.40	0.070
74-83-9	Bromomethane	ND		0.80	0.34
106-99-0	1,3-Butadiene	ND		0.80	0.15
106-97-8	n-Butane	ND		0.40	0.15
78-93-3	2-Butanone (MEK)	ND		0.80	0.20
75-65-0	tert-Butyl alcohol (TBA)	ND		2.0	0.11
104-51-8	n-Butylbenzene	ND		0.40	0.18
135-98-8	sec-Butylbenzene	ND		0.40	0.070
98-06-6	tert-Butylbenzene	ND		0.80	0.068
75-15-0	Carbon disulfide	ND		0.80	0.078
56-23-5	Carbon tetrachloride	ND		0.80	0.064
108-90-7	Chlorobenzene	ND		0.30	0.064
75-45-6	Chlorodifluoromethane	ND		0.80	0.27
75-00-3	Chloroethane	ND		0.80	0.31
67-66-3	Chloroform	ND		0.30	0.095
74-87-3	Chloromethane	ND		0.80	0.20
95-49-8	2-Chlorotoluene	ND		0.40	0.080
110-82-7	Cyclohexane	ND		0.40	0.084
124-48-1	Dibromochloromethane	ND		0.40	0.079
106-93-4	1,2-Dibromoethane (EDB)	ND		0.80	0.075
74-95-3	Dibromomethane	ND		0.40	0.057
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.40	0.16
95-50-1	1,2-Dichlorobenzene	ND		0.40	0.13
541-73-1	1,3-Dichlorobenzene	ND		0.40	0.11
106-46-7	1,4-Dichlorobenzene	ND		0.40	0.15
75-71-8	Dichlorodifluoromethane	ND		0.40	0.15
75-34-3	1,1-Dichloroethane	ND		0.30	0.072
107-06-2	1,2-Dichloroethane	ND		0.80	0.088

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28241-1
 SDG No.: _____
 Client Sample ID: 34000806 Lab Sample ID: 320-28241-1
 Matrix: Air Lab File ID: MS6051605.D
 Analysis Method: TO-15 Date Collected: 05/12/2017 00:00
 Sample wt/vol: 500 (mL) Date Analyzed: 05/16/2017 11:06
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-Volatiles ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 164631 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-35-4	1,1-Dichloroethene	ND		0.80	0.13
156-59-2	cis-1,2-Dichloroethene	ND		0.40	0.089
156-60-5	trans-1,2-Dichloroethene	ND		0.40	0.10
78-87-5	1,2-Dichloropropane	ND		0.40	0.24
10061-01-5	cis-1,3-Dichloropropene	ND		0.40	0.10
10061-02-6	trans-1,3-Dichloropropene	ND		0.40	0.088
123-91-1	1,4-Dioxane	ND		0.80	0.10
141-78-6	Ethyl acetate	ND		0.30	0.18
100-41-4	Ethylbenzene	ND		0.40	0.063
622-96-8	4-Ethyltoluene	ND		0.40	0.19
142-82-5	n-Heptane	ND		0.80	0.063
87-68-3	Hexachlorobutadiene	ND		2.0	0.43
110-54-3	n-Hexane	ND		0.80	0.075
591-78-6	2-Hexanone	ND		0.40	0.087
98-82-8	Isopropylbenzene	ND		0.80	0.10
99-87-6	4-Isopropyltoluene	ND		0.80	0.12
1634-04-4	Methyl-t-Butyl Ether (MTBE)	ND		0.80	0.12
80-62-6	Methyl methacrylate	ND		0.80	0.16
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		0.40	0.14
75-09-2	Methylene Chloride	ND		0.40	0.072
98-83-9	alpha-Methylstyrene	ND		0.40	0.065
91-20-3	Naphthalene	ND		0.80	0.56
111-65-9	n-Octane	ND		0.40	0.055
109-66-0	n-Pentane	ND		0.80	0.26
115-07-1	Propylene	ND		0.40	0.099
103-65-1	N-Propylbenzene	ND		0.40	0.059
100-42-5	Styrene	ND		0.40	0.059
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.40	0.069
127-18-4	Tetrachloroethene	ND		0.40	0.051
109-99-9	Tetrahydrofuran	ND		0.80	0.21
108-88-3	Toluene	ND		0.40	0.051
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.40	0.16
120-82-1	1,2,4-Trichlorobenzene	ND		2.0	0.43
71-55-6	1,1,1-Trichloroethane	ND		0.30	0.065
79-00-5	1,1,2-Trichloroethane	ND		0.40	0.067

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28241-1
 SDG No.: _____
 Client Sample ID: 34000806 Lab Sample ID: 320-28241-1
 Matrix: Air Lab File ID: MS6051605.D
 Analysis Method: TO-15 Date Collected: 05/12/2017 00:00
 Sample wt/vol: 500 (mL) Date Analyzed: 05/16/2017 11:06
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-Volatiles ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 164631 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-01-6	Trichloroethene	ND		0.40	0.11
75-69-4	Trichlorofluoromethane	ND		0.40	0.20
96-18-4	1,2,3-Trichloropropane	ND		0.40	0.17
95-63-6	1,2,4-Trimethylbenzene	ND		0.80	0.16
108-67-8	1,3,5-Trimethylbenzene	ND		0.40	0.13
540-84-1	2,2,4-Trimethylpentane	ND		0.40	0.071
108-05-4	Vinyl acetate	ND		0.80	0.15
593-60-2	Vinyl bromide	ND		0.80	0.26
75-01-4	Vinyl chloride	ND		0.40	0.12
179601-23-1	m,p-Xylene	ND		0.80	0.10
95-47-6	o-Xylene	ND		0.40	0.054

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	93		70-130
17060-07-0	1,2-Dichloroethane-d4 (Surr)	102		70-130
2037-26-5	Toluene-d8 (Surr)	99		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\ATMS6\20170516-43118.b\MS6051605.D
 Lims ID: 320-28241-A-1
 Client ID: 34000806
 Sample Type: Client
 Inject. Date: 16-May-2017 11:06:30 ALS Bottle#: 5 Worklist Smp#: 5
 Purge Vol: 25.000 mL Dil. Factor: 1.0000
 Sample Info: 320-28241-A-1
 Misc. Info.: 500 mL CAN CERT
 Operator ID: LHS Instrument ID: ATMS6
 Method: \\ChromNA\Sacramento\ChromData\ATMS6\20170516-43118.b\TO15_ATMS6.m
 Limit Group: MSA - TO15 - ICAL
 Last Update: 17-May-2017 09:45:37 Calib Date: 16-May-2017 08:12:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\ATMS6\20170516-43118.b\MS6051602.D
 Column 1 : RTX Volatiles (0.32 mm) Det: MS SCAN
 Process Host: XAWRK010

First Level Reviewer: phanthasena Date: 17-May-2017 09:48:10

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	130	13.094	13.094	0.000	94	43372	4.00	
* 2 1,4-Difluorobenzene	114	15.242	15.242	0.000	96	157030	4.00	
* 3 Chlorobenzene-d5 (IS)	117	21.988	21.982	0.006	89	138766	4.00	
\$ 4 1,2-Dichloroethane-d4 (Sur	65	14.305	14.299	0.006	99	77943	4.09	
\$ 5 Toluene-d8 (Surr)	100	18.697	18.691	0.006	98	92908	3.97	
\$ 6 4-Bromofluorobenzene (Surr	95	24.550	24.550	0.000	87	88368	3.73	
11 Propene	41	4.480	4.486	-0.006	26	353	0.0455	
17 Butane	43	5.283	5.295	-0.012	23	943	0.0487	
32 Acetone	43	8.270	8.276	-0.006	41	3028	0.1428	

Reagents:

