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ENVIRONMENT

Karel L. Detterman, P.G.
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502

Subject:
CPT/UVOST Field Investigation Report
Former BP Station No. 11109
4280 Foothill Boulevard
Oakland, California

Date:
September 16, 2015

Contact:
Hollis Phillips

Phone:
415.432.6903

Email:
hollis.phillips@arcadis-us.com

Our ref:
GP09BPNA.C106.C0000

Dear Ms. Detterman:

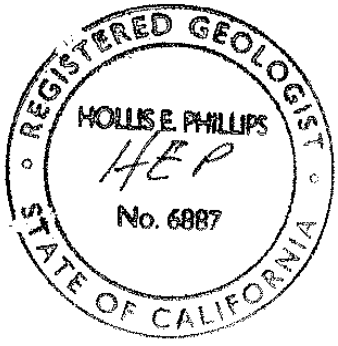
ARCADIS U.S., Inc. (ARCADIS) has prepared this report on behalf of the Atlantic Richfield Company, a BP affiliated company (ARCO), for the former ARCO service station listed below.

BP Facility No.	ACEH Site No.	Location
11109	RO0000426	4280 Foothill Boulevard Oakland, California

I declare, to the best of my knowledge at the present time, that the information and/or recommendations contained in the attached document are true and correct. If you have any questions or comments regarding the content of this report, please contact Hollis Phillips by telephone at 415.432.6903 or by e-mail at hollis.phillips@arcadis-us.com.

Sincerely,

ARCADIS U.S., Inc.



Hollis E. Phillips, P.G. (No. 6887)
Principal Geologist/Project Manager

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BP Remediation Management,

a BP affiliated company

CPT/UVOST Field Investigation Report

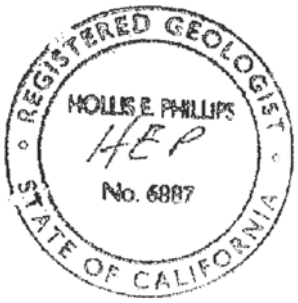
Former BP Service Station No. 11109
4280 Foothill Boulevard
Oakland, California
ACEH Site No. RO0000426

September 16, 2015

ARCADIS

Carl Edwards
Project Scientist

Hollis E. Phillips, P.G. (No. 6887)
Principal Geologist



CPT/UVOST Field Investigation Report

Former BP Service Station
No. 11109
4280 Foothill Boulevard
Oakland, California
ACEH Site No.: RO0000426

Prepared for:
BP Remediation Management,
a BP affiliated company

Prepared by:
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ARCADIS

Table of Contents

Tables

Figures

Appendices

1. Introduction

ARCADIS U.S., Inc. (ARCADIS) has prepared this *Cone Penetrometer Test/Ultraviolet Optical Screening Tool (CPT/UVOST) Field Investigation Report* for the former British Petroleum (BP) service station No. 11109 located at 4280 Foothill Boulevard in Oakland, California ("the site"; Figure 1). This report was prepared in response to a meeting between Alameda County Environmental Health (ACEH) and ARCADIS on January 30, 2014 which identified data gaps in the site investigation. A *CPT/UVOST Field Investigation Work Plan* (work plan) was submitted to ACEH on April 4, 2014 (ARCADIS 2014). ACEH sent ARCADIS a Conditional Work Plan Approval letter dated July 2, 2014, which contained technical comments regarding the specific work plan modifications necessary for permit approval (ACEH 2014). The technical comments were included in the work.

2. Background

2.1 Site Location and Description

The site is an active NTG-branded gas station located on the northern corner of the intersection of Football Boulevard and High Street in Oakland, California. The site has operated as a gasoline service station since at least the early 1970s. BP acquired the station from Mobil Oil Company in 1989 and operated the station under the BP brand. In 1994, BP sold the station to Tosco, which was acquired by Conoco Phillips who operated a 76-branded station at the site for some time. Currently, the station operates under the independent brand, NTG Self Service Gasoline.

Leaking underground storage tanks (USTs) were removed and replaced in 1991. Product conveyance lines and fuel dispensing equipment were subsequently replaced in the 1990s. Existing USTs consist of three 10,000-gallon double-wall fiberglass gasoline USTs and one 1,000-gallon double-wall fiberglass waste oil (WO) UST. Site features are shown on Figure 2.

2.2 Geology and Hydrogeology

According to the East Bay Plain Groundwater Basin Beneficial Use Evaluation Report (San Francisco Regional Water Quality Control Board [SFRWQCB] 1999), the site is located within the Oakland subarea of the East Bay Plain of the San Francisco Basin. The Oakland subarea contains a sequence of alluvial fans. The alluvial fill thickness ranges from 300 to 700 feet deep. There are no well-defined aquitards such as estuarine muds. The largest and deepest wells in this subarea historically pumped 1 to

2 million gallons per day at depths greater than 200 feet. Overall, sustainable yields are low due in part to low recharge potential. The Merritt Sand in West Oakland (up to 60 feet below ground surface [bgs]) was an important part of the early water supply for the City of Oakland before the turn of the last century when septic systems contaminated water supply wells.

Throughout most of the Alameda County East Bay Plain, from Hayward north to Albany, water-level contours show that the general direction of groundwater flow is from east to west or from the Hayward Fault to San Francisco Bay. Groundwater flow direction generally correlates to topography. Flow direction and velocity are also influenced by buried stream channels that typically are oriented from east to west. However, near the San Lorenzo subarea, the direction of flow may vary. According to information presented in the East Bay Plain Groundwater Basin Beneficial Use Evaluation Report (SFRWQCB 2015), the small set of water-level measurements available showed that the groundwater in the upper aquifers may be flowing south, with the deeper aquifers (the Alameda Formation), moving north. The nearest natural drainage is Peralta Creek, located approximately 1,500 feet west of the site. Peralta Creek flows generally north to south at its closest distance to the site.

The most recent onsite CPT logs (B-1, B-3 and B-4) show fine grained soils (clay and silty clay) extending to approximately 12 feet bgs, followed by interbedded layers of fine and coarse grain soils (sand and silty sand) extending to the total depth of the borings (approximately 35 feet bgs). The offsite CPT logs (B-5 through B-7) show predominately fine grained soils extending to total depth with interspersed coarse grain lenses. Cross sections depicting an interpretation of the CPT logs are included as Figures 3 through 5.

During the most recent groundwater monitoring event conducted on March 10, 2015, the groundwater gradient was 0.046 foot per foot. Based on historical groundwater elevation data, the direction of groundwater flow is predominately to the southwest. Depth to groundwater beneath the site ranged from approximately 9.5 to 14.7 feet bgs during the most recent groundwater monitoring event. A summary of analytical results is provided in the *Fourth Quarter 2014 and First Quarter 2015 Semiannual Groundwater Monitoring Report*, which was submitted on May 1, 2015 (ARCADIS 2015).

2.3 Summary of Past Investigations

Previous environmental investigations are summarized in the *Final Feasibility Study and Corrective Action Plan, Former BP Service Station No. 11109* (ARCADIS 2011).

Soil impacts beneath the site originate from historical operations relating to the former USTs. Additionally, soil and groundwater may have been impacted by a historical release from a dispenser island located between the USTs and the southern portion of the site (Figure 2). Historical laboratory analysis of soil samples collected from soil borings confirmed the presence of petroleum hydrocarbons in soil beneath the site. Groundwater has been sampled quarterly or semiannually since the 1986 site investigation, which was conducted following the originally reported UST release. Historically, measurable quantities of SPH have been detected in wells MW-5, MW-10, and MW-12. The highest concentrations of site constituents of concern (COCs) are historically detected at MW-5. The well was not sampled during the most recent sampling event in March 2015 due to the presence of a sheen. However, when MW-5 was last sampled (first quarter 2010), the results indicated concentrations of gasoline range organics (GRO) at 67,000 micrograms per liter (µg/L), benzene at 1,400 µg/L, toluene at 380 µg/L, ethylbenzene at 620 µg/L, and total xylenes at 1,800 µg/L.

2.4 Summary of ACEH Directives

In the January 30, 2014 meeting with ARCADIS, ACEH summarized data gaps that it contends persist at the site and must be understood in order to provide a complete site conceptual model and to facilitate the evaluation of site conditions. ACEH recommended the following be evaluated at the site:

- Adequacy of the monitoring well network.
- Need for cross-sections, including soil boring data collected from Chevron 4265 Foothill Boulevard (RO427) and Shell 4411 Foothill Boulevard (RO415).
- Extent of the benzene plume is not defined onsite and offsite.
- Underground utilities and their potential to act as preferential pathways.
- Updated well/sensitive receptor survey using data from both the Alameda County Public Works Agency (ACPWA) and the Department of Water Resources (DWR).

- Further evaluation of the area around the former WO UST.
- Re-evaluate data collected from the free product baildown test.

3. Objectives

Site investigation activities were conducted from June 17 through June 23, 2015. Drilling operations were conducted by Gregg Drilling & Testing, Inc., of Martinez, California (Gregg) under the supervision of ARCADIS.

The primary objectives of this site investigation were to evaluate the extent of potential residual separate-phase hydrocarbons (SPH), assess the extent of the COC-affected groundwater plume in the downgradient direction, and determine concentrations of COCs in soil and groundwater near the WO UST. Items listed above that were not evaluated in this investigation, including the discussion on the adequacy of the monitoring well network and re-evaluation of previous SPH baildown tests, were discussed in the work plan submitted to ACEH on April 4, 2014 (ARCADIS 2014).

3.1 Pre-Field Activities

As required by the Occupational Safety and Health Administration (OSHA) 29 Code of Federal Regulations (CFR) 1910.120 (Hazardous Waste Operations and Emergency Responses), ARCADIS updated the site-specific Health and Safety Plan addressing the health and safety issues related to field activities conducted at the site.

All necessary permits and licenses were obtained prior to the initiation of the subsurface investigation, including drilling permit number W2015-0281 from the Alameda County Public Works Agency (ACPWA). Additionally, excavation permits were obtained from the City of Oakland (permits #X1500453 and #X1500454) for work conducted on Foothill Boulevard and High Street, respectively, located in the City of Oakland right-of-way. Access agreements were in place with the current property owner prior to field mobilization, and an obstruction permit (#OB1500218) was obtained from the City of Oakland for the associated excavation work on Foothill Boulevard and High Street.

ARCADIS personnel marked the boring locations using white paint and obtained Underground Service Alert (USA-North) ticket numbers 0277117 and 0277128, which were posted on June 12, 2015. On June 4, 2015, a private third-party utility locator, Cruz Brothers Locators of Soquel, California, screened the proposed onsite borings to

determine the location(s) of nearby underground utilities. On June 17, 2015, an additional third-party utility locator, Safe2Core of San Jose, California, screened the proposed offsite borings.

3.2 Soil Boring Completion

At the request of ACEH, soil samples were collected in the vicinity of the Pacific Gas & Electric Company (PG&E) utility trench which exposed TPH-affected soils during trenching work beneath the sidewalk along High Street in 2014. On June 17, 2015, ARCADIS supervised the advancement of soil boring B-8, located approximately 8 feet from the PG&E utility trench. Gregg Drilling and Testing, Inc. (Gregg) used a hand auger to remove soil to a depth of approximately 6 feet 6 inches bgs in an effort to minimize the potential for damage to subsurface utilities. A MARL Technologies M 2.5 truck-mounted direct-push rig operated by Gregg was used to advance the soil boring from 6 feet 6 inches bgs to approximately 16 feet bgs, the total depth of the borehole. Soil samples were collected from three depths, based upon PID readings.

Soil was logged by an ARCADIS field geologist in accordance with the Unified Soil Classification System (USCS) protocol, and boring logs are included in Appendix A. Soil samples were field-screened for volatile organic compounds (VOCs) with a photoionization detector (PID).

Statewide Traffic Safety and Signs of Sacramento, California, provided traffic control during offsite drilling activities at B-8.

3.2.1 Soil Sample Collection and Laboratory Analysis – Soil Boring

Three soil samples were collected from B-8 for analytical testing at the following depth intervals: 5 to 5.5 feet bgs, 8.5 to 9 feet bgs, and 13.5 to 14 feet bgs. Samples designated for laboratory analysis were collected in 8 ounce (oz.) jars, labeled, placed on ice, and transported to ESC Lab Sciences of Mt. Juliet, Tennessee (ESC), a California state certified analytical laboratory, under chain-of-custody protocol. Soil samples were submitted for the following analyses:

- Gasoline Range Organics (GRO) and Total Petroleum Hydrocarbons as motor oil (TPHmo) by United States Environmental Protection Agency (USEPA) Method 8015B (M);

- Benzene, toluene, ethylbenzene, xylenes (collectively, BTEX), methyl tertiary butyl ether (MTBE), and naphthalene by USEPA Method 8260B;

- Polycyclic aromatic hydrocarbons (PAHs) by USEPA 8270C/D - Selective Ion Monitoring (SIM);

- Total lead by USEPA Method 6010B.

3.3 CPT/UVOST Borings

On June 18 through June 19, 2015, ARCADIS supervised Gregg in the advancement of CPT/UVOST borings B-1 and B-3 through B-7, to a depth of approximately 35 feet bgs. Three borings (B-3 through B-5) were advanced to assess the extent of SPH around MW-5 and the former dispenser islands (Figure 2), one CPT/UVOST boring (B-1) was advanced near the WO UST, and two CPT/UVOST borings (B-6 and B-7) were advanced across Foothill Boulevard to evaluate the offsite and downgradient extent of COCs.

Proposed boring B-2, presented in the work plan, was not completed during the recent site investigation activities. Several attempts were made to advance B-2, however, due to the presence of pea gravel at each attempted location, B-2 could not be safely hand cleared and advanced to the proposed depth. Attempts to advance B-2 were ceased when the furthest step-outs were greater than 10 feet away from the originally intended location. Although B-2 could not be completed, its proposed area is bounded by existing groundwater monitoring wells MW-6 and MW-7 in the upgradient direction and by groundwater monitoring well MW-3 and CPT/UVOST soil borings B-3 and B-4 in the downgradient direction.

The CPT/UVOST logs are provided in Appendix C.

CPTs were conducted using a piezocone connected by stainless steel rods to a hydraulic direct push system that advances the piezocone through the soil. The piezocone measures friction, tip resistance, and pore pressure. CPT was performed in accordance with revised (2002) American Society for Testing and Materials (ASTM) standards (D-5778-95). UVOST was advanced simultaneously with the CPT rod to detect the laser-induced fluorescence response of polyaromatic compounds present in hydrocarbon fuels, which quantifies the relative concentrations of hydrocarbons present in soil at or below the water table. Deploying the CPT with the UVOST allowed for the correlation of site lithology and the presence of SPH.

3.3.1 Soil Sample Collection and Laboratory Analysis – CPT/UVOST Borings

Soil samples were collected from soil boring B-1 at three depths, chosen based upon lithologic data and real-time fluorescence measurements from the CPT/UVOST borings. At B-1, samples were collected between 3.5 to 4 feet bgs and 6.5 to 7.5 feet bgs due to the minor peaks shown in the UVOST log (Appendix C). An additional sample was collected between 10 and 11 feet bgs where the UVOST log indicated cleaner soil above groundwater.

At B-3, samples were collected between 4.5 to 5 feet bgs and 6.5 to 7.5 feet bgs due to the minor peaks shown in the UVOST log (Appendix C).

At B-5, samples were collected between 4.5 to 5 feet bgs and at 6.5 to 7 feet bgs due to the minor peaks shown in the UVOST log. An additional sample was collected between 8.5 and 9 feet bgs for the purpose of collecting a soil sample above the water table.

The CPT rig advanced hollow push rods to the desired sampling depth, and the core (soil sampling device) was extracted and samples collected. All samples were labeled, and placed in an ice-chilled cooler for delivery to ESC, under proper chain of custody procedures. Soil samples collected from B-1 were analyzed for the following:

- GRO and TPHmo by USEPA Method 8015B (M);
- BTEX, MTBE, and naphthalene by USEPA Method 8260B;
- Chlorinated VOCs by USEPA Method 8260B;
- PAHs by USEPA 8270C/D - SIM;
- Total lead by USEPA Method 6010B;
- Wear Metals (Cadmium, Chromium, Nickel, Lead, and Zinc) by USEPA Method 6010/6020.

Soil samples collected from B-3 and B-5 were analyzed for TPHmo by USEPA Method 8015B (M). No soil samples were collected from B-2, B-4, B-6 and B-7, as outlined in the work plan.

3.3.2 Groundwater Sample Collection and Laboratory Analysis

Grab groundwater samples were collected from borings located adjacent to CPT borings B-1, B-6, and B-7. After advancing each boring to the desired depth, a grab groundwater sample was collected from these borings by placing a 1-inch-diameter polyvinyl chloride (PVC) casing with a 5-foot screened interval of 0.010-inch slotted PVC at the bottom of the boring. Blank PVC riser pipe was connected to the PVC screen to facilitate sample collection at the surface. Prior to groundwater sample collection, the static water level was measured using an electronic water-level indicator. Following depth to water gauging, several casing volumes of groundwater were purged to remove sediment-loaded groundwater to the extent feasible, and a groundwater sample was collected using a bailer. Bottom collection depths of 25, 13, and 14 feet bgs were determined for B-1, B-6, and B-7, respectively, based on CPT and UVOST readings, as well as depth to water in the nearby groundwater monitoring wells.

The groundwater grab samples were, labeled, and placed in an ice-chilled cooler for delivery to ESC under proper chain of custody procedures. Grab groundwater samples from B-6 and B-7 were analyzed for the following COCs:

- GRO by USEPA Method 8015B (M);
- BTEX and MTBE by USEPA Method 8260B;

The groundwater sample collected from boring location B-1, located near the WO UST, was also analyzed for:

- PAHs by USEPA 8270C/D – SIM;
- Naphthalene by USEPA Method 8260B.

No grab groundwater samples were collected from B-2 through B-5, and B-8, as outlined in the work plan.

3.3.3 Boring Abandonment

Upon completion of soil and grab groundwater sampling activities, all borings were abandoned in accordance with the Alameda County Public Works Agency (ACPWA) requirements. The PVC casing was removed, and the boring was grouted through a

tremie pipe from the total depth to ground surface using neat cement (composed of one sack [94 pounds] of Portland Type II/V and approximately 6 gallons of water). The ground surface was restored to match existing conditions using concrete. All boring abandonment activities were completed in the presence of an ACPWA grout inspector.

3.4 Decontamination

All down-hole drilling and sampling equipment was steam-cleaned prior to deployment and following completion of each sampling location. Decontamination of non-dedicated or non-disposable field equipment was conducted using a Liquinox® solution and deionized water rinse to prevent potential cross-contamination.

3.5 Investigation-Derived Waste Disposal

Soil cuttings generated during drilling operations were placed in one 55-gallon drum and temporarily stored on site pending characterization and disposal. Following the receipt of waste characterization analytical data, investigation-derived waste was transported offsite by Belshire Environmental Services, Inc. of Foothill, California (Belshire) on September 3, 2015. The drum is currently held at a Belshire facility pending disposal at a Soil Safe, Inc. (Soil Safe) facility in Adelanto, California on September 18, 2015. A waste manifest will be uploaded under separate cover to the State Water Resources Control Board's (SWRCB) Geotracker website when it is received from Soil Safe.

3.6 Quality Assurance and Quality Control Procedures

To verify that the analytical data collected during the investigation is valid and usable, the data were evaluated using a standard quality assurance and quality control (QA/QC) program.

Field QA/QC procedures included calibration of sampling equipment (including the PID and water quality parameter meter), the use of standard chain-of-custody procedures for sample control, and written and visual documentation of field activities in daily field logs and by photograph. One equipment blank sample (EB-1) was collected immediately following the collection of samples from B-1, to assess the accuracy and precision of field sampling methods. Analytical results from the EB-1 show estimated detections between the method detection limit (MDL) and Reporting Limit (RL) for PAHs benzo (a) anthracene, benzo (b) fluoranthene, benzo (g,h,i) perylene and phenanthrene (Table 2). ARCADIS data validation guidance states that sample results

less than five times the equipment blank results should be considered possible contamination from field, shipping and/or laboratory procedures and would be qualified as non-detect. Therefore, PAH detections in the B-1 grab groundwater sample could result from lab methods and/or field activities, rather than represent in-situ groundwater concentrations. Given the timing of the equipment blank sampling, inadvertent missteps in field decontamination procedures are the likely source for detections in EB-1, and the detections at B-1 are representative of in-situ conditions. Based on the low levels of detection in EB-1 (estimated values below RL) which are limited to PAHs, the grab groundwater analytical data is considered to be acceptable for the intended use.

The degree of laboratory accuracy and precision was established by evaluating method blanks, laboratory control samples, matrix spike samples, and surrogate QC sample results. In addition, data quality related comments reported by the laboratory were reviewed during this evaluation and incorporated into the summary report as necessary.

4. Soil and Grab Groundwater Analytical Results

4.1 Soil Analytical Results

The analytical results for the confirmation soil samples are summarized in Table 1 and Figure 6 and the laboratory analytical reports and chain-of-custody documentation are provided in Appendix D. Concentrations of COCs were not detected above the relevant screening levels in any of the soil samples collected from B-1, B-3, B-5, and B-8 (no soil samples collected from B-2, B-4, B-6 and B-7). All reported concentrations were significantly below SF-RWQCB's environmental screening levels (ESLs) for direct exposure to a commercial/industrial worker or a construction/trench worker (SF-RWQCB 2013; Tables K-2 and K-3). Additionally, concentrations of COCs in soil samples did not exceed the screening levels included in the low threat closure (LTC) Policy for direct contact to COCs through ingestion, dermal contact with soil, or inhalation of volatile soil emissions and inhalation of particulate emissions (SWRCB 2012).

4.2 Grab Groundwater Analytical Results

Grab groundwater analytical results for samples collected from B-1, B-6 and B-7 are presented in Table 2 and Figure 7, and the laboratory analytical reports and chain-of-custody documentation are provided in Appendix D (no grab groundwater samples collected from B-2 through B-5 and B-8). Concentrations of COCs were not detected

above respective laboratory reporting limits in the grab groundwater samples collected from the onsite soil boring B-1, or either offsite boring (B-6, or B-7) with the exception of MTBE. MTBE detections ranged from 0.43 to 6.2 micrograms per liter (µg/L). Groundwater was not collected from other borings during this investigation. Only one groundwater sample collected from B-7 slightly exceeded the SF-RWQCB's Maximum Concentration Level (MCL) for MTBE in drinking water (SF-RWQCB; Table F-3). The exceedance of MTBE at B-7 is attributed to the Chevron Service Station 90076 dispenser island release documented in the *Site Investigation Report, Updated Focused Site Conceptual Model, and Work Plan*, which shows the MTBE plume extending northeast into Foothill Boulevard (GeoTracker #T0600100339; CRA 2015; Appendix E). Concentrations of tested polycyclic aromatic hydrocarbons (PAHs) were not detected above the SF-RWQCB's Maximum Concentration Level (MCL) for drinking water or for the evaluation of potential vapor intrusion (SF-RWQCB; Tables F-3 and E-1) for soil boring B-1. These results indicate that the COC groundwater plume is defined downgradient (to the west and southwest) of the site.

4.3 UVOST Results

UVOST was performed at boring locations B-1 and B-3 through B-7 to assess the extent of remaining SPH. UVOST results indicate a limited secondary source is present in the vicinity of B-3, B-4 and B-5, where the highest fluorescence was observed in separate peaks at approximately 7.5 feet bgs (B-4 and B-5), 9 feet bgs (B-3) and 13.5 feet bgs (B-3 through B-5). Results are consistent with higher concentrations in soil samples collected from B-3 and B-5 (results were below ESLs). UVOST results from B-6 and B-7 did not indicate the presence of SPH, supporting the conclusion that although a secondary source is present, it is limited in areal extent to the southwest corner of the Site.

5. Preferential Pathways

During the offsite private utility survey conducted on June 17, 2015, ARCADIS investigated accessible manhole covers in the northbound and southbound outermost lanes of Foothill Boulevard. The depth to the base of the storm drain is approximately 4.5 feet bgs.

The City of Oakland provided utility maps identifying the location of their sewer mains in Foothill Boulevard, but they were not able to provide a depth of the utility relative to the ground surface. A previous preferential pathway investigation indicated that although American Telephone & Telegraph (AT&T) and PG&E utility depths in Foothill

Boulevard are confidential, they are generally installed at a depth of approximately 2 feet and 3 feet bgs, respectively (BAI 2009).

Results from the current and previous preferential pathways investigation indicate that utilities installed in Foothill Boulevard range in depth from 2 to 4.5 feet bgs, with the exception of the sewer mains. Based on the findings and the historical depth to water at the site, which ranges from 6 to 30 feet bgs, known utility corridors in Foothill Boulevard are not considered a preferential pathway for COCs.

6. Sensitive Receptor Survey

Per ACEH's request in its email correspondence dated January 31, 2014 (ACEH 2014), ARCADIS executed an updated well/sensitive receptor survey with a 2,000 foot search radius around the site for water wells (residential, municipal, industrial, etc.) and surface water bodies. Review of previous well searches for the site and copies of available well reports from the California Department of Water Resources (DWR) and Alameda County Public Works Agency (ACPWA) were reviewed (Alton Geoscience, Inc. 1992, ACPWA 2015, DWR 2015). The findings of the well survey are presented below.

6.1 Parcel Survey

The assessor's parcel number of the site is 25-2351-5-2. The parcel's survey information is included as Assessor's Map, Page 5.

Commercial and residential properties primarily surround the site. The site is located at the north corner of the intersection of High Street and Foothill Boulevard (Figure 1) (Google Earth Pro 2015). Several schools surround the site: Aspire Eres Academy is located approximately 100 feet to the north, Fremont High School is located approximately 220 feet to the east, and Oakland Charter Academy is located approximately 295 feet to the west (Alton Geoscience Inc. 1992, Google Earth Pro 2015). The south corner of the intersection of High Street and Foothill Boulevard contains mostly commercial and retail properties as well various residential buildings (Google Earth Pro 2015). An active Chevron service station is located approximately 100 feet southwest of the site. Two churches are located approximately 150 and 300 feet northeast of the site (Google Earth Pro 2015). Commercial and residential properties comprise the majority of the remainder of the buildings within 2,000 feet of the Site (Google Earth Pro 2015).

6.2 Well Survey

In May 2015, ARCADIS conducted a well survey to locate water supply wells within a 2,000-foot radius of the site. ARCADIS obtained electronic files from the DWR for wells located within the 2,000-foot search radius. No active drinking water, municipal water or industrial water supply wells within the study area were identified in the data obtained from the DWR (DWR 2015). A site map showing the 2,000-foot radius around the Site is included as Figure 8.

Additionally, an Excel file containing well completion report records for all wells located within 2,000 feet of the site was obtained from the ACPWA. No active drinking water or municipal water supply wells within the study area were identified in the data obtained from the ACPWA (ACPWA 2015). The same industrial well located at 499 High Street and identified in the DWR well completion report dataset was also contained in the dataset provided by ACPWA (ACPWA 2015).

ARCADIS contacted the East Bay Municipal Utility District (EBMUD), which serves the City of Oakland, to determine if the site is within 2,000 feet of water supply or water production wells. A Water District Supervisor at EBMUD stated in a phone conversation that EBMUD does not utilize water supply or water production wells in order to supply water to the East Bay service area (EBMUD 2015b). Additionally, a water manager at the City of Oakland Public Works Agency stated that there are no drinking water wells in the city of Oakland (City of Oakland Public Works Agency 2015).

6.3 Surface Water

6.3.1 Surface Water Drainage

The nearest surface water drainage to the site is a storm drain grate located on Foothill Boulevard at the corner of Foothill Boulevard and High Street (Google Maps 2015).

6.3.2 Peralta Creek

The nearest surface water body is Peralta Creek, which is part of the East Creek Watershed and flows from Joaquin Miller Park into the San Leandro Bay (Sowers 1993). The creek is approximately 4.5 miles long in its entirety; however, it is only above ground for approximately 1.4 miles (Sowers 1993, Google Earth Pro 2015). At its closest, the creek is located approximately 3,700 feet northwest of the site, where it

flows southwest along 34th Avenue and enters an underground canal before the intersection with Foothill Boulevard (Sowers 1993, Google Earth Pro 2015). The creek then flows due south in the underground canal until it discharges into the San Leandro Bay (Google Earth Pro 2015, Sowers 1993). According to EBMUD, the creek is not a source of water for the East Bay service area (EBMUD 2011).

6.3.3 San Francisco Bay

San Francisco Bay (the Bay) is located approximately 3.5 miles west (downgradient) of the site (Google Earth Pro 2015). EBMUD does not currently develop or distribute desalinated water from the Bay; however, it has begun exploring the installation of one or more desalination plants as part of the Bay Area Regional Desalination Project (BARDP) led in conjunction with Contra Costa Water District (CCWD), San Francisco Public Utilities Commission (SFPUC), Santa Clara Valley Water District (SCVWD), and the Alameda County Flood Control and Water Conservation District – Zone 7 (EBMUD 2011). Under the BARDP, one or more regional desalination plants will be established in order to supply desalinated water to the San Francisco Bay Area (EBMUD 2011). A feasibility study for the BARDP was completed in 2007 and concluded that the project was technically feasible (EBMUD 2011). A pilot study was conducted in 2009 at the East Contra Costa site - the Mallard Slough Pump Station - and the five water districts continue to develop plans for the project (EBMUD 2011; BARDP 2015.).

6.3.4 Tidal Canal and San Leandro Bay

The Tidal Canal is located approximately one mile southwest (downgradient) of the site, and San Leandro Bay is located approximately 1.1 miles south of the site (Google Earth Pro 2015). The Tidal Canal runs between San Leandro Bay and the San Francisco Bay, separating Alameda Island from the East Bay mainland (Google Earth Pro 2015). As noted above, water from the San Francisco Bay - including the Tidal Canal and San Leandro Bay - are not currently used as a source of drinking water.

6.4 Beneficial Uses

Existing beneficial uses of groundwater at the site include municipal and domestic supply (Geotracker 2015). However, available resources indicate that native groundwater in the East Bay Plain Groundwater Basin is not currently used as a source of water for the EBMUD service area (EBMUD 2011, City of Oakland Public Works Agency 2015).

6.5 Local Water Supply

The City of Oakland water supply is provided by EBMUD, which acquires about 90 percent (%) of the water that it supplies to the East Bay Area from the Mokelumne River watershed (EBMUD 2011). EBMUD's water rights allow for it to channel approximately 325 million gallons of water per day (MGD) from the Mokelumne River watershed to the East Bay service area, subject to other water use priorities and other factors (EBMUD 2011). Water from the Mokelumne River watershed that is eventually transported to Oakland is first stored in the Pardee Reservoir; it is then transported through the 65- to 87-inch-wide Mokelumne Aqueducts to the Orinda water treatment plant (WTP) in Orinda (EBMUD 2011, EBMUD 2015a, EBMUD 2015b). From the Orinda WTP, the water is transported by gravity method to the lower elevations of Oakland, including the Site (EBMUD 2015b). Water intended for use in Oakland may be stored in Oakland's Central Reservoir before use (EBMUD 2015a).

EBMUD's secondary source of drinking water is local runoff from the East Bay watersheds, which is determined by the amount of runoff present in the local watersheds as well as the available storage space in the existing water supply infrastructure (EBMUD 2011). On average, 15 to 25 MGD of local runoff is sent to the East Bay during years with normal rainfall, and virtually none is sent during drought years (EBMUD 2011).

7. Site Investigation Conclusions

From June 17 to June 22, 2015, ARCADIS conducted a site investigation that included the advancement of CPT/UVOST borings, and the collection of soil and groundwater samples at the site. The purpose of the recent sampling was to collect data necessary to fill data gaps existing at the site in order to evaluate the extent of potential residual separate-phase hydrocarbons (SPH); and the extent of the plume in the downgradient direction and soil and groundwater near the waste-oil underground storage tank (WO UST).

The soil and groundwater samples collected from soil borings B-1 and B-3 through B-7 did not contain concentrations of COCs above their respective screening levels with the exception of MTBE in the groundwater sample collected from B-7. The detected concentration of MTBE (6.2 µg/L) was marginally above the SF-RWQCB ESL, but did not exceed that for the evaluation of potential vapor intrusion. These results indicate that the COC-affected groundwater plume is defined and does not significantly extend downgradient from the site beyond Foothill Boulevard.

8. Site Condition Assessment Relative to the Low-Threat Closure Policy

On August 17, 2012, the LTC Policy issued by the SWRCB was adopted by the Office of Administrative Law. This policy outlines eight General Criteria to assess whether sites are candidates for low-threat case closure and three categories of Media-Specific Criteria that also must be met. Current site conditions provided herein are evaluated against the corresponding General Criteria and Media-Specific Criteria. Based on this evaluation, ARCADIS concludes that the Site meets the General and Media-Specific Criteria requirements for low-threat case closure.

8.1 Evaluation of LTC General Criteria

This section evaluates the site conditions related to each of the eight General Criteria.

8.1.1 Criteria A – The unauthorized release is located within the service area of a public water system - YES

As stated above in Section 6.5, the City of Oakland water supply is provided by EBMUD.

8.1.2 Criteria B – The unauthorized release consists only of petroleum - YES

Soil and groundwater impacts occurred as the apparent result of a super unleaded gasoline product leak from UST and dispensing infrastructure which was removed in September 1990 (BAI 2008). COCs at the site include GRO, BTEX, and MTBE. Non-petroleum impacts or releases have not been documented at the site.

8.1.3 Criteria C – The unauthorized ("primary") release from the UST system has been stopped - YES

All site USTs and associated conveyance piping were replaced in September 1990 (BAI 2008).

8.1.4 Criteria D – Free product has been removed to the maximum extent practicable - YES

Available groundwater monitoring data indicates that measurable SPH was last observed at the Site in March 2015 at MW-5 (0.01 ft). The presence of SPH is intermittent, indicated by the absence of SPH during groundwater monitoring activities

conducted in March 2014 when groundwater levels were similar, and was last detected in onsite wells MW-5, MW-10, and MW-12 in March 2013 (ARCADIS 2015).

Dual-phase extraction (DPE) activities conducted in July 2012, and baildown activities were conducted from September 2012 through March 2013 to remove drainable SPH to the extent practicable (ARCADIS 2013b). The DPE test successfully dewatered all extraction wells (MW-5, MW-10 through MW-12) and removed approximately 240 pounds (lbs) of VOCs (ARCADIS 2013b). The radius of influence (ROI) from extraction activities was estimated at approximately 29-55 feet based on depth to water measurements at MW-7, indicating that the SPH affected area in the southwest corner of the site was effectively remediated using DPE (ARCADIS 2013b).

Baildown activities were subsequently conducted from September 2012 to March 2013 at MW-5, MW-10 and MW-12 to remove SPH released from pore space due to hydraulic influence of DPE. Coarse-grained soil is present in greater abundance at the southwest corner of the site and can potentially serve as a pathway for SPH to nearby monitoring wells. Additional baildown activities have not been conducted since 2013 based on limited to no recharge of SPH at MW-5, MW-10, and MW-12, indicating that SPH has been removed to the maximum extent practicable. The limited recharge at MW-5 (0.01 feet) indicates that although SPH may be mobile within the current footprint, the overall footprint of SPH is decreasing in size. Further details on the SPH footprint and mobility of SPH are discussed in Section 8.2.1.2.

8.1.5 Criteria E – A conceptual site model that assesses the nature, extent, and mobility of the release has been developed - YES

An updated site conceptual model that includes a comprehensive site assessment history, regional and site-specific geology and hydrogeology, review of the soil and groundwater conditions at the Site, and evaluation of human health exposure from site-related COPCs was presented in the *ACEH Low Threat Closure Policy Checklist and Site Conceptual Model*, dated June 28, 2013 (ARCADIS 2013a) and is further updated with the data presented in this document.

8.1.6 Criteria F – Secondary source has been removed to the extent practicable - YES

The LTC Policy defines a “secondary source” as petroleum-impacted soil or groundwater located at or immediately beneath the point of release from the primary source. The original unauthorized release was stopped and the causative UST was removed from the site. Portions of the petroleum-affected soil and groundwater have

been removed from the site, which likely removed the secondary source beneath the point of release from the primary source, including:

- In September 1990, approximately 1,950 cubic yards of soil were excavated as a result of the removal of the former USTs and conveyance piping (BAI 2008);
- The groundwater extraction treatment system (GWETS) operated from February 1994 to December 1995 removed approximately 344,650 gallons of groundwater.
- Individual dual-phase extraction (DPE) tests were conducted at MW-5, MW-10, MW-11, and MW-12, with extraction events ranging from approximately 10 to 12 hours each (BAI 2009). A total of approximately 91 lbs of GRO and 0.30 lbs of benzene were removed during extraction activities.
- From July 17 through July 30, 2012, ARCADIS conducted a DPE test simultaneously on MW-5, MW-10, MW-11 and MW-12. A total of approximately 240 lbs of VOCs were removed during extraction activities. The DPE test was shut down following 5 days of decreasing mass removal rates.
- Baildown activities conducted from September 2012 through March 2013 at MW-5, MW-10 and MW-12 removed a total of approximately 13 gallons of SPH/water mixture, which brings the total SPH/water mixture removed from the site to approximately 187 gallons, since baildown activities began at MW-5 in 1998. (BAI 2008; ARCADIS 2013b).

8.1.7 Criteria G – Soil and groundwater have been tested for methyl tert-butyl ether and results reported in accordance with Health and Safety Code Section 25296.15 - YES

MTBE has been analyzed in groundwater samples collected from site monitoring wells since at least July 1993. MTBE analysis has generally been completed by EPA Method 8260B.

MTBE has been analyzed in soil samples since at least March 2009, when monitoring wells MW-10 through MW-12 were installed. MTBE analysis has been completed by EPA Method 8260B.

8.1.8 Criteria H – Nuisance as defined by Water Code Section 13050 does not exist at the site - YES

No nuisance exists at the Site, as defined by Water Code Section 13050. Site conditions and the treatment and disposal of site wastes are not injurious to health, are not indecent or offensive to the senses, and do not obstruct free use of property or interfere with the comfortable enjoyment of life or property. Site conditions and the treatment and disposal of site wastes do not affect an entire community or neighborhood or any considerable number of persons. Site impacts are restricted to the subsurface and are present in a limited area that does not adversely affect the community at large.

8.2 Evaluation of LTC: Media-Specific Criteria

This section evaluates the site conditions related to each of the three categories of Media-Specific Criteria.

8.2.1 Groundwater

Groundwater at the site does not currently pose a risk to existing or anticipated future beneficial uses of groundwater and meets the groundwater-specific criteria outlined in the LTC Policy (SWRCB 2012b). The LTC Policy states that "the contaminant plume that exceeds water quality objectives must be stable or decreasing in areal extent, and meet all of the additional characteristics of one of the five classes of sites."

8.2.1.1 Plume Stability

According to the *Technical Justification for Groundwater Media-Specific Criteria* (SWRCB 2012a), plume stability can be demonstrated in two ways:

1. "Routinely observed non-detect values for groundwater parameters in down-gradient wells"
2. "Stable or decreasing concentration levels in down-gradient wells."

Analytical results from grab groundwater samples collected at B-6 and B-7 did not exceed the SF-RWQCB's drinking water screening levels, with the exception of MTBE (6.2 µg/L), which marginally exceeded the screening level of 5 µg/L. The presence of MTBE is likely the result of an MTBE plume extending northeast into Foothill Boulevard from the Chevron Service Station (Appendix E). Concentrations of COCs in C-10,

located at Chevron Service Station 90076 and adjacent to B-6, have not exceeded SF-RWQCB's screening levels since September 2011. Groundwater analytical results indicate the groundwater plume does not extend past Foothill Boulevard.

8.2.1.2 Additional Groundwater-Specific Criteria

As described in the LTC Policy (SWRCB 2012b), a site can meet the groundwater media-specific criteria through one of five main classes. The property owner does not want a deed restriction therefore this Site falls into *Class 5.* However, with the exception of the localized SPH the site meets the following criteria.

2a. The contaminant plume that exceeds water quality objectives is less than 250 feet in length

To determine the classification of groundwater impacts, the length of the plume exceeding water quality objectives (SF-RWQCB ESLs) for each of the current site constituents of potential concern (COPCs) was measured using the most recent groundwater monitoring results and analytical results from grab groundwater sampling activities (Figure 9):

- The GRO plume exceeding 100 µg/L is approximately 125 feet long.
- The benzene plume exceeding 1 µg/L is approximately 100 feet long.
- The MTBE plume exceeding 5 µg/L is approximately 85 feet long.

2c. The nearest existing water supply well or surface water body is greater than 1,000 feet from the defined plume boundary.

As described in General Criteria (A), no active water supply wells were identified within a 2,000 foot radius of the Site.

The nearest surface water feature was identified as Peralta Creek, which is located approximately 3,700 feet to the northwest and cross-gradient from the Site. The nearest surface water body downgradient from the Site is San Francisco Bay, located approximately 3.5 miles west of the Site. Existing groundwater impacts at the Site do not present a risk to the nearest surface water bodies.

2d. The dissolved concentration of benzene is less than 3,000 µg/L, the dissolved concentration of MTBE is less than 1,000 µg/L.

Current benzene and MTBE concentrations are below 3,000 µg/L and 1,000 µg/L, respectively, in groundwater samples collected from site groundwater monitoring wells during the most recent groundwater monitoring event and from the most recent grab groundwater sampling activities. Results indicate the maximum benzene and MTBE concentrations in groundwater samples collected from groundwater monitoring wells and grab groundwater samples were were 130 µg/L (MW-11) and 17 µg/L (MW-4), respectively (ARCADIS 2015).

Although historical concentrations of benzene have exceeded 3,000 µg/L at MW-10 and MW-12, with the last known exceedances occurring in February 2011 and March 2010, respectively, decreasing concentrations in nearby wells (MW-3 and MW-11) indicate a stable and/or shrinking groundwater plume. Hydrographs with concentration trends in selected wells currently included in the semi-annual groundwater monitoring schedule (MW-4, MW-6, MW-7, MW-11) are shown in Figures 10 through 13. The groundwater monitoring data range for the hydrographs is selected based on the beginning of remediation activities (baildown activities from MW-5 in 1998) or the first sampling conducted at the well if the latter occurred after 1998. Decreasing GRO concentrations are observed in MW-4 and MW-11, and decreasing benzene concentrations are observed in MW-7 and MW-11. Decreasing MTBE concentrations are observed in MW-4 and MW-6. GRO and benzene were removed from the list of compounds analyzed at MW-6 in the first quarter of 2013 due to consecutive non-detections since the first quarter of 2003.

Free Product

SPH is typically discussed in terms of mobility and recoverability. The extent of SPH mobility (immobile [SPH locked in pore spaces], mobile [capable of moving laterally and vertically within existing SPH body footprint], or migrating [moving outside existing SPH body footprint – therefore expanding footprint]) is typically analyzed through the presence of SPH in monitoring wells, SPH pore velocity calculations (when transmissivity values are available), and a dissolved-phase plume stability statistical analysis. If SPH is determined to be mobile or migrating, recoverability is subsequently analyzed through an SPH baildown test, manual skimming test, long-term pneumatic skimming test, or a long-term DPE test.

Based on the available data, which includes SPH baildown activities and a short-term DPE test, SPH is mobile at the pore scale as it has historically accumulated in onsite monitoring wells. SPH mobility at the pore scale is dependent upon the presence of a sufficient driving head and hydraulic gradient; therefore, accumulation of SPH in monitoring wells is not a stand-alone indicator of LNAPL mobility. Approximately 0.01 feet of SPH accumulated in MW-5 between March 2013 and March 2015. This indicates that mobility is decreasing with time.

Based on the little to no recovery observed between the pre-bailing SPH thicknesses and departure LNAPL thicknesses as shown in Table 4 of the *Results of DPE Pilot Test and SPH Removal report*, qualitatively, SPH at this site is not recoverable (ARCADIS 2013b). Additionally, the UVOST results at B-6 and B-7 indicate that SPH is not migrating offsite.

In conclusion, SPH is mobile within the pore scale as it is able to accumulate in monitoring wells. SPH is qualitatively not recoverable based on observed gauging data following SPH manual removal events, and the SPH footprint is not migrating. Between March 2013 and March 2015, SPH detections decreased from three monitoring wells in (MW-5, MW-10, and MW-12) to a single well (MW-5) with a detection of 0.01 feet. This indicates that the SPH mobility is decreasing with time and the SPH footprint is decreasing in size.

8.2.2 Petroleum Vapor Intrusion to Indoor Air

As discussed previously in the *ACEH Low Threat Closure Policy Checklist and Site Conceptual Model*, the Site is considered a low-threat for vapor intrusion to indoor air since exposure to petroleum vapors associated with historical fuel system releases are comparatively insignificant relative to exposure from small surface spills and fugitive vapor releases that typically occur at active fueling facilities.

8.2.3 Direct Contact and Outdoor Air Exposure

As described in the LTC Policy (SWRCB 2012b), sites will meet the Media-Specific Criteria for direct contact with contaminated soil or inhalation of contaminants volatilized to outdoor air if:

1. The maximum concentrations of COCs in soil are less than or equal to those listed in Table 1 of the LTC Policy (SWRCB 2012b).

