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ARCADIS U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco
California 94104
Tel 415 374 2744
Fax 415 374 2745
www.arcadis-us.com

Mr. Mark Detterman
Senior Hazardous Materials Specialist, PG, CEG
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502

ENVIRONMENT

Subject:
Site Investigation Summary Report
Former BP Service Station No. 11126
1700 Powell Street, Emeryville, California
ACEH Case No.: RO0000066

Date:
January 23, 2015

Dear Mr. Detterman:

Contact:
Hollis Phillips

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

Phone:
415.432.6903

<u>BP Facility No.</u>	<u>ACEH Site No.</u>	<u>Location</u>
11126	RO0000066	1700 Powell Street Emeryville, California

Email:
hollis.phillips@arcadis-us.com

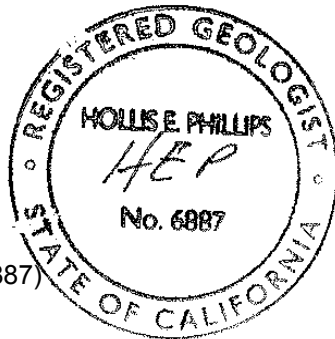
Our ref:
GP09BPNA.C044.K0000

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



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**Atlantic Richfield Company,
a BP-affiliated company**

Site Investigation Summary Report

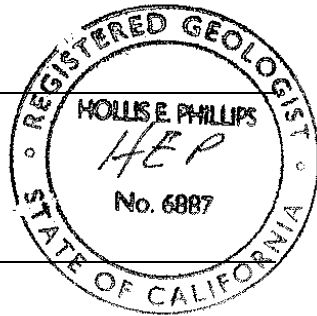
Former BP Service Station No. 11126
1700 Powell Street, Emeryville, California
ACEH Case No.: RO0000066

January 23, 2015



Jamey M. Peterson
Project Geologist

Hollis E. Phillips (No. 6887)
Principal Geologist



Site Investigation Summary Report

Former BP Service Station No.
11126
1700 Powell Street, Emeryville,
California

Prepared for:
Atlantic Richfield Company,
a BP-affiliated company

Prepared by:
ARCADIS U.S., Inc.
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Acronyms and Abbreviations

1,2-DCA	1,2-dichloroethane
ACEH	Alameda County Environmental Health
ACPWA	Alameda County Public Works Agency
ARCADIS	ARCADIS U.S., Inc.
ARCO	Atlantic Richfield Company
bgs	below ground surface
BP	British Petroleum
BTEX	benzene, toluene, ethylbenzene, and xylenes
COPC	constituent of potential of concern
Cruz	Cruz Brothers Locating, Inc. of Scotts Valley, California
DIPE	di-isopropyl ether
DRO	diesel range organics (C10-C28)
EDB	ethylene dibromide
ESL	Environmental Screening Level
ETBE	ethyl tert-butyl ether
GRO	gasoline range organics (C6 - C12)
HASP	Health and Safety Plan
IDW	investigation-derived waste
Low-Threat Closure Policy	Low-Threat Underground Storage Tank Case Closure Policy
LRL	laboratory reporting limit
mg/kg	milligrams per kilogram
MTBE	methyl tertiary butyl ether
PAH	polycyclic aromatic hydrocarbon
PID	photo ionization detector

PPE	personal protective equipment
PVC	polyvinyl chloride
report	Site Investigation Summary Report
SFRWQCB	San Francisco Bay Regional Water Quality Control Board
SIM	selective ion monitoring
site	former BP service station No. 11126, located at 1700 Powell Street, Emeryville, California
SWRCB	State Water Resources Control Board
TAME	tert-amyl methyl ether
TBA	tert-butyl alcohol
TestAmerica	TestAmerica Laboratories, Inc.
USA-North	Underground Service Alert-North
USCS	Unified Soil Classification System
USEPA	United States Environmental Protection Agency
UST	underground storage tank
VOC	volatile organic compound
µg/L	micrograms per liter

1. Introduction

On behalf of Atlantic Richfield Company (ARCO; a BP-affiliated company), ARCADIS U.S., Inc. (ARCADIS) prepared this Site Investigation Summary Report (report) to present the results of site investigation activities conducted at former BP Service Station No. 11126, located at 1700 Powell Street in Emeryville, California (site; Figure 1). The site investigation activities were performed in response to Alameda County Environmental Health (ACEH) letters dated June 30, 2014 (ACEH 2014a) and October 1, 2014 (ACEH 2014b). These letters (ACEH 2014a and 2014b) requested additional characterization of petroleum-hydrocarbon-affected soil and groundwater to address potential data gaps at the site relevant to the Low-Threat Underground Storage Tank Case Closure Policy (Low-Threat Closure Policy; State Water Resources Control Board [SWRCB 2012]). The Low-Threat Closure Policy (SWRCB 2012) was adopted by the SWRCB on May 1, 2012 and effective on August 17, 2012.

1.1 Site Background

The site is currently in use as a 76-branded gasoline station located on the northwest corner of the intersection of Powell Street and Christie Avenue in Emeryville, California (Figure 2). Three unleaded gasoline underground storage tanks (USTs) are located at the site (one 6,000-gallon UST, one 10,000 gallon UST, and one 12,000-gallon UST). Historical documents indicate that these USTs were installed in the late 1980s (SECOR International Inc. 2007). Site features include a station building and two dispenser islands with three dispensers each, for a total of six dispensers. The majority of the site surface is paved with concrete and asphalt.

Surrounding land use is commercial. A Denny's restaurant is located west of the site, a shopping plaza is located south of the site, a parking lot is located adjacent to the north of the site, and a furniture store is located to the east across Christie Avenue.

1.2 Summary of Completed Site Actions

In the June 30 and October 1, 2014 letters (ACEH 2014a and 2014b), the ACEH summarizes remaining data gaps for the site that must be understood to create a complete site conceptual model and to evaluate site conditions according to the Low-Threat Closure Policy (SWRCB 2012). Recent site activities were performed per the recommendations provided by ACEH in their letters (ACEH 2014a and 2014b) and in accordance with the Data Gaps Investigation Work Plan (ARCADIS 2014b). Site investigation activities included:

- Completion of two soil borings (GP-1 and GP-2) to evaluate soil conditions near the former waste oil USTs.
- Completion of one soil boring (GP-3) to evaluate soil conditions near MW-9.
- Completion of one soil boring (GP-4) near the location of former product line samples (PL-3 -3', TD-2, and TD-3) to determine current soil concentrations.
- Completion of one soil boring (GP-5) in the planter on the southwest side of the site in order to collect soil and groundwater grab samples for analytical testing prior to potential off-site migration and into potential utility corridors beneath Powell Street.
- Completion of one soil boring (GP-6) to assess soil and groundwater conditions in the upgradient (north) portion of the site.
- Performance of a utility survey in to assess potential utility-related preferential pathways near the site.
- Evaluation of the extent of diesel range organics (C10-C28) (DRO), naphthalene, and polycyclic aromatic hydrocarbons (PAHs) in groundwater by adding these constituents to the list of analytes for groundwater samples collected from the site during routine groundwater monitoring and sampling events.

The following sections present details on the recently performed work at the site.

2. Soil Boring Completions

Soil borings were completed at six locations (GP-1 through GP-6) at the site by Cascade Drilling, a California-licensed drilling contractor, under direct supervision by an ARCADIS geologist on November 24 and 25, 2014. Soil boring locations are shown on Figures 2 and 3.

2.1 Pre-Field Activities

Prior to initiating drilling activities, the site-specific Health and Safety Plan (HASP) was updated in accordance with state and federal requirements for use during the proposed field activities. A drilling permit (No. 2014-1120) from the Alameda County Public Works Agency (ACPWA) was obtained prior to initiation of drilling activities (Appendix

A). Underground utilities and other potential subsurface obstructions near the proposed drilling locations were located and marked prior to sampling.

Utilities were identified by Underground Service Alert-North (USA-North) and a private third-party utility surveyor (Cruz Brothers Locating, Inc. of Scotts Valley, California [Cruz]). The site was identified with white paint and a USA-North ticket was obtained prior to drilling activities. On November 20, 2014, Cruz screened the proposed drilling locations to determine the location(s) of nearby underground utilities as well as identify all on-site subsurface utilities and laterals to assess potential preferential pathways (e.g., water, electric, storm drain, sanitary sewer trenches), specifically in the downgradient and crossgradient directions toward Powell Street.

Subsurface utilities at the site were evaluated with subsurface locating equipment, including ground-penetrating radar, electromagnetic survey equipment, and radio frequency receivers. Manholes and other access ports were opened and assessed to verify the utilities' presence, depths, and trajectories to the extent feasible. On-site utilities were traced to laterals that convey utilities to the site from their respective main lines. All major subsurface utilities that service the site were located coming from Christie Avenue. Subsurface utilities in relation to potential preferential pathways are discussed in Section 4 of this report.

2.2 Installation of Borings

To minimize the potential for encountering subsurface utilities, the soil boring locations were hand cleared to a minimum of 6.5 feet below ground surface (bgs) with a hand auger prior to drilling. Once cleared, the borings were advanced using direct-push probing equipment to an approximate total depth of 10 feet bgs, with the exception of GP-5. GP-5 was advanced to its total depth with a hand auger to minimize impact to the landscaping within the planter. In addition, GP-5 was terminated at 9.5 feet bgs when material indicative of roof shingles and felt were encountered. Field personnel were unable to advance the hand auger through the roofing-like materials.

Soil samples were collected continuously to the extent feasible in 4-foot-long acetate liners, logged for stratigraphic characteristics (e.g., contacts, color, staining, odors) in accordance with the Unified Soil Classification System (USCS), and field screened for volatile organic compounds (VOCs) using a photo ionization detector (PID) under supervision by a California Professional Geologist. Soil boring logs are provided in Appendix B.

2.3 Soil Sampling and Laboratory Analysis

Soil samples were collected from each soil boring for analytical testing. Generally, soil samples were collected from intervals that exhibited the most significant indications of petroleum hydrocarbon impacts based on odor, elevated PID readings, staining, or other evidence. At least one soil sample was collected from the interval at 0 to 5 feet bgs and one from the interval from 5 to 10 feet bgs based on criteria presented in the Low-Threat Closure Policy (SWRCB 2012) for direct contact and outdoor air exposure.

Samples designated for laboratory analysis were collected in direct-push acetate liners to obtain relatively undisturbed soil samples. Sample sleeves were cut in approximate 0.5-foot increments in the field. Soil samples submitted for analytical testing between the hand-cleared interval (0 to 6.5 feet bgs) were retrieved from the hand auger and collected with Terra Core[®] samplers according to United States Environmental Protection Agency (USEPA) SW-846 Method 5035A.

Sample sleeves designated for laboratory analysis were logged visually, as inspected through the liners and to the extent feasible for soil properties (e.g., soil type, color, moisture content). Additional observations were noted regarding observed odor, staining, and VOC concentrations as measured with a PID from soil headspace at the ends of each section. The boring subsections were then capped with Teflon[®] squares and plastic end caps, labeled, sealed in plastic wrap, and placed in an ice-chilled cooler for delivery to TestAmerica Laboratories, Inc. (TestAmerica), a California Department of Public Health-certified analytical laboratory, under proper chain of custody procedures. The selected soil samples were analyzed for the presence of the following site constituents of potential concern (COPCs):

- DRO using USEPA Method 8015B Modified with Silica Gel Cleanup
- Gasoline range organics (C6 – C12) (GRO) using USEPA Method 8260B
- Benzene, toluene, ethylbenzene, and xylenes (BTEX); methyl tertiary butyl ether (MTBE); naphthalene, 1,2-dichloroethane (1,2-DCA), and ethylene dibromide (EDB) using USEPA Method 8260B
- PAHs by USEPA 8270C with selective ion monitoring (SIM).

Once the laboratory samples were collected, the remaining acetate sleeves were cut open and logged by experienced field personnel, under the supervision of a California

Professional Geologist. Soil was placed in a zip-top bag and headspace PID readings were collected and noted on boring logs.

2.4 Groundwater Grab Sampling and Laboratory Analysis

Following the completion of the hand augering, one groundwater grab sample was collected from soil borings GP-5 and GP-6 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 grab sample collection, the static water level was measured using an electronic water-level indicator. Depth to water was recorded at 5.6 feet bgs in both GP-5 and GP-6 prior to groundwater sampling. 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 peristaltic pump. The groundwater grab samples were sealed, labeled, and placed in an ice-chilled cooler for delivery to TestAmerica under proper chain of custody procedures. Groundwater grab samples were analyzed for the following COPCs:

- DRO by USEPA Method 8015B (M) with silica gel cleanup
- GRO by USEPA Method 8260B (M)
- BTEX, MTBE, naphthalene, tert-butyl alcohol (TBA), di-isopropyl ether (DIPE), ethyl tert-butyl ether (ETBE), tert-amyl methyl ether (TAME), ethanol, 1,2-DCA, and EDB using USEPA Method 8260B
- PAHs by USEPA 8270C with SIM.

2.5 Soil Boring Abandonment

Upon completion of sampling activities, the borings were abandoned in accordance with ACPWA requirements. PVC casings were removed and the borings were grouted through a tremie pipe from the total depth to ground surface using neat cement (composed of two sacks [47 pounds] of Portland Cement and approximately 6 gallons of water). The ground surfaces at each location were restored with materials consistent with surrounding areas.

2.6 Equipment Decontamination Procedures

Down-hole drilling and sampling equipment was steam-cleaned prior to deployment and following the completion of each sampling and well destruction location. Decontamination of nondedicated or nondisposable field equipment was conducted using a Liquinox[®] solution and deionized water rinse between each boring to prevent cross-contamination.

2.7 Investigation-Derived Waste Disposal

Investigation-derived waste (IDW) generated during investigation activities included soil cuttings, decontamination fluids, purge/rinse water, personal protective equipment (PPE), and other disposable sampling materials. Soil cuttings derived from drilling as well as wastewater from decontamination procedures and purge water from the collection of groundwater samples and well development were placed into 55-gallon drums and temporarily stored on site pending characterization and disposal. PPE (such as nitrile gloves) and disposable supplies (such as paper and plastic) were treated as municipal waste. Composite soil and aqueous samples of IDW were collected for waste profiling purposes. The IDW was removed from the site by Integrated Wastestream Management, Inc. on December 24, 2014. Copies of the waste manifest are included as Appendix C.

3. Results

3.1 Screening Levels for Constituents of Concern

Concentrations of analytes detected in soil and groundwater above laboratory reporting limits (LRLs) were compared to regulatory screening levels to assess potential risks. Concentrations of analytes in groundwater were compared to the Environmental Screening Levels (ESLs) for Drinking Water (Table F-3 of San Francisco Regional Water Quality Control Board [SFRWQCB] 2013). Concentrations of analytes in soil were compared to the Commercial Direct Exposure Screening Levels (Table K-2 of SFRWQCB 2013), Construction Worker Direct Exposure Screening Levels (Table K-3 of SFRWQCB 2013), and Low-Threat Closure Policy soil cleanup goals (Table 1 of SWRCB 2012). The screening levels used are provided in Tables 1 and 2 of this report.

3.2 Lithology

Soil boring logs showing sampling intervals and stratigraphic descriptions for each boring are included in Appendix B.

Subsurface materials encountered consisted of road base materials to a depth of approximately 6 inches bgs, generally underlain by brown sand to approximately 2 feet bgs. From 2 feet bgs to approximately 10 feet bgs, a soft to medium-stiff, plastic, clay persisted. Anomalous materials, such as a lens of organic debris (wood) (at GP-1, GP-2, and GP-3) and roofing felts (at GP-5) were encountered between 8 to 10 feet bgs. Wet formation materials, indicating the presence of groundwater, were observed at depths ranging from approximately 5 feet bgs (GP-3) to 8 feet bgs (GP-4 and GP-5).

3.3 Soil Sample Results

Soil sample results are summarized in Tables 1 and 2 and shown on Figure 4. Laboratory analytical reports are included in Appendix D.

DRO was detected above LRLs in all 15 soil samples, ranging from 26 milligrams per kilogram (mg/kg) (from 3 to 3.5 feet bgs in GP-3) to 3,900 mg/kg (from 6.5 to 7 feet bgs in GP-1). DRO was detected above the ESLs (SFRWQCB 2013) for commercial direct exposure (1,100 mg/kg) and construction worker direct exposure (900 mg/kg) in the soil samples collected from GP-1 at 4 to 4.5 feet bgs and 6.5 to 7 feet bgs and GP-2 at 6.7 to 7 feet bgs. DRO was not detected above the ESLs (SFRWQCB 2013) in any of the other 12 soil samples submitted for analytical testing.

GRO was detected above the LRLs in 13 of 15 soil samples, ranging from 0.39 mg/kg (from 4.5 to 5 feet bgs in GP-2) to 430 mg/kg (from 3 to 3.5 feet bgs in GP-3). GRO was not detected above the ESLs (SFRWQCB 2013) for commercial direct exposure (4,000 mg/kg) or construction worker direct exposure (2,700 mg/kg) in any soil sample submitted for analytical testing.

Benzene was detected above the LRLs in two of 15 soil samples, ranging from 0.045 mg/kg (from 3 to 3.5 feet bgs in GP-3) to 0.065 mg/kg (from 3.5 to 4.5 feet bgs in GP-3). Benzene was not detected above the ESLs (SFRWQCB 2013) for commercial direct exposure (3.7 mg/kg) or construction worker direct exposure (71 mg/kg), or above the respective Low-Threat Closure Policy (SWRCB 2012) direct contact and outdoor air exposure screening levels in any soil samples submitted for analytical testing.

Toluene was detected above the LRLs in one of 15 soil samples, at a concentration of 0.022 mg/kg from 3.5 to 4.5 feet bgs in GP-3. Toluene was not detected above the ESLs (SFRWQCB 2013) for commercial direct exposure (4,900 mg/kg) or construction worker direct exposure (4,300 mg/kg) in any soil sample submitted for analytical testing.

Ethylbenzene was detected above the LRLs in two of 15 soil samples, ranging from 0.021 mg/kg (from 4.5 to 5 feet bgs in GP-4) to 0.76 mg/kg (from 3.5 to 4.5 feet bgs in GP-3). Ethylbenzene was not detected above the ESLs (SFRWQCB 2013) for commercial direct exposure (24 mg/kg) or construction worker direct exposure (490 mg/kg), or above the respective Low-Threat Closure Policy (SWRCB 2012) direct contact and outdoor air exposure screening levels in any soil samples submitted for analytical testing.

Xylene was detected above the LRLs in two of 15 soil samples, ranging from 0.022 mg/kg (from 4.5 to 5 feet bgs in GP-4) to 0.053 mg/kg (from 3.5 to 4.5 feet bgs in GP-3). Xylene were not detected above the ESLs (SFRWQCB 2013) for commercial direct exposure (2,600 mg/kg) or construction worker direct exposure (2,500 mg/kg) in any soil samples submitted for analytical testing.

MTBE was detected above the LRLs in three of 15 soil samples, ranging from 0.110 mg/kg (from 7.5 to 8 feet bgs in GP-4) to 0.46 mg/kg (from 9.5 to 10 feet bgs in GP-3). MTBE was not detected above the ESLs for commercial direct exposure (190 mg/kg) or construction worker direct exposure (3,800 mg/kg) in any soil samples submitted for analytical testing.

Naphthalene, analyzed by USEPA Method 8260, was detected above the LRLs in three of 15 soil samples, ranging from 0.16 mg/kg (from 7.5 to 8 feet bgs in GP-4) to 2.9 mg/kg (from 3.5 to 4.5 feet bgs in GP-3). Naphthalene was not detected above the ESLs (SFRWQCB 2013) for commercial direct exposure (15 mg/kg) or construction worker direct exposure (370 mg/kg), or above the respective Low-Threat Closure Policy (SWRCB 2012) direct contact and outdoor air exposure screening levels in any soil samples submitted for analytical testing.

Naphthalene, analyzed by USEPA Method 8270C SIM, was detected above the LRLs in seven of 15 soil samples, ranging from 0.012 mg/kg (from 6 to 6.5 feet bgs in GP-6) to 1.40 mg/kg (from 3.5 to 4.5 feet bgs in GP-3). Naphthalene was not detected above the ESLs (SFRWQCB 2013) for commercial direct exposure (15 mg/kg) or construction worker direct exposure (370 mg/kg), or above the respective Low-Threat Closure

Policy (SWRCB 2012) direct contact and outdoor air exposure screening levels in any soil samples submitted for analytical testing.

1,2-DCA and EDB were not detected above LRLs in any soil samples submitted for analytical testing.

PAHs (including naphthalene analyzed by USEPA Method 8270C SIM) were not detected above the ESLs (SFRWQCB 2013) for commercial or construction worker direct exposure, or above the respective Low-Threat Closure Policy (SWRCB 2012) direct contact and outdoor air exposure screening levels in any soil sample submitted for analytical testing. However, each individual PAH was detected above the LRL in at least one soil sample. Table 2 presents the individual PAH results.

3.4 Groundwater Grab Sample Results

Groundwater grab samples were collected from GP-5 and GP-6; results are summarized in Tables 1 and 2 and shown on Figure 5. Groundwater sample results from the groundwater monitoring well network from the most recent event (December 16, 2014) are shown on Figure 5. Laboratory analytical reports are included in Appendix D.

DRO was detected above the LRLs in both groundwater grab samples, ranging from 460 micrograms per liter ($\mu\text{g/L}$) in GP-5 to 10,000 $\mu\text{g/L}$ in GP-6. DRO was detected above the groundwater ESL (SFRWQCB 2013) protective of a drinking water source of 100 $\mu\text{g/L}$ in both groundwater grab samples.

GRO was detected above the LRLs in both groundwater grab samples, ranging from 600 $\mu\text{g/L}$ in GP-6 to 2,400 $\mu\text{g/L}$ in GP-5. GRO was detected above the groundwater ESL (SFRWQCB 2013) protective of a drinking water source of 100 $\mu\text{g/L}$ in both groundwater grab samples.

Benzene was detected above the LRLs in the groundwater grab sample collected from GP-5, with a concentration of 2.1 $\mu\text{g/L}$. This detected concentration is slightly above the groundwater ESL (SFRWQCB 2013) protective of a drinking water source of 1 $\mu\text{g/L}$. Benzene was not detected above the LRL of 0.5 $\mu\text{g/L}$ in the groundwater grab sample collected from GP-6.

Toluene was detected above the LRLs in the groundwater grab sample collected from GP-5, with a concentration of 1.8 $\mu\text{g/L}$. This detected concentration is not above the

groundwater ESL (SFRWQCB 2013) protective of a drinking water source of 150 µg/L. Toluene was not detected above the LRL of 0.5 µg/L in the groundwater grab sample collected from GP-6.

Ethylbenzene was detected above the LRLs in the groundwater grab sample collected from GP-5, with a concentration of 1.2 µg/L. This detected concentration is not above the groundwater ESL (SFRWQCB 2013) protective of a drinking water source of 300 µg/L. Ethylbenzene was not detected above the LRL of 0.50 µg/L in the groundwater grab sample collected from GP-6.

Xylenes were detected above the LRLs in both groundwater grab samples, ranging from 1.6 µg/L in GP-6 to 3.1 µg/L in GP-5. Xylenes were not detected above the groundwater ESL (SFRWQCB 2013) protective of a drinking water source of 1,800 µg/L in either of the groundwater grab samples.

MTBE was detected above the LRLs in both groundwater grab samples, ranging from 9.8 µg/L in GP-6 to 11 µg/L in GP-5. MTBE was detected above the groundwater ESL (SFRWQCB 2013) protective of a drinking water source of 5 µg/L in both groundwater grab samples collected.

TBA, DIPE, ETBE, 1,2-DCA, EDB, and naphthalene (by USEPA Method 8260B) were not detected above LRLs in any of the groundwater grab samples. TAME was detected above the LRL in the grab groundwater sample collected from GP-5 at a concentration of 5.1 µg/L. Groundwater ESLs (SFRWQCB 2013) protective of a drinking water source are not available for TAME.

PAHs (including naphthalene analyzed by USEPA Method 8270C SIM) were not detected above the groundwater ESLs (SFRWQCB 2013) protective of a drinking water source in either groundwater grab sample submitted for analytical testing. However, several individual PAHs were detected above the LRL in the groundwater grab samples. Table 2 presents the individual PAH results.

3.5 Semiannual Groundwater Sample Analytical Results

All groundwater monitoring wells were sampled during the semiannual groundwater monitoring event conducted on December 16, 2014. Results from this monitoring event are presented in this report to provide additional data for the assessment of current groundwater conditions at the site. Groundwater sample results are shown on Figure 5

and will be presented in a semiannual groundwater monitoring report under separate cover. Groundwater samples results are summarized below:

- DRO was detected in seven of 11 groundwater monitoring wells sampled, with concentrations ranging from 73 µg/L (MW-8) to 1,000 µg/L (MW-2). DRO concentrations were below LRLs in four groundwater monitoring wells during the December 16, 2014 monitoring event (MW-3, MW-4, MW-10, and MW-11).
- GRO was detected above the LRLs in four of nine groundwater monitoring wells sampled, with concentrations ranging from 110 µg/L (MW-8) to 8,100 µg/L (MW-2). GRO concentrations were below LRLs in five groundwater monitoring wells during the December 16, 2014 monitoring event (MW-1, MW-3, MW-4, MW-6, and MW-7).
- Benzene was detected in three of five groundwater monitoring wells sampled, with concentrations ranging from 2.5 µg/L (MW-5) to 1,400 µg/L (MW-2). Benzene concentrations were below LRLs in the groundwater samples collected from MW-1 and MW-7.
- Ethylbenzene was detected in the groundwater samples collected from MW-2 at a concentration of 100 µg/L. Ethylbenzene concentrations were below LRLs in the groundwater samples collected from the other four groundwater monitoring wells sampled during the December 16, 2014 monitoring event (MW-1, MW-5, MW-7, and MW-9).
- Xylenes were detected in the groundwater samples collected from MW-5 at a concentration of 3.2 µg/L. Concentrations of xylenes were below LRLs in the groundwater samples collected from the other four groundwater monitoring wells sampled during the December 16, 2014 monitoring event (MW-1, MW-2, MW-7, and MW-9).
- MTBE was detected in four of nine groundwater monitoring wells sampled, with concentrations ranging from 3.5 µg/L (MW-7) to 640 µg/L (MW-2). MTBE concentrations were below LRLs in five groundwater monitoring wells sampled during the December 16, 2014 monitoring event (MW-1, MW-3, MW-4, MW-6, and MW-8).
- TBA was detected in seven of nine groundwater monitoring wells sampled, with concentrations ranging from 24 µg/L (MW-8) to 18,000 µg/L (MW-4). TBA

concentrations were below LRLs in the groundwater samples collected from MW-1 and MW-6.

- Toluene and naphthalene were not detected above LRLs in any of the groundwater samples collected during the December 16, 2014 monitoring event.

3.6 Soil and Groundwater Data Evaluation

3.6.1 Soil Samples

Concentrations of petroleum hydrocarbons (except DRO) and PAHs in soil samples collected beneath the site were nondetect or significantly below the ESLs (SFRWQCB 2013) for commercial direct and construction worker direct exposures, as well as the Low-Threat Closure Policy (SWRCB 2012) screening levels for soil. DRO was detected in all 15 soil samples; however, DRO concentrations were above ESLs (SFRWQCB 2013) in only three soil samples. These results reveal that DRO-affected soil is most significant at the water table (approximately 7 feet bgs) in the area of the former waste oil USTs in the northwestern portion of the site.

3.6.2 Groundwater Grab Samples

Results for the groundwater grab samples indicate the presence of DRO, GRO, and MTBE at concentrations exceeding the ESLs (SFRWQCB 2013) protective of a drinking water source at both locations sampled (GP-5 and GP-6). Benzene was also detected at concentrations slightly greater than the ESLs (SFRWQCB 2013) protective of a drinking water source at GP-5, located at the southern boundary of the site. These results indicate that petroleum hydrocarbon-affected groundwater is present in the upgradient area (northeast) of the site and the upgradient extent of the petroleum hydrocarbon-affected groundwater plume associated with the site is currently not defined.

Petroleum hydrocarbon constituent concentrations observed in the groundwater grab sample collected from GP-5 were consistent with the groundwater sample results from off-site groundwater monitoring well MW-5, located approximately 40 feet to the south, in the crossgradient direction. DRO, GRO, and benzene were detected at concentrations of 460, 2,400, and 2.1 µg/L, respectively, in GP-5 and 410, 2,500, and 2.5 µg/L, respectively, in MW-5. Petroleum hydrocarbon constituents were not detected in MW-10, which is located approximately 120 feet downgradient of MW-5. DRO was detected at a concentration of 140 µg/L in MW-7, which is located approximately 40

feet crossgradient of GP-5 (GRO was nondetects at MW-7). Historical data indicate that the groundwater flow direction is predominately toward the southwest, as shown on Figure 6.

Groundwater sample results from groundwater monitoring wells MW-1 through MW-11 for the December 16, 2014 monitoring event are consistent with previous events and indicate that petroleum hydrocarbon-affected groundwater is significant near the active USTs and that petroleum hydrocarbons are not present in the two most downgradient groundwater monitoring wells associated with the site (MW-10 and MW-11). The groundwater results at MW-10 and MW-11 provide delineation of the petroleum hydrocarbon-affected groundwater plume associated with the site, which includes the following COPCs: DRO, GRO, BTEX, MTBE, and TBA. These COPCs have either never been detected above LRLs or were detected significantly below the ESLs (SFRWQCB 2013) protective of a drinking water source in all groundwater samples collected from MW-10 and MW-11 during the 10-year sampling history.

Overall, the groundwater sample results for groundwater grab samples and for the December 16, 2014 groundwater monitoring event indicate that the downgradient extents of COPCs have been defined and that these constituent plumes terminate in Powell Street, south of the site. The upgradient extent of the petroleum hydrocarbon-affected groundwater plume has not been defined by the current groundwater sample results.

4. Preferential Pathway Study

As stated in Section 2.1, utility surveys were conducted on November 20, 2014. Identified utility lines are presented in Appendix E and described below. During the utility survey, Cruz determined the depths of the utilities identified. Off-site utilities in Powell Street and Christie Avenue were also adapted from a utility map provided by the City of Emeryville Department of Public Works (Mark Thomas & Company, Inc. 2009).

4.1 Water Lines

The water service lateral that services the site runs from the station building to a water meter located in the sidewalk adjacent to Christie Avenue. The depth of the water service lateral when it enters the station building is 1 foot, 8 inches and is at a depth of 1 foot, 5 inches near the water meter. From the water meter, the water line connects to the water main located in Christie Avenue. Water mains near the site run north-south

along Christie Avenue and east-west along Powell Street. The depths of the water lines along Christie Avenue and Powell Street are 6 and 8 feet bgs, respectively. The water main in Powell Street is located across the concrete median from the site and underneath the east-bound traffic lanes (approximately 60 feet south of the site). It is unlikely that on-site water utilities act as a conduit for petroleum hydrocarbon migration because the lateral is in the upgradient (northeast) area of the site and its depth does not intersect the water table.

4.2 Sanitary Sewer

The sanitary sewer lateral that services the site runs from the station building to a sanitary sewer main underneath Christie Avenue. The depth of the sanitary sewer service lateral when it enters the station building is 2 feet, 6 inches and is at a depth of 3 feet, 9 inches at a sewer clean-out near Christie Avenue. From the sewer clean-out, the sanitary sewer connects to the sanitary sewer main located in Christie Avenue. Sanitary sewer mains near the site run north-south along Christie Avenue and east-west along Powell Street. The depths of the sanitary sewer mains range from 6 feet bgs along Christie Avenue to 10 feet bgs along Powell Street. The sanitary sewer main in Powell Street is located across the concrete median from the site and underneath the east-bound traffic lanes (approximately 100 feet south of the site). It is unlikely that the on-site sanitary sewer lateral acts as a conduit for petroleum hydrocarbon migration because the lateral is in the upgradient (northeast) area of the site and its depth does not intersect the water table.

4.3 Gas Lines

The gas meter was observed at the east side of the station building. From the gas meter, the gas line lateral that services the site runs from the station building to a gas main underneath Christie Avenue. The depth of the gas service lateral near the meter is 1 foot, 8 inches and is at a depth of 3 feet, 4 inches at a subsurface utility vault near Christie Avenue. From the utility vault, the gas line connects to the gas main located in Christie Avenue. Gas mains near the site run north-south along Christie Avenue and east-west along Powell Street. The gas main beneath Powell Street is located across the concrete median from the site and underneath the east-bound traffic lanes (approximately 115 feet south of the site), at a depth of 5 feet bgs. The depth of the gas main beneath Christie Avenue could not be determined.

4.4 Electrical Lines

The electrical meter was observed on the east side of the station building. From the electrical meter, the electrical lateral that services the site runs from the station building to a subsurface electrical utility vault near Christie Avenue. The depth of the electrical service lateral near the meter is 1 foot, 8 inches and is at a depth of 2 feet, 2 inches at the subsurface electrical vault near Christie Avenue. From the electrical vault, the electrical line travels north to a subsurface transformer located in a vault below the sidewalk adjacent to Christie Avenue.