VAMIS20_00002 Amount Added: 50.00 Units: mL Run Reagent

Data File: \\ChromNA\Sacramento\ChromData\ATMS6\20170516-43118.b\MS6051605.D

Injection Date: 16-May-2017 11:06:30

Instrument ID: ATMS6

Operator ID: LHS

Lims ID: 320-28241-A-1

Lab Sample ID: 320-28241-1

Worklist Smp#: 5

Client ID: 34000806

Purge Vol: 25.000 mL

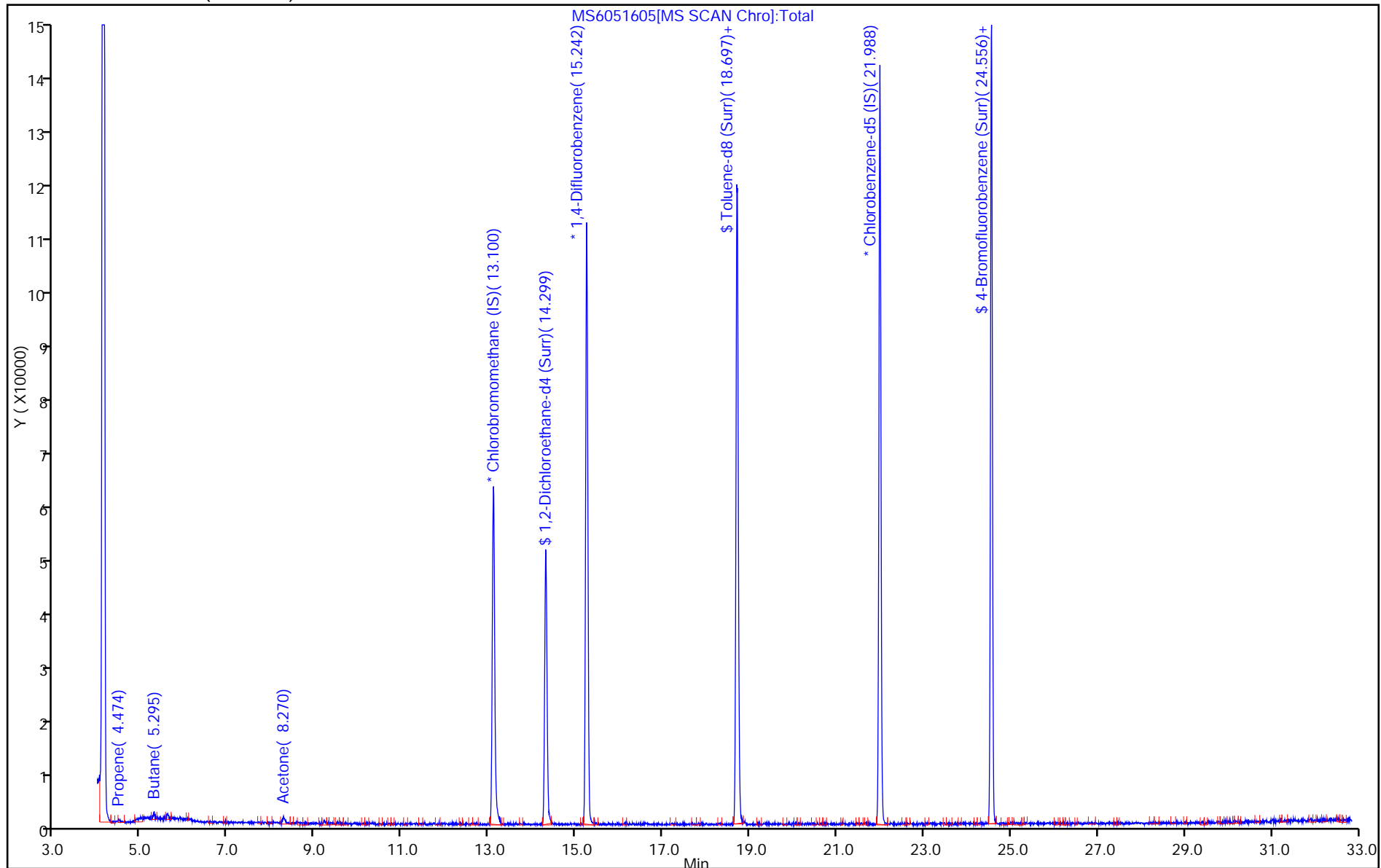
Dil. Factor: 1.0000

ALS Bottle#: 5

Method: TO15_ATMS6

Limit Group: MSA - TO15 - ICAL

Column: RTX Volatiles (0.32 mm)



FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28393-1
 SDG No.: _____
 Client Sample ID: 8318 Lab Sample ID: 320-28393-1
 Matrix: Air Lab File ID: MS6051906.D
 Analysis Method: TO-15 Date Collected: 05/18/2017 00:00
 Sample wt/vol: 500 (mL) Date Analyzed: 05/19/2017 15:42
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-Volatiles ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 165335 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
67-64-1	Acetone	0.51	J	5.0	0.18
107-02-8	Acrolein	ND		2.0	0.22
107-13-1	Acrylonitrile	ND		2.0	0.19
107-05-1	Allyl chloride	ND		0.80	0.11
71-43-2	Benzene	ND		0.40	0.079
100-44-7	Benzyl chloride	ND		0.80	0.16
75-27-4	Bromodichloromethane	ND		0.30	0.066
75-25-2	Bromoform	ND		0.40	0.070
74-83-9	Bromomethane	ND		0.80	0.34
106-99-0	1,3-Butadiene	ND		0.80	0.15
106-97-8	n-Butane	ND		0.40	0.15
78-93-3	2-Butanone (MEK)	ND		0.80	0.20
75-65-0	tert-Butyl alcohol (TBA)	ND		2.0	0.11
104-51-8	n-Butylbenzene	ND		0.40	0.18
135-98-8	sec-Butylbenzene	ND		0.40	0.070
98-06-6	tert-Butylbenzene	ND		0.80	0.068
75-15-0	Carbon disulfide	0.46	J	0.80	0.078
56-23-5	Carbon tetrachloride	ND		0.80	0.064
108-90-7	Chlorobenzene	ND		0.30	0.064
75-45-6	Chlorodifluoromethane	ND		0.80	0.27
75-00-3	Chloroethane	ND		0.80	0.31
67-66-3	Chloroform	ND		0.30	0.095
74-87-3	Chloromethane	ND		0.80	0.20
95-49-8	2-Chlorotoluene	ND		0.40	0.080
110-82-7	Cyclohexane	ND		0.40	0.084
124-48-1	Dibromochloromethane	ND		0.40	0.079
106-93-4	1,2-Dibromoethane (EDB)	ND		0.80	0.075
74-95-3	Dibromomethane	ND		0.40	0.057
76-14-2	1,2-Dichloro-1,1,2,2-tetrafluoroethane	ND		0.40	0.16
95-50-1	1,2-Dichlorobenzene	ND		0.40	0.13
541-73-1	1,3-Dichlorobenzene	ND		0.40	0.11
106-46-7	1,4-Dichlorobenzene	ND		0.40	0.15
75-71-8	Dichlorodifluoromethane	ND		0.40	0.15
75-34-3	1,1-Dichloroethane	ND		0.30	0.072
107-06-2	1,2-Dichloroethane	ND		0.80	0.088

