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RECEIVED
By Alameda County Environmental Health at 1:48 pm, Aug 18, 2014

August 12, 2014

Mr. Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

Well Destruction Report

76 (Former BP) Station No. 2611117
7210 Bancroft Avenue
Oakland, California
Fuel Leak Case No. RO0000356

Dear Mr. Nowell:

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

If you have any questions or need additional information, please contact Mr. Dennis Dettloff at (916) 503-1261.

Sincerely,

Edward C. Ralston
Program Manager
Remediation Management

Well Destruction Report

76 (Former BP) Station No. 11117
7210 Bancroft Avenue
Oakland, California

Alameda County Health Care Services Agency
Fuel Leak Case No. RO0000356

San Francisco Bay, Regional Water Quality Control Board Case No. 01-0215

GeoTracker Global ID No.T0600100201

August 12, 2014

Prepared for:
Mr. Keith Nowell
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Prepared by:
Antea®Group
11050 White Rock Road, Suite 110
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1.0 INTRODUCTION

Antea Group is pleased to submit this Well Destruction Report for the site located at 7210 Bancroft Avenue in Oakland, California (**Figure 1 and Figure 2**). This report summarizes the destruction of eight (8) monitoring wells, two (2) extracation wells, five (5) duel phase extraction wells, one (1) soil vapor extraction well, and one (1) air sparge well associated with the site, in July of 2014. The well destruction was conducted in preparation for site razing, fuel dispenser piping and underground storage tank (UST) removal activities. This work was performed as proposed in the work plan submitted by Antea Group to the Alameda County Health Care Services Agency (ACHCSA) on May 21, 2014. The work plan was conditionally approved by ACHCSA in an e-mail dated June 2, 2014 (**Appendix A**). This report has received a technical review by Mr. Dennis Dettloff a California Professional Geologist No. 7480.

1.1 Site Description

The site wasan active 76-branded gasoline retail outlet located on the northern corner of Bancroft Avenue and 73rd Avenue in Oakland, Alameda County, California (**Figure 1**). The station building, three 12,000-gallon gasoline underground storage tanks (USTs), and one 10,000-gallon diesel UST with associated piping and dispensers have been removed from the site. The site is currently unpaved as site razing activities are in progress.

Land use in the immediate vicinity of the site is mixed commercial and residential. BP acquired the facility from Mobil Oil Corporation in 1989. In January 1994, BP transferred ownership of the property to TOSCO Marketing Company (TOSCO) and has not operated the facility since that time.

2.0 SCOPE OF WORK

The scope of work completed for the monitoring well destruction included the following activities:

- Obtained drilling permits from the Alameda County Public Works Agency;
- Obtained an encroachment permit from the City of Oakland Planning and Building Department;
- Updated the site-specific health and safety plan;
- Conducted a utility clearance;
- Pressure grouted sixteen (16) wells associated with the site;
- Drilled out the air sparge well associated with the site;
- Disposed of generated waste.

2.1 Pre-Field Activities

The ACHCSA e-mail approving the well destruction work as part of site razing activities is presented as **Appendix A**. Prior to beginning field operations, Antea Group obtained permits for well destruction from the Alameda County

Public Works Agency and an encroachment permit for the City of Oakland Planning and Building Department (**Appendix C**).

Antea Group prepared a site-specific Health and Safety Plan (HASP) in accordance with Title 8, Section 5192 of the California Code of Regulations. The HASP contained a list of emergency contacts, as well as a hospital route map to the nearest emergency facility.

A utility survey was conducted prior to the field operations. Underground Service Alert (USA) was notified prior to well destruction and a private utility locator was retained to minimize the risk of damage to underground utilities.

2.2 Well Destruction Activities

On July 7 through 10, 2014, Cascade Drilling (Cascade), under supervision of an Antea Group field geologist, destroyed fifteen (15) on-site wells (MW-1, MW-3, MW-4, MW-6, MW-7, MW-11, EX-1, EX-2, DPE-1 through DPE-5, SVE-1, and AS-1) and two (2) off-site wells (MW-8 and MW-9) (**Figure 2**).

Before commencing well destruction activities the total depths of each well were measured. The construction and destruction details of each well are shown in **Table 1**. The well boxes for each of the seventeen (17) wells and the top five feet of surface seal, and well casing of monitoring well MW-9, were removed using an air-knife.

Sixteen (16) wells were destroyed by pressure grouting using neat cement and removing the well boxes. The neat cement was pumped into each well casing using tremie pipe. The surface was finished to match the existing site conditions. The top 5 feet of casing in monitoring well MW-8 was not removed due to a utility located within a foot of the well casing.

Air sparge well AS-1 was overdrilled using 8-inch diameter hollow stem augers. The borehole was backfilled with neat cement to just below ground surface and patched with concrete.

The completed Department of Water Resources (DWR) forms are included as **Appendix D** and were sent to the Alameda County Public Works Agency.

2.3 Disposal of Derived Waste

Drill cuttings and decontamination water generated during well destruction activities were placed into properly labeled 55-gallon Department of Transportation (DOT) approved steel drums. Samples of the drill cuttings and decontamination water were collected, properly labeled, placed on ice, and submitted to a California-certified laboratory for analysis of Total Petroleum Hydrocarbons as Gasoline (TPHg), benzene, toluene, ethylbenzene, and total xylenes (BTEX) and methyl tertiary butyl either (MTBE) by Environmental Protection Agency (EPA) Method 8260B, and total lead (soil only) by EPA Method 6010B. Chain-of-custody documentation accompanied the samples during transportation to the laboratory. A copy of the analytical report is presented in **Appendix E**.

3.0 CONCLUSIONS AND RECOMMENDATIONS

The previously discussed well destruction activities prepared the site for razing of the station building and removal of the USTs and product lines. Antea Group intends to conduct remedial activities as described in the Corrective Action Plan Addendum Draft submitted to the ACHCSA in an e-mail dated July 29, 2014. After completion of the site razing, UST and product line removal, and the remediation efforts, Antea Group will submit a work plan for re-installing monitoring wells on-site to continue groundwater monitoring and sampling.

4.0 REMARKS

The recommendations contained in this report represent Antea USA, Inc.'s professional opinions based upon the currently available information and are arrived at in accordance with currently accepted professional standards. This report is based upon a specific scope of work requested by the client. For any reports cited that were not generated by Delta or Antea Group, the data from those reports is used "as is" and is assumed to be accurate. Antea Group does not guarantee the accuracy of this data for the referenced work performed nor the inferences or conclusions stated in these reports. The contract between Antea USA, Inc. and its client outlines the scope of work, and only those tasks specifically authorized by that contract or outlined in this report were performed. This report is intended only for the use of Antea USA, Inc.'s client and anyone else specifically identified in writing by Antea USA, Inc. as a user of this report. Antea USA, Inc. will not and cannot be liable for unauthorized reliance by any other third party. Other than as contained in this paragraph, Antea USA, Inc. makes no express or implied warranty as to the contents of this report.

Prepared by:

Edward T. Weyrens, G.I.T.
Project Professional

Information, conclusions, and recommendations provided by Antea Group in this document regarding the site have been prepared under the supervision of and reviewed by the licensed professional whose signature appears below.

Licensed Approver:

