I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

Earle Shenk 5-29-13

Earle Shenk Date

RECEIVED
By Alameda County Environmental Health at 1:32 pm, Jun 11, 2013

ERRG
Engineering/Remediation Resources Group, Inc.
115 Sansome St., Suite 200
San Francisco, CA 94104
P: 415.395.9974
F: 415.395-9983
www.errg.com

Transmitted via e-mail

May 31, 2013 Ref.: 2012-002

Barbara Jakub
Alameda County Environmental Health
1131 Harbor Bay Parkway Suite 250
Alameda, CA 94502

Soil and Groundwater Investigation Report
6159 Acacia Avenue, Oakland California
Fuel Leak Case No. RO0000152/GeoTracker ID T060010570

Dear Ms. Jakub,

On behalf of Earle Shenk, Engineering/Remediation Resources Group, Inc. (ERRG) is pleased to submit this letter report summarizing the results for soil and groundwater samples collected at 6159 Acacia Avenue in Oakland, California. Work was conducted in accordance with the Final Work Plan and Work Plan Addendum[1] approved by Alameda County Environmental Health (ACEH).

Background

The site is a residential property located at 6159 Acacia Avenue in a residential area of Oakland, California (Figure 1). A letter[2] from ACEH, dated July 26, 2011, indicated that a 500-gallon underground storage tank (UST) was removed on April 2, 1992, from the backyard of the residence at 6159 Acacia Avenue. The UST was used to store oil to heat the residence. The tank was cylindrical in shape and approximately 10 feet long by 3 feet in diameter, with the bottom resting at 3.5 feet below ground surface (bgs) (Figure 2). The removed UST was reportedly in poor condition, with several holes in the bottom of the tank. Following removal, soil samples were collected from the tank excavation, and sample results indicated that total petroleum hydrocarbons (TPH) as diesel-range organics (DRO) were present at concentrations of 7,900 parts per million (ppm) at 3.5 feet bgs. Additional soil was excavated to 5 feet bgs, and soil samples were again collected at the bottom of the excavation. Results for the 5-foot samples indicated that TPH-DRO was present at a concentration of 1,400 ppm. In a letter[3] dated April 22, 1992, ACEH requested additional excavation and sampling; however, no documentation exists indicating that additional excavation and sampling was conducted.

[1] ERRG, 2013. "Final Work Plan for Soil and Groundwater Sampling at 6159 Acacia Avenue, Oakland California." March.

[2] Alameda County Environmental Health (ACEH), 2011. Letter regarding Work Plan Request for Fuel Leak Cause No. RO0000152 and Geo Tracker Global ID T0600101570, Earl Shenk Residence, 6159 Acacia Avenue, Oakland, CA 94618. July.

[3] ACEH, 1992. Letter regarding Closure of Home Heating Fuel Tank at 6159 Acacia, Oakland Hills, CA 94168. April.

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Site Activities

Utility Location

On April 12, 2013, a private utility locator surveyed the area around each proposed well location for underground utilities. Several irrigation water lines, electrical lines, and a sewer line were found and clearly marked.

Soil and Groundwater Sampling

On April 16, 2013, Cascade Drilling of Richmond, California, advanced a boring for collection of soil and groundwater samples in accordance with Alameda Public Works Agency Boring Permit No. W2013-0227 (Attachment 1).

The well boring was advanced using a 4-inch-diameter hand auger. During advancement of the boring, soil samples were collected using a slide hammer and brass sleeves at 4.5 to 5 feet bgs and 9.5 to 10.0 feet bgs. However, because visual staining and discoloration and odor were observed during sampling, an additional sample was collected from the 8.0 to 8.25 feet bgs interval. A soil sample was also collected at 11.5 to 12.0 feet bgs, where bedrock was encountered. All samples were submitted to the laboratory for analysis, but the sample from the 11.5-to-12.0-foot depth interval was put on hold pending the results for samples collected from the shallower intervals. During sample collection, ERRG's geologist prepared a log documenting the lithology of the boring. Attachment 2 includes the field notes and the boring log.

Perched groundwater was encountered between 9.0 and 10.5 feet bgs, and a groundwater sample was collected using a low-flow peristaltic pump.

All samples were submitted to BC Laboratories, Inc. in Bakersfield, California, for analysis of total petroleum hydrocarbons (TPH) as diesel-range organics (DRO) and TPH as motor-oil range organics (MRO) by U.S. Environmental Protection Agency (EPA) Method 8015B. Samples were also analyzed for benzene, toluene, ethylbenzene, and xylenes (BTEX) and naphthalene by EPA Method 8260B.

Sample Results

The tables below summarizes the analytical results for soil and groundwater samples. Complete laboratory reports are included in Attachment 3.

Table 1. Soil and Groundwater Sampling Results[1]

Sample ID No.	Sample Depth (feet bgs)	Matrix	Unit	TPH-DRO	Benzene	Toluene	Xylenes	Naphthalene
6159-SS-01	4.5-5.0	Soil	mg/kg	ND	ND	ND	ND	ND
6159-SS-02	8.0-8.5	Soil	mg/kg	**2,400**	ND	ND	ND	0.053
6159-SS-03	9.5-10.0	Soil	mg/kg	**890**	ND	ND	ND	0.025
6159-SS-04	11.5-12.0	Soil	mg/kg	66	ND	ND	ND	ND
6159-GW-01	9.0 to 10.5	Water	µg/L	ND	0.43	0.10	0.12	**33**
San Francisco Bay Area Tier 1 ESLs[2]		Soil	mg/kg	83	0.04	2.9	2.3	1.2
		Water	µg/L	100	1.0	40	20	6.2

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Table 1. Soil and Groundwater Sampling Results[1]*(continued)*

Notes:
[1]No samples had detections of TPH-MRO or ethylbenzene greater than the method reporting limit
[2] San Francisco Bay Regional Water Quality Control Board Tier 1 ESLs, 2013
BOLD sample results exceed ESLs
bgs = feet below ground surface
ESL = environmental screening level
ND = not detected above the method reporting limit
TPH-DRO = total petroleum hydrocarbons as diesel-range organics
TPH-MRO = total petroleum hydrocarbons as motor-oil-range organics
mg/kg = milligram per kilogram
µg/L = microgram per liter

Soil Sample Results

TPH: TPH-MRO was not reported at concentrations greater than the method reporting limit in soil samples collected at the site. TPH-DRO was reported at concentrations of 2,400 milligrams per kilogram (mg/kg) in soil sample 6159-SS-02 collected from 8.0 to 8.5 feet bgs; 890 mg/kg in soil sample 6159-SS-03 collected from 9.5 to 10.0 feet bgs; and 66 mg/kg in soil sample 6159-SS-04 collected from 11.5 to 12.0 feet bgs. Only the TPH-DRO concentrations in samples 6159-SS-02 and 6159-SS-03 exceeded the environmental screening level (ESL)[4] of 83 mg/kg.

BTEX and Naphthalene: BTEX was not reported at concentrations greater than the method reporting limit in soil samples collected at the site. Naphthalene was reported at 0.053 mg/kg in soil sample 6159-SS-02 collected from 8.0 to 8.5 feet bgs and at 0.025 mg/kg in soil sample 6159-SS-03 collected from 9.5 to 10.0 feet bgs. Both detections of naphthalene were less than the ESL of 1.2 mg/kg.

Perched Groundwater Sample Results

TPH: TPH-DRO or MRO were not reported at concentrations greater than the method reporting limit in sample 6159-GW-01.

BTEX and Naphthalene: Ethylbenzene was not reported at concentrations greater than the method reporting limit in sample 6159-GW-01. Benzene, toluene, xylenes, and naphthalene were reported at concentrations of 0.43 µg/L, 0.10 µg/L, 0.12 µg/L, and 33 µg/L, respectively. Detections of benzene, toluene, and xylenes were less than their respective Tier 1 ESLs (1.0 µg/L, 40 µg/L, and 20 µg/L). The naphthalene detection exceeded the ESL of 6.2 µg/L.

Conceptual Site Model

The conceptual site model (CSM) includes the following site-specific inputs: (1) physical characteristics, (2) nature and extent of contamination, (3) migration pathways, and (4) contaminant exposure pathways.