Several subsurface electrical lines travel from the station building across the site to service equipment associated with the station (e.g., overhead lights, station signage, fuel pumping equipment). The maximum depth of the electrical lines that service station equipment at the site was 1 foot, 2 inches.

Electrical mains near the site run north-south along Christie Avenue and east-west along Powell Street. The electrical main beneath Powell Street is located across the concrete median from the site and underneath the east-bound traffic lanes (approximately 105 feet south of the site), at depths ranging from 1 to 3 feet bgs. The depth of the electrical main beneath Christie Avenue could not be determined.

4.5 Stormwater Drains

The utility survey was conducted on a day of significant rainfall; therefore, field personnel were able to verify the conveyance of stormwater at the site. The land surface of the site is slightly sloped to the south-southwest, toward Powell Street and the driveway between the site and the adjacent Denny's restaurant. Stormwater collecting on the surface at the site flowed with the slope of the land to the street gutter running parallel to Powell Street. Additionally, a stormwater drain system was identified that collected water from the station canopy and surface water from around the dispenser islands, and discharged the collected water directly to the street gutter in Powell Street. Observations of catch basins in Powell Street indicated that the water discharged to the street gutter was collected in a catch basin near the site and was conveyed across Powell Street away from the site, across the concrete median, approximately 70 feet south of the site. Stormwater mains near the site run north-south along Christie Avenue and east-west along Powell Street. The depths of the stormwater mains beneath Christie Avenue and Powell Street are both 7 feet bgs.

4.6 Communication Lines

A communications line (telephone) that services the site runs from the station building to a subsurface communications vault near the sidewalk adjacent to Christie Avenue. From the communications vault the communications line splices: one line runs north to two pay phones located in the northeast corner of the site and the other line runs south to a large subsurface communications vault located in the sidewalk adjacent to Christie Avenue. The maximum depth of the located communications lines was 1 feet, 8 inches. Communication lines near the site run east-west along Powell Street. The communication lines beneath Powell Street are located across the concrete median from the site and underneath the east-bound traffic lanes (approximately 130 feet south of the site). The depth of the communication lines beneath Powell Street could not be determined; however, communication lines are typically installed in a relatively shallow interval (i.e., 12 to 18 inches bgs [Public Utilities Commission of the State of California 2006]) and would not create a preferential pathway for groundwater transport.

4.7 Irrigation Lines

Irrigation lines were observed in the landscaped areas along the northeast perimeter of the site boundary, at a depth of 11 inches bgs. Additional irrigation lines were observed in the planter along the east and southeast corners of the site; however, the irrigation lines in this planter were laid at ground surface.

4.8 Preferential Pathway Data Evaluation

Although subsurface utilities are likely to be shallower or at the approximate depth of historical and current groundwater measurements and therefore, may intersect groundwater and act as a potential conduit for petroleum hydrocarbon migration, additional preferential pathway investigation does not appear warranted for the following reasons:

- Utility laterals that service the site's station building come from utility mains located in Christie Avenue and are upgradient to historical groundwater flow. Furthermore, utility laterals at the site do not intersect groundwater because the depths of the utility laterals are shallower than historical groundwater depths.
- Because the identified utility mains are located off site, do not intersect the site, and are located either upgradient (Christie Avenue mains) or at a significant

distance away from the site (Powell Street mains), these are also unlikely to intersect groundwater and act as a conduit for petroleum hydrocarbon migration.

- The only on-site utility located in the downgradient flow direction is a stormwater drain that discharges stormwater directly to a street gutter at the surface in Powell Street.
- The only nearby off-site utility located in the downgradient flow direction is a stormwater line that conveys stormwater from a catch basin in Powell Street (near the site) to a stormwater main running east-west in Powell Street, approximately 70 feet south of the site. Because the stormwater conveyance line runs perpendicular to the site, it is unlikely to significantly intersect groundwater and act as a conduit for petroleum hydrocarbon migration.
- Groundwater grab sample results from GP-5 are consistent with the recent groundwater sample results from MW-5, which is located approximately 45 feet to the south, indicating that subsurface utilities downgradient and immediately south and southeast of the site are not influencing COPC concentrations in the petroleum hydrocarbon plume.
- Additional delineation south of the site across the concrete median in Powell Street is not recommended based on the distance from the site. Furthermore, groundwater monitoring wells MW-10 and MW-11 are present downgradient of the site, south of Powell Street, and provide delineation of the downgradient extent of the petroleum hydrocarbon plume associated with the site.

5. Conclusions

Soil and groundwater sample results from the soil borings completed at the site in November 2014 indicate the following:

- Site COPCs (except DRO) in soil near the former waste oil USTs in the northwestern portion of the site are either not detected at concentrations above respective LRLs or are at concentrations below ESLs (SFRWQCB 2013) for commercial direct and construction worker direct exposures. DRO-affected soil is most significant at the water table (approximately 7 feet bgs) in the area of the former waste oil USTs. DRO-affected soil may be attributed to groundwater impacts and does not necessarily represent residual impacts in soil. Although groundwater was observed at 7 feet bgs in soil borings GP-1 and GP-2, depth to

groundwater measurements in groundwater monitoring wells near the area of the former waste oil USTs have ranged from approximately 4 to 12 feet bgs (ARCADIS 2014a). DRO in groundwater immediately downgradient from the former waste oil USTs is currently monitored by existing groundwater monitoring wells MW-3 and MW-6, which are not impacted. All other petroleum hydrocarbon concentrations in soil near the former waste oil USTs are below applicable Low-Threat Closure Policy (SWRCB 2012) screening levels for soil.

- Petroleum hydrocarbons in soil near the dispenser islands (i.e., location of former product line samples PL-3-3', TD-2, and TD-3 and near MW-9) are either not detected at concentrations above respective LRLs or are at concentrations below ESLs (SFRWQCB 2013) for commercial direct and construction worker direct exposures, as well as below applicable Low-Threat Closure Policy (SWRCB 2012) screening levels for soil.
- Site COPCs in soil in the upgradient (northern) and downgradient (southern) portions of the site are either not detected at concentrations above respective LRLs or are at concentrations below ESLs (SFRWQCB 2013) for commercial direct and construction worker direct exposures, as well as below applicable Low-Threat Closure Policy (SWRCB 2012) screening levels for soil.
- Groundwater sample results from the grab groundwater samples and from the December 16, 2014 groundwater monitoring event indicate that the downgradient extents of site COPCs have been defined and that these constituent plumes terminate in Powell Street, south of the site. The upgradient extent of the petroleum hydrocarbon-affected groundwater plume has not been defined by the current groundwater sample results.
- Groundwater results from soil boring GP-5 in the planter at the southwest side of the site indicate that petroleum hydrocarbon conditions in groundwater are similar to those observed in MW-5, approximately 40 feet crossgradient. The consistency in petroleum hydrocarbon concentrations in groundwater observed in GP-5 and MW-5 and the nonexistence of subsurface utilities between GP-5 and MW-5 indicate that potential COPC off-site migration into utility corridors beneath Powell Street is unlikely.
- Subsurface utilities (utility laterals and utility main lines) beneath and near the site are unlikely to act as conduits for petroleum hydrocarbon migration because they were located either at depths shallower than historical groundwater depths,

upgradient to crossgradient of the site (Christie Avenue utility mains), or at significant distances downgradient of the site (Powell Street utility mains).

6. Recommendations

Because the upgradient extent of the dissolved-phase petroleum hydrocarbon plume in groundwater is not currently defined, it is recommended that a new groundwater monitoring well be installed in the northeast corner of the site. Groundwater sample data collected from the proposed groundwater monitoring well will provide useful data for assessing the upgradient extent of dissolved-phase petroleum hydrocarbons. The groundwater monitoring well will be installed according to the procedures discussed below.

6.1 Proposed Pre-Field Activities

Prior to initiating field activities, the HASP will be updated in accordance with state and federal requirements for use during the proposed field activities. All necessary permits and licenses will be obtained prior to initiating the subsurface investigation, including drilling permits from the ACPWA. Underground utilities and other potential subsurface obstructions near the proposed drilling locations will be located and marked prior to drilling. The utility survey will include identifying the boring location using white paint and obtaining an updated USA-North ticket by calling USA-North at least 48 hours prior to drilling activities. Additionally, a private third-party utility locator will screen the proposed locations to determine the location(s) of nearby underground utilities.

6.2 Proposed Monitoring Well Installation

To minimize the potential for encountering subsurface utilities, the well location will be cleared to a minimum depth of 6.5 feet bgs with a hand auger or a vacuum extraction truck equipped with an air knife prior to drilling. Once cleared, the boring will be advanced using direct-push probing equipment to an approximate total depth of 14 feet bgs by a C-57 licensed drilling contractor for field logging and sampling purposes. This depth was selected based on the depth to groundwater near the proposed groundwater monitoring well. Soil samples will be collected continuously to the extent feasible in 4-foot-long acetate liners, logged for stratigraphic characteristics (e.g., contacts, color, staining, odors) in accordance with the USCS, and field screened for VOCs as measured with a PID under the supervision of a California Professional Geologist.

After reaching 14 feet bgs in each boring, the direct-push equipment will be removed and the drill rig will be converted to hollow-stem auger drilling equipment. The borehole will be overdrilled to approximately 14 feet bgs using an 8-inch-outside-diameter hollow-stem auger to facilitate groundwater monitoring well construction.

6.3 Proposed Groundwater Monitoring Well Construction

Once the 8-inch-diameter borehole is completed to approximately 14 feet bgs, 2-inch-diameter Schedule 40 PVC casing will be installed, with the lower 10 feet (4 to 14 feet bgs) screened with 0.010-inch slotted PVC. A clean sand filter pack consisting of No. 2/12 Monterey Sand will be placed around the well from the bottom of the borehole to approximately 1 foot above the screen interval. A 1-foot-thick hydrated bentonite slurry seal will be placed above the sand pack. The remainder of the annular space will be grouted with neat cement to approximately 1 foot bgs. The neat cement mix generally will consist of two 47-pound sacks of Portland Cement Type I/II and 6 gallons of water with up to 3% bentonite added due to the limited footage between the top of the sand pack and the ground surface.

6.4 Proposed Groundwater Monitoring Well Development

A minimum of 72 hours after installation, the newly installed groundwater monitoring well will be developed using a combination of surging, bailing, and pumping. A surge block will be moved up and down across the screened interval to remove fine-grained deposits. After the groundwater monitoring well is surged, a bailer will be used to remove the turbid water. Additional purging activities will be conducted with a submersible pump placed near the bottom of the well. The final development task will consist of pumping the well at a steady flow rate while monitoring groundwater parameters (including pH, conductivity, turbidity, dissolved oxygen, and oxidation-reduction potential) using a water quality meter with a flow-through cell. Pumping will continue until at least three casing volumes of water have been removed and consecutive groundwater parameter readings have stabilized to within $\pm 10\%$.

6.5 Proposed Groundwater Monitoring Well Sampling

Upon installation, the new groundwater monitoring well will be placed into the existing routine groundwater monitoring program. The current semiannual groundwater monitoring program is conducted during the second and fourth quarters. Two additional groundwater monitoring events are proposed for the new well during the third quarter 2015 and first quarter 2016 to obtain sampling results that encompass a full

hydrogeologic cycle for this well's first year. The new well will be sampled for the constituents listed in Section 2.4.

Following 1 year of groundwater monitoring, the site will be re-evaluated for closure as a low risk fuel site under the Low-Threat Closure Policy (SWRCB 2012).

Soil sample collection is not proposed at the new groundwater monitoring well based on the soil sample results from GP-6.

6.6 Proposed Reporting and Project Schedule

ARCADIS is prepared to initiate field work after receipt of all necessary approvals and permits. A report detailing the completion of these proposed activities will be submitted to the ACEH following the conclusion of the field investigation. Groundwater monitoring and sampling results from the proposed well will be presented in routine groundwater monitoring reports prepared for the site.

7. References

Alameda County Environmental Health. 2014a. Letter regarding Request for Work Plan and Geotracker Compliance; Fuel Leak Case No. RO0000066 (Global ID #T0600100208), BP #11126; 1700 Powell Street, Emeryville, CA 94608. June 30.

Alameda County Environmental Health. 2014b. Letter regarding Modified Approval of Work Plan; Fuel Leak Case No. RO0000066 (Global ID #T0600100208), BP #11126; 1700 Powell Street, Emeryville, CA 94608. October 1.

ARCADIS U.S., Inc. 2014a. First and Second Quarter 2014 Semi-Annual Groundwater Monitoring Report, Former BP Station #11126, 1700 Powell Street, Emeryville, California, Regulatory Site No: RO0000066. August 6.

ARCADIS U.S., Inc. 2014b. Data Gaps Investigation Work Plan, Former ARCO Service Station No. 11126, 1700 Powell Street, Emeryville, California, Regulatory Site No: RO0000066. August 12.

Public Utilities Commission of the State of California. 2006. General Order Number 128, Rules of Construction of Underground Electric Supply and Communication Systems. Appendix A, Table 1, Clearance and Depth Requirements for Supply and Communications Systems. January 2006.

Mark Thomas & Company Inc. 2009. Figure for the City of Emeryville – Department of Public Works, Sanitary Sewer Rehabilitation Project, Powell Street Trunk Sewer and 65th Street Sewer Main. August 3.

San Francisco Bay Regional Water Quality Control Board. 2013. Environmental Screening Levels Workbook (Interim Final). December.

SECOR International Inc. 2007. Remedial Action Plan, 76 (Former BP), Service Station No. 11126, 1700 Powell Street, Emeryville, California. March 30.

State Water Resources Control Board. 2012. Water Quality Control Policy for Low-Threat Underground Storage Tank Case Closure. May 1 (effective August 17, 2012). Viewed online on December 16, 2014:
http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf

Tables

Table 1
Soil and Groundwater Grab Sample Analytical Data

Former BP Service Station No. 11126
1700 Powell Street
Emeryville, California

Sample Location	Sample ID	Sample Depth (feet bgs)	Date	DTW (feet bgs)	DRO	GRO	B	T	E	X	MTBE	1,2-DCA	EDB	TBA	DIPE	TAME	ETBE	Naphthalene	
Drinking Water Screening Levels¹ (µg/L)					100	100	1.0	150	300	1,800	5	0.5	0.05	12	--	--	--	6.1	
Groundwater Samples (results in µg/L)																			
GP-5	GP-5-GW	--	11/24/2014	8.0	460	2,400	2.1	1.8	1.2	3.1	11	<0.50	<0.50	<20	<0.50	5.1	<0.50	<1.0	
GP-6	GP-6-GW	--	11/24/2014	6.5	10,000	600	<0.50	<0.50	<0.50	1.6	9.8	<0.50	<0.50	<20	<0.50	<0.50	<0.50	<1.0	
Commercial direct exposure screening level² (mg/kg)					1,100	4,000	3.7	4,900	24	2,600	190	2.2	0.53	--	--	--	--	15	
Construction worker direct exposure soil screening level³ (mg/kg)					900	2,700	71	4,300	490	2,500	3,800	40	5.2	--	--	--	--	--	370
Low-Threat Closure Policy Commercial/Industrial (0-5 feet bgs)⁴ (mg/kg)					--	--	8.2	--	89	--	--	--	--	--	--	--	--	45	
Low-Threat Closure Policy Commercial/Industrial (5-10 feet bgs)⁴ (mg/kg)					--	--	12	--	134	--	--	--	--	--	--	--	--	45	
Low-Threat Closure Policy Utility Worker (0-10 feet bgs)⁴ (mg/kg)					--	--	14	--	314	--	--	--	--	--	--	--	--	219	
Soil Samples (results in mg/kg)																			
GP-1	GP-1-4-4.5	4.0-4.5	11/25/2014	--	2,000	1.9	<.0064	<.0064	<.0064	<.013	<.0064	<.0064	<.0064	--	--	--	--	<.013	
	GP-1-6.5-7	6.5-7.0	11/25/2014	--	3,900	12	<.025	<.025	<.025	<.050	<.025	<.025	<.025	--	--	--	--	<.050	
GP-2	GP-2-2-3	2.0-3.0	11/25/2014	--	590	<.260	<.0053	<.0053	<.0053	<.011	<.0053	<.0053	<.0053	--	--	--	--	<.011	
	GP-2-4.5-5	4.5-5	11/25/2014	--	76	0.390	<.0048	<.0048	<.0048	<.0095	<.0048	<.0048	<.0048	--	--	--	--	<.0095	
	GP-2-6.7-7	6.7-7.0	11/25/2014	--	1,000	<.240	<.0049	<.0049	<.0049	<.0098	<.0049	<.0049	<.0049	--	--	--	--	<.0098	
GP-3	GP-3-3-3.5	3.0-3.5	11/24/2014	--	26	430	0.045	<.0048	<.0048	<.0095	<.0048	--	--	--	--	--	--	0.32	
	GP-3-3.5-4.5	3.5-4.5	11/24/2014	--	80	140	0.065	0.022	0.760	0.053	<.0046	--	--	--	--	--	--	2.9	
	GP-3-9.5-10	9.5-10	11/24/2014	--	180	0.82	<.016	<.016	<.016	<.032	0.46	--	--	--	--	--	--	<.032	
GP-4	GP-4-4.5-5	4.5-5.0	11/25/2014	--	110	420	<.0044	<.0044	0.021	0.022	0.29	<.0044	<.0044	--	--	--	--	<.0087	
	GP-4-7.5-8	7.5-8.0	11/25/2014	--	57	28	<.022	<.022	<.022	<.044	0.11	<.022	<.022	--	--	--	--	0.16	
GP-5	GP-5-4.5-5	4.5-5.0	11/24/2014	--	450	2.4	<.0037	<.0037	<.0037	<.0075	<.0037	--	--	--	--	--	--	<.0075	
	GP-5-6-6.5	6.0-6.5	11/24/2014	--	180	230	<.0037	<.0037	<.0037	<.0074	<.0037	--	--	--	--	--	--	<.0074	
GP-6	GP-6-4.5-5	4.5-5.0	11/24/2014	--	480	310	<.0036	<.0036	<.0036	<.0072	<.0036	--	--	--	--	--	--	<.0072	
	GP-6-5-5.5	5.0-5.5	11/24/2014	--	460	32	<.0036	<.0036	<.0036	<.0072	<.0036	--	--	--	--	--	--	<.0072	
	GP-6-6.5	6.0-6.5	11/24/2014	--	550	300	<.0039	<.0039	<.0039	<.0077	<.0039	--	--	--	--	--	--	<.0077	

Notes:

- ¹ Drinking water screening levels (Table F-3 in SFRWQCB [2013]).
- ² Commercial direct exposure soil screening level (Table K-2 in SFRWQCB [2013]).
- ³ Construction worker direct exposure screen level (Table K-3 in SFRWQCB [2013]).
- ⁴ Table 1 in State Water Resources Control Board (2012).

1,2-DCA = 1,2-dichloroethane

B = benzene

bgs = below ground surface

DIPE = di-isopropyl ether

DRO = diesel range organics

DTW (feet bgs) = depth to water (feet below ground surface) as measured when groundwater sample was collected.

E = ethylbenzene

EDB = 1,2-dibromoethane

ETBE = ethyl tert-butyl ether

GRO = gasoline range organics

Bold values indicates concentrations detected above ESL (lowest value ESL where applicable)

References:

- San Francisco Regional Water Quality Control Board. 2013. Environmental Screening Levels Workbook (Interim Final). December.
- State Water Resources Control Board. 2012. Water Quality Control Policy for Low-Threat Underground Storage Tank Case Closure. May 1 (effective August 17, 2012). Viewed online on December 16, 2014: http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf

mg/kg = milligrams per liter

MTBE = methyl tertiary butyl ether

SFRWQCB = San Francisco Regional Water Quality Control Board

T = toluene

TAME = tert-amyl methyl ether

TBA = tert-butyl alcohol

X = total xylenes

µg/L = micrograms per liter

< = Analyte was not detected above the specified method reporting limit.

-- = Not applicable, not analyzed, or not present

Table 2
Soil and Groundwater Analytical Data for Polycyclic Aromatic Hydrocarbons
Former BP Service Station No. 11126
1700 Powell Street
Emeryville, California

Sample Location	Sample ID	Sample Depth (feet bgs)	Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo[a]anthracene	Benzo[a]pyrene	Benzo[b]fluoranthene	Benzo[g,h,i]perylene	Benzo[k]fluoranthene	Chrysene
Soil screening levels (mg/kg)												
Commercial direct exposure screening level¹				15,000	--	170,000	1.3	0.13	1.3	--	1.3	13
Construction worker direct exposure soil screening level²				8,600	--	43,000	8.3	0.83	8.3	--	8.3	83
Low-Threat Closure Policy Commercial/Industrial (0-5 feet bgs)^{3,4}				0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68	0.68
Low-Threat Closure Policy Commercial/Industrial (5-10 feet bgs)^{3,4}				--	--	--	--	--	--	--	--	--
Low-Threat Closure Policy Utility Worker (0-10 feet bgs)^{3,4}				4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
Soil Samples (results in mg/kg)												
GP-1	GP-1-4-4.5	4.5 - 5	11/25/2014	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99
	GP-1-6.5-7	6.5 - 7	11/25/2014	0.25	<0.25	0.55	0.49	<0.25	0.42	<0.25	<0.25	0.56
GP-2	GP-2-2-3	2 - 3	11/25/2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	GP-2-4.5-5	4.5 - 5	11/25/2014	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
	GP-2-6.7-7	6.7 - 7	11/25/2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
GP-3	GP-3-3-3.5	3 - 3.5	11/24/2014	<.0049	<.0049	0.0067	0.0061	<.0049	0.0051	0.0055	<.0049	0.0061
	GP-3-3.5-4.5	3.5 - 4.5	11/24/2014	0.025	0.011	0.014	0.025	0.014	0.012	0.0083	<0.0049	0.014
	GP-3-9.5-10	9.5 - 10	11/24/2014	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05	<.05
GP-4	GP-4-4.5-5	4.5 - 5	11/25/2014	0.032	0.017	0.011	0.023	0.028	0.03	0.014	0.013	0.025
	GP-4-7.5-8	7.5 - 8	11/25/2014	0.0051	0.006	0.0068	0.017	0.021	0.042	0.023	0.012	0.026
GP-5	GP-5-4.5-5	4.5 - 5	11/24/2014	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	GP-5-6-6.5	6 - 6.5	11/24/2014	0.046	0.029	0.016	0.011	<.0098	0.012	<.0098	<.0098	0.01
GP-6	GP-6-4.5-5	4.5 - 5	11/24/2014	0.01	0.0095	0.014	0.0049	<0.0049	0.0051	<0.0049	<0.0049	0.0094
	GP-6-5-5.5	5 - 5.5	11/24/2014	0.021	0.014	0.022	<0.0098	<0.0098	<0.0098	<0.0098	<0.0098	0.018
	GP-6-6.5	6 - 6.5	11/24/2014	0.018	0.0082	0.018	0.0094	<0.0049	<0.0049	<0.0049	<0.0049	0.015
Groundwater Samples (results in µg/kg)												
Drinking Water Screening Levels⁵ (µg/L)				20	2,000	22	0.056	0.20	0.056	0.13	0.056	0.56
GP-5	GP-5-GW	--	11/24/2014	0.14	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
GP-6	GP-6-GW	--	11/24/2014	1.2	0.38	0.62	0.02	<0.1	<0.1	<0.1	<0.1	0.44

Table 2
Soil and Groundwater Analytical Data for Polycyclic Aromatic Hydrocarbons

Former BP Service Station No. 11126
1700 Powell Street
Emeryville, California

Sample Location	Sample ID	Sample Depth (feet bgs)	Date	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno[1,2,3-cd]pyrene	Naphthalene	Phenanthrene	Pyrene
Soil screening levels (mg/kg)										
Commercial direct exposure screening level¹				0.38	22,000	22,000	1.3	15	--	33,000
Construction worker direct exposure soil screening level²				2.4	5,700	5,700	8.3	370	--	8,600
Low-Threat Closure Policy Commercial/Industrial (0-5 feet bgs)^{3,4}				0.68	0.68	0.68	0.68	45	0.68	0.68
Low-Threat Closure Policy Commercial/Industrial (5-10 feet bgs)^{3,4}				--	--	--	--	45	--	--
Low-Threat Closure Policy Utility Worker (0-10 feet bgs)^{3,4}				4.5	4.5	4.5	4.5	219	4.5	4.5
Soil Samples (results in mg/kg)										
GP-1	GP-1-4-4.5	4.5 - 5	11/25/2014	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99	<0.99
	GP-1-6.5-7	6.5 - 7	11/25/2014	<0.25	1.1	<0.25	<0.25	<0.25	0.39	1.0
GP-2	GP-2-2-3	2 - 3	11/25/2014	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	GP-2-4.5-5	4.5 - 5	11/25/2014	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025	<0.025
	GP-2-6.7-7	6.7 - 7	11/25/2014	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.11
GP-3	GP-3-3-3.5	3 - 3.5	11/24/2014	<0.0049	0.017	0.0064	<0.0049	0.21	0.024	0.02
	GP-3-3.5-4.5	3.5 - 4.5	11/24/2014	<0.0049	0.041	0.02	0.0052	1.40	0.062	0.045
	GP-3-9.5-10	9.5 - 10	11/24/2014	<.05	<.05	<.05	<.05	0.28	0.084	<.05
GP-4	GP-4-4.5-5	4.5 - 5	11/25/2014	<0.099	0.051	0.021	0.012	0.13	0.061	0.069
	GP-4-7.5-8	7.5 - 8	11/25/2014	0.005	0.039	0.0093	0.017	0.43	0.029	0.036
GP-5	GP-5-4.5-5	4.5 - 5	11/24/2014	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	GP-5-6-6.5	6 - 6.5	11/24/2014	<0.0098	0.026	0.035	<0.0098	0.088	0.056	0.032
GP-6	GP-6-4.5-5	4.5 - 5	11/24/2014	<0.0049	<0.0049	0.047	<0.0049	<0.0049	0.069	0.012
	GP-6-5-5.5	5 - 5.5	11/24/2014	<0.0098	<0.0098	0.083	<0.0098	<0.0098	0.14	0.027
	GP-6-6.5	6 - 6.5	11/24/2014	<0.0049	0.014	0.058	<0.0049	0.012	0.15	0.028
Groundwater Samples (results in µg/kg)										
Drinking Water Screening Levels⁵ (µg/L)				0.016	130	630	0.056	6.1	410	68
GP-5	GP-5-GW	--	11/24/2014	<0.1	<0.1	<0.1	<0.1	0.42	<0.1	<0.1
GP-6	GP-6-GW	--	11/24/2014	<0.1	0.27	2.2	<0.1	0.40	4.5	0.69

Notes:

2. Groundwater Screening Levels (GSLs) for evaluation of potential vapor intrusion concerns (Table E-1, *Fine-Coarse Mix*, SF-RWQCB [(Interim Final – May 2013)].

¹ Commercial direct exposure soil screening level (Table K-2 in SFRWQCB [2013]).

² Construction worker direct exposure screen level (Table K-3 in SFRWQCB [2013]).

³ Table 1 in State Water Resources Control Board (2012).

⁴ The Low-Threat Closure Policy screening criteria for PAH was applied to all individual PAHs except naphthalene.

⁵ Drinking water screening levels (Table F-3 in SFRWQCB [2013]).

PAHs were analyzed in soil by USEPA Method 8270C SIM.

bgs = below ground surface

mg/kg = milligrams per kilogram

PAH = polycyclic aromatic hydrocarbon

SFRWQCB = San Francisco Regional Water Quality Control Board

< = Analyte was not detected above the specified method reporting limit.

-- = not applicable or not available

µg/kg = micrograms per kilogram

µg/L = micrograms per liter

References:

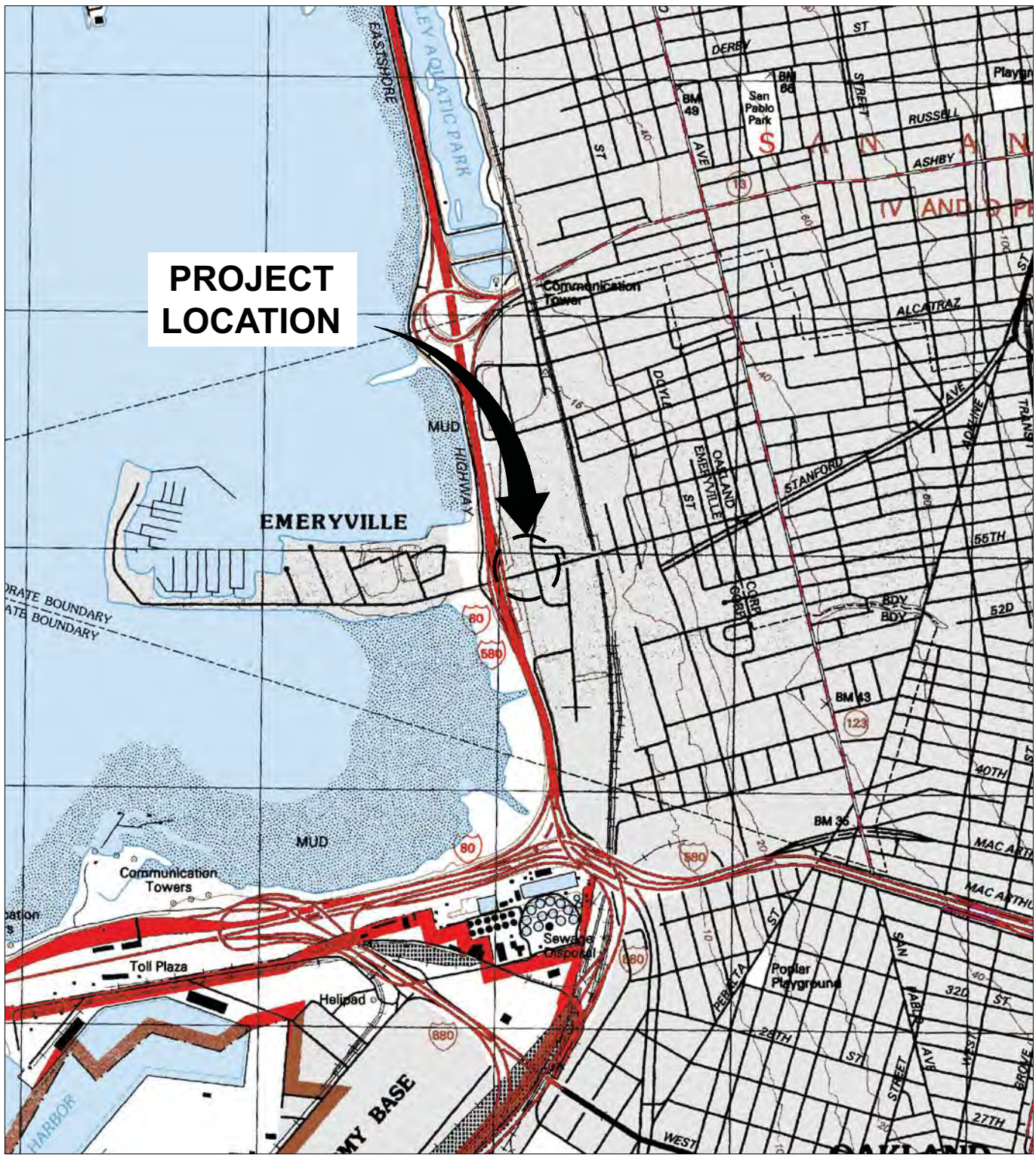
San Francisco Regional Water Quality Control Board. 2013. Environmental Screening Levels Workbook (Interim Final). December.

State Water Resources Control Board. 2012. Water Quality Control Policy for Low-Threat Underground Storage Tank Case Closure. May 1 (effective August 17, 2012).