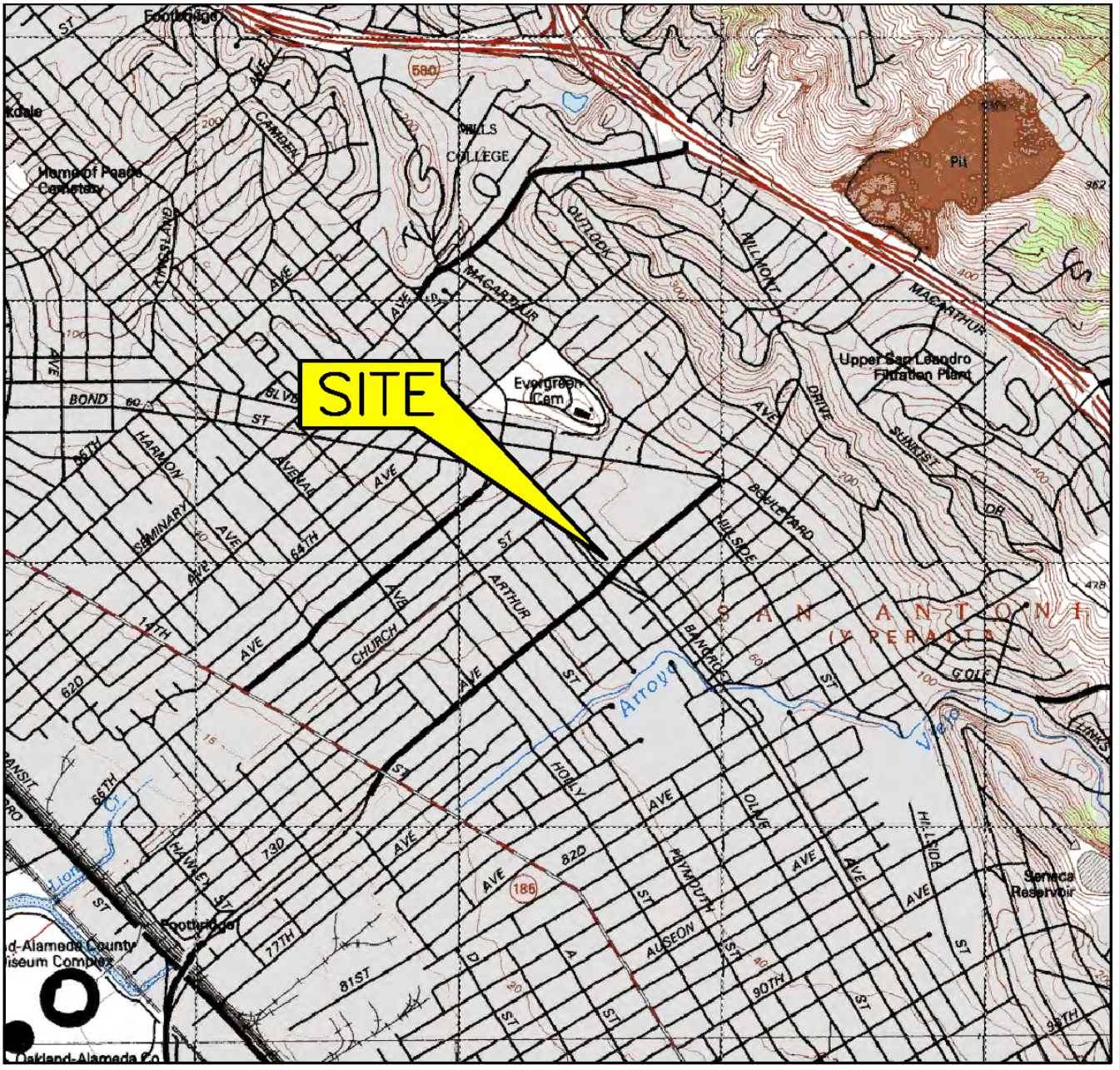
PROFESSIONAL GEOLOGIST
DENNIS SHANNON DETTLOFF
No. 7480
STATE OF CALIFORNIA

Dennis S Dettloff Date: 8/12/14

Dennis S. Dettloff, P.G.
Senior Project Manager
California Registered Professional Geologist No. 7480

cc: Electronic copy uploaded to GeoTracker

Figures



QUADRANGLE LOCATION

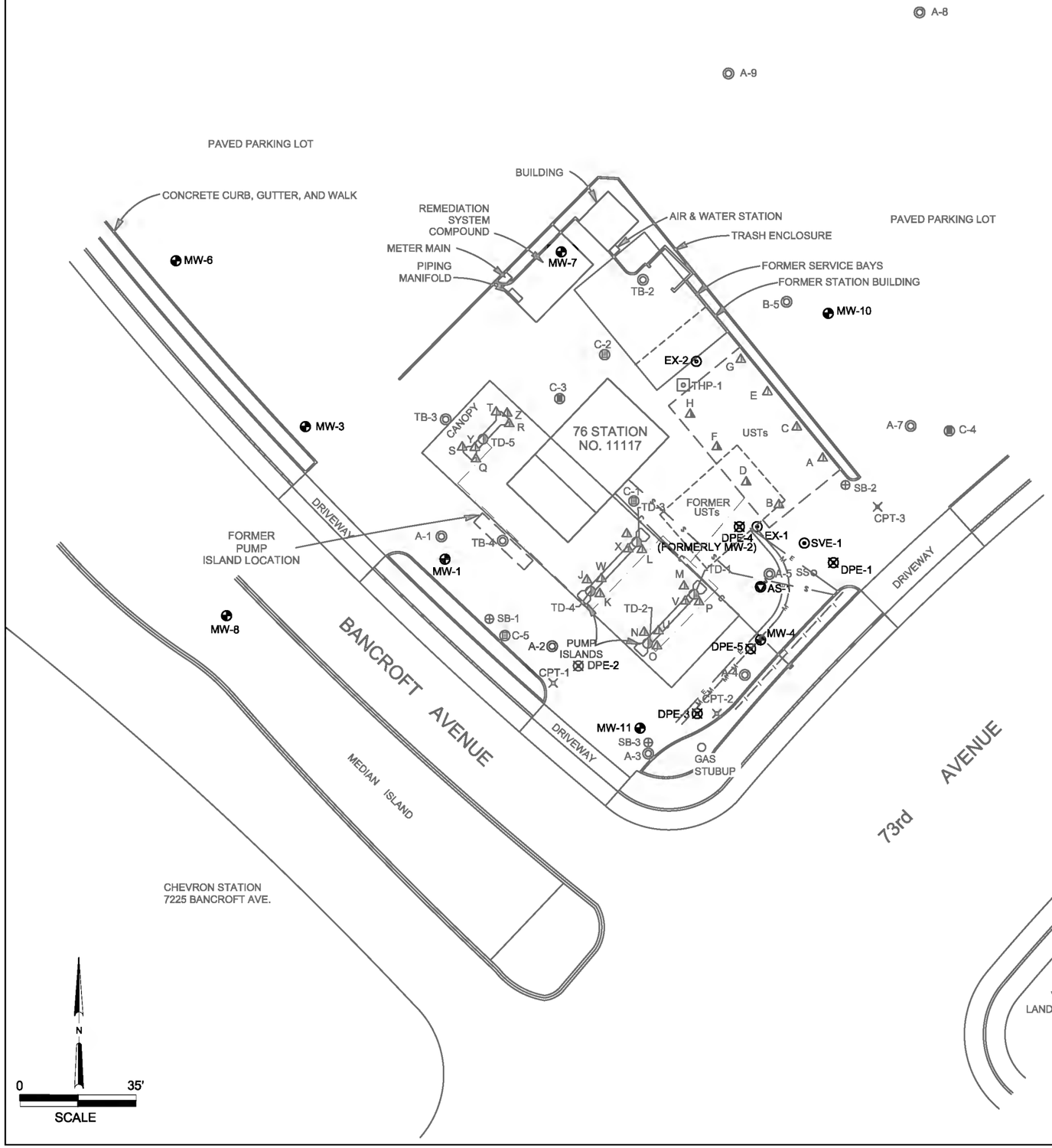
GENERAL NOTES:
BASE MAP FROM USGS, 7.5 MINUTE
TOPOGRAPHIC OAKLAND, CA. PHOTO REVISED 1980

FIGURE 1
SITE LOCATION MAP

76 (FORMER BP) STATION NO 11117
7210 BANCROFT AVENUE
OAKLAND CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
142611117	DK	JH
DATE	REVIEWED BY	FILE NAME
03/30/11	DU	11117-TOPO

antea group



EXPLANATION

- MW-7 — GROUNDWATER MONITORING WELL LOCATION
- EX-1 — SOIL VAPOR EXTRACTION WELL LOCATION
- DPE-2 — GROUNDWATER EXTRACTION WELL LOCATION
- AS-1 — AIR SPARGE WELL LOCATION
- SEWER CLEANOUT LOCATION
- SB-2 — FUTURE USE STUB-OUT LOCATION
- C-1 — SOIL BORING LOCATION (ANTEA GROUP, 2011)
- A-1/TB-2 — SOIL BORING LOCATION
  A BORINGS (URS, NOVEMBER 2005)
  B BORING (HEDI, 1992)
  T BORINGS (EMCON, 1994)
- TD-1 — DISPENSER GRAB SAMPLE LOCATION (EMCON, SEPTEMBER 1994)
- THP-1 — HYDROPUNCH BORING LOCATION (EMCON, SEPTEMBER 1994)
- A — SOIL SAMPLES COLLECTED DURING ERI UST, PRODUCT LINE, AND DISPENSER REMOVAL (NOVEMBER, 1998)
- CPT-1 — CONE PENETROMETER TEST BORINGS BROADBENT & ASSOCIATES, INC. (JUNE, 2007)
- PRODUCT LINES

FIGURE 2
SITE PLAN

76 (FORMER BP) STATION NO 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

PROJECT NO.	PREPARED BY	DRAWN BY
I42611117	SM	KYM
DATE	REVIEWED BY	FILE NAME
6/28/12	DU	11117-SMs

anteagroup

Table

TABLE 1
Well Destruction Details
76 (Former BP) Station No. 11117
7210 Bancroft Avenue
Oakland, CA