Physical Characteristics

The lithology of the site is sandy clay underlain by bedrock at approximately 11.5 feet bgs. Groundwater was encountered between 9.0 feet bgs to 10.5 feet bgs. The encountered groundwater is most likely

[4] San Francisco Bay Regional Water Quality Control Board, 2013. "Tier 1 Environmental Screening Levels." available online at < http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/esl.shtml>

perched because boring refusal occurred in the cemented sandstone bedrock layer at 11.5 feet bgs. The presence and elevation of groundwater below the bedrock was not determined during the sampling event; however, it is estimated to be approximately 156 feet bgs based on information from nearby sites. A site investigation was conducted at a nearby residence, 5925 Ocean View Drive, located approximately 1,500 feet northwest of the site. Results of the site investigation[5] indicated the site was located at an elevation of 260 feet above mean sea level (msl) and groundwater was present at 16 feet bgs. In addition, an ACEH Case Closure Summary Report[6] for 5900 Acacia Avenue located 0.2 mile west of the site at approximately 350 feet above msl states that groundwater is "more than 100 feet bgs as the site is located in the Oakland hills."

The local topography of 6159 Acacia Avenue slopes to the south–southwest. The closest down-slope surface body of water is 1 mile southwest of the site within the Claremont Country Club at the intersection of Broadway and 51st Street. Four groundwater wells are within a four mile radius of the site. Of these wells one is for domestic use, one is for irrigation purposes, and two are for industrial use. Figure 3 presents the location of these wells in relation to the site.

Nature and Extent of Contamination

Based on the analytical results, TPH-DRO and naphthalene are present in subsurface soil (i.e., between 8 and 12 feet bgs). BTEX was not detected in any soil samples; however, benzene, toluene, and xylenes were detected in perched groundwater at the site, indicating that contamination may be migrating from an offsite source. In addition, naphthalene was detected in perched groundwater.

Migration Pathways

Potentially affected media at the site include soil, groundwater, and air. Sampling results indicated residual contamination is present in soil and perched groundwater at the site.

The potential migration pathways for the site include (1) leaching of contaminants from soil to perched groundwater, (2) migration of contaminated perched groundwater-to-groundwater or surface body waters off site, (3) volatilization of contamination from soil and groundwater to soil gas and then to indoor or outdoor air, and (4) migration of contaminated offsite perched groundwater to the site (if an offsite source exists). The potential pathways are discussed below.

- TPH-DRO and naphthalene are present on site in subsurface soil between 8 and 12 feet bgs. Additionally, naphthalene is present in perched groundwater on site. As a result, contamination may be migrating from onsite soil to perched groundwater.
- Migration of perched groundwater to a groundwater aquifer below the site is unlikely because (1) the depth of perched water at the site is approximately 9.0 to 10.5 feet bgs; (2) the presence of perched water is likely seasonal and the site is on a sloped terrain, resulting in a relatively small volume of contaminated source water at the site; and (3) a large (>100 feet) bedrock layer separates the perched water and the groundwater. If the bedrock is fractured, large volumes of stormwater or rainwater would be required to transport the perched water through the potential bedrock fractures to an underlying aquifer. As a result, any residual contaminants remaining in the water would be extremely diluted by the time it reached the aquifer. Additionally the migration of perched water to a body of surface water is unlikely because the closest down-slope

[5] Pangea Environmental Services, Inc., 2010. "Site Investigation Report, Private Residence, 5925 Ocean View Drive, Oakland, California, ACEH RO0003003." October.

[6] ACEH, 1995. "Remedial Action Completion Certificate, Ref: Residential Property, 5900 Acacia Ave, Oakland, CA." August.

surface water body is greater than 1 mile away from the site. Any water that migrates off site would be diluted by rain and stormwater prior to contact with a body of surface water.

- No soil gas samples were collected during this investigation; however, the area of the former UST is located partially in an open grassy yard and partially under an unenclosed concrete pad deck that was constructed at the site. As a result, contamination may migrate from soil gas to outdoor ambient air. However, because the ambient temperature and wind patterns of the Oakland hills would dilute any volatiles in soil gas migrating to outdoor air, the migration of soil gas contamination to outdoor air is unlikely. Indoor ambient air is not considered a potential migration pathway because the location of the former UST is outside of the building foundation.
- Because benzene, toluene, and xylenes were detected in perched groundwater, but were not detected in soil, the potential exists that contamination may be migrating in perched groundwater from an offsite source of contamination.

Exposure Pathways

The primary exposure pathway at the site is direct contact with contaminated soil or perched groundwater. Potential receptors could include humans and animals residing at the site. Based on the depth of the residual contamination (5 feet bgs and deeper), it is unlikely that humans or animals would ingest or come in direct (dermal) contact with contaminated soil or groundwater. Additionally, naphthalene was the only volatile chemical that was detected in soil that could potentially pose a risk to human health and animals via soil vapor intrusion. However, all reported concentrations of naphthalene in soil were compared with the Low-Threat UST Case Closure Policy's[7] acceptable concentration for naphthalene in residential soil deeper than 5 feet (9.7 mg/kg), and comparison results indicated that naphthalene poses no significant risk of adversely affecting human health (i.e., all results were less than the acceptable concentration).

Conclusions and Recommendations

Although, TPH-DRO and naphthalene are present at elevated concentrations in soil and groundwater at the site, lateral extent of the release in soil is likely limited based on the soil lithology observed in the boring (sandy clay) and the vertical extent of the release in soil and perched groundwater is likely limited by shallow bedrock. Based on the sampling results, evaluation of the developed CSM, and review of the Low-Threat UST Case Closure Policy, this site meets the general requirements for the Low-Threat UST Case Closure Policy by Alameda County Environmental Health. The general criteria for Low-Threat UST Case Closure are as follows:

a. The unauthorized release is located within the service area of a public water system.
b. The unauthorized release consists only of petroleum.
c. The unauthorized ("primary") release from the UST system has been stopped.
d. Free product has been removed to the maximum extent practicable.
e. A CSM that assesses the nature, extent, and mobility of the release has been developed.
f. Secondary source has been removed to the extent practicable.
g. Soil or groundwater has been tested for methyl tert-butyl ether (MTBE) and results reported in accordance with Health and Safety Code Section 25296.15.
h. Nuisance as defined by Water Code Section 13050 does not exist at the site.

[7] State Water Resources Control Board (SWRCB), 2012. "Low-Threat Underground Storage Tank Case Closure Policy." May.

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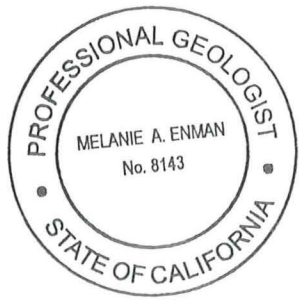
The site meets requirements listed above, with the exception of criterion g. Criterion g is considered exempt if the regulatory agency (i.e., ACEH) determines that the UST only contained diesel or jet fuel and not gasoline. Historical information, previous sampling results, and results from this investigation indicate the former UST only contained diesel, thus it can be assumed that collection of soil and groundwater samples for analysis of MTBE is not necessary.

Based on the CSM, both offsite migration and the exposure of humans or animals to site contaminants is unlikely. In addition, it is unlikely that residual contamination from the former UST is the only contributing source to the low level of contamination in the perched water at the site. It is recommended that the site be closed and no further action is required.

Please review the attached information and feel free to contact me at (415) 395-9974 if you have any questions.