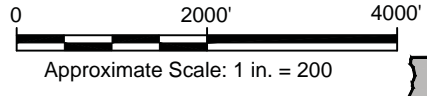
Viewed online on December 16, 2014: http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2012/rs2012_0016atta.pdf

Figures

CITY: PETALUMA, CA DIV/GROUP: ENV TEAM 2A
 C:\Users\harris\Desktop\ENV\CAD\PG95BPNA\044\DWG\PG95BPNA\044\N01.dwg LAYOUT 1 SAVE 7/8/2012 1:34 ACADVE 18.1S (LMS) TEC PAGESETU SETUP1 PLOTSTYLETABLE ARCADIS.CTB PLOTTE 7/8/2012 1:34 B HARRIS, JESSIC
 XREFS: IMAGES: PROJECTNAME: Oakland Westj



REFERENCE: BASE MAP USGS 7.5. MIN. TOPO. QUAD., OAKLAND WEST, CALIFORNIA

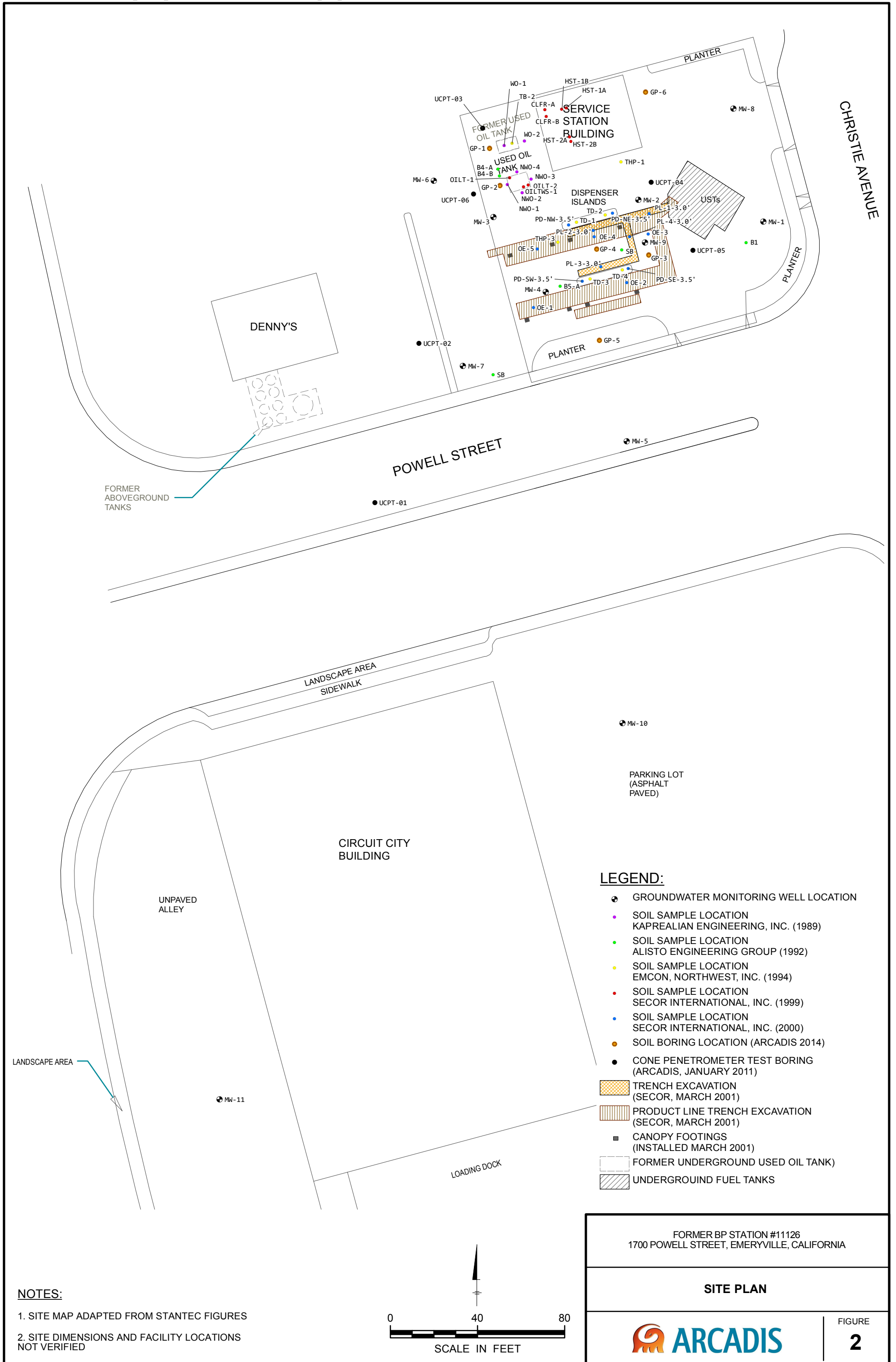


FORMER BP STATION #11126
 1700 POWELL STREET
 EMERYVILLE, CALIFORNIA

SITE VICINITY MAP



FIGURE
1



FORMER ABOVEGROUND TANKS

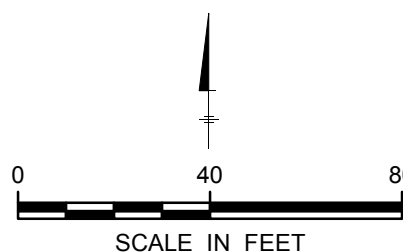
LANDSCAPE AREA

LEGEND:

- GROUNDWATER MONITORING WELL LOCATION
- SOIL SAMPLE LOCATION KAPREALIAN ENGINEERING, INC. (1989)
- SOIL SAMPLE LOCATION ALISTO ENGINEERING GROUP (1992)
- SOIL SAMPLE LOCATION EMCON, NORTHWEST, INC. (1994)
- SOIL SAMPLE LOCATION SECOR INTERNATIONAL, INC. (1999)
- SOIL SAMPLE LOCATION SECOR INTERNATIONAL, INC. (2000)
- SOIL BORING LOCATION (ARCADIS 2014)
- CONE PENETROMETER TEST BORING (ARCADIS, JANUARY 2011)
- ▨ TRENCH EXCAVATION (SECOR, MARCH 2001)
- ▨ PRODUCT LINE TRENCH EXCAVATION (SECOR, MARCH 2001)
- CANOPY FOOTINGS (INSTALLED MARCH 2001)
- ▭ FORMER UNDERGROUND USED OIL TANK
- ▨ UNDERGROUND FUEL TANKS

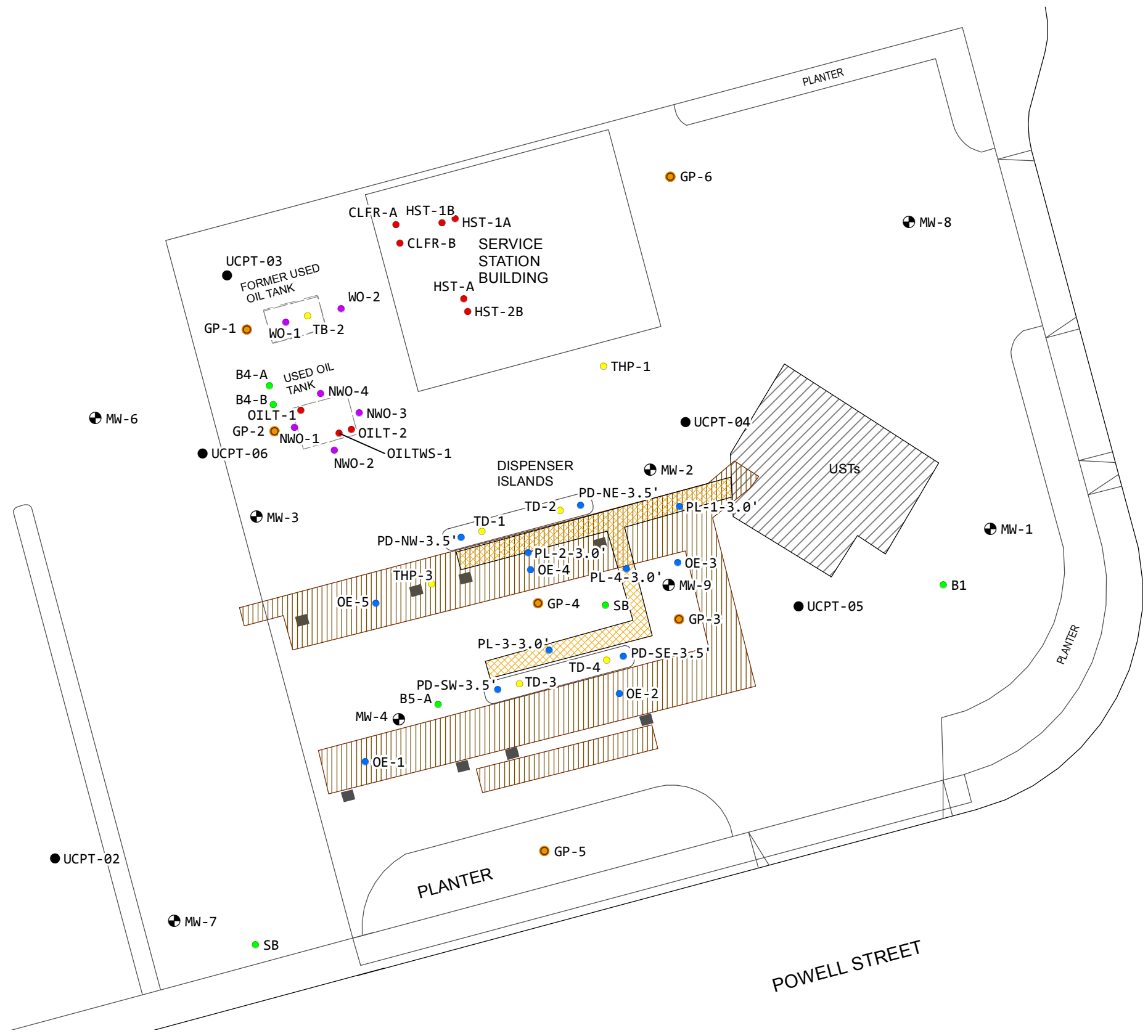
NOTES:

1. SITE MAP ADAPTED FROM STANTEC FIGURES
2. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED



FORMER BP STATION #11126 1700 POWELL STREET, EMERYVILLE, CALIFORNIA	
SITE PLAN	
	FIGURE 2

CITY: SAN FRANCISCO DIV/GROUP: ENV/IM DB: KGPETERS LD: PIC: PM: TM: PROJECT: Z:\GIS\PROJECTS\ENVBP_FOXGLOVE\CA\CA11126\GIS\MXD\CA11126_FIG3_DETAILED\SITEPLAN.MXD DATE: 1/15/2015 6:44:39 AM



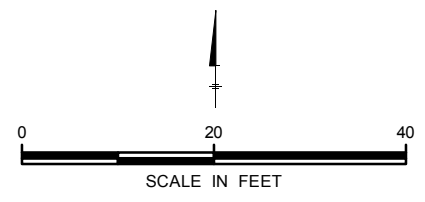
CHRISTIE AVENUE

POWELL STREET

- LEGEND:**
- GROUNDWATER MONITORING WELL LOCATION
 - SOIL SAMPLE LOCATION KAPREALIAN ENGINEERING, INC. (1989)
 - SOIL SAMPLE LOCATION ALISTO ENGINEERING GROUP (1992)
 - SOIL SAMPLE LOCATION EMCON, NORTHWEST, INC. (1994)
 - SOIL SAMPLE LOCATION SECOR INTERNATIONAL, INC. (1999)
 - SOIL SAMPLE LOCATION SECOR INTERNATIONAL, INC. (2000)
 - SOIL BORING LOCATION (ARCADIS 2014)
 - CONE PENETROMETER TEST BORING (ARCADIS, JANUARY 2011)
 - ▨ TRENCH EXCAVATION (SECOR, MARCH 2001)
 - ▨ PRODUCT LINE TRENCH EXCAVATION (SECOR, MARCH 2001)
 - CANOPY FOOTINGS (INSTALLED MARCH 2001)
 - FORMER UNDERGROUND USED OIL TANK
 - ▨ UNDERGROUND FUEL TANKS

NOTES:

1. SITE MAP ADAPTED FROM STANTEC FIGURES
2. SITE DIMENSIONS AND FACILITY LOCATIONS NOT VERIFIED



FORMER BP STATION #11126
1700 POWELL STREET, EMERYVILLE, CALIFORNIA

DETAILED SITE PLAN

ARCADIS

FIGURE 3

CITY: SAN FRANCISCO DIV/GROUP: ENV/IM DB: KGPETERS LD: PIC: PM: TM:
 PROJECT: PATH: Z:\GIS\PROJECTS\EN\MBP_FOXGLOVE\CACA11126\GIS\MXD\CACA11126_FIG4_SOILSAMPLEANALYTICALRESULTS.MXD DATE: 1/21/2015 7:55:22 AM

GP-01		
depth	4.0-4.5	6.5-7.0
DRO	2,000	3,900
GRO	1.9	12
B	<.0064	<.025
T	<.0064	<.025
E	<.0064	<.025
X	<.013	<.050
MTBE	<.0064	<.025
Naphth	<.013	<.050

GP-06			
depth	4.5-5.0	5.0-5.5	6.0-6.5
DRO	480	460	550
GRO	310	32	300
B	<.0036	<.0036	<.0039
T	<.0036	<.0036	<.0039
E	<.0036	<.0036	<.0039
X	<.0072	<.0072	<.0077
MTBE	<.0036	<.0036	<.0039
Naphth	<.0072	<.0072	<.0077

GP-02			
depth	2.0-3.0	4.5-5	6.7-7.0
DRO	590	76	1,000
GRO	<.260	0.390	<.240
B	<.0053	<.0048	<.0049
T	<.0053	<.0048	<.0049
E	<.0053	<.0048	<.0049
X	<.011	<.0095	<.0098
MTBE	<.0053	<.0048	<.0049
Naphth	<.011	<.0095	<.0098

GP-04		
depth	4.5-5.0	7.5-8.0
DRO	110	57
GRO	420	28
B	<.0044	<.022
T	<.0044	<.022
E	0.021	<.022
X	0.022	<.044
MTBE	0.29	0.11
Naphth	<.0087	0.16

GP-05		
depth	4.5-5.0	6.0-6.5
DRO	450	180
GRO	2.4	230
B	<.0037	<.0037
T	<.0037	<.0037
E	<.0037	<.0037
X	<.0075	<.0074
MTBE	<.0037	<.0037
Naphth	<.0075	<.0074

GP-03			
depth	3.0-3.5	3.5-4.5	9.5-10
DRO	26	80	180
GRO	430	140	0.82
B	0.045	0.065	<.016
T	<.0048	0.022	<.016
E	<.0048	0.760	<.016
X	<.0095	0.053	<.032
MTBE	<.0048	<.0046	0.46
Naphth	0.32	2.9	<.032

- LEGEND:**
- GROUNDWATER MONITORING WELL LOCATION
 - SOIL SAMPLE LOCATION KAPREALIAN ENGINEERING, INC. (1989)
 - SOIL SAMPLE LOCATION ALISTO ENGINEERING GROUP (1992)
 - SOIL SAMPLE LOCATION EMCON, NORTHWEST, INC. (1994)
 - SOIL SAMPLE LOCATION SECOR INTERNATIONAL, INC. (1999)
 - SOIL SAMPLE LOCATION SECOR INTERNATIONAL, INC. (2000)
 - SOIL BORING LOCATION (ARCADIS 2014)
 - CONE PENETROMETER TEST BORING (ARCADIS, JANUARY 2011)
 - ▨ TRENCH EXCAVATION (SECOR, MARCH 2001)
 - ▨ PRODUCT LINE TRENCH EXCAVATION (SECOR, MARCH 2001)
 - CANOPY FOOTINGS (INSTALLED MARCH 2001)
 - FORMER UNDERGROUND USED OIL TANK
 - ▨ UNDERGROUND FUEL TANKS

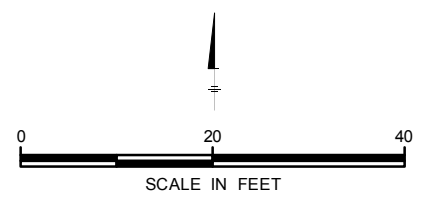
SAMPLE LOCATION		SF-RWQCB ESLs	
SAMPLE DEPTH (FEET BELOW GROUND SURFACE)		ESL ⁽¹⁾	ESL ⁽²⁾
DRO	DIESEL RANGE ORGANICS (mg/kg)	1,100	900
GRO	GASOLINE RANGE ORGANICS (mg/kg)	4,000	2,700
B	BENZENE (mg/kg)	3.7	71
T	TOLUENE (mg/kg)	4,900	4,300
E	ETHYLBENZENE (mg/kg)	24	490
X	TOTAL XYLENES (mg/kg)	2,600	2,500
MTBE	METHYL TERT-BUTYL ETHER (mg/kg)	190	3,800
Naphth	NAPHTHALENE (mg/kg)	15	370

1. COMMERCIAL DIRECT EXPOSURE SOIL SCREENING LEVEL (TABLE K-2 DIRECT EXPOSURE SOIL SCREENING LEVELS COMMERCIAL/INDUSTRIAL WORKER EXPOSURE SCENARIO, SF-RWQCB, [INTERIM FINAL - DECEMBER 2013]).
2. CONSTRUCTION WORKER DIRECT EXPOSURE SCREEN LEVEL (TABLE K-3 DIRECT EXPOSURE SOIL SCREENING LEVELS CONSTRUCTION/TRENCH WORKER EXPOSURE SCENARIO, SF-RWQCB, [INTERIM FINAL - DECEMBER 2013]).

< NOT DETECTED AT OR ABOVE STATED LABORATORY REPORTING LIMIT
 mg/kg MILLIGRAMS PER KILOGRAM
BOLD BOLD DETECTIONS INDICATE RESULT EXCEEDS ESL. (IF MORE THAN ONE ESL, THE MOST CONSERVATIVE WAS USED).

NOTES:

1. SITE MAP ADAPTED FROM STANTEC FIGURES.
2. SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. SOIL SAMPLES COLLECTED ON NOVEMBER 24, 2014 FROM GP-03, GP-05, AND GP-06.
4. SOIL SAMPLES COLLECTED ON NOVEMBER 25, 2014 FROM GP-01, GP-02, AND GP-04.

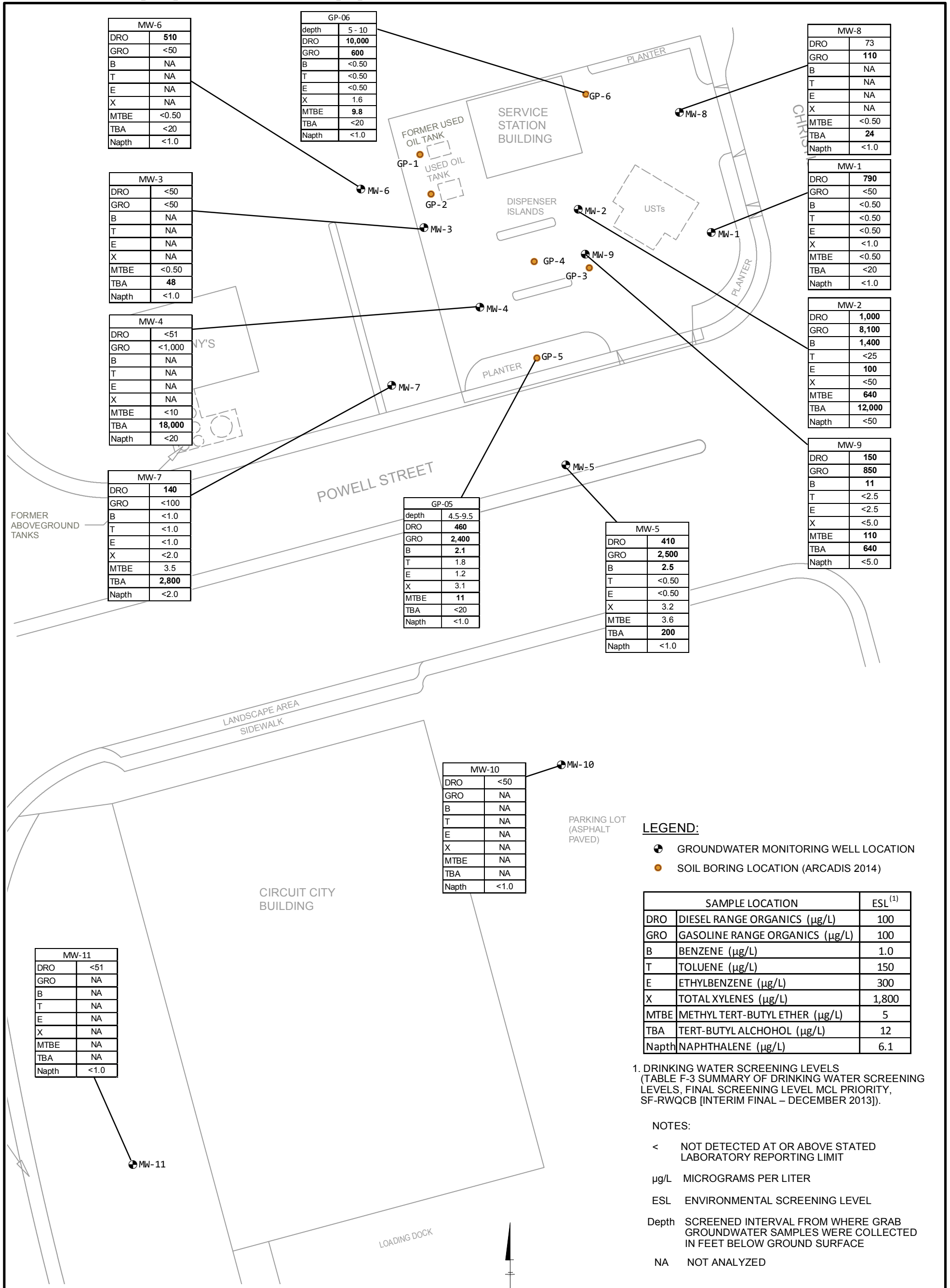


FORMER BP STATION #11126
 1700 POWELL STREET, EMERYVILLE, CALIFORNIA

SOIL SAMPLE ANALYTICAL RESULTS

ARCADIS

FIGURE 4



MW-6	
DRO	510
GRO	<50
B	NA
T	NA
E	NA
X	NA
MTBE	<0.50
TBA	<20
Naph	<1.0

GP-06	
depth	5 - 10
DRO	10,000
GRO	600
B	<0.50
T	<0.50
E	<0.50
X	1.6
MTBE	9.8
TBA	<20
Naph	<1.0

MW-8	
DRO	73
GRO	110
B	NA
T	NA
E	NA
X	NA
MTBE	<0.50
TBA	24
Naph	<1.0

MW-3	
DRO	<50
GRO	<50
B	NA
T	NA
E	NA
X	NA
MTBE	<0.50
TBA	48
Naph	<1.0

MW-1	
DRO	790
GRO	<50
B	<0.50
T	<0.50
E	<0.50
X	<1.0
MTBE	<0.50
TBA	<20
Naph	<1.0

MW-4	
DRO	<51
GRO	<1,000
B	NA
T	NA
E	NA
X	NA
MTBE	<10
TBA	18,000
Naph	<20

MW-2	
DRO	1,000
GRO	8,100
B	1,400
T	<25
E	100
X	<50
MTBE	640
TBA	12,000
Naph	<50

MW-7	
DRO	140
GRO	<100
B	<1.0
T	<1.0
E	<1.0
X	<2.0
MTBE	3.5
TBA	2,800
Naph	<2.0

MW-9	
DRO	150
GRO	850
B	11
T	<2.5
E	<2.5
X	<5.0
MTBE	110
TBA	640
Naph	<5.0

GP-05	
depth	4.5-9.5
DRO	460
GRO	2,400
B	2.1
T	1.8
E	1.2
X	3.1
MTBE	11
TBA	<20
Naph	<1.0

MW-5	
DRO	410
GRO	2,500
B	2.5
T	<0.50
E	<0.50
X	3.2
MTBE	3.6
TBA	200
Naph	<1.0

MW-10	
DRO	<50
GRO	NA
B	NA
T	NA
E	NA
X	NA
MTBE	NA
TBA	NA
Naph	<1.0

MW-11	
DRO	<51
GRO	NA
B	NA
T	NA
E	NA
X	NA
MTBE	NA
TBA	NA
Naph	<1.0

LEGEND:

- GROUNDWATER MONITORING WELL LOCATION
- SOIL BORING LOCATION (ARCADIS 2014)

SAMPLE LOCATION		ESL ⁽¹⁾
DRO	DIESEL RANGE ORGANICS (µg/L)	100
GRO	GASOLINE RANGE ORGANICS (µg/L)	100
B	BENZENE (µg/L)	1.0
T	TOLUENE (µg/L)	150
E	ETHYLBENZENE (µg/L)	300
X	TOTAL XYLENES (µg/L)	1,800
MTBE	METHYL TERT-BUTYL ETHER (µg/L)	5
TBA	TERT-BUTYL ALCOHOL (µg/L)	12
Naph	NAPHTHALENE (µg/L)	6.1

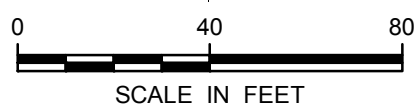
1. DRINKING WATER SCREENING LEVELS (TABLE F-3 SUMMARY OF DRINKING WATER SCREENING LEVELS, FINAL SCREENING LEVEL MCL PRIORITY, SF-RWQCB [INTERIM FINAL – DECEMBER 2013]).

NOTES:

- < NOT DETECTED AT OR ABOVE STATED LABORATORY REPORTING LIMIT
- µg/L MICROGRAMS PER LITER
- ESL ENVIRONMENTAL SCREENING LEVEL
- Depth SCREENED INTERVAL FROM WHERE GRAB GROUNDWATER SAMPLES WERE COLLECTED IN FEET BELOW GROUND SURFACE
- NA NOT ANALYZED

NOTES:

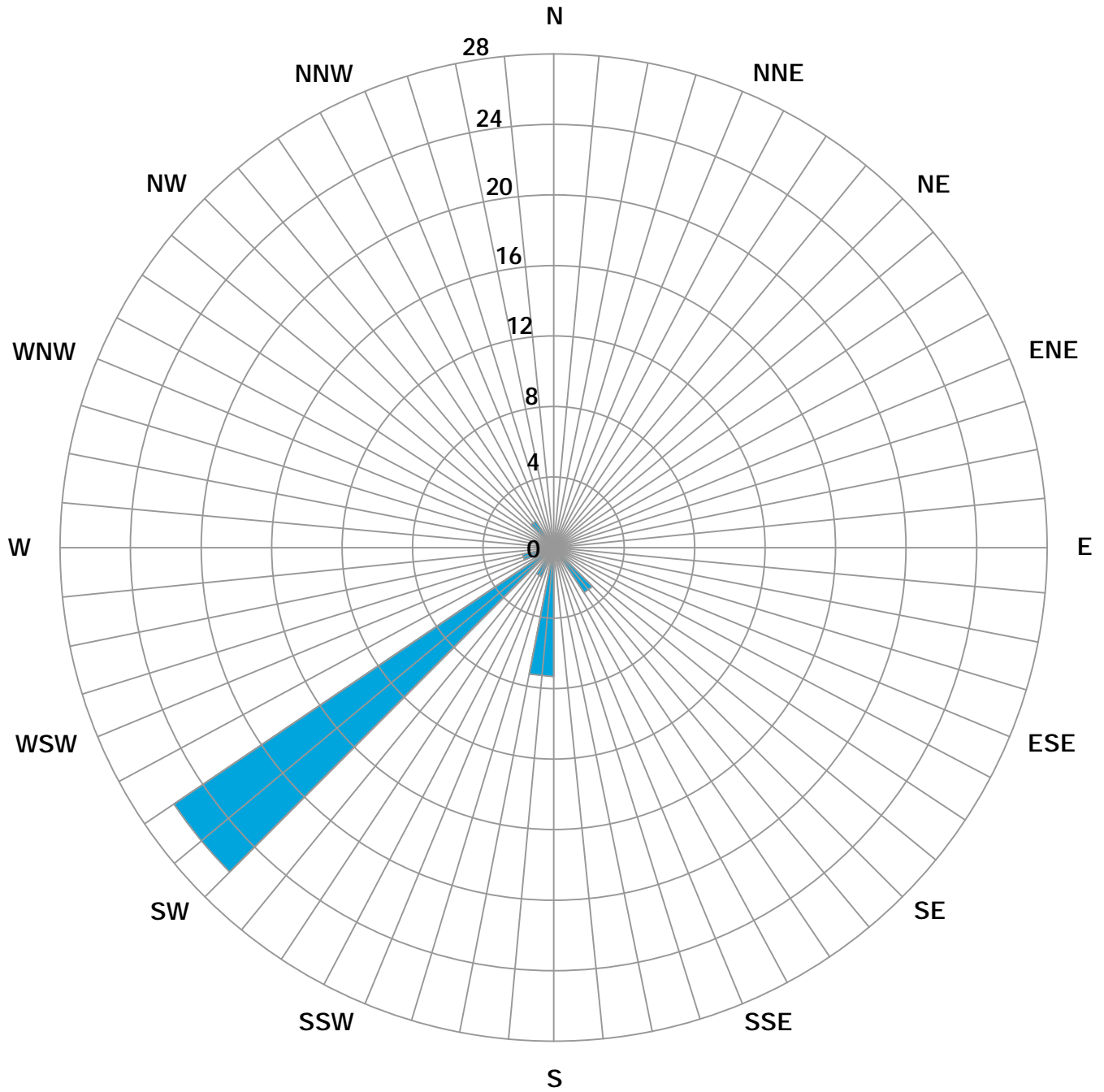
1. SITE MAP ADAPTED FROM STANTEC FIGURES.
2. SITE FEATURES AND LOCATIONS ARE APPROXIMATE.
3. GRAB GROUNDWATER SAMPLES COLLECTED ON NOVEMBER 24, 2014 FROM GP-05 AND GP-06.
4. GROUNDWATER SAMPLES COLLECTED ON DECEMBER 16, 2014 FROM MW-1 THROUGH MW-11.
5. **BOLD** VALUES INDICATE CONCENTRATIONS DETECTED ABOVE ESL.



FORMER BP STATION #11126
 1700 POWELL STREET, EMERYVILLE, CALIFORNIA

GROUNDWATER SAMPLE RESULTS





LEGEND

CONCENTRIC CIRCLES REPRESENT 45 MONITORING EVENTS CONDUCTED BETWEEN THE FIRST QUARTER 2001 AND THE SECOND QUARTER 2014.

 GROUNDWATER FLOW DIRECTION

FORMER BP STATION #11126
 1700 POWELL STREET, EMERYVILLE, CALIFORNIA

**GROUNDWATER FLOW DIRECTION
 ROSE DIAGRAM**



Appendix A

Alameda County Public Works
Agency Drilling Permits

Alameda County Public Works Agency - Water Resources Well Permit



Public Works Agency
—Alameda County—

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

Application Approved on: 11/18/2014 By jamesy

Permit Numbers: W2014-1120
Permits Valid from 11/24/2014 to 11/25/2014

Application Id: 1414538639404
Site Location: 1700 Powell st, Emeryville, CA
Project Start Date: 11/24/2014
Assigned Inspector: Contact Sam Brathwaite at (925) 570-7609 or sbrathwaite@groundzonees.com

City of Project Site: Emeryville

Completion Date: 11/25/2014

Applicant: Arcadis-US - Tu Nguyen
2000 Powell St, Emeryville, CA 94608
Property Owner: Delta Fair
1700 Powell St, emeryville, CA 94608
Client: ** same as Property Owner **
Contact: Tu Nguyen

Phone: 510-596-9527

Phone: 510-655-0909

Phone: --
Cell: 650-960-5485

Receipt Number: WR2014-0475 Total Due: \$265.00
Payer Name : Jennifer-Graborg-Arcadis-US Total Amount Paid: \$265.00
Paid By: VISA PAID IN FULL

Works Requesting Permits:

Borehole(s) for Investigation-Environmental/Monitoring Study - 6 Boreholes
Driller: Cascade - Lic #: 938110 - Method: Hand

Work Total: \$265.00

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2014-1120	11/18/2014	02/22/2015	6	2.00 in.	10.00 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:

Alameda County Public Works Agency - Water Resources Well Permit

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.



Appendix B

Soil Boring Logs



Boring No.: GP-1

Soil Boring Log

Sheet : 1 of 1

Project Name: CA-11126 Date Started: 11.25.2014 Logger: Connor Williams/Kevin Corrigan
 Project Number: GP09BPNA.C044.K0000 Date Completed: 11.25.2014 Editor: _____
 Project Location: 1700 Powell Street, Emeryville CA Weather Conditions: Clear/Sunny

Depth (feet)	Recovery (feet)	Sample ID	PID (ppm)	USCS Class.	Description	Construction Details	Misc. Descr.
0.5	HAND AUGER		4.8	SP	Surface: Asphalt to 8 inches bgs 0.5': SAND. Fine to very coarse-grained, subround/subangular, dry, very loose, weakly cemented; and gravel, subangular/subrounded, small to very large pebbles; very dark brown 10YR 2/2. Slight organic odor, red spots.	Backfilled with 5 gallons of Neat Cement	0.5
1				SC	1.5': CLAY, low plasticity, moist; and sand, fine-coarse grained, subangular/subrounded; trace gravel, large to very large pebbles, angular; green/red coloration, slight organic odor, very dark brown 10YR 2/2.		1
1.5							1.5
2			2				
2.5			2.5				
3			3				
3.5			3.5				
4			4				
4.5		GP-1-4-4.5		4.5			
5			3.4	5			
5.5				5.5			
6			8.9	6			
6.5	3.5	GP-1-6.5-7		6.5': CLAY, low plasticity, moist, very soft; and sand, fine-grained, angular to subangular, weak cementation; black N2.5;	6.5		
7				7': seam of pebbles and gravel	7		
7.5				7.5': black clay lense with organic content (wood).	7.5		
8					8		
8.5				8.5			
9				9			
9.5				9.5			
10					10		

Borehole terminated at 10 feet bgs.