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28393-1
 SDG No.: _____
 Client Sample ID: 8318 Lab Sample ID: 320-28393-1
 Matrix: Air Lab File ID: MS6051906.D
 Analysis Method: TO-15 Date Collected: 05/18/2017 00:00
 Sample wt/vol: 500 (mL) Date Analyzed: 05/19/2017 15:42
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-Volatiles ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 165335 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
75-35-4	1,1-Dichloroethene	ND		0.80	0.13
156-59-2	cis-1,2-Dichloroethene	ND		0.40	0.089
156-60-5	trans-1,2-Dichloroethene	ND		0.40	0.10
78-87-5	1,2-Dichloropropane	ND		0.40	0.24
10061-01-5	cis-1,3-Dichloropropene	ND		0.40	0.10
10061-02-6	trans-1,3-Dichloropropene	ND		0.40	0.088
123-91-1	1,4-Dioxane	ND		0.80	0.10
141-78-6	Ethyl acetate	ND		0.30	0.18
100-41-4	Ethylbenzene	ND		0.40	0.063
622-96-8	4-Ethyltoluene	ND		0.40	0.19
142-82-5	n-Heptane	ND		0.80	0.063
87-68-3	Hexachlorobutadiene	ND		2.0	0.43
110-54-3	n-Hexane	ND		0.80	0.075
591-78-6	2-Hexanone	ND		0.40	0.087
98-82-8	Isopropylbenzene	ND		0.80	0.10
99-87-6	4-Isopropyltoluene	ND		0.80	0.12
1634-04-4	Methyl-t-Butyl Ether (MTBE)	ND		0.80	0.12
80-62-6	Methyl methacrylate	ND		0.80	0.16
108-10-1	4-Methyl-2-pentanone (MIBK)	ND		0.40	0.14
75-09-2	Methylene Chloride	ND		0.40	0.072
98-83-9	alpha-Methylstyrene	ND		0.40	0.065
91-20-3	Naphthalene	ND		0.80	0.56
111-65-9	n-Octane	ND		0.40	0.055
109-66-0	n-Pentane	ND		0.80	0.26
115-07-1	Propylene	0.11	J	0.40	0.099
103-65-1	N-Propylbenzene	ND		0.40	0.059
100-42-5	Styrene	ND		0.40	0.059
79-34-5	1,1,2,2-Tetrachloroethane	ND		0.40	0.069
127-18-4	Tetrachloroethene	ND		0.40	0.051
109-99-9	Tetrahydrofuran	ND		0.80	0.21
108-88-3	Toluene	ND		0.40	0.051
76-13-1	1,1,2-Trichloro-1,2,2-trifluoroethane	ND		0.40	0.16
120-82-1	1,2,4-Trichlorobenzene	ND		2.0	0.43
71-55-6	1,1,1-Trichloroethane	ND		0.30	0.065
79-00-5	1,1,2-Trichloroethane	ND		0.40	0.067

FORM I
AIR - GC/MS VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: TestAmerica Sacramento Job No.: 320-28393-1
 SDG No.: _____
 Client Sample ID: 8318 Lab Sample ID: 320-28393-1
 Matrix: Air Lab File ID: MS6051906.D
 Analysis Method: TO-15 Date Collected: 05/18/2017 00:00
 Sample wt/vol: 500 (mL) Date Analyzed: 05/19/2017 15:42
 Soil Aliquot Vol: _____ Dilution Factor: 1
 Soil Extract Vol.: _____ GC Column: RTX-Volatiles ID: 0.32 (mm)
 % Moisture: _____ Level: (low/med) Low
 Analysis Batch No.: 165335 Units: ppb v/v

CAS NO.	COMPOUND NAME	RESULT	Q	RL	MDL
79-01-6	Trichloroethene	ND		0.40	0.11
75-69-4	Trichlorofluoromethane	ND		0.40	0.20
96-18-4	1,2,3-Trichloropropane	ND		0.40	0.17
95-63-6	1,2,4-Trimethylbenzene	ND		0.80	0.16
108-67-8	1,3,5-Trimethylbenzene	ND		0.40	0.13
540-84-1	2,2,4-Trimethylpentane	ND		0.40	0.071
108-05-4	Vinyl acetate	ND		0.80	0.15
593-60-2	Vinyl bromide	ND		0.80	0.26
75-01-4	Vinyl chloride	ND		0.40	0.12
179601-23-1	m,p-Xylene	ND		0.80	0.10
95-47-6	o-Xylene	ND		0.40	0.054

CAS NO.	SURROGATE	%REC	Q	LIMITS
460-00-4	4-Bromofluorobenzene (Surr)	94		70-130
17060-07-0	1,2-Dichloroethane-d4 (Surr)	93		70-130
2037-26-5	Toluene-d8 (Surr)	96		70-130

TestAmerica Sacramento
Target Compound Quantitation Report

Data File: \\ChromNA\Sacramento\ChromData\ATMS6\20170519-43295.b\MS6051906.D
 Lims ID: 320-28393-A-1
 Client ID: 8318
 Sample Type: Client
 Inject. Date: 19-May-2017 15:42:30 ALS Bottle#: 4 Worklist Smp#: 21
 Purge Vol: 25.000 mL Dil. Factor: 1.0000
 Sample Info: 320-28393-A-1
 Misc. Info.: 500 mL CAN CERT
 Operator ID: SV Instrument ID: ATMS6
 Method: \\ChromNA\Sacramento\ChromData\ATMS6\20170519-43295.b\TO15_ATMS6.m
 Limit Group: MSA - TO15 - ICAL
 Last Update: 22-May-2017 10:04:41 Calib Date: 19-May-2017 11:49:30
 Integrator: RTE ID Type: Deconvolution ID
 Quant Method: Internal Standard Quant By: Initial Calibration
 Last ICal File: \\ChromNA\Sacramento\ChromData\ATMS6\20170519-43295.b\MS6051902.D
 Column 1 : RTX Volatiles (0.32 mm) Det: MS SCAN
 Process Host: XAWRK029

First Level Reviewer: phanthasena

Date: 22-May-2017 10:04:41

Compound	Sig	RT (min.)	Adj RT (min.)	Dlt RT (min.)	Q	Response	OnCol Amt ppb v/v	Flags
* 1 Chlorobromomethane (IS)	130	13.100	13.100	0.000	94	40858	4.00	
* 2 1,4-Difluorobenzene	114	15.242	15.242	0.000	95	156100	4.00	
* 3 Chlorobenzene-d5 (IS)	117	21.988	21.988	0.000	89	139470	4.00	
\$ 4 1,2-Dichloroethane-d4 (Surr)	65	14.299	14.305	-0.006	98	71878	3.70	
\$ 5 Toluene-d8 (Surr)	100	18.703	18.697	0.006	98	93599	3.83	
\$ 6 4-Bromofluorobenzene (Surr)	95	24.556	24.549	0.007	87	93450	3.74	
11 Propene	41	4.498	4.486	0.012	37	892	0.1107	
17 Butane	43	5.307	5.295	0.012	10	997	0.0530	
32 Acetone	43	8.282	8.276	0.006	99	10616	0.5077	
40 Carbon disulfide	76	9.602	9.590	0.012	96	10934	0.4590	
58 Isooctane	57	14.244	14.232	0.012	1	1508	0.0333	

Reagents:

VAMSIS20_00002

Amount Added: 50.00

Units: mL

Run Reagent

Data File: \\ChromNA\Sacramento\ChromData\ATMS6\20170519-43295.b\MS6051906.D

Injection Date: 19-May-2017 15:42:30

Instrument ID: ATMS6

Operator ID: SV

Lims ID: 320-28393-A-1

Lab Sample ID: 320-28393-1

Worklist Smp#: 21

Client ID: 8318

Purge Vol: 25.000 mL

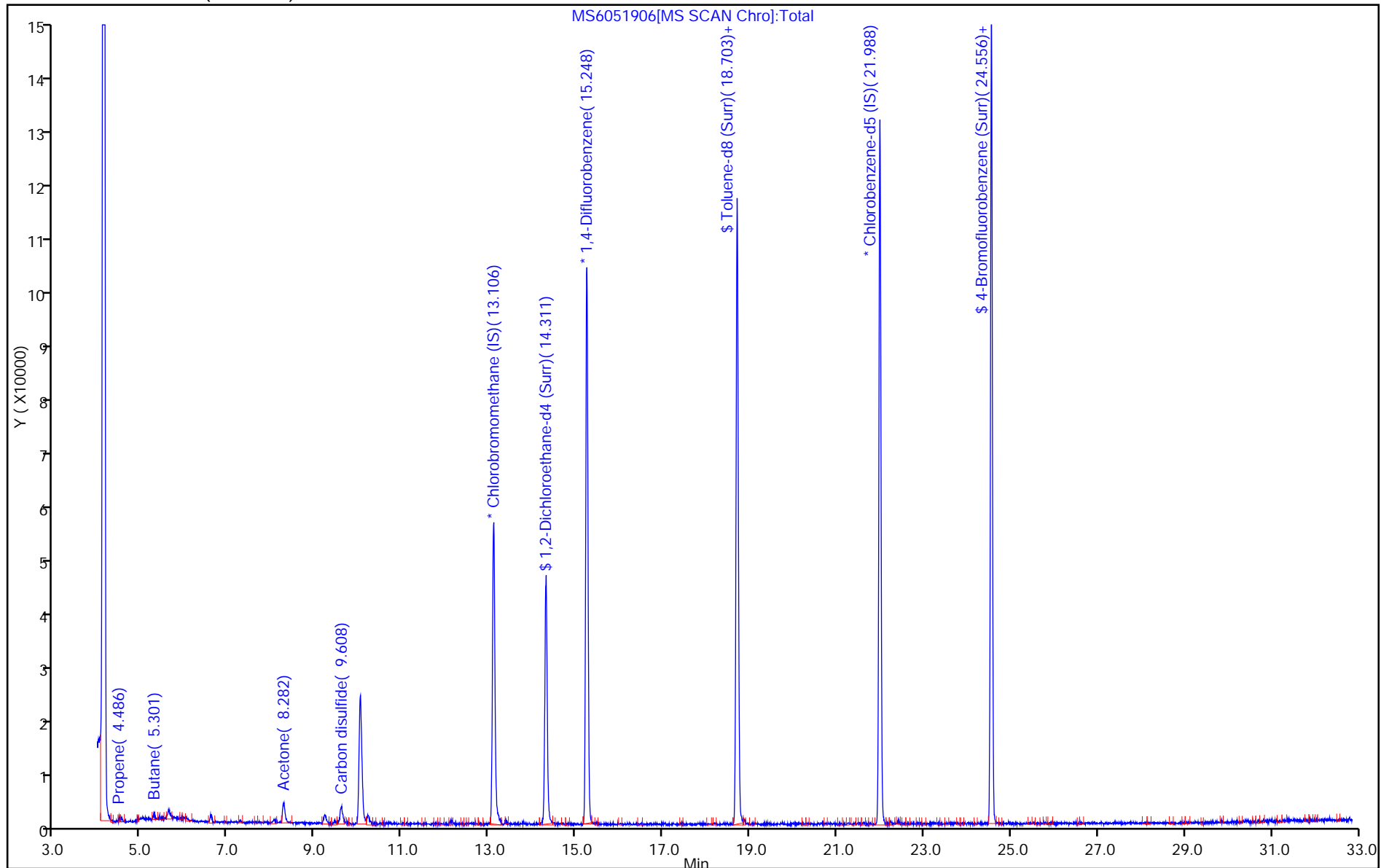
Dil. Factor: 1.0000

ALS Bottle#: 4

Method: TO15_ATMS6

Limit Group: MSA - TO15 - ICAL

Column: RTX Volatiles (0.32 mm)



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\ATMS6\20170519-43295.b\MS6051906.D

Injection Date: 19-May-2017 15:42:30

Instrument ID: ATMS6

Lims ID: 320-28393-A-1

Lab Sample ID: 320-28393-1

Client ID: 8318

Operator ID: SV

ALS Bottle#: 4 Worklist Smp#: 21

Purge Vol: 25.000 mL

Dil. Factor: 1.0000

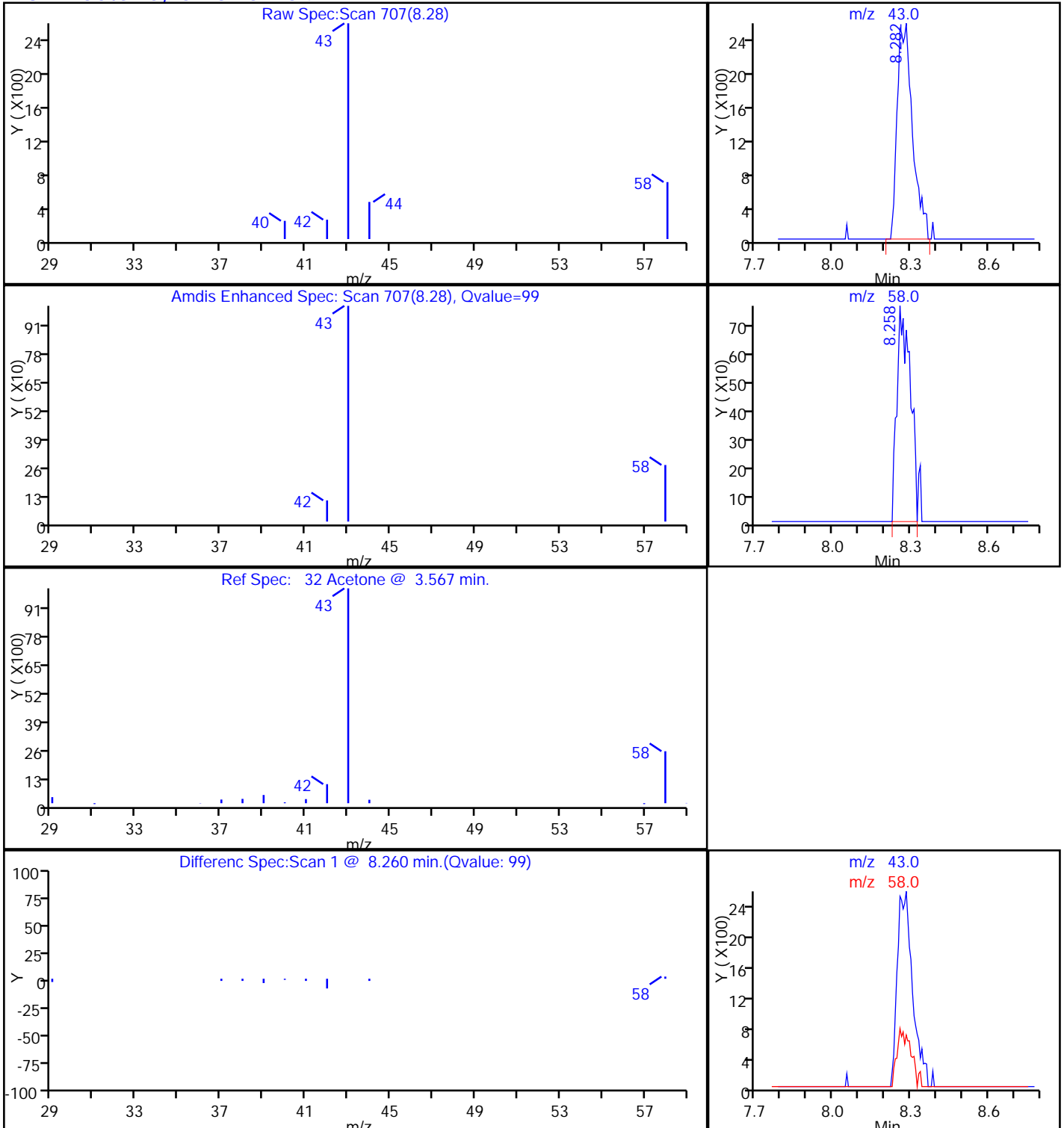
Method: TO15_ATMS6

Limit Group: MSA - TO15 - ICAL

Column: RTX Volatiles (0.32 mm)

Detector: MS SCAN

32 Acetone, CAS: 67-64-1



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\ATMS6\20170519-43295.b\MS6051906.D