Sincerely,



Tiffany Angus
Project Manager

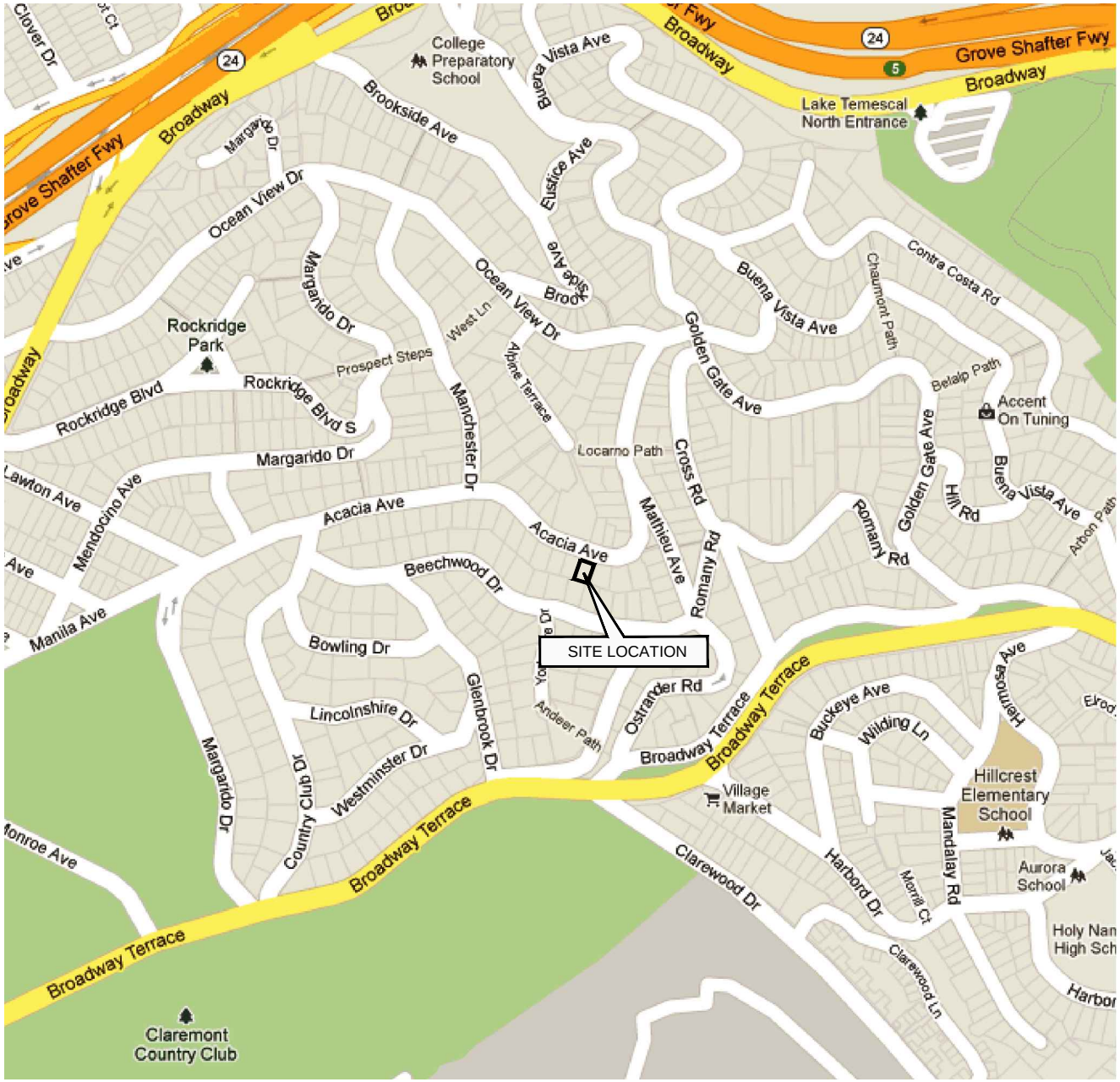
Melanie Enman, PG
Project Geologist

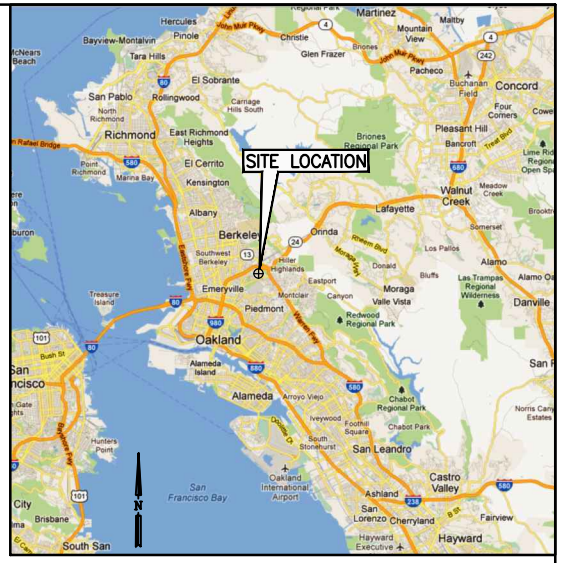
Encl. Figures: 1 – Site Vicinity and Location Map; 2 – Former Underground Storage Tank Location Map; Figure 3 – Well Location Map

Attachments: 1 – Boring Permit; 2 – Field Notes; 3 – Laboratory Reports

cc: ERRG Project File

Figures





VICINITY MAP
NOT TO SCALE

SOURCE: GOOGLE MAPS

N

0' 100'

APPROXIMATE SCALE: 1"=100'

ERRG
Engineering/Remediation Resources Group, Inc.
115 Sansome St., Suite 200
San Francisco, California 94104
(415) 395-9974

CLIENT: EARLE SHANK	SITE VICINITY AND LOCATION MAP				
LOCATION: 6159 ACACIA AVE. OAKLAND, CALIFORNIA	DRAWN BY: SC 01/09/12	CHECKED BY: TA 01/09/12	PROJECT NO. 2012-002	FIG NO. 1	

FILE NAME: N:\graphics\2012\2012-002\N. Maps&Dwg\Fig1_map.dwg LAYOUT NAME: 1 PLOTTED: Friday, January 13, 2012 - 7:23am

SOURCES: USGS HIGH-RESOLUTION ORTHOIMAGE, USNG 10SEG655880 AND 10SEG670880
COORDINATE SYSTEM: NAD 1983 CALIFORNIA STATE PLANE, ZONE 3
PROJECTION: LAMBERT CONFORMAL CONIC

N

0 24

SCALE: 1" = 24 FEET

N:\Graphics\2012\2012-002 USCG\GIS\UST_Location.mxd Last updated: 5/31/2013 at 5:05:30 PM

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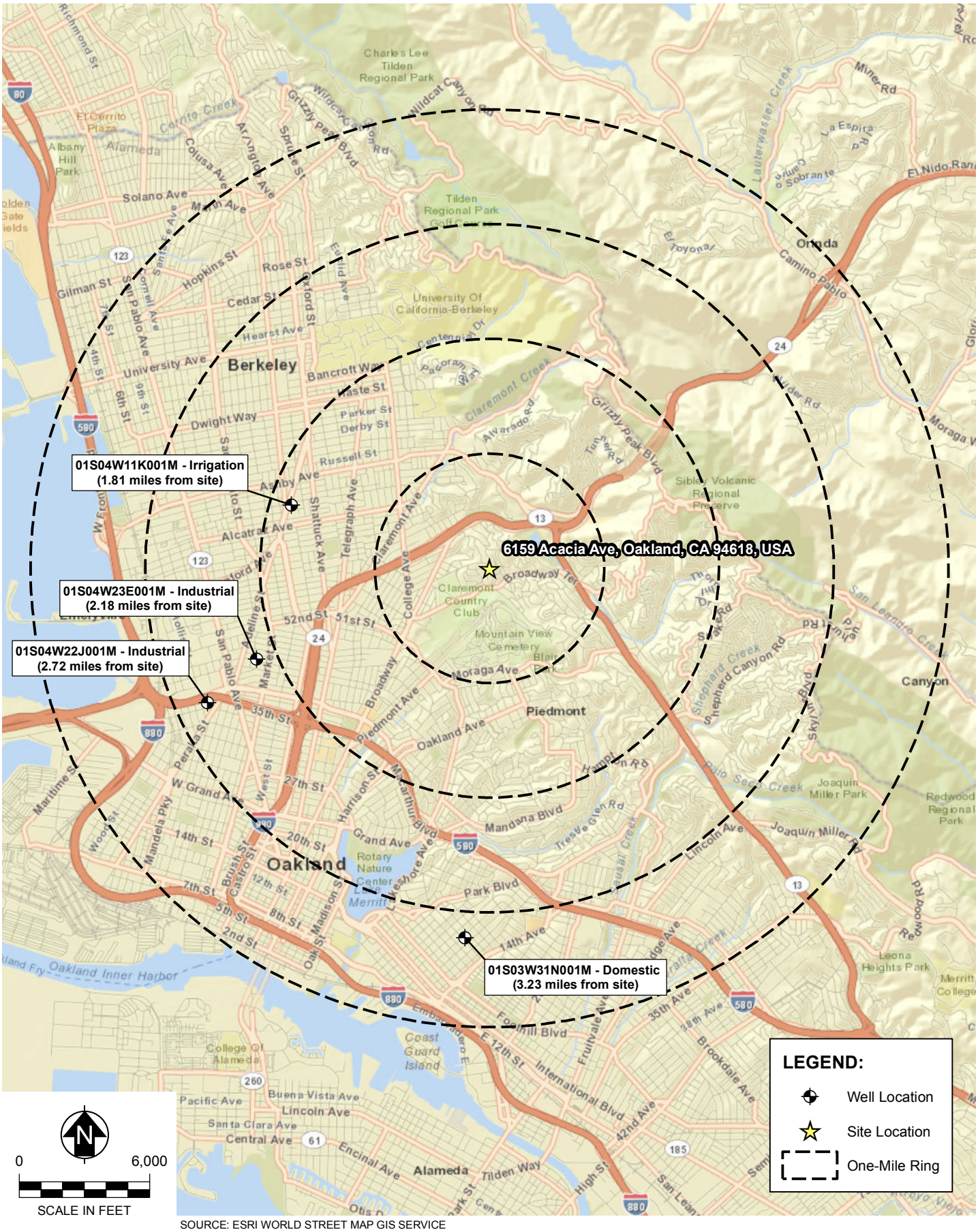
Engineering/Remediation Resources Group, Inc.
115 Sansome Street, Suite 200
San Francisco, California 94104
(415) 395-9974