2. A site-specific risk assessment shows that COCs present in soil will not adversely affect human health.
3. Exposure to COCs is mitigated through engineering controls.

Site data were evaluated with respect to the Commercial/Industrial screening levels presented in *Table 1 - Concentrations of Petroleum Constituents in Soil That Will Have No Significant Risk of Adversely Affecting Human Health* of the LTC Policy (SWRCB 2012b). Utility Worker screening levels were used as necessary when evaluation was required for hypothetical receptors.

Based on an evaluation of site data, the Site qualifies as a low-threat petroleum UST site under the Direct Contact and Outdoor Air Exposure criteria. The requirements of the soil 0 to 5 feet bgs and 5 to 10 feet bgs scenarios and Volatilization to Outdoor Air scenario are fulfilled. An evaluation with respect to the LTC Policy Direct Contact and Outdoor Air Exposure Criteria is provided below.

- Because the site is completely covered with a building and pavement, there is little or no potential for direct human contact with site soils or for off-site wind dispersion of soils. Therefore, direct contact exposure pathways (i.e., ingestion, dermal contact, and inhalation of particulates) with soils are considered incomplete or insignificant and are expected to remain the same in the future.

As shown in the table below, the Site meets the *Direct Contact and Outdoor Air Exposure* criteria as maximum concentrations of COPCs in soil are less than LTC Policy soil screening levels:

Chemical	Commercial/Industrial				Utility Worker	
	0 to 5 feet bgs mg/kg		Volatilization to outdoor air (5 to 10 feet bgs) mg/kg		0 to 10 feet bgs mg/kg	
	LTC Policy Table 1	Site Maximum	LTC Policy Table 1	Site Maximum	LTC Policy Table 1	Site Maximum
Benzene	8.2	<0.0012	12	<0.042	14	<0.042
Ethylbenzene	89	<0.0012	134	38	314	38
Naphthalene	45	<0.0059	45	2.2	219	2.2
PAHs	0.68	<0.0071	NA	0.0042	4.5	0.0042

- Note: NA = Not available; PAHs = Polycyclic aromatic hydrocarbons

Given the comparison of historical maximum constituent soil concentrations and LTC Policy screening criteria, residual concentrations of petroleum hydrocarbon constituents in soil at the site are not expected to pose adverse health effects to current and future on-site commercial and utility workers based on volatilization to outdoor air and direct contact exposures.

9. Recommendations

ARCADIS respectfully requests that ACEH grant low-threat site closure because site conditions meet the General and Media-Specific Criteria established in the LTC Policy (SWRCB 2012); therefore, the site poses a low threat to human health, safety, and the environment, and satisfies the case closure requirements of Health and Safety Code Section 25296.10. In addition, case closure is consistent with Resolution 92-49, which requires that cleanup goals be met within a reasonable time frame.

ARCADIS recommends that a status of no further action be granted, and the site be granted regulatory closure. Suspension of groundwater monitoring and reporting is also recommended during the low-threat case closure evaluation process. A work plan for monitoring well destruction and decommissioning will be prepared following the case closure evaluation process and upon site closure approval from ACWD

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ARCADIS

Tables

Table 1
Soil Analytical Results

Former BP Station No. 11109
4280 Foothill Boulevard
Oakland, California

Sample ID	Sampling Depth	Date	GRO (mg/Kg)	TPHmo (mg/Kg)	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Total Xylenes (mg/Kg)	MTBE (mg/Kg)	Naphthalene (mg/Kg)	Cadmium (mg/Kg)	Chromium (mg/Kg)	Lead (mg/Kg)	Nickel (mg/Kg)	Zinc (mg/Kg)	Acetone (mg/Kg)
EPA Analytical Method			**8015B**		**8260B**						**6010B**					
Commercial direct exposure screening level[1]			**4,000**	**100,000**	**3.7**	**4,900**	**24**	**2,600**	**200**	**15**	**1,000**	**--**	**320**	**19,000**	**310,000**	**590,000**
Construction worker direct exposure soil screening level[2]			**2,700**	**28,000**	**71**	**4,300**	**490**	**2,500**	**3,800**	**370**	**110**	**--**	**320**	**6,100**	**93,000**	**240,000**
LTC Policy Commercial/Industrial [0-5 ft bgs][3]			**--**	**--**	**8**	**--**	**89**	**--**	**--**	**45**	**--**	**--**	**--**	**--**	**--**	**--**
LTC Policy Commercial/Industrial [5-10 ft bgs][3]			**--**	**--**	**12**	**--**	**134**	**--**	**--**	**45**	**--**	**--**	**--**	**--**	**--**	**--**
LTC Policy Utility Worker [0-10 ft bgs][3]			**--**	**--**	**14**	**--**	**314**	**--**	**--**	**219**	**--**	**--**	**--**	**--**	**--**	**--**
B-1	3.5 - 4	6/19/2015	<0.034	1.8	<0.00027	<0.00043	<0.0003	<0.0007	0.00049 J	<0.001	<0.07	25	5.5	38	27	0.033 J
	6.5 - 7.5	6/19/2015	<0.034	<0.27	<0.00027	<0.00043	<0.0003	<0.0007	<0.00021	<0.001	0.088	32	6.5	52	34	0.017
	10 - 11	6/19/2015	<0.034	<0.27	<0.00027	<0.00043	<0.0003	<0.0007	<0.00021	<0.001	0.11	32	5.4	130	68	<0.010
B-3	4.5 - 5	6/17/2015	--	700	--	--	--	--	--	--	--	--	--	--	--	--
	6.5 - 7.5	6/17/2015	--	840	--	--	--	--	--	--	--	--	--	--	--	--
B-5	4.5 - 5	6/17/2015	--	5.4	--	--	--	--	--	--	--	--	--	--	--	--
	6.5 - 7	6/18/2015	--	22	--	--	--	--	--	--	--	--	--	--	--	--
	8.5 - 9	6/18/2015	--	1,600	--	--	--	--	--	--	--	--	--	--	--	--
B-8	5 - 5.5	06/17/2015	0.61	--	<0.00027	<0.00043	<0.0003	<0.0007	<0.00021	<0.001	--	--	25	--	--	--
	8 - 8.5	06/17/2015	370	--	<0.0092	<0.015	1.0	4.2	<0.0072	2.2	--	--	28	--	--	--
	13.5 - 14	06/17/2015	130	--	0.11 J	<0.073	0.098 J	<0.12	<0.036	0.35 J	--	--	21	--	--	--

Notes:
[1]Direct Exposure Soil Screening Levels (Table K-2 Commerical/Industrial Worker Exposure Scenario, Final Screening Level, SF-RWQCB [Interim Final – December 2013]).
[2]Direct Exposure Soil Screening Levels (Table K-3 , Construction/Trench Worker Exposure Scenario, Final Screening Level, SF-RWQCB [Interim Final – December 2013]).
[3]Low-Threat Underground Storage Tank Closure Policy (Table 1, Concentrations of Petroleum Consitituents in Soil That will Have No Significant Risk of Adversely Affecting Human Health, CA-SWRCB, 2012).
EPA = Environmental Protection Agency
GRO = Gasoline range organics
TPHmo = Total petroleum hydrocarbons as motor oil
MTBE = Methyl tert-butyl ether
mg/Kg = Milligram per Kilogram
-- = Not Analyzed/Not Applicable
< = Analyte was not detected above the specified method detection limit
J = Estimated value

Table 2
Grab Groundwater Analytical Results

Former BP Station No. 11109
4280 Foothill Boulevard
Oakland, California

Well ID	Depth	Date	GRO (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Naphthalene (µg/L)	Benzo (a) Anthracene (µg/L)	Benzo (b) Fluoranthene (µg/L)	Benzo (g,h,i) Perylene (µg/L)	Phenanthrene (µg/L)	2-methylnaphthalene (µg/L)
EPA Analytical Method			**8015B**	**8260B**						**8270C**				
Drinking water screening levels[1] (µg/L)			**100**	**1.0**	**150**	**300**	**1,800**	**5**	**6.1**	**0.056**	**0.056**	**0.13**	**408**	**10**
B-1	25	6/19/2015	<32	<0.33	<0.78	<0.38	<1.1	3.1	<1.0	0.022 J	0.010 J	0.0075 J	0.031 J	0.022 J
B-6	13	6/19/2015	<32	<0.33	<0.78	<0.38	<1.1	0.43 J	--	--	--	--	--	--
B-7	14	6/22/2015	<32	<0.33	<0.78	<0.38	<1.1	6.2	--	--	--	--	--	--
EB-1	--	6/19/2015	<32	<0.33	<0.78	<0.38	<1.1	<0.37	<1.0	0.01 J	0.0048 J	0.0045 J	0.011 J	<0.0090

Notes:

[1] Drinking water screening levels (Table F-3 Summary of Drinking Water Screening Levels, *Final Screening Level MCL Priority* , SF-RWQCB [Interim Final – December 2013]).

GRO = Gasoline Range Organics

MTBE = Methyl tert-butyl ether

EPA = Environmental Protection Agency

µg/L = Micrograms per liter

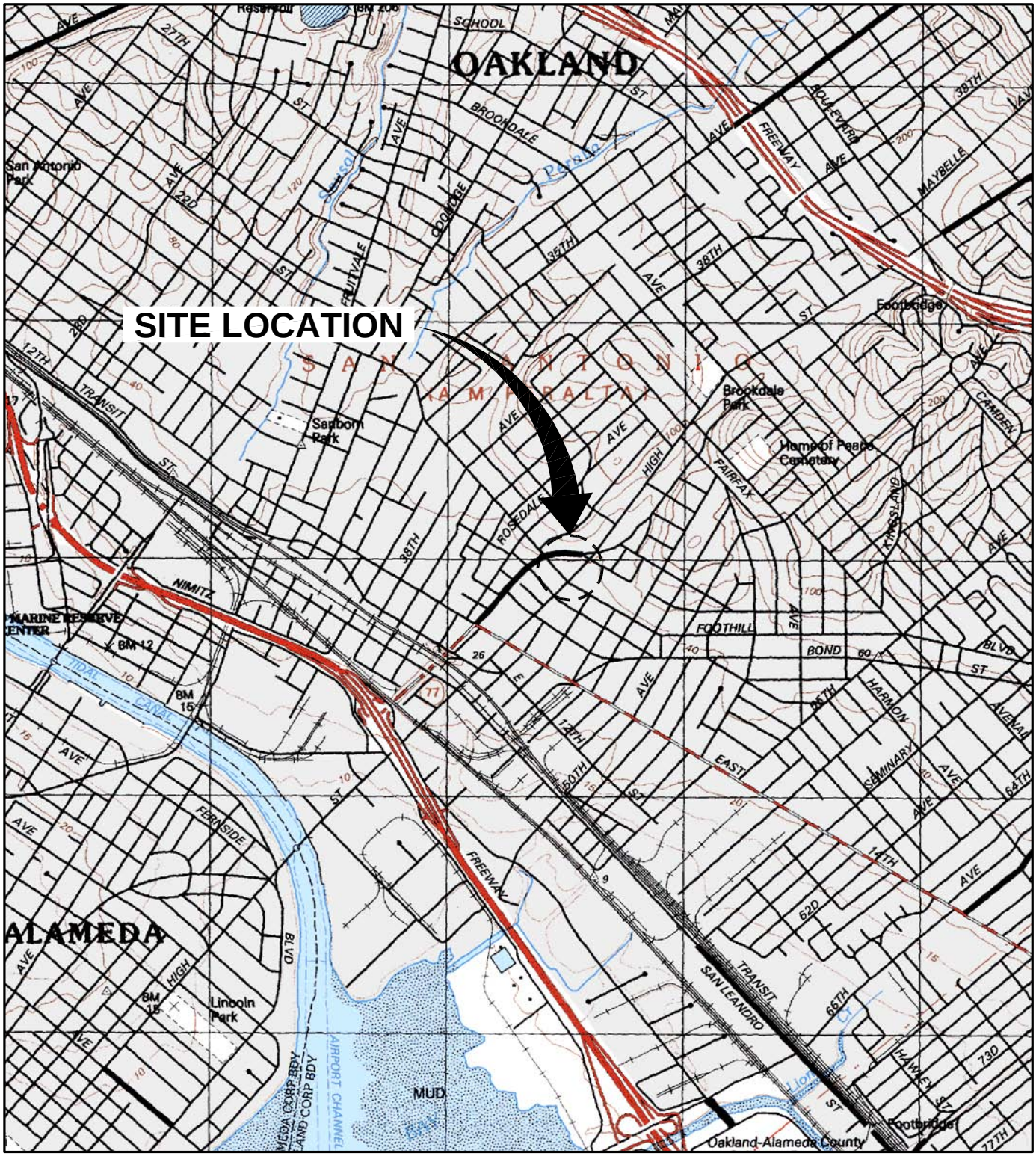
< = Analyte was not detected above the specified method detection limit

-- = Not analyzed/ Not applicable

J = Estimated value

ARCADIS

Figures



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD.,OAKLAND WEST, CA., 1993, AND SAN LEANDRO, 1993, REVISED 1996.

0 2000' 4000'

Approximate Scale: 1 in. = 2000 ft.

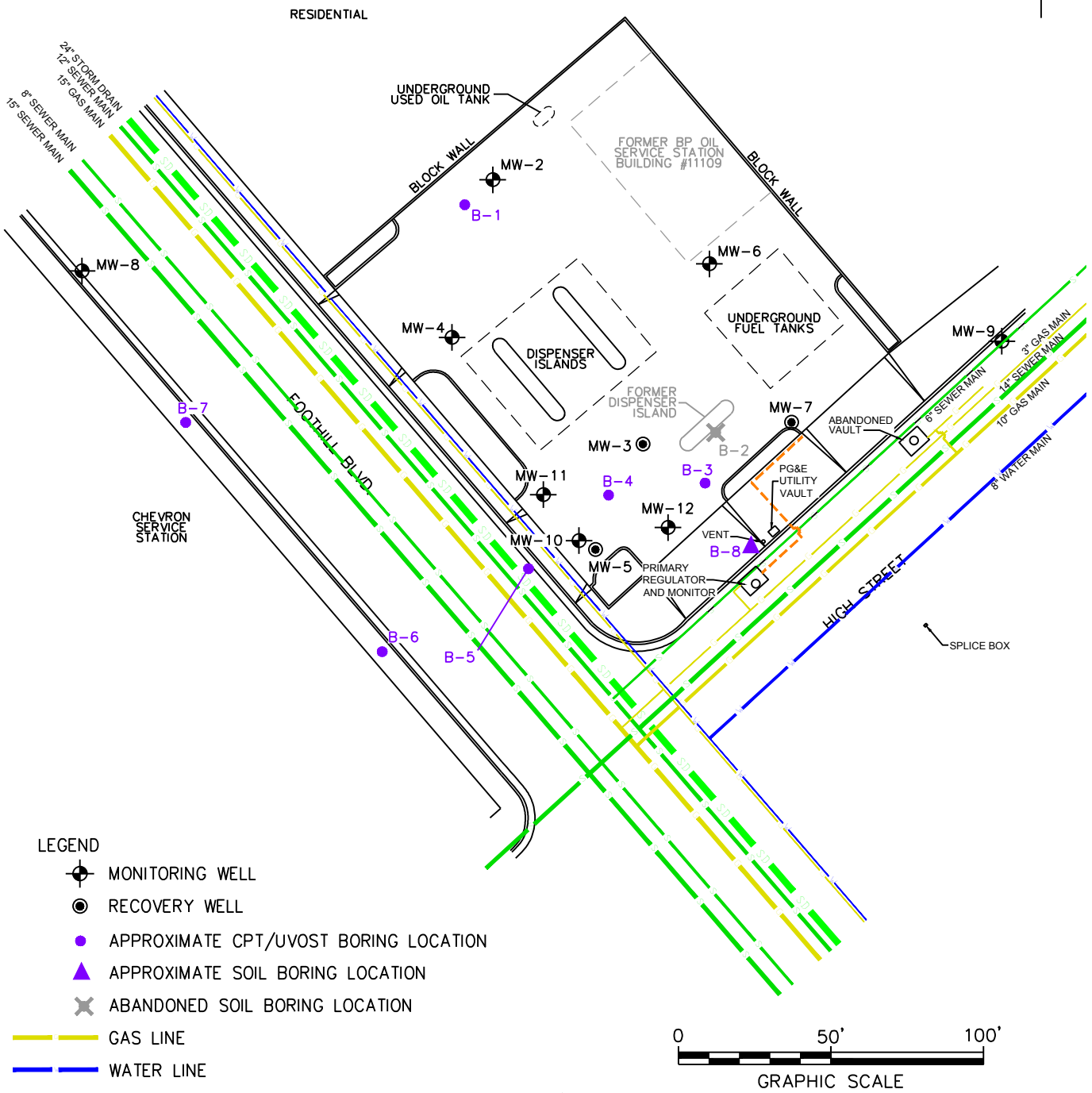
FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

SITE LOCATION MAP

ARCADIS

FIGURE
1

CITY: PETALUMA, CA DIV/GROUP: ENV DB: J. HARRIS LD:--- PIC:--- PM: H. PHILLIPS TM: B. McKENNA LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Petaluma\ACTIVITY\09BPNAC106\E0000\GP09BPNAC106-1.dwg LAYOUT: 1SAVED: 11/20/2009 8:30 AM ACADVER: 17.1S (LMS TECH) PAGESETUP: SETUP1PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 11/20/2009 8:40 AM BY: HARRIS, JESSICA
XREFS: IMAGES: GP09BX01.tif GP09BX03.tiff PROJECTNAME: ---



NOTE: BASE MAP PROVIDED BY BROADBENT & ASSOCIATES, INC., DATED 10/26/2009, REFERENCE NO. 06-88-646, AT A SCALE OF 1"=40'.

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

SITE PLAN SHOWING BORING LOCATIONS

ARCADIS

FIGURE
2

CITY: EMERYVILLE, CA DIV/GROUP: ENVCAD DB: J. HARRIS, A. REYES, J. HARRIS
G:\ENVCAD\Emeryville\ACTIGP09BPNA\C106\N0000\Soil and GGW\DWG\GP09BPNAC106-B02.dwg LAYOUT: 2 SAVED: 8/20/2015 3:45 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 8/20/2015 3:49 PM BY: REYES, ALEC

CITY:(Reqd) DIV/GROUP:(Reqd) DB:(Reqd) LD:(Opt) PIC:(Opt) PM:(Reqd) TM:(Opt) LYR:(Opt)ON=*;OFF=*REF*
G:\ENVCAD\Emeryville\ACT\GP09BPNA\C106\C0000\CrossSections\DWG\GP09BPNAC106-V01.dwg LAYOUT: 1 SAVED: 7/24/2015 3:15 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 7/24/2015 4:04 PM BY: REYES, ALEC
XREFS: IMAGES: PROJECTNAME: ----
GP09BPNAC106-X01 08-11109_Cross_Section_Transects_Page_3.jpg

RESIDENTIAL

UNDERGROUND USED OIL TANK

BLOCK WALL

FORMER BP OIL SERVICE STATION BUILDING #11109

BLOCK WALL

B

MW-2

B-1*

MW-8

MW-6

MW-4

DISPENSER ISLANDS

UNDERGROUND FUEL TANKS

MW-9

A

B-7*

FOOTHILL BLVD.

MW-7

MW-3

B-3*

MW-11

B-4*

MW-10

MW-12

B-8*

B-5*

MW-5

RESIDENTIAL

PRIVACY FENCE

HIGH STREET

B-6*

CAR WASH

UNDERGROUND FUEL TANKS

DISPENSER ISLANDS/ CANOPY

CHEVRON SERVICE STATION

A'

C-2

TREE LINE

HIGH STREET

S-6

B'

FORMER SHELL SERVICE STATION

0 40' 80'

GRAPHIC SCALE

LEGEND

- MONITORING WELL
- RECOVERY WELL
- CPT/UVOST BORING LOCATION
- SOIL BORING LOCATION
- FORMER SHELL STATION MONITORING WELL LOCATION
- CHEVRON SERVICE STATION MONITORING WELL LOCATION
- LOCATION IS APPROXIMATE
- A — A' CROSS SECTION TRANSECT LOCATION

NOTE: BASE MAP PROVIDED BY BROADBENT & ASSOCIATES, INC., DATED 10/26/2009, REFERENCE NO. 06-88-646, AT A SCALE OF 1"=40'.

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

CROSS SECTION TRANSECTS

ARCADIS

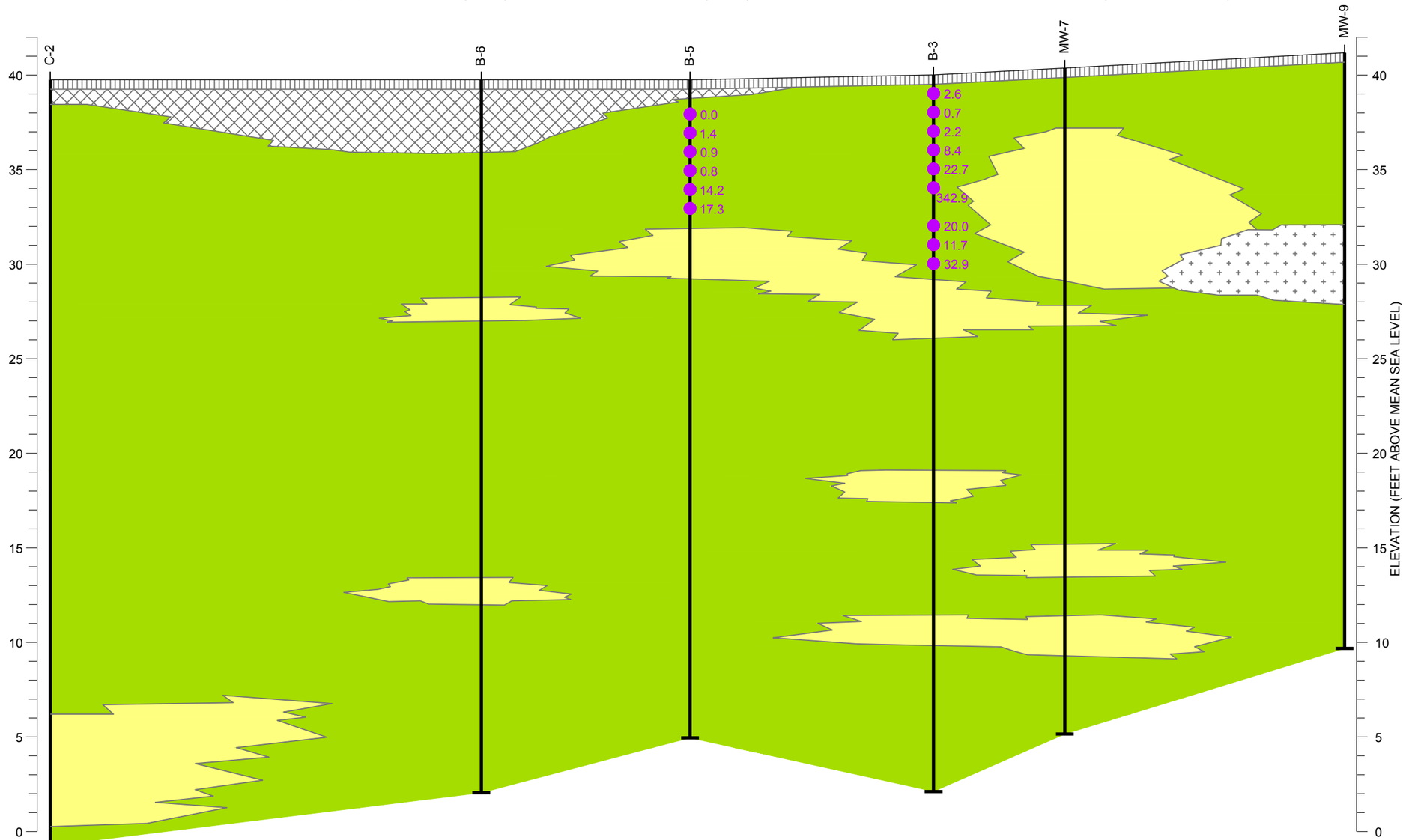
FIGURE
3

A' SOUTHWEST

A NORTHEAST

SIDEWALK | DRIVEWAY

CHEVRON #90076
GEOTRACKER ID #TO600100339 | FOOTHILL BLVD. | PARKING LOT | DRIVEWAY | SIDEWALK



LEGEND:

- DESIGNATION
- GROUND SURFACE
- GROUNDWATER MONITORING WELL OR SOIL BORING
- PID READING (PPM)
- STRATIGRAPHIC BOUNDARY
- BOTTOM OF BORING
- FILL
- GRAVEL (GC)
- CLAYEY SAND, SAND-CLAY MIXTURES, SILTY SANDS, SAND-SILT MIXTURES
- FINE GRAINED SEDIMENTS - SILTS AND CLAYS (ML, CL)
- ASPHALT

VERTICAL SCALE 6' / 0
VERTICAL SCALE EXAGGERATION = 5X
0 30'
HORIZONTAL SCALE

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

CROSS SECTION A-A'

ARCADIS

FIGURE **4**

B

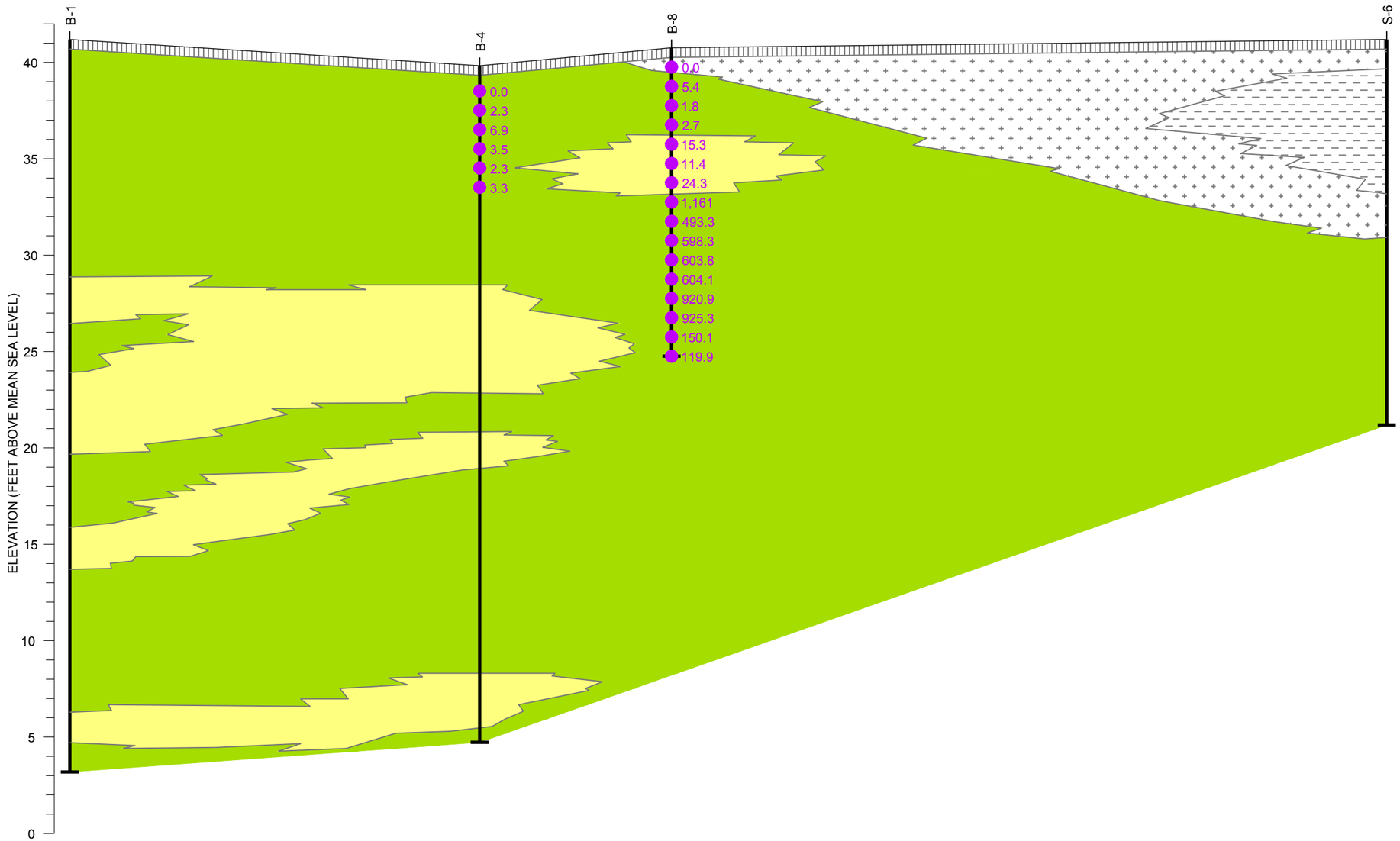
NORTHWEST

B'

SOUTHEAST

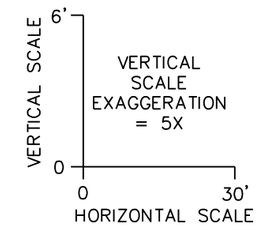
PARKING LOT | DISPENSER ISLAND | PARKING LOT | DRIVEWAY | HIGH STREET | FOOTHILL BOULEVARD | SIDEWALK | COMMERCIAL BUILDING | SHELL #13-5686

GEOTRACKER ID #TO600101065



LEGEND:

- B-4 — DESIGNATION
- GROUND SURFACE
- GROUNDWATER MONITORING WELL OR SOIL BORING
- 2.3 — PID READING (PPM)
- STRATIGRAPHIC BOUNDARY
- BOTTOM OF BORING GRAVEL (GC)
- CLAYEY SAND, SAND-CLAY MIXTURES, SILTY SANDS, SAND-SILT MIXTURES
- SILTY GRAVEL
- FINE GRAINED SEDIMENTS - SILTS AND CLAYS (ML, CL)
- ASPHALT



FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

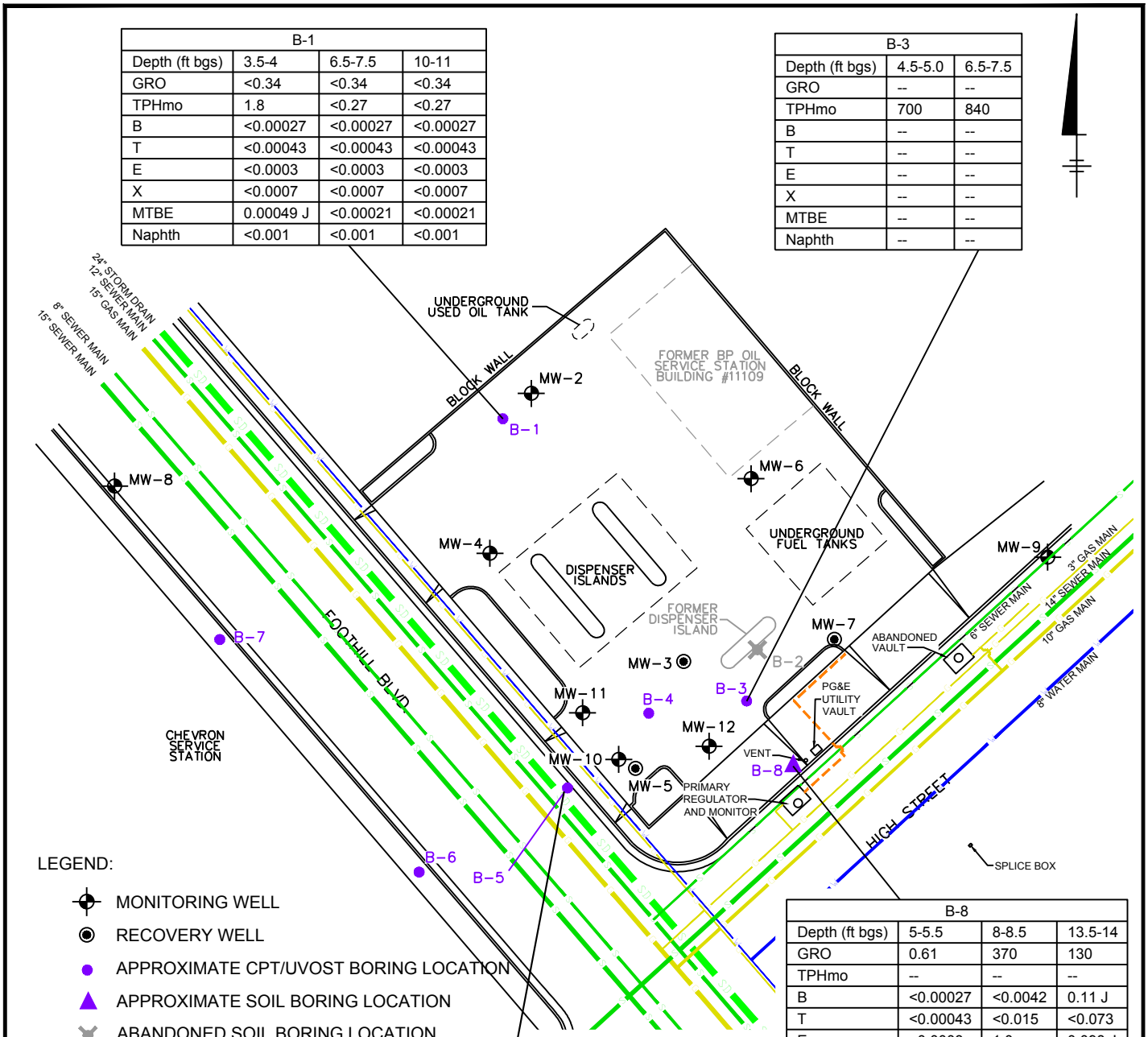
CROSS SECTION B-B'

ARCADIS

FIGURE **5**

B-1			
Depth (ft bgs)	3.5-4	6.5-7.5	10-11
GRO	<0.34	<0.34	<0.34
TPHmo	1.8	<0.27	<0.27
B	<0.00027	<0.00027	<0.00027
T	<0.00043	<0.00043	<0.00043
E	<0.0003	<0.0003	<0.0003
X	<0.0007	<0.0007	<0.0007
MTBE	0.00049 J	<0.00021	<0.00021
Naphth	<0.001	<0.001	<0.001

B-3		
Depth (ft bgs)	4.5-5.0	6.5-7.5
GRO	--	--
TPHmo	700	840
B	--	--
T	--	--
E	--	--
X	--	--
MTBE	--	--
Naphth	--	--



B-8			
Depth (ft bgs)	5-5.5	8-8.5	13.5-14
GRO	0.61	370	130
TPHmo	--	--	--
B	<0.00027	<0.0042	0.11 J
T	<0.00043	<0.015	<0.073
E	<0.0003	1.0	0.098 J
X	<0.0007	4.2	<0.12
MTBE	<0.00021	<0.0072	<0.036
Naphth	<0.001	2.2	0.35 J

B-5			
Depth (ft bgs)	4.5-5.0	6.5-7.0	8.5-9.0
GRO	--	--	--
TPHmo	5.4	22	1,600
B	--	--	--
T	--	--	--
E	--	--	--
X	--	--	--
MTBE		--	--
Naphth	--	--	--

LEGEND:

- MONITORING WELL
- RECOVERY WELL
- APPROXIMATE CPT/UVOST BORING LOCATION
- APPROXIMATE SOIL BORING LOCATION
- ABANDONED SOIL BORING LOCATION
- GAS LINE
- WATER LINE
- SEWER LINE
- STORM DRAIN
- PG&E UTILITY TRENCH

Notes:

GRO = Gasoline range organics

TPHmo = Total petroleum hydrocarbons 95 motor oil

B = Benzene

T = Toluene

E = Ethylbenzene

X = Total Xylenes

MTBE = Methyl tert-butyl ether

Naphth = Naphthalene

ft bgs = feet below ground surface

-- = Not analyzed

< = Analyte not detected above the method detection limit

J = Estimated value

Results are shown in milligrams per kilogram (mg/kg)

50' 100'

GRAPHIC SCALE

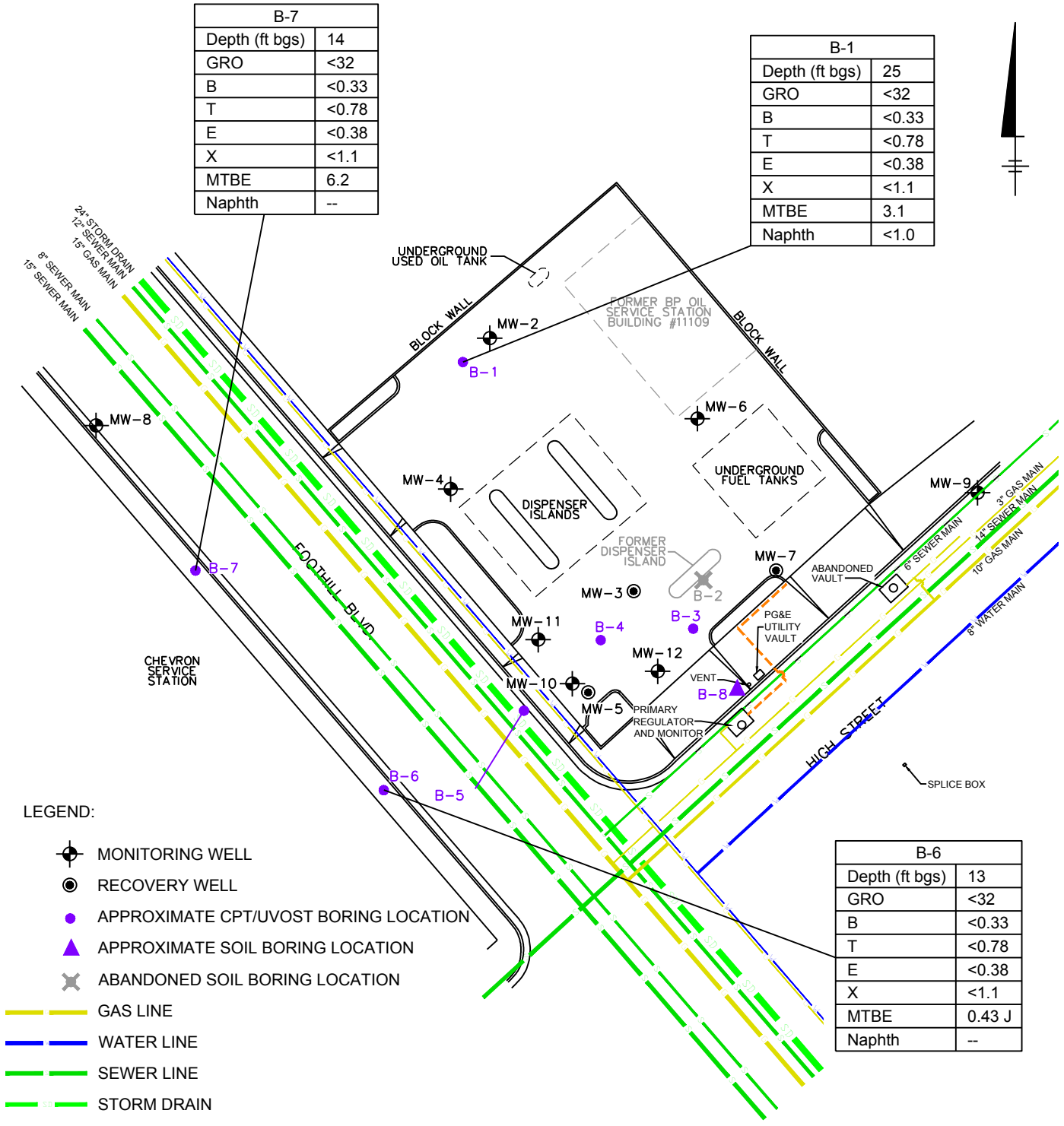
FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

SOIL ANALYTICAL RESULTS JUNE 17-22, 2015

ARCADIS

FIGURE 6

CITY: EMERYVILLE, CA DIV/GROUP: ENVCAD DB: J. HARRIS, A. REYES, J. HARRIS
G:\ENVCAD\Emeryville\ACTGP09BPNA\C106\N0000\Soil and GGWDWG\GP09BPNAC106-C06.dwg LAYOUT: 6 SAVED: 8/20/2015 3:09 PM ACADVER: 19.1S (LMS TECH) PAGESETUP: ---- PLOTSTYLETABLE: ARCADIS.CTB PLOTTED: 8/20/2015 3:33 PM BY: REYES, ALEC



Notes:

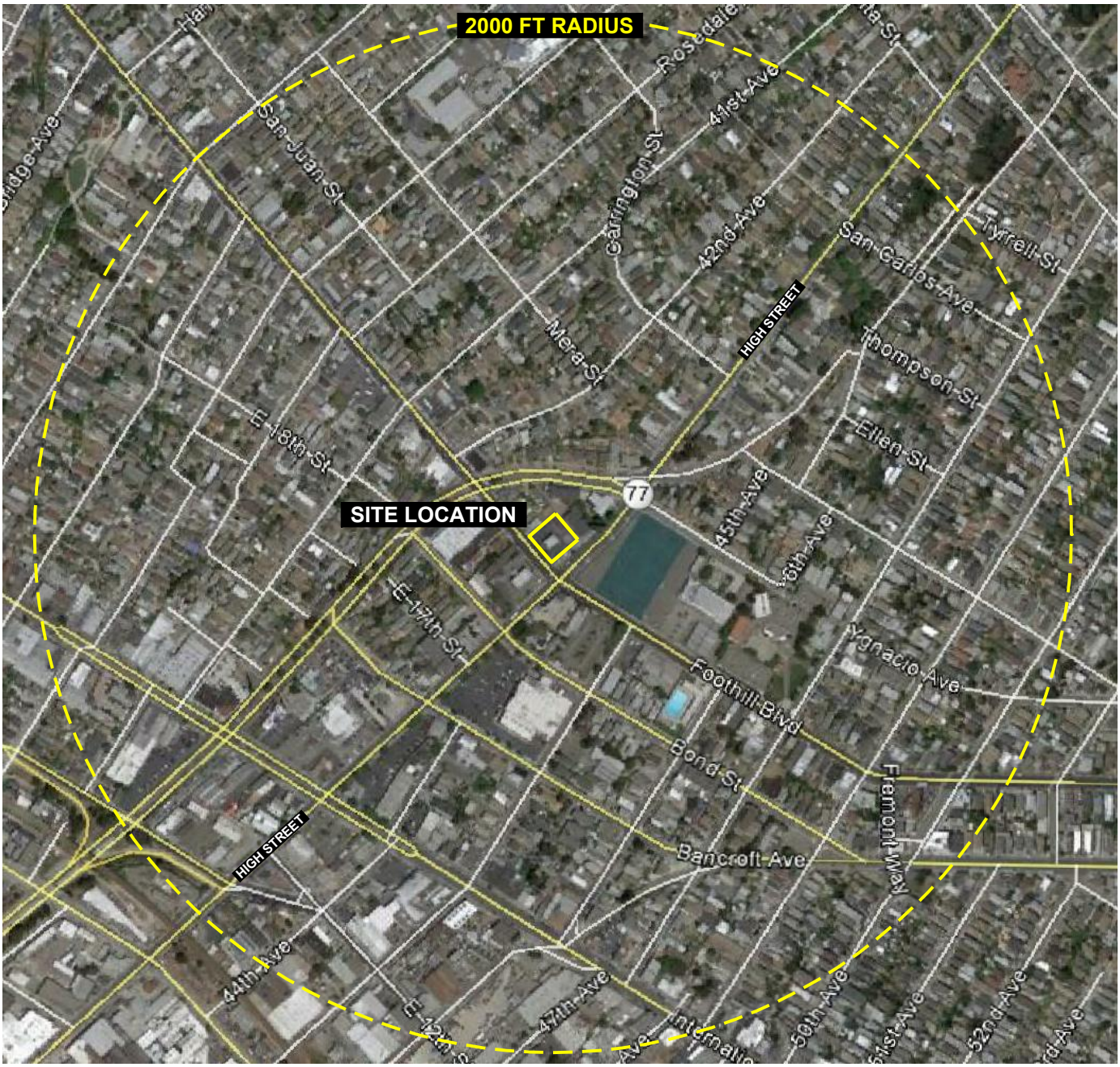
GRO = Gasoline range organics
B = Benzene
T = Toluene
E = Ethylbenzene
X = Total Xylenes
MTBE = Methyl tert-butyl ether
Naphth = Naphthalene
ft bgs= feet below ground surface
-- = Not analyzed
< = Analyte not detected above the method detection limit
J = Estimated value
Results are shown in micrograms per liter (µg/L)

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

GRAB GROUNDWATER ANALYTICAL RESULTS
JUNE 17-22, 2015

ARCADIS

FIGURE
7



SOURCE: GOOGLE EARTH PRO

0 600' 1200'

Approximate Scale: 1 in. = 600 ft.