Injection Date: 19-May-2017 15:42:30

Instrument ID: ATMS6

Lims ID: 320-28393-A-1

Lab Sample ID: 320-28393-1

Client ID: 8318

Operator ID: SV

ALS Bottle#: 4 Worklist Smp#: 21

Purge Vol: 25.000 mL

Dil. Factor: 1.0000

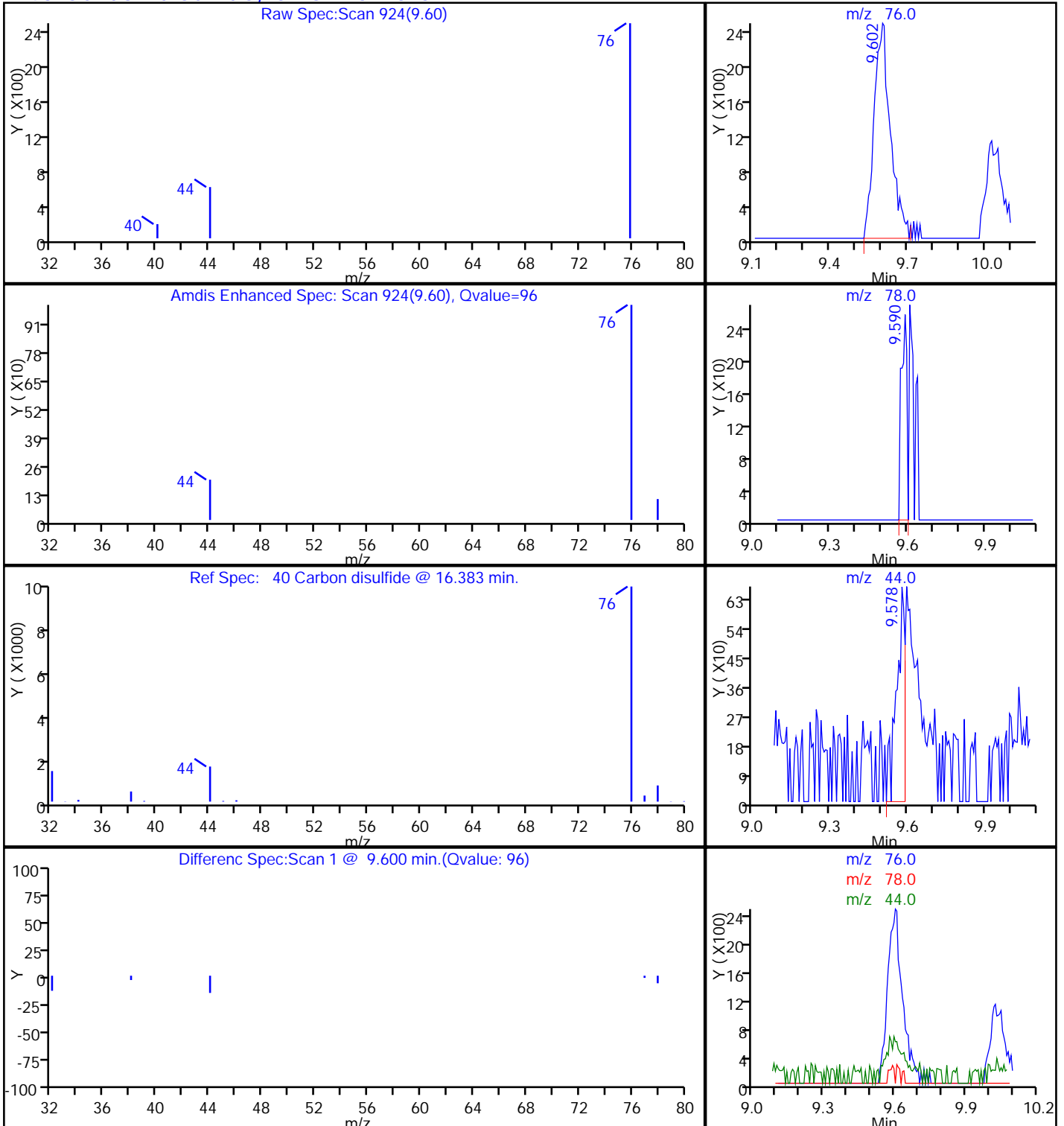
Method: TO15_ATMS6

Limit Group: MSA - TO15 - ICAL

Column: RTX Volatiles (0.32 mm)

Detector: MS SCAN

40 Carbon disulfide, CAS: 75-15-0



TestAmerica Sacramento

Data File: \\ChromNA\Sacramento\ChromData\ATMS6\20170519-43295.b\MS6051906.D

Injection Date: 19-May-2017 15:42:30

Instrument ID: ATMS6

Lims ID: 320-28393-A-1

Lab Sample ID: 320-28393-1

Client ID: 8318

Operator ID: SV

ALS Bottle#: 4 Worklist Smp#: 21

Purge Vol: 25.000 mL

Dil. Factor: 1.0000

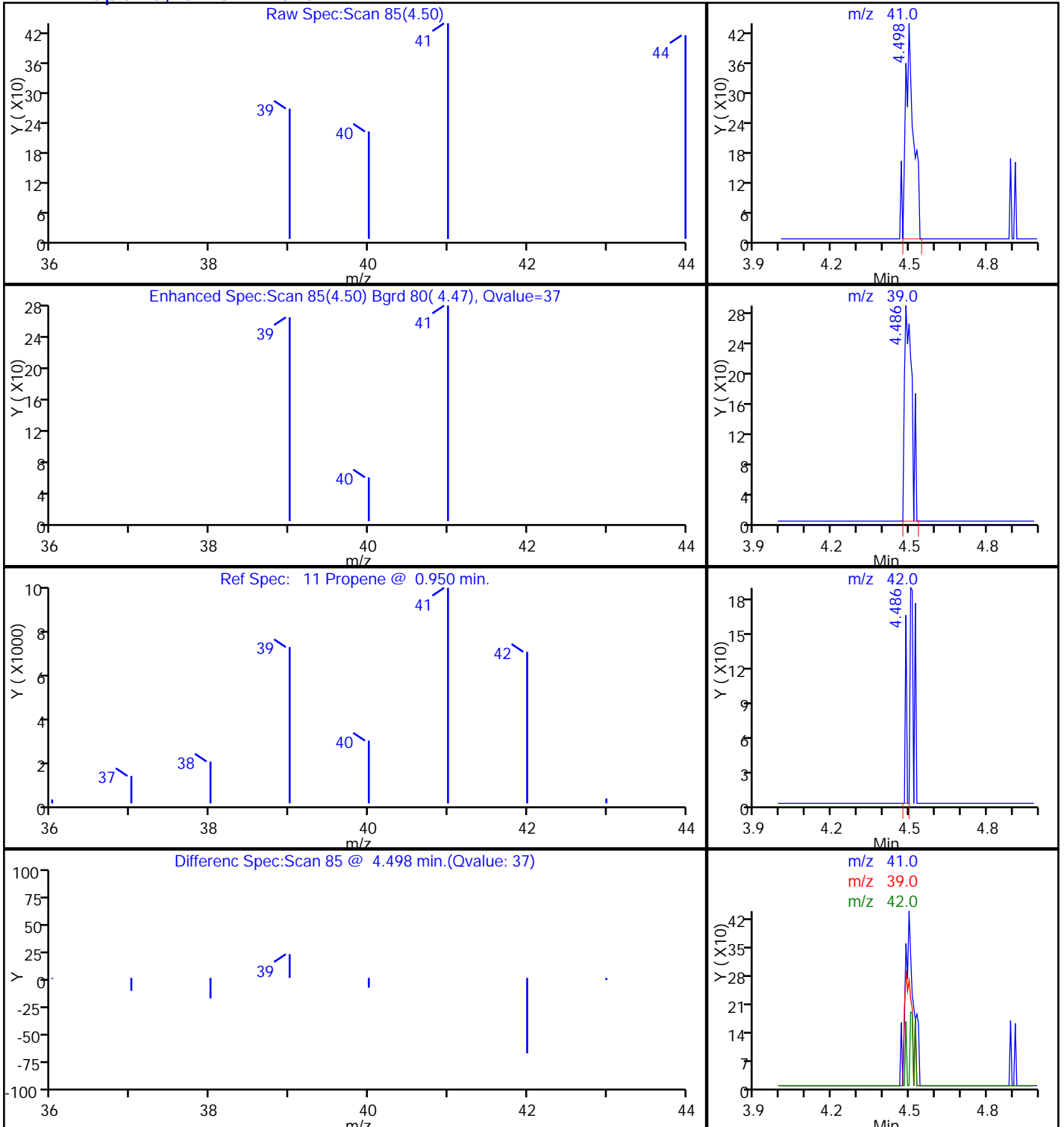
Method: TO15_ATMS6

Limit Group: MSA - TO15 - ICAL

Column: RTX Volatiles (0.32 mm)