CLIENT:	FORMER UNDERGROUND STORAGE TANK AND APPROXIMATE SAMPLING LOCATION MAP			
EARLE SHANK				
LOCATION:	DRAWN BY:	CHECKED BY:	PROJECT NO.	FIG NO.
6159 ACACIA AVE. OAKLAND, CALIFORNIA	JJC 9/27/2012	TA 9/27/2012	2012-002	2



SOURCE: ESRI WORLD STREET MAP GIS SERVICE

N:\Graphics\2012\2012-002 USCG\GIS\Well_Locations.mxd Last updated: 5/31/2013 at 9:25:21 AM

ERRG
Engineering/Remediation Resources Group, Inc.
4585 Pacheco Blvd, Suite 200
Martinez, California 94553
(925) 969-0750

CLIENT:				
EARLE SHENK	**WELL LOCATION MAP**			
LOCATION:	DRAWN BY:	CHECKED BY:	PROJECT NO.	FIG NO.
6159 ACACIA AVE. OAKLAND, CALIFORNIA	JJC 5/29/2013	TA 5/29/2013	2012-002	3

Attachment 1

Alameda County Public Works Agency - Water Resources Well Permit

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

Application Approved on: 03/21/2013 By jamesy (510) 714-0406

Permit Numbers: W2013-0227
Permits Valid from 04/01/2013 to 04/05/2013

Application Id:	1363730308552	**City of Project Site:**Oakland
Site Location:	6159 Acacia	
Project Start Date:	04/01/2013	**Completion Date:**04/05/2013
Assigned Inspector:	Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org	
Applicant:	Engineering/Remediation Resources Group, Inc. (ERRG) - Tiffany Angus 115 Sansome St, Suite 200, San Francisco, CA 94104	**Phone:** 415-395-9974
Property Owner:	Nicholas Moore 6159 Acacia, Oakland, CA 94618	**Phone:** 510-653-1855
Client:	Priscilla Shenk 575 Broadmoor Blvd, San Leandro, CA 94577	**Phone:** 510-638-3306
Contact:	Teodora Remo-Aguigui	**Phone:** 925-969-0750 **Cell:** --

	Total Due:	$265.00
Receipt Number: WR2013-0107	**Total Amount Paid:**	$265.00
Payer Name : TEODORA REMOAGUIGU	Paid By: VISA	**PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 1 Boreholes
Driller: Cascade - Lic #: 938110 - Method: DP **Work Total: $265.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2013-0227	03/21/2013	06/30/2013	1	2.00 in.	20.00 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, property damage, personal injury and wrongful death.

4. Prior to any drilling activities, it shall be the applicant's responsibility to contact and coordinate an Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits or agreements required for that Federal, State, County or City, and follow all City or County Ordinances. No work shall begin until all the permits and requirements have been approved or obtained. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County an Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the

permits and requirements have been approved or obtained.

5. Applicant shall contact Steve Miller for an inspection time at (510) 670-5517 or email to stevem@acpwa.org at least five (5) working days prior to starting, once the permit has been approved. Confirm the scheduled date(s) at least 24 hours prior to drilling.

6. 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.

7. 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.

Attachment 2

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TAILGATE SAFETY MEETING

SITE LOCATION: 6159 Acacia Ave **CONTRACT #** 2012-002

DATE 4-16-13 **TIME** 0900 **PROJECT NUMBER** 2012-002

CLIENT Earle Shenk

SPECIFIC LOCATION 6159 Acacia Ave (Back yard)

TYPE OF WORK Drilling and Soil Sampling

SAFETY TOPICS PRESENTED

SAFETY TOPICS Heavy Lifting, Utility Clearance

LESSONS LEARNED

PROTECTIVE CLOTHING/EQUIPMENT Level D, work Gloves, Nitrile Gloves

DISCUSSEDLPO CARDS: X Yes ___ No

CHEMICAL HAZARDS TPH, BTEX

PHYSICAL HAZARDS Slips + Trips, Heavy Loads, Traffic

BIOLOGICAL HAZARDS Bees

EMERGENCY PROCEDURES Stabalize + Contact 911

CLINIC ADDRESS **PHONE**

HOSPITAL ADDRESS ~~Attached~~ Kaiser Oakland 280 West MacArthur Blvd

SPECIAL EQUIPMENT 420 Geoprobe Limited Access Rig

NOTE: Avoid damage to property. Client is not the property owner.

ATTENDEES

NAME PRINTED	COMPANY	SIGNATURE
Juan C. Morales	CDLP	
Carlos Moreno	CDLP	

SSHO: **SUPERINTENDENT:** Patrick Brattoa

SIGNATURE: **SIGNATURE:**

DAILY FIELD ACTIVITY LOG

Prepared by: Patrick Bratton
Day: Tuesday
Project Name: Soil + GW Sampling at 6159 Acacia Ave
Weather: Clear
Site Visitors: Earle Shenk

Client: Earle Shenk
Date: 4-16-13
Project No.: 2012-002
Page: 1 of 2

Description of Field Activities:

0730 Arrive on site. Prepare Daily paperwork.
Drillers called while on route to site to Confirm 0800 hrs meet/start time.
0750 Drillers Arrive, walk to front of property to review safe Parking/Staging
Tailgate safety meeting: Safety topics Heavy Lifting + utility clearance. Reviewed situation of client not being property owner and the need to be curtious and clean up after our work.
0810 Meet with Property owner (Nick) who opened the back gate to give us access. Geoprobe 420M is too heavy to carry up and down stairs safely. Call Tiffany To discuss situation. Tiffany calls regulator to discuss variance, gets Approval to Hand Auger and Sample using a slam bar with a sleeve.
Drillers Lay down fabric to protect grass.
0850 Begin drilling + logging Soil
0900 Slightly wet, Collect sample 6159-55-01 at 4 ft bgs
~~0910~~ at ~6.5 f Slight odor and greenish tint to soil.
0930 Sample at 8.0 to 8.25 ft Odor is Stronger 9159-55-02
Groundwater encountered at ~8.5 ft.
~~Static GW is at~~ Auger down to 9.0 ft. Groundwater appears Static at ~7.5 to 8.0 ft. (18-24 inches of water)
Set up for water Samples. Call Tiffany to notify Client.
Set 1 inch casing into Boring. use Poly tubing and Peristaltic pump to Collect water samples 9159-GW-01 at 1015 hrs
1020 Earle arrives on site.
1025 Inspector arrives on site
Collect Soil sample at 9.5 ft to 10 ft using Auger. Sample too wet to collect from Sleeves

Signed: [signature] Date: 4-16-13

ERRG

DAILY FIELD ACTIVITY LOG

Prepared by: Patrick Bratton
Client: Earle Shank
Day: Tuesday
Date: 4-16-18
Project Name: Soil + GW Sampling at 6159 Acacia
Project No.: 2012-002
Weather: Clear
Page: 2 of 2
Site Visitors: Earl Shank

Description of Field Activities:

1050 Possible refusal in very tight clay/bedrock attempt Sample at 11.5 to 12ft Sampler not working, Collect sample out of auger. 2-3 inch angular rocks encountered, likely fractured Bedrock sample 6159-SS-04 at 1115 Hrs. ~~Collect Soil from Auger~~ PB. Collect rocks from Auger.

1120 Begin grouting up boring using tremie pipe. Take photos of the grouting process. Leave grout to settle. Begin cleaning up materials and supplies.

1130 ~~Add more~~ PB Use Vacuum to remove excess water from the boring. Add more grout to ~ 6inches below ground Surface.

Put Vacuumed water into Drum with decon water.

Put Soil cuttings into Separate Drum.

Use poting soil to fill boring the top 6inches. Put grass plug back in place.