Well I.D.	Construction Date	Elevation (TOC feet above MSL)	Original Boring Depth (feet bgs)	Casing Diameter (inches)	Screened Interval (feet bgs)	Filter Pack Interval (feet bgs)	Bentonite Seal Interval (feet bgs)	Cement Seal Interval (feet bgs)	Destruction Date	Depth to Water (feet below TOC)	Measured depth before destruction (feet)	Depth of Removed Casing and Grout (feet)	Comments
MW-1	Dec-91	43.14	40	2	20 to 40	18 to 40	17 to 18	0 to 17	07/09/14	18.58	36.51	0.0	Pressure Grout
MW-3	Dec-89	43.27	45	2	30 to 45	25 to 40	3 to 25	0 to 3	07/08/14	18.80	40.67	0.0	Pressure Grout
MW-4	Jul-92	43.64	40	2	20 to 40	18 to 40	17 to 18	0 to 17	07/07/14	19.68	38.71	0.0	Pressure Grout
MW-6	Jul-92	43.64	40	2	20 to 40	18 to 40	17 to 18	0 to 17	07/08/14	19.25	39.39	0.0	Pressure Grout
MW-7	Oct-94	44.21	45	2	25 to 45	23 to 45	21 to 23	0 to 21	07/08/14	19.83	44.20	0.0	Pressure Grout
MW-8	Oct-94	44.18	40	2	25 to 40	23 to 40	21 to 23	0 to 21	07/08/14	19.23	39.54	0.0	Pressure Grout
MW-9	Oct-94	44.35	40	2	25 to 40	23 to 40	21 to 23	0 to 21	07/08/14	20.10	38.27	5.0	Pressure Grout
MW-11	Nov-07	43.34	40	4	15 to 40	13 to 40	10 13	0 to 10	07/09/14	17.93	37.23	0.0	Pressure Grout
EX-1	Nov-99	44.20	39.5	4	18 to 38	16 to 39.5	15 to 16	0 to 15	07/07/14	20.05	37.36	0.0	Pressure Grout
EX-2	Nov-99	45.33	36.5	4	15 to 35	14 to 36.5	13 to 14	0 to 13	07/08/14	20.54	35.08	0.0	Pressure Grout
DPE-1	Nov-07	44.28	40	4	15 to 40	13 to 40	10 to 13	0 to 10	07/07/14	19.80	39.49	0.0	Pressure Grout
DPE-2	Nov-07	43.03	40	4	15 to 40	13 to 40	10 to 13	0 to 10	07/09/14	18.33	39.62	0.0	Pressure Grout
DPE-3	Nov-07	43.27	40	4	13 to 38	11 to 40	8 to 11	0 to8	07/09/14	18.81	39.42	0.0	Pressure Grout
DPE-4	Nov-07	44.08	45	4	15 to 40	13 to 45	10 to 13	0 to 10	07/07/14	19.70	39.75	0.0	Pressure Grout
DPE-5	Nov-07	44.60	40	4	15 to 40	13 to 40	10 to 13	0 to 10	07/07/14	18.15	39.15	0.0	Pressure Grout
SVE-1	Oct-11	44.78	22	4	10 to 22	8 to 22	6 to 8	0 to 6	07/07/14	19.97	22.11	0.0	Pressure Grout
AS-1	Oct-11	44.64	35	0.25/2.0	33.5 to 34	32.5 to 35	31.5 to 32.5	0 to 31.5	07/10/14	--	--	35.0	Drill Out

Notes:

TOC = top of casing

MSL = mean sea level

bgs = below ground surface

-- = Not available

Elevations are in US survey feet, Vertical Datum is NGVD29

Appendix A

Alameda County Health Care Service Agency E-mail

From:	Nowell, Keith, Env. Health
Sent:	Monday, June 02, 2014 1:21 PM
To:	Ed.C.Ralston@p66.com
Cc:	'cmartin@platinum-energy.net'; Dennis Dettloff; Jasmine Senn (jasmine@aeei.com); 'jpaul@skbcos.com'; 'Ed.Weyrens@anteagroup.com'; 'beena.standig@cis.cushwake.com'; 'dthomas@tiogaconstruction.com'; 'wmast@pesenv.com'; 'lgriffin@oaklandnet.com'; 'ryost@platinum-energy.net'
Subject:	Fuel Leak Case RO356 - BP #11117, 7210 BANCROFT AVE., OAKLAND , CA 94605

Dear Mr. Ralston,

Alameda County Environmental Health (ACEH) has reviewed the recently submitted document entitled *Work Plan- Well Destruction and Replacement* (WP) dated May 21, 2014 prepared by Antea Group (ANTEA) on your behalf. ACEH agrees with the well destruction as described in the WP but is of the opinion monitoring well replacement should be determined after the interim removal action has been performed.

The proposed well destruction may be implemented. Replacement well installation may be addressed in the removal action report or submitted under separate cover as a replacement well installation work plan. Please schedule and complete the fieldwork activities by the date specified below and provide ACEH with at least three (3) business days notification prior to conducting the fieldwork. Upon completion of the well destruction, please prove ACEH with documentation of the well destruction and removal of destruction derived waste.

- **June 24, 2014- Well Destruction Report** (file name: RO0000356_WELL_DCM_R_yyyy-mm-dd)

Thank you for your cooperation. Should you have any questions regarding this correspondence or your case, please call me at (510) 567-6764 or send an electronic mail message at keith.nowell@acgov.org.

Regards,
Keith Nowell

Keith Nowell PG, CHG
Hazardous Materials Specialist
Alameda County Environmental Health
1131 Harbor Bay Parkway
Alameda , CA 94502-6540
phone: 510 / 567 - 6764
fax: 510 / 337 - 9335
email: keith.nowell@acgov.org

PDF copies of case files can be reviewed/downloaded at:

Appendix B

Summary of Previous Environmental Investigations

SITE LOCATION AND BACKGROUND

The Site is an active 76-brand gasoline retail outlet located on the northern corner of Bancroft Avenue and 73rd Avenue at 7210 Bancroft Avenue in Oakland, Alameda County, California (**Figure 1**). The site consists of a service station building, three 12,000-gallon gasoline underground storage tanks (USTs), and one 10,000-gallon diesel UST with associated piping and dispensers. The site is covered with asphalt or concrete surfacing except for planters along the southeastern and southwestern property boundaries and at the north corner of the property.

Land use in the immediate vicinity of the site is mixed commercial and residential. BP acquired the facility from Mobil Oil Corporation in 1989. In January 1994, BP transferred the property to TOSCO Marketing Company (TOSCO) and has not operated the facility since that time.

SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS

1984 UST Replacement: In 1984, the pre-existing USTs at the site were removed and three single-walled fiberglass gasoline underground storage tanks (USTs) (6,000-gallon, 10,000-gallon, and 12,000-gallon) and one 6,000-gallon diesel UST were installed in a cavity immediately to the northeast of the former USTs. A UST removal/installation report is not on file, and it is unknown if one was ever prepared. No documentation was reportedly found referencing the conditions of the removed USTs or reporting evidence of the hydrocarbon impacts in the soil and groundwater, if any, at the time of the UST removal.

1989 Phase II Environmental Audit: In December 1989, Hunter Environmental Services, Inc. (Hunter) performed a Phase II Environmental Audit on the adjacent Eastmont Town Center site located to the north and northwest of the former BP Site. Part of the Phase II study included the installation monitoring well MW-3 near the western boundary of the former BP Site. Soil samples collected from 10 and 20 feet below ground surface (bgs) from MW-3 were analyzed for total petroleum hydrocarbons (TPH), benzene, toluene, ethyl benzene, and total xylenes (BTEX), and oil and grease. No analytes were reported above their respective laboratory reporting limits (LRLs). A groundwater sample collected from MW-3 was reported to contain TPH and benzene at concentrations of 2,700 micrograms per liter (µg/L) and 530 µg/L, respectively (Hunter, 1989).

1991 Phase I Subsurface Investigation: In December 1991, Hydro Environmental Technologies, Inc. (Hydro) drilled two on-site soil borings (MW-1 and MW-2) to total depths of 40 feet bgs, and soil samples were collected at 10-foot intervals between 5 and 25 feet bgs. First groundwater was encountered at approximately 30 feet bgs. The analytical results of the soil samples from MW-1 and MW-2 reported total petroleum hydrocarbons as gasoline (TPH-g) and BTEX at concentrations below their respective LRLs (Hydro, 1991).

1992 Phase I Subsurface Investigation: In July 1992, Hydro advanced boring MW-4 and MW-6 to total depths of 40 feet bgs, and boring B-5 was advanced to 50 feet bgs, First groundwater was encountered at approximately 30 feet bgs in borings MW-4 and MW-6, and no free water was encountered in boring B-5. The analytical results of soil samples collected at 30 feet bgs from B-5 and MW-6 reported TPH-g and BTEX at concentrations below their respective LRLs. The maximum TPH-g and BTEX concentrations in soil reported in MW-4 were 6,000 milligrams per kilogram (mg/kg) and 34 mg/kg, respectively, from a depth of 20 feet bgs. Borings MW-4 and MW-6 were subsequently converted into monitoring wells (Hydro, 1992).

1994 Baseline Assessment Report: In September 1994, EMCON performed a Supplemental Site Assessment at the site. Four exploratory soil borings (THP-1, TB-2, TB-3, TB-4) were advanced to a maximum depth of 45 feet bgs north of the former and existing UST complexes (THP-1), at the former service bays (TB-2), north of the northern pump island (TB-3), and at a former pump island (TB-4). Additionally, one soil sample was collected from beneath each of the five dispensers (TD-1 through TD-5). Groundwater was encountered in TB-2 and TB-3 at approximately 33 to 36 feet bgs and groundwater samples were collected from TB-2 and TB-3 via temporarily well points. Maximum concentrations of 16 mg/kg TPH-g (TD-3), TPH as diesel (TPH-d) at concentrations ranging from 110 mg/kg to 5,000 mg/kg (TD-1 through TD-5), and benzene at concentrations below LRLs were reported in soil samples. TPHg was not reported above the LRLs and a maximum concentration of 0.7 µg/L benzene (TB-3) was reported in groundwater samples (EMCON, 1994).

1994 Well Installation: In October 1994, Hydro advanced boring MW-7 to a total depth of 45 feet bgs, and borings MW-8 and MW-9 were advanced to total depths of 40 feet bgs. First encountered groundwater was at approximately 27 feet bgs to 32 feet bgs. TPH-g and BTEX were not reported above their respective LRLs in soil samples collected from 25 feet bgs in each boring. The three borings were subsequently converted into monitoring wells MW-7 through MW-9 (Hydro, 1995).