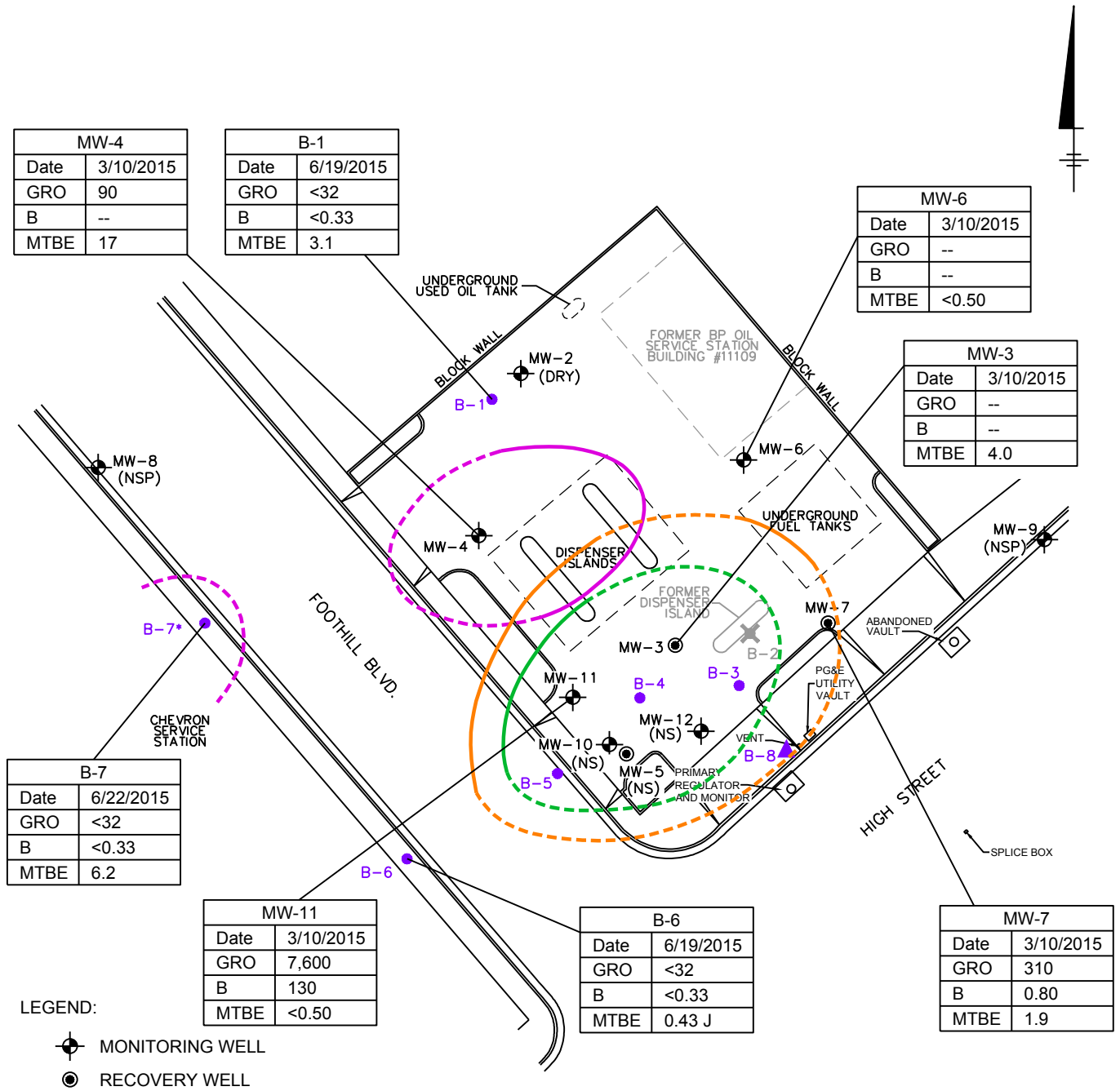
NOTE:
NO DRINKING WATER, INDUSTRIAL WATER, OR MUNICIPAL WATER SUPPLY WELLS WERE IDENTIFIED WITHIN 2,000 FEET OF THIS SITE.

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

SITE MAP SHOWING WELLS WITH A 2,000 FOOT RADIUS

ARCADIS

FIGURE
8



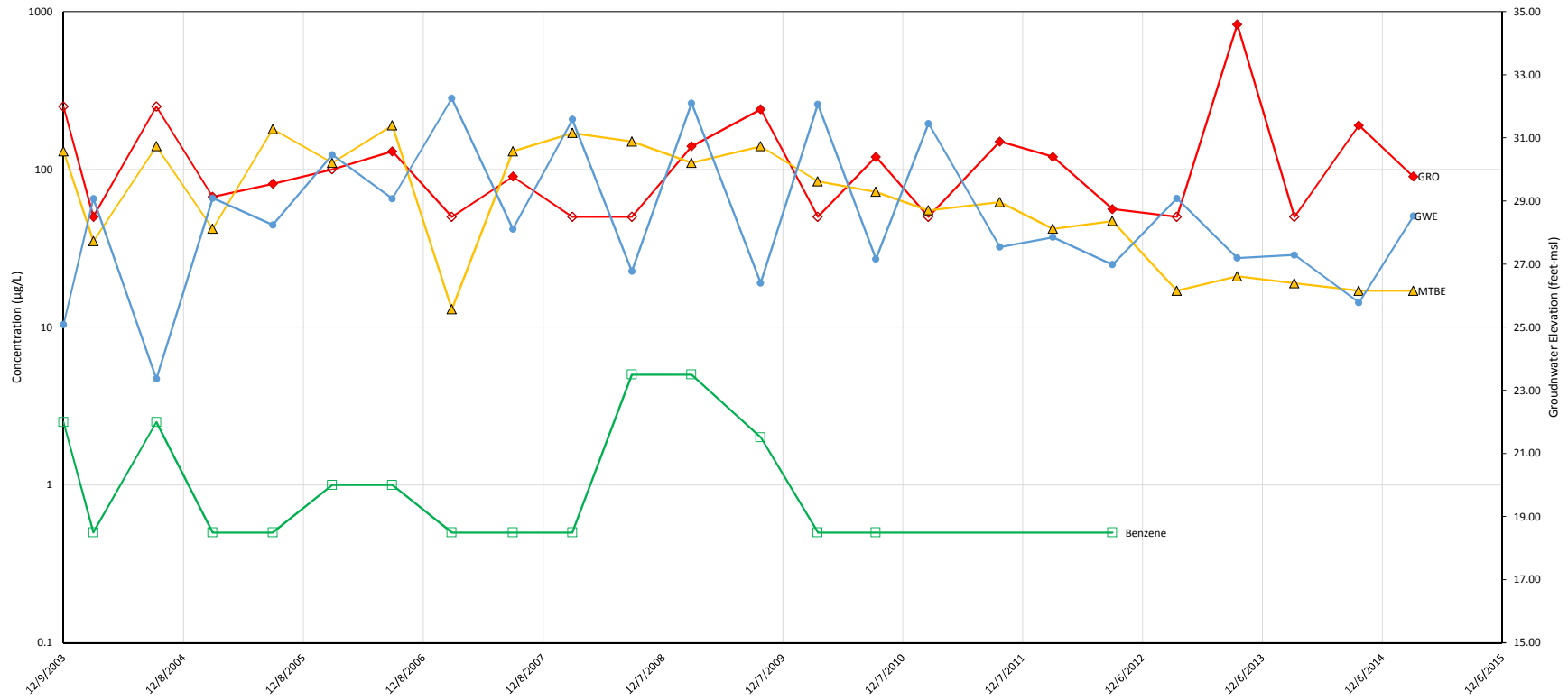
Notes:
GRO = Gasoline range organics
B = Benzene
MTBE = Methyl tert-butyl ether
J = Estimated Value
NS = Not sampled
NSP = Not sampled in accordance with groundwater sampling schedule
-- = Not analyzed in accordance with groundwater sampling schedule
< = Analyte not detected above method detection limit
Results are shown in micrograms per liter (µg/L)
Contours are dashed where inferred
Contours generated from grab ground sampling analytical results and First Quarter 2015 Semi-Annual groundwater monitoring analytical results.

FORMER BP STATION #11109
4280 FOOTHILL BOULEVARD
OAKLAND, CALIFORNIA

GRO, BENZENE, AND MTBE ISOCONCENTRATION CONTOURS

ARCADIS

FIGURE
9



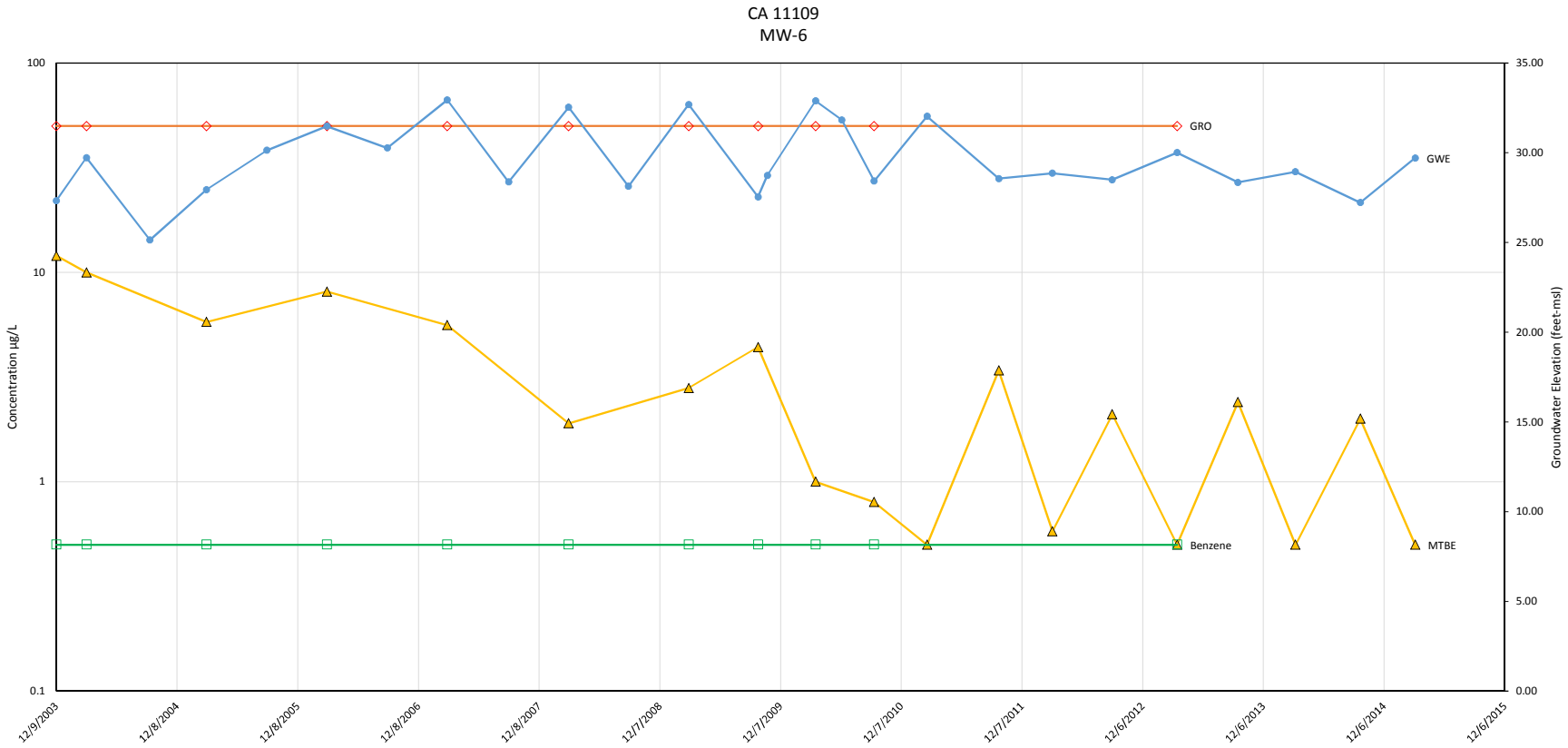
Note: Hollow symbols indicate not detected above reported detection limit
GWE = Groundwater elevation
msl = mean sea level
µg/L = micrograms per liter
GRO = Gasoline range organics
MTBE = Methyl tert-butyl ether

Former BP Station #11109
4280 Foothill Bouelvard
Oakland, California

HYDROGRAPH AND CONCENTRATION TREND FOR MONITORING WELL MW-4

ARCADIS
Infrastructure · Water · Environment · Buildings

FIGURE
10



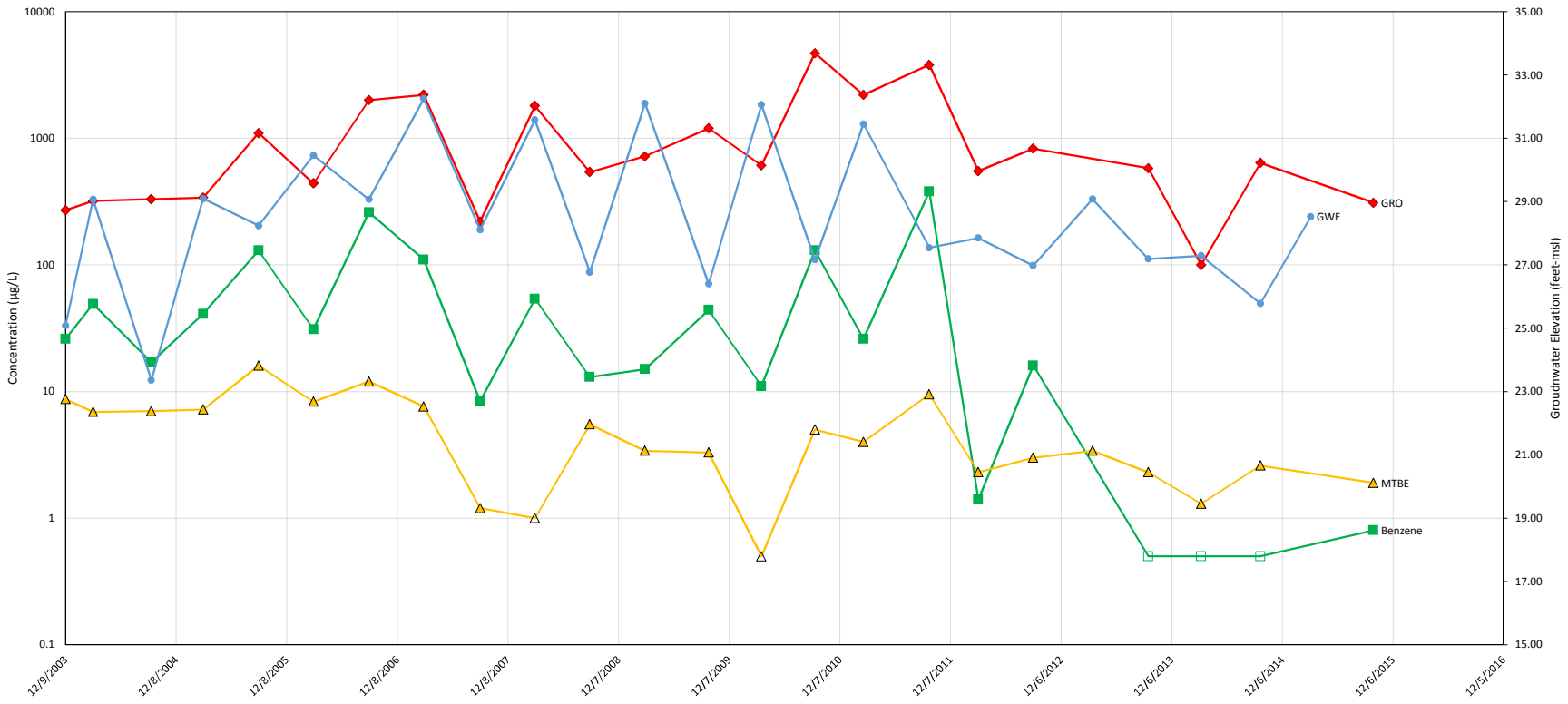
Note: Hollow symbols indicate not detected above reported detection limit
GWE = Groundwater elevation
msl = mean sea level
µg/L = micrograms per liter
GRO = Gasoline range organics
MTBE = Methyl tert-butyl ether

Former BP Station #11109
4280 Foothill Bouelvard
Oakland, California

HYDROGRAPH AND CONCENTRATION TREND FOR MONITORING WELL MW-6

ARCADIS
Infrastructure · Water · Environment · Buildings

FIGURE
11



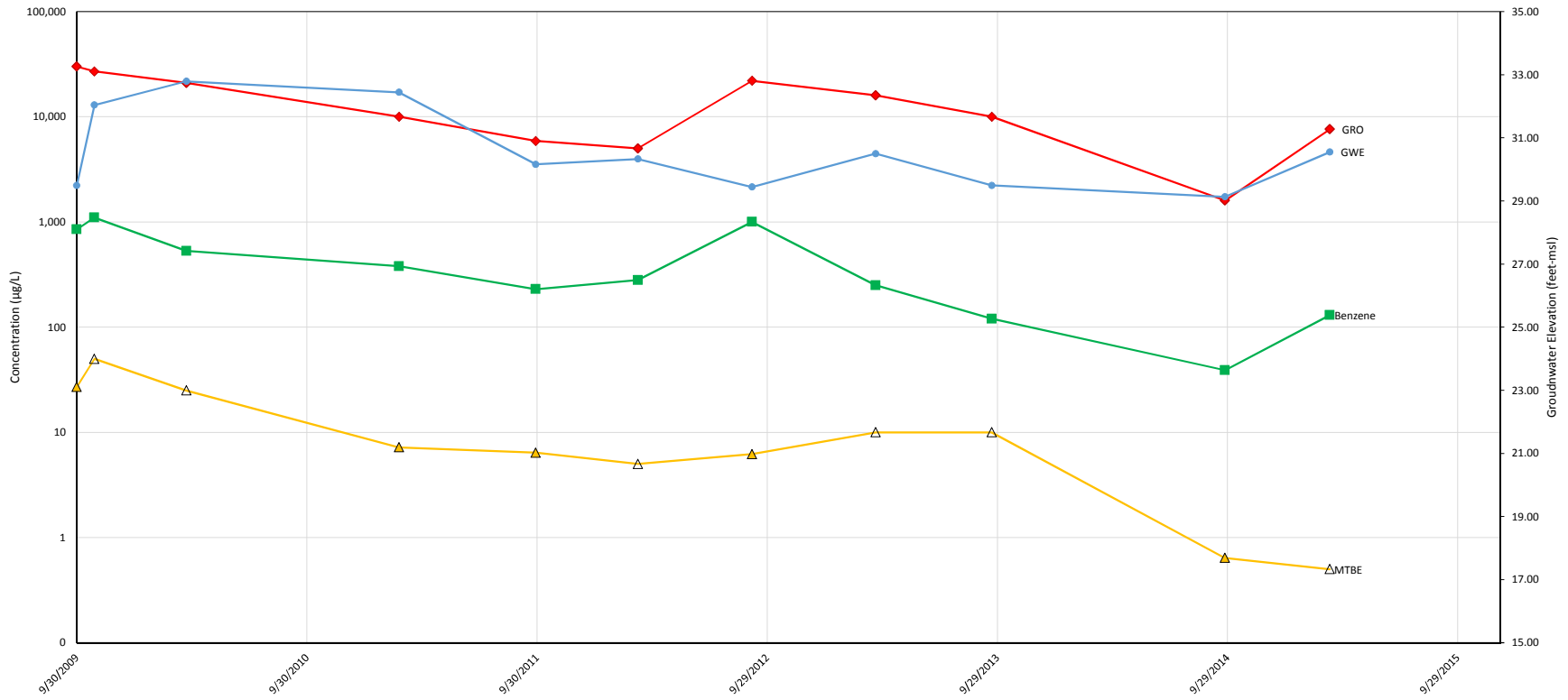
Note: Hollow symbols indicate not detected above reported detection limit
GWE = Groundwater elevation
msl = mean sea level
µg/L = micrograms per liter
GRO = Gasoline range organics
MTBE = Methyl tert-butyl ether

Former BP Station #11109
4280 Foothill Bouelvard
Oakland, California

HYDROGRAPH AND CONCENTRATION TREND FOR MONITORING WELL MW-7

ARCADIS
Infrastructure · Water · Environment · Buildings

FIGURE
12



Note: Hollow symbols indicate not detected above reported detection limit
GWE = Groundwater elevation
msl = mean sea level
µg/L = micrograms per liter
GRO = Gasoline range organics
MTBE = Methyl tert-butyl ether

Former BP Station #11109
4280 Foothill Bouelvard
Oakland, California

HYDROGRAPH AND CONCENTRATION TREND FOR MONITORING WELL MW-11

ARCADIS
Infrastructure · Water · Environment · Buildings

FIGURE
13

Appendix A

Soil Boring Logs

ARCADIS

EXPLORATORY BORING LOG

project no: GP09BPNA.C106 | date: 6/17/15 | boring number: B-3
client: BP 11109
location: 4280 Foothill Blvd, Oakland, CA
logged by: Bo Jessup
driller/helper:
page 1 of

field location of boring:

drilling method:
hole diameter:
casing diameter:
well completion data:

ground elevation: datum:

water level / time / date

boring/well construction	headspace: gastech/PID FID ppm	sample number	blows per foot or pressure in psi	depth	sample	soil group symbol (USCS)	
						Asphalt	0-6" Asphalt
	2.6			1		SC	6"-1' Clayey sand, some gravel; moist, loose, sand m-c, gravel up to 2cm, Brown 10YR 4/4
	0.7			2			1'-10' Clay, some silt, trace sand; soft, moist, Black, 2.5/N, low plasticity
	2.2		hand augered	3			
	8.4			4			@ 5' sand increases to little, very Dark Greenish Gray 10Y3/1
	33.7			5	▽		
	342.9			6		CL	@ 9' trace gravel up to .5 cm, oxidized
	NR			7			
	NR		6.5'-8' NOT Recovered	8			
	20.0						
	11.7			9			
	32.6			10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

USCS lithology; Munsell color; sorting; grain size; lith. %s; modifiers; consistency; moisture.

ARCADIS

EXPLORATORY BORING LOG

project no:	GP09BPNA.C106	date: 6/17/15	boring number: B-4
client:	BP-11109		
location:	4280 Foothill Blvd, Oakland, CA		page 1 of
logged by:	Bo Jessup		
driller/helper:			

field location of boring:

drilling method:
hole diameter:
casing diameter:
well completion data:

ground elevation: datum:

water level / time / date

boring/well construction	headspace: gastech/PID/FID ppm	sample number	blows per foot or pressure in psi	depth	sample	soil group symbol (USCS)	
						Asphalt	0'-6" Asphalt
	0.0			1		SC	6"-1' Clayey sand and gravel; soft/loose, moist, sand m-c, gravel up to 2cm, Brown 10YR 4/4
	2.3			2			
	6.9			3			1'-6.5' Clay, some silt, trace sand; soft, moist, low plasticity, Black 2.5/N
	3.5			4		CL	@3' very dark greenish gray 10Y3/1
	2.3			5			@4' trace coarse sand
	3.3			6			@5' medium stiff, greenish gray 10Y4/1, little sand f-vc, trace gravel up to 1cm
				7			
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

USCS lithology; Munsell color; sorting; grain size; lith. %s; modifiers; consistency; moisture.

ARCADIS

EXPLORATORY BORING LOG

project no: GP09BPNA.C106 date: 6/17/15 boring number: B-5
client: BP-11109
location: 4280 Foothill Blvd, Oakland, CA
logged by: Bo Jessup
driller/helper:
page 1 of

field location of boring:

drilling method:
hole diameter:
casing diameter:
well completion data:

ground elevation: datum:

water level
time
date

boring/well construction	headspace: gastech/PID/FID ppm	sample number	blows per foot or pressure in psi	depth	sample	soil group symbol (USCS)	
						Asphalt Concrete	0'-3" Asphalt
	NR			1			3"-7" Concrete
	1.4			2			7"-2' No recovery
	0.9			3			2'-6' Clay, some silt; trace sand; soft, moist, low plasticity, sand f-c, Black 2.5/N
	0.8			4		CL	@3' oxidized, dark greenish gray 10Y 4/1
	14.2			5			
	17.3			6			@5' SAA, sandy clay; greenish gray 10GY 5/1
				7		SC	@6' SAA, Clayey sand; f-c, low plasticity, moist, loose, greenish gray 10GY 5/1
				8			
				9			
				10			
				11			
				12			
				13			
				14			
				15			
				16			
				17			
				18			
				19			
				20			

USCS lithology; Munsell color; sorting; grain size; lith. %s; modifiers; consistency; moisture.

ARCADIS

EXPLORATORY BORING LOG

project no: GP09BPNA.C06 | date: | boring number: B-8
client: BP-11109
location: 4280 Foothill Blvd, Oakland, CA
logged by: Bo Jessup
driller/helper: | page 1 of

field location of boring: | drilling method: direct push
hole diameter:
casing diameter:
well completion data:

ground elevation: | datum:

water level / time / date

boring/well construction	headspace: gastech/PID/FID ppm	sample number	blows per foot or pressure in psi	depth	sample	soil group symbol (USCS)	
						concrete	0-6" Concrete
	0.0			1		SP	6"-1' Sand and gravel, trace clay; coarse, well rounded, gravel up to 2 cm, subrounded, moist, loose, Brown 10YR 4/4
	5.4			2		ML	
	1.1			3			1'-4' Silt, little sand, trace clay; low plasticity, sand f-m, trace coarse, moist, loose, Black 7.5/N
	2.7			4			
	15.3			5	0900		4'-7' Clayey sand, little gravel; f-c, gravel 0.3-1 cm, moist, soft/loose, very dark greenish gray 10Y 3/1
	11.4			6			
	24.3			7			
	1161			8	0930		@8' medium stiff, no/low plasticity, greenish gray 10 GY 5/1
	493.3			9			@13' gravel slightly more abundant, still "little"
	598.3			10		CL	
	603.8			11			
	604.1			12			
	920.9			13			
	926.3			14	1010		
	150.1			15			
	119.9			16			TD=16'
				17			
				18			
				19			
				20			

hand augered 0-6.5'

USCS lithology; Munsell color; sorting; grain size; lith. %s; modifiers; consistency; moisture.

ARCADIS

Appendix B

Drilling Permit

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: 04/02/2015 By jamesy

Permit Numbers: W2015-0281
Permits Valid from 05/01/2015 to 05/29/2015

Application Id:	1427749311417	**City of Project Site:**	Oakland
Site Location:	4280 Foothill Blvd/High St, Oakland, CA		
Project Start Date:	05/01/2015	**Completion Date:**	05/29/2015
Assigned Inspector:	Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org		

Applicant:	Arcadis - Hollis Phillips 100 Montgomery St #300, San Francisco, CA 94104	**Phone:** 415-432-6903
Property Owner:	Khalid Romana Usman 3670 Ralston Avenue, Hillsborough, CA 94010	**Phone:** 650-685-1224
Client:	Atlantic Richfield Co. Charles Carmel PO Box 1257, San Ramon, CA 94583	**Phone:** --

	Total Due:	$265.00
Receipt Number: WR2015-0160	**Total Amount Paid:**	$265.00
Payer Name : Arcadis	Paid By: CHECK	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitorinig Study - 11 Boreholes
Driller: Gregg Drilling - Lic #: 485165 - Method: other **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2015-0281	04/02/2015	07/30/2015	11	2.00 in.	35.00 ft

Specific Work Permit Conditions

1. Backfill bore hole by tremie with cement grout or cement grout/sand mixture. Upper two-three feet replaced in kind or with compacted cuttings. All cuttings remaining or unused shall be containerized and hauled off site. The containers shall be clearly labeled to the ownership of the container and labeled hazardous or non-hazardous.

2. 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.

3. 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.

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. 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.

6. 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.

7. 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.

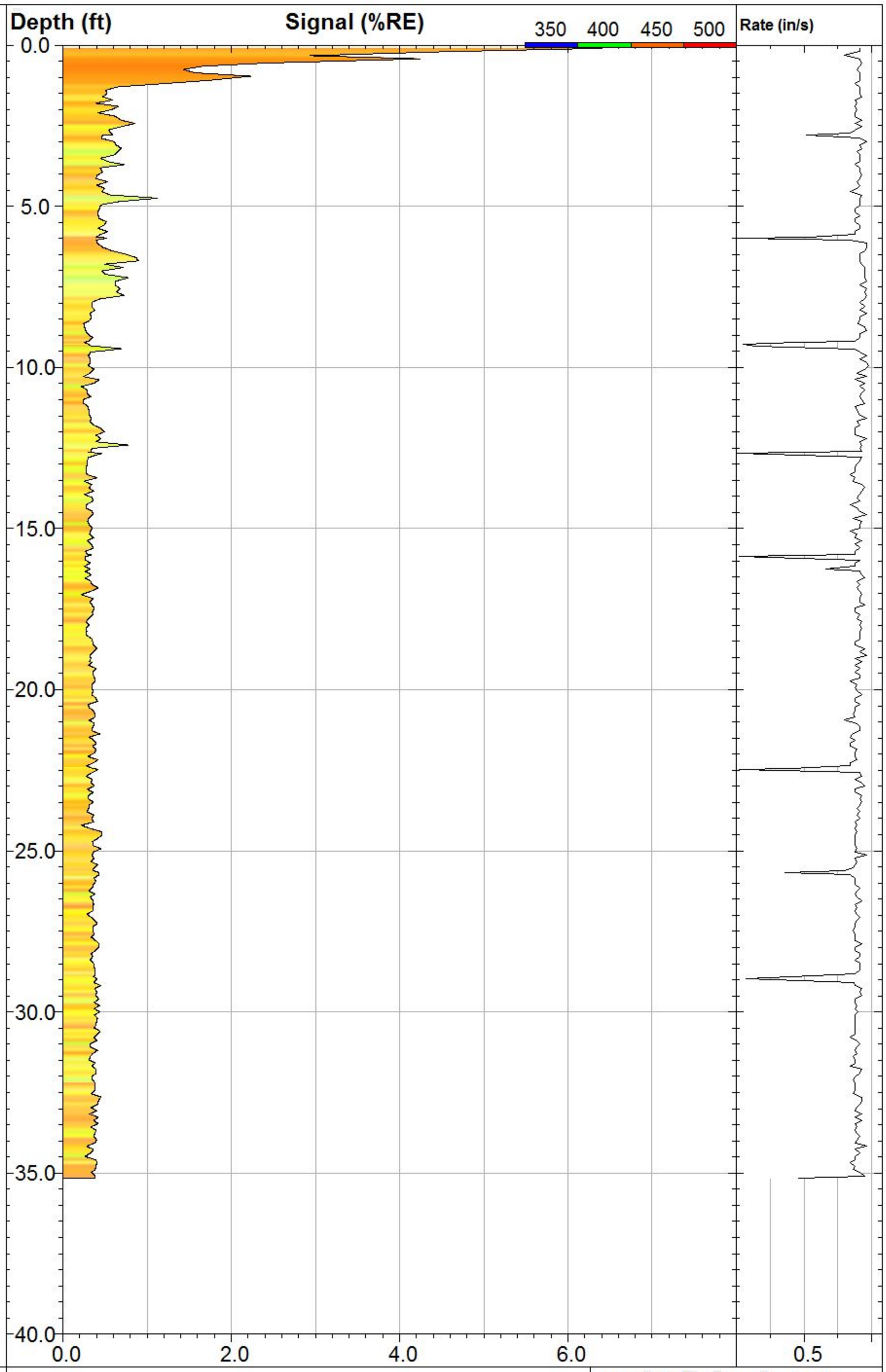
8. Permit is valid only for the purpose specified herein. No changes in construction procedures, as described on this permit application. Boreholes shall not be converted to monitoring wells, without a permit application process.

ARCADIS

Appendix C

CPT/UVOST Logs

Callouts



GREGG

B-1

UVOST By Dakota
www.DakotaTechnologies.com

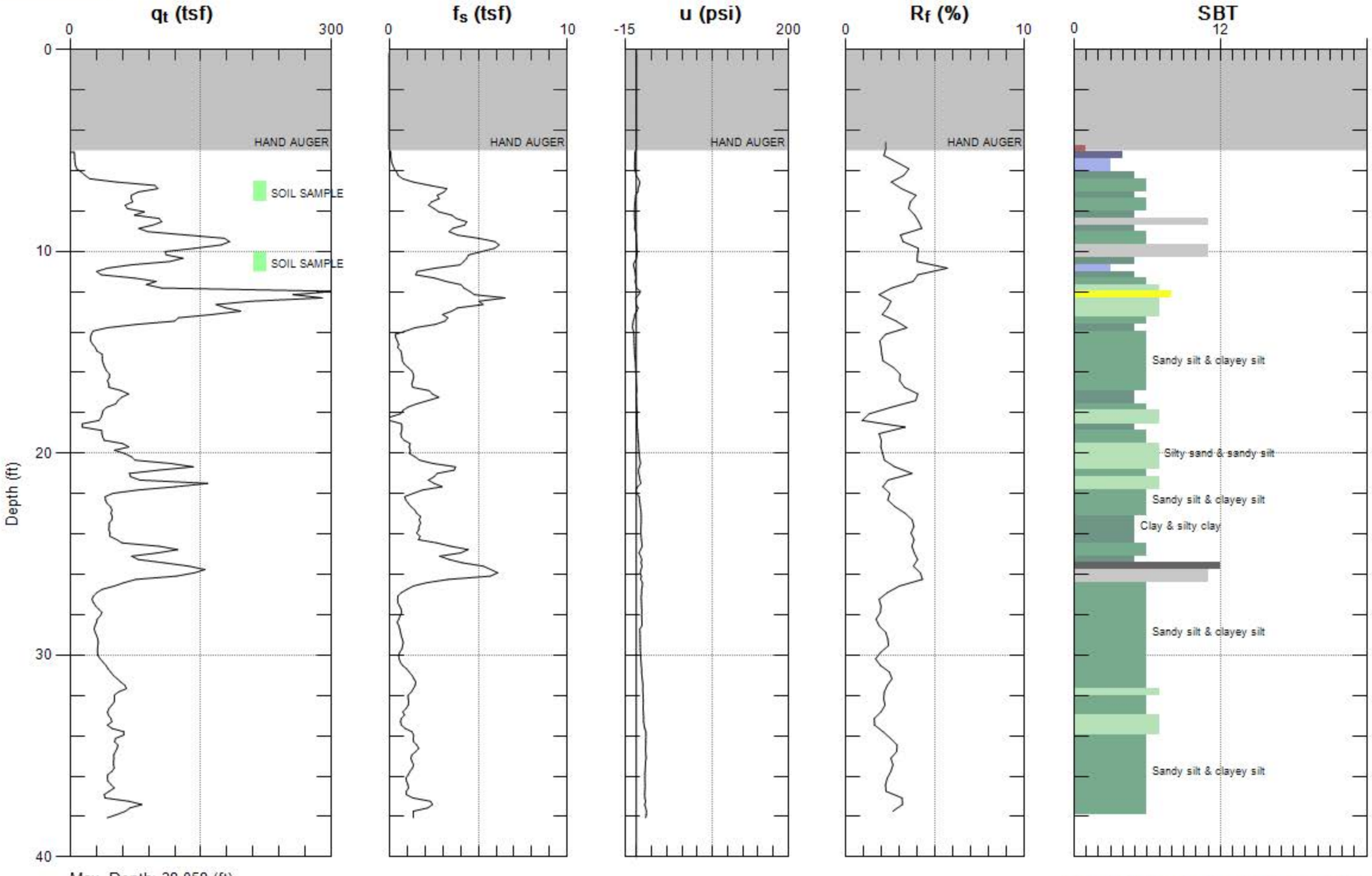
Site: **BP 11109**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **35.17 ft**
Client / Job: **Arcadis / D1150575**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **6.4 %RE @ 0.10 ft**
Operator / Unit: **Tim Patterson / UVOST10**	*Elevation:* **Unavailable**	*Date & Time:* **2015-06-19 13:25 PDT**

GREGG

ARCADIS

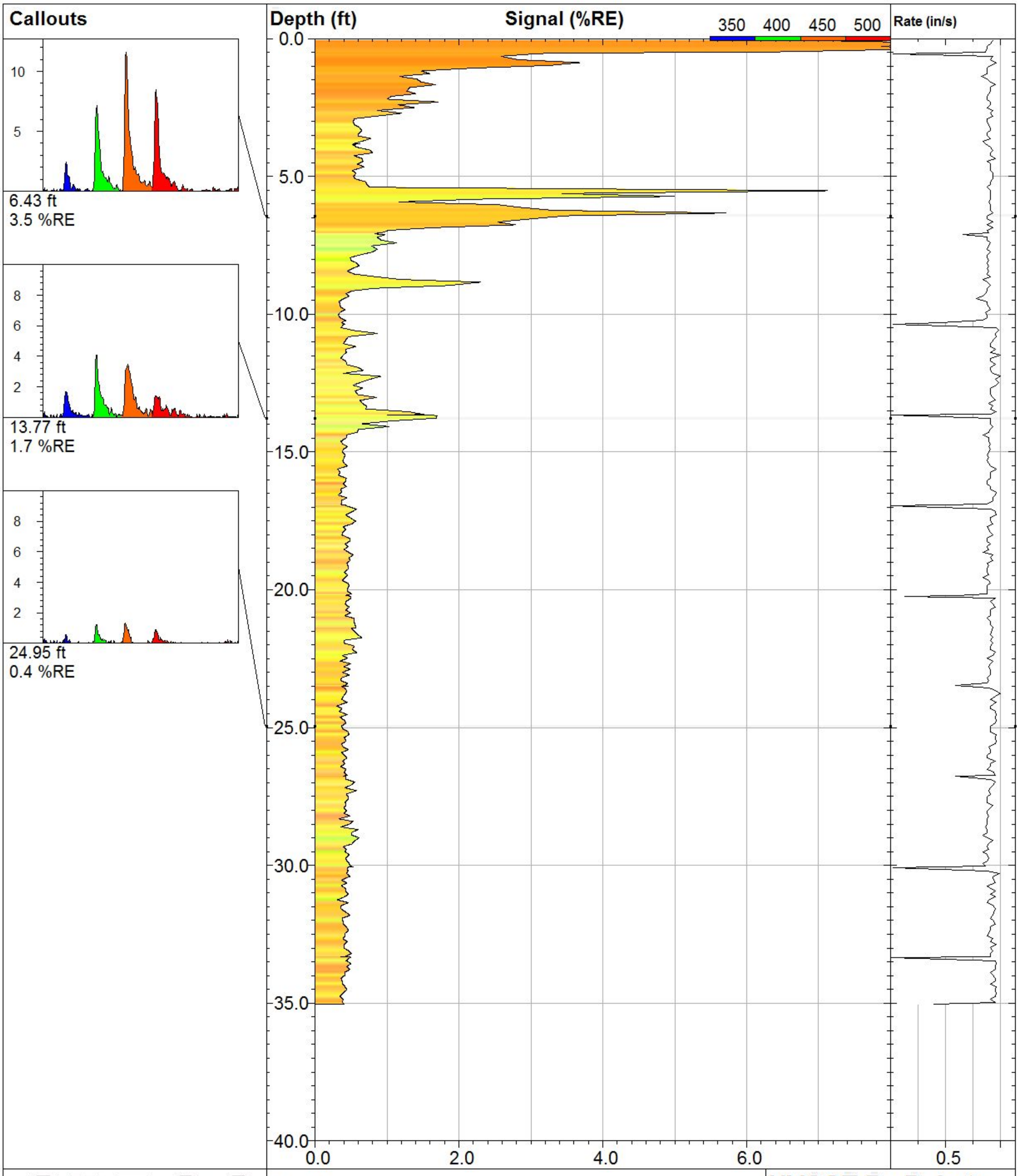
Site: BP-11109
Sounding: B-1

Engineer: B.JESSUP
Date: 6/19/2015 01:28



Max. Depth: 38.058 (ft)
Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



GREGG

B-3

UVOST By Dakota
www.DakotaTechnologies.com

Site: **BP 11109**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **35.05 ft**
Client / Job: **Arcadis / D1150575**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **9.1 %RE @ 0.18 ft**
Operator / Unit: **D. Tidwellitterson / UVOST**	*Elevation:* **Unavailable**	*Date & Time:* **2015-06-19 15:27 PDT**

GREGG

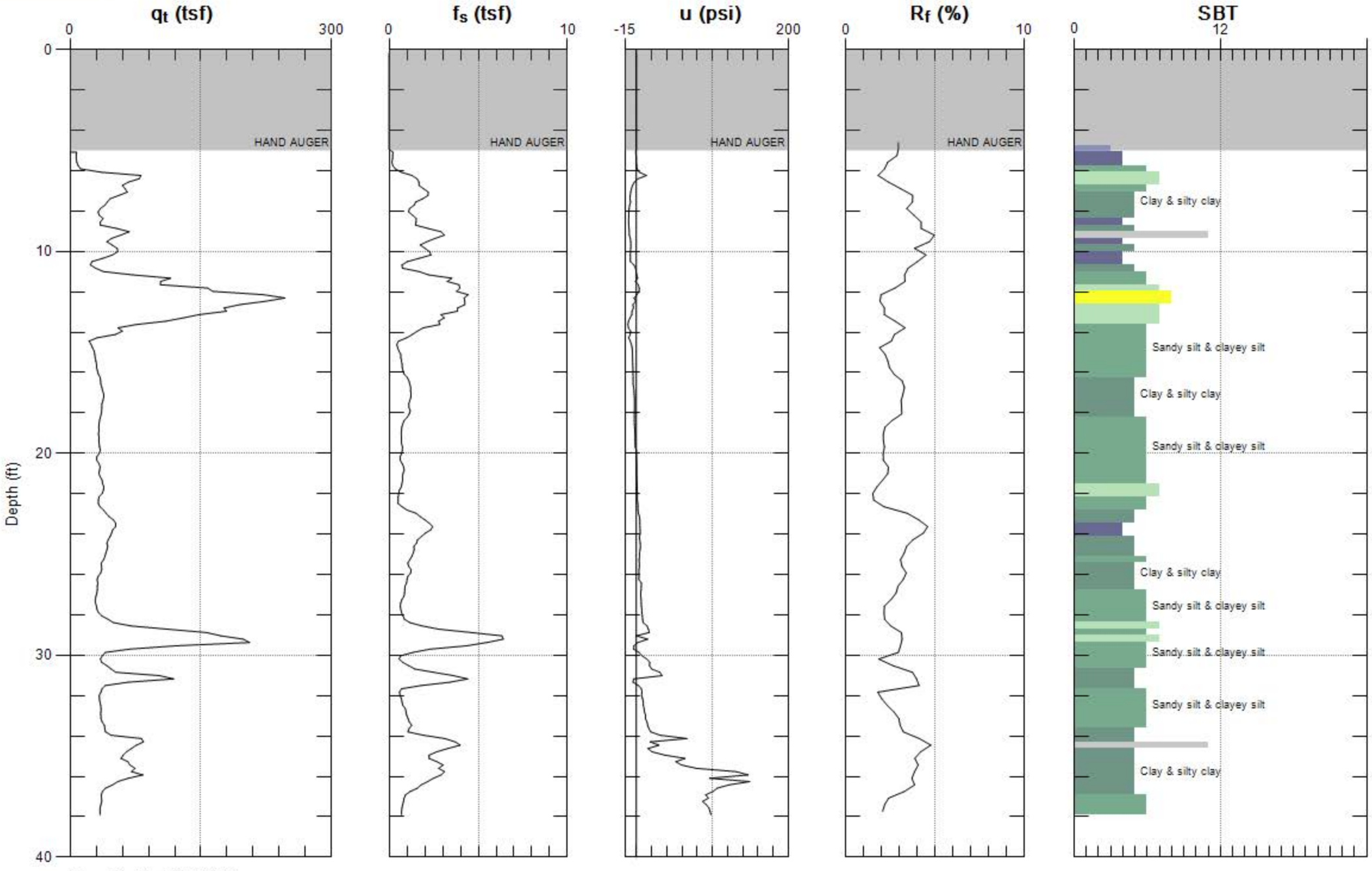
ARCADIS

Site: BP-11109

Sounding: B-3

Engineer: B.JESSUP

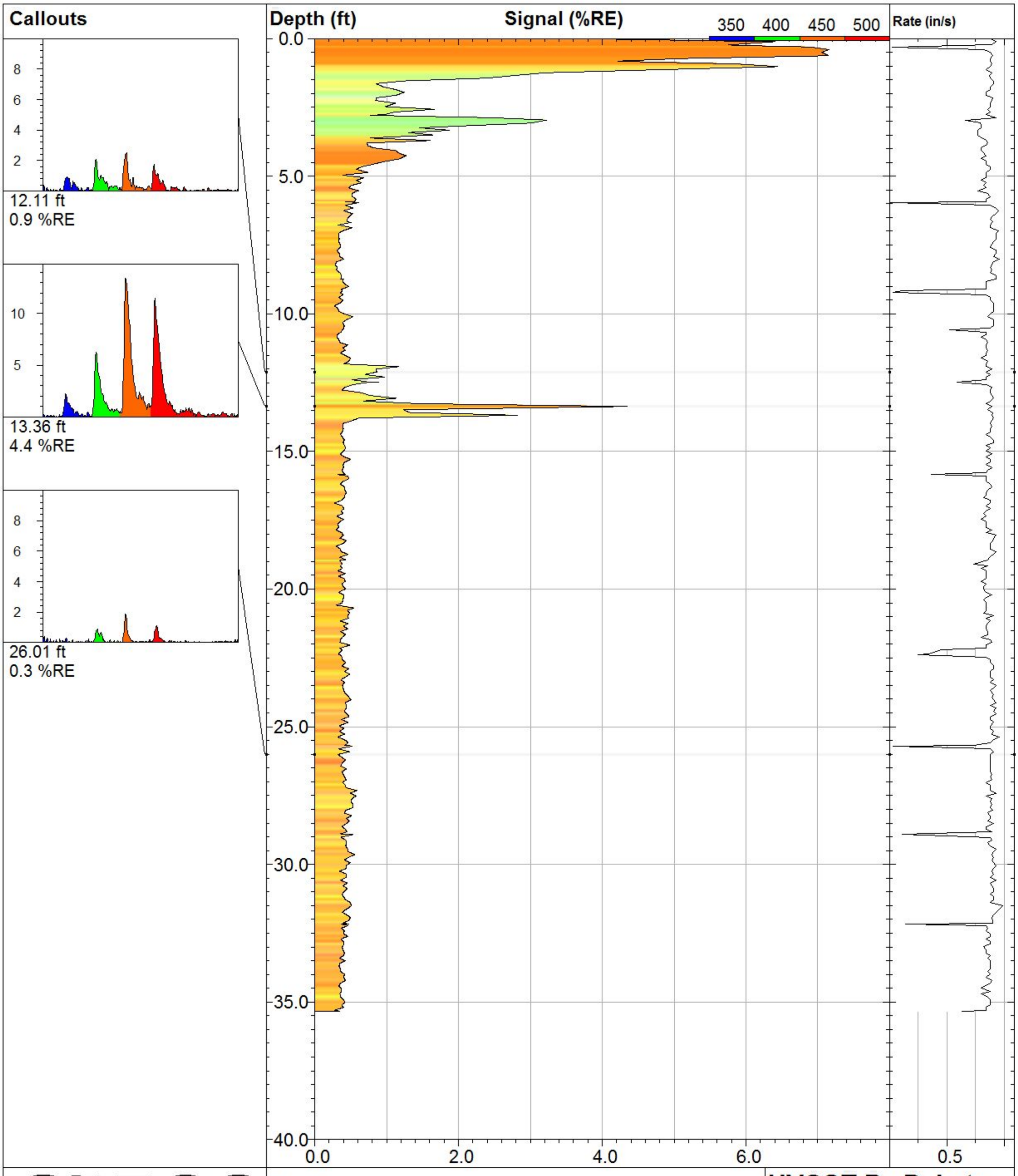
Date: 6/19/2015 03:29



Max. Depth: 37.894 (ft)

Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



GREGG	**B-4**		**UVOST By Dakota** www.DakotaTechnologies.com
	Site: **BP 11109**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **35.33 ft**
	Client / Job: **Arcadis / D1150575**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **7.2 %RE @ 0.40 ft**
	Operator / Unit: **Tim Patterson / UVOST10**	*Elevation:* **Unavailable**	*Date & Time:* **2015-06-19 12:11 PDT**

GREGG

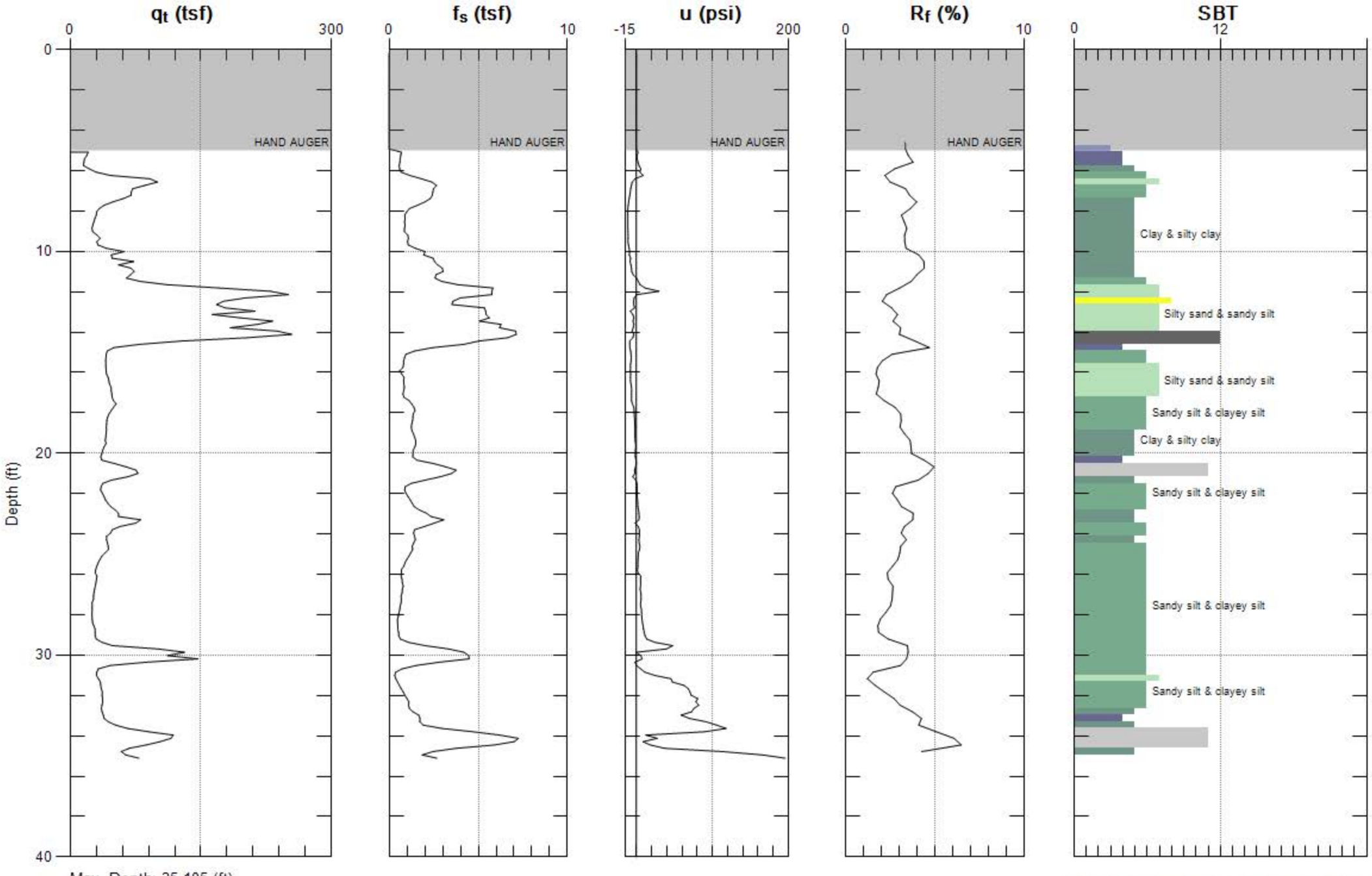
ARCADIS

Site: BP-11109

Sounding: B-4

Engineer: B.JESSUP

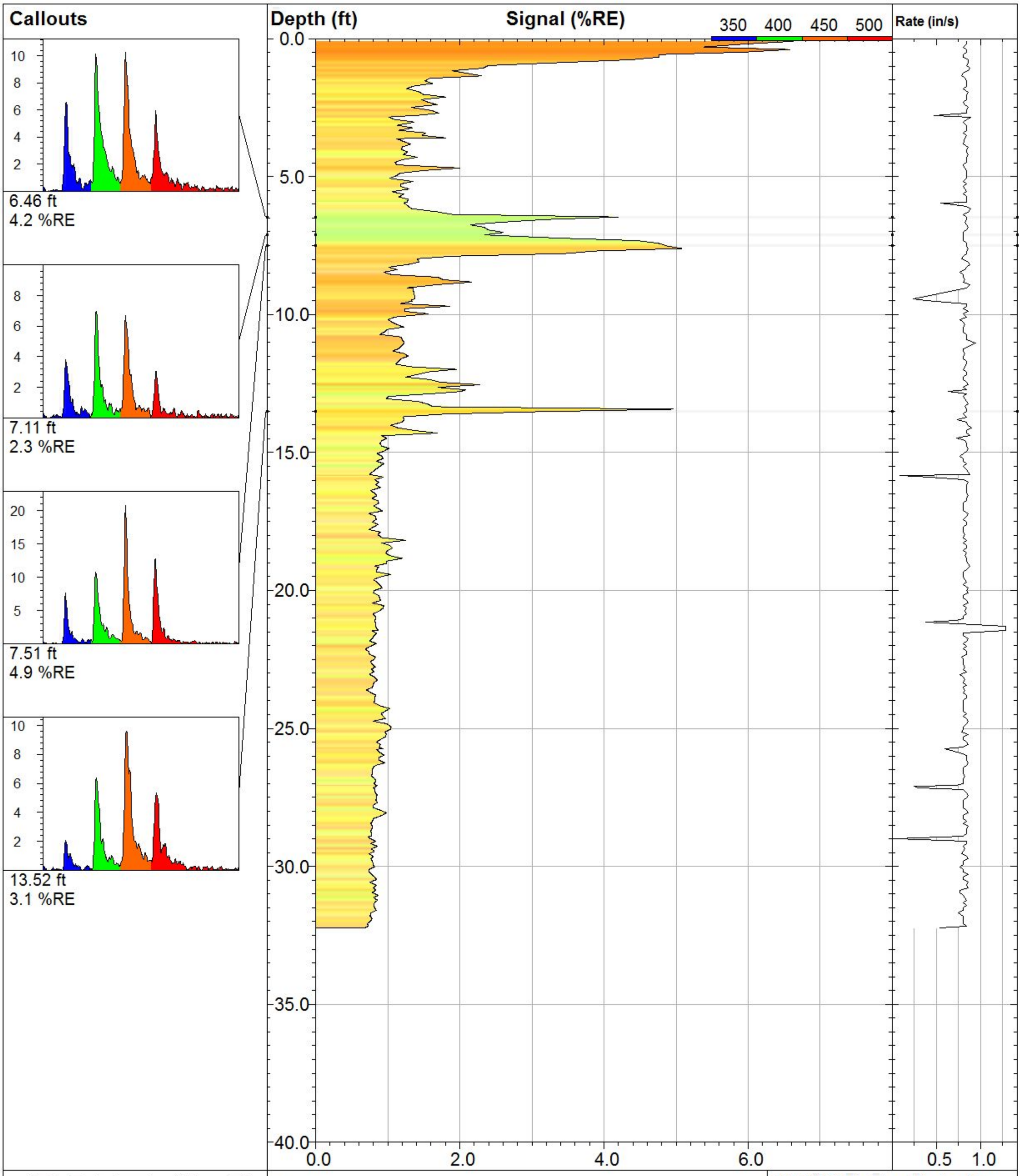
Date: 6/19/2015 04:35



Max. Depth: 35.105 (ft)

Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



GREGG

B-5

UVOST By Dakota
www.DakotaTechnologies.com

Site: **BP 11109**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **32.22 ft**
Client / Job: **Arcadis / D1150575**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **6.6 %RE @ 0.10 ft**
Operator / Unit: **Tim Patterson / UVOST10**	*Elevation:* **Unavailable**	*Date & Time:* **2015-06-18 09:18 PDT**

GREGG

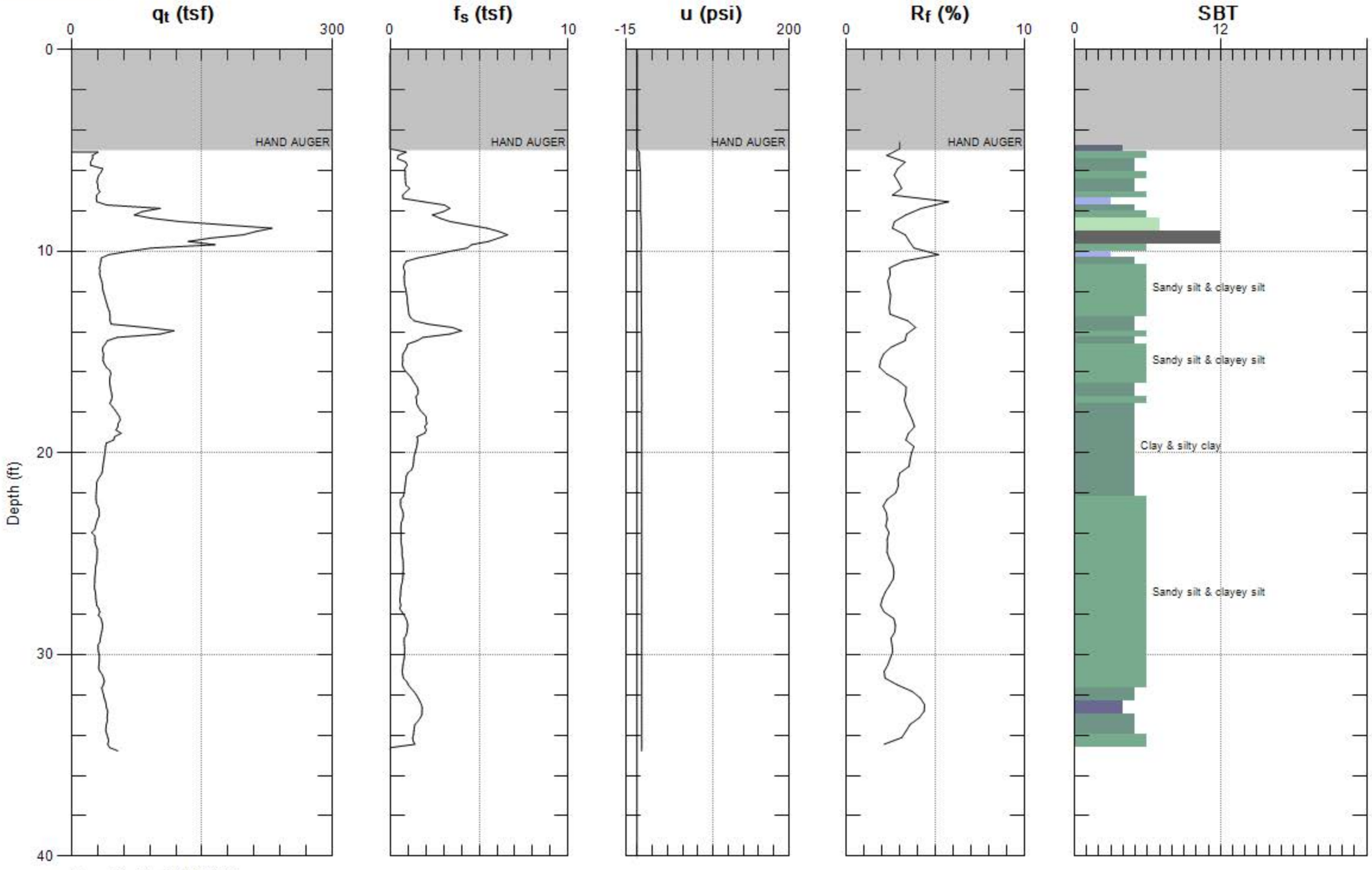
ARCADIS

Site: BP-11109

Sounding: B-5

Engineer: B.JESSUP

Date: 6/18/2015 09:05

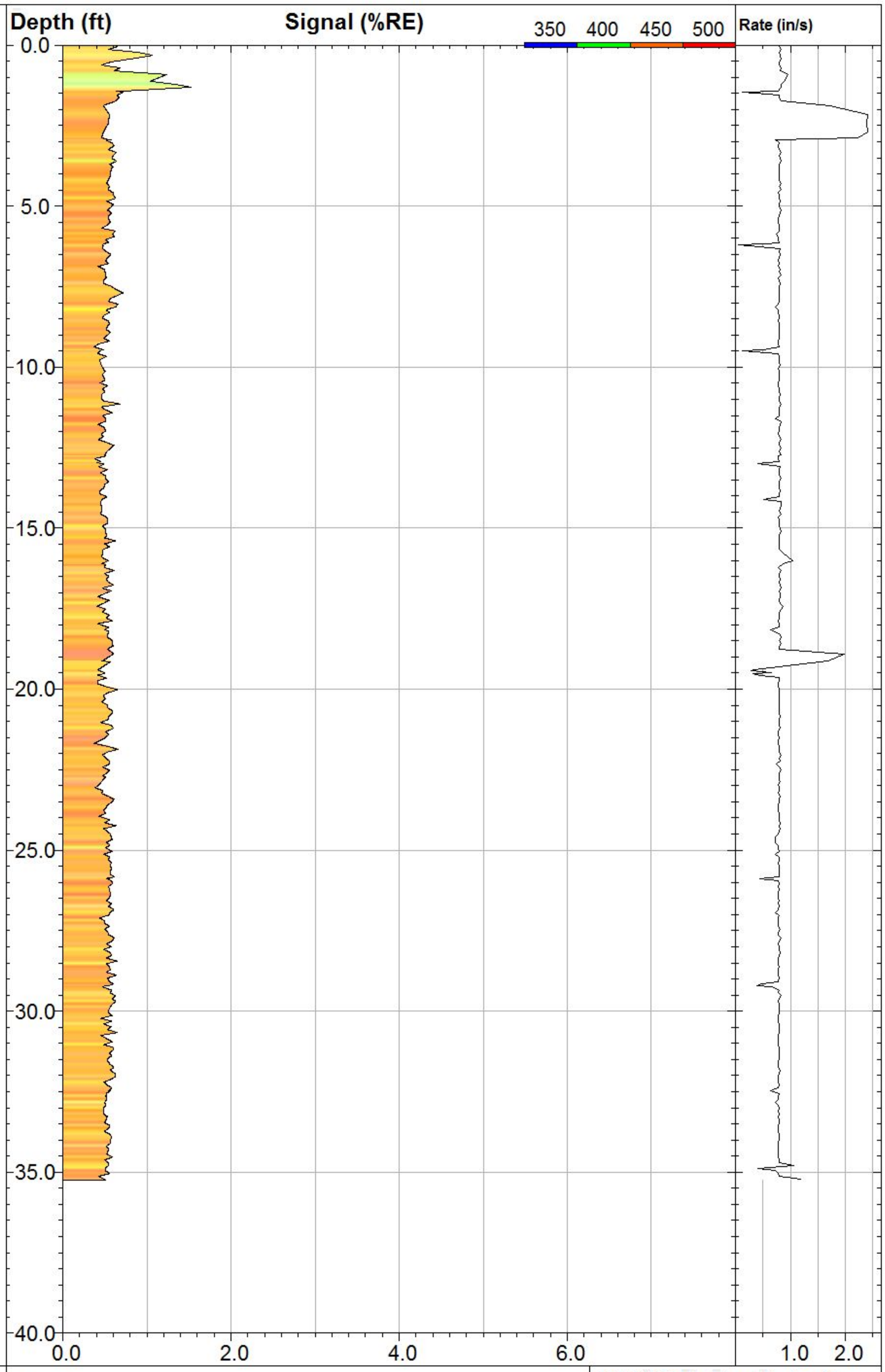


Max. Depth: 34.777 (ft)

Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)

Callouts



GREGG

B-6

UVOST By Dakota
www.DakotaTechnologies.com

Site: **BP 11109**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **35.25 ft**
Client / Job: **Arcadis / D1150575**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **1.5 %RE @ 1.31 ft**
Operator / Unit: **Tim Patterson / UVOST10**	*Elevation:* **Unavailable**	*Date & Time:* **2015-06-18 15:06 PDT**

GREGG

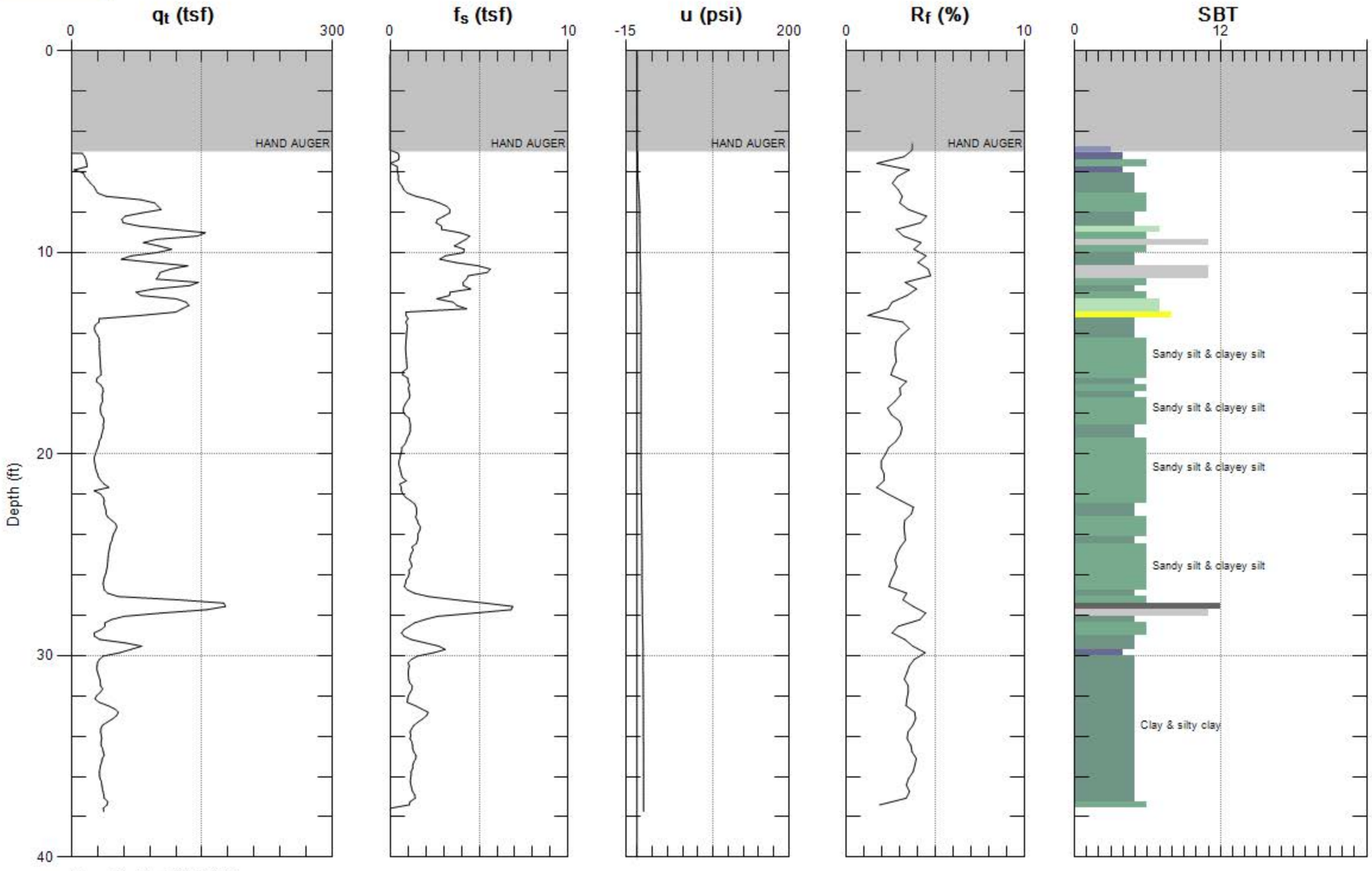
ARCADIS

Site: BP-11109

Sounding: B-6

Engineer: B.JESSUP

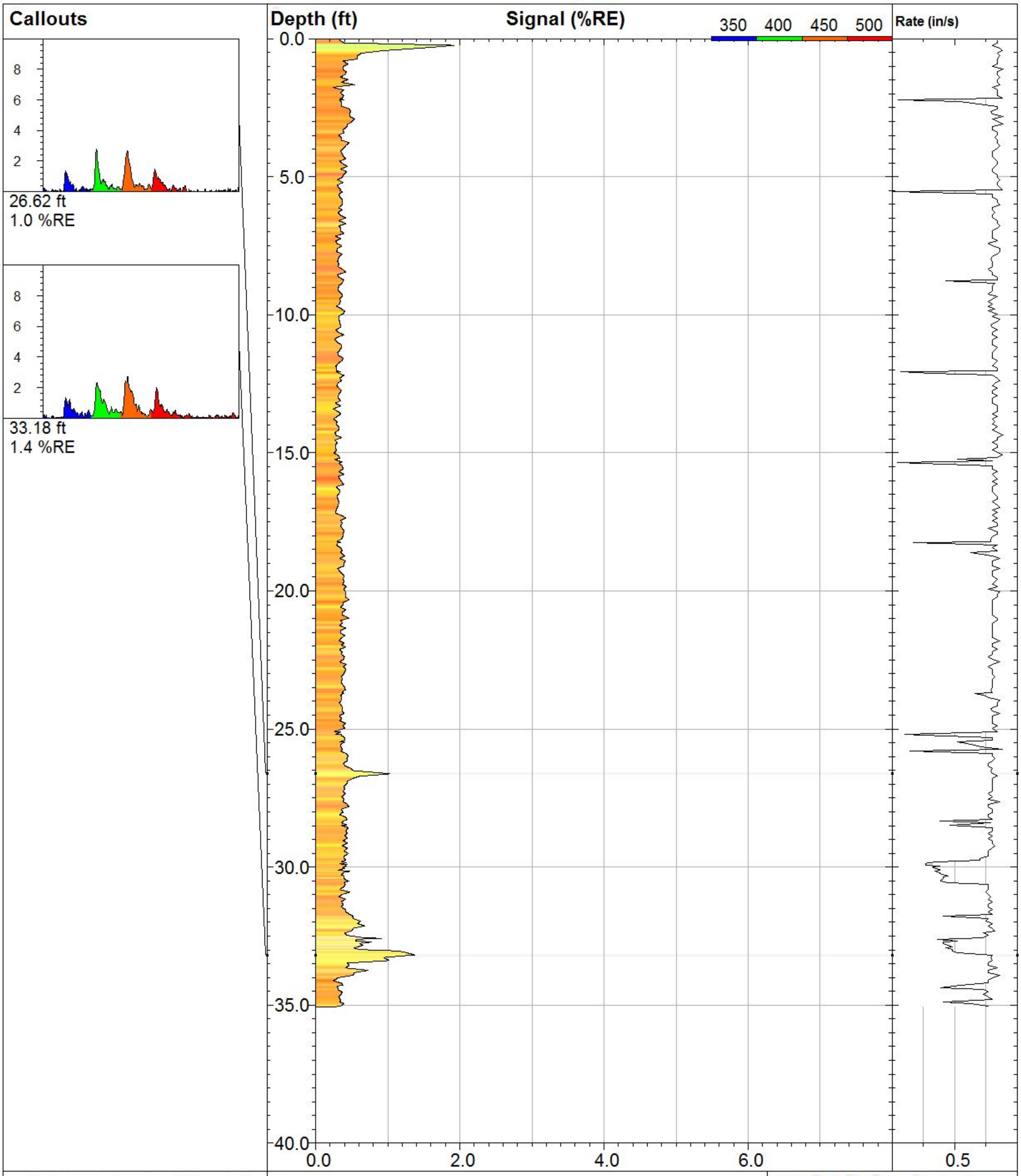
Date: 6/18/2015 03:03



Max. Depth: 37.730 (ft)

Avg. Interval: 0.328 (ft)

SBT: Soil Behavior Type (Robertson 1990)



GREGG

B-7

UVOST By Dakota
www.DakotaTechnologies.com

Site: **BP 11109**	*Y Coord.(Lat-N) / System:* **Unavailable / NA**	*Final depth:* **35.06 ft**
Client / Job: **Arcadis / D1150575**	*X Coord.(Lng-E) / Fix:* **Unavailable / NA**	*Max signal:* **1.9 %RE @ 0.24 ft**
Operator / Unit: **Tim Patterson / UVOST10**	*Elevation:* **Unavailable**	*Date & Time:* **2015-06-18 12:45 PDT**

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Appendix D

Laboratory Analytical Reports – Soil and Groundwater

ESC LAB SCIENCES
YOUR LAB OF CHOICE

12065 Lebanon Rd
Mt. Juliet, TN 37122
(615) 758-5858
(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L771980

For: ARCADIS US - San Francisco, CA
Project: CA-11109 -
June 30, 2015

Sample Receiving and Handling

All sample aliquots were received at the correct temperature, in the proper containers, and with the appropriate preservatives. All method specified holding times were met.

Total Solids by Method 2540 G-2011

Laboratory Control Sample

Samples L771980-01, -02, -03, and -04 were analyzed in analytical batch WG797066. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch.

Sample L771980-05 was analyzed in analytical batch WG797067. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG797066 sample duplicate analysis was performed on sample L771980-02. The relative percent differences were within the method limits for target analytes reported from this batch.

For analytical batch WG797067 sample duplicate analysis was performed on sample L771980-05. The relative percent differences were within the method limits for target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Trace Metals by Method 6010B

Laboratory Control Sample

Samples L771980-01, -04, and -05 were analyzed in analytical batch WG797024. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG797024 matrix spike/matrix spike duplicate analysis was performed on sample L771887-01. The matrix spike recoveries were below laboratory control limits for Lead. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile TPH by Method 8015

Laboratory Control Sample

Sample L771980-01 was analyzed in analytical batch WG797911. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample L771980-05 was analyzed in analytical batch WG798541. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent

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Est. 1970

Quality Control Summary
SDG: L771980
For: ARCADIS US - San Francisco, CA
Project: CA-11109 -
June 30, 2015

difference was within laboratory limits for all target analytes reported from this batch.

Sample L771980-04 was analyzed in analytical batch WG798852. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Sample L771980-05 was analyzed in analytical batch WG799086. The laboratory control sample associated with this sample was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate
For analytical batch WG797911 matrix spike/matrix spike duplicate analysis was performed on sample L772424-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

For analytical batch WG798541 matrix spike/matrix spike duplicate analysis was performed on sample L772485-02. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

For analytical batch WG798852 matrix spike/matrix spike duplicate analysis was performed on sample L772274-02. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

For analytical batch WG799086 matrix spike/matrix spike duplicate analysis was performed on sample L772740-04. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile Organic Compounds by Method 8260B
Laboratory Control Sample
Samples L771980-01, -04, and -05 were analyzed in analytical batch WG796925. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate
For analytical batch WG796925 matrix spike/matrix spike duplicate analysis was performed on sample L771909-01. The matrix spike recoveries were below laboratory control limits for Naphthalene. The spike recoveries were within limits for the remaining target compounds reported from this batch. The relative percent difference exceeded laboratory limits for Naphthalene.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

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Quality Control Summary
SDG: L771980

For: ARCADIS US - San Francisco, CA
Project: CA-11109 -
June 30, 2015

Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM

Laboratory Control Sample

Samples L771980-01, -04, and -05 were analyzed in analytical batch WG796853. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG796853 matrix spike/matrix spike duplicate analysis was performed on sample L772011-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Diesel Range Organics California by Method 8015

Laboratory Control Sample

Samples L771980-02 and 03 were analyzed in analytical batch WG797059. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

Precision for batch WG797059 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Nancy F. McLain
ESC Representative
ESC Lab Sciences

12065 Lebanon Rd.
Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

Report Summary

Tuesday June 30, 2015

Report Number: L771980
Samples Received: 06/18/15
Client Project: GP09BPNA.C106

Description: CA-11109 - GP09BPNA.C106

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By: Jarred Willis

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

June 30,2015

ESC Sample # : L771980-01

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 18, 2015
Description : CA-11109 -

Sample ID : B-8-5.5-061715 5-5.5FT

Collected By : B Jessup
Collection Date : 06/17/15 09:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	92.8	0.0333		%		2540 G-2	06/20/15	1
Lead	25.	0.19	0.54	mg/kg		6010B	06/20/15	1
TPHG C6 - C12	0.61	0.034	0.11	mg/kg		8015	06/25/15	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	96.7			% Rec.		8015	06/25/15	1
Benzene	U	0.00027	0.0011	mg/kg		8260B	06/22/15	1
Toluene	U	0.00043	0.0054	mg/kg		8260B	06/22/15	1
Ethylbenzene	U	0.00030	0.0011	mg/kg		8260B	06/22/15	1
Total Xylenes	U	0.00070	0.0032	mg/kg		8260B	06/22/15	1
Methyl tert-butyl ether	U	0.00021	0.0011	mg/kg		8260B	06/22/15	1
Naphthalene	U	0.0010	0.0054	mg/kg		8260B	06/22/15	1
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/22/15	1
Dibromofluoromethane	108.			% Rec.		8260B	06/22/15	1
a,a,a-Trifluorotoluene	103.			% Rec.		8260B	06/22/15	1
4-Bromofluorobenzene	100.			% Rec.		8260B	06/22/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Acenaphthene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Acenaphthylene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Benzo(a)anthracene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Benzo(a)pyrene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Benzo(b)fluoranthene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Benzo(g,h,i)perylene	0.00075	0.00060	0.0065	mg/kg	J	8270C-SI	06/22/15	1
Benzo(k)fluoranthene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Chrysene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Dibenz(a,h)anthracene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Fluoranthene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Fluorene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Indeno(1,2,3-cd)pyrene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Naphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/22/15	1
Phenanthrene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
Pyrene	U	0.00060	0.0065	mg/kg		8270C-SI	06/22/15	1
1-Methylnaphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/22/15	1
2-Methylnaphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/22/15	1
2-Chloronaphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/22/15	1
Surrogate Recovery								
p-Terphenyl-d14	56.1			% Rec.		8270C-SI	06/22/15	1
Nitrobenzene-d5	83.9			% Rec.		8270C-SI	06/22/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 06/29/15 15:44 Revised: 06/30/15 08:49

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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

June 30,2015

ESC Sample # : L771980-01

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 18, 2015
Description : CA-11109 -

Sample ID : B-8-5.5-061715 5-5.5FT

Collected By : B Jessup
Collection Date : 06/17/15 09:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
2-Fluorobiphenyl	66.3			% Rec.		8270C-SI	06/22/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 06/29/15 15:44 Revised: 06/30/15 08:49

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REPORT OF ANALYSIS

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

June 30,2015

ESC Sample # : L771980-02

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 18, 2015
Description : CA-11109 -

Sample ID : B-3-5-061715 4.5-5FT

Collected By : B Jessup
Collection Date : 06/17/15 12:45

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	81.0	0.0333		%		2540 G-2	06/20/15	1
Diesel Range Organics California								
C12-C22 Hydrocarbons	89.	0.73	4.9	mg/kg		8015	06/20/15	1
C22-C32 Hydrocarbons	540	27.	99.	mg/kg		8015	06/21/15	20
C32-C40 Hydrocarbons	160	1.3	4.9	mg/kg		8015	06/20/15	1
Surrogate Recovery								
o-Terphenyl	89.6			% Rec.		8015	06/20/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 06/29/15 15:44 Revised: 06/30/15 08:50

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REPORT OF ANALYSIS

Claire Hamaji
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100 Montgomery Street, Suite 300
San Francisco, CA 94104

June 30,2015

ESC Sample # : L771980-03

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 18, 2015
Description : CA-11109 -

Sample ID : B-5-5-061715 4.5-5FT

Collected By : B Jessup
Collection Date : 06/17/15 11:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	82.8	0.0333		%		2540 G-2	06/20/15	1
Diesel Range Organics California								
C12-C22 Hydrocarbons	0.98	0.73	4.8	mg/kg	J	8015	06/21/15	1
C22-C32 Hydrocarbons	3.4	1.3	4.8	mg/kg	J	8015	06/21/15	1
C32-C40 Hydrocarbons	2.0	1.3	4.8	mg/kg	J	8015	06/21/15	1
Surrogate Recovery								
o-Terphenyl	103.			% Rec.		8015	06/21/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 06/29/15 15:44 Revised: 06/30/15 08:50

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REPORT OF ANALYSIS

Claire Hamaji
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San Francisco, CA 94104

June 30,2015

ESC Sample # : L771980-04

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 18, 2015
Description : CA-11109 -

Sample ID : B-8-8.5-061715 8-8.5FT

Collected By : B Jessup
Collection Date : 06/17/15 09:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	80.8	0.0333		%		2540 G-2	06/20/15	1
Lead	28.	0.19	0.62	mg/kg		6010B	06/20/15	1
TPHG C6 - C12	370	1.2	4.2	mg/kg		8015	06/27/15	34
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	96.6			% Rec.		8015	06/27/15	1
Benzene	U	0.0092	0.042	mg/kg		8260B	06/22/15	34
Toluene	U	0.015	0.21	mg/kg		8260B	06/22/15	34
Ethylbenzene	1.0	0.010	0.042	mg/kg		8260B	06/22/15	34
Total Xylenes	4.2	0.024	0.13	mg/kg		8260B	06/22/15	34
Methyl tert-butyl ether	U	0.0072	0.042	mg/kg		8260B	06/22/15	34
Naphthalene	2.2	0.034	0.21	mg/kg		8260B	06/22/15	34
Surrogate Recovery								
Toluene-d8	101.			% Rec.		8260B	06/22/15	1
Dibromofluoromethane	105.			% Rec.		8260B	06/22/15	1
a,a,a-Trifluorotoluene	96.3			% Rec.		8260B	06/22/15	1
4-Bromofluorobenzene	111.			% Rec.		8260B	06/22/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.11	0.00060	0.0074	mg/kg		8270C-SI	06/22/15	1
Acenaphthene	0.074	0.00060	0.0074	mg/kg		8270C-SI	06/22/15	1
Acenaphthylene	0.012	0.00060	0.0074	mg/kg		8270C-SI	06/22/15	1
Benzo(a)anthracene	0.0074	0.00060	0.0074	mg/kg	J	8270C-SI	06/22/15	1
Benzo(a)pyrene	0.0042	0.00060	0.0074	mg/kg	J	8270C-SI	06/22/15	1
Benzo(b)fluoranthene	0.0064	0.00060	0.0074	mg/kg	J	8270C-SI	06/22/15	1
Benzo(g,h,i)perylene	0.015	0.00060	0.0074	mg/kg		8270C-SI	06/22/15	1
Benzo(k)fluoranthene	0.0010	0.00060	0.0074	mg/kg	J	8270C-SI	06/22/15	1
Chrysene	0.011	0.00060	0.0074	mg/kg		8270C-SI	06/22/15	1
Dibenz(a,h)anthracene	0.00075	0.00060	0.0074	mg/kg	J	8270C-SI	06/22/15	1
Fluoranthene	0.032	0.00060	0.0074	mg/kg		8270C-SI	06/22/15	1
Fluorene	0.32	0.00060	0.0074	mg/kg		8270C-SI	06/22/15	1
Indeno(1,2,3-cd)pyrene	0.0020	0.00060	0.0074	mg/kg	J	8270C-SI	06/22/15	1
Naphthalene	5.2	0.040	0.50	mg/kg		8270C-SI	06/22/15	20
Phenanthrene	0.52	0.00060	0.0074	mg/kg		8270C-SI	06/22/15	1
Pyrene	0.16	0.00060	0.0074	mg/kg		8270C-SI	06/22/15	1
1-Methylnaphthalene	6.7	0.040	0.50	mg/kg		8270C-SI	06/22/15	20
2-Methylnaphthalene	14.	0.040	0.50	mg/kg		8270C-SI	06/22/15	20
2-Chloronaphthalene	U	0.0020	0.025	mg/kg		8270C-SI	06/22/15	1
Surrogate Recovery								
p-Terphenyl-d14	62.3			% Rec.		8270C-SI	06/22/15	1
Nitrobenzene-d5	37.5			% Rec.	J7	8270C-SI	06/22/15	20

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

June 30,2015

Date Received : June 18, 2015
Description : CA-11109 -

Sample ID : B-8-8.5-061715 8-8.5FT

Collected By : B Jessup
Collection Date : 06/17/15 09:30

ESC Sample # : L771980-04

Site ID : 11109

Project # : GP09BPNA.C106

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
2-Fluorobiphenyl	65.0			% Rec.		8270C-SI	06/22/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 06/29/15 15:44 Revised: 06/30/15 08:50

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REPORT OF ANALYSIS

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

June 30,2015

Date Received : June 18, 2015
Description : CA-11109 -

Sample ID : B-8-14-061715 13.5-14FT

Collected By : B Jessup
Collection Date : 06/17/15 10:10

ESC Sample # : L771980-05

Site ID : 11109

Project # : GP09BPNA.C106

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	93.3	0.0333		%		2540 G-2	06/20/15	1
Lead	21.	0.19	0.54	mg/kg		6010B	06/20/15	1
TPHG C6 - C12	130	5.7	18.	mg/kg		8015	06/29/15	167.5
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	94.2			% Rec.		8015	06/29/15	1
Benzene	0.11	0.045	0.18	mg/kg	J	8260B	06/22/15	167.5
Toluene	U	0.073	0.90	mg/kg		8260B	06/22/15	167.5
Ethylbenzene	0.098	0.050	0.18	mg/kg	J	8260B	06/22/15	167.5
Total Xylenes	U	0.12	0.54	mg/kg		8260B	06/22/15	167.5
Methyl tert-butyl ether	U	0.036	0.18	mg/kg		8260B	06/22/15	167.5
Naphthalene	0.35	0.17	0.90	mg/kg	J	8260B	06/22/15	167.5
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	06/22/15	1
Dibromofluoromethane	106.			% Rec.		8260B	06/22/15	1
a,a,a-Trifluorotoluene	101.			% Rec.		8260B	06/22/15	1
4-Bromofluorobenzene	96.7			% Rec.		8260B	06/22/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	0.0082	0.00060	0.0064	mg/kg		8270C-SI	06/22/15	1
Acenaphthene	0.012	0.00060	0.0064	mg/kg		8270C-SI	06/22/15	1
Acenaphthylene	0.0019	0.00060	0.0064	mg/kg	J	8270C-SI	06/22/15	1
Benzo(a)anthracene	0.0029	0.00060	0.0064	mg/kg	J	8270C-SI	06/22/15	1
Benzo(a)pyrene	0.0014	0.00060	0.0064	mg/kg	J	8270C-SI	06/22/15	1
Benzo(b)fluoranthene	0.0016	0.00060	0.0064	mg/kg	J	8270C-SI	06/22/15	1
Benzo(g,h,i)perylene	0.0015	0.00060	0.0064	mg/kg	J	8270C-SI	06/22/15	1
Benzo(k)fluoranthene	0.00068	0.00060	0.0064	mg/kg	J	8270C-SI	06/22/15	1
Chrysene	0.0021	0.00060	0.0064	mg/kg	J	8270C-SI	06/22/15	1
Dibenz(a,h)anthracene	U	0.00060	0.0064	mg/kg		8270C-SI	06/22/15	1
Fluoranthene	0.0088	0.00060	0.0064	mg/kg		8270C-SI	06/22/15	1
Fluorene	0.016	0.00060	0.0064	mg/kg		8270C-SI	06/22/15	1
Indeno(1,2,3-cd)pyrene	U	0.00060	0.0064	mg/kg		8270C-SI	06/22/15	1
Naphthalene	0.082	0.0020	0.021	mg/kg		8270C-SI	06/22/15	1
Phenanthrene	0.028	0.00060	0.0064	mg/kg		8270C-SI	06/22/15	1
Pyrene	0.012	0.00060	0.0064	mg/kg		8270C-SI	06/22/15	1
1-Methylnaphthalene	0.60	0.0020	0.021	mg/kg		8270C-SI	06/22/15	1
2-Methylnaphthalene	1.4	0.0020	0.021	mg/kg		8270C-SI	06/22/15	1
2-Chloronaphthalene	U	0.0020	0.021	mg/kg		8270C-SI	06/22/15	1
Surrogate Recovery								
p-Terphenyl-d14	60.0			% Rec.		8270C-SI	06/22/15	1
Nitrobenzene-d5	171.			% Rec.	J1	8270C-SI	06/22/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
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Note:

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REPORT OF ANALYSIS

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

June 30,2015

ESC Sample # : L771980-05

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 18, 2015
Description : CA-11109 -

Sample ID : B-8-14-061715 13.5-14FT

Collected By : B Jessup
Collection Date : 06/17/15 10:10

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
2-Fluorobiphenyl	64.9			% Rec.		8270C-SI	06/22/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 06/29/15 15:44 Revised: 06/30/15 08:50