1200 Collect Soil (IDW-Soil) and Water (IDW-Water) samples from Drums.

1230 Label drums with "Pending Analysis" labels and store drum next to mailbox in home owners driveway.

1245 Leave Site, End of day.

Signed: [signature] Date: 4-16-18

ERRG

ERRG

Boring #:	001
Sheet	1 of 2

Project Name and Location: Investigation at 6159 Acacia Ave | **Job #:** 2012-002

Elevation: Unknown | **Date and Time Started:** 4-16-13 at 0850 hrs

Completion Depth: 11.5 ft | **Number of Samples:** Drive: 4 | 1-liter | VOA: | Other:

Boring Diameter & Drilling Method: ~~Mud Rotary~~ 4 inch Hand Auger | **Water Level:** First (date/time) 8.75 | Second (date/time): 9.0

Sampler: Patrick Bratton | **Hammer Wt:** | **Drop:** | **Boring Location:** Backyard

Drilling Co: Cascade | **Driller:** Juan and Carlos

Depth (ft.)	Sample No	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
0					Grass			10		10	80		
.5					Clay: Brown stiff dry		CL						
1					10% Small gravel, high Plasticity								
1.5					Some Organics								
2					rounded 2-3 inch Rock, Sub Angular green (Greenstone?)								
2.5													
3.0					Same, slightly reddish Brown		CL	10		10	80		
3.5					Same but moist								
4	6159-SS-01	100%			Same but wet								
4.2	at 0900												
4.5	at 4.5 ft				Dry								
5					Same Brown		CL						
5.5					Less Gravel								
6													
6.5	6195-SS-02				Slight odor, Brown/green		CL						
7	at 0915												
7.5					Less Gravel								
8.0	6195-SS-02				Wood debris								
8.5	0930				Odor								
9					Sample Wet								
9.5					8' 10 inches with 18 inches of water								

ERRG

Boring #:	001
Sheet	2 of 2

Project Name and Location: | **Job #:**

Depth (ft.)	Sample No	Sample Interval	Recovery	Blow Count	Description	Graphic Symbol	USCS Symbol	Estimated % of Gr	Sa	Si	Cl	P.I.D. Reading	Comments
8.5	SS-03				Clay No Gravel		CL						
10	1030				tight								
10.5					5% small Rounded			5%			95		
					Gravel								
11					Dry tight.								
11.5													
					Refusal at 11.5								
					Fractured bedrock in Auger								

Attachment 3

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

Date of Report: 05/09/2013

Tiffany Angus

ERRG
115 Sansome Street, Suite 200
San Francisco, CA 94104

Project:	Acacia Street
BC Work Order:	1308095
Invoice ID:	B145138

Enclosed are the results of analyses for samples received by the laboratory on 4/19/2013. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Tina Green
Client Services Manager

Authorized Signature

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Table of Contents

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BC Laboratories, Inc.

Chain of Custody Form

Page 1 of 1

Report To: Client: ERRG	Project #: 2012-002
Attn: Tiffany Angus	Project Name: Acacia St
Street Address: 115 Sansome St. Suite 200	
City, State, Zip: San Francisco, CA 94104	Sampler(s): Patrick Bratton
Phone: (415) 848-7117 Fax:	
Email Address: tiffany.angus@errg.com	
Work Order #: 2012-002	13-08095

Analysis Requested

Comments:

Sample #	Description	Date Sampled	Time Sampled	TPH-DRO (8015B)	TPH-MRO (8015B)	BTEX (8260B)	Naphthalene (8260B)	Sample Matrix: Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other	Turnaround # of work days*	Notes
1	6195-SS-01 -1	4/16/13	0900	X	X	X	X	X						10	
2	6195-SS-02 -2	4/16/13	0930	X	X	X	X	X						10	
3	6195-SS-03 -3	4/16/13	1030	X	X	X	X	X						10	
4	6195-SS-04 -4	4/16/13	1115	*	*	*	*	X						10	*Hold Sample
5	6195-GW-01 -5	4/16/13	1015	X	X	X	X				X			10	

Are there any tests with holding times less than or equal to 48 hours? ☐ Yes ☐ No

* Standard Turnaround = 10 work days

Billing

☒ Same as above

Client:
Address:
City: State Zip
Attn:
PO#:

EDF Required? Geotracker ☐ Yes ☐ No

Send Copy to State of CA? (EDT) ☐ Yes ☐ No

Global ID (Needed for EDF):

System # (Needed for EDT):

	Relinquished By	Date	Time	Received By	Date	Time
1.		4/18	1130		4-18-13	1130
2.		4-18-13	1945		4-18-13	19:45
3.		4-18-13	22:45		4-18-13	2245

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4100 Atlas Court Bakersfield, CA 93308 (661) 327-4911 FAX (661) 327-1918 www.bclabs.com

Chain of Custody and Cooler Receipt Form for 1308095 Page 2 of 2

BC LABORATORIES INC. COOLER RECEIPT FORM Rev. No. 13 08/17/13 Page 1 Of 1

Submission #: 13-08095

SHIPPING INFORMATION
Federal Express ☐ UPS ☐ Hand Delivery ☐
BC Lab Field Service ☑ Other ☐ (Specify)_____

SHIPPING CONTAINER
Ice Chest ☑ None ☐
Box ☐ Other ☐ (Specify)_____

Refrigerant: Ice ☑ Blue Ice ☐ None ☐ Other ☐ Comments:

Custody Seals: Ice Chest ☐ Intact? Yes ☐ No ☐ | Containers ☐ Intact? Yes ☐ No ☐ | None ☑ Comments:

All samples received? Yes ☑ No ☐ All samples containers intact? Yes ☑ No ☐ Description(s) match COC? Yes ☑ No ☐

COC Received ☑YES ☐ NO

Emissivity: 0.95 Container: Qt Amber Thermometer ID: 207

Temperature: (A) 0.7 °C / (C) 0.6 °C

Date/Time 4/18/13 2245

Analyst Init SAS

SAMPLE CONTAINERS	SAMPLE NUMBERS 1	2	3	4	5	6	7	8	9	10
QT GENERAL MINERAL/ GENERAL PHYSICAL										
PT PE UNPRESERVED										
QT INORGANIC CHEMICAL METALS										
PT INORGANIC CHEMICAL METALS										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz. NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT TOX										
PT CHEMICAL OXYGEN DEMAND										
PtA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL	( )	( )	( )	( )	A 3	( )	( )	( )	( )	( )
QT EPA 413.1, 413.2, 418.1										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 508/608/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
100ml EPA 547										
100ml EPA 531.1										
QT EPA 548										
QT EPA 549										
QT EPA 632										
QT EPA 8015M										
QT AMBER					BC					
8 OZ. JAR										
32 OZ. JAR										
SOIL SLEEVE	A	A	A	A						
PCB VIAL										
PLASTIC BAG										
FERROUS IRON										
ENCORE										
SMART KIT										

CHK BY KIQ DISTRIBUTION ORIGINAL SUB-OUT ☐

Comments:_____

Sample Numbering Completed By: KIQ Date/Time: 4/19/13 @1755

A = Actual / C = Corrected

ERRG
115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1308095-01	**COC Number:**	---	**Receive Date:**	04/19/2013 22:45
	Project Number:	---	**Sampling Date:**	04/16/2013 09:00
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	6195-SS-01	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1308095-02	**COC Number:**	---	**Receive Date:**	04/19/2013 22:45
	Project Number:	---	**Sampling Date:**	04/16/2013 09:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	6195-SS-02	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1308095-03	**COC Number:**	---	**Receive Date:**	04/19/2013 22:45
	Project Number:	---	**Sampling Date:**	04/16/2013 10:30
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	6195-SS-03	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1308095-04	**COC Number:**	---	**Receive Date:**	04/19/2013 22:45
	Project Number:	---	**Sampling Date:**	04/16/2013 11:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	6195-SS-04	**Lab Matrix:**	Solids
	Sampled By:	---	**Sample Type:**	Soil
1308095-05	**COC Number:**	---	**Receive Date:**	04/19/2013 22:45
	Project Number:	---	**Sampling Date:**	04/16/2013 10:15
	Sampling Location:	---	**Sample Depth:**	---
	Sampling Point:	6195-GW-01	**Lab Matrix:**	Water
	Sampled By:	---	**Sample Type:**	Groundwater

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ERRG
115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1308095-01 | **Client Sample Name:** 6195-SS-01, 4/16/2013 9:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	96.5	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.3	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	95.4	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/23/13	04/24/13 10:27	ADC	MS-V2	1	BWD1834

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ERRG
115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1308095-01 | **Client Sample Name:** 6195-SS-01, 4/16/2013 9:00:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND	A01	1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND	A01	1
Tetracosane (Surrogate)	86.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	04/25/13	04/29/13 21:41	MWB	GC-2	1.007	BWD2221

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115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1308095-02 | **Client Sample Name:** 6195-SS-02, 4/16/2013 9:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Naphthalene	**0.053**	**mg/kg**	**0.0050**	**0.0014**	**EPA-8260B**	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	93.9	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.2	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	90.5	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/23/13	04/23/13 12:06	ADC	MS-V2	1	BWD1834

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115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1308095-02 | **Client Sample Name:** 6195-SS-02, 4/16/2013 9:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	**2400**	**mg/kg**	**500**	**60**	**EPA-8015B/FFP**	ND	**A01**	1
TPH - Motor Oil	ND	mg/kg	1000	320	EPA-8015B/FFP	ND	A01	1
Tetracosane (Surrogate)	0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01,A17	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	04/25/13	04/30/13 09:49	MWB	GC-2	50.505	BWD2221

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115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1308095-03 | **Client Sample Name:** 6195-SS-03, 4/16/2013 10:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Naphthalene	**0.025**	**mg/kg**	**0.0050**	**0.0014**	**EPA-8260B**	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	95.6	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.8	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	106	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/23/13	04/23/13 12:32	ADC	MS-V2	1	BWD1834

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ERRG
115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1308095-03 | **Client Sample Name:** 6195-SS-03, 4/16/2013 10:30:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	**890**	**mg/kg**	**100**	**12**	**EPA-8015B/FFP**	ND	**A01**	1
TPH - Motor Oil	ND	mg/kg	200	65	EPA-8015B/FFP	ND	A01	1
Tetracosane (Surrogate)	77.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	04/25/13	04/30/13 10:12	MWB	GC-2	10.101	BWD2221

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ERRG
115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1308095-04 | **Client Sample Name:** 6195-SS-04, 4/16/2013 11:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	99.9	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.8	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	98.5	%	74 - 121 (LCL - UCL)		EPA-8260B			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/24/13	04/24/13 10:54	ADC	MS-V2	1	BWE0004

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ERRG
115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1308095-04 | **Client Sample Name:** 6195-SS-04, 4/16/2013 11:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	**66**	**mg/kg**	**10**	**1.2**	**EPA-8015B/FFP**	ND	**Z1**	1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND	Z1	1
Tetracosane (Surrogate)	83.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	05/02/13	05/08/13 12:52	MWB	GC-2	0.993	BWE0510

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ERRG
115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1308095-05 | **Client Sample Name:** 6195-GW-01, 4/16/2013 10:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	**0.43**	**ug/L**	**0.50**	**0.083**	**EPA-8260B**	ND	**J**	1
Bromobenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Bromochloromethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
Bromodichloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Bromoform	ND	ug/L	0.50	0.27	EPA-8260B	ND		1
Bromomethane	ND	ug/L	1.0	0.25	EPA-8260B	ND		1
n-Butylbenzene	**1.4**	**ug/L**	**0.50**	**0.11**	**EPA-8260B**	ND		1
sec-Butylbenzene	**6.5**	**ug/L**	**0.50**	**0.15**	**EPA-8260B**	ND		1
tert-Butylbenzene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Carbon tetrachloride	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
Chlorobenzene	ND	ug/L	0.50	0.093	EPA-8260B	ND		1
Chloroethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
Chloroform	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Chloromethane	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
2-Chlorotoluene	ND	ug/L	0.50	0.20	EPA-8260B	ND		1
4-Chlorotoluene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
Dibromochloromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	ug/L	1.0	0.44	EPA-8260B	ND		1
1,2-Dibromoethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Dibromomethane	ND	ug/L	0.50	0.24	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	ug/L	0.50	0.072	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	ug/L	0.50	0.062	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	ug/L	0.50	0.099	EPA-8260B	ND		1
1,1-Dichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,2-Dichloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
1,1-Dichloroethene	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,3-Dichloropropane	ND	ug/L	0.50	0.086	EPA-8260B	ND		1
2,2-Dichloropropane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,1-Dichloropropene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1

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ERRG
115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1308095-05 | **Client Sample Name:** 6195-GW-01, 4/16/2013 10:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	ug/L	0.50	0.14	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	ug/L	0.50	0.079	EPA-8260B	ND		1
Ethylbenzene	ND	ug/L	0.50	0.098	EPA-8260B	ND		1
Hexachlorobutadiene	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Isopropylbenzene	**2.0**	**ug/L**	**0.50**	**0.14**	**EPA-8260B**	ND		1
p-Isopropyltoluene	**0.45**	**ug/L**	**0.50**	**0.12**	**EPA-8260B**	ND	**J**	1
Methylene chloride	ND	ug/L	1.0	0.48	EPA-8260B	ND		1
Methyl t-butyl ether	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
Naphthalene	**33**	**ug/L**	**0.50**	**0.36**	**EPA-8260B**	ND		1
n-Propylbenzene	**3.5**	**ug/L**	**0.50**	**0.11**	**EPA-8260B**	ND		1
Styrene	ND	ug/L	0.50	0.068	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	ug/L	0.50	0.18	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	ug/L	0.50	0.17	EPA-8260B	ND		1
Tetrachloroethene	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
Toluene	**0.10**	**ug/L**	**0.50**	**0.093**	**EPA-8260B**	ND	**J**	1
1,2,3-Trichlorobenzene	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	ug/L	0.50	0.19	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	ug/L	0.50	0.11	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	ug/L	0.50	0.16	EPA-8260B	ND		1
Trichloroethene	ND	ug/L	0.50	0.085	EPA-8260B	ND		1
Trichlorofluoromethane	ND	ug/L	0.50	0.13	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	ug/L	1.0	0.24	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	ug/L	0.50	0.15	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Vinyl chloride	ND	ug/L	0.50	0.12	EPA-8260B	ND		1
Total Xylenes	ND	ug/L	1.0	0.36	EPA-8260B	ND		1
p- & m-Xylenes	ND	ug/L	0.50	0.28	EPA-8260B	ND		1
o-Xylene	**0.12**	**ug/L**	**0.50**	**0.082**	**EPA-8260B**	ND	**J**	1
1,2-Dichloroethane-d4 (Surrogate)	116	%	75 - 125 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	99.7	%	80 - 120 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	101	%	80 - 120 (LCL - UCL)		EPA-8260B			1

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115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Volatile Organic Analysis (EPA Method 8260)

BCL Sample ID: 1308095-05 | **Client Sample Name:** 6195-GW-01, 4/16/2013 10:15:00AM

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	04/24/13	04/25/13 10:35	MGC	MS-V5	1	BWD1930

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Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1308095-05 | **Client Sample Name:** 6195-GW-01, 4/16/2013 10:15:00AM

Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Diesel (FFP)	ND	ug/L	200	34	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	ug/L	500	66	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	54.4	%	37 - 134 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	04/23/13	04/26/13 10:57	MWB	GC-2	1	BWD2076

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Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
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Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWD1834						
Benzene	BWD1834-BLK1	ND	mg/kg	0.0050	0.0013	
Ethylbenzene	BWD1834-BLK1	ND	mg/kg	0.0050	0.0015	
Naphthalene	BWD1834-BLK1	ND	mg/kg	0.0050	0.0014	
Toluene	BWD1834-BLK1	ND	mg/kg	0.0050	0.0012	
Total Xylenes	BWD1834-BLK1	ND	mg/kg	0.010	0.0034	
1,2-Dichloroethane-d4 (Surrogate)	BWD1834-BLK1	95.0	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BWD1834-BLK1	97.0	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BWD1834-BLK1	90.0	%	74 - 121 (LCL - UCL)		
QC Batch ID: BWD1930						
Benzene	BWD1930-BLK1	ND	ug/L	0.50	0.083	
Bromobenzene	BWD1930-BLK1	ND	ug/L	0.50	0.13	
Bromochloromethane	BWD1930-BLK1	ND	ug/L	0.50	0.24	
Bromodichloromethane	BWD1930-BLK1	ND	ug/L	0.50	0.14	
Bromoform	BWD1930-BLK1	ND	ug/L	0.50	0.27	
Bromomethane	BWD1930-BLK1	ND	ug/L	1.0	0.25	
n-Butylbenzene	BWD1930-BLK1	ND	ug/L	0.50	0.11	
sec-Butylbenzene	BWD1930-BLK1	ND	ug/L	0.50	0.15	
tert-Butylbenzene	BWD1930-BLK1	ND	ug/L	0.50	0.13	
Carbon tetrachloride	BWD1930-BLK1	ND	ug/L	0.50	0.18	
Chlorobenzene	BWD1930-BLK1	ND	ug/L	0.50	0.093	
Chloroethane	BWD1930-BLK1	ND	ug/L	0.50	0.14	
Chloroform	BWD1930-BLK1	ND	ug/L	0.50	0.12	
Chloromethane	BWD1930-BLK1	ND	ug/L	0.50	0.14	
2-Chlorotoluene	BWD1930-BLK1	ND	ug/L	0.50	0.20	
4-Chlorotoluene	BWD1930-BLK1	ND	ug/L	0.50	0.15	
Dibromochloromethane	BWD1930-BLK1	ND	ug/L	0.50	0.13	
1,2-Dibromo-3-chloropropane	BWD1930-BLK1	ND	ug/L	1.0	0.44	
1,2-Dibromoethane	BWD1930-BLK1	ND	ug/L	0.50	0.16	
Dibromomethane	BWD1930-BLK1	ND	ug/L	0.50	0.24	
1,2-Dichlorobenzene	BWD1930-BLK1	ND	ug/L	0.50	0.072	
1,3-Dichlorobenzene	BWD1930-BLK1	ND	ug/L	0.50	0.15	
1,4-Dichlorobenzene	BWD1930-BLK1	ND	ug/L	0.50	0.062	
Dichlorodifluoromethane	BWD1930-BLK1	ND	ug/L	0.50	0.099	

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Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWD1930						
1,1-Dichloroethane	BWD1930-BLK1	ND	ug/L	0.50	0.11	
1,2-Dichloroethane	BWD1930-BLK1	ND	ug/L	0.50	0.17	
1,1-Dichloroethene	BWD1930-BLK1	ND	ug/L	0.50	0.18	
cis-1,2-Dichloroethene	BWD1930-BLK1	ND	ug/L	0.50	0.085	
trans-1,2-Dichloroethene	BWD1930-BLK1	ND	ug/L	0.50	0.15	
1,2-Dichloropropane	BWD1930-BLK1	ND	ug/L	0.50	0.13	
1,3-Dichloropropane	BWD1930-BLK1	ND	ug/L	0.50	0.086	
2,2-Dichloropropane	BWD1930-BLK1	ND	ug/L	0.50	0.13	
1,1-Dichloropropene	BWD1930-BLK1	ND	ug/L	0.50	0.085	
cis-1,3-Dichloropropene	BWD1930-BLK1	ND	ug/L	0.50	0.14	
trans-1,3-Dichloropropene	BWD1930-BLK1	ND	ug/L	0.50	0.079	
Ethylbenzene	BWD1930-BLK1	ND	ug/L	0.50	0.098	
Hexachlorobutadiene	BWD1930-BLK1	ND	ug/L	0.50	0.17	
Isopropylbenzene	BWD1930-BLK1	ND	ug/L	0.50	0.14	
p-Isopropyltoluene	BWD1930-BLK1	ND	ug/L	0.50	0.12	
Methylene chloride	BWD1930-BLK1	ND	ug/L	1.0	0.48	
Methyl t-butyl ether	BWD1930-BLK1	ND	ug/L	0.50	0.11	
Naphthalene	BWD1930-BLK1	ND	ug/L	0.50	0.36	
n-Propylbenzene	BWD1930-BLK1	ND	ug/L	0.50	0.11	
Styrene	BWD1930-BLK1	ND	ug/L	0.50	0.068	
1,1,1,2-Tetrachloroethane	BWD1930-BLK1	ND	ug/L	0.50	0.18	
1,1,2,2-Tetrachloroethane	BWD1930-BLK1	ND	ug/L	0.50	0.17	
Tetrachloroethene	BWD1930-BLK1	ND	ug/L	0.50	0.13	
Toluene	BWD1930-BLK1	ND	ug/L	0.50	0.093	
1,2,3-Trichlorobenzene	BWD1930-BLK1	ND	ug/L	0.50	0.16	
1,2,4-Trichlorobenzene	BWD1930-BLK1	ND	ug/L	0.50	0.19	
1,1,1-Trichloroethane	BWD1930-BLK1	ND	ug/L	0.50	0.11	
1,1,2-Trichloroethane	BWD1930-BLK1	ND	ug/L	0.50	0.16	
Trichloroethene	BWD1930-BLK1	ND	ug/L	0.50	0.085	
Trichlorofluoromethane	BWD1930-BLK1	ND	ug/L	0.50	0.13	
1,2,3-Trichloropropane	BWD1930-BLK1	ND	ug/L	1.0	0.24	
1,1,2-Trichloro-1,2,2-trifluoroethane	BWD1930-BLK1	ND	ug/L	0.50	0.15	
1,2,4-Trimethylbenzene	BWD1930-BLK1	ND	ug/L	0.50	0.12	
1,3,5-Trimethylbenzene	BWD1930-BLK1	ND	ug/L	0.50	0.12	

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Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWD1930						
Vinyl chloride	BWD1930-BLK1	ND	ug/L	0.50	0.12	
Total Xylenes	BWD1930-BLK1	ND	ug/L	1.0	0.36	
p- & m-Xylenes	BWD1930-BLK1	ND	ug/L	0.50	0.28	
o-Xylene	BWD1930-BLK1	ND	ug/L	0.50	0.082	
1,2-Dichloroethane-d4 (Surrogate)	BWD1930-BLK1	103	%	75 - 125 (LCL - UCL)		
Toluene-d8 (Surrogate)	BWD1930-BLK1	101	%	80 - 120 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BWD1930-BLK1	97.2	%	80 - 120 (LCL - UCL)		
QC Batch ID: BWE0004						
Benzene	BWE0004-BLK1	ND	mg/kg	0.0050	0.0013	
Ethylbenzene	BWE0004-BLK1	ND	mg/kg	0.0050	0.0015	
Naphthalene	BWE0004-BLK1	ND	mg/kg	0.0050	0.0014	
Toluene	BWE0004-BLK1	ND	mg/kg	0.0050	0.0012	
Total Xylenes	BWE0004-BLK1	ND	mg/kg	0.010	0.0034	
1,2-Dichloroethane-d4 (Surrogate)	BWE0004-BLK1	102	%	70 - 121 (LCL - UCL)		
Toluene-d8 (Surrogate)	BWE0004-BLK1	97.6	%	81 - 117 (LCL - UCL)		
4-Bromofluorobenzene (Surrogate)	BWE0004-BLK1	90.9	%	74 - 121 (LCL - UCL)		

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Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BWD1834										
Benzene	BWD1834-BS1	LCS	0.11711	0.12500	mg/kg	93.7		70 - 130		
Toluene	BWD1834-BS1	LCS	0.11243	0.12500	mg/kg	89.9		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWD1834-BS1	LCS	0.049230	0.050000	mg/kg	98.5		70 - 121		
Toluene-d8 (Surrogate)	BWD1834-BS1	LCS	0.048290	0.050000	mg/kg	96.6		81 - 117		
4-Bromofluorobenzene (Surrogate)	BWD1834-BS1	LCS	0.048640	0.050000	mg/kg	97.3		74 - 121		
QC Batch ID: BWD1930										
Benzene	BWD1930-BS1	LCS	25.260	25.000	ug/L	101		70 - 130		
Bromodichloromethane	BWD1930-BS1	LCS	26.600	25.000	ug/L	106		70 - 130		
Chlorobenzene	BWD1930-BS1	LCS	24.530	25.000	ug/L	98.1		70 - 130		
Chloroethane	BWD1930-BS1	LCS	25.940	25.000	ug/L	104		70 - 130		
1,4-Dichlorobenzene	BWD1930-BS1	LCS	26.180	25.000	ug/L	105		70 - 130		
1,1-Dichloroethane	BWD1930-BS1	LCS	24.380	25.000	ug/L	97.5		70 - 130		
1,1-Dichloroethene	BWD1930-BS1	LCS	24.890	25.000	ug/L	99.6		70 - 130		
Toluene	BWD1930-BS1	LCS	24.520	25.000	ug/L	98.1		70 - 130		
Trichloroethene	BWD1930-BS1	LCS	24.410	25.000	ug/L	97.6		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWD1930-BS1	LCS	10.670	10.000	ug/L	107		75 - 125		
Toluene-d8 (Surrogate)	BWD1930-BS1	LCS	10.180	10.000	ug/L	102		80 - 120		
4-Bromofluorobenzene (Surrogate)	BWD1930-BS1	LCS	10.220	10.000	ug/L	102		80 - 120		
QC Batch ID: BWE0004										
Benzene	BWE0004-BS1	LCS	0.13097	0.12500	mg/kg	105		70 - 130		
Toluene	BWE0004-BS1	LCS	0.12590	0.12500	mg/kg	101		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	BWE0004-BS1	LCS	0.048620	0.050000	mg/kg	97.2		70 - 121		
Toluene-d8 (Surrogate)	BWE0004-BS1	LCS	0.048260	0.050000	mg/kg	96.5		81 - 117		
4-Bromofluorobenzene (Surrogate)	BWE0004-BS1	LCS	0.049510	0.050000	mg/kg	99.0		74 - 121		

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Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BWD1834	Used client sample: N										
Benzene	MS	1308130-11	ND	0.11954	0.12500	mg/kg		95.6		70 - 130	
	MSD	1308130-11	ND	0.11350	0.12500	mg/kg	5.2	90.8	20	70 - 130	
Toluene	MS	1308130-11	ND	0.13178	0.12500	mg/kg		105		70 - 130	
	MSD	1308130-11	ND	0.11248	0.12500	mg/kg	15.8	90.0	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1308130-11	ND	0.038530	0.050000	mg/kg		77.1		70 - 121	
	MSD	1308130-11	ND	0.048170	0.050000	mg/kg	22.2	96.3		70 - 121	
Toluene-d8 (Surrogate)	MS	1308130-11	ND	0.044590	0.050000	mg/kg		89.2		81 - 117	
	MSD	1308130-11	ND	0.049640	0.050000	mg/kg	10.7	99.3		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1308130-11	ND	0.048750	0.050000	mg/kg		97.5		74 - 121	
	MSD	1308130-11	ND	0.049790	0.050000	mg/kg	2.1	99.6		74 - 121	
QC Batch ID: BWD1930	Used client sample: N										
Benzene	MS	307895-06RE´	1.5500	127.55	125.00	ug/L		101		70 - 130	
	MSD	307895-06RE´	1.5500	122.00	125.00	ug/L	4.4	96.4	20	70 - 130	
Bromodichloromethane	MS	307895-06RE´	ND	138.60	125.00	ug/L		111		70 - 130	
	MSD	307895-06RE´	ND	135.60	125.00	ug/L	2.2	108	20	70 - 130	
Chlorobenzene	MS	307895-06RE´	ND	126.35	125.00	ug/L		101		70 - 130	
	MSD	307895-06RE´	ND	122.80	125.00	ug/L	2.8	98.2	20	70 - 130	
Chloroethane	MS	307895-06RE´	ND	129.60	125.00	ug/L		104		70 - 130	
	MSD	307895-06RE´	ND	121.80	125.00	ug/L	6.2	97.4	20	70 - 130	
1,4-Dichlorobenzene	MS	307895-06RE´	ND	133.60	125.00	ug/L		107		70 - 130	
	MSD	307895-06RE´	ND	131.95	125.00	ug/L	1.2	106	20	70 - 130	
1,1-Dichloroethane	MS	307895-06RE´	41.300	162.95	125.00	ug/L		97.3		70 - 130	
	MSD	307895-06RE´	41.300	156.20	125.00	ug/L	4.2	91.9	20	70 - 130	
1,1-Dichloroethene	MS	307895-06RE´	4.8000	126.95	125.00	ug/L		97.7		70 - 130	
	MSD	307895-06RE´	4.8000	121.65	125.00	ug/L	4.3	93.5	20	70 - 130	
Toluene	MS	307895-06RE´	ND	123.80	125.00	ug/L		99.0		70 - 130	
	MSD	307895-06RE´	ND	121.25	125.00	ug/L	2.1	97.0	20	70 - 130	
Trichloroethene	MS	307895-06RE´	116.45	230.80	125.00	ug/L		91.5		70 - 130	
	MSD	307895-06RE´	116.45	225.45	125.00	ug/L	2.3	87.2	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	307895-06RE´	ND	10.720	10.000	ug/L		107		75 - 125	
	MSD	307895-06RE´	ND	10.440	10.000	ug/L	2.6	104		75 - 125	
Toluene-d8 (Surrogate)	MS	307895-06RE´	ND	10.050	10.000	ug/L		100		80 - 120	
	MSD	307895-06RE´	ND	10.220	10.000	ug/L	1.7	102		80 - 120	
4-Bromofluorobenzene (Surrogate)	MS	307895-06RE´	ND	10.370	10.000	ug/L		104		80 - 120	
	MSD	307895-06RE´	ND	10.230	10.000	ug/L	1.4	102		80 - 120	
QC Batch ID: BWE0004	Used client sample: N										

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115 Sansome Street, Suite 200
San Francisco, CA 94104

Reported: 05/09/2013 15:40
Project: Acacia Street
Project Number: 2012-002
Project Manager: Tiffany Angus

Volatile Organic Analysis (EPA Method 8260)

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BWE0004	Used client sample: N										
Benzene	MS	1308130-29	ND	0.12720	0.12500	mg/kg		102		70 - 130	
	MSD	1308130-29	ND	0.12859	0.12500	mg/kg	1.1	103	20	70 - 130	
Toluene	MS	1308130-29	ND	0.11724	0.12500	mg/kg		93.8		70 - 130	
	MSD	1308130-29	ND	0.12095	0.12500	mg/kg	3.1	96.8	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1308130-29	ND	0.054140	0.050000	mg/kg		108		70 - 121	
	MSD	1308130-29	ND	0.054320	0.050000	mg/kg	0.3	109		70 - 121	
Toluene-d8 (Surrogate)	MS	1308130-29	ND	0.049520	0.050000	mg/kg		99.0		81 - 117	
	MSD	1308130-29	ND	0.049790	0.050000	mg/kg	0.5	99.6		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1308130-29	ND	0.051680	0.050000	mg/kg		103		74 - 121	
	MSD	1308130-29	ND	0.046300	0.050000	mg/kg	11.0	92.6		74 - 121	

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ERRG
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Project: Acacia Street
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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BWD2076						
TPH - Diesel (FFP)	BWD2076-BLK1	ND	ug/L	200	34	
TPH - Motor Oil	BWD2076-BLK1	ND	ug/L	500	66	
Tetracosane (Surrogate)	BWD2076-BLK1	66.4	%	37 - 134 (LCL - UCL)		
QC Batch ID: BWD2221						
TPH - Diesel (FFP)	BWD2221-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	BWD2221-BLK1	ND	mg/kg	20	6.5	
Tetracosane (Surrogate)	BWD2221-BLK1	86.3	%	20 - 145 (LCL - UCL)		
QC Batch ID: BWE0510						
TPH - Diesel (FFP)	BWE0510-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	BWE0510-BLK1	ND	mg/kg	20	6.5	
Tetracosane (Surrogate)	BWE0510-BLK1	91.1	%	20 - 145 (LCL - UCL)		

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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits Percent Recovery	Control Limits RPD	Lab Quals
QC Batch ID: BWD2076										
TPH - Diesel (FFP)	BWD2076-BS1	LCS	2046.3	2500.0	ug/L	81.9		52 - 128		
Tetracosane (Surrogate)	BWD2076-BS1	LCS	79.385	100.00	ug/L	79.4		37 - 134		
QC Batch ID: BWD2221										
TPH - Diesel (FFP)	BWD2221-BS1	LCS	73.303	81.967	mg/kg	89.4		64 - 124		
Tetracosane (Surrogate)	BWD2221-BS1	LCS	3.0456	3.2787	mg/kg	92.9		20 - 145		
QC Batch ID: BWE0510										
TPH - Diesel (FFP)	BWE0510-BS1	LCS	66.850	83.333	mg/kg	80.2		64 - 124		
Tetracosane (Surrogate)	BWE0510-BS1	LCS	2.7892	3.3333	mg/kg	83.7		20 - 145		

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Purgeable Aromatics and Total Petroleum Hydrocarbons

Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits RPD	Control Limits Percent Recovery	Lab Quals
QC Batch ID: BWD2076	Used client sample: N										
TPH - Diesel (FFP)	MS	1305402-85	ND	1736.1	2500.0	ug/L		69.4		50 - 127	
	MSD	1305402-85	ND	2041.3	2500.0	ug/L	16.2	81.7	24	50 - 127	
Tetracosane (Surrogate)	MS	1305402-85	ND	66.830	100.00	ug/L		66.8		37 - 134	
	MSD	1305402-85	ND	79.950	100.00	ug/L	17.9	80.0		37 - 134	
QC Batch ID: BWD2221	Used client sample: N										
TPH - Diesel (FFP)	MS	1305402-48	ND	69.391	83.612	mg/kg		83.0		52 - 131	
	MSD	1305402-48	ND	70.224	82.508	mg/kg	1.2	85.1	30	52 - 131	
Tetracosane (Surrogate)	MS	1305402-48	ND	3.0166	3.3445	mg/kg		90.2		20 - 145	
	MSD	1305402-48	ND	2.9411	3.3003	mg/kg	2.5	89.1		20 - 145	
QC Batch ID: BWE0510	Used client sample: N										
TPH - Diesel (FFP)	MS	1305402-73	ND	65.972	83.333	mg/kg		79.2		52 - 131	
	MSD	1305402-73	ND	67.409	84.746	mg/kg	2.2	79.5	30	52 - 131	
Tetracosane (Surrogate)	MS	1305402-73	ND	2.9352	3.3333	mg/kg		88.1		20 - 145	
	MSD	1305402-73	ND	2.8224	3.3898	mg/kg	3.9	83.3		20 - 145	

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Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected at or above the reporting limit
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
A01	PQL's and MDL's are raised due to sample dilution.
A17	Surrogate not reportable due to sample dilution.
Z1	Sample taken off HOLD past holding time.

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