Detector: MS SCAN

11 Propene, CAS: 115-07-1



APPENDIX D

PERTINENT DATA FROM PREVIOUS INVESTIGATION

TABLES

Table 2
Summary of Soil Vapor Analytical Results
Off-Site Subsurface Investigation Report
6601-6603 Shellmound Street, Emeryville, California

Sample Location	Sample ID	Sample Depth (feet bgs)	Date Sampled	PCE (µg/m ³)	TCE (µg/m ³)	cis-1,2-DCE (µg/m ³)	trans-1,2-DCE (µg/m ³)	Vinyl chloride (µg/m ³)	1,1,1-TCA (µg/m ³)	MEK (µg/m ³)	MIBK (µg/m ³)	Acetone (µg/m ³)	Benzene (µg/m ³)	Toluene (µg/m ³)	Ethylbenzene (µg/m ³)	m,p-Xylene (µg/m ³)	o-Xylene (µg/m ³)	1,2,4-TMB (µg/m ³)	1,3,5-TMB (µg/m ³)	4-Ethyltoluene (µg/m ³)	Carbon disulfide (µg/m ³)	Chloroform (µg/m ³)	Other VOCs (µg/m ³)	Carbon Dioxide (% v/v)	Oxygen (% v/v)	Helium (% v/v)	
PSV1/SSV1	SSV1	0.5	10/18/2016	< 12	23	< 7	< 7	< 4.5	< 7.3	< 10	< 7.3	220	< 5.7	< 6.7	< 7.7	< 15	< 7.7	< 17	< 8.7	< 8.7	< 11	< 6.5	ND	10	4.8	< 0.18	
	PSV1-5	5.0	10/21/2016	28	23	130	13	82	< 11	220	61	380	120	410	39	150	40	< 26	< 13	< 13	38	< 9.8	ND	11	2.4	0.30	
	PSV1-10	10.0	10/21/2016	< 69	63	170	240	210	< 42	78	< 42	< 300	510	1,100	860	2,500	920	< 100	< 50	< 50	140	< 37	ND	< 1	1.9	< 0.2	
PSV2/SSV2	SSV2	0.5	10/18/2016	400	18	< 7	< 7	< 4.5	40	< 10	< 7.3	250	7.3	7.1	< 7.7	< 15	< 7.7	< 17	< 8.7	< 8.7	< 11	< 6.5	ND	< 0.97	19	0.27	
	PSV2-5	5.0	10/21/2016	< 2.7	3.7	75	15	300	< 1.6	140	< 1.6	330	37	270	34	130	38	18	7.2	7.1	23	< 1.5	4.8 (1,1-DCA), 4.5 (CB), 2.5 (1,3-DCB)	5.7	8.7	< 0.19	
	PSV2-9	9.0	10/21/2016	< 18	< 14	30	17	190	< 11	86	92	240	110	680	73	270	83	35	15	16	50	< 9.8	ND	< 1.1	1.1	< 0.21	
PSV3/SSV3	SSV3	0.5	10/18/2016	< 4.1	< 3.2	< 2.4	< 2.4	< 1.5	< 2.5	8.3	< 2.5	92	18	5.1	< 2.6	6.4	2.6	< 5.9	< 3	< 3	< 3.8	< 2.2	ND	< 0.98	13	0.52	
	PSV3-5	5.0	10/21/2016	< 130	< 100	150	< 74	3,700	< 76	170	85	< 550	170	610	100	400	110	< 180	< 92	< 92	< 120	< 68	ND	6.4	2.2	< 0.6	
PSV4/SSV4	SSV4	0.5	10/18/2016	< 34	< 27	< 20	< 20	< 13	< 21	< 30	< 21	750	< 16	< 19	< 22	< 44	< 22	< 50	< 25	< 25	< 32	33	ND	< 0.99	13	0.37	
	PSV4-5	5.0	10/21/2016	< 17	< 13	< 9.9	< 9.9	< 6.4	< 10	240	68	400	110	740	86	340	95	39	17	23	73	< 9.2	ND	4.7	7.4	< 0.2	
	PSV4-10	10.0	10/21/2016	< 13	< 9.9	8.8	< 7.3	< 4.7	< 7.6	100	72	150	130	370	78	270	93	52	24	19	370	< 6.8	ND	3.0	1.6	< 0.19	
PSV5/SSV5	SSV5	0.5	10/18/2016	< 5.6	17	< 3.3	< 3.3	< 2.1	< 3.4	< 4.8	< 3.4	160	3.6	4.4	< 3.6	7.3	< 3.6	< 8.1	< 4	< 4	25	< 3	ND	2.1	15	0.41	
	PSV5-5	5.0	10/19/2016	< 54	< 43	< 32	< 32	< 20	< 33	310	< 33	490	100	180	35	150	36	< 79	< 39	< 39	95	< 29	ND	3.6	2.4	< 0.2	
	PSV5-10	10.0	10/19/2016	< 67	< 53	< 39	< 39	< 25	< 40	180	< 40	310	180	260	54	190	69	< 97	< 48	< 48	270	< 36	ND	< 0.99	3.9	< 0.2	
PSV6/SSV6	SSV6	0.5	10/18/2016	< 5.4	200	< 3.2	< 3.2	< 2	< 3.3	13	< 3.3	120	3.3	18	3.6	12	4.0	< 7.8	< 3.9	< 3.9	270	18	ND	2.9	18	3.1	
	PSV6-5	5.0	10/20/2016	< 11	36	100	11	150	< 6.9	250	88	470	180	150	25	98	26	20	9.6	20	< 6.2	ND	6.8	2.6	< 0.16		
	PSV6-10	10.0	10/20/2016	< 14	< 11	< 8.3	< 8.3	460	< 8.6	92	< 8.6	160	190	69	30	97	38	29	20	13	62	< 7.7	36 (CE)	< 0.78	8.1	1.1	
PSV7/SSV7	SSV7	0.5	10/18/2016	< 130	< 100	< 75	< 75	< 48	< 77	< 110	140	2,800	< 60	< 71	< 82	< 160	< 82	< 190	< 93	< 93	< 120	< 69	ND	< 0.95	3.6	< 0.19	
	PSV7-5	5.0	10/20/2016	< 8.9	24	37	15	12	< 5.4	100	< 5.4	210	290	67	15	58	18	13	< 6.4	6.4	9.3	< 4.8	ND	7.1	9.8	0.33	
	PSV7-10	10.0	10/20/2016	< 4.8	< 3.8	3.9	< 2.8	< 1.8	< 2.9	120	< 2.9	150	47	95	21	61	26	28	11	8.0	13	< 2.6	ND	4.1	6.6	< 0.15	
PSV8/SSV8	SSV8	0.5	10/18/2016	< 14	< 11	< 8.1	< 8.1	< 5.2	< 8.4	13	< 8.4	480	15	11	< 8.9	< 18	< 8.9	< 20	< 10	< 10	< 13	< 7.5	27 (1,4-Dioxane)	3.8	7.9	< 0.21	
	PSV8-5	5.0	10/20/2016	< 15	< 12	13	< 8.7	30	< 9	250	68	370	71	290	58	210	61	45	22	20	33	< 8	ND	1.2	8.4	< 0.17	
	PSV8-10	10.0	10/20/2016	< 7.6	11	30	6.3	51	< 4.6	110	< 4.6	190	150	170	63	120	38	27	13	11	49	< 4.1	12 (Styrene)	2.8	5.5	< 0.2	
PSV9/SSV9	SSV9	0.5	10/18/2016	< 7.1	12	< 4.1	< 4.1	< 2.7	< 4.3	< 6.2	< 4.3	380	9.6	6.7	< 4.5	13	4.8	< 10	< 5.1	< 5.1	11	16	ND	< 1	13	< 0.2	
	PSV9-5	5.0	10/20/2016	< 17	95	37	58	120	< 10	320	68	370	51	160	36	140	40	34	14	< 12	< 15	< 9.1	ND	11	1.9	< 0.19	
	PSV9-9	9.0	10/20/2016	48	110	98	110	210	< 4.9	130	48	170	53	150	23	69	20	< 12	< 5.9	< 5.9	190	< 4.4	17 (1,1-DCE) 9.3 (CB)	4.2	1.7	< 0.2	
PSV10/SSV10	SSV10	0.5	10/18/2016	< 5.8	< 4.6	< 3.4	< 3.4	< 2.2	< 3.5	< 5	< 3.5	130	4.6	3.6	< 3.7	< 7.4	< 3.7	< 8.4	< 4.2	< 4.2	< 5.3	6.5	< 1.1	20	0.22		
	PSV10-5	5.0	10/20/2016	< 17	79	90	69	200	< 10	270	91	380	92	210	42	150	47	40	19	< 12	< 16	< 9.2	ND	8.4	1.5	< 0.16	
	PSV10-10	10.0	10/20/2016	< 52	120	950	390	1,500	< 32	110	< 32	< 230	1,700	270	610	580	390	450	280	180	100	< 28	ND	< 0.97	1.3	< 0.19	
PSV11/SSV11	SSV11	0.5	10/18/2016	< 17	74	< 9.8	< 9.8	< 6.3	< 10	< 15	< 10	280	9.0	< 9.3	< 11	< 22	< 11	< 24	< 12	< 12	< 15	< 9.1	ND	3.3	14	< 0.2	
	PSV11-5	5.0	10/21/2016	< 21	23	32	< 12	15	< 12	130	< 12	790	340	260	38	240	48	< 30	< 15	< 15	33	< 11	ND	2.3	1.7	< 0.19	
	PSV11-9	9.0	10/21/2016	< 11	17	40	10	43	< 6.7	72	< 6.7	230	130	210	44	270	57	46	27	15	82	< 6	17 (NAPH)	< 0.98	10	0.73	
RWQCB Commercial/Industrial Land Use VI ESL (Subslab / Soil Gas) ¹				2100	3000	35,000	350,000	160	4,400,000	22,000,000	1,600,000	130,000,000	420	1,300,000	4900	440,000	440,000	NE	NE	NE	NE	530	NE	NE	NE	NE	
RWQCB TCE Trigger Level, Commercial/Industrial Subslab/Soil Gas ²				--	8000	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Notes:
 Detections are shown in bold. Results equal to or exceeding applicable regulatory screening levels are shaded.
 Only detected analytes are summarized on table. Refer to Appendix C for laboratory report to access entire list of compounds analyzed.
 PCE = Tetrachloroethene.
 TCE = Trichloroethene.
 DCE = Dichloroethene.
 TCA = Trichloroethane.
 PCA = Tetrachloroethane.
 MEK = Methyl Ethyl Ketone.
 MIBK = Methyl Isobutyl Ketone.
 TMB = Trimethylbenzene.
 CB = Chlorobenzene.
 CE = Chloroethane.
 DCB = Dichlorobenzene.
 NAPH = Naphthalene.
 VOCs = Volatile organic compounds.
 bgs = Below ground surface.
 µg/m³ = Micrograms per cubic meter.
 % v/v = Percent by volume.
 < 2.9 = Not detected at or above the indicated laboratory method reporting limit.
 ND = Not detected at or above the respective laboratory method reporting limits.
 NE = Not established.
 -- = Not applicable/not analyzed.
 1. ESL = February 2016 Regional Water Quality Control Board, San Francisco Bay Region (RWQCB) Environmental Screening Levels (ESLs), Table SG-1 Subslab/Soil Gas Vapor Intrusion: Human Health Risk Levels. Commercial/Industrial Final VI Screening Level.
 2. RWQCB, 2016. User's Guide: Derivation and Application of Environmental Screening Levels (ESLs), TCE ESLs, Action Levels for Indoor Air (Response), and Groundwater and Soil Gas Trigger Levels (Sample Indoor Air), Table 4-4. February.