1997 Offsite Well Installation: In July 1997, Pacific Environmental Group (PEG) drilled one boring (MW-10) offsite to a depth of approximately 37.5 feet bgs. Soil samples were collected and the boring was subsequently converted into a monitoring well. First groundwater was encountered at approximately 26 feet bgs. No TPH-g, BTEX or methyl tertiary butyl ether (MTBE) was reported in soil samples at concentrations above their respective LRLs in MW-10. TPH-g and BTEX were not reported in the groundwater sample collected from MW-10 at concentrations above their respective LRLs. However, MTBE was reported at concentration of 13 µg/L using EPA Method 8020 (PEG, 1997).

1998 UST and Associated Piping and Dispenser Removal: In August 1998, Environmental Resolutions, Inc. (ERI) removed the three gasoline USTs (6,000-gallon, 10,000-gallon, and 12,000-gallon), one 6,000-gallon diesel UST, and associated dispensers and piping from the site. There was no visible evidence of leakage from the USTs removed. A total of eight native soil samples were collected from beneath each end of the removed USTs (denoted as A through H on **Figure 2**) at depths of 14 to 16 feet bgs, and a total of 18 soil samples (denoted as I through Z on **Figure 2**) were collected from the former dispenser locations and from beneath the associated product lines at three feet bgs (ERI, 1998).

TPH-g was reported in five of the eight UST excavation samples at concentrations ranging from 3.7 mg/kg (S-15-T2S) to 5,300 mg/kg (S-15-T1S). TPH-d was reported at 630 mg/kg (S-15-T1N) and 800mg/kg (S-15 T1S) into two samples, benzene concentrations ranged between 0.40 mg/kg (S-15-T1N) to 0.95 mg/kg (S-16-T3N) in three samples, MTBE concentrations ranged between 0.028 mg/kg (S-14-T4S) to 5.3 mg/kg (S-16-T3N) in seven samples, and lead was not reported in the sample analyzed for lead. TPH-g was reported in nine of the eighteen dispenser and product line samples with concentrations ranging between 1.4 mg/kg (S-3-PL12) to 7,200 mg/kg (S-3-D4). TPH-d was reported between 4.8 mg/kg (S-3-PL12) to 190 mg/kg (S-3-PL11) in five samples, benzene was reported between 0.0089 mg/kg (S-3-PL12) to 22 mg/kg (S-3-D4) in three samples and MTBE was reported between 0.048 mg/kg (S-3-PL12) to 15 mg/kg (S-3-PL1) in ten samples (ERI, 1998).

During the 1998 UST replacement activities, approximately 389 tons of soil and backfill were transported off-site disposal. The existing 10,000-gallon diesel and three 12,000-gallon gasoline USTs were installed as replacements (ERI, 1998).

1999 Groundwater Recovery Test: In April 1999, Alisto Engineering Group (Alisto) conducted groundwater recovery tests on wells MW-1 through MW-4, MW-6, MW-7 and MW-10 to assess the spatial variation in hydraulic conductivity in the shallow water-bearing zone across the Site. Testing by the Bouwer-Rice method yielded hydraulic conductivities of 2.46 x 10^{-2} ft/min for MW-1, 2.42 x 10^{-4} ft/min for MW-2, 3.82 x 10^{-4} ft/min for MW-3, 5.75 x 10-4 ft/min for MW-4, 1.99 x 10^{-2} ft/min for MW-6 1.09 x 10^{-4} ft/min for MW-7 and 8.78 x 10^{-5} ft/min for MW-10. The geometric mean of the hydraulic conductivity and flow velocity values were calculated to be 1.37 x 10-5 feet per second and 73.85 feet per year, respectively (Alisto, 1999).

1999 Extraction Well Installation: In November 1999, Cambria Environmental Technology, Inc. (Cambria) installed two 4-inch diameter wells (EX-1 and EX-2) on-site to facilitate potential remedial activities at the site. Well EX-1 was drilled to 39.5 feet bgs and EX-2 was drilled to 36.5 feet bgs. Groundwater was first encountered at 26 feet bgs. No TPHg or BTEX, and relatively low MTBE concentrations (below 0.012 mg/kg) were reported in soil samples collected from EX-1 and EX-2 (Cambria, 2000).

2000 Interim Remedial Action and Recovery Testing: Between March 16 and April 30, 2000, Cambria conducted interim remedial activities at the site to evaluate the effectiveness of hydrocarbon and MTBE reduction using short-term groundwater extraction. During eight extraction events, approximately 10,900 gallons of groundwater was extracted from wells EX-1, EX-2 and MW-2. During the extraction events, stable to slightly decreasing hydrocarbon and MTBE concentration trends were reported in samples collected from wells MW-2 and EX-1, located immediately southwest of the existing USTs. Samples from well EX-2, located north of the existing USTs, exhibited lower hydrocarbon and MTBE concentrations than MW-2 and EX-1. In April 2000, during the batch extraction events, recovery tests were conducted on wells EX-1, EX-2 and MW-2. Based on the recovery test measurements, the calculated hydraulic conductivity values ranged from 1.85 x 10^{-4} ft/min to 8.33 x 10^{-4} ft/min with resulting flow velocities of 16 ft/year to 73 ft/year at well MW-2 (Cambria, 2000).

The calculated hydraulic conductivity values ranged from 2.02 x 10^{5} ft/min to 3.85 x 10^{-5} ft/min for well EX-1 with resulting flow velocities of 1.8 to 3.4 Ft/yr. And a well EX-2, the calculated hydraulic conductivity values ranged from 3.04 x 10^{-4} ft/min to 2.13 x 10^{-3} ft/min for resulting flow velocities of 27 ft/year to 187 ft/year. The geometric mean of these values is a hydraulic conductivity of 3.0 x 10^{-4} ft/min and resulting flow velocity of 26 ft/year (Cambria, 2000).

2001 Dual-Phase Extraction Pilot Test: From October 29, through November 2, 2001, Cambia performed a dual phase soil vapor and groundwater extraction (DPE) pilot test on the monitoring wells with the highest historical hydrocarbon concentrations (i.e., MW-2 and MW-4) and the extraction wells (EX-1 and EX-2) at the site. The DPE test results indicated that the vacuum influence was limited to within 18 to 28 feet of the extraction well. Water levels typically decreased several feet in the extraction wells and had a varied response in the observation wells. Estimated vapor-phase removal rates were approximately 200-pounds of hydrocarbon per day in wells MW-4 and EX-1, and less than 5-pounds of hydrocarbon per day in wells MW-2 and EX-2 (Cambria 2002).

Soil vapor concentrations showed a decreasing trend in wells MW-4 and EX-1 during the short-term pilot tests. Grab water samples collected before and after the pilot tests remained the same order of magnitude. A total of 6,500 gallons of water were extracted during the DPE pilot test and appropriately disposed off-site. Overall, the test results indicated that DPE is a feasible remedial alternative for the site (Cambria, 2002). Alameda County Environmental Health (ACEH) approved Cambria's August 8, 2002, *Dual Phase Extraction Pilot Test Report* as a Corrective Action Plan (CAP).

2005 Soil and Water Investigation: In Fall 2005, URS completed nine Geoprobe soil borings with co-located Hydropunch borings. The first phase of work was on-site source area characterization: five boring locations (A-1 through A-5) were advanced in the vicinity of the possible hydrocarbons source areas such as locations of former and current USTs, products dispensers, and in the vicinity of MW-4 to adequately characterize the lateral and vertical extent of petroleum hydrocarbons in soils in the identified source areas. An off-site assessment was completed during the second phase of work (borings A-7 through A-10) to further define the downgradient, cross-gradient, and up-gradient extent of the groundwater plume (soil boring A-6 was unable to be advanced due to close proximity to electric lines and product piping). Maximum concentrations of gasoline range organics (GRO), benzene, and MTBE were reported in soil at concentrations of 490 mg/kg [A-4 (23.5-24')], 0.11 mg/kg [A-5 (35-35.5')], and 0.84 mg/kg [A-1 (46-46.5')], respectively. Maximum concentrations of GRO, benzene, and MTBE were reported in ground water at concentrations of 510,000 µg/L [A-2 (21.3')], 11,000 µg/L [A-4 (34-36')], and 39,000 ug/L [A-4 (34-36')], respectively (URS, 2005).

The cross-gradient and downgradient lateral extents of the dissolved hydrocarbon plume were characterized during the last investigation. However, the vertical extent of the dissolved-phase hydrocarbons on the southern portion of the site was not defined. Specifically, significantly elevated concentrations were reported in Hydropunch groundwater samples collected from the bottom depths of soil borings A-2, A-3 and A-4. The bottom Hydropunch sample collected from boring A-2 (40-42 ft bgs) contained concentrations of GRO, benzene, and MTBE at 36,000 µg/L. 1,800 µg/L, and 110 µg/L, respectively. The bottom Hydropunch sample collected from boring A-3 (34-36 ft bgs) contained concentrations of GRO, benzene, and MTBE at 12,000µg/L, 21µg/L, and 8.3µg/L respectively. The bottom Hydropunch sample collected from boring A-4 (34-36 ft bgs) contained GRO, benzene, and MTBE concentrations of 120,000µg/L, 11,000µg/L and 39,000 µg/L respectively (URS, 2005).