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L771980-01	WG796853	SAMP	Benzo(g,h,i)perylene	R3044925	J
L771980-03	WG797059	SAMP	C12-C22 Hydrocarbons	R3044752	J
	WG797059	SAMP	C22-C32 Hydrocarbons	R3044752	J
	WG797059	SAMP	C32-C40 Hydrocarbons	R3044752	J
L771980-04	WG796853	SAMP	Benzo(a)anthracene	R3044925	J
	WG796853	SAMP	Benzo(a)pyrene	R3044925	J
	WG796853	SAMP	Benzo(b)fluoranthene	R3044925	J
	WG796853	SAMP	Benzo(k)fluoranthene	R3044925	J
	WG796853	SAMP	Dibenz(a,h)anthracene	R3044925	J
	WG796853	SAMP	Indeno(1,2,3-cd)pyrene	R3044925	J
	WG796853	SAMP	Nitrobenzene-d5	R3045122	J7
L771980-05	WG796853	SAMP	Acenaphthylene	R3044925	J
	WG796853	SAMP	Benzo(a)anthracene	R3044925	J
	WG796853	SAMP	Benzo(a)pyrene	R3044925	J
	WG796853	SAMP	Benzo(b)fluoranthene	R3044925	J
	WG796853	SAMP	Benzo(g,h,i)perylene	R3044925	J
	WG796853	SAMP	Benzo(k)fluoranthene	R3044925	J
	WG796853	SAMP	Chrysene	R3044925	J
	WG796853	SAMP	Nitrobenzene-d5	R3044925	J1
	WG796925	SAMP	Benzene	R3045165	J
	WG796925	SAMP	Ethylbenzene	R3045165	J
	WG796925	SAMP	Naphthalene	R3045165	J

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Total Solids by Method 2540 G-2011		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797066**
Analysis Date:	6/20/2015 7:29:00 AM	Analyst:	475
Instrument ID:	LOGBAL1		
Sample Numbers:	L771980-01, -02, -03, -04		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Total Solids	TSOLIDS	< 0.100	< 0.0333	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Total Solids	1	50	49.982	100	85 - 115	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Total Solids by Method 2540 G-2011		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797067**
Analysis Date:	6/20/2015 7:24:00 AM	Analyst:	475
Instrument ID:	LOGBAL1		
Sample Numbers:	L771980-05		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Total Solids	TSOLIDS	< 0.100	< 0.0333	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Total Solids	1	50	50.013	100	85 - 115	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Total Solids by Method 2540 G-2011		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797066**
Analysis Date:	6/20/2015 7:29:00 AM	Analyst:	475
Instrument ID:	LOGBAL1		
Sample Numbers:	L771980-01, -02, -03, -04		

Sample Duplicate

L771980-02

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Total Solids	1	81.025	82.338	1.61	5	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Total Solids by Method 2540 G-2011		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797067**
Analysis Date:	6/20/2015 7:24:00 AM	Analyst:	475
Instrument ID:	LOGBAL1		
Sample Numbers:	L771980-05		

Sample Duplicate

L771980-05

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Total Solids	1	93.346	91.783	1.69	5	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Trace Metals by Method 6010B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797024**
Analysis Date:	6/20/2015 9:56:00 PM	Analyst:	136
Instrument ID:	ICP14	Prep Date:	6/19/2015
Sample Numbers:	L771980-01, -04, -05		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Lead	7439-92-1	< 0.500	< 0.190	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Lead	1	100	108.12	108	80 - 120	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Lead	1	100	101.62	102	80 - 120	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
Lead	1	100	108.12	108	101.62	102	80 - 120		6	20	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Trace Metals by Method 6010B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797024**
Analysis Date:	6/20/2015 9:56:00 PM	Analyst:	136
Instrument ID:	ICP14	Prep Date:	6/19/2015
Sample Numbers:	L771980-01, -04, -05		

Serial Dilution

L771887-01

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Lead	5	108.90	101.94	6	10	

Matrix Spike / Matrix Spike Duplicate

L771887-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Lead	1	100	108.90	127.44	19	136.09	27	75 - 125	J6	7	20	

Post Digest Spike

L771887-01

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Lead	1	100	108.90	218.30	109	75-125	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797911**
Analysis Date:	6/25/2015 3:42:00 AM	Analyst:	591
Instrument ID:	VOCGC5		
Sample Numbers:	L771980-01		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPHG C6 - C12		< 0.100	< 0.0339	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.6809	103	62.2 - 127	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.8250	106	62.2 - 127	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
TPHG C6 - C12	1	5.5	5.6809	103	5.8250	106	62.2 - 127		2.5	20	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798541**
Analysis Date:	6/26/2015 3:22:00 PM	Analyst:	591
Instrument ID:	VOCGC1		
Sample Numbers:	L771980-05		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPHG C6 - C12		< 0.100	< 0.0339	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.0568	91.9	62.2 - 127	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.0247	91.4	62.2 - 127	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
TPHG C6 - C12	1	5.5	5.0568	91.9	5.0247	91.4	62.2 - 127		0.64	20	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798852**
Analysis Date:	6/27/2015 3:43:00 PM	Analyst:	591
Instrument ID:	VOCGC5		
Sample Numbers:	L771980-04		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPHG C6 - C12		< 0.100	< 0.0339	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	4.7325	86	62.2 - 127	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	4.4834	81.5	62.2 - 127	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
TPHG C6 - C12	1	5.5	4.7325	86	4.4834	81.5	62.2 - 127		5.41	20	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG799086**
Analysis Date:	6/29/2015 2:18:00 PM	Analyst:	591
Instrument ID:	VOCGC5		
Sample Numbers:	L771980-05		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPHG C6 - C12		< 0.100	< 0.0339	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.3129	96.6	62.2 - 127	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.4500	99.1	62.2 - 127	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
TPHG C6 - C12	1	5.5	5.3129	96.6	5.4500	99.1	62.2 - 127		2.55	20	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797911**
Analysis Date:	6/25/2015 3:42:00 AM	Analyst:	591
Instrument ID:	VOCGC5		
Sample Numbers:	L771980-01		

Matrix Spike / Matrix Spike Duplicate

L772424-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
TPHG C6 - C12	5	5.5	<0.1695	21.884	79.6	23.456	85.3	20.5 - 134		6.93	23.8	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798541**
Analysis Date:	6/26/2015 3:22:00 PM	Analyst:	591
Instrument ID:	VOCGC1		
Sample Numbers:	L771980-05		

Matrix Spike / Matrix Spike Duplicate

L772485-02

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
TPHG C6 - C12	5	5.5	0.2300	18.561	66.7	18.741	67.3	20.5 - 134		0.97	23.8	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798852**
Analysis Date:	6/27/2015 3:43:00 PM	Analyst:	591
Instrument ID:	VOCGC5		
Sample Numbers:	L771980-04		

Matrix Spike / Matrix Spike Duplicate

L772274-02

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
TPHG C6 - C12	5	5.5	<0.1695	22.368	81.3	21.559	78.4	20.5 - 134		3.68	23.8	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG799086**
Analysis Date:	6/29/2015 2:18:00 PM	Analyst:	591
Instrument ID:	VOCGC5		
Sample Numbers:	L771980-05		

Matrix Spike / Matrix Spike Duplicate

L772740-04

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
TPHG C6 - C12	5	5.5	<0.1695	20.455	74.4	21.338	77.6	20.5 - 134		4.23	23.8	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797911**
Analysis Date:	6/25/2015 3:42:00 AM	Analyst:	591
Instrument ID:	VOCGC5		
Sample Numbers:	L771980-01		

Surrogate Summary

Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L771980-01	VOCGC5	0624_47	0.193	96.7		
LCS WG797911	VOCGC5	0624_39	0.203	101	0.219	109
LCSD WG797911	VOCGC5	0624_40	0.203	102		
BLANK WG797911	VOCGC5	0624_42	0.199	99.6	0.187	93.4
MS WG797911	VOCGC5	0624_43	0.197	98.3		
MSD WG797911	VOCGC5	0624_44	0.197	98.7		

--A,A,A-TRIFLUOROTOLUENE(FID)	True Value: 0.2 ppm	Limits: 59 - 128
--A,A,A-TRIFLUOROTOLUENE(PID)	True Value: 0.2 ppm	Limits: 54 - 144

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798541**
Analysis Date:	6/26/2015 3:22:00 PM	Analyst:	591
Instrument ID:	VOCGC1		
Sample Numbers:	L771980-05		

Surrogate Summary

Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L771980-05	VOCGC1	0626_13	0.0345	17.2 J2		
LCS WG798541	VOCGC1	0626_07	0.189	94.4		
LCSD WG798541	VOCGC1	0626_08	0.189	94.7		
BLANK WG798541	VOCGC1	0626_10	0.192	96.0		
MS WG798541	VOCGC1	0626_34	0.188	94.1	0.214	107
MSD WG798541	VOCGC1	0626_35	0.189	94.7	0.214	107

--A,A,A-TRIFLUOROTOLUENE(FID)	True Value: 0.2 ppm	Limits: 59 - 128
--A,A,A-TRIFLUOROTOLUENE(PID)	True Value: 0.2 ppm	Limits: 54 - 144

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798852**
Analysis Date:	6/27/2015 3:43:00 PM	Analyst:	591
Instrument ID:	VOCGC5		
Sample Numbers:	L771980-04		

Surrogate Summary

Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L771980-04	VOCGC5	0627_15	0.193	96.6		
LCS WG798852	VOCGC5	0627_04	0.199	99.5	0.205	102
LCSD WG798852	VOCGC5	0627_05	0.200	99.9	0.202	101
LCS WG798852	VOCGC5	0627_06	0.200	100	0.217	108
LCSD WG798852	VOCGC5	0627_07	0.199	99.4	0.217	108
BLANK WG798852	VOCGC5	0627_09	0.201	100	0.188	94.1
MS WG798852	VOCGC5	0627_10	0.196	98.1	0.199	99.3
MSD WG798852	VOCGC5	0627_11	0.197	98.4	0.201	100
MS WG798852	VOCGC5	0627_12	0.199	99.5	0.215	108
MSD WG798852	VOCGC5	0627_13	0.198	99.1	0.216	108

--A,A,A-TRIFLUOROTOLUENE(FID)	True Value: 0.2 ppm	Limits: 59 - 128
--A,A,A-TRIFLUOROTOLUENE(PID)	True Value: 0.2 ppm	Limits: 54 - 144

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG799086**
Analysis Date:	6/29/2015 2:18:00 PM	Analyst:	591
Instrument ID:	VOCGC5		
Sample Numbers:	L771980-05		

Surrogate Summary

Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L771980-05	VOCGC5	0629_15	0.188	94.2		
LCS WG799086	VOCGC5	0629_04	0.191	95.6	0.197	98.7
LCSD WG799086	VOCGC5	0629_05	0.197	98.3	0.202	101
LCS WG799086	VOCGC5	0629_06	0.199	99.7	0.216	108
LCSD WG799086	VOCGC5	0629_07	0.199	99.7	0.216	108
BLANK WG799086	VOCGC5	0629_09	0.196	97.9	0.185	92.3
MS WG799086	VOCGC5	0629_22	0.195	97.7		
MSD WG799086	VOCGC5	0629_23	0.196	98.0		
MS WG799086	VOCGC5	0629_20			0.199	99.5
MSD WG799086	VOCGC5	0629_21			0.200	99.8

--A,A,A-TRIFLUOROTOLUENE(FID)	True Value: 0.2 ppm	Limits: 59 - 128
--A,A,A-TRIFLUOROTOLUENE(PID)	True Value: 0.2 ppm	Limits: 54 - 144

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796925**
Analysis Date:	6/22/2015 9:07:00 PM	Analyst:	591
Instrument ID:	VOCMS7		
Sample Numbers:	L771980-01, -04, -05		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Benzene	71-43-2	< 0.00100	< 0.000270	
Ethylbenzene	100-41-4	< 0.00100	< 0.000297	
Methyl tert-butyl ether	1634-04-4	< 0.00100	< 0.000212	
Naphthalene	91-20-3	< 0.00500	< 0.00100	
Toluene	108-88-3	< 0.00500	< 0.000434	
Xylenes, Total	1330-20-7	< 0.00300	< 0.000698	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796925**
Analysis Date:	6/22/2015 9:07:00 PM	Analyst:	591
Instrument ID:	VOCMS7		
Sample Numbers:	L771980-01, -04, -05		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Benzene	1	0.025	0.0279	112	72.6 - 120	
Ethylbenzene	1	0.025	0.0277	111	78.6 - 124	
Methyl tert-butyl ether	1	0.025	0.0299	120	70.2 - 122	
Naphthalene	1	0.025	0.0263	105	69.9 - 132	
Toluene	1	0.025	0.0266	106	76.7 - 116	
Xylenes, Total	1	0.075	0.0809	108	78.1 - 123	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Benzene	1	0.025	0.0262	105	72.6 - 120	
Ethylbenzene	1	0.025	0.0261	104	78.6 - 124	
Methyl tert-butyl ether	1	0.025	0.0284	114	70.2 - 122	
Naphthalene	1	0.025	0.0261	104	69.9 - 132	
Toluene	1	0.025	0.0251	100	76.7 - 116	
Xylenes, Total	1	0.075	0.0764	102	78.1 - 123	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
Benzene	1	0.025	0.0279	112	0.0262	105	72.6 - 120		6.07	20	
Ethylbenzene	1	0.025	0.0277	111	0.0261	104	78.6 - 124		6.1	20	
Methyl tert-butyl ether	1	0.025	0.0299	120	0.0284	114	70.2 - 122		5.27	20	
Naphthalene	1	0.025	0.0263	105	0.0261	104	69.9 - 132		0.8	20	
Toluene	1	0.025	0.0266	106	0.0251	100	76.7 - 116		5.85	20	
Xylenes, Total	1	0.075	0.0809	108	0.0764	102	78.1 - 123		5.73	20	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796925**
Analysis Date:	6/22/2015 9:07:00 PM	Analyst:	591
Instrument ID:	VOCMS7		
Sample Numbers:	L771980-01, -04, -05		

Matrix Spike / Matrix Spike Duplicate

L771909-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Benzene	5	0.025	<0.0014	0.1169	93.6	0.1219	97.5	47.8 - 131		4.16	22.8	
Ethylbenzene	5	0.025	<0.0015	0.1058	83.7	0.1031	81.5	44.8 - 135		2.59	26.9	
Methyl tert-butyl ether	5	0.025	<0.0011	0.1443	115	0.1429	114	50.4 - 131		0.97	24.8	
Naphthalene	5	0.025	<0.005	0.0132	10.5	0.0235	18.8	18.4 - 145	J6	56.2	34	J3
Toluene	5	0.025	0.0024	0.1057	82.7	0.1092	85.5	47.8 - 127		3.25	24.3	
Xylenes, Total	5	0.075	<0.0035	0.2968	79.1	0.2918	77.8	42.7 - 135		1.7	26.6	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796925**
Analysis Date:	6/22/2015 9:07:00 PM	Analyst:	591
Instrument ID:	VOCMS7		
Sample Numbers:	L771980-01, -04, -05		

Internal Standard Response and Retention Time Summary

File ID: 0622_03
Analyzed: 06/22/15 112300

	IS1		IS2		IS3		IS4	
	Response	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
12 Hr. Std	513464	4.33	905390	4.66	133548	5.83	425831	8.23
Upper Limit	1030000	4.83	1810000	5.16	267000	6.33	852000	8.73
Lower Limit	257000	3.83	453000	4.16	66800	5.33	213000	7.73
Sample ID	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
L771980-01	540111	4.33	931507	4.66	140993	5.83	428165	8.22
L771980-04	518602	4.33	926532	4.66	145753	5.83	517505	8.22
L771980-05	574630	4.33	1009227	4.66	157396	5.83	465823	8.22
MSD WG796925	558907	4.33	995197	4.66	149354	5.83	500016	8.23
MS WG796925	497524	4.33	884194	4.66	138843	5.83	453164	8.23
LCSD WG796925	526229	4.33	934087	4.66	137356	5.83	433545	8.22
LCS WG796925	513808	4.33	914045	4.66	134674	5.83	430392	8.23
BLANK WG796925	509555	4.33	865405	4.66	126586	5.83	397882	8.22

Legend:
IS1 -- PENTAFLUOROBENZENE
IS2 -- 1,4-DIFLUOROBENZENE
IS3 -- 2-BROMO-1-CHLOROPROPANE
IS4 -- 1,4-DICHLOROBENZENE-D4

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test: Volatile Organic Compounds by Method 8260B
Project No: GP09BPNA.C106 — Matrix: Soil - mg/kg
Project: CA-11109 - — EPA ID: TN00003
Collection Date: 6/17/2015 — **Analytic Batch: WG796925**
Analysis Date: 6/22/2015 9:07:00 PM — Analyst: 591
Instrument ID: VOCMS7
Sample Numbers: L771980-01, -04, -05

Surrogate Summary

			BFB		TFT		DFM		TD8	
Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L771980-01	VOCMS7	0622_26	0.0401	100	0.0410	103	0.0433	108	0.0403	101
L771980-04	VOCMS7	0622_27	0.0443	111	0.0385	96.3	0.0419	105	0.0406	101
L771980-05	VOCMS7	0622_28	0.0387	96.7	0.0402	101	0.0426	106	0.0408	102
LCS WG796925	VOCMS7	0622_04	0.0411	103	0.0402	101	0.0420	105	0.0407	102
LCSD WG796925	VOCMS7	0622_05	0.0411	103	0.0405	101	0.0423	106	0.0406	102
BLANK WG796925	VOCMS7	0622_08	0.0403	101	0.0415	104	0.0427	107	0.0410	103
MS WG796925	VOCMS7	0622_09	0.112	281 J1	0.0392	98.1	0.0425	106	0.0413	103
MSD WG796925	VOCMS7	0622_10	0.0878	220 J1	0.0397	99.3	0.0425	106	0.0408	102

BFB --4-BROMOFLUOROBENZENE	True Value: 0.04 ppm	Limits: 69.7 - 129
TFT --A,A,A-TRIFLUOROTOLUENE	True Value: 0.04 ppm	Limits: 87.2 - 117
DFM --DIBROMOFLUOROMETHANE	True Value: 0.04 ppm	Limits: 76.30 - 123
TD8 --TOLUENE-D8	True Value: 0.04 ppm	Limits: 88.7 - 115

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Diesel Range Organics California by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797059**
Analysis Date:	6/20/2015 11:53:00 PM	Analyst:	543
Instrument ID:	SVGC2	Prep Date:	6/19/2015
Sample Numbers:	L771980-02, -03		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
C12-C22 Hydrocarbons		< 4.00	< 0.733	
C22-C32 Hydrocarbons		< 4.00	< 1.33	
C32-C40 Hydrocarbons		< 4.00	< 1.33	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
C12-C22 Hydrocarbons	1	30	25.733	85.8	50 - 150	
C22-C32 Hydrocarbons	1	30	25.478	84.9	50 - 150	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
C12-C22 Hydrocarbons	1	30	26.423	88.1	50 - 150	
C22-C32 Hydrocarbons	1	30	25.737	85.8	50 - 150	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
C12-C22 Hydrocarbons	1	30	25.733	85.8	26.423	88.1	50 - 150		2.65	20	
C22-C32 Hydrocarbons	1	30	25.478	84.9	25.737	85.8	50 - 150		1.01	20	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Diesel Range Organics California by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797059**
Analysis Date:	6/20/2015 11:53:00 PM	Analyst:	543
Instrument ID:	SVGC2	Prep Date:	6/19/2015
Sample Numbers:	L771980-02, -03		

Surrogate Summary

			o-Terphenyl	
Laboratory Sample ID	Instrument	File ID	ppm	% Rec
L771980-02	SVGC2	0620A_13	0.717	89.6
L771980-03	SVGC2	0620A_14	0.828	103
BLANK WG797059	SVGC2	0620A_10	1.00	125
LCS WG797059	SVGC2	0620A_11	0.852	107
LCSD WG797059	SVGC2	0620A_12	0.908	113

o-Terphenyl --O-TERPHENYL True Value: 0.8 ppm Limits: 50 - 150

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS22, BNAMS18	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1-Methylnaphthalene	90-12-0	< 20.0	< 2.00	
2-Chloronaphthalene	91-58-7	< 20.0	< 2.00	
2-Methylnaphthalene	91-57-6	< 20.0	< 2.00	
Acenaphthene	83-32-9	< 6.00	< 0.600	
Acenaphthylene	208-96-8	< 6.00	< 0.600	
Anthracene	120-12-7	< 6.00	< 0.600	
Benzo(a)anthracene	56-55-3	< 6.00	< 0.600	
Benzo(a)pyrene	50-32-8	< 6.00	< 0.600	
Benzo(b)fluoranthene	205-99-2	< 6.00	< 0.600	
Benzo(g,h,i)perylene	191-24-2	< 6.00	< 0.600	
Benzo(k)fluoranthene	207-08-9	< 6.00	< 0.600	
Chrysene	218-01-9	< 6.00	< 0.600	
Dibenz(a,h)anthracene	53-70-3	< 6.00	< 0.600	
Fluoranthene	206-44-0	< 6.00	< 0.600	
Fluorene	86-73-7	< 6.00	< 0.600	
Indeno(1,2,3-cd)pyrene	193-39-5	< 6.00	< 0.600	
Naphthalene	91-20-3	< 20.0	< 2.00	
Phenanthrene	85-01-8	< 6.00	< 0.600	
Pyrene	129-00-0	< 6.00	< 0.600	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS22, BNAMS18	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	80	60.808	76	50.6 - 122	
2-Chloronaphthalene	1	80	58.209	72.8	53.9 - 121	
2-Methylnaphthalene	1	80	57.528	71.9	50.4 - 120	
Acenaphthene	1	80	57.824	72.3	52.4 - 120	
Acenaphthylene	1	80	58.105	72.6	49.6 - 120	
Anthracene	1	80	61.159	76.4	50.3 - 130	
Benzo(a)anthracene	1	80	55.317	69.1	46.7 - 125	
Benzo(a)pyrene	1	80	53.132	66.4	42.3 - 119	
Benzo(b)fluoranthene	1	80	53.244	66.6	43.6 - 124	
Benzo(g,h,i)perylene	1	80	56.622	70.8	45.1 - 132	
Benzo(k)fluoranthene	1	80	57.949	72.4	46.1 - 131	
Chrysene	1	80	58.637	73.3	49.5 - 131	
Dibenz(a,h)anthracene	1	80	58.715	73.4	44.8 - 133	
Fluoranthene	1	80	59.022	73.8	49.3 - 128	
Fluorene	1	80	54.394	68	50.6 - 121	
Indeno(1,2,3-cd)pyrene	1	80	58.243	72.8	46.1 - 135	
Naphthalene	1	80	58.375	73	49.6 - 115	
Phenanthrene	1	80	57.299	71.6	48.8 - 121	
Pyrene	1	80	61.830	77.3	44.7 - 130	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS22, BNAMS18	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	80	63.166	79	50.6 - 122	
2-Chloronaphthalene	1	80	60.188	75.2	53.9 - 121	
2-Methylnaphthalene	1	80	59.523	74.4	50.4 - 120	
Acenaphthene	1	80	59.742	74.7	52.4 - 120	
Acenaphthylene	1	80	59.773	74.7	49.6 - 120	
Anthracene	1	80	63.075	78.8	50.3 - 130	
Benzo(a)anthracene	1	80	56.918	71.1	46.7 - 125	
Benzo(a)pyrene	1	80	53.961	67.5	42.3 - 119	
Benzo(b)fluoranthene	1	80	55.811	69.8	43.6 - 124	
Benzo(g,h,i)perylene	1	80	58.437	73	45.1 - 132	
Benzo(k)fluoranthene	1	80	59.982	75	46.1 - 131	
Chrysene	1	80	60.980	76.2	49.5 - 131	
Dibenz(a,h)anthracene	1	80	60.529	75.7	44.8 - 133	
Fluoranthene	1	80	59.762	74.7	49.3 - 128	
Fluorene	1	80	56.011	70	50.6 - 121	
Indeno(1,2,3-cd)pyrene	1	80	59.947	74.9	46.1 - 135	
Naphthalene	1	80	60.832	76	49.6 - 115	
Phenanthrene	1	80	59.320	74.2	48.8 - 121	
Pyrene	1	80	63.355	79.2	44.7 - 130	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS22, BNAMS18	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
1-Methylnaphthalene	1	80	60.808	76	63.166	79	50.6 - 122		3.8	20	
2-Chloronaphthalene	1	80	58.209	72.8	60.188	75.2	53.9 - 121		3.34	20	
2-Methylnaphthalene	1	80	57.528	71.9	59.523	74.4	50.4 - 120		3.41	20	
Acenaphthene	1	80	57.824	72.3	59.742	74.7	52.4 - 120		3.26	20	
Acenaphthylene	1	80	58.105	72.6	59.773	74.7	49.6 - 120		2.83	20	
Anthracene	1	80	61.159	76.4	63.075	78.8	50.3 - 130		3.08	20	
Benzo(a)anthracene	1	80	55.317	69.1	56.918	71.1	46.7 - 125		2.85	20	
Benzo(a)pyrene	1	80	53.132	66.4	53.961	67.5	42.3 - 119		1.55	20	
Benzo(b)fluoranthene	1	80	53.244	66.6	55.811	69.8	43.6 - 124		4.71	20	
Benzo(g,h,i)perylene	1	80	56.622	70.8	58.437	73	45.1 - 132		3.16	20	
Benzo(k)fluoranthene	1	80	57.949	72.4	59.982	75	46.1 - 131		3.45	20	
Chrysene	1	80	58.637	73.3	60.980	76.2	49.5 - 131		3.92	20	
Dibenz(a,h)anthracene	1	80	58.715	73.4	60.529	75.7	44.8 - 133		3.04	20	
Fluoranthene	1	80	59.022	73.8	59.762	74.7	49.3 - 128		1.25	20	
Fluorene	1	80	54.394	68	56.011	70	50.6 - 121		2.93	20	
Indeno(1,2,3-cd)pyrene	1	80	58.243	72.8	59.947	74.9	46.1 - 135		2.88	20	
Naphthalene	1	80	58.375	73	60.832	76	49.6 - 115		4.12	20	
Phenanthrene	1	80	57.299	71.6	59.320	74.2	48.8 - 121		3.47	20	
Pyrene	1	80	61.830	77.3	63.355	79.2	44.7 - 130		2.44	20	

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS22, BNAMS18	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Matrix Spike / Matrix Spike Duplicate

L772011-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
1-Methylnaphthalene	1	80	2.4427	61.514	73.8	62.468	75	28.4 - 137		1.54	20	
2-Chloronaphthalene	1	80	<2	56.320	70.4	57.492	71.9	38.6 - 126		2.06	20	
2-Methylnaphthalene	1	80	4.2012	59.426	69	60.407	70.3	26.6 - 137		1.64	20	
Acenaphthene	1	80	<0.6	56.263	70.3	57.340	71.7	31.9 - 130		1.9	20	
Acenaphthylene	1	80	<0.6	58.514	73.1	59.813	74.8	33.7 - 129		2.2	20	
Anthracene	1	80	6.8937	65.857	73.7	66.582	74.6	26.5 - 141		1.09	21.2	
Benzo(a)anthracene	1	80	40.522	99.143	73.3	97.184	70.8	18.3 - 136		1.99	24.6	
Benzo(a)pyrene	1	80	47.460	102.63	69	100.65	66.5	16.9 - 135		1.95	25.2	
Benzo(b)fluoranthene	1	80	49.533	101.63	65.1	89.192	49.6	10 - 134		13	30.9	
Benzo(g,h,i)perylene	1	80	26.047	83.146	71.4	84.214	72.7	14.1 - 140		1.28	25.5	
Benzo(k)fluoranthene	1	80	15.370	74.426	73.8	83.066	84.6	18.2 - 138		11	25.6	
Chrysene	1	80	46.999	104.04	71.3	102.17	69	17.1 - 145		1.81	24.2	
Dibenz(a,h)anthracene	1	80	7.8431	66.352	73.1	66.188	72.9	18.5 - 138		0.25	24.3	
Fluoranthene	1	80	48.071	113.73	82.1	101.18	66.4	15.4 - 144		11.7	27.1	
Fluorene	1	80	1.3326	54.769	66.8	55.245	67.4	23.5 - 136		0.87	20	
Indeno(1,2,3-cd)pyrene	1	80	25.444	84.649	74	83.890	73.1	14.5 - 142		0.9	25.8	
Naphthalene	1	80	3.3929	59.455	70.1	61.183	72.2	29.2 - 128		2.87	20	
Phenanthrene	1	80	11.181	65.067	67.4	64.844	67.1	20.1 - 134		0.34	23.6	
Pyrene	1	80	52.390	113.07	75.9	102.95	63.2	11 - 148		9.37	26.1	

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Est. 1970

Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Internal Standard Response and Retention Time Summary

File ID: 0622A_04
Analyzed: 06/22/15 123400

	NAP		ACE		PHEN		CHR	
	Response	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
12 Hr. Std	63988	5.51	38206	7.41	66881	8.95	73181	11.65
Upper Limit	128000	6.01	76400	7.91	134000	9.45	146000	12.15
Lower Limit	32000	5.01	19100	6.91	33400	8.45	36600	11.15
Sample ID	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
L771980-04 20X	67808	5.51	42527	7.41	79077	8.95	93829	11.65

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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(800) 767-5859
Fax (615) 758-5859
Tax I.D 62-0814289
Est. 1970

Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Internal Standard Response and Retention Time Summary

File ID: 0622A_04
Analyzed: 06/22/15 123400

	NAP		PER	
	Response	**RT**	**Response**	**RT**
12 Hr. Std	63988	5.51	88629	13.26
Upper Limit	128000	6.01	177000	13.76
Lower Limit	32000	5.01	44300	12.76
Sample ID	**Response**	**RT**	**Response**	**RT**
L771980-04 20X	67808	5.51	117901	13.25

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS22	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Internal Standard Response and Retention Time Summary

File ID: 0622_03
Analyzed: 06/22/15 005700

	NAP		ACE		PHEN		CHR	
	Response	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
12 Hr. Std	53003	5.48	28608	7.40	43380	8.93	39168	11.64
Upper Limit	106000	5.98	57200	7.90	86800	9.43	78300	12.14
Lower Limit	26500	4.98	14300	6.90	21700	8.43	19600	11.14
Sample ID	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
L771980-04			27272	7.40	45162	8.93	39079	11.63
L771980-01	54422	5.49	30292	7.40	46453	8.93	42745	11.63
L771980-05	58984	5.50	28787	7.40	46324	8.93	41841	11.63
MSD WG796853	55575	5.49	30587	7.40	47861	8.93	46892	11.63
MS WG796853	55011	5.49	30340	7.40	47007	8.93	47010	11.64
LCSD WG796853	57046	5.49	31398	7.40	47920	8.93	42974	11.64
LCS WG796853	60869	5.48	33260	7.40	50967	8.94	45889	11.65
BLANK WG796853	57475	5.49	31822	7.40	47330	8.93	42854	11.64

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS22	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Internal Standard Response and Retention Time Summary

File ID: 0622_03
Analyzed: 06/22/15 005700

	NAP		PER	
	Response	**RT**	**Response**	**RT**
12 Hr. Std	53003	5.48	39203	13.24
Upper Limit	106000	5.98	78400	13.74
Lower Limit	26500	4.98	19600	12.74
Sample ID	**Response**	**RT**	**Response**	**RT**
L771980-04			40275	13.23
L771980-01	54422	5.49	44807	13.23
L771980-05	58984	5.50	43118	13.23
MSD WG796853	55575	5.49	48027	13.23
MS WG796853	55011	5.49	47381	13.23
LCSD WG796853	57046	5.49	42981	13.23
LCS WG796853	60869	5.48	46454	13.25
BLANK WG796853	57475	5.49	43195	13.23

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L771980
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 -	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG796853**
Analysis Date:	6/22/2015 7:31:00 AM	Analyst:	280
Instrument ID:	BNAMS22	Prep Date:	6/18/2015
Sample Numbers:	L771980-01, -04, -05		

Surrogate Summary

			FBP		NBZ		TPH	
Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec
L771980-01	BNAMS22	0622_19	0.0552	66.3	0.0699	83.9	0.0467	56.1
L771980-04	BNAMS22	0622_20	0.0541	65.0			0.0519	62.3
L771980-05	BNAMS22	0622_21	0.0541	64.9	0.143	171 J1	0.0500	60.0
LCS WG796853	BNAMS22	0622_05	0.0582	69.9	0.0719	86.3	0.0526	63.1
LCSD WG796853	BNAMS22	0622_06	0.0611	73.3	0.0763	91.6	0.0551	66.1
BLANK WG796853	BNAMS22	0622_07	0.0591	70.9	0.0733	88.0	0.0537	64.5
MS WG796853	BNAMS22	0622_23	0.0559	67.1	0.0717	86.1	0.0479	57.5
MSD WG796853	BNAMS22	0622_24	0.0570	68.5	0.0739	88.7	0.0487	58.5
L771980-04 20x	BNAMS18	0622A_25			0.0312	37.5 J7		

FBP --2-FLUOROBIPHENYL	True Value: 0.0833 ppm	Limits: 40.6 - 122
NBZ --NITROBENZENE-D5	True Value: 0.0833 ppm	Limits: 22.1 - 146
TPH --P-TERPHENYL-D14	True Value: 0.0833 ppm	Limits: 32.20 - 131

ARCADIS US - San Francisco, CA

100 Montgomery Street, Suite 300
San Francisco, CA 94104

Billing Information:
Attn: Accounts Payable
630 Plaza Drive, Suite 600
Highlands Ranch, CO 80129

Report to: Claire Hamaji, Carl Edwards
Email To: Claire.Hamaji@arcadis-us.com Carl.Edwards@arcadis-us.com

Project Description: CA-11109 -
City/State Collected: Oakland, CA

Phone: 415-432-6917
Fax: 720-344-0486

Client Project # GP09BPNA.C106
Lab Project # ARCADISBP-CA11109

Collected by (print): B Jessup
Site/Facility ID # 11109
P.O. #

Collected by (signature): B Jessup
Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X__Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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L# 771980
A059

Acctnum: ARCADISBP
Template: T102861
Prelogin: P510924
TSR: 358 - Jarred Willis
PB: 6/21/15
Shipped Via: FedEx Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOC Screen 2ozClr-NoPres	VOCs & oxys by 8260 40mlAmb-HCl	GRO (8015B)	BTEX and MTBE (8260B)	+ Naphthalene (8260B)	PAHs (8270 C/D-SIM)	Cl. Chlorinated VOCs	(6010/6020) Wear Metals (Nickel, Lead, Zinc, Chromium, Cadmium)	Total Lead (6010B)	TPH mo (8015B)	Rem./Contaminant	Sample # (lab only)
~~B-6~~		~~GW~~				~~5~~			X	X								
~~B-7~~		~~GW~~				~~5~~			X	X								
~~B-1~~		GW				~~8~~		X	X	X	X	X	X	X				
~~B-1~~		~~SS~~				~~7~~	X		X	X	X	X	X	X	X	X		
B-8-5.5-061715	Grab	SS	5-5.5	6/17/15	0900	7	X		X	X	X	X			X	X	BJ	-01
B-3-5-061715	↓	SS	4.5-5	6/17/15	1245	1										X		-02
B-5-5-061715		SS	4.5-5	6/17/15	1100	1		BJ								X		-03
B-8-8.5-061715		~~SS~~GW	8-8.5	6/17/15	0930	~~7~~ 7	X		X	X	X	X			X	X	BJ	-04
B-8-14-061715		SS	13.5-14	6/17/15	1010	7	X		X	X	X	X			X	X	BJ	-05

NOT COLLECTED TODAY

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

6361019569LO

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
B Jessup	6/17/15	1630	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Dale By

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____
Temp: 3.9 °C Bottles Received: 23/17B
Date: 6/18/15 Time: 0910

Condition: F (lab use only)
COC Seal Intact: ___ Y ___ N ___ NA
pH Checked: NCF:
50 of 51 X

Troy Dunlap

ESC Lab Sciences
Non-Conformance Form

Login #: L771980	Client: ARCADISBP	Date: 6/18/15	Evaluated by: Troy Dunlap

Non-Conformance (check applicable items)

	Sample Integrity		Chain of Custody Clarification		
	Parameter(s) past holding time	X	Login Clarification Needed		**If Broken Container:**
	Improper temperature		Chain of custody is incomplete		Insufficient packing material around container
	Improper container type		Please specify Metals requested.		Insufficient packing material inside cooler
	Improper preservation		Please specify TCLP requested.		Improper handling by carrier (FedEx / UPS / Courie
	Insufficient sample volume.		Received additional samples not listed on coc.		Sample was frozen
	Sample is biphasic.		Sample ids on containers do not match ids on coc		Container lid not intact
	Vials received with headspace.		Trip Blank not received.		**If no Chain of Custody:**
	Broken container		Client did not "X" analysis.		Received by:
	Broken container:		Chain of Custody is missing		Date/Time:
	Sufficient sample remains				Temp./Cont. Rec./pH:
					Carrier:
					Tracking#

Login Comments: Please clarify analysis TPHmo for B-3-5 and B-5-5.

Client informed by:		Call		Email		Voice Mail		Date: 6/19/15	Time: 14:26
TSR Initials:CM	Client Contact:								

Login Instructions:

Log as DROCAER.

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Est. 1970

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

Report Summary

Monday June 22, 2015

Report Number: L772240
Samples Received: 06/19/15
Client Project: GP09BPNA.C106

Description: CA-11109 - GP09BPNA.C106

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

June 22,2015

ESC Sample # : L772240-01

Date Received : June 19, 2015
Description : CA-11109 - GP09BPNA.C106

Site ID :

Sample ID : B-5-7-061815

Project # : GP09BPNA.C106

Collected By : Bo Jessup
Collection Date : 06/18/15 10:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	80.7	0.0333		%		2540 G-2	06/21/15	1
Oil Range Organics								
C28-C40 Oil Range	22.	0.27	5.0	mg/kg		8015	06/20/15	1
Surrogate Recovery								
o-Terphenyl	78.7			% Rec.		8015	06/20/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 06/22/15 13:21 Printed: 06/22/15 15:11

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REPORT OF ANALYSIS

Claire Hamaji
ARCADIS
100 Montgomery Street, Suite 300
San Francisco, CA 94104

June 22,2015

ESC Sample # : L772240-02

Site ID :

Project # : GP09BPNA.C106

Date Received : June 19, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-5-8.5-061815

Collected By : Bo Jessup
Collection Date : 06/18/15 10:40

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.6	0.0333		%		2540 G-2	06/21/15	1
Oil Range Organics								
C28-C40 Oil Range	1600	14.	240	mg/kg		8015	06/20/15	50
Surrogate Recovery								
o-Terphenyl	109.			% Rec.	J7	8015	06/20/15	50

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 06/22/15 13:21 Printed: 06/22/15 15:11

Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L772240-02	WG797101	SAMP	o-Terphenyl	R3044745	J7

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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ARCADIS
Claire Hamaji
100 Montgomery Street, Suite 300

San Francisco, CA 94104

Quality Assurance Report
Level II

L772240

June 22, 2015

Laboratory Blank

Analyte	Result	Units	% Rec	Limit	Batch	Date Analyzed
C28-C40 Oil Range	< 4	mg/kg			WG797101	06/20/15 09:27
o-Terphenyl		% Rec.	89.40	50-150	WG797101	06/20/15 09:27
Total Solids	< .1	%			WG797162	06/21/15 09:20

Duplicate

Analyte	Units	Result	Duplicate	RPD	Limit	Ref Samp	Batch
Total Solids	%	79.9	79.8	0.155	5	L772228-06	WG797162

Laboratory Control Sample

Analyte	Units	Known Val	Result	% Rec	Limit	Batch
Total Solids	%	50	49.9	99.9	85-115	WG797162

Batch number /Run number / Sample number cross reference

WG797101: R3044745: L772240-01 02
WG797162: R3044767: L772240-01 02

* * Calculations are performed prior to rounding of reported values.
* Performance of this Analyte is outside of established criteria.
For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'

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ARCADIS
Claire Hamaji
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San Francisco, CA 94104

Quality Assurance Report
Level II

L772240

June 22, 2015

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.

ARCADIS
Infrastructure · Water · Environment · Buildings

ID#:

CHAIN OF CUSTODY & LABORATORY ANALYSIS REQUEST FORM

Page 1 of 1

Lab Work Order # 177240

Send Results to:

Contact & Company Name: Claire Hamaji, Carl Edwards
Telephone: 415-432-6917, 510-318-2438 (BO)
Address: on file
Fax:
City State Zip
E-mail Address: Claire.Hamaji@arcadis-us.com, Carl.Edwards@arcadis-us.com
Project Name/Location (City, State): BP-11109
Project #: GP09BPNA-C106
Sampler's Printed Name: BO Jessup
Sampler's Signature: B Jessup

Sample ID	Collection Date	Collection Time	Type (✓) Comp	Type (✓) Grab	Matrix	Preservative	Filtered (✓)	# of Containers	Container Information	Motor Oil by 8015B
B-5-7-061815	6/18	1030		X	SO	E		1	7	X
B-5-8.5-061815	6/18	1040		X	SO					X

PARAMETER ANALYSIS & METHOD

Keys

Preservation Key:
A. H_2SO_4
B. HCL
C. HNO_3
D. NaOH
E. None
F. Other: _____
G. Other: _____
H. Other: _____

Container Information Key:
1. 40 ml Vial
2. 1 L Amber
3. 250 ml Plastic
4. 500 ml Plastic
5. Encore
6. 2 oz. Glass
7. 4 oz. Glass
8. 8 oz. Glass
9. Other: _____
10. Other: _____

Matrix Key:
SO - Soil
W - Water
T - Tissue
SE - Sediment
SL - Sludge
A - Air
NL - NAPL/Oil
SW - Sample Wipe
Other: _____

REMARKS T102861

-01
-02

K108

Special Instructions/Comments:

☐ Special QA/QC Instructions(✓):

OK

Laboratory Information and Receipt		Relinquished By	Received By	Relinquished By	Laboratory Received By
Lab Name: ESC	Cooler Custody Seal (✓) ☐ Intact ☐ Not Intact	Printed Name: Bo Jessup	Printed Name:	Printed Name: FED EX	Printed Name:
☒ Cooler packed with ice (✓)		Signature: B	Signature:	Signature: 636108816 10	Signature:
Specify Turnaround Requirements: STANDARD TAT	Sample Receipt:	Firm: ARCADIS	Firm/Courier:	Firm/Courier:	Firm: ESL
Shipping Tracking #:	Condition/Cooler Temp: _____	Date/Time: 6/18/15 1650	Date/Time:	Date/Time:	Date/Time: 6-19-15 0900

20730826 CofC AR Form 01.12.2007

Distribution: WHITE – Laboratory returns with results YELLOW – Lab copy PINK – Retained by ARCADIS

cont. 2 = 4oz

3.6° AVS COC=D

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Quality Control Summary
SDG: L772834

For: ARCADIS US - San Francisco, CA
Project: CA-11109 - GP09BPNA.C106
July 06, 2015

Sample Receiving and Handling

All sample aliquots were received at the correct temperature, in the proper containers, and with the appropriate preservatives. All method specified holding times were met.

Total Solids by Method 2540 G-2011

Laboratory Control Sample

Samples L772834-01, -05, -06, and -07 were analyzed in analytical batch WG798236. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch.

Sample Duplicate Analysis

For analytical batch WG798236 sample duplicate analysis was performed on sample L772836-04. The relative percent differences were within the method limits for target analytes reported from this batch.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Trace Metals by Method 6010B

Laboratory Control Sample

Samples L772834-05, -06, and -07 were analyzed in analytical batch WG797796. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG797796 matrix spike/matrix spike duplicate analysis was performed on sample L772818-03. The matrix spike recoveries were above laboratory control limits for Lead. The spike recoveries were within limits for the remaining target compounds reported from this batch. The relative percent difference exceeded laboratory limits for Lead.

Blank Analysis

The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile TPH by Method 8015

Laboratory Control Sample

Samples L772834-02, -03, -04, and -08 were analyzed in analytical batch WG798722. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Samples L772834-05, -06, and -07 were analyzed in analytical batch WG799322. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate

For analytical batch WG798722 matrix spike/matrix spike duplicate analysis was performed on sample L772739-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

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Quality Control Summary
SDG: L772834

For: ARCADIS US - San Francisco, CA
Project: CA-11109 - GP09BPNA.C106
July 06, 2015

For analytical batch WG799322 matrix spike/matrix spike duplicate analysis was performed on sample L772957-01. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Volatile Organic Compounds by Method 8260B
Laboratory Control Sample
Samples L772834-02, -03, -04, and -08 were analyzed in analytical batch WG798183. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Samples L772834-05, -06, and -07 were analyzed in analytical batch WG798519. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference exceeded laboratory limits for Trichlorofluoromethane.

Matrix Spike/Matrix Spike Duplicate
For analytical batch WG798183 matrix spike/matrix spike duplicate analysis was performed on sample L772955-01. The matrix spike recoveries were within laboratory control limits for all target analytes reported from this batch. The relative percent difference exceeded laboratory limits for Benzene, Methyl tert-butyl ether, and Naphthalene.

For analytical batch WG798519 matrix spike/matrix spike duplicate analysis was performed on sample L772802-02. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM
Laboratory Control Sample
Samples L772834-05, -06, and -07 were analyzed in analytical batch WG797705. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference exceeded laboratory limits for Benzo(k)fluoranthene.

Samples L772834-03 and 04 were analyzed in analytical batch WG798089. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate
For analytical batch WG797705 matrix spike/matrix spike duplicate analysis was performed on sample L772720-12. The matrix spike recoveries and relative percent differences were within laboratory control limits for all target analytes reported from this batch.