Drilling Co.: Cascade Drilling Sampling Method: 1.5-inch acetate liners (o.d.)
 Driller: Juan Morales Sampling Interval: 4.0-4.5 feet bgs; 6.5-7.0 feet bgs (soil samples)
 Drilling Method: Direct Push Water Level Start: 7 feet bgs (during drilling) ▼
 Drill Rig Type: Geoprobe 6600 Water Level Finish: --
 Remarks: Converted to Well: Yes No
 1. Direct Push rods = 2.25 inch o.d. Surface Elev: --
 2. Boring backfilled on 11/25/2014 North Coor: --
 o.d. = outside diameter bgs = below ground surface East Coor: --

Boring No.: GP-2

Soil Boring Log

Sheet: 1 of 1

Project Name: CA-11126 Date Started: 11.25.2014 Logger: Connor Williams/Kevin Corrigan
 Project Number: GP09BPNA.C044.K0000 Date Completed: 11.25.2014 Editor: _____
 Project Location: 1700 Powell Street, Emeryville CA Weather Conditions: Clear/Sunny

Depth (feet)	Recovery (feet)	Sample ID	PID (ppm)	USCS Class.	Description	Construction Details	Misc. Descr.		
0.5	HAND AUGER		2.3	SW	Surface: Asphalt to 6 inches bgs	Backfilled with 6 gallons of Neat Cement	0.5		
1					0.5': SAND, medium to very coarse grained, subangular to subrounded, dry; poorly sorted, light brown, 10YR 4/2. at 9" bgs: 2" lense of dark brown silty sand.		1		
1.5					GP-2-2-3		12.9	1': SAND, fine-grained, dy, soft, very loose, poorly sorted; dark brown 10yr 2/2; 1" lense of concrete chunks at 4.5' bgs.	1.5
2							2		
2.5	3.5	GP-2-4.5-5	164	SC	4.5': SAND, fine-grained ,soft, very loose; trace clay, high plasticity, dry, very soft; trace gravel, granule to small pebble; poorly sorted, dark brown 10YR 2/2.		5		
3								3	
3.5								3.5	
4	3.4	GP-2-6.7-7	31	CL	6': SAND, fine-grained, dry; and clay, high plasticity, dry, soft; dark brown 10YR 2/2. Some wood fragments		6		
4.5								4.5	
5	3.5	GP-2-6.7-7	3.4	CL	7': CLAY, high plasticity, soft, wet; some gravel, subrounded, small to large pebble; poorly sorted, wet; black N2.5/; wood debris at 8.5' bgs, red coloration at 10' bgs.		7		
5.5						5.5			
6						6			
6.5						6.5			
7						7			
7.5						7.5			
8	8								
8.5	8.5								
9	9								
9.5	9.5								
10	10								

Borehole terminated at 10 feet bgs.

Drilling Co.: Cascade Drilling Sampling Method: 1.5-inch acetate liners (o.d.)
 Driller: Juan Morales Sampling Interval: 2.0-3.0 ft; 4.5-5 ft; 6.7-7.0 ft bgs (soil samples)
 Drilling Method: Direct Push Water Level Start: 7 feet bgs (during drilling) ▼
 Drill Rig Type: Geoprobe 6600 Water Level Finish: --
 Remarks: Converted to Well: Yes No
 1. Direct Push rods = 2.25 inch o.d. Surface Elev: --
 2. Boring backfilled on 11/25/2014 North Coor: --
 o.d. = outside diameter bgs = below ground surface East Coor: --



Boring No.: GP-3

Soil Boring Log

Sheet : 1 of 1

Project Name: CA-11126 Date Started: 11.24.2014 Logger: Connor Williams/Kevin Corrigan
 Project Number: GP09BPNA.C044.K0000 Date Completed: 11.24.2014 Editor: _____
 Project Location: 1700 Powell Street, Emeryville CA Weather Conditions: Clear/Sunny

Depth (feet)	Recovery (feet)	Sample ID	PID (ppm)	USCS Class.	Description	Construction Details	Misc. Descr.
0.5	HAND AUGER		1.4	SP	Surface: Asphalt to 6 inches bgs 0.5': SAND, medium-grained, subangular, large pebbles, poorly sorted, very loose, soft, dry, weak cementation; brown 10YR 4/3. 1': dark gray, well-sorted sand present	Backfilled with 6 gallons of Neat Cement	0.5
1			7.9				1
1.5			7.2	CL	1.5': CLAY, medium plasticity, soft, weak cementation, moist, loose, angular; with silt; some sand, fine grained; brown 10YR 4/3.		1.5
2			15.8				2
2.5			22.8				2.5
3		386.2		CL	2.5': CLAY, medium plasticity, moist, soft; and sand, large pebbles, round to angular, weak cementation, and gravel; brown 10YR 4/3, strong petroleum odor, green/orange coloration throughout.		3
3.5		GP-3-3-3.5					3.5
4		564.8		SM	3.5': SAND, medium to large pebbles, round to angular, moist, loose, soft; poorly sorted, dark gray N4, strong petroleum odor.		4
4.5		569					4.5
5				CL	4.5' CLAY, high plasticity, wet; with sand, large pebble, angular; poorly sorted, wood debris throughout.		5
5.5						5.5	
6						6	
6.5	3.5						6.5
7							7
7.5							7.5
8							8
8.5							8.5
9						9	
9.5		GP-3-9.5-10			9.5': coarse-grained sand present; color change to dark gray N4.		9.5
10					Borehole terminated at 10 feet bgs.		10

Drilling Co.: Cascade Drilling Sampling Method: 1.5-inch acetate liners (o.d.)
 Driller: Juan Morales Sampling Interval: 3.0-3.5 ft; 3.5-4.5 ft; 9.5-10 ft bgs (soil samples)
 Drilling Method: Direct Push Water Level Start: 5 feet bgs (during drilling) ▼
 Drill Rig Type: Geoprobe 6600 Water Level Finish: --
 Remarks: Converted to Well: Yes No
 1. Direct Push rods = 2.25 inch o.d. Surface Elev: --
 2. Boring backfilled on 11/24/2014 North Coor: --
 o.d. = outside diameter bgs = below ground surface East Coor: --



Boring No.: GP-4

Soil Boring Log

Sheet : 1 of 1

Project Name: CA-11126 Date Started: 11.25.2014 Logger: Connor Williams/Kevin Corrigan
 Project Number: GP09BPNA.C044.K0000 Date Completed: 11.25.2014 Editor: _____
 Project Location: 1700 Powell Street, Emeryville CA Weather Conditions: Clear/Sunny

Depth (feet)	Recovery (feet)	Sample ID	PID (ppm)	USCS Class.	Description	Construction Details	Misc. Descr.	
0.5	HAND AUGER		0.5	SC	Surface: Asphalt to 6 inches bgs 0.5': SAND, fine to course grain, subangular, dry, weak cementation; and clay, medium plasticity, moist, soft; trace gravel, granule to large pebble, angular, very loose; poorly sorted, brown 10YR 4/3. 1': color change to dark gray (N4)	Backfilled with 6 gallons of Neat Cement	0.5	
1				SP	1.5' SAND, fine to very course grain, angular to subangular, very loose, weak cementation; trace gravel, small to large pebble, subangular to angular; poorly sorted, dry, light brown, 10YR 6/8.		1	
1.5				CL	2': CLAY, high plasticity, medium-stiff; and sand, fine to very course, angular to subangular, weak cementation; poorly sorted, moist, very dark brown 10YR 2/2. 3': cementation to strong cementation		1.5	
2	3.5	GP-4-4.5-5	128.4	CL	6.5': CLAY, low plasticity, soft; with sand, medium pebble, angular, weak cementation, very dark brown 10YR 2/2. 7': silt present; trace well sorted sand present; moisture increasing		8	2
2.5								3
3								3.5
3.5								4
4	3.5	GP-4-7.5-8	19.9	CL			8	4
4.5								4.5
5	3.5		19.9	CL			8	5
5.5						5.5		
6						6		
6.5						6.5		
7						7		
7.5						7.5		
8	3.5		19.9	CL		8	8	
8.5							8.5	
9							9	
9.5							9.5	
10	3.5		19.9	CL		8	10	
10							10	

Borehole terminated at 10 feet bgs.

Drilling Co.: Cascade Drilling Sampling Method: 1.5-inch acetate liners (o.d.)
 Driller: Juan Morales Sampling Interval: 4.5-5.0 ft; 7.5-8.0 ft bgs (soil samples)
 Drilling Method: Direct Push Water Level Start: 8 feet bgs (during drilling) ▼
 Drill Rig Type: Geoprobe 6600 Water Level Finish: --
 Remarks: 1. Direct Push rods = 2.25 inch o.d. Converted to Well: Yes No
2. Boring backfilled on 11/25/2014 Surface Elev: --
 o.d. = outside diameter bgs = below ground surface North Coor: --
 East Coor: --

Boring No.: GP-5

Soil Boring Log

Sheet: 1 of 1

Project Name: CA-11126 Date Started: 11.24.2014 Logger: Connor Williams/Kevin Corrigan
 Project Number: GP09BPNA.C044.K0000 Date Completed: 11.24.2014 Editor: _____
 Project Location: 1700 Powell Street, Emeryville CA Weather Conditions: Clear/Sunny

Depth (feet)	Recovery (feet)	Sample ID	PID (ppm)	USCS Class.	Description	Construction Details	Misc. Descr.
0.5	HAND AUGER ▼				Surface: Grass	Backfilled with 5 gallons of Neat Cement	
1			1.4	SP	0.5': SAND, medium grain, angular to subangular, weakly cemented, dry, loose; well sorted, dark reddish brown 10YR 2.5/2, Trace organic matter throughout.		
1.5			3.4				
2			14				
2.5			44				
3			28				
3.5			18				
4			5.8				
4.5			67.1				
5			GP-5-4.5-5	17.6			
5.5			13.4				
6			29.2		6': SAND, medium to coarse grain subangular to angular, soft, dry, weak cementation; poorly sorted, strong organic odor.		
6.5		GP-5-6-6.5	355.6				
7			541.9		7' CLAY, high plasticity, soft; trace gravel, small pebbles, angular to subangular; loose wet, dark gray N4.		
7.5							
8			539.2		8': 2" lense of black roofing felts. <i>*0.01-slot PVC screen placed in boring for groundwater sample collection. Screen and casing were removed from boring after sampling activities.</i>		
8.5							
9		GP-5-GW	12.6				
9.5			26.7		9.5': 2" lense of red shingle material and black synthetic fabric.		
10					Borehole terminated at 9.5 feet bgs.		

Drilling Co.: Cascade Drilling Sampling Method: 1.5-inch acetate liners (o.d.)
 Driller: Juan Morales Sampling Interval: 5 to 10 ft bgs (screen interval for grab GW sample)
 Drilling Method: Direct Push Water Level Start: 8 ft bgs (during drilling) ▼
 Drill Rig Type: Geoprobe 6600 Water Level Finish: 5.6 ft bgs (during groundwater sampling) ▼
 Remarks: Converted to Well: Yes No
 1. Direct Push rods = 2.25 inch o.d. Surface Elev: ---
 2. Boring backfilled on 11/24/2014 North Coor: ---
 o.d. = outside diameter bgs = below ground surface East Coor: ---

Boring No.: GP-6

Soil Boring Log

Sheet : 1 of 1

Project Name: CA-11126 Date Started: 11.24.2014 Logger: Connor Williams/Kevin Corrigan
 Project Number: GP09BPNA.C044.K0000 Date Completed: 11.24.2014 Editor: _____
 Project Location: 1700 Powell Street, Emeryville CA Weather Conditions: Clear/Sunny

Depth (feet)	Recovery (feet)	Sample ID	PID (ppm)	USCS Class.	Description	Construction Details	Misc Descr.	
0			0	GM	Surface: Asphalt to 4 inches bgs	Backfilled with 5 gallons of Neat Cement		
0.5	HAND AUGER				0.5': GRAVEL, small to very large pebble, subrounded to subangular; some sand, medium grained, subrounded to subangular, dry, loose; poorly sorted, 10YR 4/3.			
1					1': color change to dark olive-grey 5Y 3/2			
1.5								
2				0.6			2.5': 1" lense of black synthetic fabric	
2.5								
3				2.6	OH		3': CLAY, high plasticity, medium stiff; trace sand, medium to coarse grained, subrounded to subangular; poorly sorted, dry, dark gray N4.	
3.5				65			4.5': hydrocarbon odor present	
4								
4.5							5': consistency change to soft	
5			GP-6-4.5-5	390.3				
5.5		GP-6-5-5.5	264.4					
6			787		6': moisture increase to moist			
6.5		GP-6-6-6.5	106.1					
7	3.5							
7.5								
8								
8.5				120.1				
9								
9.5		GP-6-GW						
10			4.2					
Borehole terminated at 10 feet bgs.								

*0.01-slot PVC screen placed in boring for groundwater sample collection. Screen and casing were removed from boring after sampling activities.

Drilling Co.: Cascade Drilling Sampling Method: 1.5-inch acetate liners (o.d.)
 Driller: Juan Morales Sampling Interval: 4.5 to 9.5 ft bgs (screen interval for grab GW sample)
 Drilling Method: Direct Push Water Level Start: 6.5 ft bgs (during drilling)
 Drill Rig Type: Geoprobe 6600 Water Level Finish: 5.6 ft bgs (during groundwater sampling)
 Remarks: Converted to Well: Yes No
 1. Direct Push rods = 2.25 inch o.d. Surface Elev: ---
 2. Boring backfilled on 11/24/2014 North Coor: ---
 o.d. = outside diameter bgs = below ground surface East Coor: ---



Appendix C

IDW Waste Manifest

NON-HAZARDOUS WASTE MANIFEST		1. Generator ID Number N/A	2. Page 1 of 1	3. Emergency Response Phone 800-454-9300	4. Waste Tracking Number B443-001
5. Generator's Name and Mailing Address BP West Coast Products LLC Attn: Hollis Philips PO Box 80249, Rancho Santa Margarita, CA 92688 Generator's Phone: 415-432-6903			Generator's Site Address (if different than mailing address) CA-11126 1700 Powell Street, Emeryville, CA 94068		
6. Transporter 1 Company Name Integrated Wastestream Management, Inc.			U.S. EPA ID Number CAD983653627		
7. Transporter 2 Company Name			U.S. EPA ID Number		
8. Designated Facility Name and Site Address Republic Services Vasco Road Landfill 4001 N. Vasco Road, Livermore, CA 94550 (925)447-0491 Facility's Phone:			U.S. EPA ID Number N/A		
9. Waste Shipping Name and Description		10. Containers		11. Total Quantity	12. Unit Wt./Vol.
		No.	Type		
1. Non-Hazardous Waste Solid (Soil)		2	DM	Est. 15	T
2.					
3.					
4.					
13. Special Handling Instructions and Additional Information Wear appropriate safety gear when handling. IWM Job #: Bella 443 Profile #: 431006 (Soil) IWM 24 Hour Emergency (408) 813-9428					
14. GENERATOR/OFFICER'S CERTIFICATION: I hereby declare that the contents of this assignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations.					
Generator's/Officer's Printed/Typed Name Emily Wahlstrand			Signature 		Month Day Year 12 24 14
15. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of embarkment: Date leaving U.S.:					
16. Transporter Acknowledgment of Receipt of Materials					
Transporter 1 Printed/Typed Name Scott Winton			Signature 		Month Day Year 12 24 14
Transporter 2 Printed/Typed Name			Signature		Month Day Year
17. Discrepancy					
17a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection					
17b. Alternate Facility (or Generator) Manifest Reference Number: U.S. EPA ID Number:					
Facility's Phone:					
17c. Signature of Alternate Facility (or Generator) Month Day Year					
18. Designated Facility Owner or Operator: Certification of receipt of materials covered by the manifest except as noted in item 17c					
Printed/Typed Name CARLOS MORA			Signature 		Month Day Year 11 6 15



Appendix D

Laboratory Analytical Results and
Chain-of-Custody Documentation

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

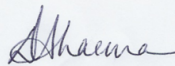
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-61520-1
Client Project/Site: BP #11126, Emeryville

For:
ARCADIS U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco, California 94104

Attn: Hollis Phillips



Authorized for release by:
12/9/2014 4:53:20 PM

Dimple Sharma, Senior Project Manager
(925)484-1919
dimple.sharma@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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

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

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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*	ISTD response or retention time outside acceptable limits

GC/MS Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
X	Surrogate is outside control limits
F1	MS and/or MSD Recovery exceeds the control limits
F2	MS/MSD RPD exceeds control limits

GC Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
X	Surrogate is outside control limits

Glossary

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

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Job ID: 720-61520-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative 720-61520-1

Comments

No additional comments.

Receipt

The samples were received on 11/25/2014 5:55 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 3.1° C.

GC/MS VOA

Method 8260B: Internal standard (ISTD) response for the following sample was outside control limits: GP-1-4.5-5 (720-61520-1), GP-1-6.5-7 (720-61520-2). The sample was re-extracted and/or re-analyzed with concurring results, and the original set of data has been reported.

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

GC/MS Semi VOA

Method 8270C SIM: The following sample was diluted due to the nature of the sample matrix: GP-1-4.5-5 (720-61520-1), GP-1-6.5-7 (720-61520-2), GP-2-2-3 (720-61520-5), GP-2-4.5-5 (720-61520-6), GP-4-4.5-5 (720-61520-3), GP-2-6.7-7 (720-61520-7). Elevated reporting limits (RLs) are provided.

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

GC VOA

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

GC Semi VOA

Method 8015B: The following sample required a dilution due to the nature of the sample matrix: GP-2-6.7-7 (720-61520-7). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

Method 8015B: The method blank for batch 172019 contained C10-C28 above the reporting limit (RL). Associated sample were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 8015B: The following sample required a dilution due to the nature of the sample matrix: GP-1-4.5-5 (720-61520-1), GP-1-6.5-7 (720-61520-2), GP-2-2-3 (720-61520-5). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

Organic Prep

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-1-4.5-5

Lab Sample ID: 720-61520-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	1900		320		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	2000		120		mg/Kg	50		8015B	Total/NA

Client Sample ID: GP-1-6.5-7

Lab Sample ID: 720-61520-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	12000		1300		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Acenaphthene	250		250		ug/Kg	10		8270C SIM	Total/NA
Anthracene	550		250		ug/Kg	10		8270C SIM	Total/NA
Benzo[a]anthracene	490		250		ug/Kg	10		8270C SIM	Total/NA
Benzo[b]fluoranthene	420		250		ug/Kg	10		8270C SIM	Total/NA
Chrysene	560		250		ug/Kg	10		8270C SIM	Total/NA
Fluoranthene	1100		250		ug/Kg	10		8270C SIM	Total/NA
Phenanthrene	390		250		ug/Kg	10		8270C SIM	Total/NA
Pyrene	1000		250		ug/Kg	10		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	3900		120		mg/Kg	50		8015B	Total/NA

Client Sample ID: GP-4-4.5-5

Lab Sample ID: 720-61520-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Ethylbenzene	21		4.4		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
MTBE	290		4.4		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	22		8.7		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C6-C12	420000		23000		ug/Kg	100		8260B	Total/NA
Acenaphthene	32		9.9		ug/Kg	2		8270C SIM	Total/NA
Acenaphthylene	17		9.9		ug/Kg	2		8270C SIM	Total/NA
Anthracene	11		9.9		ug/Kg	2		8270C SIM	Total/NA
Benzo[a]anthracene	23		9.9		ug/Kg	2		8270C SIM	Total/NA
Benzo[a]pyrene	28		9.9		ug/Kg	2		8270C SIM	Total/NA
Benzo[b]fluoranthene	30		9.9		ug/Kg	2		8270C SIM	Total/NA
Benzo[g,h,i]perylene	14		9.9		ug/Kg	2		8270C SIM	Total/NA
Benzo[k]fluoranthene	13		9.9		ug/Kg	2		8270C SIM	Total/NA
Chrysene	25		9.9		ug/Kg	2		8270C SIM	Total/NA
Fluoranthene	51		9.9		ug/Kg	2		8270C SIM	Total/NA
Fluorene	21		9.9		ug/Kg	2		8270C SIM	Total/NA
Indeno[1,2,3-cd]pyrene	12		9.9		ug/Kg	2		8270C SIM	Total/NA
Naphthalene	130		9.9		ug/Kg	2		8270C SIM	Total/NA
Phenanthrene	61		9.9		ug/Kg	2		8270C SIM	Total/NA
Pyrene	69		9.9		ug/Kg	2		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	110		0.99		mg/Kg	1		8015B	Total/NA

Client Sample ID: GP-4-7.5-8

Lab Sample ID: 720-61520-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	110		22		ug/Kg	1		8260B/CA_LUFT MS	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Detection Summary

Client: ARCADIS U.S., Inc.
 Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-4-7.5-8 (Continued)

Lab Sample ID: 720-61520-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	28000		1100		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Naphthalene	160		44		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Acenaphthene	5.1		5.0		ug/Kg	1		8270C SIM	Total/NA
Acenaphthylene	6.0		5.0		ug/Kg	1		8270C SIM	Total/NA
Anthracene	6.8		5.0		ug/Kg	1		8270C SIM	Total/NA
Benzo[a]anthracene	17		5.0		ug/Kg	1		8270C SIM	Total/NA
Benzo[a]pyrene	21		5.0		ug/Kg	1		8270C SIM	Total/NA
Benzo[b]fluoranthene	42		5.0		ug/Kg	1		8270C SIM	Total/NA
Benzo[g,h,i]perylene	23		5.0		ug/Kg	1		8270C SIM	Total/NA
Benzo[k]fluoranthene	12		5.0		ug/Kg	1		8270C SIM	Total/NA
Chrysene	26		5.0		ug/Kg	1		8270C SIM	Total/NA
Dibenz(a,h)anthracene	5.0		5.0		ug/Kg	1		8270C SIM	Total/NA
Fluoranthene	39		5.0		ug/Kg	1		8270C SIM	Total/NA
Fluorene	9.3		5.0		ug/Kg	1		8270C SIM	Total/NA
Indeno[1,2,3-cd]pyrene	17		5.0		ug/Kg	1		8270C SIM	Total/NA
Naphthalene	430		5.0		ug/Kg	1		8270C SIM	Total/NA
Phenanthrene	29		5.0		ug/Kg	1		8270C SIM	Total/NA
Pyrene	36		5.0		ug/Kg	1		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	57		1.0		mg/Kg	1		8015B	Total/NA

Client Sample ID: GP-2-2-3

Lab Sample ID: 720-61520-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	590		20		mg/Kg	20		8015B	Total/NA

Client Sample ID: GP-2-4.5-5

Lab Sample ID: 720-61520-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	390		240		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	76		3.0		mg/Kg	3		8015B	Total/NA

Client Sample ID: GP-2-6.7-7

Lab Sample ID: 720-61520-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	100		100		ug/Kg	20		8270C SIM	Total/NA
Pyrene	110		100		ug/Kg	20		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	1000		25		mg/Kg	10		8015B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-1-4.5-5

Lab Sample ID: 720-61520-1

Date Collected: 11/25/14 10:20

Matrix: Solid

Date Received: 11/25/14 17:55

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		6.4		ug/Kg		11/25/14 22:06	11/26/14 17:28	1
Ethylbenzene	ND	*	6.4		ug/Kg		11/25/14 22:06	11/26/14 17:28	1
MTBE	ND		6.4		ug/Kg		11/25/14 22:06	11/26/14 17:28	1
Toluene	ND	*	6.4		ug/Kg		11/25/14 22:06	11/26/14 17:28	1
EDB	ND		6.4		ug/Kg		11/25/14 22:06	11/26/14 17:28	1
Xylenes, Total	ND		13		ug/Kg		11/25/14 22:06	11/26/14 17:28	1
1,2-DCA	ND		6.4		ug/Kg		11/25/14 22:06	11/26/14 17:28	1
Gasoline Range Organics (GRO)	1900		320		ug/Kg		11/25/14 22:06	11/26/14 17:28	1
-C6-C12									
Naphthalene	ND	*	13		ug/Kg		11/25/14 22:06	11/26/14 17:28	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	66	*	45 - 131				11/25/14 22:06	11/26/14 17:28	1
1,2-Dichloroethane-d4 (Surr)	125		60 - 140				11/25/14 22:06	11/26/14 17:28	1
Toluene-d8 (Surr)	75		58 - 140				11/25/14 22:06	11/26/14 17:28	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Acenaphthylene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Anthracene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Benzo[a]anthracene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Benzo[a]pyrene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Benzo[b]fluoranthene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Benzo[g,h,i]perylene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Benzo[k]fluoranthene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Chrysene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Dibenz(a,h)anthracene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Fluoranthene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Fluorene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Indeno[1,2,3-cd]pyrene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Naphthalene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Phenanthrene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Pyrene	ND		990		ug/Kg		12/04/14 10:23	12/05/14 21:36	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	0	X D	33 - 120				12/04/14 10:23	12/05/14 21:36	20
Terphenyl-d14	0	X D	35 - 146				12/04/14 10:23	12/05/14 21:36	20

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	2000		120		mg/Kg		12/04/14 10:28	12/08/14 12:16	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	0	D X	40 - 130				12/04/14 10:28	12/08/14 12:16	50

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-1-6.5-7

Lab Sample ID: 720-61520-2

Date Collected: 11/25/14 10:45

Matrix: Solid

Date Received: 11/25/14 17:55

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		25		ug/Kg		11/26/14 13:30	11/26/14 14:39	1
Benzene	ND		25		ug/Kg		11/26/14 13:30	11/26/14 14:39	1
EDB	ND		25		ug/Kg		11/26/14 13:30	11/26/14 14:39	1
1,2-DCA	ND		25		ug/Kg		11/26/14 13:30	11/26/14 14:39	1
Ethylbenzene	ND		25		ug/Kg		11/26/14 13:30	11/26/14 14:39	1
Toluene	ND		25		ug/Kg		11/26/14 13:30	11/26/14 14:39	1
Xylenes, Total	ND		50		ug/Kg		11/26/14 13:30	11/26/14 14:39	1
Gasoline Range Organics (GRO)	12000		1300		ug/Kg		11/26/14 13:30	11/26/14 14:39	1
-C6-C12									
Naphthalene	ND	*	50		ug/Kg		11/26/14 13:30	11/26/14 14:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	78		45 - 131				11/26/14 13:30	11/26/14 14:39	1
1,2-Dichloroethane-d4 (Surr)	117		60 - 140				11/26/14 13:30	11/26/14 14:39	1
Toluene-d8 (Surr)	80		58 - 140				11/26/14 13:30	11/26/14 14:39	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	250		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Acenaphthylene	ND		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Anthracene	550		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Benzo[a]anthracene	490		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Benzo[a]pyrene	ND		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Benzo[b]fluoranthene	420		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Benzo[g,h,i]perylene	ND		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Benzo[k]fluoranthene	ND		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Chrysene	560		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Dibenz(a,h)anthracene	ND		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Fluoranthene	1100		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Fluorene	ND		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Indeno[1,2,3-cd]pyrene	ND		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Naphthalene	ND		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Phenanthrene	390		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Pyrene	1000		250		ug/Kg		12/04/14 10:23	12/05/14 21:59	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	90		33 - 120				12/04/14 10:23	12/05/14 21:59	10
Terphenyl-d14	80		35 - 146				12/04/14 10:23	12/05/14 21:59	10

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	3900		120		mg/Kg		12/05/14 08:58	12/08/14 11:27	50
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	0	D X	40 - 130				12/05/14 08:58	12/08/14 11:27	50

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-4-4.5-5

Lab Sample ID: 720-61520-3

Date Collected: 11/25/14 12:00

Matrix: Solid

Date Received: 11/25/14 17:55

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		4.4		ug/Kg		11/25/14 22:06	11/26/14 17:56	1
Ethylbenzene	21		4.4		ug/Kg		11/25/14 22:06	11/26/14 17:56	1
MTBE	290		4.4		ug/Kg		11/25/14 22:06	11/26/14 17:56	1
Toluene	ND		4.4		ug/Kg		11/25/14 22:06	11/26/14 17:56	1
EDB	ND		4.4		ug/Kg		11/25/14 22:06	11/26/14 17:56	1
Xylenes, Total	22		8.7		ug/Kg		11/25/14 22:06	11/26/14 17:56	1
1,2-DCA	ND		4.4		ug/Kg		11/25/14 22:06	11/26/14 17:56	1
Naphthalene	ND		8.7		ug/Kg		11/25/14 22:06	11/26/14 17:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	110		45 - 131				11/25/14 22:06	11/26/14 17:56	1
1,2-Dichloroethane-d4 (Surr)	108		60 - 140				11/25/14 22:06	11/26/14 17:56	1
Toluene-d8 (Surr)	96		58 - 140				11/25/14 22:06	11/26/14 17:56	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	420000		23000		ug/Kg		11/25/14 22:06	12/01/14 18:26	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	114		66 - 148				11/25/14 22:06	12/01/14 18:26	100
1,2-Dichloroethane-d4 (Surr)	91		62 - 137				11/25/14 22:06	12/01/14 18:26	100
Toluene-d8 (Surr)	96		65 - 141				11/25/14 22:06	12/01/14 18:26	100

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	32		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Acenaphthylene	17		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Anthracene	11		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Benzo[a]anthracene	23		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Benzo[a]pyrene	28		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Benzo[b]fluoranthene	30		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Benzo[g,h,i]perylene	14		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Benzo[k]fluoranthene	13		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Chrysene	25		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Dibenz(a,h)anthracene	ND		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Fluoranthene	51		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Fluorene	21		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Indeno[1,2,3-cd]pyrene	12		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Naphthalene	130		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Phenanthrene	61		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Pyrene	69		9.9		ug/Kg		12/04/14 10:23	12/05/14 22:23	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	64		33 - 120				12/04/14 10:23	12/05/14 22:23	2
Terphenyl-d14	81		35 - 146				12/04/14 10:23	12/05/14 22:23	2

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	110		0.99		mg/Kg		12/04/14 10:28	12/05/14 23:24	1

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-4-4.5-5
Date Collected: 11/25/14 12:00
Date Received: 11/25/14 17:55

Lab Sample ID: 720-61520-3
Matrix: Solid

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>p-Terphenyl</i>	62		40 - 130	12/04/14 10:28	12/05/14 23:24	1

- 1
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- 14

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-4-7.5-8

Lab Sample ID: 720-61520-4

Date Collected: 11/25/14 12:30

Matrix: Solid

Date Received: 11/25/14 17:55

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	110		22		ug/Kg		11/26/14 13:30	11/26/14 15:07	1
Benzene	ND		22		ug/Kg		11/26/14 13:30	11/26/14 15:07	1
EDB	ND		22		ug/Kg		11/26/14 13:30	11/26/14 15:07	1
1,2-DCA	ND		22		ug/Kg		11/26/14 13:30	11/26/14 15:07	1
Ethylbenzene	ND		22		ug/Kg		11/26/14 13:30	11/26/14 15:07	1
Toluene	ND		22		ug/Kg		11/26/14 13:30	11/26/14 15:07	1
Xylenes, Total	ND		44		ug/Kg		11/26/14 13:30	11/26/14 15:07	1
Gasoline Range Organics (GRO)	28000		1100		ug/Kg		11/26/14 13:30	11/26/14 15:07	1
-C6-C12									
Naphthalene	160		44		ug/Kg		11/26/14 13:30	11/26/14 15:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	112		45 - 131				11/26/14 13:30	11/26/14 15:07	1
1,2-Dichloroethane-d4 (Surr)	110		60 - 140				11/26/14 13:30	11/26/14 15:07	1
Toluene-d8 (Surr)	97		58 - 140				11/26/14 13:30	11/26/14 15:07	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	5.1		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Acenaphthylene	6.0		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Anthracene	6.8		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Benzo[a]anthracene	17		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Benzo[a]pyrene	21		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Benzo[b]fluoranthene	42		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Benzo[g,h,i]perylene	23		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Benzo[k]fluoranthene	12		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Chrysene	26		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Dibenz(a,h)anthracene	5.0		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Fluoranthene	39		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Fluorene	9.3		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Indeno[1,2,3-cd]pyrene	17		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Naphthalene	430		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Phenanthrene	29		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Pyrene	36		5.0		ug/Kg		12/05/14 09:05	12/06/14 14:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	68		33 - 120				12/05/14 09:05	12/06/14 14:15	1
Terphenyl-d14	80		35 - 146				12/05/14 09:05	12/06/14 14:15	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	57		1.0		mg/Kg		12/05/14 08:58	12/08/14 16:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	69		40 - 130				12/05/14 08:58	12/08/14 16:03	1

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-2-2-3

Lab Sample ID: 720-61520-5

Date Collected: 11/25/14 14:15

Matrix: Solid

Date Received: 11/25/14 17:55

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		5.3		ug/Kg		11/25/14 22:06	11/26/14 18:24	1
Ethylbenzene	ND		5.3		ug/Kg		11/25/14 22:06	11/26/14 18:24	1
MTBE	ND		5.3		ug/Kg		11/25/14 22:06	11/26/14 18:24	1
Toluene	ND		5.3		ug/Kg		11/25/14 22:06	11/26/14 18:24	1
EDB	ND		5.3		ug/Kg		11/25/14 22:06	11/26/14 18:24	1
Xylenes, Total	ND		11		ug/Kg		11/25/14 22:06	11/26/14 18:24	1
1,2-DCA	ND		5.3		ug/Kg		11/25/14 22:06	11/26/14 18:24	1
Gasoline Range Organics (GRO)	ND		260		ug/Kg		11/25/14 22:06	11/26/14 18:24	1
-C6-C12									
Naphthalene	ND		11		ug/Kg		11/25/14 22:06	11/26/14 18:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	87		45 - 131				11/25/14 22:06	11/26/14 18:24	1
1,2-Dichloroethane-d4 (Surr)	102		60 - 140				11/25/14 22:06	11/26/14 18:24	1
Toluene-d8 (Surr)	93		58 - 140				11/25/14 22:06	11/26/14 18:24	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Acenaphthylene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Anthracene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Benzo[a]anthracene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Benzo[a]pyrene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Benzo[b]fluoranthene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Benzo[g,h,i]perylene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Benzo[k]fluoranthene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Chrysene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Dibenz(a,h)anthracene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Fluoranthene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Fluorene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Indeno[1,2,3-cd]pyrene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Naphthalene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Phenanthrene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Pyrene	ND		100		ug/Kg		12/04/14 10:23	12/05/14 19:41	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	92		33 - 120				12/04/14 10:23	12/05/14 19:41	10
Terphenyl-d14	91		35 - 146				12/04/14 10:23	12/05/14 19:41	10

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	590		20		mg/Kg		12/04/14 10:28	12/08/14 11:52	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	0	D X	40 - 130				12/04/14 10:28	12/08/14 11:52	20

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-2-4.5-5

Lab Sample ID: 720-61520-6

Date Collected: 11/25/14 14:15

Matrix: Solid

Date Received: 11/25/14 17:55

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		4.8		ug/Kg		11/25/14 22:06	11/26/14 18:52	1
Ethylbenzene	ND		4.8		ug/Kg		11/25/14 22:06	11/26/14 18:52	1
MTBE	ND		4.8		ug/Kg		11/25/14 22:06	11/26/14 18:52	1
Toluene	ND		4.8		ug/Kg		11/25/14 22:06	11/26/14 18:52	1
EDB	ND		4.8		ug/Kg		11/25/14 22:06	11/26/14 18:52	1
Xylenes, Total	ND		9.5		ug/Kg		11/25/14 22:06	11/26/14 18:52	1
1,2-DCA	ND		4.8		ug/Kg		11/25/14 22:06	11/26/14 18:52	1
Gasoline Range Organics (GRO)	390		240		ug/Kg		11/25/14 22:06	11/26/14 18:52	1
-C6-C12									
Naphthalene	ND		9.5		ug/Kg		11/25/14 22:06	11/26/14 18:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	85		45 - 131				11/25/14 22:06	11/26/14 18:52	1
1,2-Dichloroethane-d4 (Surr)	102		60 - 140				11/25/14 22:06	11/26/14 18:52	1
Toluene-d8 (Surr)	92		58 - 140				11/25/14 22:06	11/26/14 18:52	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Acenaphthylene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Anthracene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Benzo[a]anthracene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Benzo[a]pyrene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Benzo[b]fluoranthene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Benzo[g,h,i]perylene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Benzo[k]fluoranthene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Chrysene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Dibenz(a,h)anthracene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Fluoranthene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Fluorene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Indeno[1,2,3-cd]pyrene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Naphthalene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Phenanthrene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Pyrene	ND		25		ug/Kg		12/04/14 10:23	12/05/14 22:46	5
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	75		33 - 120				12/04/14 10:23	12/05/14 22:46	5
Terphenyl-d14	82		35 - 146				12/04/14 10:23	12/05/14 22:46	5

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	76		3.0		mg/Kg		12/04/14 10:28	12/05/14 23:53	3
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	66		40 - 130				12/04/14 10:28	12/05/14 23:53	3

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-2-6.7-7

Lab Sample ID: 720-61520-7

Date Collected: 11/25/14 14:45

Matrix: Solid

Date Received: 11/25/14 17:55

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	ND		4.9		ug/Kg		11/28/14 11:24	12/01/14 15:17	1
Benzene	ND		4.9		ug/Kg		11/28/14 11:24	12/01/14 15:17	1
EDB	ND		4.9		ug/Kg		11/28/14 11:24	12/01/14 15:17	1
1,2-DCA	ND		4.9		ug/Kg		11/28/14 11:24	12/01/14 15:17	1
Ethylbenzene	ND		4.9		ug/Kg		11/28/14 11:24	12/01/14 15:17	1
Toluene	ND		4.9		ug/Kg		11/28/14 11:24	12/01/14 15:17	1
Xylenes, Total	ND		9.8		ug/Kg		11/28/14 11:24	12/01/14 15:17	1
Gasoline Range Organics (GRO)	ND		240		ug/Kg		11/28/14 11:24	12/01/14 15:17	1
-C6-C12									
Naphthalene	ND		9.8		ug/Kg		11/28/14 11:24	12/01/14 15:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	89		45 - 131				11/28/14 11:24	12/01/14 15:17	1
1,2-Dichloroethane-d4 (Surr)	91		60 - 140				11/28/14 11:24	12/01/14 15:17	1
Toluene-d8 (Surr)	94		58 - 140				11/28/14 11:24	12/01/14 15:17	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Acenaphthylene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Anthracene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Benzo[a]anthracene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Benzo[a]pyrene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Benzo[b]fluoranthene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Benzo[g,h,i]perylene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Benzo[k]fluoranthene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Chrysene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Dibenz(a,h)anthracene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Fluoranthene	100		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Fluorene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Indeno[1,2,3-cd]pyrene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Naphthalene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Phenanthrene	ND		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Pyrene	110		100		ug/Kg		12/05/14 09:05	12/08/14 17:30	20
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	78		33 - 120				12/05/14 09:05	12/08/14 17:30	20
Terphenyl-d14	69		35 - 146				12/05/14 09:05	12/08/14 17:30	20

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1000		25		mg/Kg		12/05/14 08:58	12/07/14 00:15	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	0	X D	40 - 130				12/05/14 08:58	12/07/14 00:15	10

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 720-171797/4

Matrix: Solid

Analysis Batch: 171797

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	ND		25000		ug/Kg			12/01/14 14:20	100

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		66 - 148		12/01/14 14:20	100
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		12/01/14 14:20	100
Toluene-d8 (Surr)	96		65 - 141		12/01/14 14:20	100

Lab Sample ID: LCS 720-171797/7

Matrix: Solid

Analysis Batch: 171797

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	100000	91900		ug/Kg		92	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	92		66 - 148
1,2-Dichloroethane-d4 (Surr)	94		62 - 137
Toluene-d8 (Surr)	95		65 - 141

Lab Sample ID: LCSD 720-171797/8

Matrix: Solid

Analysis Batch: 171797

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12	100000	100000		ug/Kg		100	70 - 130	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	95		66 - 148
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
Toluene-d8 (Surr)	96		65 - 141

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Lab Sample ID: MB 720-171654/4

Matrix: Solid

Analysis Batch: 171654

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		5.0		ug/Kg			11/26/14 11:19	1
Ethylbenzene	ND		5.0		ug/Kg			11/26/14 11:19	1
Methyl tert-butyl ether	ND		5.0		ug/Kg			11/26/14 11:19	1
MTBE	ND		5.0		ug/Kg			11/26/14 11:19	1
Toluene	ND		5.0		ug/Kg			11/26/14 11:19	1
EDB	ND		5.0		ug/Kg			11/26/14 11:19	1
Xylenes, Total	ND		10		ug/Kg			11/26/14 11:19	1

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: MB 720-171654/4
Matrix: Solid
Analysis Batch: 171654

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-DCA	ND		5.0		ug/Kg			11/26/14 11:19	1
Gasoline Range Organics (GRO) -C6-C12	ND		250		ug/Kg			11/26/14 11:19	1
Naphthalene	ND		10		ug/Kg			11/26/14 11:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		45 - 131		11/26/14 11:19	1
1,2-Dichloroethane-d4 (Surr)	105		60 - 140		11/26/14 11:19	1
Toluene-d8 (Surr)	93		58 - 140		11/26/14 11:19	1

Lab Sample ID: LCS 720-171654/5
Matrix: Solid
Analysis Batch: 171654

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	47.8		ug/Kg		96	70 - 130
Ethylbenzene	50.0	47.4		ug/Kg		95	80 - 137
Methyl tert-butyl ether	50.0	52.8		ug/Kg		106	70 - 144
MTBE	50.0	52.8		ug/Kg		106	70 - 144
m-Xylene & p-Xylene	50.0	47.9		ug/Kg		96	70 - 146
o-Xylene	50.0	48.1		ug/Kg		96	70 - 140
Toluene	50.0	46.5		ug/Kg		93	80 - 128
EDB	50.0	54.5		ug/Kg		109	70 - 140
1,2-DCA	50.0	55.9		ug/Kg		112	70 - 130
Naphthalene	50.0	51.5		ug/Kg		103	60 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	98		45 - 131
1,2-Dichloroethane-d4 (Surr)	105		60 - 140
Toluene-d8 (Surr)	97		58 - 140

Lab Sample ID: LCS 720-171654/7
Matrix: Solid
Analysis Batch: 171654

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	1000	1090		ug/Kg		109	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	100		45 - 131
1,2-Dichloroethane-d4 (Surr)	107		60 - 140
Toluene-d8 (Surr)	96		58 - 140

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-171654/6

Matrix: Solid

Analysis Batch: 171654

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	47.7		ug/Kg		95	70 - 130	0	20
Ethylbenzene	50.0	47.1		ug/Kg		94	80 - 137	1	20
Methyl tert-butyl ether	50.0	49.8		ug/Kg		100	70 - 144	6	20
MTBE	50.0	49.8		ug/Kg		100	70 - 144	6	20
m-Xylene & p-Xylene	50.0	47.3		ug/Kg		95	70 - 146	1	20
o-Xylene	50.0	47.6		ug/Kg		95	70 - 140	1	20
Toluene	50.0	46.2		ug/Kg		92	80 - 128	1	20
EDB	50.0	51.9		ug/Kg		104	70 - 140	5	20
1,2-DCA	50.0	52.9		ug/Kg		106	70 - 130	6	20
Naphthalene	50.0	50.2		ug/Kg		100	60 - 147	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	95		45 - 131
1,2-Dichloroethane-d4 (Surr)	105		60 - 140
Toluene-d8 (Surr)	98		58 - 140

Lab Sample ID: LCSD 720-171654/8

Matrix: Solid

Analysis Batch: 171654

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12	1000	1100		ug/Kg		110	64 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	99		45 - 131
1,2-Dichloroethane-d4 (Surr)	106		60 - 140
Toluene-d8 (Surr)	96		58 - 140

Lab Sample ID: MB 720-171775/6

Matrix: Solid

Analysis Batch: 171775

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		5.0		ug/Kg			12/01/14 10:06	1
Ethylbenzene	ND		5.0		ug/Kg			12/01/14 10:06	1
Methyl tert-butyl ether	ND		5.0		ug/Kg			12/01/14 10:06	1
Toluene	ND		5.0		ug/Kg			12/01/14 10:06	1
EDB	ND		5.0		ug/Kg			12/01/14 10:06	1
Xylenes, Total	ND		10		ug/Kg			12/01/14 10:06	1
1,2-DCA	ND		5.0		ug/Kg			12/01/14 10:06	1
Gasoline Range Organics (GRO) -C6-C12	ND		250		ug/Kg			12/01/14 10:06	1
Naphthalene	ND		10		ug/Kg			12/01/14 10:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		45 - 131		12/01/14 10:06	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: MB 720-171775/6
Matrix: Solid
Analysis Batch: 171775

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

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	87		60 - 140		12/01/14 10:06	1
Toluene-d8 (Surr)	95		58 - 140		12/01/14 10:06	1

Lab Sample ID: LCS 720-171775/7
Matrix: Solid
Analysis Batch: 171775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Benzene	50.0	47.1		ug/Kg		94	70 - 130	
Ethylbenzene	50.0	45.5		ug/Kg		91	80 - 137	
Methyl tert-butyl ether	50.0	45.2		ug/Kg		90	70 - 144	
m-Xylene & p-Xylene	50.0	45.5		ug/Kg		91	70 - 146	
o-Xylene	50.0	45.3		ug/Kg		91	70 - 140	
Toluene	50.0	46.5		ug/Kg		93	80 - 128	
EDB	50.0	51.0		ug/Kg		102	70 - 140	
1,2-DCA	50.0	43.5		ug/Kg		87	70 - 130	
Naphthalene	50.0	50.7		ug/Kg		101	60 - 147	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	89		45 - 131
1,2-Dichloroethane-d4 (Surr)	91		60 - 140
Toluene-d8 (Surr)	97		58 - 140

Lab Sample ID: LCS 720-171775/9
Matrix: Solid
Analysis Batch: 171775

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits	
Gasoline Range Organics (GRO) -C6-C12	1000	1000		ug/Kg		100	64 - 120	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	91		45 - 131
1,2-Dichloroethane-d4 (Surr)	89		60 - 140
Toluene-d8 (Surr)	96		58 - 140

Lab Sample ID: LCSD 720-171775/10
Matrix: Solid
Analysis Batch: 171775

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits		RPD	Limit
Gasoline Range Organics (GRO) -C6-C12	1000	996		ug/Kg		100	64 - 120	1	20	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	92		45 - 131
1,2-Dichloroethane-d4 (Surr)	90		60 - 140

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-171775/10
Matrix: Solid
Analysis Batch: 171775

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

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	96		58 - 140

Lab Sample ID: LCSD 720-171775/8
Matrix: Solid
Analysis Batch: 171775

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	46.3		ug/Kg		93	70 - 130	2	20
Ethylbenzene	50.0	45.0		ug/Kg		90	80 - 137	1	20
Methyl tert-butyl ether	50.0	47.8		ug/Kg		96	70 - 144	6	20
m-Xylene & p-Xylene	50.0	45.0		ug/Kg		90	70 - 146	1	20
o-Xylene	50.0	44.7		ug/Kg		89	70 - 140	1	20
Toluene	50.0	46.8		ug/Kg		94	80 - 128	1	20
EDB	50.0	52.9		ug/Kg		106	70 - 140	4	20
1,2-DCA	50.0	44.4		ug/Kg		89	70 - 130	2	20
Naphthalene	50.0	54.3		ug/Kg		109	60 - 147	7	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	90		45 - 131
1,2-Dichloroethane-d4 (Surr)	91		60 - 140
Toluene-d8 (Surr)	97		58 - 140

Method: 8270C SIM - PAHs by GCMS (SIM)

Lab Sample ID: MB 720-172018/1-A
Matrix: Solid
Analysis Batch: 172091

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 172018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Acenaphthylene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Anthracene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[a]anthracene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[a]pyrene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[b]fluoranthene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[g,h,i]perylene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[k]fluoranthene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Chrysene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Dibenz(a,h)anthracene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Fluoranthene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Fluorene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Indeno[1,2,3-cd]pyrene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Naphthalene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Phenanthrene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Pyrene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8270C SIM - PAHs by GCMS (SIM) (Continued)

Lab Sample ID: MB 720-172018/1-A

Matrix: Solid

Analysis Batch: 172091

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172018

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl	77		33 - 120	12/04/14 10:23	12/05/14 14:16	1
Terphenyl-d14	84		35 - 146	12/04/14 10:23	12/05/14 14:16	1

Lab Sample ID: LCS 720-172018/2-A

Matrix: Solid

Analysis Batch: 172091

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 172018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.	
							Limits	
Acenaphthene	333	218		ug/Kg		65	49 - 120	
Acenaphthylene	333	240		ug/Kg		72	52 - 120	
Anthracene	333	296		ug/Kg		89	52 - 120	
Benzo[a]anthracene	333	295		ug/Kg		88	52 - 120	
Benzo[a]pyrene	333	307		ug/Kg		92	54 - 120	
Benzo[b]fluoranthene	333	286		ug/Kg		86	51 - 120	
Benzo[g,h,i]perylene	333	325		ug/Kg		98	48 - 120	
Benzo[k]fluoranthene	333	305		ug/Kg		91	56 - 120	
Chrysene	333	259		ug/Kg		78	40 - 120	
Dibenz(a,h)anthracene	333	328		ug/Kg		98	50 - 120	
Fluoranthene	333	303		ug/Kg		91	57 - 120	
Fluorene	333	250		ug/Kg		75	52 - 120	
Indeno[1,2,3-cd]pyrene	333	328		ug/Kg		98	48 - 120	
Naphthalene	333	209		ug/Kg		63	46 - 120	
Phenanthrene	333	263		ug/Kg		79	48 - 120	
Pyrene	333	290		ug/Kg		87	53 - 120	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	70		33 - 120
Terphenyl-d14	94		35 - 146

Lab Sample ID: 720-61520-5 MS

Matrix: Solid

Analysis Batch: 172091

Client Sample ID: GP-2-2-3

Prep Type: Total/NA

Prep Batch: 172018

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec.	
									Limits	
Acenaphthene	ND		331	249		ug/Kg		75	33 - 120	
Acenaphthylene	ND		331	279		ug/Kg		84	28 - 120	
Anthracene	ND		331	314		ug/Kg		95	36 - 120	
Benzo[a]anthracene	ND		331	336		ug/Kg		88	29 - 120	
Benzo[a]pyrene	ND		331	299		ug/Kg		90	24 - 120	
Benzo[b]fluoranthene	ND		331	322		ug/Kg		77	17 - 132	
Benzo[g,h,i]perylene	ND		331	257		ug/Kg		78	21 - 120	
Benzo[k]fluoranthene	ND		331	295		ug/Kg		89	35 - 120	
Chrysene	ND		331	330		ug/Kg		75	29 - 120	
Dibenz(a,h)anthracene	ND		331	258		ug/Kg		78	36 - 120	
Fluoranthene	ND		331	318		ug/Kg		88	24 - 120	
Fluorene	ND		331	264		ug/Kg		80	35 - 120	
Indeno[1,2,3-cd]pyrene	ND		331	247		ug/Kg		74	20 - 126	
Naphthalene	ND		331	251		ug/Kg		76	32 - 120	

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8270C SIM - PAHs by GCMS (SIM) (Continued)

Lab Sample ID: 720-61520-5 MS

Matrix: Solid

Analysis Batch: 172091

Client Sample ID: GP-2-2-3

Prep Type: Total/NA

Prep Batch: 172018

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Phenanthrene	ND		331	328		ug/Kg		71	28 - 120
Pyrene	ND		331	327		ug/Kg		82	24 - 123
Surrogate	%Recovery	MS Qualifier	Limits						
2-Fluorobiphenyl	84		33 - 120						
Terphenyl-d14	89		35 - 146						

Lab Sample ID: 720-61520-5 MSD

Matrix: Solid

Analysis Batch: 172091

Client Sample ID: GP-2-2-3

Prep Type: Total/NA

Prep Batch: 172018

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
	Result	Qualifier	Added	Result	Qualifier						
Acenaphthene	ND		331	246		ug/Kg		74	33 - 120	1	20
Acenaphthylene	ND		331	284		ug/Kg		86	28 - 120	2	20
Anthracene	ND		331	327		ug/Kg		99	36 - 120	4	20
Benzo[a]anthracene	ND		331	379		ug/Kg		101	29 - 120	12	20
Benzo[a]pyrene	ND		331	313		ug/Kg		94	24 - 120	5	20
Benzo[b]fluoranthene	ND		331	330		ug/Kg		80	17 - 132	2	20
Benzo[g,h,i]perylene	ND		331	247		ug/Kg		75	21 - 120	4	20
Benzo[k]fluoranthene	ND		331	293		ug/Kg		88	35 - 120	1	20
Chrysene	ND		331	394		ug/Kg		94	29 - 120	18	20
Dibenz(a,h)anthracene	ND		331	244		ug/Kg		74	36 - 120	5	20
Fluoranthene	ND		331	308		ug/Kg		85	24 - 120	3	20
Fluorene	ND		331	256		ug/Kg		77	35 - 120	3	20
Indeno[1,2,3-cd]pyrene	ND		331	218		ug/Kg		66	20 - 126	13	20
Naphthalene	ND		331	233		ug/Kg		70	32 - 120	8	20
Phenanthrene	ND		331	435	F2	ug/Kg		103	28 - 120	28	20
Pyrene	ND		331	356		ug/Kg		91	24 - 123	8	20
Surrogate	%Recovery	MSD Qualifier	Limits								
2-Fluorobiphenyl	80		33 - 120								
Terphenyl-d14	87		35 - 146								

Lab Sample ID: MB 720-172090/1-A

Matrix: Solid

Analysis Batch: 172155

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172090

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acenaphthene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Acenaphthylene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Anthracene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Benzo[a]anthracene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Benzo[a]pyrene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Benzo[b]fluoranthene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Benzo[g,h,i]perylene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Benzo[k]fluoranthene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Chrysene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Dibenz(a,h)anthracene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8270C SIM - PAHs by GCMS (SIM) (Continued)

Lab Sample ID: MB 720-172090/1-A

Matrix: Solid

Analysis Batch: 172155

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172090

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Fluoranthene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Fluorene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Indeno[1,2,3-cd]pyrene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Naphthalene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Phenanthrene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1
Pyrene	ND		4.9		ug/Kg		12/05/14 09:05	12/06/14 13:05	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	83		33 - 120	12/05/14 09:05	12/06/14 13:05	1
Terphenyl-d14	85		35 - 146	12/05/14 09:05	12/06/14 13:05	1

Lab Sample ID: LCS 720-172090/2-A

Matrix: Solid

Analysis Batch: 172155

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 172090

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	331	204		ug/Kg		62	49 - 120
Acenaphthylene	331	223		ug/Kg		67	52 - 120
Anthracene	331	256		ug/Kg		77	52 - 120
Benzo[a]anthracene	331	264		ug/Kg		80	52 - 120
Benzo[a]pyrene	331	277		ug/Kg		84	54 - 120
Benzo[b]fluoranthene	331	258		ug/Kg		78	51 - 120
Benzo[g,h,i]perylene	331	302		ug/Kg		91	48 - 120
Benzo[k]fluoranthene	331	278		ug/Kg		84	56 - 120
Chrysene	331	233		ug/Kg		70	40 - 120
Dibenz(a,h)anthracene	331	301		ug/Kg		91	50 - 120
Fluoranthene	331	263		ug/Kg		79	57 - 120
Fluorene	331	222		ug/Kg		67	52 - 120
Indeno[1,2,3-cd]pyrene	331	301		ug/Kg		91	48 - 120
Naphthalene	331	208		ug/Kg		63	46 - 120
Phenanthrene	331	234		ug/Kg		71	48 - 120
Pyrene	331	263		ug/Kg		79	53 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	65		33 - 120
Terphenyl-d14	86		35 - 146

Lab Sample ID: 720-61520-4 MS

Matrix: Solid

Analysis Batch: 172206

Client Sample ID: GP-4-7.5-8

Prep Type: Total/NA

Prep Batch: 172090

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	5.1		332	225		ug/Kg		66	33 - 120
Acenaphthylene	6.0		332	233		ug/Kg		68	28 - 120
Anthracene	6.8		332	305		ug/Kg		90	36 - 120
Benzo[a]anthracene	17		332	286		ug/Kg		81	29 - 120
Benzo[a]pyrene	21		332	267		ug/Kg		74	24 - 120
Benzo[b]fluoranthene	42		332	264		ug/Kg		67	17 - 132

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8270C SIM - PAHs by GCMS (SIM) (Continued)

Lab Sample ID: 720-61520-4 MS

Matrix: Solid

Analysis Batch: 172206

Client Sample ID: GP-4-7.5-8

Prep Type: Total/NA

Prep Batch: 172090

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec. Limits
	Result	Qualifier	Added	Result	Qualifier				
Benzo[g,h,i]perylene	23		332	266		ug/Kg		73	21 - 120
Benzo[k]fluoranthene	12		332	293		ug/Kg		85	35 - 120
Chrysene	26		332	248		ug/Kg		67	29 - 120
Dibenz(a,h)anthracene	5.0		332	265		ug/Kg		78	36 - 120
Fluoranthene	39		332	325		ug/Kg		86	24 - 120
Fluorene	9.3		332	253		ug/Kg		73	35 - 120
Indeno[1,2,3-cd]pyrene	17		332	263		ug/Kg		74	20 - 126
Naphthalene	430		332	959	F1	ug/Kg		158	32 - 120
Phenanthrene	29		332	401		ug/Kg		112	28 - 120
Pyrene	36		332	323		ug/Kg		87	24 - 123

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	63		33 - 120
Terphenyl-d14	84		35 - 146

Lab Sample ID: 720-61520-4 MSD

Matrix: Solid

Analysis Batch: 172206

Client Sample ID: GP-4-7.5-8

Prep Type: Total/NA

Prep Batch: 172090

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec. Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier						
Acenaphthene	5.1		329	214		ug/Kg		64	33 - 120	5	20
Acenaphthylene	6.0		329	232		ug/Kg		69	28 - 120	0	20
Anthracene	6.8		329	287		ug/Kg		85	36 - 120	6	20
Benzo[a]anthracene	17		329	280		ug/Kg		80	29 - 120	2	20
Benzo[a]pyrene	21		329	271		ug/Kg		76	24 - 120	2	20
Benzo[b]fluoranthene	42		329	269		ug/Kg		69	17 - 132	2	20
Benzo[g,h,i]perylene	23		329	272		ug/Kg		76	21 - 120	2	20
Benzo[k]fluoranthene	12		329	281		ug/Kg		82	35 - 120	4	20
Chrysene	26		329	241		ug/Kg		65	29 - 120	3	20
Dibenz(a,h)anthracene	5.0		329	275		ug/Kg		82	36 - 120	4	20
Fluoranthene	39		329	301		ug/Kg		80	24 - 120	8	20
Fluorene	9.3		329	252		ug/Kg		74	35 - 120	0	20
Indeno[1,2,3-cd]pyrene	17		329	279		ug/Kg		80	20 - 126	6	20
Naphthalene	430		329	505	F1 F2	ug/Kg		22	32 - 120	62	20
Phenanthrene	29		329	267	F2	ug/Kg		72	28 - 120	40	20
Pyrene	36		329	297		ug/Kg		80	24 - 123	9	20

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	71		33 - 120
Terphenyl-d14	87		35 - 146

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 720-172019/1-A

Matrix: Solid

Analysis Batch: 172096

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172019

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		1.0		mg/Kg		12/04/14 10:28	12/05/14 16:06	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	85		40 - 130				12/04/14 10:28	12/05/14 16:06	1

Lab Sample ID: LCS 720-172019/2-A

Matrix: Solid

Analysis Batch: 172074

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 172019

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	83.1	84.6		mg/Kg		102	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
p-Terphenyl	115		40 - 130				

Lab Sample ID: MB 720-172087/1-A

Matrix: Solid

Analysis Batch: 172148

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172087

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		0.99		mg/Kg		12/05/14 08:58	12/08/14 10:36	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	91		40 - 130				12/05/14 08:58	12/08/14 10:36	1

Lab Sample ID: LCS 720-172087/2-A

Matrix: Solid

Analysis Batch: 172148

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 172087

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	82.7	77.4		mg/Kg		94	50 - 150
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
p-Terphenyl	101		40 - 130				

TestAmerica Pleasanton

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

GC/MS VOA

Analysis Batch: 171654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-1	GP-1-4.5-5	Total/NA	Solid	8260B/CA_LUFT MS	171687
720-61520-2	GP-1-6.5-7	Total/NA	Solid	8260B/CA_LUFT MS	171683
720-61520-3	GP-4-4.5-5	Total/NA	Solid	8260B/CA_LUFT MS	171687
720-61520-4	GP-4-7.5-8	Total/NA	Solid	8260B/CA_LUFT MS	171683
720-61520-5	GP-2-2-3	Total/NA	Solid	8260B/CA_LUFT MS	171687
720-61520-6	GP-2-4.5-5	Total/NA	Solid	8260B/CA_LUFT MS	171687
LCS 720-171654/5	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCS 720-171654/7	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171654/6	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171654/8	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
MB 720-171654/4	Method Blank	Total/NA	Solid	8260B/CA_LUFT MS	

Prep Batch: 171683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-2	GP-1-6.5-7	Total/NA	Solid	5030B	
720-61520-4	GP-4-7.5-8	Total/NA	Solid	5030B	

Prep Batch: 171687

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-1	GP-1-4.5-5	Total/NA	Solid	5035	
720-61520-3	GP-4-4.5-5	Total/NA	Solid	5035	
720-61520-5	GP-2-2-3	Total/NA	Solid	5035	
720-61520-6	GP-2-4.5-5	Total/NA	Solid	5035	

Prep Batch: 171747

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-7	GP-2-6.7-7	Total/NA	Solid	5030B	

Analysis Batch: 171775

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-7	GP-2-6.7-7	Total/NA	Solid	8260B/CA_LUFT MS	171747
LCS 720-171775/7	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCS 720-171775/9	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171775/10	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171775/8	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
MB 720-171775/6	Method Blank	Total/NA	Solid	8260B/CA_LUFT MS	

TestAmerica Pleasanton

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

GC/MS VOA (Continued)

Analysis Batch: 171797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-3	GP-4-4.5-5	Total/NA	Solid	8260B	171818
LCS 720-171797/7	Lab Control Sample	Total/NA	Solid	8260B	
LCS 720-171797/8	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 720-171797/4	Method Blank	Total/NA	Solid	8260B	

Prep Batch: 171818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-3	GP-4-4.5-5	Total/NA	Solid	5035	

GC/MS Semi VOA

Prep Batch: 172018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-1	GP-1-4.5-5	Total/NA	Solid	3546	
720-61520-2	GP-1-6.5-7	Total/NA	Solid	3546	
720-61520-3	GP-4-4.5-5	Total/NA	Solid	3546	
720-61520-5	GP-2-2-3	Total/NA	Solid	3546	
720-61520-5 MS	GP-2-2-3	Total/NA	Solid	3546	
720-61520-5 MSD	GP-2-2-3	Total/NA	Solid	3546	
720-61520-6	GP-2-4.5-5	Total/NA	Solid	3546	
LCS 720-172018/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 720-172018/1-A	Method Blank	Total/NA	Solid	3546	

Prep Batch: 172090

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-4	GP-4-7.5-8	Total/NA	Solid	3546	
720-61520-4 MS	GP-4-7.5-8	Total/NA	Solid	3546	
720-61520-4 MSD	GP-4-7.5-8	Total/NA	Solid	3546	
720-61520-7	GP-2-6.7-7	Total/NA	Solid	3546	
LCS 720-172090/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 720-172090/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 172091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-1	GP-1-4.5-5	Total/NA	Solid	8270C SIM	172018
720-61520-2	GP-1-6.5-7	Total/NA	Solid	8270C SIM	172018
720-61520-3	GP-4-4.5-5	Total/NA	Solid	8270C SIM	172018
720-61520-5	GP-2-2-3	Total/NA	Solid	8270C SIM	172018
720-61520-5 MS	GP-2-2-3	Total/NA	Solid	8270C SIM	172018
720-61520-5 MSD	GP-2-2-3	Total/NA	Solid	8270C SIM	172018
720-61520-6	GP-2-4.5-5	Total/NA	Solid	8270C SIM	172018
LCS 720-172018/2-A	Lab Control Sample	Total/NA	Solid	8270C SIM	172018
MB 720-172018/1-A	Method Blank	Total/NA	Solid	8270C SIM	172018

Analysis Batch: 172155

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-4	GP-4-7.5-8	Total/NA	Solid	8270C SIM	172090
LCS 720-172090/2-A	Lab Control Sample	Total/NA	Solid	8270C SIM	172090
MB 720-172090/1-A	Method Blank	Total/NA	Solid	8270C SIM	172090

TestAmerica Pleasanton

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

GC/MS Semi VOA (Continued)

Analysis Batch: 172206

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-4 MS	GP-4-7.5-8	Total/NA	Solid	8270C SIM	172090
720-61520-4 MSD	GP-4-7.5-8	Total/NA	Solid	8270C SIM	172090
720-61520-7	GP-2-6.7-7	Total/NA	Solid	8270C SIM	172090

GC Semi VOA

Prep Batch: 172019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-1	GP-1-4.5-5	Total/NA	Solid	3546	
720-61520-3	GP-4-4.5-5	Total/NA	Solid	3546	
720-61520-5	GP-2-2-3	Total/NA	Solid	3546	
720-61520-6	GP-2-4.5-5	Total/NA	Solid	3546	
LCS 720-172019/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 720-172019/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 172074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 720-172019/2-A	Lab Control Sample	Total/NA	Solid	8015B	172019

Prep Batch: 172087

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-2	GP-1-6.5-7	Total/NA	Solid	3546	
720-61520-4	GP-4-7.5-8	Total/NA	Solid	3546	
720-61520-7	GP-2-6.7-7	Total/NA	Solid	3546	
LCS 720-172087/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 720-172087/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 172096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-3	GP-4-4.5-5	Total/NA	Solid	8015B	172019
720-61520-6	GP-2-4.5-5	Total/NA	Solid	8015B	172019
MB 720-172019/1-A	Method Blank	Total/NA	Solid	8015B	172019

Analysis Batch: 172148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-4	GP-4-7.5-8	Total/NA	Solid	8015B	172087
LCS 720-172087/2-A	Lab Control Sample	Total/NA	Solid	8015B	172087
MB 720-172087/1-A	Method Blank	Total/NA	Solid	8015B	172087

Analysis Batch: 172149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-1	GP-1-4.5-5	Total/NA	Solid	8015B	172019
720-61520-2	GP-1-6.5-7	Total/NA	Solid	8015B	172087
720-61520-5	GP-2-2-3	Total/NA	Solid	8015B	172019

Analysis Batch: 172154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61520-7	GP-2-6.7-7	Total/NA	Solid	8015B	172087

TestAmerica Pleasanton

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-1-4.5-5

Date Collected: 11/25/14 10:20

Date Received: 11/25/14 17:55

Lab Sample ID: 720-61520-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171687	11/25/14 22:06	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171654	11/26/14 17:28	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		20	172091	12/05/14 21:36	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		50	172149	12/08/14 12:16	JXL	TAL PLS

Client Sample ID: GP-1-6.5-7

Date Collected: 11/25/14 10:45

Date Received: 11/25/14 17:55

Lab Sample ID: 720-61520-2

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			171683	11/26/14 13:30	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171654	11/26/14 14:39	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		10	172091	12/05/14 21:59	MQL	TAL PLS
Total/NA	Prep	3546			172087	12/05/14 08:58	NDU	TAL PLS
Total/NA	Analysis	8015B		50	172149	12/08/14 11:27	JXL	TAL PLS

Client Sample ID: GP-4-4.5-5

Date Collected: 11/25/14 12:00

Date Received: 11/25/14 17:55

Lab Sample ID: 720-61520-3

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171818	11/25/14 22:06	ASC	TAL PLS
Total/NA	Analysis	8260B		100	171797	12/01/14 18:26	LPL	TAL PLS
Total/NA	Prep	5035			171687	11/25/14 22:06	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171654	11/26/14 17:56	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		2	172091	12/05/14 22:23	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		1	172096	12/05/14 23:24	JXL	TAL PLS

Client Sample ID: GP-4-7.5-8

Date Collected: 11/25/14 12:30

Date Received: 11/25/14 17:55

Lab Sample ID: 720-61520-4

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			171683	11/26/14 13:30	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171654	11/26/14 15:07	LPL	TAL PLS
Total/NA	Prep	3546			172090	12/05/14 09:05	AFM	TAL PLS
Total/NA	Analysis	8270C SIM		1	172155	12/06/14 14:15	MQL	TAL PLS
Total/NA	Prep	3546			172087	12/05/14 08:58	NDU	TAL PLS

TestAmerica Pleasanton

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Client Sample ID: GP-4-7.5-8

Lab Sample ID: 720-61520-4

Date Collected: 11/25/14 12:30

Matrix: Solid

Date Received: 11/25/14 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015B		1	172148	12/08/14 16:03	DCH	TAL PLS

Client Sample ID: GP-2-2-3

Lab Sample ID: 720-61520-5

Date Collected: 11/25/14 14:15

Matrix: Solid

Date Received: 11/25/14 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171687	11/25/14 22:06	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171654	11/26/14 18:24	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		10	172091	12/05/14 19:41	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		20	172149	12/08/14 11:52	JXL	TAL PLS

Client Sample ID: GP-2-4.5-5

Lab Sample ID: 720-61520-6

Date Collected: 11/25/14 14:15

Matrix: Solid

Date Received: 11/25/14 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171687	11/25/14 22:06	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171654	11/26/14 18:52	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		5	172091	12/05/14 22:46	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		3	172096	12/05/14 23:53	JXL	TAL PLS

Client Sample ID: GP-2-6.7-7

Lab Sample ID: 720-61520-7

Date Collected: 11/25/14 14:45

Matrix: Solid

Date Received: 11/25/14 17:55

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			171747	11/28/14 11:24	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171775	12/01/14 15:17	ASC	TAL PLS
Total/NA	Prep	3546			172090	12/05/14 09:05	AFM	TAL PLS
Total/NA	Analysis	8270C SIM		20	172206	12/08/14 17:30	MQL	TAL PLS
Total/NA	Prep	3546			172087	12/05/14 08:58	NDU	TAL PLS
Total/NA	Analysis	8015B		10	172154	12/07/14 00:15	DCH	TAL PLS

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Laboratory: TestAmerica Pleasanton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-16

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PLS
8260B/CA_LUFTM S	8260B / CA LUFT MS	SW846	TAL PLS
8270C SIM	PAHs by GCMS (SIM)	SW846	TAL PLS
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL PLS

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919



Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61520-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-61520-1	GP-1-4.5-5	Solid	11/25/14 10:20	11/25/14 17:55
720-61520-2	GP-1-6.5-7	Solid	11/25/14 10:45	11/25/14 17:55
720-61520-3	GP-4-4.5-5	Solid	11/25/14 12:00	11/25/14 17:55
720-61520-4	GP-4-7.5-8	Solid	11/25/14 12:30	11/25/14 17:55
720-61520-5	GP-2-2-3	Solid	11/25/14 14:15	11/25/14 17:55
720-61520-6	GP-2-4.5-5	Solid	11/25/14 14:15	11/25/14 17:55
720-61520-7	GP-2-6.7-7	Solid	11/25/14 14:45	11/25/14 17:55





Calscience Environmental Laboratories, Inc.

SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

720-61520

157866
CHAIN OF CUSTODY RECORD

Date 11/25/2014
Page 1 of 1

LABORATORY CLIENT: ARCADIS U.S., Inc.				CLIENT PROJECT NAME / NUMBER: CA11126/GP09BPNA.C044.C000				P.O. NO.:																					
ADDRESS: 100 Smith Ranch Rd., Suite 329				PROJECT CONTACT: Jamey Peterson				LAB USE ONLY <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>																					
CITY: San Rafael		STATE: CA		ZIP:		SAMPLER(S): (PRINT) Kevin Corrigan/Connie Williams		COELT LOG CODE <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>		COOLER RECEIPT TEMP: _____ °C																			
TEL: 707-889-6739		E-MAIL: jamey.peterson@arcadis-us.com		REQUESTED ANALYSES <table border="1" style="width:100%; border-collapse: collapse; font-size: small;"> <tr> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH (g) (8260)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH (d) or (C6-C36) or (C6-C44)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHs (8015)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">BTEX / MTBE (8260B) or ()</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCs (8260B)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Oxygenates (8260B)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Encore Prep (5035)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">SVOCs (8270C)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Pesticides (8081A)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PCBs (8082)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PNAAs (8310) or (8270C)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">T22 Metals (6010B/747X)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Cr(VI) (7196A or 7199 or 218.6)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">VOCs (TO-14A) or (TO-15)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">TPH (g) [TO-3]*</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">PAHs (8270)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">Naphthalene (8260)</td> <td style="writing-mode: vertical-rl; transform: rotate(180deg);">1,2-DCA; EDB (8260)</td> </tr> </table>								TPH (g) (8260)	TPH (d) or (C6-C36) or (C6-C44)	PAHs (8015)	BTEX / MTBE (8260B) or ()	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) (7196A or 7199 or 218.6)	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]*	PAHs (8270)	Naphthalene (8260)	1,2-DCA; EDB (8260)
TPH (g) (8260)	TPH (d) or (C6-C36) or (C6-C44)	PAHs (8015)	BTEX / MTBE (8260B) or ()									VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) (7196A or 7199 or 218.6)	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]*	PAHs (8270)	Naphthalene (8260)	1,2-DCA; EDB (8260)				
TURNAROUND TIME: <input type="checkbox"/> SAME DAY <input type="checkbox"/> 24 HR <input type="checkbox"/> 48 HR <input type="checkbox"/> 72 HR <input checked="" type="checkbox"/> STANDARD																													
SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY) <input type="checkbox"/> RWQCB REPORTING FORMS <input type="checkbox"/> COELT EDF <input type="checkbox"/>																													
SPECIAL INSTRUCTIONS: please send results & logins to email above																													
LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING		MATRIX	NO. OF CONT.	TPH (g) (8260)	TPH (d) or (C6-C36) or (C6-C44)	PAHs (8015)	BTEX / MTBE (8260B) or ()	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) (7196A or 7199 or 218.6)	VOCs (TO-14A) or (TO-15)	TPH (g) [TO-3]*	PAHs (8270)	Naphthalene (8260)	1,2-DCA; EDB (8260)					
			DATE	TIME																									
	1 GP-4.5-5		11/25/14	10:20	S	4	X	X	X													X	X	X					
	2 GP-1-6.5-7		11/25/14	10:45	S	1	X	X	X													X	X	X					
	3 GP-4-4.5-5		11/25/14	12:00	S	4	X	X	X													X	X	X					
	4 GP-4-7.5-8		11/25/14	12:30	S	2	X	X	X													X	X	X					
	5 GP-2-2-3		11/25/14	14:15	S	4	X	X	X													X	X	X					
	6 GP-2-4.5-5		11/25/14	14:15	S	4	X	X	X													X	X	X					
	7 GP-2-6.7-7		11/25/14	14:45	S	1	X	X	X													X	X	X					



Relinquished by: (Signature) <i>[Signature]</i>		Received by: (Signature) EMAL		Date: 11/25/14	Time: 4PM
Relinquished by: (Signature) EMAL		Received by: (Signature/Affiliation) <i>[Signature]</i>		Date: 11/25/14	Time: 1755
Relinquished by: (Signature)		Received by: (Signature/Affiliation)		Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

3.1°C

05/01/07 Revision

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 720-61520-1

Login Number: 61520

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Bullock, Tracy

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



TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

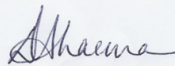
ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Pleasanton
1220 Quarry Lane
Pleasanton, CA 94566
Tel: (925)484-1919

TestAmerica Job ID: 720-61486-1
Client Project/Site: BP #11126, Emeryville

For:
ARCADIS U.S., Inc.
100 Montgomery Street
Suite 300
San Francisco, California 94104

Attn: Hollis Phillips



Authorized for release by:
12/9/2014 4:11:51 PM

Dimple Sharma, Senior Project Manager
(925)484-1919
dimple.sharma@testamericainc.com

LINKS

Review your project
results through
TotalAccess

Have a Question?



Visit us at:
www.testamericainc.com

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

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

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Definitions/Glossary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
D	Surrogate or matrix spike recoveries were not obtained because the extract was diluted for analysis; also compounds analyzed at a dilution may be flagged with a D.
X	Surrogate is outside control limits
B	Compound was found in the blank and sample.

Glossary

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

Case Narrative

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Job ID: 720-61486-1

Laboratory: TestAmerica Pleasanton

Narrative

Job Narrative 720-61486-1

Comments

No additional comments.

Receipt

The samples were received on 11/24/2014 4:43 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 1.1° C and 1.5° C.

Except:

The following samples were received in pre-weighed containers with a label that was added in the field, which would cause a slight low bias in the final results.

Sample GP-3-3.5-4.5 was received with an extra label on the terracore vials. Terracore should only be received with the label it comes with and not an added label. Weights on vials for this sample were also covered.

GC/MS VOA

Method 8260B: Surrogate recovery for the following sample was outside control limits: GP-3-3-3.5 (720-61486-8), GP-6-4.5-5 (720-61486-3), GP-6-5-5.5 (720-61486-4), GP-6-6-6.5 (720-61486-5). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

GC/MS Semi VOA

Method 8270C SIM: The following sample was diluted due to the abundance of non-target analytes: GP-5-4.5-5 (720-61486-6), GP-5-6-6.5 (720-61486-7), GP-6-5-5.5 (720-61486-4). Elevated reporting limits (RLs) are provided.

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

GC VOA

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

GC Semi VOA

Method 8015B: The method blank for batch 172019 contained C10-C28 above the 8015M_DRO method reporting limit (RL). Associated samples were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 8015B: The following samples required a dilution due to the nature of the sample matrix: GP-6-5-5.5 (720-61486-4), GP-6-6-6.5 (720-61486-5), GP-3-9.5-10 (720-61486-10), GP-5-4.5-5 (720-61486-6). Because of this dilution, the surrogate spike concentration in the sample was reduced to a level where the recovery calculation does not provide useful information.

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

Organic Prep

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

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-5-GW

Lab Sample ID: 720-61486-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
MTBE	11		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Benzene	2.1		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	1.2		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Toluene	1.8		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	3.1		1.0		ug/L	1		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C6-C12	2400		50		ug/L	1		8260B/CA_LUFT MS	Total/NA
TAME	5.1		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Naphthalene	0.42		0.10		ug/L	1		8270C SIM	Total/NA
Acenaphthene	0.14		0.10		ug/L	1		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	460		51		ug/L	1		8015B	Total/NA

Client Sample ID: GP-6-GW

Lab Sample ID: 720-61486-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
MTBE	9.8		0.50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	1.6		1.0		ug/L	1		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C6-C12	600		50		ug/L	1		8260B/CA_LUFT MS	Total/NA
Naphthalene	0.40		0.10		ug/L	1		8270C SIM	Total/NA
Acenaphthene	1.2		0.10		ug/L	1		8270C SIM	Total/NA
Acenaphthylene	0.38		0.10		ug/L	1		8270C SIM	Total/NA
Fluorene	2.2		0.10		ug/L	1		8270C SIM	Total/NA
Phenanthrene	4.5		0.10		ug/L	1		8270C SIM	Total/NA
Anthracene	0.62		0.10		ug/L	1		8270C SIM	Total/NA
Benzo[a]anthracene	0.20		0.10		ug/L	1		8270C SIM	Total/NA
Chrysene	0.44		0.10		ug/L	1		8270C SIM	Total/NA
Fluoranthene	0.27		0.10		ug/L	1		8270C SIM	Total/NA
Pyrene	0.69		0.10		ug/L	1		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	10000		100		ug/L	2		8015B	Total/NA

Client Sample ID: GP-6-4.5-5

Lab Sample ID: 720-61486-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	310000		17000		ug/Kg	100		8260B	Total/NA
Acenaphthene	10		4.9		ug/Kg	1		8270C SIM	Total/NA
Acenaphthylene	9.5		4.9		ug/Kg	1		8270C SIM	Total/NA
Anthracene	14		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[a]anthracene	4.9		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[b]fluoranthene	5.1		4.9		ug/Kg	1		8270C SIM	Total/NA
Chrysene	9.4		4.9		ug/Kg	1		8270C SIM	Total/NA
Fluorene	47		4.9		ug/Kg	1		8270C SIM	Total/NA
Phenanthrene	69		4.9		ug/Kg	1		8270C SIM	Total/NA
Pyrene	12		4.9		ug/Kg	1		8270C SIM	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-6-4.5-5 (Continued)

Lab Sample ID: 720-61486-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel Range Organics [C10-C28]	480	B	3.0		mg/Kg	3		8015B	Total/NA

Client Sample ID: GP-6-5-5.5

Lab Sample ID: 720-61486-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	32000		18000		ug/Kg	100		8260B	Total/NA
Acenaphthene	21		9.8		ug/Kg	2		8270C SIM	Total/NA
Acenaphthylene	14		9.8		ug/Kg	2		8270C SIM	Total/NA
Anthracene	22		9.8		ug/Kg	2		8270C SIM	Total/NA
Chrysene	18		9.8		ug/Kg	2		8270C SIM	Total/NA
Fluorene	83		9.8		ug/Kg	2		8270C SIM	Total/NA
Phenanthrene	140		9.8		ug/Kg	2		8270C SIM	Total/NA
Pyrene	27		9.8		ug/Kg	2		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	460		4.9		mg/Kg	5		8015B	Total/NA

Client Sample ID: GP-6-6-6.5

Lab Sample ID: 720-61486-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	300000		21000		ug/Kg	100		8260B	Total/NA
Acenaphthene	18		4.9		ug/Kg	1		8270C SIM	Total/NA
Acenaphthylene	8.2		4.9		ug/Kg	1		8270C SIM	Total/NA
Anthracene	18		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[a]anthracene	9.4		4.9		ug/Kg	1		8270C SIM	Total/NA
Chrysene	15		4.9		ug/Kg	1		8270C SIM	Total/NA
Fluoranthene	14		4.9		ug/Kg	1		8270C SIM	Total/NA
Fluorene	58		4.9		ug/Kg	1		8270C SIM	Total/NA
Naphthalene	12		4.9		ug/Kg	1		8270C SIM	Total/NA
Phenanthrene	150		4.9		ug/Kg	1		8270C SIM	Total/NA
Pyrene	28		4.9		ug/Kg	1		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	550		4.9		mg/Kg	5		8015B	Total/NA

Client Sample ID: GP-5-4.5-5

Lab Sample ID: 720-61486-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	2400		190		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Diesel Range Organics [C10-C28]	450		10		mg/Kg	10		8015B	Total/NA

Client Sample ID: GP-5-6-6.5

Lab Sample ID: 720-61486-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Gasoline Range Organics (GRO) -C6-C12	230000		23000		ug/Kg	100		8260B	Total/NA
Acenaphthene	46		9.8		ug/Kg	2		8270C SIM	Total/NA
Acenaphthylene	29		9.8		ug/Kg	2		8270C SIM	Total/NA
Anthracene	16		9.8		ug/Kg	2		8270C SIM	Total/NA
Benzo[a]anthracene	11		9.8		ug/Kg	2		8270C SIM	Total/NA
Benzo[b]fluoranthene	12		9.8		ug/Kg	2		8270C SIM	Total/NA
Chrysene	10		9.8		ug/Kg	2		8270C SIM	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-5-6-6.5 (Continued)

Lab Sample ID: 720-61486-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoranthene	26		9.8		ug/Kg	2		8270C SIM	Total/NA
Fluorene	35		9.8		ug/Kg	2		8270C SIM	Total/NA
Naphthalene	88		9.8		ug/Kg	2		8270C SIM	Total/NA
Phenanthrene	56		9.8		ug/Kg	2		8270C SIM	Total/NA
Pyrene	32		9.8		ug/Kg	2		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	180	B	3.0		mg/Kg	3		8015B	Total/NA

Client Sample ID: GP-3-3-3.5

Lab Sample ID: 720-61486-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	45		4.8		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Naphthalene	320		9.5		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	6300		450		ug/Kg	100		8260B	Total/NA
Gasoline Range Organics (GRO) -C6-C12	430000		23000		ug/Kg	100		8260B	Total/NA
Anthracene	6.7		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[a]anthracene	6.1		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[b]fluoranthene	5.1		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[g,h,i]perylene	5.5		4.9		ug/Kg	1		8270C SIM	Total/NA
Chrysene	6.1		4.9		ug/Kg	1		8270C SIM	Total/NA
Fluoranthene	17		4.9		ug/Kg	1		8270C SIM	Total/NA
Fluorene	6.4		4.9		ug/Kg	1		8270C SIM	Total/NA
Naphthalene	210		4.9		ug/Kg	1		8270C SIM	Total/NA
Phenanthrene	24		4.9		ug/Kg	1		8270C SIM	Total/NA
Pyrene	20		4.9		ug/Kg	1		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	26	B	0.99		mg/Kg	1		8015B	Total/NA

Client Sample ID: GP-3-3.5-4.5

Lab Sample ID: 720-61486-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	65		4.6		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Toluene	22		4.6		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Xylenes, Total	53		9.3		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Ethylbenzene	760		510		ug/Kg	100		8260B	Total/NA
Gasoline Range Organics (GRO) -C6-C12	140000		25000		ug/Kg	100		8260B	Total/NA
Naphthalene	2900		1000		ug/Kg	100		8260B	Total/NA
Acenaphthene	25		4.9		ug/Kg	1		8270C SIM	Total/NA
Acenaphthylene	11		4.9		ug/Kg	1		8270C SIM	Total/NA
Anthracene	14		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[a]anthracene	14		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[a]pyrene	9.7		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[b]fluoranthene	12		4.9		ug/Kg	1		8270C SIM	Total/NA
Benzo[g,h,i]perylene	8.3		4.9		ug/Kg	1		8270C SIM	Total/NA
Chrysene	14		4.9		ug/Kg	1		8270C SIM	Total/NA
Fluoranthene	41		4.9		ug/Kg	1		8270C SIM	Total/NA
Fluorene	20		4.9		ug/Kg	1		8270C SIM	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Detection Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-3-3.5-4.5 (Continued)

Lab Sample ID: 720-61486-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Indeno[1,2,3-cd]pyrene	5.2		4.9		ug/Kg	1		8270C SIM	Total/NA
Naphthalene	1400		25		ug/Kg	5		8270C SIM	Total/NA
Phenanthrene	62		4.9		ug/Kg	1		8270C SIM	Total/NA
Pyrene	45		4.9		ug/Kg	1		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	80	B	0.99		mg/Kg	1		8015B	Total/NA

Client Sample ID: GP-3-9.5-10

Lab Sample ID: 720-61486-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Methyl tert-butyl ether	460		16		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Gasoline Range Organics (GRO) -C6-C12	820		810		ug/Kg	1		8260B/CA_LUFT MS	Total/NA
Naphthalene	280		50		ug/Kg	10		8270C SIM	Total/NA
Phenanthrene	84		50		ug/Kg	10		8270C SIM	Total/NA
Diesel Range Organics [C10-C28]	180		9.9		mg/Kg	10		8015B	Total/NA

This Detection Summary does not include radiochemical test results.

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-5-GW

Lab Sample ID: 720-61486-1

Date Collected: 11/24/14 11:30

Matrix: Water

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	11		0.50		ug/L			11/28/14 12:24	1
Benzene	2.1		0.50		ug/L			11/28/14 12:24	1
EDB	ND		0.50		ug/L			11/28/14 12:24	1
1,2-DCA	ND		0.50		ug/L			11/28/14 12:24	1
Ethylbenzene	1.2		0.50		ug/L			11/28/14 12:24	1
Toluene	1.8		0.50		ug/L			11/28/14 12:24	1
Xylenes, Total	3.1		1.0		ug/L			11/28/14 12:24	1
Gasoline Range Organics (GRO)	2400		50		ug/L			11/28/14 12:24	1
-C6-C12									
TBA	ND		20		ug/L			11/28/14 12:24	1
DIPE	ND		0.50		ug/L			11/28/14 12:24	1
TAME	5.1		0.50		ug/L			11/28/14 12:24	1
Ethyl t-butyl ether	ND		0.50		ug/L			11/28/14 12:24	1
Naphthalene	ND		1.0		ug/L			11/28/14 12:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	108		67 - 130					11/28/14 12:24	1
1,2-Dichloroethane-d4 (Surr)	110		72 - 130					11/28/14 12:24	1
Toluene-d8 (Surr)	101		70 - 130					11/28/14 12:24	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.42		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Acenaphthene	0.14		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Acenaphthylene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Fluorene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Phenanthrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Anthracene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Benzo[a]anthracene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Chrysene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Benzo[a]pyrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Benzo[b]fluoranthene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Benzo[k]fluoranthene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Benzo[g,h,i]perylene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Indeno[1,2,3-cd]pyrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Fluoranthene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Pyrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Dibenz(a,h)anthracene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	52		29 - 120				12/01/14 10:27	12/02/14 14:09	1
Terphenyl-d14	64		45 - 120				12/01/14 10:27	12/02/14 14:09	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	460		51		ug/L		11/26/14 09:50	11/26/14 16:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	84		23 - 156				11/26/14 09:50	11/26/14 16:19	1

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-6-GW

Lab Sample ID: 720-61486-2

Date Collected: 11/24/14 10:15

Matrix: Water

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
MTBE	9.8		0.50		ug/L			11/28/14 12:54	1
Benzene	ND		0.50		ug/L			11/28/14 12:54	1
EDB	ND		0.50		ug/L			11/28/14 12:54	1
1,2-DCA	ND		0.50		ug/L			11/28/14 12:54	1
Ethylbenzene	ND		0.50		ug/L			11/28/14 12:54	1
Toluene	ND		0.50		ug/L			11/28/14 12:54	1
Xylenes, Total	1.6		1.0		ug/L			11/28/14 12:54	1
Gasoline Range Organics (GRO)	600		50		ug/L			11/28/14 12:54	1
-C6-C12									
TBA	ND		20		ug/L			11/28/14 12:54	1
DIPE	ND		0.50		ug/L			11/28/14 12:54	1
TAME	ND		0.50		ug/L			11/28/14 12:54	1
Ethyl t-butyl ether	ND		0.50		ug/L			11/28/14 12:54	1
Naphthalene	ND		1.0		ug/L			11/28/14 12:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	107		67 - 130					11/28/14 12:54	1
1,2-Dichloroethane-d4 (Surr)	109		72 - 130					11/28/14 12:54	1
Toluene-d8 (Surr)	98		70 - 130					11/28/14 12:54	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Naphthalene	0.40		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Acenaphthene	1.2		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Acenaphthylene	0.38		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Fluorene	2.2		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Phenanthrene	4.5		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Anthracene	0.62		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Benzo[a]anthracene	0.20		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Chrysene	0.44		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Benzo[a]pyrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Benzo[b]fluoranthene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Benzo[k]fluoranthene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Benzo[g,h,i]perylene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Indeno[1,2,3-cd]pyrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Fluoranthene	0.27		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Pyrene	0.69		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Dibenz(a,h)anthracene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 14:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	46		29 - 120				12/01/14 10:27	12/02/14 14:32	1
Terphenyl-d14	54		45 - 120				12/01/14 10:27	12/02/14 14:32	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	10000		100		ug/L		11/26/14 09:50	11/26/14 18:44	2
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	61		23 - 156				11/26/14 09:50	11/26/14 18:44	2

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-6-4.5-5

Lab Sample ID: 720-61486-3

Date Collected: 11/24/14 08:49

Matrix: Solid

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.6		ug/Kg		11/24/14 18:35	11/25/14 22:23	1
Ethylbenzene	ND		3.6		ug/Kg		11/24/14 18:35	11/25/14 22:23	1
MTBE	ND		3.6		ug/Kg		11/24/14 18:35	11/25/14 22:23	1
Toluene	ND		3.6		ug/Kg		11/24/14 18:35	11/25/14 22:23	1
Xylenes, Total	ND		7.2		ug/Kg		11/24/14 18:35	11/25/14 22:23	1
Naphthalene	ND		7.2		ug/Kg		11/24/14 18:35	11/25/14 22:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	0	X	45 - 131	11/24/14 18:35	11/25/14 22:23	1
1,2-Dichloroethane-d4 (Surr)	86		60 - 140	11/24/14 18:35	11/25/14 22:23	1
Toluene-d8 (Surr)	87		58 - 140	11/24/14 18:35	11/25/14 22:23	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	310000		17000		ug/Kg		11/24/14 18:35	12/01/14 18:58	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	116		66 - 148	11/24/14 18:35	12/01/14 18:58	100
1,2-Dichloroethane-d4 (Surr)	89		62 - 137	11/24/14 18:35	12/01/14 18:58	100
Toluene-d8 (Surr)	95		65 - 141	11/24/14 18:35	12/01/14 18:58	100

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	10		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Acenaphthylene	9.5		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Anthracene	14		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Benzo[a]anthracene	4.9		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Benzo[a]pyrene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Benzo[b]fluoranthene	5.1		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Benzo[g,h,i]perylene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Benzo[k]fluoranthene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Chrysene	9.4		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Dibenz(a,h)anthracene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Fluoranthene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Fluorene	47		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Indeno[1,2,3-cd]pyrene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Naphthalene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Phenanthrene	69		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1
Pyrene	12		4.9		ug/Kg		12/04/14 10:23	12/05/14 14:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	78		33 - 120	12/04/14 10:23	12/05/14 14:39	1
Terphenyl-d14	78		35 - 146	12/04/14 10:23	12/05/14 14:39	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	480	B	3.0		mg/Kg		12/04/14 10:28	12/08/14 16:51	3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl	72		40 - 130	12/04/14 10:28	12/08/14 16:51	3

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-6-5-5.5

Lab Sample ID: 720-61486-4

Date Collected: 11/24/14 09:55

Matrix: Solid

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.6		ug/Kg		11/24/14 18:35	11/25/14 22:52	1
Ethylbenzene	ND		3.6		ug/Kg		11/24/14 18:35	11/25/14 22:52	1
MTBE	ND		3.6		ug/Kg		11/24/14 18:35	11/25/14 22:52	1
Toluene	ND		3.6		ug/Kg		11/24/14 18:35	11/25/14 22:52	1
Xylenes, Total	ND		7.2		ug/Kg		11/24/14 18:35	11/25/14 22:52	1
Naphthalene	ND		7.2		ug/Kg		11/24/14 18:35	11/25/14 22:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	139	X	45 - 131	11/24/14 18:35	11/25/14 22:52	1
1,2-Dichloroethane-d4 (Surr)	77		60 - 140	11/24/14 18:35	11/25/14 22:52	1
Toluene-d8 (Surr)	94		58 - 140	11/24/14 18:35	11/25/14 22:52	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	32000		18000		ug/Kg		11/24/14 18:35	12/01/14 19:29	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		66 - 148	11/24/14 18:35	12/01/14 19:29	100
1,2-Dichloroethane-d4 (Surr)	91		62 - 137	11/24/14 18:35	12/01/14 19:29	100
Toluene-d8 (Surr)	95		65 - 141	11/24/14 18:35	12/01/14 19:29	100

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	21		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Acenaphthylene	14		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Anthracene	22		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Benzo[a]anthracene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Benzo[a]pyrene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Benzo[b]fluoranthene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Benzo[g,h,i]perylene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Benzo[k]fluoranthene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Chrysene	18		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Dibenz(a,h)anthracene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Fluoranthene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Fluorene	83		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Indeno[1,2,3-cd]pyrene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Naphthalene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Phenanthrene	140		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2
Pyrene	27		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:04	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	87		33 - 120	12/04/14 10:23	12/05/14 20:04	2
Terphenyl-d14	87		35 - 146	12/04/14 10:23	12/05/14 20:04	2

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	460		4.9		mg/Kg		12/04/14 10:28	12/06/14 18:55	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl	0	X D	40 - 130	12/04/14 10:28	12/06/14 18:55	5

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-6-6.5

Lab Sample ID: 720-61486-5

Date Collected: 11/24/14 09:45

Matrix: Solid

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.9		ug/Kg		11/24/14 18:35	11/25/14 23:21	1
Ethylbenzene	ND		3.9		ug/Kg		11/24/14 18:35	11/25/14 23:21	1
MTBE	ND		3.9		ug/Kg		11/24/14 18:35	11/25/14 23:21	1
Toluene	ND		3.9		ug/Kg		11/24/14 18:35	11/25/14 23:21	1
Xylenes, Total	ND		7.7		ug/Kg		11/24/14 18:35	11/25/14 23:21	1
Naphthalene	ND		7.7		ug/Kg		11/24/14 18:35	11/25/14 23:21	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	290	X	45 - 131	11/24/14 18:35	11/25/14 23:21	1
1,2-Dichloroethane-d4 (Surr)	81		60 - 140	11/24/14 18:35	11/25/14 23:21	1
Toluene-d8 (Surr)	90		58 - 140	11/24/14 18:35	11/25/14 23:21	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	300000		21000		ug/Kg		11/24/14 18:35	12/01/14 19:59	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		66 - 148	11/24/14 18:35	12/01/14 19:59	100
1,2-Dichloroethane-d4 (Surr)	94		62 - 137	11/24/14 18:35	12/01/14 19:59	100
Toluene-d8 (Surr)	94		65 - 141	11/24/14 18:35	12/01/14 19:59	100

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	18		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Acenaphthylene	8.2		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Anthracene	18		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Benzo[a]anthracene	9.4		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Benzo[a]pyrene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Benzo[b]fluoranthene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Benzo[g,h,i]perylene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Benzo[k]fluoranthene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Chrysene	15		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Dibenz(a,h)anthracene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Fluoranthene	14		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Fluorene	58		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Indeno[1,2,3-cd]pyrene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Naphthalene	12		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Phenanthrene	150		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1
Pyrene	28		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	69		33 - 120	12/04/14 10:23	12/05/14 15:02	1
Terphenyl-d14	74		35 - 146	12/04/14 10:23	12/05/14 15:02	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	550		4.9		mg/Kg		12/04/14 10:28	12/06/14 19:24	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl	0	X D	40 - 130	12/04/14 10:28	12/06/14 19:24	5

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-5-4.5-5

Lab Sample ID: 720-61486-6

Date Collected: 11/24/14 10:45

Matrix: Solid

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.7		ug/Kg		11/24/14 18:35	11/28/14 12:10	1
Ethylbenzene	ND		3.7		ug/Kg		11/24/14 18:35	11/28/14 12:10	1
MTBE	ND		3.7		ug/Kg		11/24/14 18:35	11/28/14 12:10	1
Toluene	ND		3.7		ug/Kg		11/24/14 18:35	11/28/14 12:10	1
Xylenes, Total	ND		7.5		ug/Kg		11/24/14 18:35	11/28/14 12:10	1
Gasoline Range Organics (GRO)	2400		190		ug/Kg		11/24/14 18:35	11/28/14 12:10	1
-C6-C12									
Naphthalene	ND		7.5		ug/Kg		11/24/14 18:35	11/28/14 12:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	107		45 - 131				11/24/14 18:35	11/28/14 12:10	1
1,2-Dichloroethane-d4 (Surr)	108		60 - 140				11/24/14 18:35	11/28/14 12:10	1
Toluene-d8 (Surr)	93		58 - 140				11/24/14 18:35	11/28/14 12:10	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Acenaphthylene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Anthracene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Benzo[a]anthracene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Benzo[a]pyrene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Benzo[b]fluoranthene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Benzo[g,h,i]perylene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Benzo[k]fluoranthene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Chrysene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Dibenz(a,h)anthracene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Fluoranthene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Fluorene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Indeno[1,2,3-cd]pyrene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Naphthalene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Phenanthrene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Pyrene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 23:09	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	80		33 - 120				12/04/14 10:23	12/05/14 23:09	10
Terphenyl-d14	87		35 - 146				12/04/14 10:23	12/05/14 23:09	10

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	450		10		mg/Kg		12/04/14 10:28	12/05/14 22:26	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	0	X D	40 - 130				12/04/14 10:28	12/05/14 22:26	10

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-5-6-6.5

Lab Sample ID: 720-61486-7

Date Collected: 11/24/14 11:15

Matrix: Solid

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		3.7		ug/Kg		11/24/14 18:35	11/26/14 00:19	1
Ethylbenzene	ND		3.7		ug/Kg		11/24/14 18:35	11/26/14 00:19	1
MTBE	ND		3.7		ug/Kg		11/24/14 18:35	11/26/14 00:19	1
Toluene	ND		3.7		ug/Kg		11/24/14 18:35	11/26/14 00:19	1
Xylenes, Total	ND		7.4		ug/Kg		11/24/14 18:35	11/26/14 00:19	1
Naphthalene	ND		7.4		ug/Kg		11/24/14 18:35	11/26/14 00:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	120		45 - 131	11/24/14 18:35	11/26/14 00:19	1
1,2-Dichloroethane-d4 (Surr)	72		60 - 140	11/24/14 18:35	11/26/14 00:19	1
Toluene-d8 (Surr)	94		58 - 140	11/24/14 18:35	11/26/14 00:19	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline Range Organics (GRO) -C6-C12	230000		23000		ug/Kg		11/24/14 18:35	12/01/14 20:30	100

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	100		66 - 148	11/24/14 18:35	12/01/14 20:30	100
1,2-Dichloroethane-d4 (Surr)	89		62 - 137	11/24/14 18:35	12/01/14 20:30	100
Toluene-d8 (Surr)	96		65 - 141	11/24/14 18:35	12/01/14 20:30	100

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	46		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Acenaphthylene	29		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Anthracene	16		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Benzo[a]anthracene	11		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Benzo[a]pyrene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Benzo[b]fluoranthene	12		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Benzo[g,h,i]perylene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Benzo[k]fluoranthene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Chrysene	10		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Dibenz(a,h)anthracene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Fluoranthene	26		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Fluorene	35		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Indeno[1,2,3-cd]pyrene	ND		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Naphthalene	88		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Phenanthrene	56		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2
Pyrene	32		9.8		ug/Kg		12/04/14 10:23	12/05/14 20:50	2

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	79		33 - 120	12/04/14 10:23	12/05/14 20:50	2
Terphenyl-d14	87		35 - 146	12/04/14 10:23	12/05/14 20:50	2

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	180	B	3.0		mg/Kg		12/04/14 10:28	12/08/14 17:16	3

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
p-Terphenyl	68		40 - 130	12/04/14 10:28	12/08/14 17:16	3

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-3-3-3.5

Lab Sample ID: 720-61486-8

Date Collected: 11/24/14 15:00

Matrix: Solid

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	45		4.8		ug/Kg		11/24/14 18:35	11/26/14 00:48	1
MTBE	ND		4.8		ug/Kg		11/24/14 18:35	11/26/14 00:48	1
Toluene	ND		4.8		ug/Kg		11/24/14 18:35	11/26/14 00:48	1
Xylenes, Total	ND		9.5		ug/Kg		11/24/14 18:35	11/26/14 00:48	1
Naphthalene	320		9.5		ug/Kg		11/24/14 18:35	11/26/14 00:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	211	X	45 - 131				11/24/14 18:35	11/26/14 00:48	1
1,2-Dichloroethane-d4 (Surr)	71		60 - 140				11/24/14 18:35	11/26/14 00:48	1
Toluene-d8 (Surr)	90		58 - 140				11/24/14 18:35	11/26/14 00:48	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	6300		450		ug/Kg		11/24/14 18:35	12/01/14 21:01	100
Gasoline Range Organics (GRO) -C6-C12	430000		23000		ug/Kg		11/24/14 18:35	12/01/14 21:01	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	108		66 - 148				11/24/14 18:35	12/01/14 21:01	100
1,2-Dichloroethane-d4 (Surr)	92		62 - 137				11/24/14 18:35	12/01/14 21:01	100
Toluene-d8 (Surr)	94		65 - 141				11/24/14 18:35	12/01/14 21:01	100

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Acenaphthylene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Anthracene	6.7		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Benzo[a]anthracene	6.1		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Benzo[a]pyrene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Benzo[b]fluoranthene	5.1		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Benzo[g,h,i]perylene	5.5		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Benzo[k]fluoranthene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Chrysene	6.1		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Dibenz(a,h)anthracene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Fluoranthene	17		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Fluorene	6.4		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Indeno[1,2,3-cd]pyrene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Naphthalene	210		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Phenanthrene	24		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Pyrene	20		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	68		33 - 120				12/04/14 10:23	12/05/14 15:26	1
Terphenyl-d14	75		35 - 146				12/04/14 10:23	12/05/14 15:26	1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	26	B	0.99		mg/Kg		12/04/14 10:28	12/08/14 11:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	73		40 - 130				12/04/14 10:28	12/08/14 11:52	1

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-3-3.5-4.5

Lab Sample ID: 720-61486-9

Date Collected: 11/24/14 14:45

Matrix: Solid

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	65		4.6		ug/Kg		11/24/14 18:35	11/26/14 01:17	1
MTBE	ND		4.6		ug/Kg		11/24/14 18:35	11/26/14 01:17	1
Toluene	22		4.6		ug/Kg		11/24/14 18:35	11/26/14 01:17	1
Xylenes, Total	53		9.3		ug/Kg		11/24/14 18:35	11/26/14 01:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	123		45 - 131				11/24/14 18:35	11/26/14 01:17	1
1,2-Dichloroethane-d4 (Surr)	76		60 - 140				11/24/14 18:35	11/26/14 01:17	1
Toluene-d8 (Surr)	93		58 - 140				11/24/14 18:35	11/26/14 01:17	1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	760		510		ug/Kg		11/24/14 18:35	12/01/14 21:31	100
Gasoline Range Organics (GRO) -C6-C12	140000		25000		ug/Kg		11/24/14 18:35	12/01/14 21:31	100
Naphthalene	2900		1000		ug/Kg		11/24/14 18:35	12/01/14 21:31	100
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	91		66 - 148				11/24/14 18:35	12/01/14 21:31	100
1,2-Dichloroethane-d4 (Surr)	86		62 - 137				11/24/14 18:35	12/01/14 21:31	100
Toluene-d8 (Surr)	95		65 - 141				11/24/14 18:35	12/01/14 21:31	100

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	25		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Acenaphthylene	11		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Anthracene	14		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Benzo[a]anthracene	14		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Benzo[a]pyrene	9.7		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Benzo[b]fluoranthene	12		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Benzo[g,h,i]perylene	8.3		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Benzo[k]fluoranthene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Chrysene	14		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Dibenz(a,h)anthracene	ND		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Fluoranthene	41		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Fluorene	20		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Indeno[1,2,3-cd]pyrene	5.2		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Naphthalene	1400		25		ug/Kg		12/04/14 10:23	12/05/14 20:27	5
Phenanthrene	62		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Pyrene	45		4.9		ug/Kg		12/04/14 10:23	12/05/14 15:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	70		33 - 120				12/04/14 10:23	12/05/14 15:49	1
2-Fluorobiphenyl	71		33 - 120				12/04/14 10:23	12/05/14 20:27	5
Terphenyl-d14	84		35 - 146				12/04/14 10:23	12/05/14 15:49	1
Terphenyl-d14	84		35 - 146				12/04/14 10:23	12/05/14 20:27	5

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	80	B	0.99		mg/Kg		12/04/14 10:28	12/05/14 10:56	1

TestAmerica Pleasanton

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-3-3.5-4.5

Lab Sample ID: 720-61486-9

Date Collected: 11/24/14 14:45

Matrix: Solid

Date Received: 11/24/14 16:43

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>p-Terphenyl</i>	77		40 - 130	12/04/14 10:28	12/05/14 10:56	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14

Client Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-3-9.5-10

Lab Sample ID: 720-61486-10

Date Collected: 11/24/14 15:25

Matrix: Solid

Date Received: 11/24/14 16:43

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methyl tert-butyl ether	460		16		ug/Kg		11/26/14 13:30	11/26/14 14:10	1
Benzene	ND		16		ug/Kg		11/26/14 13:30	11/26/14 14:10	1
Ethylbenzene	ND		16		ug/Kg		11/26/14 13:30	11/26/14 14:10	1
Toluene	ND		16		ug/Kg		11/26/14 13:30	11/26/14 14:10	1
Xylenes, Total	ND		32		ug/Kg		11/26/14 13:30	11/26/14 14:10	1
Gasoline Range Organics (GRO)	820		810		ug/Kg		11/26/14 13:30	11/26/14 14:10	1
-C6-C12									
Naphthalene	ND		32		ug/Kg		11/26/14 13:30	11/26/14 14:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	96		45 - 131				11/26/14 13:30	11/26/14 14:10	1
1,2-Dichloroethane-d4 (Surr)	102		60 - 140				11/26/14 13:30	11/26/14 14:10	1
Toluene-d8 (Surr)	96		58 - 140				11/26/14 13:30	11/26/14 14:10	1

Method: 8270C SIM - PAHs by GCMS (SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Acenaphthylene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Anthracene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Benzo[a]anthracene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Benzo[a]pyrene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Benzo[b]fluoranthene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Benzo[g,h,i]perylene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Benzo[k]fluoranthene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Chrysene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Dibenz(a,h)anthracene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Fluoranthene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Fluorene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Indeno[1,2,3-cd]pyrene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Naphthalene	280		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Phenanthrene	84		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Pyrene	ND		50		ug/Kg		12/04/14 10:23	12/05/14 21:13	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	81		33 - 120				12/04/14 10:23	12/05/14 21:13	10
Terphenyl-d14	85		35 - 146				12/04/14 10:23	12/05/14 21:13	10

Method: 8015B - Diesel Range Organics (DRO) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	180		9.9		mg/Kg		12/04/14 10:28	12/05/14 22:55	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	0	X D	40 - 130				12/04/14 10:28	12/05/14 22:55	10

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 720-171797/4

Matrix: Solid

Analysis Batch: 171797

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylbenzene	ND		500		ug/Kg			12/01/14 14:20	100
Gasoline Range Organics (GRO) -C6-C12	ND		25000		ug/Kg			12/01/14 14:20	100
Naphthalene	ND		1000		ug/Kg			12/01/14 14:20	100

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	94		66 - 148		12/01/14 14:20	100
1,2-Dichloroethane-d4 (Surr)	93		62 - 137		12/01/14 14:20	100
Toluene-d8 (Surr)	96		65 - 141		12/01/14 14:20	100

Lab Sample ID: LCS 720-171797/5

Matrix: Solid

Analysis Batch: 171797

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	5000	4880		ug/Kg		98	76 - 137
Naphthalene	5000	4370		ug/Kg		87	62 - 151

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	92		66 - 148
1,2-Dichloroethane-d4 (Surr)	87		62 - 137
Toluene-d8 (Surr)	99		65 - 141

Lab Sample ID: LCS 720-171797/7

Matrix: Solid

Analysis Batch: 171797

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	100000	91900		ug/Kg		92	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	92		66 - 148
1,2-Dichloroethane-d4 (Surr)	94		62 - 137
Toluene-d8 (Surr)	95		65 - 141

Lab Sample ID: LCSD 720-171797/6

Matrix: Solid

Analysis Batch: 171797

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Ethylbenzene	5000	4900		ug/Kg		98	76 - 137	0	20
Naphthalene	5000	4770		ug/Kg		95	62 - 151	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	86		66 - 148
1,2-Dichloroethane-d4 (Surr)	90		62 - 137

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 720-171797/6

Matrix: Solid

Analysis Batch: 171797

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Toluene-d8 (Surr)	93		65 - 141

Lab Sample ID: LCSD 720-171797/8

Matrix: Solid

Analysis Batch: 171797

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12	100000	100000		ug/Kg		100	70 - 130	9	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	95		66 - 148
1,2-Dichloroethane-d4 (Surr)	93		62 - 137
Toluene-d8 (Surr)	96		65 - 141

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS

Lab Sample ID: MB 720-171624/4

Matrix: Solid

Analysis Batch: 171624

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		5.0		ug/Kg			11/25/14 19:58	1
Ethylbenzene	ND		5.0		ug/Kg			11/25/14 19:58	1
MTBE	ND		5.0		ug/Kg			11/25/14 19:58	1
Toluene	ND		5.0		ug/Kg			11/25/14 19:58	1
Xylenes, Total	ND		10		ug/Kg			11/25/14 19:58	1
Gasoline Range Organics (GRO) -C6-C12	ND		250		ug/Kg			11/25/14 19:58	1
Naphthalene	ND		10		ug/Kg			11/25/14 19:58	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	84		45 - 131		11/25/14 19:58	1
1,2-Dichloroethane-d4 (Surr)	79		60 - 140		11/25/14 19:58	1
Toluene-d8 (Surr)	93		58 - 140		11/25/14 19:58	1

Lab Sample ID: LCS 720-171624/5

Matrix: Solid

Analysis Batch: 171624

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	48.8		ug/Kg		98	70 - 130
Ethylbenzene	50.0	42.6		ug/Kg		85	80 - 137
MTBE	50.0	45.5		ug/Kg		91	70 - 144
m-Xylene & p-Xylene	50.0	43.1		ug/Kg		86	70 - 146
Toluene	50.0	43.6		ug/Kg		87	80 - 128
Naphthalene	50.0	51.8		ug/Kg		104	60 - 147

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-171624/5
Matrix: Solid
Analysis Batch: 171624

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

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	88		45 - 131
1,2-Dichloroethane-d4 (Surr)	76		60 - 140
Toluene-d8 (Surr)	98		58 - 140

Lab Sample ID: LCS 720-171624/7
Matrix: Solid
Analysis Batch: 171624

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	1000	941		ug/Kg		94	64 - 120

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	88		45 - 131
1,2-Dichloroethane-d4 (Surr)	81		60 - 140
Toluene-d8 (Surr)	95		58 - 140

Lab Sample ID: LCSD 720-171624/6
Matrix: Solid
Analysis Batch: 171624

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	48.3		ug/Kg		97	70 - 130	1	20
Ethylbenzene	50.0	41.4		ug/Kg		83	80 - 137	3	20
MTBE	50.0	48.7		ug/Kg		97	70 - 144	7	20
m-Xylene & p-Xylene	50.0	42.2		ug/Kg		84	70 - 146	2	20
Toluene	50.0	42.7		ug/Kg		85	80 - 128	2	20
Naphthalene	50.0	54.6		ug/Kg		109	60 - 147	5	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	88		45 - 131
1,2-Dichloroethane-d4 (Surr)	80		60 - 140
Toluene-d8 (Surr)	96		58 - 140

Lab Sample ID: LCSD 720-171624/8
Matrix: Solid
Analysis Batch: 171624

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12	1000	925		ug/Kg		92	64 - 120	2	20

	LCSD	LCSD	
Surrogate	%Recovery	Qualifier	Limits
4-Bromofluorobenzene	91		45 - 131
1,2-Dichloroethane-d4 (Surr)	84		60 - 140
Toluene-d8 (Surr)	96		58 - 140

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: MB 720-171654/4

Matrix: Solid

Analysis Batch: 171654

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		5.0		ug/Kg			11/26/14 11:19	1
Ethylbenzene	ND		5.0		ug/Kg			11/26/14 11:19	1
Methyl tert-butyl ether	ND		5.0		ug/Kg			11/26/14 11:19	1
Toluene	ND		5.0		ug/Kg			11/26/14 11:19	1
Xylenes, Total	ND		10		ug/Kg			11/26/14 11:19	1
Gasoline Range Organics (GRO) -C6-C12	ND		250		ug/Kg			11/26/14 11:19	1
Naphthalene	ND		10		ug/Kg			11/26/14 11:19	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		45 - 131		11/26/14 11:19	1
1,2-Dichloroethane-d4 (Surr)	105		60 - 140		11/26/14 11:19	1
Toluene-d8 (Surr)	93		58 - 140		11/26/14 11:19	1

Lab Sample ID: LCS 720-171654/5

Matrix: Solid

Analysis Batch: 171654

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	47.8		ug/Kg		96	70 - 130
Ethylbenzene	50.0	47.4		ug/Kg		95	80 - 137
Methyl tert-butyl ether	50.0	52.8		ug/Kg		106	70 - 144
m-Xylene & p-Xylene	50.0	47.9		ug/Kg		96	70 - 146
Toluene	50.0	46.5		ug/Kg		93	80 - 128
Naphthalene	50.0	51.5		ug/Kg		103	60 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	98		45 - 131
1,2-Dichloroethane-d4 (Surr)	105		60 - 140
Toluene-d8 (Surr)	97		58 - 140

Lab Sample ID: LCS 720-171654/7

Matrix: Solid

Analysis Batch: 171654

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	1000	1090		ug/Kg		109	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	100		45 - 131
1,2-Dichloroethane-d4 (Surr)	107		60 - 140
Toluene-d8 (Surr)	96		58 - 140

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-171654/6

Matrix: Solid

Analysis Batch: 171654

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	47.7		ug/Kg		95	70 - 130	0	20
Ethylbenzene	50.0	47.1		ug/Kg		94	80 - 137	1	20
Methyl tert-butyl ether	50.0	49.8		ug/Kg		100	70 - 144	6	20
m-Xylene & p-Xylene	50.0	47.3		ug/Kg		95	70 - 146	1	20
Toluene	50.0	46.2		ug/Kg		92	80 - 128	1	20
Naphthalene	50.0	50.2		ug/Kg		100	60 - 147	3	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	95		45 - 131
1,2-Dichloroethane-d4 (Surr)	105		60 - 140
Toluene-d8 (Surr)	98		58 - 140

Lab Sample ID: LCSD 720-171654/8

Matrix: Solid

Analysis Batch: 171654

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12	1000	1100		ug/Kg		110	64 - 120	1	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	99		45 - 131
1,2-Dichloroethane-d4 (Surr)	106		60 - 140
Toluene-d8 (Surr)	96		58 - 140

Lab Sample ID: MB 720-171722/7

Matrix: Water

Analysis Batch: 171722

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	ND		0.50		ug/L			11/28/14 09:26	1
EDB	ND		0.50		ug/L			11/28/14 09:26	1
1,2-DCA	ND		0.50		ug/L			11/28/14 09:26	1
Ethylbenzene	ND		0.50		ug/L			11/28/14 09:26	1
MTBE	ND		0.50		ug/L			11/28/14 09:26	1
Toluene	ND		0.50		ug/L			11/28/14 09:26	1
Xylenes, Total	ND		1.0		ug/L			11/28/14 09:26	1
TBA	ND		20		ug/L			11/28/14 09:26	1
DIPE	ND		0.50		ug/L			11/28/14 09:26	1
Gasoline Range Organics (GRO) -C6-C12	ND		50		ug/L			11/28/14 09:26	1
TAME	ND		0.50		ug/L			11/28/14 09:26	1
Ethyl t-butyl ether	ND		0.50		ug/L			11/28/14 09:26	1
Naphthalene	ND		1.0		ug/L			11/28/14 09:26	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		67 - 130		11/28/14 09:26	1

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QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: MB 720-171722/7

Matrix: Water

Analysis Batch: 171722

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
1,2-Dichloroethane-d4 (Surr)	107		72 - 130		11/28/14 09:26	1
Toluene-d8 (Surr)	98		70 - 130		11/28/14 09:26	1

Lab Sample ID: LCS 720-171722/10

Matrix: Water

Analysis Batch: 171722

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Gasoline Range Organics (GRO) -C6-C12	500	541		ug/L		108	58 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	102		67 - 130
1,2-Dichloroethane-d4 (Surr)	109		72 - 130
Toluene-d8 (Surr)	99		70 - 130

Lab Sample ID: LCS 720-171722/8

Matrix: Water

Analysis Batch: 171722

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec.
							Limits
Benzene	25.0	24.0		ug/L		96	79 - 130
EDB	25.0	25.2		ug/L		101	70 - 130
1,2-DCA	25.0	26.7		ug/L		107	61 - 132
Ethylbenzene	25.0	24.9		ug/L		100	80 - 120
MTBE	25.0	25.4		ug/L		102	62 - 130
Toluene	25.0	23.8		ug/L		95	78 - 120
TBA	250	218		ug/L		87	70 - 130
DIPE	25.0	24.9		ug/L		100	69 - 134
TAME	25.0	26.4		ug/L		106	79 - 130
Ethyl t-butyl ether	25.0	25.8		ug/L		103	70 - 130
Naphthalene	25.0	21.6		ug/L		86	70 - 130

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	100		67 - 130
1,2-Dichloroethane-d4 (Surr)	102		72 - 130
Toluene-d8 (Surr)	99		70 - 130

Lab Sample ID: LCSD 720-171722/11

Matrix: Water

Analysis Batch: 171722

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec.	RPD	Limit
							Limits	RPD	Limit
Gasoline Range Organics (GRO) -C6-C12	500	551		ug/L		110	58 - 120	2	20

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-171722/11
Matrix: Water
Analysis Batch: 171722

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

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	102		67 - 130
1,2-Dichloroethane-d4 (Surr)	107		72 - 130
Toluene-d8 (Surr)	99		70 - 130

Lab Sample ID: LCSD 720-171722/9
Matrix: Water
Analysis Batch: 171722

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

Analyte	Spike Added	LCSD		Unit	D	%Rec	%Rec.		RPD	Limit
		Result	Qualifier				Limits	RPD		
Benzene	25.0	24.0		ug/L		96	79 - 130	0	20	
EDB	25.0	27.0		ug/L		108	70 - 130	7	20	
1,2-DCA	25.0	27.2		ug/L		109	61 - 132	2	20	
Ethylbenzene	25.0	25.0		ug/L		100	80 - 120	0	20	
MTBE	25.0	27.6		ug/L		110	62 - 130	8	20	
Toluene	25.0	23.8		ug/L		95	78 - 120	0	20	
TBA	250	218		ug/L		87	70 - 130	0	20	
DIPE	25.0	25.3		ug/L		101	69 - 134	2	20	
TAME	25.0	27.9		ug/L		112	79 - 130	6	20	
Ethyl t-butyl ether	25.0	27.1		ug/L		108	70 - 130	5	20	
Naphthalene	25.0	24.1		ug/L		96	70 - 130	11	20	

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	101		67 - 130
1,2-Dichloroethane-d4 (Surr)	101		72 - 130
Toluene-d8 (Surr)	100		70 - 130

Lab Sample ID: MB 720-171723/5
Matrix: Solid
Analysis Batch: 171723

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

Analyte	MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	ND		5.0		ug/Kg			11/28/14 09:20	1
Ethylbenzene	ND		5.0		ug/Kg			11/28/14 09:20	1
MTBE	ND		5.0		ug/Kg			11/28/14 09:20	1
Toluene	ND		5.0		ug/Kg			11/28/14 09:20	1
Xylenes, Total	ND		10		ug/Kg			11/28/14 09:20	1
Gasoline Range Organics (GRO)	ND		250		ug/Kg			11/28/14 09:20	1
-C6-C12									
Naphthalene	ND		10		ug/Kg			11/28/14 09:20	1

Surrogate	MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene	96		45 - 131		11/28/14 09:20	1
1,2-Dichloroethane-d4 (Surr)	108		60 - 140		11/28/14 09:20	1
Toluene-d8 (Surr)	96		58 - 140		11/28/14 09:20	1

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCS 720-171723/6

Matrix: Solid

Analysis Batch: 171723

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	46.3		ug/Kg		93	70 - 130
Ethylbenzene	50.0	47.1		ug/Kg		94	80 - 137
MTBE	50.0	49.9		ug/Kg		100	70 - 144
m-Xylene & p-Xylene	50.0	47.5		ug/Kg		95	70 - 146
Toluene	50.0	46.3		ug/Kg		93	80 - 128
Naphthalene	50.0	50.1		ug/Kg		100	60 - 147

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	97		45 - 131
1,2-Dichloroethane-d4 (Surr)	107		60 - 140
Toluene-d8 (Surr)	99		58 - 140

Lab Sample ID: LCS 720-171723/8

Matrix: Solid

Analysis Batch: 171723

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline Range Organics (GRO) -C6-C12	1000	1050		ug/Kg		105	64 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene	97		45 - 131
1,2-Dichloroethane-d4 (Surr)	107		60 - 140
Toluene-d8 (Surr)	97		58 - 140

Lab Sample ID: LCSD 720-171723/7

Matrix: Solid

Analysis Batch: 171723

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	Limit
Benzene	50.0	46.5		ug/Kg		93	70 - 130	0	20
Ethylbenzene	50.0	47.0		ug/Kg		94	80 - 137	0	20
MTBE	50.0	50.1		ug/Kg		100	70 - 144	0	20
m-Xylene & p-Xylene	50.0	47.4		ug/Kg		95	70 - 146	0	20
Toluene	50.0	46.3		ug/Kg		93	80 - 128	0	20
Naphthalene	50.0	51.1		ug/Kg		102	60 - 147	2	20

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
4-Bromofluorobenzene	96		45 - 131
1,2-Dichloroethane-d4 (Surr)	106		60 - 140
Toluene-d8 (Surr)	98		58 - 140

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8260B/CA_LUFTMS - 8260B / CA LUFT MS (Continued)

Lab Sample ID: LCSD 720-171723/9
 Matrix: Solid
 Analysis Batch: 171723

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline Range Organics (GRO) -C6-C12	1000	1060		ug/Kg		106	64 - 120	1	20
Surrogate	%Recovery	LCSD	LCSD	Qualifier			Limits		
4-Bromofluorobenzene	97						45 - 131		
1,2-Dichloroethane-d4 (Surr)	108						60 - 140		
Toluene-d8 (Surr)	97						58 - 140		

Method: 8270C SIM - PAHs by GCMS (SIM)

Lab Sample ID: MB 720-171782/1-A
 Matrix: Water
 Analysis Batch: 171868

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 171782

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Acenaphthylene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Anthracene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Benzo[a]anthracene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Benzo[a]pyrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Chrysene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Benzo[b]fluoranthene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Benzo[k]fluoranthene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Benzo[g,h,i]perylene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Fluorene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Indeno[1,2,3-cd]pyrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Fluoranthene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Naphthalene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Phenanthrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Pyrene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Dibenz(a,h)anthracene	ND		0.10		ug/L		12/01/14 10:27	12/02/14 12:59	1
Surrogate	%Recovery	MB	MB	Qualifier			Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	41						12/01/14 10:27	12/02/14 12:59	1
Terphenyl-d14	73						12/01/14 10:27	12/02/14 12:59	1

Lab Sample ID: LCS 720-171782/2-A
 Matrix: Water
 Analysis Batch: 171868

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 171782

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	10.0	4.08		ug/L		41	24 - 120
Acenaphthylene	10.0	4.44		ug/L		44	24 - 120
Anthracene	10.0	5.91		ug/L		59	44 - 120
Benzo[a]anthracene	10.0	7.02		ug/L		70	48 - 120
Benzo[a]pyrene	10.0	6.77		ug/L		68	43 - 120
Chrysene	10.0	5.88		ug/L		59	47 - 120

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8270C SIM - PAHs by GCMS (SIM) (Continued)

Lab Sample ID: LCS 720-171782/2-A

Matrix: Water

Analysis Batch: 171868

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 171782

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzo[b]fluoranthene	10.0	6.69		ug/L		67	42 - 120
Benzo[k]fluoranthene	10.0	6.50		ug/L		65	42 - 120
Benzo[g,h,i]perylene	10.0	6.90		ug/L		69	35 - 120
Fluorene	10.0	4.62		ug/L		46	27 - 120
Indeno[1,2,3-cd]pyrene	10.0	6.96		ug/L		70	36 - 120
Fluoranthene	10.0	6.64		ug/L		66	43 - 120
Naphthalene	10.0	3.97		ug/L		40	19 - 120
Phenanthrene	10.0	5.19		ug/L		52	31 - 120
Pyrene	10.0	6.90		ug/L		69	47 - 120
Dibenz(a,h)anthracene	10.0	6.93		ug/L		69	33 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	43		29 - 120
Terphenyl-d14	79		45 - 120

Lab Sample ID: LCSD 720-171782/3-A

Matrix: Water

Analysis Batch: 171868

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 171782

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	10.0	3.52		ug/L		35	24 - 120	15	35
Acenaphthylene	10.0	3.86		ug/L		39	24 - 120	14	35
Anthracene	10.0	5.50		ug/L		55	44 - 120	7	35
Benzo[a]anthracene	10.0	6.86		ug/L		69	48 - 120	2	35
Benzo[a]pyrene	10.0	6.33		ug/L		63	43 - 120	7	35
Chrysene	10.0	5.90		ug/L		59	47 - 120	0	35
Benzo[b]fluoranthene	10.0	6.58		ug/L		66	42 - 120	2	35
Benzo[k]fluoranthene	10.0	5.95		ug/L		59	42 - 120	9	35
Benzo[g,h,i]perylene	10.0	6.19		ug/L		62	35 - 120	11	35
Fluorene	10.0	3.93		ug/L		39	27 - 120	16	35
Indeno[1,2,3-cd]pyrene	10.0	6.30		ug/L		63	36 - 120	10	35
Fluoranthene	10.0	6.80		ug/L		68	43 - 120	2	35
Naphthalene	10.0	3.59		ug/L		36	19 - 120	10	35
Phenanthrene	10.0	4.55		ug/L		46	31 - 120	13	35
Pyrene	10.0	6.91		ug/L		69	47 - 120	0	35
Dibenz(a,h)anthracene	10.0	6.21		ug/L		62	33 - 120	11	35

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
2-Fluorobiphenyl	37		29 - 120
Terphenyl-d14	77		45 - 120

Lab Sample ID: MB 720-172018/1-A

Matrix: Solid

Analysis Batch: 172091

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Acenaphthylene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8270C SIM - PAHs by GCMS (SIM) (Continued)

Lab Sample ID: MB 720-172018/1-A

Matrix: Solid

Analysis Batch: 172091

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 172018

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Anthracene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[a]anthracene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[a]pyrene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Chrysene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[b]fluoranthene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[k]fluoranthene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Benzo[g,h,i]perylene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Fluorene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Indeno[1,2,3-cd]pyrene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Fluoranthene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Naphthalene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Phenanthrene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Pyrene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1
Dibenz(a,h)anthracene	ND		5.0		ug/Kg		12/04/14 10:23	12/05/14 14:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	77		33 - 120	12/04/14 10:23	12/05/14 14:16	1
Terphenyl-d14	84		35 - 146	12/04/14 10:23	12/05/14 14:16	1

Lab Sample ID: LCS 720-172018/2-A

Matrix: Solid

Analysis Batch: 172091

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 172018

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	333	218		ug/Kg		65	49 - 120
Acenaphthylene	333	240		ug/Kg		72	52 - 120
Anthracene	333	296		ug/Kg		89	52 - 120
Benzo[a]anthracene	333	295		ug/Kg		88	52 - 120
Benzo[a]pyrene	333	307		ug/Kg		92	54 - 120
Chrysene	333	259		ug/Kg		78	40 - 120
Benzo[b]fluoranthene	333	286		ug/Kg		86	51 - 120
Benzo[k]fluoranthene	333	305		ug/Kg		91	56 - 120
Benzo[g,h,i]perylene	333	325		ug/Kg		98	48 - 120
Fluorene	333	250		ug/Kg		75	52 - 120
Indeno[1,2,3-cd]pyrene	333	328		ug/Kg		98	48 - 120
Fluoranthene	333	303		ug/Kg		91	57 - 120
Naphthalene	333	209		ug/Kg		63	46 - 120
Phenanthrene	333	263		ug/Kg		79	48 - 120
Pyrene	333	290		ug/Kg		87	53 - 120
Dibenz(a,h)anthracene	333	328		ug/Kg		98	50 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	70		33 - 120
Terphenyl-d14	94		35 - 146

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8015B - Diesel Range Organics (DRO) (GC)

Lab Sample ID: MB 720-171665/1-A
Matrix: Water
Analysis Batch: 171656

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 171665

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		50		ug/L		11/26/14 09:50	11/27/14 05:55	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	83		23 - 156				11/26/14 09:50	11/27/14 05:55	1

Lab Sample ID: LCS 720-171665/2-A
Matrix: Water
Analysis Batch: 171656

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 171665

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Diesel Range Organics [C10-C28]	2500	1550		ug/L		62	34 - 115
Surrogate	%Recovery	LCS Qualifier	Limits				
p-Terphenyl	110		23 - 156				

Lab Sample ID: LCSD 720-171665/3-A
Matrix: Water
Analysis Batch: 171656

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 171665

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	2500	1500		ug/L		60	34 - 115	3	35
Surrogate	%Recovery	LCSD Qualifier	Limits						
p-Terphenyl	101		23 - 156						

Lab Sample ID: MB 720-172019/1-A
Matrix: Solid
Analysis Batch: 172074

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 172019

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	1.01		1.0		mg/Kg		12/04/14 10:28	12/05/14 12:34	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	94		40 - 130				12/04/14 10:28	12/05/14 12:34	1

Lab Sample ID: MB 720-172019/1-A
Matrix: Solid
Analysis Batch: 172096

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 172019

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Diesel Range Organics [C10-C28]	ND		1.0		mg/Kg		12/04/14 10:28	12/05/14 16:06	1
Surrogate	%Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
p-Terphenyl	85		40 - 130				12/04/14 10:28	12/05/14 16:06	1

TestAmerica Pleasanton

QC Sample Results

Client: ARCADIS U.S., Inc.
 Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method: 8015B - Diesel Range Organics (DRO) (GC) (Continued)

Lab Sample ID: LCS 720-172019/2-A

Matrix: Solid

Analysis Batch: 172074

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 172019

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	83.1	84.6		mg/Kg		102	50 - 150
Surrogate		LCS %Recovery	LCS Qualifier				Limits
<i>p-Terphenyl</i>		115					40 - 130

Lab Sample ID: 720-61486-9 MS

Matrix: Solid

Analysis Batch: 172074

Client Sample ID: GP-3-3.5-4.5

Prep Type: Total/NA

Prep Batch: 172019

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Diesel Range Organics [C10-C28]	80	B	82.6	165		mg/Kg		103	50 - 150
Surrogate		MS %Recovery		MS Qualifier					Limits
<i>p-Terphenyl</i>		89							40 - 130

Lab Sample ID: 720-61486-9 MSD

Matrix: Solid

Analysis Batch: 172074

Client Sample ID: GP-3-3.5-4.5

Prep Type: Total/NA

Prep Batch: 172019

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Diesel Range Organics [C10-C28]	80	B	83.1	144		mg/Kg		77	50 - 150	14	30
Surrogate		MSD %Recovery		MSD Qualifier					Limits		
<i>p-Terphenyl</i>		91							40 - 130		

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

GC/MS VOA

Analysis Batch: 171624

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-3	GP-6-4.5-5	Total/NA	Solid	8260B/CA_LUFT MS	171634
720-61486-4	GP-6-5-5.5	Total/NA	Solid	8260B/CA_LUFT MS	171634
720-61486-5	GP-6-6-6.5	Total/NA	Solid	8260B/CA_LUFT MS	171634
720-61486-7	GP-5-6-6.5	Total/NA	Solid	8260B/CA_LUFT MS	171634
720-61486-8	GP-3-3-3.5	Total/NA	Solid	8260B/CA_LUFT MS	171634
720-61486-9	GP-3-3.5-4.5	Total/NA	Solid	8260B/CA_LUFT MS	171634
LCS 720-171624/5	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCS 720-171624/7	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171624/6	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171624/8	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
MB 720-171624/4	Method Blank	Total/NA	Solid	8260B/CA_LUFT MS	

Prep Batch: 171634

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-3	GP-6-4.5-5	Total/NA	Solid	5035	
720-61486-4	GP-6-5-5.5	Total/NA	Solid	5035	
720-61486-5	GP-6-6-6.5	Total/NA	Solid	5035	
720-61486-7	GP-5-6-6.5	Total/NA	Solid	5035	
720-61486-8	GP-3-3-3.5	Total/NA	Solid	5035	
720-61486-9	GP-3-3.5-4.5	Total/NA	Solid	5035	

Analysis Batch: 171654

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-10	GP-3-9.5-10	Total/NA	Solid	8260B/CA_LUFT MS	171683
LCS 720-171654/5	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCS 720-171654/7	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171654/6	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171654/8	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
MB 720-171654/4	Method Blank	Total/NA	Solid	8260B/CA_LUFT MS	

Prep Batch: 171683

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-10	GP-3-9.5-10	Total/NA	Solid	5030B	

Analysis Batch: 171722

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-1	GP-5-GW	Total/NA	Water	8260B/CA_LUFT MS	

TestAmerica Pleasanton

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

GC/MS VOA (Continued)

Analysis Batch: 171722 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-2	GP-6-GW	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-171722/10	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCS 720-171722/8	Lab Control Sample	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-171722/11	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
LCSD 720-171722/9	Lab Control Sample Dup	Total/NA	Water	8260B/CA_LUFT MS	
MB 720-171722/7	Method Blank	Total/NA	Water	8260B/CA_LUFT MS	

Analysis Batch: 171723

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-6	GP-5-4.5-5	Total/NA	Solid	8260B/CA_LUFT MS	171744
LCS 720-171723/6	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCS 720-171723/8	Lab Control Sample	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171723/7	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
LCSD 720-171723/9	Lab Control Sample Dup	Total/NA	Solid	8260B/CA_LUFT MS	
MB 720-171723/5	Method Blank	Total/NA	Solid	8260B/CA_LUFT MS	

Prep Batch: 171744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-6	GP-5-4.5-5	Total/NA	Solid	5035	

Analysis Batch: 171797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-3	GP-6-4.5-5	Total/NA	Solid	8260B	171818
720-61486-4	GP-6-5-5.5	Total/NA	Solid	8260B	171818
720-61486-5	GP-6-6-6.5	Total/NA	Solid	8260B	171818
720-61486-7	GP-5-6-6.5	Total/NA	Solid	8260B	171818
720-61486-8	GP-3-3-3.5	Total/NA	Solid	8260B	171818
720-61486-9	GP-3-3.5-4.5	Total/NA	Solid	8260B	171818
LCS 720-171797/5	Lab Control Sample	Total/NA	Solid	8260B	
LCS 720-171797/7	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 720-171797/6	Lab Control Sample Dup	Total/NA	Solid	8260B	
LCSD 720-171797/8	Lab Control Sample Dup	Total/NA	Solid	8260B	
MB 720-171797/4	Method Blank	Total/NA	Solid	8260B	

Prep Batch: 171818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-3	GP-6-4.5-5	Total/NA	Solid	5035	
720-61486-4	GP-6-5-5.5	Total/NA	Solid	5035	
720-61486-5	GP-6-6-6.5	Total/NA	Solid	5035	
720-61486-7	GP-5-6-6.5	Total/NA	Solid	5035	
720-61486-8	GP-3-3-3.5	Total/NA	Solid	5035	
720-61486-9	GP-3-3.5-4.5	Total/NA	Solid	5035	

TestAmerica Pleasanton

QC Association Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

GC/MS Semi VOA

Prep Batch: 171782

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-1	GP-5-GW	Total/NA	Water	3510C	
720-61486-2	GP-6-GW	Total/NA	Water	3510C	
LCS 720-171782/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 720-171782/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 720-171782/1-A	Method Blank	Total/NA	Water	3510C	

Analysis Batch: 171868

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-1	GP-5-GW	Total/NA	Water	8270C SIM	171782
720-61486-2	GP-6-GW	Total/NA	Water	8270C SIM	171782
LCS 720-171782/2-A	Lab Control Sample	Total/NA	Water	8270C SIM	171782
LCS 720-171782/3-A	Lab Control Sample Dup	Total/NA	Water	8270C SIM	171782
MB 720-171782/1-A	Method Blank	Total/NA	Water	8270C SIM	171782

Prep Batch: 172018

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-3	GP-6-4.5-5	Total/NA	Solid	3546	
720-61486-4	GP-6-5-5.5	Total/NA	Solid	3546	
720-61486-5	GP-6-6-6.5	Total/NA	Solid	3546	
720-61486-6	GP-5-4.5-5	Total/NA	Solid	3546	
720-61486-7	GP-5-6-6.5	Total/NA	Solid	3546	
720-61486-8	GP-3-3-3.5	Total/NA	Solid	3546	
720-61486-9	GP-3-3.5-4.5	Total/NA	Solid	3546	
720-61486-10	GP-3-9.5-10	Total/NA	Solid	3546	
LCS 720-172018/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 720-172018/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 172091

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-3	GP-6-4.5-5	Total/NA	Solid	8270C SIM	172018
720-61486-4	GP-6-5-5.5	Total/NA	Solid	8270C SIM	172018
720-61486-5	GP-6-6-6.5	Total/NA	Solid	8270C SIM	172018
720-61486-6	GP-5-4.5-5	Total/NA	Solid	8270C SIM	172018
720-61486-7	GP-5-6-6.5	Total/NA	Solid	8270C SIM	172018
720-61486-8	GP-3-3-3.5	Total/NA	Solid	8270C SIM	172018
720-61486-9	GP-3-3.5-4.5	Total/NA	Solid	8270C SIM	172018
720-61486-9	GP-3-3.5-4.5	Total/NA	Solid	8270C SIM	172018
720-61486-10	GP-3-9.5-10	Total/NA	Solid	8270C SIM	172018
LCS 720-172018/2-A	Lab Control Sample	Total/NA	Solid	8270C SIM	172018
MB 720-172018/1-A	Method Blank	Total/NA	Solid	8270C SIM	172018

GC Semi VOA

Analysis Batch: 171656

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-1	GP-5-GW	Total/NA	Water	8015B	171665
720-61486-2	GP-6-GW	Total/NA	Water	8015B	171665
LCS 720-171665/2-A	Lab Control Sample	Total/NA	Water	8015B	171665
LCS 720-171665/3-A	Lab Control Sample Dup	Total/NA	Water	8015B	171665
MB 720-171665/1-A	Method Blank	Total/NA	Water	8015B	171665

TestAmerica Pleasanton

QC Association Summary

Client: ARCADIS U.S., Inc.
 Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

GC Semi VOA (Continued)

Prep Batch: 171665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-1	GP-5-GW	Total/NA	Water	3510C	
720-61486-2	GP-6-GW	Total/NA	Water	3510C	
LCS 720-171665/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 720-171665/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	
MB 720-171665/1-A	Method Blank	Total/NA	Water	3510C	

Prep Batch: 172019

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-3	GP-6-4.5-5	Total/NA	Solid	3546	
720-61486-4	GP-6-5-5.5	Total/NA	Solid	3546	
720-61486-5	GP-6-6-6.5	Total/NA	Solid	3546	
720-61486-6	GP-5-4.5-5	Total/NA	Solid	3546	
720-61486-7	GP-5-6-6.5	Total/NA	Solid	3546	
720-61486-8	GP-3-3-3.5	Total/NA	Solid	3546	
720-61486-9	GP-3-3.5-4.5	Total/NA	Solid	3546	
720-61486-9 MS	GP-3-3.5-4.5	Total/NA	Solid	3546	
720-61486-9 MSD	GP-3-3.5-4.5	Total/NA	Solid	3546	
720-61486-10	GP-3-9.5-10	Total/NA	Solid	3546	
LCS 720-172019/2-A	Lab Control Sample	Total/NA	Solid	3546	
MB 720-172019/1-A	Method Blank	Total/NA	Solid	3546	

Analysis Batch: 172074

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-9	GP-3-3.5-4.5	Total/NA	Solid	8015B	172019
720-61486-9 MS	GP-3-3.5-4.5	Total/NA	Solid	8015B	172019
720-61486-9 MSD	GP-3-3.5-4.5	Total/NA	Solid	8015B	172019
LCS 720-172019/2-A	Lab Control Sample	Total/NA	Solid	8015B	172019
MB 720-172019/1-A	Method Blank	Total/NA	Solid	8015B	172019

Analysis Batch: 172096

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-6	GP-5-4.5-5	Total/NA	Solid	8015B	172019
720-61486-10	GP-3-9.5-10	Total/NA	Solid	8015B	172019
MB 720-172019/1-A	Method Blank	Total/NA	Solid	8015B	172019

Analysis Batch: 172148

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-3	GP-6-4.5-5	Total/NA	Solid	8015B	172019
720-61486-7	GP-5-6-6.5	Total/NA	Solid	8015B	172019
720-61486-8	GP-3-3-3.5	Total/NA	Solid	8015B	172019

Analysis Batch: 172154

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
720-61486-4	GP-6-5-5.5	Total/NA	Solid	8015B	172019
720-61486-5	GP-6-6-6.5	Total/NA	Solid	8015B	172019

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-5-GW

Lab Sample ID: 720-61486-1

Date Collected: 11/24/14 11:30

Matrix: Water

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	171722	11/28/14 12:24	LPL	TAL PLS
Total/NA	Prep	3510C			171782	12/01/14 10:27	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		1	171868	12/02/14 14:09	MQL	TAL PLS
Total/NA	Prep	3510C			171665	11/26/14 09:50	NDU	TAL PLS
Total/NA	Analysis	8015B		1	171656	11/26/14 16:19	JXL	TAL PLS

Client Sample ID: GP-6-GW

Lab Sample ID: 720-61486-2

Date Collected: 11/24/14 10:15

Matrix: Water

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B/CA_LUFTMS		1	171722	11/28/14 12:54	LPL	TAL PLS
Total/NA	Prep	3510C			171782	12/01/14 10:27	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		1	171868	12/02/14 14:32	MQL	TAL PLS
Total/NA	Prep	3510C			171665	11/26/14 09:50	NDU	TAL PLS
Total/NA	Analysis	8015B		2	171656	11/26/14 18:44	JXL	TAL PLS

Client Sample ID: GP-6-4.5-5

Lab Sample ID: 720-61486-3

Date Collected: 11/24/14 08:49

Matrix: Solid

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171818	11/24/14 18:35	ASC	TAL PLS
Total/NA	Analysis	8260B		100	171797	12/01/14 18:58	LPL	TAL PLS
Total/NA	Prep	5035			171634	11/24/14 18:35	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171624	11/25/14 22:23	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		1	172091	12/05/14 14:39	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		3	172148	12/08/14 16:51	DCH	TAL PLS

Client Sample ID: GP-6-5-5.5

Lab Sample ID: 720-61486-4

Date Collected: 11/24/14 09:55

Matrix: Solid

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171818	11/24/14 18:35	ASC	TAL PLS
Total/NA	Analysis	8260B		100	171797	12/01/14 19:29	LPL	TAL PLS
Total/NA	Prep	5035			171634	11/24/14 18:35	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171624	11/25/14 22:52	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		2	172091	12/05/14 20:04	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS

TestAmerica Pleasanton

Lab Chronicle

Client: ARCADIS U.S., Inc.
 Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-6-5-5.5

Lab Sample ID: 720-61486-4

Date Collected: 11/24/14 09:55

Matrix: Solid

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8015B		5	172154	12/06/14 18:55	DCH	TAL PLS

Client Sample ID: GP-6-6-6.5

Lab Sample ID: 720-61486-5

Date Collected: 11/24/14 09:45

Matrix: Solid

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171818	11/24/14 18:35	ASC	TAL PLS
Total/NA	Analysis	8260B		100	171797	12/01/14 19:59	LPL	TAL PLS
Total/NA	Prep	5035			171634	11/24/14 18:35	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171624	11/25/14 23:21	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		1	172091	12/05/14 15:02	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		5	172154	12/06/14 19:24	DCH	TAL PLS

Client Sample ID: GP-5-4.5-5

Lab Sample ID: 720-61486-6

Date Collected: 11/24/14 10:45

Matrix: Solid

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171744	11/24/14 18:35	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171723	11/28/14 12:10	PDR	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		10	172091	12/05/14 23:09	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		10	172096	12/05/14 22:26	JXL	TAL PLS

Client Sample ID: GP-5-6-6.5

Lab Sample ID: 720-61486-7

Date Collected: 11/24/14 11:15

Matrix: Solid

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171818	11/24/14 18:35	ASC	TAL PLS
Total/NA	Analysis	8260B		100	171797	12/01/14 20:30	LPL	TAL PLS
Total/NA	Prep	5035			171634	11/24/14 18:35	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171624	11/26/14 00:19	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		2	172091	12/05/14 20:50	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		3	172148	12/08/14 17:16	DCH	TAL PLS

Lab Chronicle

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Client Sample ID: GP-3-3-3.5

Lab Sample ID: 720-61486-8

Date Collected: 11/24/14 15:00

Matrix: Solid

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171818	11/24/14 18:35	ASC	TAL PLS
Total/NA	Analysis	8260B		100	171797	12/01/14 21:01	LPL	TAL PLS
Total/NA	Prep	5035			171634	11/24/14 18:35	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171624	11/26/14 00:48	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		1	172091	12/05/14 15:26	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		1	172148	12/08/14 11:52	DCH	TAL PLS

Client Sample ID: GP-3-3.5-4.5

Lab Sample ID: 720-61486-9

Date Collected: 11/24/14 14:45

Matrix: Solid

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5035			171818	11/24/14 18:35	ASC	TAL PLS
Total/NA	Analysis	8260B		100	171797	12/01/14 21:31	LPL	TAL PLS
Total/NA	Prep	5035			171634	11/24/14 18:35	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171624	11/26/14 01:17	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		1	172091	12/05/14 15:49	MQL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		5	172091	12/05/14 20:27	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		1	172074	12/05/14 10:56	JXL	TAL PLS

Client Sample ID: GP-3-9.5-10

Lab Sample ID: 720-61486-10

Date Collected: 11/24/14 15:25

Matrix: Solid

Date Received: 11/24/14 16:43

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			171683	11/26/14 13:30	LPL	TAL PLS
Total/NA	Analysis	8260B/CA_LUFTMS		1	171654	11/26/14 14:10	LPL	TAL PLS
Total/NA	Prep	3546			172018	12/04/14 10:23	NDU	TAL PLS
Total/NA	Analysis	8270C SIM		10	172091	12/05/14 21:13	MQL	TAL PLS
Total/NA	Prep	3546			172019	12/04/14 10:28	AFM	TAL PLS
Total/NA	Analysis	8015B		10	172096	12/05/14 22:55	JXL	TAL PLS

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919

Certification Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Laboratory: TestAmerica Pleasanton

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

Authority	Program	EPA Region	Certification ID	Expiration Date
California	State Program	9	2496	01-31-16

- 1
- 2
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Method Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL PLS
8260B/CA_LUFTM S	8260B / CA LUFT MS	SW846	TAL PLS
8270C SIM	PAHs by GCMS (SIM)	SW846	TAL PLS
8015B	Diesel Range Organics (DRO) (GC)	SW846	TAL PLS

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL PLS = TestAmerica Pleasanton, 1220 Quarry Lane, Pleasanton, CA 94566, TEL (925)484-1919



Sample Summary

Client: ARCADIS U.S., Inc.
Project/Site: BP #11126, Emeryville

TestAmerica Job ID: 720-61486-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
720-61486-1	GP-5-GW	Water	11/24/14 11:30	11/24/14 16:43
720-61486-2	GP-6-GW	Water	11/24/14 10:15	11/24/14 16:43
720-61486-3	GP-6-4.5-5	Solid	11/24/14 08:49	11/24/14 16:43
720-61486-4	GP-6-5-5.5	Solid	11/24/14 09:55	11/24/14 16:43
720-61486-5	GP-6-6-6.5	Solid	11/24/14 09:45	11/24/14 16:43
720-61486-6	GP-5-4.5-5	Solid	11/24/14 10:45	11/24/14 16:43
720-61486-7	GP-5-6-6.5	Solid	11/24/14 11:15	11/24/14 16:43
720-61486-8	GP-3-3-3.5	Solid	11/24/14 15:00	11/24/14 16:43
720-61486-9	GP-3-3.5-4.5	Solid	11/24/14 14:45	11/24/14 16:43
720-61486-10	GP-3-9.5-10	Solid	11/24/14 15:25	11/24/14 16:43





Calscience Environmental Laboratories, Inc.

SoCal Laboratory
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494

NorCal Service Center
5063 Commercial Circle, Suite H
Concord, CA 94520-8577
(925) 689-9022

720-61486

CHAIN OF CUSTODY RECORD
Date 11.24.2014
Page 1 of 1

12/9/2014

LABORATORY CLIENT: ARCADIS U.S., Inc.		CLIENT PROJECT NAME / NUMBER: CA-1126 / GP09BPNA.C044.C0000		P.O. NO.:	
ADDRESS: 100 SMITH RANCH RD, Suite 329		PROJECT CONTACT: JAMEY PETERSON		LAB USE ONLY <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
CITY: SAN RAFAEL STATE: CA ZIP:		SAMPLER(S): (PRINT) Connor Williams/Kerin Grogan		COELT LOG CODE <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	
TEL: 707.889.6739 E-MAIL: jamey.peterson@arcadis-us.com		COOLER RECEIPT		TEMP: _____ °C	

TURNAROUND TIME:
 SAME DAY 24 HR 48 HR 72 HR STANDARD

SPECIAL REQUIREMENTS (ADDITIONAL COSTS MAY APPLY)
 RWQCB REPORTING FORMS COELT EDF

SPECIAL INSTRUCTIONS:
 1. Please send results & log-ins to email above

REQUESTED ANALYSES

LAB USE ONLY	SAMPLE ID	FIELD POINT NAME (FOR COELT EDF)	SAMPLING		MATRIX	NO. OF CONT.	TPH(g) (8260)	TPH (g) or (C6-C36) or (C6-C44)	TPH DRO (8015)	BTEX / MTBE (8260B) or ()	VOCs (8260B)	Oxygenates (8260B)	Encore Prep (5035)	SVOCs (8270C)	Pesticides (8081A)	PCBs (8082)	PNAs (8310) or (8270C)	T22 Metals (6010B/747X)	Cr(VI) (7196A or 7199 or 218.6)	VOCs (TO-14A) or (TO-15)	TPH (g) (TO-3)*	PAHs (8270)	NAPhtalene (8260)	1,2-DCA; EDB (8260)
			DATE	TIME																				
	GP-5-GW		11.24.14	11:30	W	7	X	X	X		X											X	X	X
	GP-6-GW		11.24.14	10:15	W	7	X	X	X		X											X	X	X
	GP-6-4.5-5		11.24.14	08:49	S	4	X	X	X													X	X	X
	GP-6-5-5.5		11.24.14	09:55	S	4	X	X	X													X	X	X
	GP-6-6-6.5		11.24.14	09:45	S	4	X	X	X													X	X	X
	GP-5-4.5-5		11.24.14	10:45	S	4	X	X	X													X	X	X
	GP-5-6-6.5		11.24.14	11:15	S	4	X	X	X													X	X	X
	GP-3-3-3.5		11.24.14	15:00	S	4	X	X	X													X	X	X
	GP-3-3.5-4.5		11.24.14	14:45	S	4	X	X	X													X	X	X
	GP-3-9.5-10		11.24.14	15:25	S	1	X	X	X													X	X	X



720-61486 Chain of Custody

Relinquished by: (Signature) <i>[Signature]</i> ARCADIS US	Received by: (Signature/Affiliation) <i>[Signature]</i>	Date: 11-24-14	Time: 1535
Relinquished by: (Signature) <i>[Signature]</i>	Received by: (Signature/Affiliation) <i>[Signature]</i>	Date: 11-24-14	Time: 1643
Relinquished by: (Signature)	Received by: (Signature/Affiliation)	Date:	Time:

DISTRIBUTION: White with final report, Green and Yellow to Client.
Please note that pages 1 and 2 of 2 of our T/Cs are printed on the reverse side of the Green and Yellow copies respectively.

11°C / 1.5°C

Login Sample Receipt Checklist

Client: ARCADIS U.S., Inc.

Job Number: 720-61486-1

Login Number: 61486

List Source: TestAmerica Pleasanton

List Number: 1

Creator: Gonzales, Justinn

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



Appendix E

Preferential Pathway Data Results

**Table E-1
Utility Locations and Depths
Former BP Service Station No. 11126
1700 Powell Street
Emeryville, California**

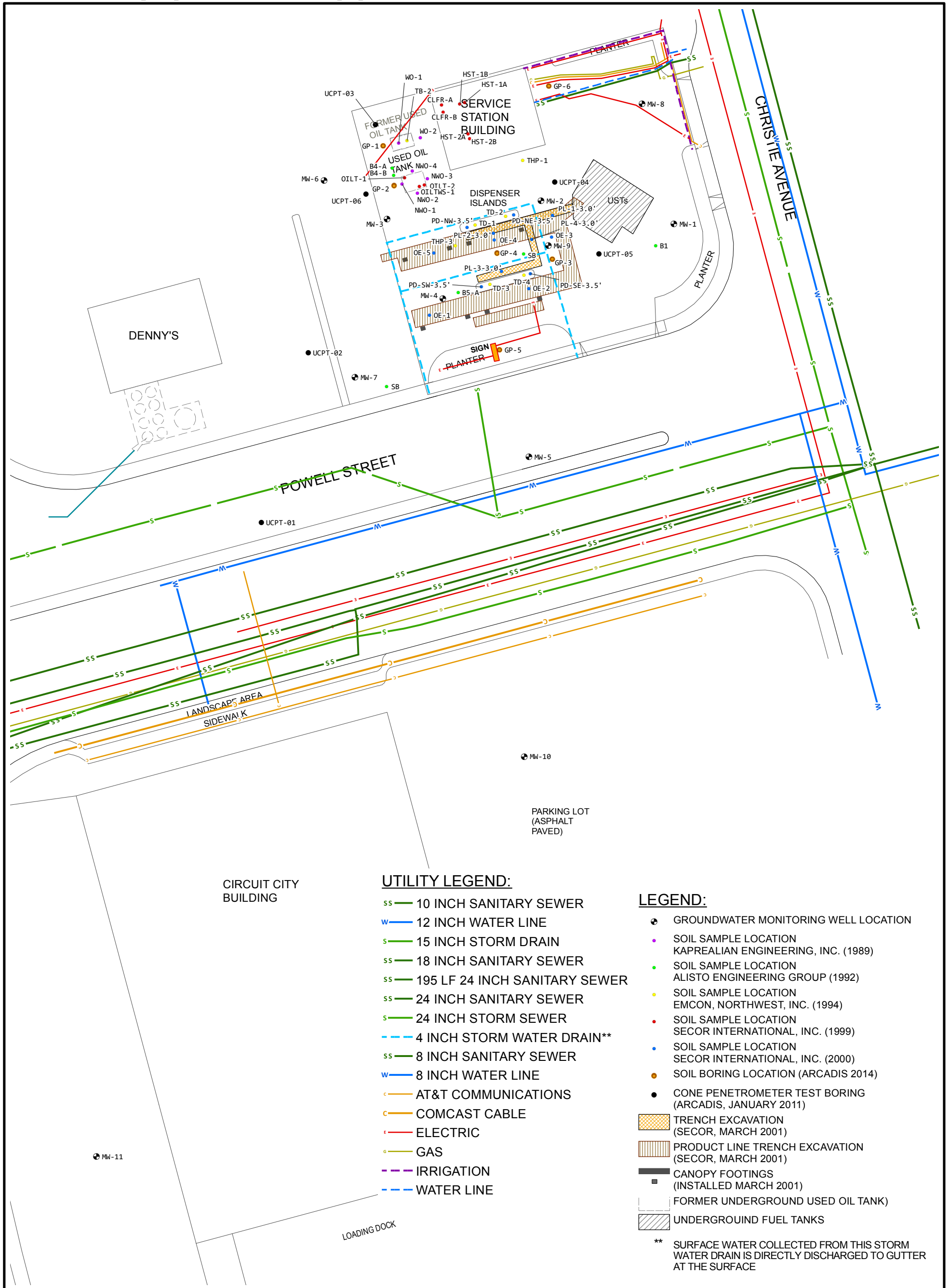
Type	Diameter	Depth	Top of Pipe Depth	Location	Site Placement	Street	Comments
	(inches)	(ft bgs)	(ft bgs)				
Source: City of Emeryville – Department of Public Works, Sanitary Sewer Rehabilitation Project, Powell Street Trunk Sewer and 65th Street Sewer Main (08/03/2009)							
STORM DRAIN	15	7	7	APPROX	OFFSITE	POWELL STREET	
NEW 14 LF VCP SANITARY SEWER	30	10 to 12	10	APPROX	OFFSITE	POWELL STREET	
EXISTING GAS	NOT REPORTED	5	5	APPROX	OFFSITE	POWELL STREET	
PG&E ELECTRIC	3 to 6	3	3	APPROX	OFFSITE	POWELL STREET	
EXISTING SANITARY SEWER	24	5 to 7	5	APPROX	OFFSITE	POWELL STREET	
EXISTING SANITARY SEWER	10	11 to 12	11	APPROX	OFFSITE	POWELL STREET	
EXISTING SANITARY SEWER	18	5 to 7	5	APPROX	OFFSITE	POWELL STREET	
EXISTING SANITARY SEWER	8	6	6	APPROX	OFFSITE	CHRISTIE AVENUE	
EXISTING CIP	18	7 to 9	7	APPROX	OFFSITE	POWELL STREET	
EXISTING 16 LF SANITARY SEWER	24	10 to 12	10	APPROX	OFFSITE	POWELL STREET	
EXISTING PG&E ELECTRIC	3 to 6	1 to 2	1	APPROX	OFFSITE	POWELL STREET	
EXISTING WATER LINE	8	6	6	APPROX	OFFSITE	CHRISTIE AVENUE	
EXISTING WATER LINE	12	8	8	APPROX	OFFSITE	POWELL STREET	
NEW 33 LF VCP	24	9 to 11	9	APPROX	OFFSITE	POWELL STREET	
EXISTING STORM DRAIN	24	7 to 9	7	APPROX	OFFSITE	CHRISTIE AVENUE	
Source: utilities located during Utility Survey on November 20, 2014							
STORM SYSTEM DRAINAGE	4	surface to 1.5	surface to 1.5	CANOPY/DISPENSER ISLANDS	ONSITE	POWELL STREET	direct discharge to street gutter
ELECTRICAL	--	1.25	1.25	IN PLANTER	ONSITE	--	electrical to site light
ELECTRICAL	--	1.25	1.25	NW CORNER SITE	ONSITE	--	electrical to site light
IRRIGATION LINE	--	surface to 0.9	surface to 0.9	NE CORNER SITE	ONSITE	--	
ELECTRICAL	see note 1	1.75 to 2.25	1.75 to 2.25	NE CORNER SITE	ONSITE	CHRISTIE AVENUE	electrical lateral
GAS LINE	see note 1	1.75 to 3.5	1.75 to 3.5	BUILDING TO STREET	ONSITE	CHRISTIE AVENUE	gas line lateral
COMMUNICATIONS LINE	see note 1	1.75	1.75	BUILDING TO STREET	ONSITE	CHRISTIE AVENUE	telephone line
SANITARY SEWER	6	2.5 to 3.75	2.5 to 3.75	BUILDING TO STREET	ONSITE	CHRISTIE AVENUE	sanitary sewer lateral
ELECTRICAL	--	1.25	1.25	BUILDING TO PLANTER	ONSITE	--	electrical to site light; sign
WATER LINE	2	1.5 to 1.75	1.5 to 1.75	BUILDING TO STREET	ONSITE	CHRISTIE AVENUE	water service lateral

Notes:

ft bgs = feet below ground surface

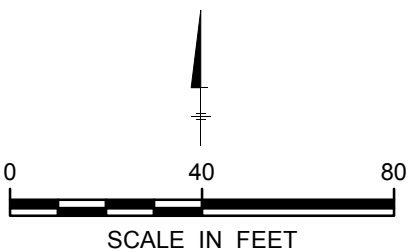
APPROX = approximate location; adapted from City of Emeryville utility figure

1) Utilities located in same trench.



NOTES:

1. SITE MAP ADAPTED FROM STANTEC FIGURES
2. ONSITE UTILITIES AND LATERALS IDENTIFIED DURING SUBSURFACE UTILITY LOCATION ACTIVITIES ON NOVEMBER 20, 2014.
3. OFFSITE UTILITIES ADAPTED FROM UTILITY MAP PROVIDED BY THE CITY OF EMERYVILLE DEPARTMENT OF PUBLIC WORKS.



FORMER BP STATION #11126
 1700 POWELL STREET, EMERYVILLE, CALIFORNIA

SUBSURFACE UTILITY MAP



FIGURE
E-1

STATE WATER RESOURCES CONTROL BOARD
GEOTRACKER ESI

UPLOADING A GEO_REPORT FILE

SUCCESS

Your GEO_REPORT file has been successfully submitted!

<u>Submittal Type:</u>	GEO_REPORT
<u>Report Title:</u>	Site Investigation Summary Report 012315
<u>Report Type:</u>	Site Investigation
<u>Report Date:</u>	1/23/2015
<u>Facility Global ID:</u>	T0600100208
<u>Facility Name:</u>	BP #11126
<u>File Name:</u>	CA-11126 150123 BP - Site Investigation Summary Report.pdf
<u>Organization Name:</u>	ARCADIS
<u>Username:</u>	ARCADISBP
<u>IP Address:</u>	69.181.178.58
<u>Submittal Date/Time:</u>	1/23/2015 5:31:15 PM
<u>Confirmation Number:</u>	3146279513

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