Table 3
Summary of Soil Vapor Leak Check Results
Off-Site Subsurface Investigation Report
6601-6603 Shellmound Street, Emeryville, California

Sample Location	Sample ID	Sample Depth (feet bgs)	Date Sampled	Helium Detected in Sample (% v/v)	Helium Detected in Shroud (% v/v)	Breakthrough Factor (%)
PSV1/SSV1	SSV1	0.5	10/18/2016	0.18	26.7	0.7
	PSV1-5	5	10/21/2016	0.3	24.7	1.2
	PSV1-10	10	10/21/2016	0.2	24.7	0.8
PSV2/SSV2	SSV2	0.5	10/18/2016	0.27	28.9	0.9
	PSV2-5	5	10/21/2016	0.19	32.8	0.6
	PSV2-9	9	10/21/2016	0.21	32.8	0.6
PSV2/SSV3	SSV3	0.5	10/18/2016	0.52	29.7	1.8
	PSV3-5	5	10/21/2016	0.6	34.9	1.7
PSV4/SSV4	SSV4	0.5	10/18/2016	0.37	29.3	1.3
	PSV4-5	5	10/21/2016	0.2	36.2	0.6
	PSV4-10	10	10/21/2016	0.19	36.2	0.5
PSV5/SSV5	SSV5	0.5	10/18/2016	0.41	29.1	1.4
	PSV5-5	5	10/19/2016	0.2	32.6	0.6
	PSV5-10	10	10/19/2016	0.2	36.8	0.5
PSV6/SSV6	SSV6	0.5	10/18/2016	3.1	27.5	11.3
	PSV6-5	5	10/20/2016	0.16	28.2	0.6
	PSV6-10	10	10/20/2016	1.1	28.2	3.9
PSV7/SSV7	SSV7	0.5	10/18/2016	0.19	25.9	0.7
	PSV7-5	5	10/20/2016	0.33	25.4	1.3
	PSV7-10	10	10/20/2016	0.15	25.4	0.6
PSV8/SSV8	SSV8	0.5	10/18/2016	0.21	36.2	0.6
	PSV8-5	5	10/20/2016	0.17	28.8	0.6
	PSV8-10	10	10/20/2016	0.2	28.8	0.7
PSV9/SSV9	SSV9	0.5	10/18/2016	0.2	32.7	0.6
	PSV9-5	5	10/20/2016	0.19	29.7	0.6
	PSV9-9	9	10/20/2016	0.2	29.7	0.7
PSV10/SSV10	SSV10	0.5	10/18/2016	0.22	29.7	0.7
	PSV10-5	5	10/20/2016	0.16	32.8	0.5
	PSV10-10	10	10/20/2016	0.19	32.8	0.6
PSV11/SSV11	SSV11	0.5	10/18/2016	0.2	34.8	0.6
	PSV11-5	5	10/21/2016	0.19	32.6	0.6
	PSV11-9	9	10/21/2016	0.73	32.6	2.2
Acceptable Ambient Air Breakthrough Limit ¹				--	--	5%

Notes:

Detections are shown in bold. Results equal to or exceeding applicable RPD limits are shaded.

bgs = Below ground surface.

% v/v = Percent by volume.

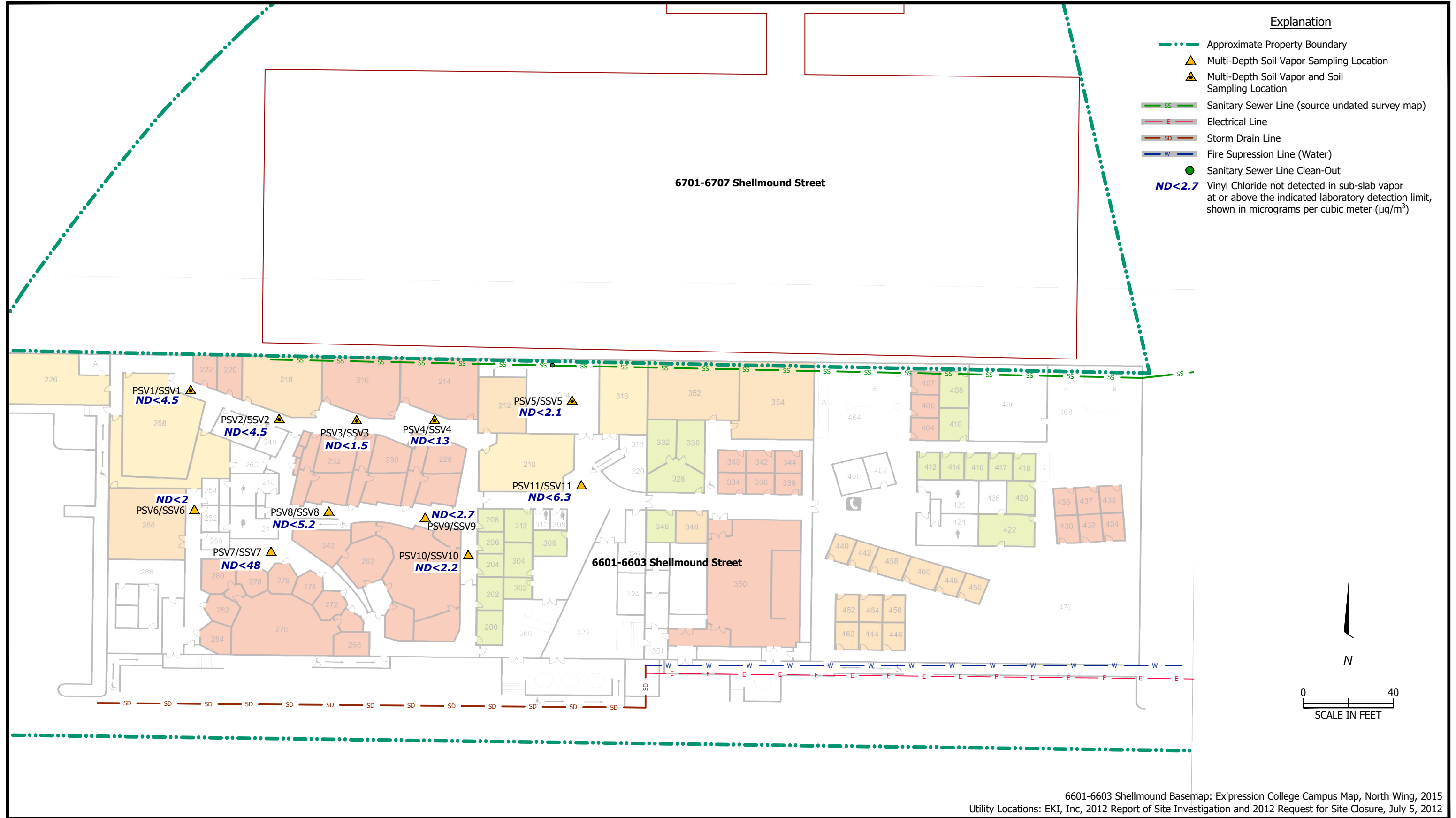
-- = Not applicable.

1. In accordance with California Environmental Protection Agency/Department of Toxic Substances Control Advisory - Active Soil Gas Investigations, July 2015 - Appendix C: Quantitative Leak Testing Using a Tracer Gas.

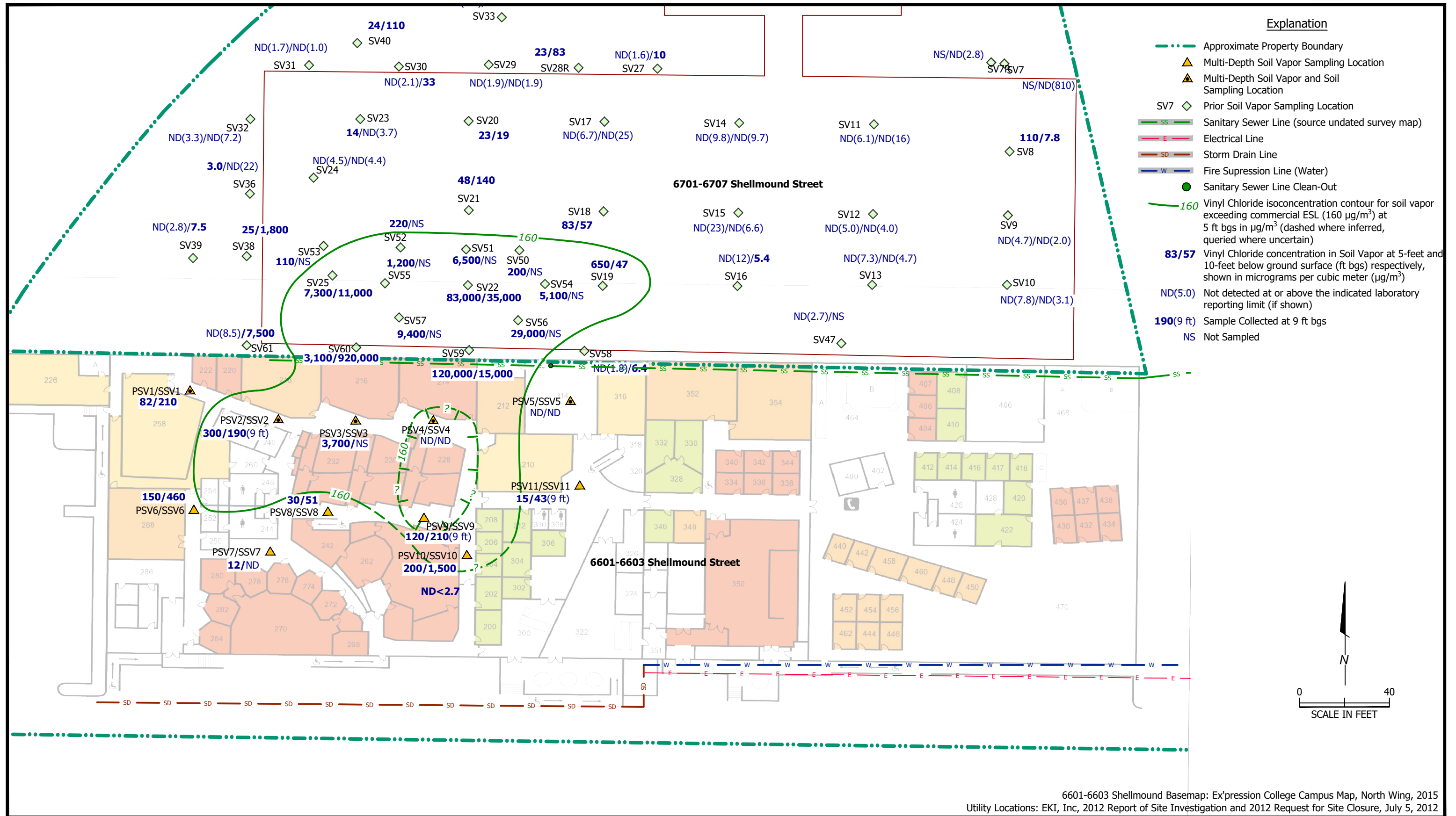
ILLUSTRATIONS

Explanation

- - - Approximate Property Boundary
- ▲ Multi-Depth Soil Vapor Sampling Location
- ▲ Multi-Depth Soil Vapor and Soil Sampling Location
- SS Sanitary Sewer Line (source undated survey map)
- E Electrical Line
- SD Storm Drain Line
- W Fire Suppression Line (Water)
- Sanitary Sewer Line Clean-Out
- ND<2.7** Vinyl Chloride not detected in sub-slab vapor at or above the indicated laboratory detection limit, shown in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$)



6601-6603 Shellmound Basemap: Ex'pression College Campus Map, North Wing, 2015
 Utility Locations: EKI, Inc, 2012 Report of Site Investigation and 2012 Request for Site Closure, July 5, 2012



DISTRIBUTION

**SUPPLEMENTAL OFF-SITE SUBSURFACE INVESTIGATION REPORT
6701, 6705, AND 6707 SHELLMOUND STREET
EMERYVILLE, CALIFORNIA
FUEL LEAK CASE NO. RO0000548
GEOTRACKER GLOBAL ID T0600100894**

JULY 6, 2017

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