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Quality Control Summary
SDG: L772834

For: ARCADIS US - San Francisco, CA
Project: CA-11109 - GP09BPNA.C106
July 06, 2015

Precision for batch WG798089 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Diesel and Oil Ranges by Method 8015
Laboratory Control Sample
Samples L772834-01, -05, -06, and -07 were analyzed in analytical batch WG798143. The laboratory control sample associated with these samples was within the laboratory control limits for all target analytes reported from this batch. The relative percent difference was within laboratory limits for all target analytes reported from this batch.

Matrix Spike/Matrix Spike Duplicate
Precision for batch WG798143 was evaluated using the LCS/LCSD. The RPDs were within method limits.

Blank Analysis
The method blank, the initial, and all continuing calibration blanks contained no analytes at concentrations above the method reporting limit.

Nancy F. McLain
ESC Representative
ESC Lab Sciences

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Hollis Phillips
ARCADIS
100 Montgomery Street
Suite 300
San Francisco, CA 94104

Report Summary

Thursday July 02, 2015

Report Number: L772834
Samples Received: 06/23/15
Client Project: GP09BPNA.C106

Description: CA-11109 - GP09BPNA.C106

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

Jarred Willis , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197, FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016, NC - ENV375/DW21704/BIO041, ND - R-140. NJ - TN002, NJ NELAP - TN002, SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612, MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1, TX - T104704245-11-3, OK - 9915, PA - 68-02979, IA Lab #364, EPA - TN002

Accreditation is only applicable to the test methods specified on each scope of accreditation held by ESC Lab Sciences.

Where applicable, sampling conducted by ESC is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.

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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02, 2015

ESC Sample # : L772834-01

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-3-6.5-061715

Collected By : Bo Jessup
Collection Date : 06/17/15 11:53

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	77.1	0.0333		%		2540 G-2	06/26/15	1
Oil Range Organics								
C28-C40 Oil Range	840	1.4	26.	mg/kg		8015	06/25/15	5
Surrogate Recovery								
o-Terphenyl	88.6			% Rec.		8015	06/25/15	5

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
Reported: 07/02/15 17:19 Printed: 07/02/15 17:25

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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02, 2015

ESC Sample # : L772834-02

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Site ID : 11109

Sample ID : B-6-13-061915

Project # : GP09BPNA.C106

Collected By : Bo Jessup
Collection Date : 06/19/15 17:25

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPHG C6 - C12	U	32.	100	ug/l		8015	06/27/15	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	95.3			% Rec.		8015	06/27/15	1
Benzene	U	0.33	1.0	ug/l		8260B	07/02/15	1
Toluene	U	0.78	5.0	ug/l		8260B	07/02/15	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	07/02/15	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	07/02/15	1
Methyl tert-butyl ether	0.43	0.37	1.0	ug/l	J	8260B	07/02/15	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	07/02/15	1
Dibromofluoromethane	99.1			% Rec.		8260B	07/02/15	1
4-Bromofluorobenzene	104.			% Rec.		8260B	07/02/15	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02, 2015

ESC Sample # : L772834-03

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-1-25-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 17:00

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPHG C6 - C12	U	32.	100	ug/l		8015	06/27/15	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	95.4			% Rec.		8015	06/27/15	1
Benzene	U	0.33	1.0	ug/l		8260B	07/02/15	1
Toluene	U	0.78	5.0	ug/l		8260B	07/02/15	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	07/02/15	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	07/02/15	1
Methyl tert-butyl ether	3.1	0.37	1.0	ug/l		8260B	07/02/15	1
Naphthalene	U	1.0	5.0	ug/l		8260B	07/02/15	1
Surrogate Recovery								
Toluene-d8	102.			% Rec.		8260B	07/02/15	1
Dibromofluoromethane	88.7			% Rec.		8260B	07/02/15	1
a,a,a-Trifluorotoluene	107.			% Rec.		8260B	07/02/15	1
4-Bromofluorobenzene	114.			% Rec.		8260B	07/02/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.028	0.10	ug/l		8270C-S	06/25/15	2
Acenaphthene	U	0.020	0.10	ug/l		8270C-S	06/25/15	2
Acenaphthylene	U	0.024	0.10	ug/l		8270C-S	06/25/15	2
Benzo(a)anthracene	0.022	0.0082	0.10	ug/l	J	8270C-S	06/25/15	2
Benzo(a)pyrene	U	0.023	0.10	ug/l		8270C-S	06/25/15	2
Benzo(b)fluoranthene	0.010	0.0042	0.10	ug/l	J	8270C-S	06/25/15	2
Benzo(g,h,i)perylene	0.0075	0.0045	0.10	ug/l	J	8270C-S	06/25/15	2
Benzo(k)fluoranthene	U	0.027	0.10	ug/l		8270C-S	06/25/15	2
Chrysene	U	0.022	0.10	ug/l		8270C-S	06/25/15	2
Dibenz(a,h)anthracene	U	0.0079	0.10	ug/l		8270C-S	06/25/15	2
Fluoranthene	U	0.031	0.10	ug/l		8270C-S	06/25/15	2
Fluorene	U	0.017	0.10	ug/l		8270C-S	06/25/15	2
Indeno(1,2,3-cd)pyrene	U	0.030	0.10	ug/l		8270C-S	06/25/15	2
Naphthalene	U	0.040	0.50	ug/l		8270C-S	06/25/15	2
Phenanthrene	0.031	0.016	0.10	ug/l	J	8270C-S	06/25/15	2
Pyrene	U	0.023	0.10	ug/l		8270C-S	06/25/15	2
1-Methylnaphthalene	U	0.016	0.50	ug/l		8270C-S	06/25/15	2
2-Methylnaphthalene	0.022	0.018	0.50	ug/l	J	8270C-S	06/25/15	2
2-Chloronaphthalene	U	0.013	0.50	ug/l		8270C-S	06/25/15	2
Surrogate Recovery								
Nitrobenzene-d5	114.			% Rec.		8270C-S	06/25/15	2
2-Fluorobiphenyl	91.4			% Rec.		8270C-S	06/25/15	2
p-Terphenyl-d14	86.5			% Rec.		8270C-S	06/25/15	2

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
The reported analytical results relate only to the sample submitted.

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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02,2015

ESC Sample # : L772834-04

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : EB-1-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 17:30

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPHG C6 - C12	U	32.	100	ug/l		8015	06/27/15	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	95.8			% Rec.		8015	06/27/15	1
Benzene	U	0.33	1.0	ug/l		8260B	07/02/15	1
Toluene	U	0.78	5.0	ug/l		8260B	07/02/15	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	07/02/15	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	07/02/15	1
Methyl tert-butyl ether	U	0.37	1.0	ug/l		8260B	07/02/15	1
Naphthalene	U	1.0	5.0	ug/l		8260B	07/02/15	1
Surrogate Recovery								
Toluene-d8	107.			% Rec.		8260B	07/02/15	1
Dibromofluoromethane	96.8			% Rec.		8260B	07/02/15	1
a,a,a-Trifluorotoluene	100.			% Rec.		8260B	07/02/15	1
4-Bromofluorobenzene	105.			% Rec.		8260B	07/02/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.014	0.050	ug/l		8270C-S	06/25/15	1
Acenaphthene	U	0.010	0.050	ug/l		8270C-S	06/25/15	1
Acenaphthylene	U	0.012	0.050	ug/l		8270C-S	06/25/15	1
Benzo(a)anthracene	0.010	0.0041	0.050	ug/l	J	8270C-S	06/25/15	1
Benzo(a)pyrene	U	0.012	0.050	ug/l		8270C-S	06/25/15	1
Benzo(b)fluoranthene	0.0048	0.0021	0.050	ug/l	J	8270C-S	06/25/15	1
Benzo(g,h,i)perylene	0.0045	0.0023	0.050	ug/l	J	8270C-S	06/25/15	1
Benzo(k)fluoranthene	U	0.014	0.050	ug/l		8270C-S	06/25/15	1
Chrysene	U	0.011	0.050	ug/l		8270C-S	06/25/15	1
Dibenz(a,h)anthracene	U	0.0040	0.050	ug/l		8270C-S	06/25/15	1
Fluoranthene	U	0.016	0.050	ug/l		8270C-S	06/25/15	1
Fluorene	U	0.0085	0.050	ug/l		8270C-S	06/25/15	1
Indeno(1,2,3-cd)pyrene	U	0.015	0.050	ug/l		8270C-S	06/25/15	1
Naphthalene	U	0.020	0.25	ug/l		8270C-S	06/25/15	1
Phenanthrene	0.011	0.0082	0.050	ug/l	J	8270C-S	06/25/15	1
Pyrene	U	0.012	0.050	ug/l		8270C-S	06/25/15	1
1-Methylnaphthalene	U	0.0082	0.25	ug/l		8270C-S	06/25/15	1
2-Methylnaphthalene	U	0.0090	0.25	ug/l		8270C-S	06/25/15	1
2-Chloronaphthalene	U	0.0065	0.25	ug/l		8270C-S	06/25/15	1
Surrogate Recovery								
Nitrobenzene-d5	123.			% Rec.		8270C-S	06/25/15	1
2-Fluorobiphenyl	108.			% Rec.		8270C-S	06/25/15	1
p-Terphenyl-d14	108.			% Rec.		8270C-S	06/25/15	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02,2015

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-1-4-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 09:00

ESC Sample # : L772834-05

Site ID : 11109

Project # : GP09BPNA.C106

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	84.2	0.0333		%		2540 G-2	06/26/15	1
Cadmium	U	0.070	0.59	mg/kg		6010B	06/24/15	1
Chromium	25.	0.14	1.2	mg/kg		6010B	06/24/15	1
Lead	5.5	0.19	0.59	mg/kg		6010B	06/24/15	1
Nickel	38.	0.49	2.4	mg/kg		6010B	06/24/15	1
Zinc	27.	0.59	5.9	mg/kg		6010B	06/24/15	1
TPHG C6 - C12	U	0.034	0.12	mg/kg		8015	06/30/15	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	93.1			% Rec.		8015	06/30/15	1
Volatiles - Oxygenates								
Acetone	0.033	0.010	0.059	mg/kg	J	8260B	07/02/15	1
Acrylonitrile	U	0.0018	0.012	mg/kg		8260B	07/02/15	1
Benzene	U	0.00027	0.0012	mg/kg		8260B	07/02/15	1
Bromobenzene	U	0.00028	0.0012	mg/kg		8260B	07/02/15	1
Bromodichloromethane	U	0.00025	0.0012	mg/kg		8260B	07/02/15	1
Bromoform	U	0.00042	0.0012	mg/kg		8260B	07/02/15	1
Bromomethane	U	0.0013	0.0059	mg/kg		8260B	07/02/15	1
n-Butylbenzene	U	0.00026	0.0012	mg/kg		8260B	07/02/15	1
sec-Butylbenzene	U	0.00020	0.0012	mg/kg		8260B	07/02/15	1
tert-Butylbenzene	U	0.00021	0.0012	mg/kg		8260B	07/02/15	1
Carbon tetrachloride	U	0.00033	0.0012	mg/kg		8260B	07/02/15	1
Carbon disulfide	U	0.00022	0.0012	mg/kg		8260B	07/02/15	1
Chlorobenzene	U	0.00021	0.0012	mg/kg		8260B	07/02/15	1
Chlorodibromomethane	U	0.00037	0.0012	mg/kg		8260B	07/02/15	1
Chloroethane	U	0.00095	0.0059	mg/kg		8260B	07/02/15	1
2-Chloroethyl vinyl ether	U	0.0023	0.059	mg/kg		8260B	07/02/15	1
Chloroform	U	0.00023	0.0059	mg/kg		8260B	07/02/15	1
Chloromethane	U	0.00038	0.0030	mg/kg		8260B	07/02/15	1
2-Chlorotoluene	U	0.00030	0.0012	mg/kg		8260B	07/02/15	1
4-Chlorotoluene	U	0.00024	0.0012	mg/kg		8260B	07/02/15	1
1,2-Dibromo-3-Chloropropane	U	0.0010	0.0059	mg/kg		8260B	07/02/15	1
1,2-Dibromoethane	U	0.00034	0.0012	mg/kg		8260B	07/02/15	1
Dibromomethane	U	0.00038	0.0012	mg/kg		8260B	07/02/15	1
1,2-Dichlorobenzene	U	0.00030	0.0012	mg/kg		8260B	07/02/15	1
1,3-Dichlorobenzene	U	0.00024	0.0012	mg/kg		8260B	07/02/15	1
1,4-Dichlorobenzene	U	0.00023	0.0012	mg/kg		8260B	07/02/15	1
Dichlorodifluoromethane	U	0.00071	0.0059	mg/kg		8260B	07/02/15	1
1,1-Dichloroethane	U	0.00020	0.0012	mg/kg		8260B	07/02/15	1
1,2-Dichloroethane	U	0.00026	0.0012	mg/kg		8260B	07/02/15	1
1,1-Dichloroethene	U	0.00030	0.0012	mg/kg		8260B	07/02/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

The reported analytical results relate only to the sample submitted
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02,2015

ESC Sample # : L772834-05

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-1-4-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 09:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
cis-1,2-Dichloroethene	U	0.00024	0.0012	mg/kg		8260B	07/02/15	1
trans-1,2-Dichloroethene	U	0.00026	0.0012	mg/kg		8260B	07/02/15	1
1,2-Dichloropropane	U	0.00036	0.0012	mg/kg		8260B	07/02/15	1
1,1-Dichloropropene	U	0.00032	0.0012	mg/kg		8260B	07/02/15	1
1,3-Dichloropropane	U	0.00021	0.0012	mg/kg		8260B	07/02/15	1
cis-1,3-Dichloropropene	U	0.00026	0.0012	mg/kg		8260B	07/02/15	1
trans-1,3-Dichloropropene	U	0.00027	0.0012	mg/kg		8260B	07/02/15	1
2,2-Dichloropropane	U	0.00028	0.0012	mg/kg		8260B	07/02/15	1
Ethylbenzene	U	0.00030	0.0012	mg/kg		8260B	07/02/15	1
Hexachloro-1,3-butadiene	U	0.00034	0.0012	mg/kg		8260B	07/02/15	1
Isopropylbenzene	U	0.00024	0.0012	mg/kg		8260B	07/02/15	1
p-Isopropyltoluene	U	0.00020	0.0012	mg/kg		8260B	07/02/15	1
2-Butanone (MEK)	U	0.0047	0.012	mg/kg		8260B	07/02/15	1
Methylene Chloride	U	0.0010	0.0059	mg/kg		8260B	07/02/15	1
4-Methyl-2-pentanone (MIBK)	U	0.0019	0.012	mg/kg		8260B	07/02/15	1
Naphthalene	U	0.0010	0.0059	mg/kg		8260B	07/02/15	1
n-Propylbenzene	U	0.00021	0.0012	mg/kg		8260B	07/02/15	1
Styrene	U	0.00023	0.0012	mg/kg		8260B	07/02/15	1
1,1,1,2-Tetrachloroethane	U	0.00026	0.0012	mg/kg		8260B	07/02/15	1
1,1,2,2-Tetrachloroethane	U	0.00036	0.0012	mg/kg		8260B	07/02/15	1
1,1,2-Trichlorotrifluoroethane	U	0.00036	0.0012	mg/kg		8260B	07/02/15	1
Tetrachloroethene	U	0.00028	0.0012	mg/kg		8260B	07/02/15	1
Toluene	U	0.00043	0.0059	mg/kg		8260B	07/02/15	1
1,2,3-Trichlorobenzene	U	0.00031	0.0012	mg/kg		8260B	07/02/15	1
1,2,4-Trichlorobenzene	U	0.00039	0.0012	mg/kg		8260B	07/02/15	1
1,1,1-Trichloroethane	U	0.00029	0.0012	mg/kg		8260B	07/02/15	1
1,1,2-Trichloroethane	U	0.00028	0.0012	mg/kg		8260B	07/02/15	1
Trichloroethene	U	0.00028	0.0012	mg/kg		8260B	07/02/15	1
Trichlorofluoromethane	U	0.00038	0.0059	mg/kg	J3	8260B	07/02/15	1
1,2,3-Trichloropropane	U	0.00074	0.0030	mg/kg		8260B	07/02/15	1
1,2,4-Trimethylbenzene	U	0.00021	0.0012	mg/kg		8260B	07/02/15	1
1,2,3-Trimethylbenzene	U	0.00029	0.0012	mg/kg		8260B	07/02/15	1
1,3,5-Trimethylbenzene	U	0.00027	0.0012	mg/kg		8260B	07/02/15	1
Vinyl chloride	U	0.00029	0.0012	mg/kg		8260B	07/02/15	1
Xylenes, Total	U	0.00070	0.0036	mg/kg		8260B	07/02/15	1
Di-isopropyl ether	U	0.00025	0.0012	mg/kg		8260B	07/02/15	1
Ethanol	U	0.049	0.12	mg/kg		8260B	07/02/15	1
Ethyl tert-butyl ether	U	0.00040	0.0012	mg/kg		8260B	07/02/15	1
Methyl tert-butyl ether	0.00049	0.00021	0.0012	mg/kg	J	8260B	07/02/15	1
t-Amyl Alcohol	U	0.0042	0.059	mg/kg		8260B	07/02/15	1
tert-Butyl alcohol	U	0.0020	0.0059	mg/kg		8260B	07/02/15	1
tert-Amyl Methyl Ether	U	0.00027	0.0012	mg/kg		8260B	07/02/15	1
Surrogate Recovery								

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02,2015

ESC Sample # : L772834-05

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Site ID : 11109

Sample ID : B-1-4-061915

Project # : GP09BPNA.C106

Collected By : Bo Jessup
Collection Date : 06/19/15 09:00

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Toluene-d8	107.			% Rec.		8260B	07/02/15	1
Dibromofluoromethane	113.			% Rec.		8260B	07/02/15	1
4-Bromofluorobenzene	91.3			% Rec.		8260B	07/02/15	1
Oil Range Organics								
C28-C40 Oil Range	1.8	0.27	4.8	mg/kg	J	8015	06/25/15	1
Surrogate Recovery								
o-Terphenyl	92.8			% Rec.		8015	06/25/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Acenaphthene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Acenaphthylene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Benzo(a)anthracene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Benzo(a)pyrene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Benzo(b)fluoranthene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Benzo(g,h,i)perylene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Benzo(k)fluoranthene	U	0.00060	0.0071	mg/kg	J3	8270C-SI	06/25/15	1
Chrysene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Dibenz(a,h)anthracene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Fluoranthene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Fluorene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Indeno(1,2,3-cd)pyrene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Naphthalene	U	0.0020	0.024	mg/kg		8270C-SI	06/25/15	1
Phenanthrene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
Pyrene	U	0.00060	0.0071	mg/kg		8270C-SI	06/25/15	1
1-Methylnaphthalene	U	0.0020	0.024	mg/kg		8270C-SI	06/25/15	1
2-Methylnaphthalene	U	0.0020	0.024	mg/kg		8270C-SI	06/25/15	1
2-Chloronaphthalene	U	0.0020	0.024	mg/kg		8270C-SI	06/25/15	1
Surrogate Recovery								
p-Terphenyl-d14	71.9			% Rec.		8270C-SI	06/25/15	1
Nitrobenzene-d5	120.			% Rec.		8270C-SI	06/25/15	1
2-Fluorobiphenyl	90.3			% Rec.		8270C-SI	06/25/15	1

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U = ND (Not Detected)
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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02,2015

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-1-7.5-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 15:30

ESC Sample # : L772834-06

Site ID : 11109

Project # : GP09BPNA.C106

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	88.7	0.0333		%		2540 G-2	06/26/15	1
Cadmium	0.088	0.070	0.56	mg/kg	J	6010B	06/24/15	1
Chromium	32.	0.14	1.1	mg/kg		6010B	06/24/15	1
Lead	6.5	0.19	0.56	mg/kg		6010B	06/24/15	1
Nickel	52.	0.49	2.2	mg/kg		6010B	06/24/15	1
Zinc	34.	0.59	5.6	mg/kg		6010B	06/24/15	1
TPHG C6 - C12	U	0.034	0.11	mg/kg		8015	06/30/15	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	93.9			% Rec.		8015	06/30/15	1
Volatiles - Oxygenates								
Acetone	0.017	0.010	0.056	mg/kg	J	8260B	07/02/15	1
Acrylonitrile	U	0.0018	0.011	mg/kg		8260B	07/02/15	1
Benzene	U	0.00027	0.0011	mg/kg		8260B	07/02/15	1
Bromobenzene	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Bromodichloromethane	U	0.00025	0.0011	mg/kg		8260B	07/02/15	1
Bromoform	U	0.00042	0.0011	mg/kg		8260B	07/02/15	1
Bromomethane	U	0.0013	0.0056	mg/kg		8260B	07/02/15	1
n-Butylbenzene	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
sec-Butylbenzene	U	0.00020	0.0011	mg/kg		8260B	07/02/15	1
tert-Butylbenzene	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
Carbon tetrachloride	U	0.00033	0.0011	mg/kg		8260B	07/02/15	1
Carbon disulfide	U	0.00022	0.0011	mg/kg		8260B	07/02/15	1
Chlorobenzene	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
Chlorodibromomethane	U	0.00037	0.0011	mg/kg		8260B	07/02/15	1
Chloroethane	U	0.00095	0.0056	mg/kg		8260B	07/02/15	1
2-Chloroethyl vinyl ether	U	0.0023	0.056	mg/kg		8260B	07/02/15	1
Chloroform	U	0.00023	0.0056	mg/kg		8260B	07/02/15	1
Chloromethane	U	0.00038	0.0028	mg/kg		8260B	07/02/15	1
2-Chlorotoluene	U	0.00030	0.0011	mg/kg		8260B	07/02/15	1
4-Chlorotoluene	U	0.00024	0.0011	mg/kg		8260B	07/02/15	1
1,2-Dibromo-3-Chloropropane	U	0.0010	0.0056	mg/kg		8260B	07/02/15	1
1,2-Dibromoethane	U	0.00034	0.0011	mg/kg		8260B	07/02/15	1
Dibromomethane	U	0.00038	0.0011	mg/kg		8260B	07/02/15	1
1,2-Dichlorobenzene	U	0.00030	0.0011	mg/kg		8260B	07/02/15	1
1,3-Dichlorobenzene	U	0.00024	0.0011	mg/kg		8260B	07/02/15	1
1,4-Dichlorobenzene	U	0.00023	0.0011	mg/kg		8260B	07/02/15	1
Dichlorodifluoromethane	U	0.00071	0.0056	mg/kg		8260B	07/02/15	1
1,1-Dichloroethane	U	0.00020	0.0011	mg/kg		8260B	07/02/15	1
1,2-Dichloroethane	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
1,1-Dichloroethene	U	0.00030	0.0011	mg/kg		8260B	07/02/15	1

Results listed are dry weight basis.
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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02,2015

ESC Sample # : L772834-06

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-1-7.5-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 15:30

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
cis-1,2-Dichloroethene	U	0.00024	0.0011	mg/kg		8260B	07/02/15	1
trans-1,2-Dichloroethene	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
1,2-Dichloropropane	U	0.00036	0.0011	mg/kg		8260B	07/02/15	1
1,1-Dichloropropene	U	0.00032	0.0011	mg/kg		8260B	07/02/15	1
1,3-Dichloropropane	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
cis-1,3-Dichloropropene	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
trans-1,3-Dichloropropene	U	0.00027	0.0011	mg/kg		8260B	07/02/15	1
2,2-Dichloropropane	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Ethylbenzene	U	0.00030	0.0011	mg/kg		8260B	07/02/15	1
Hexachloro-1,3-butadiene	U	0.00034	0.0011	mg/kg		8260B	07/02/15	1
Isopropylbenzene	U	0.00024	0.0011	mg/kg		8260B	07/02/15	1
p-Isopropyltoluene	U	0.00020	0.0011	mg/kg		8260B	07/02/15	1
2-Butanone (MEK)	U	0.0047	0.011	mg/kg		8260B	07/02/15	1
Methylene Chloride	U	0.0010	0.0056	mg/kg		8260B	07/02/15	1
4-Methyl-2-pentanone (MIBK)	U	0.0019	0.011	mg/kg		8260B	07/02/15	1
Naphthalene	U	0.0010	0.0056	mg/kg		8260B	07/02/15	1
n-Propylbenzene	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
Styrene	U	0.00023	0.0011	mg/kg		8260B	07/02/15	1
1,1,1,2-Tetrachloroethane	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
1,1,2,2-Tetrachloroethane	U	0.00036	0.0011	mg/kg		8260B	07/02/15	1
1,1,2-Trichlorotrifluoroethane	U	0.00036	0.0011	mg/kg		8260B	07/02/15	1
Tetrachloroethene	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Toluene	U	0.00043	0.0056	mg/kg		8260B	07/02/15	1
1,2,3-Trichlorobenzene	U	0.00031	0.0011	mg/kg		8260B	07/02/15	1
1,2,4-Trichlorobenzene	U	0.00039	0.0011	mg/kg		8260B	07/02/15	1
1,1,1-Trichloroethane	U	0.00029	0.0011	mg/kg		8260B	07/02/15	1
1,1,2-Trichloroethane	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Trichloroethene	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Trichlorofluoromethane	U	0.00038	0.0056	mg/kg	J3	8260B	07/02/15	1
1,2,3-Trichloropropane	U	0.00074	0.0028	mg/kg		8260B	07/02/15	1
1,2,4-Trimethylbenzene	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
1,2,3-Trimethylbenzene	U	0.00029	0.0011	mg/kg		8260B	07/02/15	1
1,3,5-Trimethylbenzene	U	0.00027	0.0011	mg/kg		8260B	07/02/15	1
Vinyl chloride	U	0.00029	0.0011	mg/kg		8260B	07/02/15	1
Xylenes, Total	U	0.00070	0.0034	mg/kg		8260B	07/02/15	1
Di-isopropyl ether	U	0.00025	0.0011	mg/kg		8260B	07/02/15	1
Ethanol	U	0.049	0.11	mg/kg		8260B	07/02/15	1
Ethyl tert-butyl ether	U	0.00040	0.0011	mg/kg		8260B	07/02/15	1
Methyl tert-butyl ether	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
t-Amyl Alcohol	U	0.0042	0.056	mg/kg		8260B	07/02/15	1
tert-Butyl alcohol	U	0.0020	0.0056	mg/kg		8260B	07/02/15	1
tert-Amyl Methyl Ether	U	0.00027	0.0011	mg/kg		8260B	07/02/15	1
Surrogate Recovery								

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02,2015

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-1-7.5-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 15:30

ESC Sample # : L772834-06

Site ID : 11109

Project # : GP09BPNA.C106

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Toluene-d8	108.			% Rec.		8260B	07/02/15	1
Dibromofluoromethane	115.			% Rec.		8260B	07/02/15	1
4-Bromofluorobenzene	93.9			% Rec.		8260B	07/02/15	1
Oil Range Organics								
C28-C40 Oil Range	U	0.27	4.5	mg/kg		8015	06/25/15	1
Surrogate Recovery								
o-Terphenyl	84.4			% Rec.		8015	06/25/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Acenaphthene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Acenaphthylene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Benzo(a)anthracene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Benzo(a)pyrene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Benzo(b)fluoranthene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Benzo(g,h,i)perylene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Benzo(k)fluoranthene	U	0.00060	0.0068	mg/kg	J3	8270C-SI	06/25/15	1
Chrysene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Dibenz(a,h)anthracene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Fluoranthene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Fluorene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Indeno(1,2,3-cd)pyrene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Naphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/25/15	1
Phenanthrene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
Pyrene	U	0.00060	0.0068	mg/kg		8270C-SI	06/25/15	1
1-Methylnaphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/25/15	1
2-Methylnaphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/25/15	1
2-Chloronaphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/25/15	1
Surrogate Recovery								
p-Terphenyl-d14	74.1			% Rec.		8270C-SI	06/25/15	1
Nitrobenzene-d5	135.			% Rec.		8270C-SI	06/25/15	1
2-Fluorobiphenyl	96.1			% Rec.		8270C-SI	06/25/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

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Est. 1970

REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02, 2015

ESC Sample # : L772834-07

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-1-11-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 15:35

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Total Solids	92.1	0.0333		%		2540 G-2	06/26/15	1
Cadmium	0.11	0.070	0.54	mg/kg	J	6010B	06/24/15	1
Chromium	32.	0.14	1.1	mg/kg		6010B	06/24/15	1
Lead	5.4	0.19	0.54	mg/kg		6010B	06/24/15	1
Nickel	130	0.49	2.2	mg/kg		6010B	06/24/15	1
Zinc	68.	0.59	5.4	mg/kg		6010B	06/24/15	1
TPHG C6 - C12	U	0.034	0.11	mg/kg		8015	06/30/15	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	93.5			% Rec.		8015	06/30/15	1
Volatiles - Oxygenates								
Acetone	U	0.010	0.054	mg/kg		8260B	07/02/15	1
Acrylonitrile	U	0.0018	0.011	mg/kg		8260B	07/02/15	1
Benzene	U	0.00027	0.0011	mg/kg		8260B	07/02/15	1
Bromobenzene	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Bromodichloromethane	U	0.00025	0.0011	mg/kg		8260B	07/02/15	1
Bromoform	U	0.00042	0.0011	mg/kg		8260B	07/02/15	1
Bromomethane	U	0.0013	0.0054	mg/kg		8260B	07/02/15	1
n-Butylbenzene	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
sec-Butylbenzene	U	0.00020	0.0011	mg/kg		8260B	07/02/15	1
tert-Butylbenzene	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
Carbon tetrachloride	U	0.00033	0.0011	mg/kg		8260B	07/02/15	1
Carbon disulfide	U	0.00022	0.0011	mg/kg		8260B	07/02/15	1
Chlorobenzene	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
Chlorodibromomethane	U	0.00037	0.0011	mg/kg		8260B	07/02/15	1
Chloroethane	U	0.00095	0.0054	mg/kg		8260B	07/02/15	1
2-Chloroethyl vinyl ether	U	0.0023	0.054	mg/kg		8260B	07/02/15	1
Chloroform	U	0.00023	0.0054	mg/kg		8260B	07/02/15	1
Chloromethane	U	0.00038	0.0027	mg/kg		8260B	07/02/15	1
2-Chlorotoluene	U	0.00030	0.0011	mg/kg		8260B	07/02/15	1
4-Chlorotoluene	U	0.00024	0.0011	mg/kg		8260B	07/02/15	1
1,2-Dibromo-3-Chloropropane	U	0.0010	0.0054	mg/kg		8260B	07/02/15	1
1,2-Dibromoethane	U	0.00034	0.0011	mg/kg		8260B	07/02/15	1
Dibromomethane	U	0.00038	0.0011	mg/kg		8260B	07/02/15	1
1,2-Dichlorobenzene	U	0.00030	0.0011	mg/kg		8260B	07/02/15	1
1,3-Dichlorobenzene	U	0.00024	0.0011	mg/kg		8260B	07/02/15	1
1,4-Dichlorobenzene	U	0.00023	0.0011	mg/kg		8260B	07/02/15	1
Dichlorodifluoromethane	U	0.00071	0.0054	mg/kg		8260B	07/02/15	1
1,1-Dichloroethane	U	0.00020	0.0011	mg/kg		8260B	07/02/15	1
1,2-Dichloroethane	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
1,1-Dichloroethene	U	0.00030	0.0011	mg/kg		8260B	07/02/15	1

Results listed are dry weight basis.
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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02, 2015

ESC Sample # : L772834-07

Site ID : 11109

Project # : GP09BPNA.C106

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-1-11-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 15:35

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
cis-1,2-Dichloroethene	U	0.00024	0.0011	mg/kg		8260B	07/02/15	1
trans-1,2-Dichloroethene	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
1,2-Dichloropropane	U	0.00036	0.0011	mg/kg		8260B	07/02/15	1
1,1-Dichloropropene	U	0.00032	0.0011	mg/kg		8260B	07/02/15	1
1,3-Dichloropropane	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
cis-1,3-Dichloropropene	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
trans-1,3-Dichloropropene	U	0.00027	0.0011	mg/kg		8260B	07/02/15	1
2,2-Dichloropropane	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Ethylbenzene	U	0.00030	0.0011	mg/kg		8260B	07/02/15	1
Hexachloro-1,3-butadiene	U	0.00034	0.0011	mg/kg		8260B	07/02/15	1
Isopropylbenzene	U	0.00024	0.0011	mg/kg		8260B	07/02/15	1
p-Isopropyltoluene	U	0.00020	0.0011	mg/kg		8260B	07/02/15	1
2-Butanone (MEK)	U	0.0047	0.011	mg/kg		8260B	07/02/15	1
Methylene Chloride	U	0.0010	0.0054	mg/kg		8260B	07/02/15	1
4-Methyl-2-pentanone (MIBK)	U	0.0019	0.011	mg/kg		8260B	07/02/15	1
Naphthalene	U	0.0010	0.0054	mg/kg		8260B	07/02/15	1
n-Propylbenzene	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
Styrene	U	0.00023	0.0011	mg/kg		8260B	07/02/15	1
1,1,1,2-Tetrachloroethane	U	0.00026	0.0011	mg/kg		8260B	07/02/15	1
1,1,2,2-Tetrachloroethane	U	0.00036	0.0011	mg/kg		8260B	07/02/15	1
1,1,2-Trichlorotrifluoroethane	U	0.00036	0.0011	mg/kg		8260B	07/02/15	1
Tetrachloroethene	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Toluene	U	0.00043	0.0054	mg/kg		8260B	07/02/15	1
1,2,3-Trichlorobenzene	U	0.00031	0.0011	mg/kg		8260B	07/02/15	1
1,2,4-Trichlorobenzene	U	0.00039	0.0011	mg/kg		8260B	07/02/15	1
1,1,1-Trichloroethane	U	0.00029	0.0011	mg/kg		8260B	07/02/15	1
1,1,2-Trichloroethane	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Trichloroethene	U	0.00028	0.0011	mg/kg		8260B	07/02/15	1
Trichlorofluoromethane	U	0.00038	0.0054	mg/kg	J3	8260B	07/02/15	1
1,2,3-Trichloropropane	U	0.00074	0.0027	mg/kg		8260B	07/02/15	1
1,2,4-Trimethylbenzene	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
1,2,3-Trimethylbenzene	U	0.00029	0.0011	mg/kg		8260B	07/02/15	1
1,3,5-Trimethylbenzene	U	0.00027	0.0011	mg/kg		8260B	07/02/15	1
Vinyl chloride	U	0.00029	0.0011	mg/kg		8260B	07/02/15	1
Xylenes, Total	U	0.00070	0.0032	mg/kg		8260B	07/02/15	1
Di-isopropyl ether	U	0.00025	0.0011	mg/kg		8260B	07/02/15	1
Ethanol	U	0.049	0.11	mg/kg		8260B	07/02/15	1
Ethyl tert-butyl ether	U	0.00040	0.0011	mg/kg		8260B	07/02/15	1
Methyl tert-butyl ether	U	0.00021	0.0011	mg/kg		8260B	07/02/15	1
t-Amyl Alcohol	U	0.0042	0.054	mg/kg		8260B	07/02/15	1
tert-Butyl alcohol	U	0.0020	0.0054	mg/kg		8260B	07/02/15	1
tert-Amyl Methyl Ether	U	0.00027	0.0011	mg/kg		8260B	07/02/15	1
Surrogate Recovery								

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02, 2015

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-1-11-061915

Collected By : Bo Jessup
Collection Date : 06/19/15 15:35

ESC Sample # : L772834-07

Site ID : 11109

Project # : GP09BPNA.C106

Parameter	Dry Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
Toluene-d8	109.			% Rec.		8260B	07/02/15	1
Dibromofluoromethane	117.			% Rec.		8260B	07/02/15	1
4-Bromofluorobenzene	92.6			% Rec.		8260B	07/02/15	1
Oil Range Organics								
C28-C40 Oil Range	U	0.27	4.3	mg/kg		8015	06/25/15	1
Surrogate Recovery								
o-Terphenyl	88.3			% Rec.		8015	06/25/15	1
Polynuclear Aromatic Hydrocarbons								
Anthracene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Acenaphthene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Acenaphthylene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Benzo(a)anthracene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Benzo(a)pyrene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Benzo(b)fluoranthene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Benzo(g,h,i)perylene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Benzo(k)fluoranthene	U	0.00060	0.0065	mg/kg	J3	8270C-SI	06/25/15	1
Chrysene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Dibenz(a,h)anthracene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Fluoranthene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Fluorene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Indeno(1,2,3-cd)pyrene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Naphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/25/15	1
Phenanthrene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
Pyrene	U	0.00060	0.0065	mg/kg		8270C-SI	06/25/15	1
1-Methylnaphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/25/15	1
2-Methylnaphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/25/15	1
2-Chloronaphthalene	U	0.0020	0.022	mg/kg		8270C-SI	06/25/15	1
Surrogate Recovery								
p-Terphenyl-d14	69.2			% Rec.		8270C-SI	06/25/15	1
Nitrobenzene-d5	114.			% Rec.		8270C-SI	06/25/15	1
2-Fluorobiphenyl	84.0			% Rec.		8270C-SI	06/25/15	1

Results listed are dry weight basis.
U = ND (Not Detected)
MDL = Minimum Detection Limit = LOD = TRRP SDL
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
Note:

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REPORT OF ANALYSIS

Hollis Phillips
ARCADIS
100 Montgomery Street
San Francisco, CA 94104

July 02, 2015

Date Received : June 23, 2015
Description : CA-11109 - GP09BPNA.C106

Sample ID : B-7-14-062215

Collected By : Bo Jessup
Collection Date : 06/22/15 10:50

ESC Sample # : L772834-08

Site ID : 11109

Project # : GP09BPNA.C106

Parameter	Result	MDL	RDL	Units	Qualifier	Method	Date	Dil.
TPHG C6 - C12	U	32.	100	ug/l		8015	06/28/15	1
Surrogate Recovery-%								
a,a,a-Trifluorotoluene(FID)	95.7			% Rec.		8015	06/28/15	1
Benzene	U	0.33	1.0	ug/l		8260B	07/02/15	1
Toluene	U	0.78	5.0	ug/l		8260B	07/02/15	1
Ethylbenzene	U	0.38	1.0	ug/l		8260B	07/02/15	1
Total Xylenes	U	1.1	3.0	ug/l		8260B	07/02/15	1
Methyl tert-butyl ether	6.2	0.37	1.0	ug/l		8260B	07/02/15	1
Surrogate Recovery								
Toluene-d8	114.			% Rec.		8260B	07/02/15	1
Dibromofluoromethane	98.0			% Rec.		8260B	07/02/15	1
4-Bromofluorobenzene	95.6			% Rec.		8260B	07/02/15	1

U = ND (Not Detected)
RDL = Reported Detection Limit = LOQ = PQL = EQL = TRRP MQL
MDL = Minimum Detection Limit = LOD = TRRP SDL
Note:
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Attachment A
List of Analytes with QC Qualifiers

Sample Number	Work Group	Sample Type	Analyte	Run ID	Qualifier
L772834-02	WG798183	SAMP	Methyl tert-butyl ether	R3047423	J
L772834-03	WG798089	SAMP	Benzo(a)anthracene	R3045849	J
	WG798089	SAMP	Benzo(b)fluoranthene	R3045849	J
	WG798089	SAMP	Benzo(g,h,i)perylene	R3045849	J
	WG798089	SAMP	Phenanthrene	R3045849	J
	WG798089	SAMP	2-Methylnaphthalene	R3045849	J
L772834-04	WG798089	SAMP	Benzo(a)anthracene	R3045849	J
	WG798089	SAMP	Benzo(b)fluoranthene	R3045849	J
	WG798089	SAMP	Benzo(g,h,i)perylene	R3045849	J
	WG798089	SAMP	Phenanthrene	R3045849	J
L772834-05	WG797705	SAMP	Benzo(k)fluoranthene	R3045697	J3
	WG798519	SAMP	Acetone	R3047347	J
	WG798519	SAMP	Trichlorofluoromethane	R3047347	J3
	WG798519	SAMP	Methyl tert-butyl ether	R3047347	J
	WG798143	SAMP	C28-C40 Oil Range	R3045988	J
L772834-06	WG797705	SAMP	Benzo(k)fluoranthene	R3045697	J3
	WG797796	SAMP	Cadmium	R3045631	J
	WG798519	SAMP	Acetone	R3047347	J
	WG798519	SAMP	Trichlorofluoromethane	R3047347	J3
L772834-07	WG797705	SAMP	Benzo(k)fluoranthene	R3045697	J3
	WG797796	SAMP	Cadmium	R3045631	J
	WG798519	SAMP	Trichlorofluoromethane	R3047347	J3

Attachment B
Explanation of QC Qualifier Codes

Qualifier	Meaning
J	(EPA) - Estimated value below the lowest calibration point. Confidence correlates with concentration.
J3	The associated batch QC was outside the established quality control range for precision.

Qualifier Report Information

ESC utilizes sample and result qualifiers as set forth by the EPA Contract Laboratory Program and as required by most certifying bodies including NELAC. In addition to the EPA qualifiers adopted by ESC, we have implemented ESC qualifiers to provide more information pertaining to our analytical results. Each qualifier is designated in the qualifier explanation as either EPA or ESC. Data qualifiers are intended to provide the ESC client with more detailed information concerning the potential bias of reported data. Because of the wide range of constituents and variety of matrices incorporated by most EPA methods,it is common for some compounds to fall outside of established ranges. These exceptions are evaluated and all reported data is valid and useable "unless qualified as 'R' (Rejected)."

Definitions

Accuracy - The relationship of the observed value of a known sample to the true value of a known sample. Represented by percent recovery and relevant to samples such as: control samples, matrix spike recoveries, surrogate recoveries, etc.

Precision - The agreement between a set of samples or between duplicate samples. Relates to how close together the results are and is represented by Relative Percent Differrence.

Surrogate - Organic compounds that are similar in chemical composition, extraction, and chromotography to analytes of interest. The surrogates are used to determine the probable response of the group of analytes that are chemically related to the surrogate compound. Surrogates are added to the sample and carried through all stages of preparation and analyses.

TIC - Tentatively Identified Compound: Compounds detected in samples that are not target compounds, internal standards, system monitoring compounds, or surrogates.

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Total Solids by Method 2540 G-2011		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798236**
Analysis Date:	6/26/2015 7:30:00 AM	Analyst:	475
Instrument ID:	LOGBAL1		
Sample Numbers:	L772834-01, -05, -06, -07		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Total Solids	TSOLIDS	< 0.100	< 0.0333	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Total Solids	1	50	49.978	100	85 - 115	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Total Solids by Method 2540 G-2011		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798236**
Analysis Date:	6/26/2015 7:30:00 AM	Analyst:	475
Instrument ID:	LOGBAL1		
Sample Numbers:	L772834-01, -05, -06, -07		

Sample Duplicate

L772836-04

Analyte	Dil	Sample Result	DUP Result	% RPD	Limit	Qualifier
Total Solids	1	84.932	85.096	0.19	5	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Trace Metals by Method 6010B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797796**
Analysis Date:	6/24/2015 7:04:00 PM	Analyst:	447
Instrument ID:	ICP14	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Cadmium	7440-43-9	< 0.500	< 0.0700	
Chromium	7440-47-3	< 1.00	< 0.140	
Lead	7439-92-1	< 0.500	< 0.190	
Nickel	7440-02-0	< 2.00	< 0.490	
Zinc	7440-66-6	< 5.00	1.78	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Trace Metals by Method 6010B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797796**
Analysis Date:	6/24/2015 7:04:00 PM	Analyst:	447
Instrument ID:	ICP14	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cadmium	1	100	102.60	103	80 - 120	
Chromium	1	100	103.69	104	80 - 120	
Lead	1	100	103.35	103	80 - 120	
Nickel	1	100	101.90	102	80 - 120	
Zinc	1	100	100.87	101	80 - 120	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Cadmium	1	100	101.65	102	80 - 120	
Chromium	1	100	103.68	104	80 - 120	
Lead	1	100	102.19	102	80 - 120	
Nickel	1	100	100.77	101	80 - 120	
Zinc	1	100	100.10	100	80 - 120	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control RPD Limits	RPD Qual
Cadmium	1	100	102.60	103	101.65	102	80 - 120		1	20	
Chromium	1	100	103.69	104	103.68	104	80 - 120		0	20	
Lead	1	100	103.35	103	102.19	102	80 - 120		1	20	
Nickel	1	100	101.90	102	100.77	101	80 - 120		1	20	
Zinc	1	100	100.87	101	100.10	100	80 - 120		1	20	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Trace Metals by Method 6010B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797796**
Analysis Date:	6/24/2015 7:04:00 PM	Analyst:	447
Instrument ID:	ICP14	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Serial Dilution

L772818-03

Analyte	Dil	Sample Result	SD Result	% RPD	Limit	Qualifier
Cadmium	5	<0.07	<0.35		10	
Chromium	5	6.7330	6.6226	2	10	
Lead	5	16.786	16.845	0	10	
Nickel	5	6.9532	6.7083	4	10	
Zinc	5	23.692	23.429	1	10	

Matrix Spike / Matrix Spike Duplicate

L772818-03

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Cadmium	1	100	<0.07	97.426	97	94.278	94	75 - 125		3	20	
Chromium	1	100	6.7330	106.88	100	104.10	97	75 - 125		3	20	
Lead	1	100	16.786	118.22	101	145.34	129	75 - 125	J5	21	20	J3
Nickel	1	100	6.9532	105.45	98	102.61	96	75 - 125		3	20	
Zinc	1	100	23.692	115.21	92	111.09	87	75 - 125		4	20	

Post Digest Spike

L772818-03

Analyte	Dil	Spike Value	Sample	Result	% Rec	Control Limits	Qualifier
Cadmium	1	100	<0.07	98.135	98	75-125	
Chromium	1	100	6.7330	107.94	101	75-125	
Lead	1	100	16.786	117.10	100	75-125	
Nickel	1	100	6.9532	105.99	99	75-125	
Zinc	1	100	23.692	119.99	96	75-125	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Water - mg/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798722**
Analysis Date:	6/27/2015 7:17:00 PM	Analyst:	591
Instrument ID:	VOCGC7		
Sample Numbers:	L772834-02, -03, -04, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPHG C6 - C12		< 0.100	< 0.0316	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.5688	101	66 - 123	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.4981	100	66 - 123	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
TPHG C6 - C12	1	5.5	5.5688	101	5.4981	100	66 - 123		1.28	20	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG799322**
Analysis Date:	6/30/2015 9:47:00 PM	Analyst:	591
Instrument ID:	VOCGC7		
Sample Numbers:	L772834-05, -06, -07		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
TPHG C6 - C12		< 0.100	< 0.0339	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.8894	107	62.2 - 127	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
TPHG C6 - C12	1	5.5	5.8100	106	62.2 - 127	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
TPHG C6 - C12	1	5.5	5.8894	107	5.8100	106	62.2 - 127		1.36	20	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Water - mg/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798722**
Analysis Date:	6/27/2015 7:17:00 PM	Analyst:	591
Instrument ID:	VOCGC7		
Sample Numbers:	L772834-02, -03, -04, -08		

Matrix Spike / Matrix Spike Duplicate

L772739-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
TPHG C6 - C12	1	5.5	6.7588	9.7459	54.3	9.5548	50.8	47.5 - 136		1.98	20	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG799322**
Analysis Date:	6/30/2015 9:47:00 PM	Analyst:	591
Instrument ID:	VOCGC7		
Sample Numbers:	L772834-05, -06, -07		

Matrix Spike / Matrix Spike Duplicate

L772957-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
TPHG C6 - C12	5	5.5	87.042	98.781	42.7	116.98	109	20.5 - 134		16.9	23.8	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Water - mg/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798722**
Analysis Date:	6/27/2015 7:17:00 PM	Analyst:	591
Instrument ID:	VOCGC7		
Sample Numbers:	L772834-02, -03, -04, -08		

Surrogate Summary

Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L772834-02	VOCGC7	0627_17	0.191	95.3		
L772834-03	VOCGC7	0627_18	0.191	95.4		
L772834-04	VOCGC7	0627_19	0.192	95.8		
L772834-08	VOCGC7	0627_26	0.191	95.7		
LCS WG798722	VOCGC7	0627_06	0.206	103	0.218	109
LCSD WG798722	VOCGC7	0627_07	0.205	102	0.217	109
BLANK WG798722	VOCGC7	0627_09	0.190	95.0	0.205	102
MS WG798722	VOCGC7	0627_20	0.209	105	0.213	107
MSD WG798722	VOCGC7	0627_21	0.210	105	0.215	107

--A,A,A-TRIFLUOROTOLUENE(FID)	True Value: 0.2 ppm	Limits: 62 - 128
--A,A,A-TRIFLUOROTOLUENE(PID)	True Value: 0.2 ppm	Limits: 55 - 122

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile TPH by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG799322**
Analysis Date:	6/30/2015 9:47:00 PM	Analyst:	591
Instrument ID:	VOCGC7		
Sample Numbers:	L772834-05, -06, -07		

Surrogate Summary

Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec
L772834-05	VOCGC7	0630_29	0.186	93.1		
L772834-06	VOCGC7	0630_30	0.188	93.9		
L772834-07	VOCGC7	0630_31	0.187	93.5		
LCS WG799322	VOCGC7	0630_06	0.205	102		
LCSD WG799322	VOCGC7	0630_07	0.205	103		
BLANK WG799322	VOCGC7	0630_09	0.189	94.4	0.204	102
MS WG799322	VOCGC7	0701_41	0.195	97.6		
MSD WG799322	VOCGC7	0701_42	0.195	97.4		
LCS WG799322	VOCGC7	0630_04			0.204	102
LCSD WG799322	VOCGC7	0630_05			0.202	101
MS WG799322	VOCGC7	0701_39			0.198	99.0
MSD WG799322	VOCGC7	0701_40			0.198	99.1

--A,A,A-TRIFLUOROTOLUENE(FID)	True Value: 0.2 ppm	Limits: 59 - 128
--A,A,A-TRIFLUOROTOLUENE(PID)	True Value: 0.2 ppm	Limits: 54 - 144

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Water - mg/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798183**
Analysis Date:	7/2/2015 3:30:00 PM	Analyst:	591
Instrument ID:	VOCMS28		
Sample Numbers:	L772834-02, -03, -04, -08		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Benzene	71-43-2	< 0.00100	< 0.000331	
Ethylbenzene	100-41-4	< 0.00100	< 0.000384	
Methyl tert-butyl ether	1634-04-4	< 0.00100	< 0.000367	
Naphthalene	91-20-3	< 0.00500	< 0.00100	
Toluene	108-88-3	< 0.00500	< 0.000780	
Xylenes, Total	1330-20-7	< 0.00300	< 0.00106	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798519**
Analysis Date:	7/2/2015 9:19:00 AM	Analyst:	591
Instrument ID:	VOCMS4		
Sample Numbers:	L772834-05, -06, -07		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1,1,1,2-Tetrachloroethane	630-20-6	< 0.00100	< 0.000264	
1,1,1-Trichloroethane	71-55-6	< 0.00100	< 0.000286	
1,1,2,2-Tetrachloroethane	79-34-5	< 0.00100	< 0.000365	
1,1,2-Trichloroethane	79-00-5	< 0.00100	< 0.000277	
1,1,2-Trichlorotrifluoroethane	76-13-1	< 0.00100	< 0.000365	
1,1-Dichloroethane	75-34-3	< 0.00100	< 0.000199	
1,1-Dichloroethene	75-35-4	< 0.00100	< 0.000303	
1,1-Dichloropropene	563-58-6	< 0.00100	< 0.000317	
1,2,3-Trichlorobenzene	87-61-6	< 0.00100	< 0.000306	
1,2,3-Trichloropropane	96-18-4	< 0.00250	< 0.000741	
1,2,3-Trimethylbenzene	526-73-8	< 0.00100	< 0.000287	
1,2,4-Trichlorobenzene	120-82-1	< 0.00100	< 0.000388	
1,2,4-Trimethylbenzene	95-63-6	< 0.00100	< 0.000211	
1,2-Dibromo-3-Chloropropane	96-12-8	< 0.00500	< 0.00105	
1,2-Dibromoethane	106-93-4	< 0.00100	< 0.000343	
1,2-Dichlorobenzene	95-50-1	< 0.00100	< 0.000305	
1,2-Dichloroethane	107-06-2	< 0.00100	< 0.000265	
1,2-Dichloropropane	78-87-5	< 0.00100	< 0.000358	
1,3,5-Trimethylbenzene	108-67-8	< 0.00100	< 0.000266	
1,3-Dichlorobenzene	541-73-1	< 0.00100	< 0.000239	
1,3-Dichloropropane	142-28-9	< 0.00100	< 0.000207	
1,4-Dichlorobenzene	106-46-7	< 0.00100	< 0.000226	
2,2-Dichloropropane	594-20-7	< 0.00100	< 0.000279	
2-Butanone (MEK)	78-93-3	< 0.0100	< 0.00468	
2-Chloroethyl vinyl ether	110-75-8	< 0.0500	< 0.00234	
2-Chlorotoluene	95-49-8	< 0.00100	< 0.000301	
4-Chlorotoluene	106-43-4	< 0.00100	< 0.000240	
4-Methyl-2-pentanone (MIBK)	108-10-1	< 0.0100	< 0.00188	
Acetone	67-64-1	< 0.0500	< 0.0100	
Acrylonitrile	107-13-1	< 0.0100	< 0.00179	
Benzene	71-43-2	< 0.00100	< 0.000270	
Bromobenzene	108-86-1	< 0.00100	< 0.000284	
Bromodichloromethane	75-27-4	< 0.00100	< 0.000254	
Bromoform	75-25-2	< 0.00100	< 0.000424	
Bromomethane	74-83-9	< 0.00500	< 0.00134	
Carbon disulfide	75-15-0	< 0.00100	< 0.000221	
Carbon tetrachloride	56-23-5	< 0.00100	< 0.000328	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798519**
Analysis Date:	7/2/2015 9:19:00 AM	Analyst:	591
Instrument ID:	VOCMS4		
Sample Numbers:	L772834-05, -06, -07		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
Chlorobenzene	108-90-7	< 0.00100	< 0.000212	
Chlorodibromomethane	124-48-1	< 0.00100	< 0.000373	
Chloroethane	75-00-3	< 0.00500	< 0.000946	
Chloroform	67-66-3	< 0.00500	< 0.000229	
Chloromethane	74-87-3	< 0.00250	< 0.000375	
cis-1,2-Dichloroethene	156-59-2	< 0.00100	< 0.000235	
cis-1,3-Dichloropropene	10061-01-5	< 0.00100	< 0.000262	
Dibromomethane	74-95-3	< 0.00100	< 0.000382	
Dichlorodifluoromethane	75-71-8	< 0.00500	< 0.000713	
Di-isopropyl ether	108-20-3	< 0.00100	< 0.000248	
Ethanol	64-17-5	< 0.100	< 0.0490	
Ethyl tert-butyl ether	637-92-3	< 0.00100	< 0.000400	
Ethylbenzene	100-41-4	< 0.00100	< 0.000297	
Hexachloro-1,3-butadiene	87-68-3	< 0.00100	< 0.000342	
Isopropylbenzene	98-82-8	< 0.00100	< 0.000243	
Methyl tert-butyl ether	1634-04-4	< 0.00100	< 0.000212	
Methylene Chloride	75-09-2	< 0.00500	< 0.00100	
Naphthalene	91-20-3	< 0.00500	< 0.00100	
n-Butylbenzene	104-51-8	< 0.00100	< 0.000258	
n-Propylbenzene	103-65-1	< 0.00100	< 0.000206	
p-Isopropyltoluene	99-87-6	< 0.00100	< 0.000204	
sec-Butylbenzene	135-98-8	< 0.00100	< 0.000201	
Styrene	100-42-5	< 0.00100	< 0.000234	
tert-Amyl Methyl Ether	994-05-8	< 0.00100	< 0.000270	
tert-Butyl alcohol	75-65-0	< 0.00500	< 0.00200	
tert-Butylbenzene	98-06-6	< 0.00100	< 0.000206	
Tetrachloroethene	127-18-4	< 0.00100	< 0.000276	
Toluene	108-88-3	< 0.00500	< 0.000434	
trans-1,2-Dichloroethene	156-60-5	< 0.00100	< 0.000264	
trans-1,3-Dichloropropene	10061-02-6	< 0.00100	< 0.000267	
Trichloroethene	79-01-6	< 0.00100	< 0.000279	
Trichlorofluoromethane	75-69-4	< 0.00500	< 0.000382	
Vinyl chloride	75-01-4	< 0.00100	< 0.000291	
Xylenes, Total	1330-20-7	< 0.00300	< 0.000698	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test: Volatile Organic Compounds by Method 8260B
Project No: GP09BPNA.C106
Project: CA-11109 - GP09BPNA.C106
Collection Date: 6/17/2015
Analysis Date: 7/2/2015 3:30:00 PM
Instrument ID: VOCMS28
Sample Numbers: L772834-02, -03, -04, -08

Matrix: Water - mg/L
EPA ID: TN00003
Analytic Batch: WG798183
Analyst: 591

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Benzene	1	0.025	0.0263	105	73 - 122	
Ethylbenzene	1	0.025	0.0226	90.4	80.9 - 121	
Methyl tert-butyl ether	1	0.025	0.0263	105	70.1 - 125	
Naphthalene	1	0.025	0.0257	103	69.7 - 134	
Toluene	1	0.025	0.0237	94.9	77.9 - 116	
Xylenes, Total	1	0.075	0.0681	90.8	79.2 - 122	

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Benzene	1	0.025	0.0268	107	73 - 122	
Ethylbenzene	1	0.025	0.0259	104	80.9 - 121	
Methyl tert-butyl ether	1	0.025	0.0267	107	70.1 - 125	
Naphthalene	1	0.025	0.0259	104	69.7 - 134	
Toluene	1	0.025	0.0264	105	77.9 - 116	
Xylenes, Total	1	0.075	0.0764	102	79.2 - 122	

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
Benzene	1	0.025	0.0263	105	0.0268	107	73 - 122		1.84	20	
Ethylbenzene	1	0.025	0.0226	90.4	0.0259	104	80.9 - 121		13.6	20	
Methyl tert-butyl ether	1	0.025	0.0263	105	0.0267	107	70.1 - 125		1.75	20	
Naphthalene	1	0.025	0.0257	103	0.0259	104	69.7 - 134		0.8	20	
Toluene	1	0.025	0.0237	94.9	0.0264	105	77.9 - 116		10.6	20	
Xylenes, Total	1	0.075	0.0681	90.8	0.0764	102	79.2 - 122		11.6	20	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798519**
Analysis Date:	7/2/2015 9:19:00 AM	Analyst:	591
Instrument ID:	VOCMS4		
Sample Numbers:	L772834-05, -06, -07		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0235	94	76.7 - 127	
1,1,1-Trichloroethane	1	0.025	0.0231	92.5	69.9 - 127	
1,1,2,2-Tetrachloroethane	1	0.025	0.0241	96.2	78.8 - 124	
1,1,2-Trichloroethane	1	0.025	0.0234	93.8	81.9 - 119	
1,1,2-Trichlorotrifluoroethane	1	0.025	0.0298	119	62.6 - 138	
1,1-Dichloroethane	1	0.025	0.0243	97.4	71.7 - 125	
1,1-Dichloroethene	1	0.025	0.0318	127	60.6 - 133	
1,1-Dichloropropene	1	0.025	0.0244	97.7	71.2 - 126	
1,2,3-Trichlorobenzene	1	0.025	0.0220	88.1	72.5 - 137	
1,2,3-Trichloropropane	1	0.025	0.0274	109	74 - 124	
1,2,3-Trimethylbenzene	1	0.025	0.0243	97.1	79.4 - 118	
1,2,4-Trichlorobenzene	1	0.025	0.0221	88.4	74 - 137	
1,2,4-Trimethylbenzene	1	0.025	0.0240	96	77.1 - 124	
1,2-Dibromo-3-Chloropropane	1	0.025	0.0232	92.9	64.9 - 131	
1,2-Dibromoethane	1	0.025	0.0242	96.8	78.7 - 123	
1,2-Dichlorobenzene	1	0.025	0.0241	96.6	83.6 - 119	
1,2-Dichloroethane	1	0.025	0.0261	105	67.2 - 121	
1,2-Dichloropropane	1	0.025	0.0242	96.7	76.9 - 123	
1,3,5-Trimethylbenzene	1	0.025	0.0257	103	79 - 125	
1,3-Dichlorobenzene	1	0.025	0.0251	100	75.9 - 129	
1,3-Dichloropropane	1	0.025	0.0234	93.6	80.3 - 114	
1,4-Dichlorobenzene	1	0.025	0.0242	97	81 - 115	
2,2-Dichloropropane	1	0.025	0.0214	85.4	61.9 - 132	
2-Butanone (MEK)	1	0.125	0.1279	102	44.5 - 154	
2-Chloroethyl vinyl ether	1	0.125	0.1291	103	16.7 - 162	
2-Chlorotoluene	1	0.025	0.0255	102	74.6 - 127	
4-Chlorotoluene	1	0.025	0.0242	96.7	79.5 - 123	
4-Methyl-2-pentanone (MIBK)	1	0.125	0.1372	110	61.1 - 138	
Acetone	1	0.125	0.1290	103	25.3 - 178	
Acrylonitrile	1	0.125	0.1239	99.1	57.8 - 143	
Benzene	1	0.025	0.0250	99.8	72.6 - 120	
Bromobenzene	1	0.025	0.0247	98.7	80.3 - 115	
Bromodichloromethane	1	0.025	0.0237	95	75.3 - 119	
Bromoform	1	0.025	0.0257	103	69.1 - 135	
Bromomethane	1	0.025	0.0315	126	23 - 191	
Carbon disulfide	1	0.025	0.0282	113	49.9 - 136	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798519**
Analysis Date:	7/2/2015 9:19:00 AM	Analyst:	591
Instrument ID:	VOCMS4		
Sample Numbers:	L772834-05, -06, -07		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Carbon tetrachloride	1	0.025	0.0238	95.3	69.4 - 129	
Chlorobenzene	1	0.025	0.0250	100	78.9 - 122	
Chlorodibromomethane	1	0.025	0.0245	98	76.4 - 126	
Chloroethane	1	0.025	0.0291	116	47.2 - 147	
Chloroform	1	0.025	0.0244	97.8	73.3 - 122	
Chloromethane	1	0.025	0.0203	81.2	53.1 - 135	
cis-1,2-Dichloroethene	1	0.025	0.0224	89.6	76.1 - 121	
cis-1,3-Dichloropropene	1	0.025	0.0237	94.7	77.3 - 123	
Dibromomethane	1	0.025	0.0254	102	78.5 - 117	
Dichlorodifluoromethane	1	0.025	0.0184	73.8	50.9 - 139	
Di-isopropyl ether	1	0.025	0.0236	94.5	67.2 - 131	
Ethylbenzene	1	0.025	0.0246	98.5	78.6 - 124	
Hexachloro-1,3-butadiene	1	0.025	0.0213	85	69.2 - 136	
Isopropylbenzene	1	0.025	0.0241	96.4	79.4 - 126	
Methyl tert-butyl ether	1	0.025	0.0229	91.4	70.2 - 122	
Methylene Chloride	1	0.025	0.0229	91.7	68.2 - 119	
Naphthalene	1	0.025	0.0228	91.3	69.9 - 132	
n-Butylbenzene	1	0.025	0.0249	99.4	74.2 - 134	
n-Propylbenzene	1	0.025	0.0255	102	80.2 - 124	
p-Isopropyltoluene	1	0.025	0.0253	101	75.4 - 132	
sec-Butylbenzene	1	0.025	0.0254	102	77.8 - 129	
Styrene	1	0.025	0.0252	101	79.4 - 124	
tert-Butylbenzene	1	0.025	0.0244	97.4	77.2 - 129	
Tetrachloroethene	1	0.025	0.0230	92.2	71.1 - 133	
Toluene	1	0.025	0.0250	100	76.7 - 116	
trans-1,2-Dichloroethene	1	0.025	0.0233	93	70.7 - 124	
trans-1,3-Dichloropropene	1	0.025	0.0243	97.3	73 - 127	
Trichloroethene	1	0.025	0.0251	100	77.2 - 122	
Trichlorofluoromethane	1	0.025	0.0132	52.7	51.5 - 151	
Vinyl chloride	1	0.025	0.0256	102	58.4 - 134	
Xylenes, Total	1	0.075	0.0725	96.6	78.1 - 123	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798519**
Analysis Date:	7/2/2015 9:19:00 AM	Analyst:	591
Instrument ID:	VOCMS4		
Sample Numbers:	L772834-05, -06, -07		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0238	95.3	76.7 - 127	
1,1,1-Trichloroethane	1	0.025	0.0241	96.5	69.9 - 127	
1,1,2,2-Tetrachloroethane	1	0.025	0.0244	97.7	78.8 - 124	
1,1,2-Trichloroethane	1	0.025	0.0227	90.6	81.9 - 119	
1,1,2-Trichlorotrifluoroethane	1	0.025	0.0295	118	62.6 - 138	
1,1-Dichloroethane	1	0.025	0.0249	99.4	71.7 - 125	
1,1-Dichloroethene	1	0.025	0.0318	127	60.6 - 133	
1,1-Dichloropropene	1	0.025	0.0251	100	71.2 - 126	
1,2,3-Trichlorobenzene	1	0.025	0.0226	90.4	72.5 - 137	
1,2,3-Trichloropropane	1	0.025	0.0274	110	74 - 124	
1,2,3-Trimethylbenzene	1	0.025	0.0246	98.4	79.4 - 118	
1,2,4-Trichlorobenzene	1	0.025	0.0222	88.8	74 - 137	
1,2,4-Trimethylbenzene	1	0.025	0.0237	94.9	77.1 - 124	
1,2-Dibromo-3-Chloropropane	1	0.025	0.0227	90.9	64.9 - 131	
1,2-Dibromoethane	1	0.025	0.0235	94.1	78.7 - 123	
1,2-Dichlorobenzene	1	0.025	0.0238	95.1	83.6 - 119	
1,2-Dichloroethane	1	0.025	0.0264	106	67.2 - 121	
1,2-Dichloropropane	1	0.025	0.0238	95.4	76.9 - 123	
1,3,5-Trimethylbenzene	1	0.025	0.0256	102	79 - 125	
1,3-Dichlorobenzene	1	0.025	0.0244	97.7	75.9 - 129	
1,3-Dichloropropane	1	0.025	0.0228	91.2	80.3 - 114	
1,4-Dichlorobenzene	1	0.025	0.0246	98.2	81 - 115	
2,2-Dichloropropane	1	0.025	0.0216	86.4	61.9 - 132	
2-Butanone (MEK)	1	0.125	0.1301	104	44.5 - 154	
2-Chloroethyl vinyl ether	1	0.125	0.1168	93.4	16.7 - 162	
2-Chlorotoluene	1	0.025	0.0254	102	74.6 - 127	
4-Chlorotoluene	1	0.025	0.0236	94.5	79.5 - 123	
4-Methyl-2-pentanone (MIBK)	1	0.125	0.1355	108	61.1 - 138	
Acetone	1	0.125	0.1334	107	25.3 - 178	
Acrylonitrile	1	0.125	0.1266	101	57.8 - 143	
Benzene	1	0.025	0.0255	102	72.6 - 120	
Bromobenzene	1	0.025	0.0245	98	80.3 - 115	
Bromodichloromethane	1	0.025	0.0238	95	75.3 - 119	
Bromoform	1	0.025	0.0257	103	69.1 - 135	
Bromomethane	1	0.025	0.0318	127	23 - 191	
Carbon disulfide	1	0.025	0.0287	115	49.9 - 136	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798519**
Analysis Date:	7/2/2015 9:19:00 AM	Analyst:	591
Instrument ID:	VOCMS4		
Sample Numbers:	L772834-05, -06, -07		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
Carbon tetrachloride	1	0.025	0.0244	97.7	69.4 - 129	
Chlorobenzene	1	0.025	0.0242	96.9	78.9 - 122	
Chlorodibromomethane	1	0.025	0.0245	97.9	76.4 - 126	
Chloroethane	1	0.025	0.0287	115	47.2 - 147	
Chloroform	1	0.025	0.0252	101	73.3 - 122	
Chloromethane	1	0.025	0.0205	81.9	53.1 - 135	
cis-1,2-Dichloroethene	1	0.025	0.0241	96.5	76.1 - 121	
cis-1,3-Dichloropropene	1	0.025	0.0235	93.9	77.3 - 123	
Dibromomethane	1	0.025	0.0254	102	78.5 - 117	
Dichlorodifluoromethane	1	0.025	0.0183	73.2	50.9 - 139	
Di-isopropyl ether	1	0.025	0.0243	97.1	67.2 - 131	
Ethylbenzene	1	0.025	0.0240	95.8	78.6 - 124	
Hexachloro-1,3-butadiene	1	0.025	0.0217	86.7	69.2 - 136	
Isopropylbenzene	1	0.025	0.0237	94.7	79.4 - 126	
Methyl tert-butyl ether	1	0.025	0.0234	93.4	70.2 - 122	
Methylene Chloride	1	0.025	0.0236	94.3	68.2 - 119	
Naphthalene	1	0.025	0.0231	92.3	69.9 - 132	
n-Butylbenzene	1	0.025	0.0250	99.9	74.2 - 134	
n-Propylbenzene	1	0.025	0.0252	101	80.2 - 124	
p-Isopropyltoluene	1	0.025	0.0251	100	75.4 - 132	
sec-Butylbenzene	1	0.025	0.0250	99.9	77.8 - 129	
Styrene	1	0.025	0.0244	97.7	79.4 - 124	
tert-Butylbenzene	1	0.025	0.0242	96.6	77.2 - 129	
Tetrachloroethene	1	0.025	0.0218	87.4	71.1 - 133	
Toluene	1	0.025	0.0249	99.4	76.7 - 116	
trans-1,2-Dichloroethene	1	0.025	0.0238	95.3	70.7 - 124	
trans-1,3-Dichloropropene	1	0.025	0.0240	96.2	73 - 127	
Trichloroethene	1	0.025	0.0250	100	77.2 - 122	
Trichlorofluoromethane	1	0.025	0.0339	135	51.5 - 151	
Vinyl chloride	1	0.025	0.0253	101	58.4 - 134	
Xylenes, Total	1	0.075	0.0713	95	78.1 - 123	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test: Volatile Organic Compounds by Method 8260B
Project No: GP09BPNA.C106
Project: CA-11109 - GP09BPNA.C106
Collection Date: 6/17/2015
Analysis Date: 7/2/2015 9:19:00 AM
Instrument ID: VOCMS4
Sample Numbers: L772834-05, -06, -07

Matrix: Soil - mg/kg
EPA ID: TN00003
Analytic Batch: WG798519
Analyst: 591

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control RPD Limits	RPD Qual
1,1,1,2-Tetrachloroethane	1	0.025	0.0235	94	0.0238	95.3	76.7 - 127		1.34	20	
1,1,1-Trichloroethane	1	0.025	0.0231	92.5	0.0241	96.5	69.9 - 127		4.24	20	
1,1,2,2-Tetrachloroethane	1	0.025	0.0241	96.2	0.0244	97.7	78.8 - 124		1.57	20	
1,1,2-Trichloroethane	1	0.025	0.0234	93.8	0.0227	90.6	81.9 - 119		3.41	20	
1,1,2-Trichlorotrifluoroethane	1	0.025	0.0298	119	0.0295	118	62.6 - 138		0.96	20	
1,1-Dichloroethane	1	0.025	0.0243	97.4	0.0249	99.4	71.7 - 125		2.08	20	
1,1-Dichloroethene	1	0.025	0.0318	127	0.0318	127	60.6 - 133		0.03	20	
1,1-Dichloropropene	1	0.025	0.0244	97.7	0.0251	100	71.2 - 126		2.76	20	
1,2,3-Trichlorobenzene	1	0.025	0.0220	88.1	0.0226	90.4	72.5 - 137		2.61	20	
1,2,3-Trichloropropane	1	0.025	0.0274	109	0.0274	110	74 - 124		0.31	20	
1,2,3-Trimethylbenzene	1	0.025	0.0243	97.1	0.0246	98.4	79.4 - 118		1.33	20	
1,2,4-Trichlorobenzene	1	0.025	0.0221	88.4	0.0222	88.8	74 - 137		0.46	20	
1,2,4-Trimethylbenzene	1	0.025	0.0240	96	0.0237	94.9	77.1 - 124		1.16	20	
1,2-Dibromo-3-Chloropropane	1	0.025	0.0232	92.9	0.0227	90.9	64.9 - 131		2.17	20	
1,2-Dibromoethane	1	0.025	0.0242	96.8	0.0235	94.1	78.7 - 123		2.84	20	
1,2-Dichlorobenzene	1	0.025	0.0241	96.6	0.0238	95.1	83.6 - 119		1.52	20	
1,2-Dichloroethane	1	0.025	0.0261	105	0.0264	106	67.2 - 121		0.88	20	
1,2-Dichloropropane	1	0.025	0.0242	96.7	0.0238	95.4	76.9 - 123		1.33	20	
1,3,5-Trimethylbenzene	1	0.025	0.0257	103	0.0256	102	79 - 125		0.45	20	
1,3-Dichlorobenzene	1	0.025	0.0251	100	0.0244	97.7	75.9 - 129		2.53	20	
1,3-Dichloropropane	1	0.025	0.0234	93.6	0.0228	91.2	80.3 - 114		2.54	20	
1,4-Dichlorobenzene	1	0.025	0.0242	97	0.0246	98.2	81 - 115		1.26	20	
2,2-Dichloropropane	1	0.025	0.0214	85.4	0.0216	86.4	61.9 - 132		1.15	20	
2-Butanone (MEK)	1	0.125	0.1279	102	0.1301	104	44.5 - 154		1.73	21.3	
2-Chloroethyl vinyl ether	1	0.125	0.1291	103	0.1168	93.4	16.7 - 162		9.97	23.7	
2-Chlorotoluene	1	0.025	0.0255	102	0.0254	102	74.6 - 127		0.58	20	
4-Chlorotoluene	1	0.025	0.0242	96.7	0.0236	94.5	79.5 - 123		2.27	20	
4-Methyl-2-pentanone (MIBK)	1	0.125	0.1372	110	0.1355	108	61.1 - 138		1.24	20	
Acetone	1	0.125	0.1290	103	0.1334	107	25.3 - 178		3.34	22.9	
Acrylonitrile	1	0.125	0.1239	99.1	0.1266	101	57.8 - 143		2.11	20	
Benzene	1	0.025	0.0250	99.8	0.0255	102	72.6 - 120		2.28	20	
Bromobenzene	1	0.025	0.0247	98.7	0.0245	98	80.3 - 115		0.7	20	
Bromodichloromethane	1	0.025	0.0237	95	0.0238	95	75.3 - 119		0.08	20	
Bromoform	1	0.025	0.0257	103	0.0257	103	69.1 - 135		0.22	20	
Bromomethane	1	0.025	0.0315	126	0.0318	127	23 - 191		0.92	20	
Carbon disulfide	1	0.025	0.0282	113	0.0287	115	49.9 - 136		1.69	20	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test: Volatile Organic Compounds by Method 8260B
Project No: GP09BPNA.C106
Project: CA-11109 - GP09BPNA.C106
Collection Date: 6/17/2015
Analysis Date: 7/2/2015 9:19:00 AM
Instrument ID: VOCMS4
Sample Numbers: L772834-05, -06, -07

Matrix: Soil - mg/kg
EPA ID: TN00003
Analytic Batch: WG798519
Analyst: 591

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
Carbon tetrachloride	1	0.025	0.0238	95.3	0.0244	97.7	69.4 - 129		2.49	20	
Chlorobenzene	1	0.025	0.0250	100	0.0242	96.9	78.9 - 122		3.25	20	
Chlorodibromomethane	1	0.025	0.0245	98	0.0245	97.9	76.4 - 126		0.09	20	
Chloroethane	1	0.025	0.0291	116	0.0287	115	47.2 - 147		1.15	20	
Chloroform	1	0.025	0.0244	97.8	0.0252	101	73.3 - 122		3.01	20	
Chloromethane	1	0.025	0.0203	81.2	0.0205	81.9	53.1 - 135		0.86	20	
cis-1,2-Dichloroethene	1	0.025	0.0224	89.6	0.0241	96.5	76.1 - 121		7.47	20	
cis-1,3-Dichloropropene	1	0.025	0.0237	94.7	0.0235	93.9	77.3 - 123		0.9	20	
Dibromomethane	1	0.025	0.0254	102	0.0254	102	78.5 - 117		0.08	20	
Dichlorodifluoromethane	1	0.025	0.0184	73.8	0.0183	73.2	50.9 - 139		0.72	20	
Di-isopropyl ether	1	0.025	0.0236	94.5	0.0243	97.1	67.2 - 131		2.79	20	
Ethylbenzene	1	0.025	0.0246	98.5	0.0240	95.8	78.6 - 124		2.78	20	
Hexachloro-1,3-butadiene	1	0.025	0.0213	85	0.0217	86.7	69.2 - 136		1.95	20	
Isopropylbenzene	1	0.025	0.0241	96.4	0.0237	94.7	79.4 - 126		1.76	20	
Methyl tert-butyl ether	1	0.025	0.0229	91.4	0.0234	93.4	70.2 - 122		2.15	20	
Methylene Chloride	1	0.025	0.0229	91.7	0.0236	94.3	68.2 - 119		2.81	20	
Naphthalene	1	0.025	0.0228	91.3	0.0231	92.3	69.9 - 132		1.02	20	
n-Butylbenzene	1	0.025	0.0249	99.4	0.0250	99.9	74.2 - 134		0.46	20	
n-Propylbenzene	1	0.025	0.0255	102	0.0252	101	80.2 - 124		1.45	20	
p-Isopropyltoluene	1	0.025	0.0253	101	0.0251	100	75.4 - 132		1	20	
sec-Butylbenzene	1	0.025	0.0254	102	0.0250	99.9	77.8 - 129		1.62	20	
Styrene	1	0.025	0.0252	101	0.0244	97.7	79.4 - 124		2.98	20	
tert-Butylbenzene	1	0.025	0.0244	97.4	0.0242	96.6	77.2 - 129		0.87	20	
Tetrachloroethene	1	0.025	0.0230	92.2	0.0218	87.4	71.1 - 133		5.38	20	
Toluene	1	0.025	0.0250	100	0.0249	99.4	76.7 - 116		0.58	20	
trans-1,2-Dichloroethene	1	0.025	0.0233	93	0.0238	95.3	70.7 - 124		2.38	20	
trans-1,3-Dichloropropene	1	0.025	0.0243	97.3	0.0240	96.2	73 - 127		1.12	20	
Trichloroethene	1	0.025	0.0251	100	0.0250	100	77.2 - 122		0.3	20	
Trichlorofluoromethane	1	0.025	0.0132	52.7	0.0339	135	51.5 - 151		87.9	20	J3
Vinyl chloride	1	0.025	0.0256	102	0.0253	101	58.4 - 134		1.19	20	
Xylenes, Total	1	0.075	0.0725	96.6	0.0713	95	78.1 - 123		1.65	20	

Parameters in bold text are reported in this SDG

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Est. 1970

Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Water - mg/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798183**
Analysis Date:	7/2/2015 3:30:00 PM	Analyst:	591
Instrument ID:	VOCMS28		
Sample Numbers:	L772834-02, -03, -04, -08		

Matrix Spike / Matrix Spike Duplicate

L772955-01

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Benzene	1	0.025	<0.0003	0.0207	82.9	0.0255	102	58.6 - 133		20.5	20	J3
Ethylbenzene	1	0.025	<0.0004	0.0283	113	0.0252	101	62.7 - 136		11.5	20	
Methyl tert-butyl ether	1	0.025	0.0033	0.0242	83.6	0.0299	106	61.4 - 136		21	20	J3
Naphthalene	1	0.025	<0.001	0.0306	122	0.0235	94.1	61.8 - 143		26.2	20	J3
Toluene	1	0.025	<0.0008	0.0247	96.3	0.0259	101	67.8 - 124		4.52	20	
Xylenes, Total	1	0.075	<0.0011	0.0856	114	0.0746	99	65.6 - 133		13.8	20	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test: Volatile Organic Compounds by Method 8260B
Project No: GP09BPNA.C106
Project: CA-11109 - GP09BPNA.C106
Collection Date: 6/17/2015
Analysis Date: 7/2/2015 9:19:00 AM
Instrument ID: VOCMS4
Sample Numbers: L772834-05, -06, -07

Matrix: Soil - mg/kg
EPA ID: TN00003
Analytic Batch: WG798519
Analyst: 591

Matrix Spike / Matrix Spike Duplicate

L772802-02

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
1,1,1,2-Tetrachloroethane	26	0.025	<0.0069	0.5969	91.8	0.5868	90.3	48.8 - 136		1.7	25.5	
1,1,1-Trichloroethane	26	0.025	<0.0074	0.5965	91.8	0.6207	95.5	49 - 138		3.98	25.3	
1,1,2,2-Tetrachloroethane	26	0.025	<0.0095	0.5583	85.9	0.5802	89.3	45.7 - 140		3.86	26.4	
1,1,2-Trichloroethane	26	0.025	<0.0072	0.5464	84.1	0.5732	88.2	52.3 - 132		4.8	23.4	
1,1,2-Trichlorotrifluoroethane	26	0.025	<0.0095	0.8621	133	0.8224	127	35.7 - 146		4.71	28.8	
1,1-Dichloroethane	26	0.025	<0.0052	0.6415	98.7	0.6546	101	49.1 - 136		2.02	22.9	
1,1-Dichloroethene	26	0.025	<0.0079	0.7781	120	0.7474	115	36.1 - 142		4.03	25.6	
1,1-Dichloropropene	26	0.025	<0.0082	0.6445	99.2	0.6586	101	43 - 137		2.17	26.4	
1,2,3-Trichlorobenzene	26	0.025	<0.0080	0.5468	84.1	0.5743	88.3	10 - 150		4.9	38.5	
1,2,3-Trichloropropane	26	0.025	<0.0193	0.6350	97.7	0.6242	96	44.4 - 138		1.72	26.3	
1,2,3-Trimethylbenzene	26	0.025	<0.0075	0.6381	97.9	0.6415	98.5	41 - 133		0.54	27.6	
1,2,4-Trichlorobenzene	26	0.025	<0.0101	0.5985	92.1	0.5936	91.3	10 - 153		0.82	39.3	
1,2,4-Trimethylbenzene	26	0.025	<0.0055	0.6250	95.5	0.6256	95.6	32.9 - 139		0.1	30.6	
1,2-Dibromo-3-Chloropropane	26	0.025	<0.0273	0.5016	77.2	0.5341	82.2	40.4 - 138		6.29	30.8	
1,2-Dibromoethane	26	0.025	<0.0089	0.5687	87.5	0.5849	90	50.2 - 133		2.8	23.6	
1,2-Dichlorobenzene	26	0.025	<0.0079	0.6247	96.1	0.6309	97.1	34.6 - 139		0.99	29.9	
1,2-Dichloroethane	26	0.025	<0.0069	0.6564	101	0.6872	106	47.1 - 129		4.58	22.7	
1,2-Dichloropropane	26	0.025	<0.0093	0.6138	94.4	0.6366	97.9	50.3 - 134		3.65	22.7	
1,3,5-Trimethylbenzene	26	0.025	<0.0069	0.6567	101	0.6681	103	37.1 - 138		1.72	30.6	
1,3-Dichlorobenzene	26	0.025	<0.0062	0.6480	99.7	0.6576	101	28.4 - 142		1.48	31.2	
1,3-Dichloropropane	26	0.025	<0.0054	0.5694	87.6	0.5735	88.2	51.4 - 127		0.72	23.1	
1,4-Dichlorobenzene	26	0.025	<0.0059	0.6282	96.7	0.6426	98.9	35 - 133		2.26	31.1	
2,2-Dichloropropane	26	0.025	<0.0073	0.4980	76.6	0.5452	83.9	45.2 - 141		9.06	26.6	
2-Butanone (MEK)	26	0.125	<0.1217	2.9823	90.9	3.1708	96.7	23.9 - 170		6.13	28.3	
2-Chloroethyl vinyl ether	26	0.125	<0.0608	2.6205	80.6	2.8727	88.4	5 - 159		9.18	40	
2-Chlorotoluene	26	0.025	<0.0078	0.6450	99.2	0.6445	99.2	36.1 - 137		0.08	28.9	
4-Chlorotoluene	26	0.025	<0.0062	0.6115	94.1	0.6288	96.7	35.4 - 137		2.79	29.8	
4-Methyl-2-pentanone (MIBK)	26	0.125	<0.0489	3.0062	92.5	3.2523	100	42.4 - 146		7.87	26.7	
Acetone	26	0.125	<0.26	2.8933	83.7	2.7109	78.1	10 - 130		6.51	31.5	
Acrylonitrile	26	0.125	<0.0465	2.9222	89.9	3.1244	96.1	39.3 - 152		6.69	27.2	
Benzene	26	0.025	<0.0070	0.6628	102	0.6737	103	47.8 - 131		1.63	22.8	
Bromobenzene	26	0.025	<0.0074	0.6290	96.8	0.6396	98.4	40 - 130		1.68	27.4	
Bromodichloromethane	26	0.025	<0.0066	0.5820	89.5	0.6014	92.5	50.6 - 128		3.27	22.8	
Bromoform	26	0.025	<0.0110	0.5553	85.4	0.5634	86.7	43.3 - 139		1.45	25.9	
Bromomethane	26	0.025	<0.0348	0.7980	123	0.8028	124	5 - 189		0.61	26.7	
Carbon disulfide	26	0.025	<0.0057	0.7488	115	0.6973	107	21.2 - 135		7.13	23.8	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test: Volatile Organic Compounds by Method 8260B
Project No: GP09BPNA.C106
Project: CA-11109 - GP09BPNA.C106
Collection Date: 6/17/2015
Analysis Date: 7/2/2015 9:19:00 AM
Instrument ID: VOCMS4
Sample Numbers: L772834-05, -06, -07

Matrix: Soil - mg/kg
EPA ID: TN00003
Analytic Batch: WG798519
Analyst: 591

Matrix Spike / Matrix Spike Duplicate

L772802-02

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
Carbon tetrachloride	26	0.025	<0.0085	0.6015	92.5	0.6092	93.7	46 - 140		1.26	27.2	
Chlorobenzene	26	0.025	<0.0055	0.6356	97.8	0.6362	97.9	44.1 - 134		0.08	25.7	
Chlorodibromomethane	26	0.025	<0.0097	0.5886	90.5	0.5838	89.8	49.7 - 134		0.82	24	
Chloroethane	26	0.025	<0.0246	0.4421	68	0.3446	53	5 - 164		24.8	28.4	
Chloroform	26	0.025	<0.0060	0.6530	100	0.6520	100	51.2 - 133		0.15	22.8	
Chloromethane	26	0.025	<0.0098	0.5055	77.8	0.5296	81.5	31.4 - 141		4.66	24.6	
cis-1,2-Dichloroethene	26	0.025	<0.0061	0.5977	92	0.6002	92.3	50.6 - 133		0.41	23	
cis-1,3-Dichloropropene	26	0.025	<0.0068	0.5844	89.9	0.5864	90.2	48.4 - 134		0.35	23.6	
Dibromomethane	26	0.025	<0.0099	0.6205	95.5	0.6246	96.1	52.4 - 128		0.66	23	
Dichlorodifluoromethane	26	0.025	<0.0185	0.4559	70.1	0.4850	74.6	31.2 - 144		6.18	30.2	
Di-isopropyl ether	26	0.025	<0.0064	0.6386	98.2	0.6605	102	46.7 - 140		3.37	23.5	
Ethylbenzene	26	0.025	<0.0077	0.6186	94.5	0.6352	97.1	44.8 - 135		2.64	26.9	
Hexachloro-1,3-butadiene	26	0.025	<0.0089	0.5607	86.3	0.5469	84.1	10 - 149		2.49	40	
Isopropylbenzene	26	0.025	<0.0063	0.6117	93.9	0.6199	95.2	41.9 - 139		1.34	29.3	
Methyl tert-butyl ether	26	0.025	<0.0055	0.5968	91.8	0.6231	95.9	50.4 - 131		4.32	24.8	
Methylene Chloride	26	0.025	<0.026	0.6254	96.2	0.6492	99.9	46.7 - 125		3.74	22.2	
Naphthalene	26	0.025	<0.026	0.5154	78.7	0.5587	85.4	18.4 - 145		8.06	34	
n-Butylbenzene	26	0.025	<0.0067	0.6667	103	0.6554	101	23.6 - 146		1.71	39.2	
n-Propylbenzene	26	0.025	<0.0054	0.6558	101	0.6610	101	35.2 - 139		0.78	31.9	
p-Isopropyltoluene	26	0.025	<0.0053	0.6488	99.8	0.6610	102	27.3 - 146		1.86	35.1	
sec-Butylbenzene	26	0.025	<0.0052	0.6464	99.4	0.6474	99.6	31 - 142		0.16	34.7	
Styrene	26	0.025	<0.0061	0.6351	97.7	0.6339	97.5	39.7 - 137		0.18	28.2	
tert-Butylbenzene	26	0.025	<0.0054	0.6153	94.7	0.6400	98.5	36.9 - 142		3.93	31.7	
Tetrachloroethene	26	0.025	<0.0072	0.5829	89.7	0.5843	89.9	37.7 - 140		0.24	29.2	
Toluene	26	0.025	0.0635	0.7013	98.1	0.7076	99.1	47.8 - 127		0.89	24.3	
trans-1,2-Dichloroethene	26	0.025	<0.0069	0.6045	93	0.6118	94.1	43.8 - 135		1.2	24.8	
trans-1,3-Dichloropropene	26	0.025	<0.0069	0.5804	89.3	0.5770	88.8	46.6 - 135		0.59	25.3	
Trichloroethene	26	0.025	<0.0073	0.6314	97.1	0.6466	99.5	48 - 132		2.38	24.8	
Trichlorofluoromethane	26	0.025	<0.0099	0.7579	117	0.7801	120	12.8 - 169		2.88	29.7	
Vinyl chloride	26	0.025	<0.0076	0.5768	88.7	0.6228	95.8	32 - 146		7.67	26.3	
Xylenes, Total	26	0.075	0.0235	1.8718	94.8	1.8949	96	42.7 - 135		1.22	26.6	