Therefore, the vertical extent of dissolved phase petroleum hydrocarbon contamination remains unknown in this southern area of the site (URS, 2005). A work plan for soil and water investigation to delineate the vertical extent of contamination in the southern portion of the site was submitted to ACEH in October 2006.

2007 Soil and Groundwater Investigation: In April 2007, Stratus Environmental, Inc. (Stratus) advanced cone penetrometer test (CPT) borings in three locations onsite (CPT-1 through CPT-3) to maximum depths of 60 feet bgs. CPT-1 was advanced southwest of the dispenser islands and southeast of monitoring well MW-1; CPT-2 was advanced south of the dispenser islands and southwest of monitoring well MW-4; CPT-3 was advanced in the eastern corner of the side as requested by the ACEH. An Ultraviolet Induced Fluorescence (UVIF) module was used at each CPT boring location, analyzing the vertical extent of petroleum hydrocarbons in additional to providing soil profiling data. Groundwater samples were collected from multiple depths at each boring locations; physical soil samples were not collected during this investigation.

- GRO was reported above laboratory reporting limits in five of the seven groundwater samples, ranging from 170 µg/L (CPT-3-28-32') to 170,000 µg/L (CPT-1-37-41').
- Benzene was reported above laboratory reporting limits in four of the seven groundwater samples, ranging from 0.51 µg/L (CPT-3-23-27') to 7,700 µg/L (CPT-2-37-41').
- Toluene was reported above laboratory reporting limits in three of the seven groundwater samples, ranging from 57 µg/L (CPT-1-30-34') to 670 µg/L (CPT-2-28-32').

- Ethylbenzene was reported above laboratory reporting limits in four of the seven groundwater samples, ranging from 530 µg/L (CPT-2-37-41') to 2,600 µg/L (CPT-1-37-41').
- Total xylenes were reported above laboratory reporting limits in four of the seven groundwater samples, ranging from 290 µg/L (CPT-2-37-41') to 9,600 µg/L (CPT-1-37-41').
- MTBE was reported above laboratory reporting limits in five of the seven groundwater samples, ranging from 4.4 µg/L (CPT-3-56-60') to 6,500 µg/L (CPT-2-37-41').
- TBA was reported above laboratory reporting limits in groundwater sample CPT-2-37-41' at 2,400 µg/L.

2007-2008 DPE System Installation: Construction of the DPE system was started by Broadbent & Associates, Inc (BAI) and Stratus in late 2007. The system consists of a thermal/catalytic oxidizer with a 25 horsepower liquid ring blower designed to extract water and vapor from six on-site extraction wells. Extracted vapor were to be treated by thermal/catalytic oxidation and discharged to the atmosphere under the oversight of the Bay Area Air Quality Management District. Extracted groundwater was to be treated by a sediment filter and three 1,000 pounds carbon vessels before being discharged into the City of Oakland sanitary sewer system. DPE wells DPE-1 through DPE-5 were installed at the site to total depths ranging from 35 feet to 40 feet bgs. Well MW-2 was overdrilled and destroyed to allow DPE-4 to be installed in the same borehole.

As of the end of the fourth quarter 2008 the system had not been started. BAI and Stratus were still coordinating with Pacific Gas & Electric (PG&E) to install electrical service to the system. Natural gas was completed to the site and system in third quarter 2008 (BAI, 2008a).

During DPE construction activities, on-site groundwater monitoring well MW-11 was installed to a total depth of 40 feet bgs on the southern corner of the site. Soil samples collected at 20 feet and 30 feet bgs reported maximum concentrations of 1.9 mg/kg GRO and 0.0089 mg/kg benzene. MTBE was not reported above the LRL in either of the soil samples (BAI, 2008a).

2009-2011 DPE System Startup Efforts: In 2009, Antea Group (formerly Delta Consultants) began coordinating with nearby businesses (Eastmont Mall and Burger King) for the 3-phase power source. Due to financial consideration, Antea Group also explored another alternative for the startup of the DPE system, which included reconfiguring the current system for single phase power.

2011-2012 Remedial Action Site Investigation: Antea Group submitted the *Remedial Action Investigation Work Plan*, dated August 03, 2011 to the ACEH. The ACEH approved the proposed scope of work in an agency letter to Antea Group dated September 1, 2011. In October 2011, Antea Group and subcontractors advanced borings C-1 through C-5, and advanced and installed remedial wells SVE-1 and AS-1 per the August 2011 work plan. Antea Group submitted a *Remedial Investigation Work Plan Addendum*, dated December 13, 2011 which proposes a postponement of the AS/SVE pilot test described in the August 3, 2011 *Remedial Action Investigation Work Plan* to utilize a new remedial strategy called Plume Stop, a product created by Regenesis. Between March 26 and 30, 2012, Antea Group and Regenesis oversaw subcontractor Vironex inject Plume Stop at nine soil boring locations using direct push technology.

2013 Site Investigation: Antea Group conducted a site investigation on October 14 through 18, 2013 including the advancement of nine CPT borings (CPT-4 through CPT-12). The borings were advanced in the vicinity of monitoring well

MW-4 in an attempt to evaluate soil contamination in the area in preparation for a feasibility study/corrective action plan. Results of the investigation were reported in the *Site Investigation Report*, dated January 24, 2014.

FREE PRODUCT RECOVERY DURING GROUNDWATER MONITORING EVENTS

Free product was observed in groundwater monitoring well MW-2 between 1993 and 1998, at thicknesses ranging from 2.60 feet (3/30/1994) to less than 0.01 feet (10/2/1997 to 7/21/1998). When free product was observed in the well, it was removed by bailer. Between 1993 and 1998, a cumulative total of 24.90 gallons of free product had been removed from the well (Alisto, 1998).

Free product was also observed in monitoring well MW-4 during the third quarter 2001 (0.03 inches), fourth quarter 2006 (0.11 inches), first quarter 2008 (0.01 inches), and third quarter 2008 (0.05 inches); and in EX-2 during the second quarter 2007 (0.01 inch). With the exception of 1.5 gallons of a free product/water mixture recovered from monitoring well MW-4 during the third quarter 2008 (BAI, 2008b), free product was not recovered from these wells when observed.

SENSTIVE RECEPTORS

2000 Potential Receptor Survey, Expanded Site Plan and Well Search: In October 2000, Alisto completed a potential receptor survey, prepared an expanded site plan with neighboring property parcel information and underground utilities mapped, and identified wells in the vicinity of the site. A review of the files of the California Department of Water Resources (DWR) was performed to identify all known wells within one-half mile radius of the site. The results of the well search revealed that there were 17 wells other than the on-site monitoring sells. Of these, 11 were offsite monitoring wells; four were cathodic protection wells, one an industrial well, and one irrigation well for a nearby cemetery. No domestic/municipal water supply wells were identified from review of the DWR files (Alisto, 2000).

2010 Sensitive Receptor Survey: Delta Consultants (Delta) submitted a *Sensitive Receptor Survey* in October 2010. As part of that receptor survey, Delta conducted a records review (environmental database search), a well radius search, and a search for other sensitive receptors which have the potential to be affected by the petroleum hydrocarbon release at the site. Delta's review of the historical aerial photographs indicated that the site in 1939 was primarily used for agricultural purposes with small family residences. In general, the site was developed to the current conditions with the station building in 1974. The historical topographic maps support the indication of residential houses and agriculture in the site region as early as 1915 to 1948. The well search indicated that 10 wells were within a one-mile radius of the site. DWR indicated the presence of 7 wells within a one-mile radius of the site. However, no records were found for the status of these wells as being active or abandoned. The main surface water bodies were Lake Merritt located northwest of the site and San Leandro Bay located west of the site. Several churches, schools and day care centers were located within a one-mile radius of the site. Based on the above identified receptors' distances form the site, directions from the site, and extent of hydrocarbon impact at the site, they were not anticipated to be affected by the petroleum hydrocarbon release at the site.

Appendix C

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: 06/25/2014 By jamesy

Permit Numbers: W2014-0618 to W2014-0626
Permits Valid from 07/07/2014 to 07/11/2014

Application Id: 1403301398252 **City of Project Site:** Oakland
Site Location: 7210 Bancroft Avenue, Oakland, CA
Project Start Date: 07/07/2014 **Completion Date:** 07/11/2014
Assigned Inspector: Contact Steve Miller at (510) 670-5517 or stevem@acpwa.org

Applicant: Antea Group - Ed Weyrens **Phone:** 916-503-1277
11050 White Rock Rd #110, Rancho Cordova, CA 95670
Property Owner: Power Quality Electrical Systems Inc. **Phone:** 510-553-0109
7210 Bancroft Ave, Oakland, CA 94605
Client: ** same as Property Owner **
Contact: Ed Weyrens **Phone:** 916-503-1277
Cell: 707-592-6684

Total Due: $3441.00
Receipt Number: WR2014-0265 **Total Amount Paid:** $3441.00
Payer Name : Antea Group Paid By: CHECK **PAID IN FULL**

Works Requesting Permits:

Well Destruction-Monitoring - 5 Wells
Driller: Cascade - Lic #: 938110 - Method: press **Work Total: $1985.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth	State Well #	Orig. Permit #	DWR #
W2014-0618	06/25/2014	10/05/2014	MW1	8.00 in.	2.00 in.	17.00 ft	40.00 ft	2S/3W10Q	No Records	No Records
W2014-0619	06/25/2014	10/05/2014	MW3	8.00 in.	2.00 in.	25.00 ft	40.00 ft	2S/3W10Q	No Records	No Records
W2014-0620	06/25/2014	10/05/2014	MW4	8.00 in.	2.00 in.	17.00 ft	40.00 ft	2S/3W10Q	No Records	No Records
W2014-0621	06/25/2014	10/05/2014	MW6	8.00 in.	2.00 in.	17.00 ft	40.00 ft	2S/3W10Q	No Records	No Records
W2014-0622	06/25/2014	10/05/2014	MW7	8.00 in.	2.00 in.	21.00 ft	45.00 ft	2S/3W10Q	94523	560801

Specific Work Permit Conditions

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. 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.

3. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755

(Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Include permit number and site map.

4. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.

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

6. 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.

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

8. Remove the Christy box or similar structure. Destroy wells
MW-1, MW-3, MW-4, MW-6, MW-7, MW-9 and MW-11 by grouting neat cement with a tremie pipe or pressure grouting (25 psi for 5min.) to the bottom of the well and by filling with neat cement to three (3-5) feet below surface grade. Allow the sealing material to spill over the top of the casing to fill any annular space between casing and soil. After the seal has set, backfill the remaining hole with concrete or compacted material to match existing conditions.

9. 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.

Well Destruction-Monitoring - 3 Wells
Driller: Cascade - Lic #: 938110 - Method: press **Work Total: $1191.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth	State Well #	Orig. Permit #	DWR #
W2014-0623	06/25/2014	10/05/2014	MW11	10.00 in.	4.00 in.	10.00 ft	35.00 ft	2S/3W10Q	NO Records	NO Records
W2014-0624	06/25/2014	10/05/2014	MW8	8.00 in.	2.00 in.	21.00 ft	40.00 ft	2S/3W10Q	64523	416783
W2014-0625	06/25/2014	10/05/2014	MW9	8.00 in.	2.00 in.	21.00 ft	40.00 ft	2S/3W10Q	64523	56082

Specific Work Permit Conditions

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. 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.

3. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Include permit number and site map.

4. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.

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

6. 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.

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

8. Remove the Christy box or similar structure.

Destroy well by grouting neat cement with a tremie pipe or pressure grouting (25 psi for 5min.) to the bottom of the well and by filling with neat cement to three (3-5) feet below surface grade. Allow the sealing material to spill over the top of the casing to fill any annular space between casing and soil.

After the seal has set, backfill the remaining hole with concrete or compacted material to match existing conditions.

9. 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.

10. Remove the Christy box or similar structure. Destroy well MW-8 by overdrilling the upper 5ft. bgs & Tremie Grouting with Cement. After the seal has set, backfill the remaining hole with concrete or compacted material to match existing.

Remediation Well Destruction-Extraction - 9 Wells
Driller: Cascade - Lic #: 938110 - Method: press **Work Total: $265.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth	State Well #	Orig. Permit #	DWR #
W2014-0626	06/25/2014	10/05/2014	AS1	3.25 in.	0.13 in.	28.50 ft	34.00 ft	2S/3W10Q	W2011-0594	e0139085

Alameda County Public Works Agency - Water Resources Well Permit

W2014-0626	06/25/2014	10/05/2014	DPE1	10.00 in.	4.00 in.	10.00 ft	40.00 ft	2S/3W10Q	No Records	No Records
W2014-0626	06/25/2014	10/05/2014	DPE2	10.00 in.	4.00 in.	10.00 ft	40.00 ft	2S/3W10Q	No Records	No Records
W2014-0626	06/25/2014	10/05/2014	DPE3	10.00 in.	4.00 in.	8.00 ft	38.00 ft	2S/3W10Q	No Records	No Records
W2014-0626	06/25/2014	10/05/2014	DPE4	10.00 in.	4.00 in.	10.00 ft	40.00 ft	2S/3W10Q	No Records	No Records
W2014-0626	06/25/2014	10/05/2014	DPE5	10.00 in.	4.00 in.	10.00 ft	40.00 ft	2S/3W10Q	No Records	No Records
W2014-0626	06/25/2014	10/05/2014	EX1	10.00 in.	4.00 in.	15.00 ft	38.00 ft	2S/3W10Q	No Records	No Records
W2014-0626	06/25/2014	10/05/2014	EX2	10.00 in.	4.00 in.	15.00 ft	35.00 ft	2S/3W10Q	No Records	No Records
W2014-0626	06/25/2014	10/05/2014	SVE1	10.00 in.	4.00 in.	6.00 ft	22.00 ft	2S/3W10Q	W2011-0593	e0139087

Specific Work Permit Conditions

1. Drilling Permit(s) can be voided/ cancelled only in writing. It is the applicant's responsibility to notify Alameda County Public Works Agency, Water Resources Section in writing for an extension or to cancel the drilling permit application. No drilling permit application(s) shall be extended beyond ninety (90) days from the original start date. Applicants may not cancel a drilling permit application after the completion date of the permit issued has passed.

2. Compliance with the well-sealing specifications shall not exempt the well-sealing contractor from complying with appropriate State reporting-requirements related to well construction or destruction (Sections 13750 through 13755 (Division 7, Chapter 10, Article 3) of the California Water Code). Contractor must complete State DWR Form 188 and mail original to the Alameda County Public Works Agency, Water Resources Section, within 60 days. Include permit number and site map.

3. Applicant shall submit the copies of the approved encroachment permit to this office within 60 days.

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. Remove the Christy box or similar structure. Pressure Grout with Cement (Less than 30 ft in depth). After the seal has set, backfill the remaining hole with concrete or compacted material to match existing.

6. 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.

7. Remove the Christy box or similar structure. Destroy well AS-1 by overdrilling to total depth & Tremie Grouting with Cement. After the seal has set, backfill the remaining hole with concrete or compacted material to match existing.

8. Remove the Christy box or similar structure. Destroy wells Ex-1, EX-2, DPE-1. DPE-2, DPE-3, DPE-4, DPE-5 and SVE-1 by pressure Grouting with neat cement. After the seal has set, backfill the remaining hole with concrete or compacted material to match existing.

9. 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.

Permits for which no major inspection has been approved within 180 days shall expire by limitation. No refund more than 180 days after expiration or final.

CITY OF OAKLAND

250 FRANK H. OGAWA PLAZA ▪ 2ND FLOOR ▪ OAKLAND, CA 94612

Planning and Building Department
www.oaklandnet.com

PH: 510-238-3891
FAX: 510-238-2263
TDD: 510-238-3254

Permit No: X1401654 Excavation **Filed Date:** 7/1/2014

Job Site: 7210 BANCROFT AVE **Schedule Inspection by calling:** ~~510-238-3444~~

Parcel No: 039 329900202

District:

Project Description: Abandon one monitoring well on the median of Bancroft off 73rd Av & one monitoring well on the island (median) of 73rd Av off Bancroft. Alameda County documentation provided. Call PWA INSPECTION prior to start: 510-238-3651. 4th FLOOR.

Related Permits:

	Name	Applicant	Address	Phone	License #
Owner:	EASTMONT OAKLAND ASSOCIATES LLC		825 THIRD AVE 36TH FL NEW YORK, NY		
Contractor-Employee:	CASCADE DRILLING L P	X	P O BOX 1184 WOODINVILLE, WA	(425) 485-8908	938110

PERMIT DETAILS: Building/Public Infrastructure/Excavation/NA

General Information

Excavation Type: Private Party
Special Paving Detail Required:
Tree Removal Involved:
Date Street Last Resurfaced:
Holiday Restriction (Nov 1 - Jan 1):
Worker's Compensation Company Name:
Limited Operation Area (7AM-9AM) And (4PM-6PM):
Worker's Compensation Policy #:

Key Dates

Approximate Start Date:
Approximate End Date:

TOTAL FEES TO BE PAID AT FILING: $436.05

Application Fee	$71.00	Excavation - Private Party Type	$309.00	Records Management Fee	$36.10
Technology Enhancement Fee	$19.95				

Plans Checked By _____ Date _____ Permit Issued By _____ Date _____

Finalized By _____ Date _____

APPLICANT COPY

Permit No: X1401654 **Parcel No:** 039 329900202 **Job Site:** 7210 BANCROFT AVE

LICENSED CONTRACTOR'S DECLARATION

I hereby affirm under penalty of perjury that I am licensed under provisions of Chapter 9 (commencing with Section 7000) of Division 3 of the Business and Professions Code, and my license is in full force and effect.

CONSTRUCTION LENDING AGENCY DECLARATION

I hereby affirm under penalty of perjury that there is a construction lending agency for the performance of the work for which this permit is issued (Section 8172, Civil Code).

Lender's Name _____

Branch Designation _____

Lender's Address _____

WORKERS' COMPENSATION DECLARATION

WARNING: FAILURE TO SECURE WORKERS' COMPENSATION COVERAGE IS UNLAWFUL, AND SHALL SUBJECT AN EMPLOYER TO CRIMINAL PENALTIES AND CIVIL FINES UP TO ONE HUNDRED THOUSAND DOLLARS ($100,000), IN ADDITION TO THE COST OF COMPENSATION, DAMAGES AS PROVIDED FOR IN SECTION 3706 OF THE LABOR CODE, INTEREST, AND ATTORNEY'S FEES.