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Est. 1970

Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test: Volatile Organic Compounds by Method 8260B
Project No: GP09BPNA.C106 Matrix: Water - mg/L
Project: CA-11109 - GP09BPNA.C106 EPA ID: TN00003
Collection Date: 6/17/2015 **Analytic Batch: WG798183**
Analysis Date: 7/2/2015 3:30:00 PM Analyst: 591
Instrument ID: VOCMS28
Sample Numbers: L772834-02, -03, -04, -08

Internal Standard Response and Retention Time Summary

File ID: 0702_02
Analyzed: 07/02/15 125900

	IS1		IS2		IS3		DCB	
	Response	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
12 Hr. Std	421392	4.26	729615	4.59	126221	5.75	293489	8.14
Upper Limit	843000	4.76	1460000	5.09	252000	6.25	587000	8.64
Lower Limit	211000	3.76	365000	4.09	63100	5.25	147000	7.64
Sample ID	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
L772834-02	391635	4.26	712008	4.59	117869	5.75	287041	8.14
L772834-03	342352	4.26	576643	4.59	84849	5.75	265467	8.14
L772834-04	395030	4.26	713352	4.59	113573	5.75	294774	8.14
L772834-08	395902	4.26	679142	4.59	119992	5.75	290767	8.14
MSD WG798183	395144	4.26	710296	4.59	119179	5.75	294853	8.14
MS WG798183	299599	4.26	498552	4.59	73652	5.75	220442	8.14
LCSD WG798183	401470	4.26	720126	4.59	120007	5.75	302046	8.14
LCS WG798183	409886	4.26	738801	4.59	106649	5.75	301743	8.14
BLANK WG798183	411603	4.26	742741	4.59	123725	5.75	303239	8.14

Legend:
IS1 -- PENTAFLUOROBENZENE
IS2 -- 1,4-DIFLUOROBENZENE
IS3 -- 2-BROMO-1-CHLOROPROPANE
DCB -- 1,4-DICHLOROBENZENE-D4

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798519**
Analysis Date:	7/2/2015 9:19:00 AM	Analyst:	591
Instrument ID:	VOCMS4		
Sample Numbers:	L772834-05, -06, -07		

Internal Standard Response and Retention Time Summary

File ID: 0702_04
Analyzed: 07/02/15 035000

	IS1		IS2		IS3		DCB	
	Response	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
12 Hr. Std	324437	4.19	542840	4.52	83678	5.67	246502	8.05
Upper Limit	649000	4.69	1090000	5.02	167000	6.17	493000	8.55
Lower Limit	162000	3.69	271000	4.02	41800	5.17	123000	7.55
Sample ID	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
L772834-05	330448	4.19	552965	4.52	92119	5.67	233523	8.04
L772834-06	321989	4.19	551478	4.52	90143	5.66	245284	8.04
L772834-07	314578	4.19	540620	4.51	90291	5.66	237428	8.04
MSD WG798519	321887	4.18	531622	4.51	82870	5.66	242046	8.04
MS WG798519	315532	4.18	521055	4.51	80497	5.66	232105	8.04
LCSD WG798519	321490	4.19	531874	4.52	84600	5.67	247193	8.04
LCS WG798519	325666	4.19	526986	4.52	82035	5.67	243759	8.04
BLANK WG798519	293037	4.19	501836	4.52	77884	5.67	209969	8.05

Legend:
IS1 -- PENTAFLUOROBENZENE
IS2 -- 1,4-DIFLUOROBENZENE
IS3 -- 2-BROMO-1-CHLOROPROPANE
DCB -- 1,4-DICHLOROBENZENE-D4

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test: Volatile Organic Compounds by Method 8260B
Project No: GP09BPNA.C106 Matrix: Water - mg/L
Project: CA-11109 - GP09BPNA.C106 EPA ID: TN00003
Collection Date: 6/17/2015 **Analytic Batch: WG798183**
Analysis Date: 7/2/2015 3:30:00 PM Analyst: 591
Instrument ID: VOCMS28
Sample Numbers: L772834-02, -03, -04, -08

Surrogate Summary

			BFB		DFM		TD8		TFT	
Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L772834-02	VOCMS28	0702_08	0.0415	104	0.0396	99.1	0.0427	107		
L772834-03	VOCMS28	0702_09	0.0457	114	0.0355	88.7	0.0409	102	0.0426	107
L772834-04	VOCMS28	0702_10	0.0420	105	0.0387	96.8	0.0427	107	0.0402	100
L772834-08	VOCMS28	0702_11	0.0382	95.6	0.0392	98.0	0.0455	114		
LCS WG798183	VOCMS28	0702_03	0.0409	102	0.0397	99.1	0.0374	93.5	0.0406	101
LCSD WG798183	VOCMS28	0702_04	0.0411	103	0.0386	96.6	0.0426	107	0.0404	101
BLANK WG798183	VOCMS28	0702_06	0.0363	90.8	0.0388	97.1	0.0428	107	0.0404	101
MS WG798183	VOCMS28	0702_14	0.0440	110	0.0350	87.4	0.0411	103	0.0428	107
MSD WG798183	VOCMS28	0702_15	0.0359	89.8	0.0387	96.7	0.0425	106	0.0405	101

BFB --4-BROMOFLUOROBENZENE	True Value: 0.04 ppm	Limits: 80.1 - 120
DFM --DIBROMOFLUOROMETHANE	True Value: 0.04 ppm	Limits: 79 - 121
TD8 --TOLUENE-D8	True Value: 0.04 ppm	Limits: 90 - 115
TFT --A,A,A-TRIFLUOROTOLUENE	True Value: 0.04 ppm	Limits: 90.4 - 116

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Volatile Organic Compounds by Method 8260B		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798519**
Analysis Date:	7/2/2015 9:19:00 AM	Analyst:	591
Instrument ID:	VOCMS4		
Sample Numbers:	L772834-05, -06, -07		

Surrogate Summary

			BFB		DFM		TD8		TFT	
Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec	ppm	% Rec
L772834-05	VOCMS4	0702_19	0.0365	91.3	0.0451	113	0.0428	107		
L772834-06	VOCMS4	0702_20	0.0376	93.9	0.0459	115	0.0430	108		
L772834-07	VOCMS4	0702_21	0.0370	92.6	0.0468	117	0.0434	109		
LCS WG798519	VOCMS4	0702_05	0.0384	96.1	0.0417	104	0.0426	106	0.0394	98.5
LCSD WG798519	VOCMS4	0702_06	0.0379	94.7	0.0422	105	0.0421	105	0.0397	99.2
BLANK WG798519	VOCMS4	0702_09	0.0375	93.8	0.0436	109	0.0428	107	0.0398	99.4
MS WG798519	VOCMS4	0702_10	0.0380	94.9	0.0417	104	0.0422	106	0.0396	98.9
MSD WG798519	VOCMS4	0702_11	0.0381	95.2	0.0425	106	0.0421	105	0.0397	99.2

BFB --4-BROMOFLUOROBENZENE	True Value: 0.04 ppm	Limits: 69.7 - 129
DFM --DIBROMOFLUOROMETHANE	True Value: 0.04 ppm	Limits: 76.3 - 123
TD8 --TOLUENE-D8	True Value: 0.04 ppm	Limits: 88.70 - 115
TFT --A,A,A-TRIFLUOROTOLUENE	True Value: 0.04 ppm	Limits: 87.2 - 117

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Diesel and Oil Ranges by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798143**
Analysis Date:	6/25/2015 10:24:00 PM	Analyst:	543
Instrument ID:	SVGC2	Prep Date:	6/24/2015
Sample Numbers:	L772834-01, -05, -06, -07		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
C28-C40 Oil Range		< 4.00	< 0.274	

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
C28-C40 Oil Range is not captured in the LCS/D											

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Diesel and Oil Ranges by Method 8015		
Project No:	GP09BPNA.C106	Matrix:	Soil - mg/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798143**
Analysis Date:	6/25/2015 10:24:00 PM	Analyst:	543
Instrument ID:	SVGC2	Prep Date:	6/24/2015
Sample Numbers:	L772834-01, -05, -06, -07		

Surrogate Summary

			o-Terphenyl	
Laboratory Sample ID	Instrument	File ID	ppm	% Rec
L772834-01 5x	SVGC2	0625_58	0.709	88.6
L772834-05	SVGC2	0625_50	0.742	92.8
L772834-06	SVGC2	0625_51	0.675	84.4
L772834-07	SVGC2	0625_52	0.706	88.3
BLANK WG798143	SVGC2	0625_28	0.808	101
LCS WG798143	SVGC2	0625_30	0.796	99.5
LCSD WG798143	SVGC2	0625_31	0.694	86.7

o-Terphenyl --O-TERPHENYL True Value: 0.8 ppm Limits: 50 - 150

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797705**
Analysis Date:	6/25/2015 3:59:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1-Methylnaphthalene	90-12-0	< 20.0	< 2.00	
2-Chloronaphthalene	91-58-7	< 20.0	< 2.00	
2-Methylnaphthalene	91-57-6	< 20.0	< 2.00	
Acenaphthene	83-32-9	< 6.00	< 0.600	
Acenaphthylene	208-96-8	< 6.00	< 0.600	
Anthracene	120-12-7	< 6.00	< 0.600	
Benzo(a)anthracene	56-55-3	< 6.00	< 0.600	
Benzo(a)pyrene	50-32-8	< 6.00	< 0.600	
Benzo(b)fluoranthene	205-99-2	< 6.00	< 0.600	
Benzo(g,h,i)perylene	191-24-2	< 6.00	< 0.600	
Benzo(k)fluoranthene	207-08-9	< 6.00	< 0.600	
Chrysene	218-01-9	< 6.00	< 0.600	
Dibenz(a,h)anthracene	53-70-3	< 6.00	< 0.600	
Fluoranthene	206-44-0	< 6.00	< 0.600	
Fluorene	86-73-7	< 6.00	< 0.600	
Indeno(1,2,3-cd)pyrene	193-39-5	< 6.00	< 0.600	
Naphthalene	91-20-3	< 20.0	< 2.00	
Phenanthrene	85-01-8	< 6.00	< 0.600	
Pyrene	129-00-0	< 6.00	< 0.600	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Water - ug/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798089**
Analysis Date:	6/25/2015 12:35:00 PM	Analyst:	282
Instrument ID:	BNAMS12	Prep Date:	6/24/2015
Sample Numbers:	L772834-03, -04		

Method Blank

Analyte	CAS	RDL	MDL	Qualifier
1-Methylnaphthalene	90-12-0	< 0.250	0.0101	
2-Chloronaphthalene	91-58-7	< 0.250	< 0.00647	
2-Methylnaphthalene	91-57-6	< 0.250	< 0.00902	
Acenaphthene	83-32-9	< 0.0500	< 0.0100	
Acenaphthylene	208-96-8	< 0.0500	< 0.0120	
Anthracene	120-12-7	< 0.0500	< 0.0140	
Benzo(a)anthracene	56-55-3	< 0.0500	0.0115	
Benzo(a)pyrene	50-32-8	< 0.0500	< 0.0116	
Benzo(b)fluoranthene	205-99-2	< 0.0500	0.00616	
Benzo(g,h,i)perylene	191-24-2	< 0.0500	0.00550	
Benzo(k)fluoranthene	207-08-9	< 0.0500	< 0.0136	
Chrysene	218-01-9	< 0.0500	< 0.0108	
Dibenz(a,h)anthracene	53-70-3	< 0.0500	0.00411	
Fluoranthene	206-44-0	< 0.0500	< 0.0157	
Fluorene	86-73-7	< 0.0500	< 0.00850	
Indeno(1,2,3-cd)pyrene	193-39-5	< 0.0500	< 0.0148	
Naphthalene	91-20-3	< 0.250	< 0.0198	
Phenanthrene	85-01-8	< 0.0500	0.0126	
Pyrene	129-00-0	< 0.0500	< 0.0117	

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Quality Control Summary
SDG: L772834
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Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797705**
Analysis Date:	6/25/2015 3:59:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	80	58.466	73.1	50.6 - 122	
2-Chloronaphthalene	1	80	52.652	65.8	53.9 - 121	
2-Methylnaphthalene	1	80	56.173	70.2	50.4 - 120	
Acenaphthene	1	80	51.018	63.8	52.4 - 120	
Acenaphthylene	1	80	53.282	66.6	49.6 - 120	
Anthracene	1	80	55.124	68.9	50.3 - 130	
Benzo(a)anthracene	1	80	52.497	65.6	46.7 - 125	
Benzo(a)pyrene	1	80	54.341	67.9	42.3 - 119	
Benzo(b)fluoranthene	1	80	54.005	67.5	43.6 - 124	
Benzo(g,h,i)perylene	1	80	47.404	59.3	45.1 - 132	
Benzo(k)fluoranthene	1	80	58.153	72.7	46.1 - 131	
Chrysene	1	80	53.274	66.6	49.5 - 131	
Dibenz(a,h)anthracene	1	80	52.132	65.2	44.8 - 133	
Fluoranthene	1	80	58.937	73.7	49.3 - 128	
Fluorene	1	80	54.817	68.5	50.6 - 121	
Indeno(1,2,3-cd)pyrene	1	80	52.363	65.5	46.1 - 135	
Naphthalene	1	80	53.233	66.5	49.6 - 115	
Phenanthrene	1	80	47.020	58.8	48.8 - 121	
Pyrene	1	80	52.531	65.7	44.7 - 130	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797705**
Analysis Date:	6/25/2015 3:59:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	80	66.567	83.2	50.6 - 122	
2-Chloronaphthalene	1	80	60.303	75.4	53.9 - 121	
2-Methylnaphthalene	1	80	63.597	79.5	50.4 - 120	
Acenaphthene	1	80	57.975	72.5	52.4 - 120	
Acenaphthylene	1	80	60.581	75.7	49.6 - 120	
Anthracene	1	80	63.176	79	50.3 - 130	
Benzo(a)anthracene	1	80	59.647	74.6	46.7 - 125	
Benzo(a)pyrene	1	80	60.839	76	42.3 - 119	
Benzo(b)fluoranthene	1	80	58.150	72.7	43.6 - 124	
Benzo(g,h,i)perylene	1	80	54.590	68.2	45.1 - 132	
Benzo(k)fluoranthene	1	80	71.172	89	46.1 - 131	
Chrysene	1	80	62.008	77.5	49.5 - 131	
Dibenz(a,h)anthracene	1	80	59.637	74.5	44.8 - 133	
Fluoranthene	1	80	66.772	83.5	49.3 - 128	
Fluorene	1	80	62.912	78.6	50.6 - 121	
Indeno(1,2,3-cd)pyrene	1	80	60.301	75.4	46.1 - 135	
Naphthalene	1	80	60.457	75.6	49.6 - 115	
Phenanthrene	1	80	52.777	66	48.8 - 121	
Pyrene	1	80	60.223	75.3	44.7 - 130	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797705**
Analysis Date:	6/25/2015 3:59:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control Limits	RPD Qual
1-Methylnaphthalene	1	80	58.466	73.1	66.567	83.2	50.6 - 122		13	20	
2-Chloronaphthalene	1	80	52.652	65.8	60.303	75.4	53.9 - 121		13.6	20	
2-Methylnaphthalene	1	80	56.173	70.2	63.597	79.5	50.4 - 120		12.4	20	
Acenaphthene	1	80	51.018	63.8	57.975	72.5	52.4 - 120		12.8	20	
Acenaphthylene	1	80	53.282	66.6	60.581	75.7	49.6 - 120		12.8	20	
Anthracene	1	80	55.124	68.9	63.176	79	50.3 - 130		13.6	20	
Benzo(a)anthracene	1	80	52.497	65.6	59.647	74.6	46.7 - 125		12.8	20	
Benzo(a)pyrene	1	80	54.341	67.9	60.839	76	42.3 - 119		11.3	20	
Benzo(b)fluoranthene	1	80	54.005	67.5	58.150	72.7	43.6 - 124		7.39	20	
Benzo(g,h,i)perylene	1	80	47.404	59.3	54.590	68.2	45.1 - 132		14.1	20	
Benzo(k)fluoranthene	1	80	58.153	72.7	71.172	89	46.1 - 131		20.1	20	J3
Chrysene	1	80	53.274	66.6	62.008	77.5	49.5 - 131		15.2	20	
Dibenz(a,h)anthracene	1	80	52.132	65.2	59.637	74.5	44.8 - 133		13.4	20	
Fluoranthene	1	80	58.937	73.7	66.772	83.5	49.3 - 128		12.5	20	
Fluorene	1	80	54.817	68.5	62.912	78.6	50.6 - 121		13.8	20	
Indeno(1,2,3-cd)pyrene	1	80	52.363	65.5	60.301	75.4	46.1 - 135		14.1	20	
Naphthalene	1	80	53.233	66.5	60.457	75.6	49.6 - 115		12.7	20	
Phenanthrene	1	80	47.020	58.8	52.777	66	48.8 - 121		11.5	20	
Pyrene	1	80	52.531	65.7	60.223	75.3	44.7 - 130		13.6	20	

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Water - ug/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798089**
Analysis Date:	6/25/2015 12:35:00 PM	Analyst:	282
Instrument ID:	BNAMS12	Prep Date:	6/24/2015
Sample Numbers:	L772834-03, -04		

Laboratory Control Sample (LCS)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	2	2.2753	114	68.3 - 144	
2-Chloronaphthalene	1	2	2.3433	117	69.7 - 140	
2-Methylnaphthalene	1	2	2.2986	115	67.6 - 143	
Acenaphthene	1	2	2.2938	115	67.7 - 153	
Acenaphthylene	1	2	2.3376	117	66.9 - 141	
Anthracene	1	2	2.3547	118	68.9 - 153	
Benzo(a)anthracene	1	2	2.4857	124	63.1 - 147	
Benzo(a)pyrene	1	2	2.5168	126	62.2 - 150	
Benzo(b)fluoranthene	1	2	2.4784	124	58.4 - 148	
Benzo(g,h,i)perylene	1	2	2.4708	124	57.4 - 152	
Benzo(k)fluoranthene	1	2	2.5717	129	60.5 - 154	
Chrysene	1	2	2.4458	122	64.8 - 155	
Dibenz(a,h)anthracene	1	2	2.3120	116	53.5 - 153	
Fluoranthene	1	2	2.4232	121	68.6 - 153	
Fluorene	1	2	2.2808	114	67.3 - 141	
Indeno(1,2,3-cd)pyrene	1	2	2.3612	118	57 - 155	
Naphthalene	1	2	2.2596	113	66.7 - 135	
Phenanthrene	1	2	2.2905	115	64.3 - 143	
Pyrene	1	2	2.5188	126	60.2 - 154	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Water - ug/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798089**
Analysis Date:	6/25/2015 12:35:00 PM	Analyst:	282
Instrument ID:	BNAMS12	Prep Date:	6/24/2015
Sample Numbers:	L772834-03, -04		

Laboratory Control Sample Duplicate (LCSD)

Analyte	Dil	True Value	Found	% Rec	Control Limits	Qual
1-Methylnaphthalene	1	2	2.2830	114	68.3 - 144	
2-Chloronaphthalene	1	2	2.2615	113	69.7 - 140	
2-Methylnaphthalene	1	2	2.2979	115	67.6 - 143	
Acenaphthene	1	2	2.2220	111	67.7 - 153	
Acenaphthylene	1	2	2.2771	114	66.9 - 141	
Anthracene	1	2	2.2865	114	68.9 - 153	
Benzo(a)anthracene	1	2	2.3837	119	63.1 - 147	
Benzo(a)pyrene	1	2	2.4570	123	62.2 - 150	
Benzo(b)fluoranthene	1	2	2.4598	123	58.4 - 148	
Benzo(g,h,i)perylene	1	2	2.4529	123	57.4 - 152	
Benzo(k)fluoranthene	1	2	2.4579	123	60.5 - 154	
Chrysene	1	2	2.3934	120	64.8 - 155	
Dibenz(a,h)anthracene	1	2	2.3376	117	53.5 - 153	
Fluoranthene	1	2	2.3440	117	68.6 - 153	
Fluorene	1	2	2.2112	111	67.3 - 141	
Indeno(1,2,3-cd)pyrene	1	2	2.3689	118	57 - 155	
Naphthalene	1	2	2.2063	110	66.7 - 135	
Phenanthrene	1	2	2.2218	111	64.3 - 143	
Pyrene	1	2	2.4396	122	60.2 - 154	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Water - ug/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798089**
Analysis Date:	6/25/2015 12:35:00 PM	Analyst:	282
Instrument ID:	BNAMS12	Prep Date:	6/24/2015
Sample Numbers:	L772834-03, -04		

Laboratory Control Sample / Laboratory Control Sample Duplicate

Analyte	Dil	Spike	LCS	% Rec	LCSD	% Rec	Control Limits	% Rec Qual	% RPD	Control RPD Limits	RPD Qual
1-Methylnaphthalene	1	2	2.2753	114	2.2830	114	68.3 - 144		0.34	20	
2-Chloronaphthalene	1	2	2.3433	117	2.2615	113	69.7 - 140		3.55	20	
2-Methylnaphthalene	1	2	2.2986	115	2.2979	115	67.6 - 143		0.03	20	
Acenaphthene	1	2	2.2938	115	2.2220	111	67.7 - 153		3.18	20	
Acenaphthylene	1	2	2.3376	117	2.2771	114	66.9 - 141		2.62	20	
Anthracene	1	2	2.3547	118	2.2865	114	68.9 - 153		2.94	20	
Benzo(a)anthracene	1	2	2.4857	124	2.3837	119	63.1 - 147		4.19	20	
Benzo(a)pyrene	1	2	2.5168	126	2.4570	123	62.2 - 150		2.4	20	
Benzo(b)fluoranthene	1	2	2.4784	124	2.4598	123	58.4 - 148		0.75	20	
Benzo(g,h,i)perylene	1	2	2.4708	124	2.4529	123	57.4 - 152		0.73	20	
Benzo(k)fluoranthene	1	2	2.5717	129	2.4579	123	60.5 - 154		4.53	20	
Chrysene	1	2	2.4458	122	2.3934	120	64.8 - 155		2.17	20	
Dibenz(a,h)anthracene	1	2	2.3120	116	2.3376	117	53.5 - 153		1.1	20	
Fluoranthene	1	2	2.4232	121	2.3440	117	68.6 - 153		3.33	20	
Fluorene	1	2	2.2808	114	2.2112	111	67.3 - 141		3.1	20	
Indeno(1,2,3-cd)pyrene	1	2	2.3612	118	2.3689	118	57 - 155		0.33	20	
Naphthalene	1	2	2.2596	113	2.2063	110	66.7 - 135		2.39	20	
Phenanthrene	1	2	2.2905	115	2.2218	111	64.3 - 143		3.04	20	
Pyrene	1	2	2.5188	126	2.4396	122	60.2 - 154		3.2	20	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797705**
Analysis Date:	6/25/2015 3:59:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Matrix Spike / Matrix Spike Duplicate

L772720-12

Analyte	Dil	Spike Value	Sample	MS	% Rec	MSD	% Rec	Control Limits	% Rec Qual	RPD	Control Limits	RPD Qual
1-Methylnaphthalene	1	80	<2	73.469	91.8	70.225	87.8	28.4 - 137		4.51	20	
2-Chloronaphthalene	1	80	<2	66.495	83.1	65.158	81.4	38.6 - 126		2.03	20	
2-Methylnaphthalene	1	80	<2	70.191	87.7	67.578	84.5	26.6 - 137		3.79	20	
Acenaphthene	1	80	<0.6	63.845	79.8	62.887	78.6	31.9 - 130		1.51	20	
Acenaphthylene	1	80	<0.6	66.716	83.4	66.033	82.5	33.7 - 129		1.03	20	
Anthracene	1	80	<0.6	69.520	86.9	70.316	87.9	26.5 - 141		1.14	21.2	
Benzo(a)anthracene	1	80	<0.6	65.626	82	63.385	79.2	18.3 - 136		3.47	24.6	
Benzo(a)pyrene	1	80	<0.6	72.196	90.2	70.145	87.7	16.9 - 135		2.88	25.2	
Benzo(b)fluoranthene	1	80	<0.6	67.697	84.6	63.884	79.9	10 - 134		5.8	30.9	
Benzo(g,h,i)perylene	1	80	<0.6	58.734	73.4	56.686	70.9	14.1 - 140		3.55	25.5	
Benzo(k)fluoranthene	1	80	<0.6	71.716	89.6	70.439	88	18.2 - 138		1.8	25.6	
Chrysene	1	80	<0.6	67.454	84.3	66.845	83.6	17.1 - 145		0.91	24.2	
Dibenz(a,h)anthracene	1	80	<0.6	64.322	80.4	62.428	78	18.5 - 138		2.99	24.3	
Fluoranthene	1	80	<0.6	71.492	89.4	70.294	87.9	15.4 - 144		1.69	27.1	
Fluorene	1	80	<0.6	68.170	85.2	67.480	84.3	23.5 - 136		1.02	20	
Indeno(1,2,3-cd)pyrene	1	80	<0.6	64.560	80.7	62.159	77.7	14.5 - 142		3.79	25.8	
Naphthalene	1	80	<2	67.162	84	63.674	79.6	29.2 - 128		5.33	20	
Phenanthrene	1	80	<0.6	56.534	70.7	56.010	70	20.1 - 134		0.93	23.6	
Pyrene	1	80	<0.6	65.752	82.2	63.248	79.1	11 - 148		3.88	26.1	

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797705**
Analysis Date:	6/25/2015 3:59:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Internal Standard Response and Retention Time Summary

File ID: 0624A_03
Analyzed: 06/24/15 214900

	NAP		ACE		PHEN		CHR	
	Response	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
12 Hr. Std	72590	5.50	51664	7.41	100332	8.94	115082	11.65
Upper Limit	145000	6.00	103000	7.91	201000	9.44	230000	12.15
Lower Limit	36300	5.00	25800	6.91	50200	8.44	57500	11.15
Sample ID	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
L772834-05	67544	5.51	48782	7.41	89757	8.95	111245	11.65
L772834-06	66176	5.51	47465	7.41	86657	8.95	110723	11.65
L772834-07	71125	5.51	51153	7.41	95353	8.94	115445	11.64
MSD WG797705	66523	5.51	46953	7.41	91078	8.94	106679	11.64
MS WG797705	67324	5.51	47809	7.41	93131	8.94	107253	11.64
LCSD WG797705	72622	5.51	51479	7.41	100306	8.94	117906	11.65
LCS WG797705	70955	5.51	50821	7.41	98027	8.94	116960	11.65
BLANK WG797705	73721	5.51	53231	7.41	98696	8.95	123450	11.65

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797705**
Analysis Date:	6/25/2015 3:59:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Internal Standard Response and Retention Time Summary

File ID: 0624A_03
Analyzed: 06/24/15 214900

	NAP		PER	
	Response	**RT**	**Response**	**RT**
12 Hr. Std	72590	5.50	124950	13.26
Upper Limit	145000	6.00	250000	13.76
Lower Limit	36300	5.00	62500	12.76
Sample ID	**Response**	**RT**	**Response**	**RT**
L772834-05	67544	5.51	118272	13.26
L772834-06	66176	5.51	113228	13.26
L772834-07	71125	5.51	125917	13.25
MSD WG797705	66523	5.51	115303	13.25
MS WG797705	67324	5.51	116914	13.25
LCSD WG797705	72622	5.51	127044	13.25
LCS WG797705	70955	5.51	126821	13.26
BLANK WG797705	73721	5.51	126089	13.26

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Water - ug/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798089**
Analysis Date:	6/25/2015 12:35:00 PM	Analyst:	282
Instrument ID:	BNAMS12	Prep Date:	6/24/2015
Sample Numbers:	L772834-03, -04		

Internal Standard Response and Retention Time Summary

File ID: 0625_03.D
Analyzed: 062515

	NAP		ACE		PHEN		CHR	
	Response	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
12 Hr. Std	67036	5.51	41446	7.38	75529	8.91	65875	11.60
Upper Limit	134000	6.01	82900	7.88	151000	9.41	132000	12.10
Lower Limit	33500	5.01	20700	6.88	37800	8.41	32900	11.10
Sample ID	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
LCSD WG798089	61619	5.51	38039	7.38	69119	8.91	61984	11.60
LCS WG798089	58442	5.50	35002	7.38	64022	8.91	57524	11.60
BLANK WG798089	59835	5.51	36716	7.38	66626	8.91	57572	11.60

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Water - ug/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798089**
Analysis Date:	6/25/2015 12:35:00 PM	Analyst:	282
Instrument ID:	BNAMS12	Prep Date:	6/24/2015
Sample Numbers:	L772834-03, -04		

Internal Standard Response and Retention Time Summary

File ID: 0625_03.D
Analyzed: 062515

	NAP		PER	
	Response	**RT**	**Response**	**RT**
12 Hr. Std	67036	5.51	59026	13.17
Upper Limit	134000	6.01	118000	13.67
Lower Limit	33500	5.01	29500	12.67
Sample ID	**Response**	**RT**	**Response**	**RT**
LCSD WG798089	61619	5.51	55671	13.17
LCS WG798089	58442	5.50	51538	13.18
BLANK WG798089	59835	5.51	51255	13.16

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Water - ug/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798089**
Analysis Date:	6/25/2015 12:35:00 PM	Analyst:	282
Instrument ID:	BNAMS12	Prep Date:	6/24/2015
Sample Numbers:	L772834-03, -04		

Internal Standard Response and Retention Time Summary

File ID: 0625_12
Analyzed: 06/25/15 105500

	NAP		ACE		PHEN		CHR	
	Response	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
12 Hr. Std	66719	5.51	41080	7.38	74629	8.91	65710	11.60
Upper Limit	134000	6.01	82900	7.88	151000	9.41	132000	12.10
Lower Limit	33500	5.01	20700	6.88	37800	8.41	32900	11.10
Sample ID	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**	**Response**	**RT**
L772834-03 2X	61985	5.51	38726	7.38	71419	8.91	62182	11.59
L772834-04	61540	5.51	37943	7.38	68905	8.91	59295	11.60

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Water - ug/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798089**
Analysis Date:	6/25/2015 12:35:00 PM	Analyst:	282
Instrument ID:	BNAMS12	Prep Date:	6/24/2015
Sample Numbers:	L772834-03, -04		

Internal Standard Response and Retention Time Summary

File ID: 0625_12
Analyzed: 06/25/15 105500

	NAP		PER	
	Response	**RT**	**Response**	**RT**
12 Hr. Std	66719	5.51	59226	13.17
Upper Limit	134000	6.01	118000	13.67
Lower Limit	33500	5.01	29500	12.67
Sample ID	**Response**	**RT**	**Response**	**RT**
L772834-03 2X	61985	5.51	56063	13.16
L772834-04	61540	5.51	53134	13.17

Legend:
NAP -- Naphthalene-d8
ACE -- Acenaphthene-d10
PHEN -- Phenanthrene-d10
CHR -- Chrysene-d12
PER -- Perylene-d12

Parameters in bold text are reported in this SDG

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Soil - ug/kg
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG797705**
Analysis Date:	6/25/2015 3:59:00 AM	Analyst:	280
Instrument ID:	BNAMS18	Prep Date:	6/23/2015
Sample Numbers:	L772834-05, -06, -07		

Surrogate Summary

			FBP		NBZ		TPH	
Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec
L772834-05	BNAMS18	0624A_19	0.0752	90.3	0.100	120	0.0599	71.9
L772834-06	BNAMS18	0624A_20	0.0801	96.1	0.113	135	0.0617	74.1
L772834-07	BNAMS18	0624A_21	0.0700	84.0	0.0951	114	0.0577	69.2
LCS WG797705	BNAMS18	0624A_05	0.0573	68.8	0.0797	95.7	0.0452	54.3
LCSD WG797705	BNAMS18	0624A_06	0.0678	81.4	0.0933	112	0.0546	65.6
BLANK WG797705	BNAMS18	0624A_07	0.0651	78.2	0.0926	111	0.0516	61.9
MS WG797705	BNAMS18	0624A_13	0.0772	92.7	0.107	128	0.0618	74.2
MSD WG797705	BNAMS18	0624A_14	0.0771	92.6	0.107	129	0.0594	71.3

FBP --2-FLUOROBIPHENYL	True Value: 0.0833 ppm	Limits: 40.6 - 122
NBZ --NITROBENZENE-D5	True Value: 0.0833 ppm	Limits: 22.1 - 146
TPH --P-TERPHENYL-D14	True Value: 0.0833 ppm	Limits: 32.20 - 131

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Quality Control Summary
SDG: L772834
ARCADIS US - San Francisco, CA

Test:	Polynuclear Aromatic Hydrocarbons by Method 8270C-SIM		
Project No:	GP09BPNA.C106	Matrix:	Water - ug/L
Project:	CA-11109 - GP09BPNA.C106	EPA ID:	TN00003
Collection Date:	6/17/2015	**Analytic Batch:**	**WG798089**
Analysis Date:	6/25/2015 12:35:00 PM	Analyst:	282
Instrument ID:	BNAMS12	Prep Date:	6/24/2015
Sample Numbers:	L772834-03, -04		

Surrogate Summary

			FBP		NBZ		TPH	
Laboratory Sample ID	Instrument	File ID	ppm	% Rec	ppm	% Rec	ppm	% Rec
L772834-03 2x	BNAMS12	0625_16	0.00183	91.4	0.00228	114	0.00173	86.5
L772834-04	BNAMS12	0625_17	0.00216	108	0.00245	123	0.00217	108
LCS WG798089	BNAMS12	0625_13	0.00229	115	0.00268	134	0.00226	113
LCSD WG798089	BNAMS12	0625_14	0.00219	110	0.00241	120	0.00217	108
BLANK WG798089	BNAMS12	0625_15	0.00226	113	0.00243	121	0.00228	114

FBP --2-FLUOROBIPHENYL	True Value: 0.002 ppm	Limits: 55.5 - 150
NBZ --NITROBENZENE-D5	True Value: 0.002 ppm	Limits: 33.8 - 179
TPH --P-TERPHENYL-D14	True Value: 0.002 ppm	Limits: 46.20 - 163

ARCADIS US - San Francisco, CA

100 Montgomery Street, Suite 300
San Francisco, CA 94104

Billing Information:
Attn: Accounts Payable
630 Plaza Drive, Suite 600
Highlands Ranch, CO 80129

Report to: Claire Hamaji, Carl Edwards

Email To: Claire.Hamaji@arcadis-us.com Carl.edwards@arcadis-us.com

Project Description: CA-11109 -

City/State Collected: Oakland, CA

Phone: 415-432-6917
Fax: 720-344-0486

Client Project # GP09BPNA-C106

Lab Project # ARCADISBP-CA11109

Collected by (print): Bo Jessup

Site/Facility ID # 11109

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X_Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

ESC LABORATORIES
YOUR LAB OF CHOICE
12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

L# L772834
A174

Acctnum: ARCADISBP
Template: T103473
Prelogin: P514614
TSR: 358 - Jarred Willis
PB: 6-17-15 WG
Shipped Via: FedEx Priority

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cd, Cr, Ni, Pb, Zn 2ozClr-NoPres	GRO / VOCs & oxys 40ml/NaHSO4/Cr/MeOH	Motor Oil / PAHSIM 4ozClr-NoPres	Motor Oil 4ozClr-NoPres	VOC Screen 2ozClr-NoPres	GRO by 8015B - 40 mL vials w/ HCl	BTEX, MTBE by 8260B 40 mL amb HCl	PAHSIMLVI 40 mL amb NO preservative by 8270 C/D	Naphthalene by 8260B	Rem./Contaminant	Sample # (lab only)
B-3-6.5-061715	Grab	SS	6-6.5	6/17/15	1153	1				X							-01
B-6-13-061915	Grab	GW	13	6/19/15	1725	5						X	X				-02
B-1-25-061915	Grab	GW	25	6/19/15	1700	6						X	X	X	X		-03
EB-1-061915	Grab	GW	—	6/19/15	1730	8						X	X	X	X		-04
B-1-4-061915	Grab	SS	3.5-4	6/19/15	0900	7	X	X	X		X						-05
B-1-7.5-061915	Grab	SS	6.5-7.5	6/19/15	1530	7	X	X	X		X						-06
B-1-11-061915	Grab	SS	10-11	6/19/15	1535	7	X	X	X		X						-07

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks: Extract immediately, samples collected 6/17-6/19
Note: on B-1-25-061925, I put red caps on unpreserved bottles. Bottles/preservatives mixed up. caps just got

pH _____ Temp _____
Flow _____ Other _____

7738892745 13

Hold #

Relinquished by: (Signature) Received by: (Signature)

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Condition: (lab use only) 6175 OK

Relinquished by: (Signature) Date: 6/22/15 Time: 1200 Received by: (Signature)

Temp: 3.1 °C Bottles Received: 48+2TB

COC Seal Intact: ✓ Y ___N ___NA

Relinquished by: (Signature) Date: Time: Received for lab by: (Signature)

Date: 6-23-15 Time: 0900

pH Checked: NCF:

ARCADIS US - San Francisco, CA

100 Montgomery Street, Suite 300
San Francisco, CA 94104

Billing Information:
Attn: Accounts Payable
630 Plaza Drive, Suite 600
Highlands Ranch, CO 80129

Report to: Claire Hamaji, Carl Edwards

Email To: Claire.Hamaji@arcadis-us.com
Carl.Edwards@arcadis-us.com

Project Description: CA-11109 -

City/State Collected: Oakland, CA

Phone: 415-432-6917
Fax: 720-344-0486

Client Project # GP09BPNA.CLOG.CA009

Lab Project # ARCADISBP-CA11109

Collected by (print): Bo Jessup

Site/Facility ID # BP-11109

P.O. #

Collected by (signature): B Jessup
Immediately
Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day 200%
___ Next Day 100%
___ Two Day 50%
___ Three Day 25%

Date Results Needed

Email? ___No X__Yes
FAX? ___No ___Yes

Analysis / Container / Preservative

Chain of Custody Page ___ of ___

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L# L772834

Table #

Acctnum: ARCADISBP
Template: T102861
Prelogin: P510924
TSR: 358 - Jarred Willis
PB: 5-21/22

Shipped Via: FedEX Ground

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	Cd, Cr, Ni, Pb, Zn 2ozClr-NoPres	GRO / V8260BTEXMN 40ml/NaHSO4/Syr/MeOH	GRO / VOCs & oxys 40ml/NaHSO4/Syr/MeOH	GRO 40mlAmb HCl by 8015B	Motor Oil / PAHSIM 4ozClr-NoPres	Motor Oil 4ozClr-NoPres	PAHSIM 4ozClr-NoPres	PAHSIMLVI 40mlAmb-NoPres-WT	Pb 2ozClr-NoPres	BTEX, MTBE by 8260B V8260BTEXMN 40mlAmb-HCl	Rem./Contaminant	Sample # (lab only)
~~B-6~~		~~GW~~				5				X						X		
B-7-14-062215	Grab	GW	14'	6/22/15	10:50	5				X						X		-08
~~B-1~~		~~GW~~				8				X				X				
~~B-1~~		~~SS~~				7	X		X		X							
~~B-8 B~~		~~SS~~				7		X					X		X			
~~B-3~~		~~SS~~				1						X						
~~B-5~~		~~SS~~				1						X						
		~~GW~~				8				X				X				
		~~SS~~				7	X		X		X							

* Matrix: **SS** - Soil **GW** - Groundwater **WW** - WasteWater **DW** - Drinking Water **OT** - Other_____

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Hold #

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Lorraine Fuller	6/22/15	15:00	FEDEX
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature) Dalaby

Samples returned via: ☐ UPS ☑ FedEx ☐ Courier ☐ _____

Temp: 3.1 °C Bottles Received: 48+2TB

Date: 6-23-15 Time: 0900

Condition: (lab use only) OK

COC Seal Intact: ✓ Y ___ N ___ NA

pH Checked: NCF:

ARCADIS

Appendix E

Chevron Service Station MTBE
Plume Map – March 10, 2015

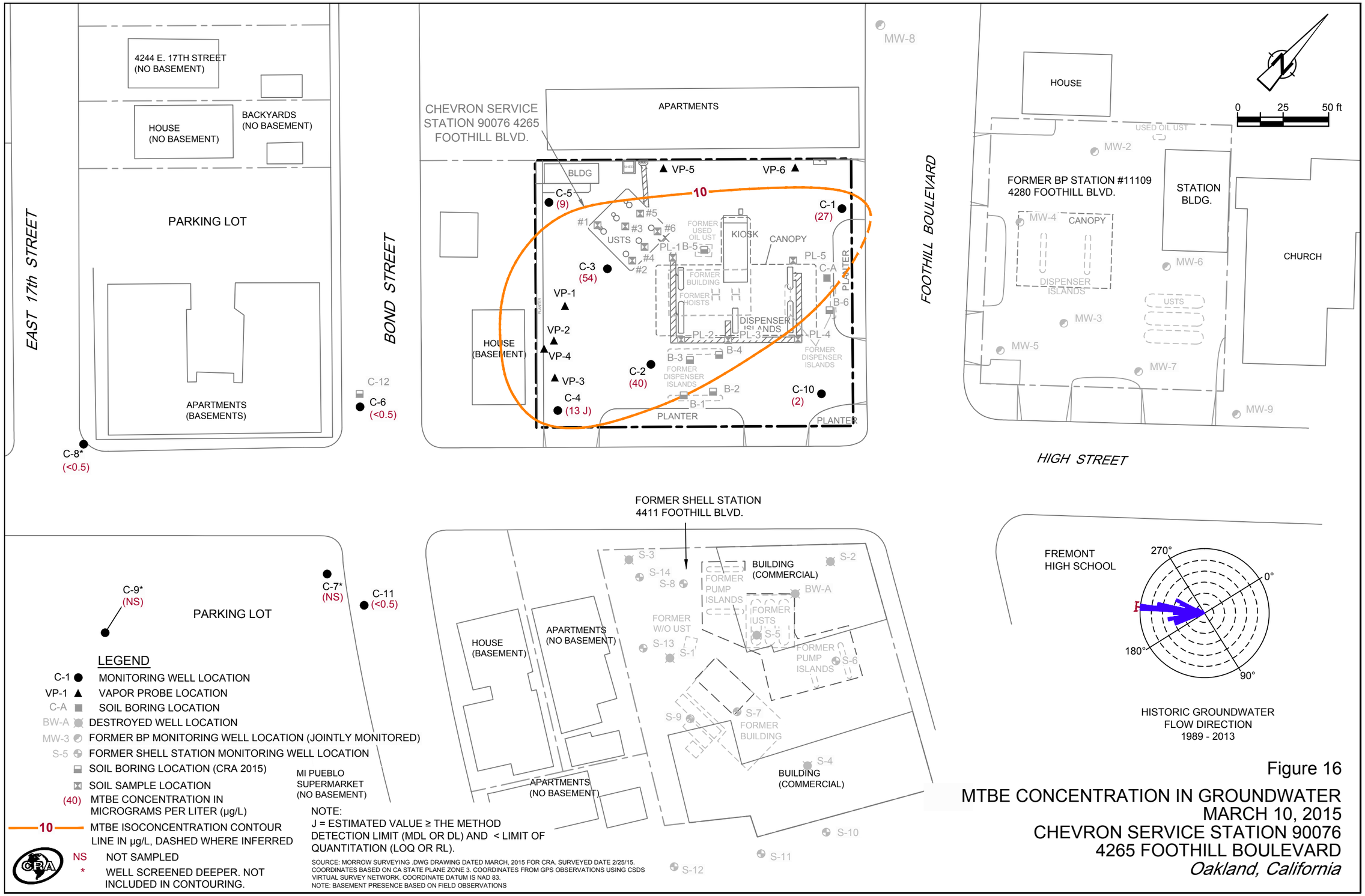

Figure 16

MTBE CONCENTRATION IN GROUNDWATER
MARCH 10, 2015
CHEVRON SERVICE STATION 90076
4265 FOOTHILL BOULEVARD
Oakland, California

311977-2014(018)GN-SO015 APR 15/2015

STATE WATER RESOURCES CONTROL BOARD

GEOTRACKER ESI

UPLOADING A GEO_REPORT FILE

SUCCESS

Your GEO_REPORT file has been successfully submitted!

Submittal Type:	**GEO_REPORT**
Report Title:	**CPT/UVOST Field Investigation Report 091615**
Report Type:	**Request for Closure**
Report Date:	**9/16/2015**
Facility Global ID:	**T0600100217**
Facility Name:	**BP #11109**
File Name:	**CA-11109 150916 BP - CPT UVOST Field Investigation Report.pdf**
Organization Name:	**ARCADIS**
Username:	**ARCADISBP**
IP Address:	**108.171.135.189**
Submittal Date/Time:	**9/16/2015 4:37:25 PM**
Confirmation Number:	**5553565323**