I hereby affirm under penalty of perjury one of the following declarations:

☐ I have and will maintain a certificate of consent to self-insure for workers' compensation, issued by the Director of Industrial Relations as provided for by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I have and will maintain workers' compensation insurance, as required by Section 3700 of the Labor Code, for the performance of the work for which this permit is issued.

☐ I certify that, in the performance of the work for which this permit is issued, I shall not employ any person in any manner so as to become subject to the workers' compensation laws of California, and agree that, if I should become subject to the workers' compensation provisions of Section 3700 of the Labor Code, I shall forthwith comply with those provisions.

HAZARDOUS MATERIALS DECLARATION

I hereby affirm that the intended occupancy ☐WILL ☐ WILL NOT use, handle or store any hazardous, or acutely hazardous, materials. (Checking "WILL" acknowledges that Sections 25505, 25533, and 25534 of the Health and Safety Code, as well as filing instructions were made available to you).

I HEREBY CERTIFY THE FOLLOWING: That I have read this document; that the above information is correct; and that I have truthfully affirmed all applicable declarations contained in this document. I agree to comply with all city and county ordinances and state laws relating to building construction, and hereby authorize representatives of this city to enter upon the above-mentioned property for inspection purposes.

I hereby agree to save, defend, indemnify and keep harmless the City of Oakland and its officials, officers, employees, representatives, agents, and volunteers from all actions, claims, demands, litigation, or proceedings, including those for attorneys' fees, against the City in consequence of the granting of this permit or from the use or occupancy of the public right-of-way, public easement, or any sidewalk, street or sub-sidewalk or otherwise by virtue thereof, and will in all things strictly comply with the conditions under which this permit is granted I further certify that I am the owner of the property involved in this permit or that I am fully authorized by the owner to access the property and perform the work authorized by this permit.

Name _____

Signature _____

☐ Contractor, or ☐Contractor's Agent Date

NOTICE: No activities related to the approved work, including storage/use of materials, is allowed within the public right-of-way without an encroachment permit. Dust control measures shall be used throughout all phases of construction.

Appendix D

DWR Well Completion Report Forms

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

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STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

Appendix E

Certified Laboratory Analytical Report

KIFF Analytical LLC

Report Number : 88675
Date : 07/21/2014

Laboratory Results

Dennis Dettloff
Antea Group
11050 White Rock Rd. Suite 110
Rancho Cordova, CA 95670

Subject : 1 Soil Sample and 1 Water Sample
Project Name : 1117 Oakland
Project Number : I42611117

Dear Mr. Dettloff,

Chemical analysis of the samples referenced above has been completed. Summaries of the data are contained on the following pages. Sample(s) were received under documented chain-of-custody. US EPA protocols for sample storage and preservation were followed. Testing procedures comply with the 2003 NELAC and TNI 2009 standards. Laboratory results relate only to the samples tested. This report may be freely reproduced in full, but may only be reproduced in part with the express permission of Kiff Analytical, LLC. Kiff Analytical, LLC is certified by the State of California under the Environmental Laboratory Accreditation Program (ELAP), lab # 08263CA.
If you have any questions regarding procedures or results, please call me at 530-297-4800.

Sincerely,

Troy G. Turpen

Troy Turpen

KIFF Analytical LLC

Report Number : 88675
Date : 07/21/2014

Subject : 1 Soil Sample and 1 Water Sample
Project Name : 1117 Oakland
Project Number : I42611117

Case Narrative

All soil samples were reported on a total weight (wet weight) basis.

KIFF Analytical LLC

Analysis Summary

Report Number : 88675
Date : 07/21/14

Attention : Dennis Dettloff
Antea Group
11050 White Rock Rd. Suite 110
Rancho Cordova, CA 95670

Project Name :1117 Oakland
Project Number : I42611117

			Sample Name	Comp Soil
			Sample Date	07/10/14
Analyte	Method	Units	MRL	Results
Lead	EPA 6010B	mg/Kg	0.50	**5.3**
Benzene	EPA 8260B	mg/Kg	0.0050	ND
Ethylbenzene	EPA 8260B	mg/Kg	0.0050	**0.064**
Toluene	EPA 8260B	mg/Kg	0.0050	ND
Total Xylenes	EPA 8260B	mg/Kg	0.0050	**0.26**
Methyl-t-butyl ether (MTBE)	EPA 8260B	mg/Kg	0.0050	ND
TPH as Gasoline	EPA 8260B	mg/Kg	1.0	**6.5**
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%		100
Toluene - d8 (Surr)	EPA 8260B	%		101

MRL = Method Reporting Limit
ND = Not Detected

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF Analytical LLC

Analysis Summary

Report Number : 88675
Date : 07/21/14

Attention : Dennis Dettloff
Antea Group
11050 White Rock Rd. Suite 110
Rancho Cordova, CA 95670

Project Name :1117 Oakland
Project Number : I42611117

			Sample Name	Comp H2O
			Sample Date	07/10/14
Analyte	Method	Units	MRL	Results
Benzene	EPA 8260B	ug/L	0.50	**3.1**
Ethylbenzene	EPA 8260B	ug/L	0.50	**30**
Toluene	EPA 8260B	ug/L	0.50	**0.73**
Total Xylenes	EPA 8260B	ug/L	0.50	**120**
Methyl-t-butyl ether (MTBE)	EPA 8260B	ug/L	0.50	ND
TPH as Gasoline	EPA 8260B	ug/L	50	**2100**
1,2-Dichloroethane-d4 (Surr)	EPA 8260B	%		95.5
Toluene - d8 (Surr)	EPA 8260B	%		99.4

MRL = Method Reporting Limit
ND = Not Detected

2795 2nd St., Suite 300 Davis, CA 95616 530-297-4800
ELAP # 2236

KIFF Analytical LLC

Report Number : 88675
Date : 07/21/14

Project Name : **1117 Oakland**
Project Number : **I42611117**

Sample : **Comp Soil** Matrix : Soil Lab Number : 88675-01
Sample Date :07/10/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Lead	**5.3**	0.50	mg/Kg	EPA 6010B	07/15/14 14:14
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	07/11/14 22:24
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	07/11/14 22:24
Ethylbenzene	**0.064**	0.0050	mg/Kg	EPA 8260B	07/11/14 22:24
Total Xylenes	**0.26**	0.0050	mg/Kg	EPA 8260B	07/11/14 22:24
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	07/11/14 22:24
TPH as Gasoline	**6.5**	1.0	mg/Kg	EPA 8260B	07/11/14 22:24
1,2-Dichloroethane-d4 (Surr)	100		% Recovery	EPA 8260B	07/11/14 22:24
Toluene - d8 (Surr)	101		% Recovery	EPA 8260B	07/11/14 22:24

Sample : **Comp H2O** Matrix : Water Lab Number : 88675-02
Sample Date :07/10/14

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date/Time Analyzed
Benzene	**3.1**	0.50	ug/L	EPA 8260B	07/10/14 22:45
Toluene	**0.73**	0.50	ug/L	EPA 8260B	07/10/14 22:45
Ethylbenzene	**30**	0.50	ug/L	EPA 8260B	07/10/14 22:45
Total Xylenes	**120**	0.50	ug/L	EPA 8260B	07/10/14 22:45
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/10/14 22:45
TPH as Gasoline	**2100**	50	ug/L	EPA 8260B	07/10/14 22:45
1,2-Dichloroethane-d4 (Surr)	95.5		% Recovery	EPA 8260B	07/10/14 22:45
Toluene - d8 (Surr)	99.4		% Recovery	EPA 8260B	07/10/14 22:45

Report Number : 88675

Date : 07/21/14

QC Report : Method Blank Data

Project Name : **1117 Oakland**

Project Number : **I42611117**

Parameter	Measured Value	Method Reporting Limit	Units	Analysis Method	Date Analyzed
Lead	< 0.50	0.50	mg/Kg	EPA 6010B	07/15/14
Benzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	07/11/14
Ethylbenzene	< 0.0050	0.0050	mg/Kg	EPA 8260B	07/11/14
Toluene	< 0.0050	0.0050	mg/Kg	EPA 8260B	07/11/14
Total Xylenes	< 0.0050	0.0050	mg/Kg	EPA 8260B	07/11/14
Methyl-t-butyl ether (MTBE)	< 0.0050	0.0050	mg/Kg	EPA 8260B	07/11/14
TPH as Gasoline	< 1.0	1.0	mg/Kg	EPA 8260B	07/11/14
1,2-Dichloroethane-d4 (Surr)	105		%	EPA 8260B	07/11/14
Toluene - d8 (Surr)	102		%	EPA 8260B	07/11/14
Benzene	< 0.50	0.50	ug/L	EPA 8260B	07/10/14
Ethylbenzene	< 0.50	0.50	ug/L	EPA 8260B	07/10/14
Toluene	< 0.50	0.50	ug/L	EPA 8260B	07/10/14
Total Xylenes	< 0.50	0.50	ug/L	EPA 8260B	07/10/14
Methyl-t-butyl ether (MTBE)	< 0.50	0.50	ug/L	EPA 8260B	07/10/14
TPH as Gasoline	< 50	50	ug/L	EPA 8260B	07/10/14
1,2-Dichloroethane-d4 (Surr)	97.6		%	EPA 8260B	07/10/14
Toluene - d8 (Surr)	99.7		%	EPA 8260B	07/10/14

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 88675

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 07/21/14

Project Name : **1117 Oakland**

Project Number : **I42611117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Benzene														
	88682-12	<0.0050	0.0391	0.0398	0.0346	0.0356	mg/Kg	EPA 8260B	7/11/14	88.6	89.6	1.13	70.0-130	25
Ethylbenzene														
	88682-12	<0.0050	0.0391	0.0398	0.0358	0.0373	mg/Kg	EPA 8260B	7/11/14	91.7	93.7	2.18	70.0-130	25
Methyl-t-butyl ether														
	88682-12	<0.0050	0.0392	0.0399	0.0439	0.0448	mg/Kg	EPA 8260B	7/11/14	112	112	0.285	60.0-130	25
P + M Xylene														
	88682-12	<0.0050	0.0391	0.0398	0.0350	0.0361	mg/Kg	EPA 8260B	7/11/14	89.5	90.8	1.44	70.0-130	25
Toluene														
	88682-12	<0.0050	0.0391	0.0398	0.0359	0.0381	mg/Kg	EPA 8260B	7/11/14	91.9	95.8	4.10	70.0-130	25
Benzene														
	88654-02	<0.50	40.0	40.0	38.2	37.8	ug/L	EPA 8260B	7/10/14	95.5	94.5	1.01	70.0-130	25
Ethylbenzene														
	88654-02	<0.50	40.0	40.0	39.7	39.6	ug/L	EPA 8260B	7/10/14	99.4	99.0	0.316	70.0-130	25
Methyl-t-butyl ether														
	88654-02	5.3	40.1	40.1	43.0	44.0	ug/L	EPA 8260B	7/10/14	94.0	96.4	2.58	70.0-130	25
P + M Xylene														
	88654-02	<0.50	40.0	40.0	40.0	39.9	ug/L	EPA 8260B	7/10/14	100	99.7	0.320	70.0-130	25

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

Report Number : 88675

QC Report : Matrix Spike/ Matrix Spike Duplicate

Date : 07/21/2014

Project Name : **1117 Oakland**

Project Number : **I42611117**

Parameter	Spiked Sample	Sample Value	Spike Level	Spike Dup. Level	Spiked Sample Value	Duplicate Spiked Sample Value	Units	Analysis Method	Date Analyzed	Spiked Sample Percent Recov.	Duplicate Spiked Sample Percent Recov.	Relative Percent Diff.	Spiked Sample Percent Recov. Limit	Relative Percent Diff. Limit
Toluene														
	88654-02	<0.50	40.0	40.0	39.2	39.1	ug/L	EPA 8260B	7/10/14	97.9	97.8	0.124	70.0-130	25
Lead														
	88675-01	5.3	49.5	49.5	50.9	49.4	mg/Kg	EPA 6010B	7/15/14	92.2	89.0	3.10	75-125	20

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

QC Report : Laboratory Control Sample (LCS)

Project Name : **1117 Oakland**

Project Number : **I42611117**

Parameter	Spike Level	Units	Analysis Method	Date Analyzed	LCS Percent Recov.	LCS Percent Recov. Limit
Lead	50.0	mg/Kg	EPA 6010B	7/15/14	106	85-115
Benzene	0.0388	mg/Kg	EPA 8260B	7/11/14	89.1	70.0-130
Ethylbenzene	0.0388	mg/Kg	EPA 8260B	7/11/14	93.9	70.0-130
Methyl-t-butyl ether	0.0390	mg/Kg	EPA 8260B	7/11/14	110	60.0-130
P + M Xylene	0.0388	mg/Kg	EPA 8260B	7/11/14	91.6	70.0-130
Toluene	0.0388	mg/Kg	EPA 8260B	7/11/14	93.2	70.0-130
Benzene	40.1	ug/L	EPA 8260B	7/10/14	90.4	70.0-130
Ethylbenzene	40.1	ug/L	EPA 8260B	7/10/14	94.4	70.0-130
Methyl-t-butyl ether	40.2	ug/L	EPA 8260B	7/10/14	86.8	70.0-130
P + M Xylene	40.1	ug/L	EPA 8260B	7/10/14	94.0	70.0-130
TPH as Gasoline	486	ug/L	EPA 8260B	7/10/14	91.0	70.0-130
Toluene	40.1	ug/L	EPA 8260B	7/10/14	93.8	70.0-130

KIFF ANALYTICAL, LLC

2795 2nd Street, Suite 300 Davis, CA 95618 530-297-4800

KIFF Analytical LLC

2795 2nd Street, Suite 300
Davis, CA 95618
Lab: 530.297.4800
Fax: 530.297.4802

SRG # / Lab No. 88675

Page 1 of 1

Chain-of-Custody Record and Analysis Request

Send Report To: Dennis Detthoff
Email Address: dennis.detthoff@antea group.com
Company: Antea Group
Address:
Phone Number: 916 952-7189
Fax Number:
Project #: I42611117
P.O. #:
Project Name: 1117 Oakland
Project Address:

Electronic Data Deliverable (EDD): ☐ CA EDF ☐ CA WriteOn ☐ WA EIM ☐ Excel ☐ EQuIS _____ (format) ☐ Other _____
Global ID (for CA EDF use):
EDD Deliverable To (Email Address):
Sampling Company: Antea Group
Sampler Signature: Alan Buehler
Invoice To:

Sample Identification	Sampling Date	Sampling Time	# of Containers: 40 ml VOA	Sleeve	Poly	Glass	Tedlar	# Preserved: HCl	HNO_3	None	Matrix: Water	Soil	Air	Other (specify)	TPH: Gas (8260)	Other (specify)	TPH: Gas (8015)	Diesel	Motor Oil	8260B: BTEX: Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	5 Oxygenates: MTBE	DIPE	ETBE	TAME	TBA	7 Oxygenates (5 Oxygenates plus): Ethanol	Methanol	Lead Scavengers: 1,2 DCA	1,2 EDB	Halogenated Volatile Organic Compounds (former 8010 list)	Volatile Organic Compounds Full List	524: Volatile Organics by EPA Method 524.2	Metals: Metals Group (Method: ____): ☐ CAM 17 ☐ LUFT 5	Individual Metals (list and enter method):	SPECIAL: ☐ Nitrate as N ☐ Nitrite as N ☐ Ferrous Iron	☐ Nitrate as NO_3 ☐ Nitrite as NO_2	Chromium VI by EPA 7199	Other: 4 CAM 17 (6010)	For Lab Use Only
Comp Soil	7/10/14	14:58				2				X		X			X					X				X																			01
Comp H2O	7/10/14	15:00	[redacted]		1			X		X	X				X					X				X																			02
			40																																								

Relinquished by (signature/affiliation)	Date & Time	Received by (signature/affiliation)	Date & Time
[signature] / Antea Group	7/10/14 15:15		

Remarks and Special Instructions (composite, filter, MS/MSD, return samples, Silica Gel, etc.):
Hold Poly for additional analysis
Hold extra soil for additional analysis

Relinquished by (signature/affiliation)	Date & Time	Received by Kiff Analytical (signature)	Date & Time
		[signature] for Kiff Analytical	071014 1515

Turnaround Time (TAT - Circle One):
(Standard) 4-Day 3-Day 2-Day 1-Day Other: _____
TAT in business days. Surcharge may apply. TAT for subcontracted work may vary.

Page 10 of 11

Distribution: Original - Lab; Copy - Originator
Rev: 052113

KIFF Analytical LLC

SAMPLE RECEIPT CHECKLIST

SRG #: 88675

Sample Receipt	Initials/Date: Eug 071014	Storage Time: 1515	Sample Login	Initials/Date: Eug 071014

TAT: ☑ Standard ☐ Rush ☐ Split ☐ None

Method of Receipt: ☐ Courier ☑ Over-the-counter ☐ Shipped

Temp °C 12.8 ☐ N/A | Therm ID IR3 | Time 1510 | Coolant present ☑ Yes ☐ No ☐ Water | ☐ Temp Excursion N/A

For Shipments Only: Cooler Receipt Initials/Date/Time: | Custody Seals ☐ N/A ☐ Intact ☐ Broken

Chain-of-Custody:	Yes	No
Is COC present?	✓	
Is COC signed by relinquisher?	✓	
Is COC dated by relinquisher?	✓	
Is the sampler's name on the COC?	✓	
Are there analyses or hold for all samples?	✓	

Documented on	COC	Labels	Discrepancies:
Sample ID	✓	✓	
Project ID	✓	✓	
Sample Date	✓	✓	
Sample Time	✓	✓	
Does COC match project history?	☑ N/A	☐ Yes	☐ No

Samples:	N/A	Yes	No
Are sample custody seals intact?	✓		
Are sample containers intact?		✓	
Is preservation documented?		✓	
In-house Analysis:	**N/A**	**Yes**	**No**
Are preservatives acceptable?		✓	
Are samples within holding time?		✓	
Are sample container types correct?		✓	
Is there adequate sample volume?		✓	

Receipt Details:

Matrix	Container Type	# of Containers
SO	8oz. glass	02
WA	1 Liter poly	01
WA	Voa	06

Comments:

CS Required: ☐

Proceed With Analysis: ☐ YES ☐ NO Init/Date:

Client Communication: