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Alameda County
Environmental Health

June 19, 2012

Mr. Ross Wickham
Alameda County Health Care Services
Environmental Health Services
Environmental Protection
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Subject: Dual-Phase Vacuum Extraction Installation and Startup Report _RO0002933
1409 – 1417 12th Street, Oakland, California

Dear Mr. Wickman:

On behalf of Mrs. Shirley E. Thompson (property owner), Impact Environmental Services (IES) is pleased to submit this Dual-Phase Vacuum Extraction Installation and Startup Report for the property located at 1409 – 1417 12th Street, Oakland, California.

Funding for this project has been provided by a grant from the Orphan Site Cleanup Fund through an agreement with California State Water Resources Control Board.

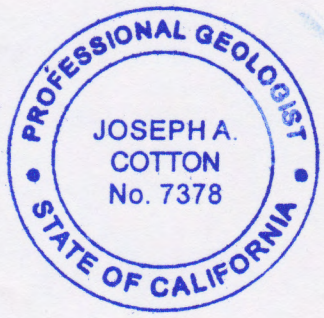
Certification

I certify under penalty of law that this document and attachments are prepared under my direction or supervision in accordance with the system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing the violations.

Please contact Joseph Cotton at (510)703-5420 if you have questions or comments.

Sincerely
Impact Environmental Services

Joseph Cotton, P.G.
Principal Geologist



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Please contact Joseph Cotton at (510)703-5420 if you have questions or comments.

Sincerely,

Shirley E. Thompson

Shirley E. Thompson
Property Owner

DUAL-PHASE VACUUM EXTRACTION INSTALLATION & STARTUP REPORT–

1409 – 1417 12th Street OAKLAND, CALIFORNIA

Prepared for

Shirley Thompson
1155 Hopkins Street
Berkeley, CA 94702

November 17, 2010

Prepared by

IES
Impact Environmental Services

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IES

DUAL PHASE VACUUM EXTRACTION SOIL AND GROUNDWATER REMEDIATION SYSTEM INSTALLATION & STARTUP REPORT 1409-1417 12TH STREET OAKLAND CALIFORNIA

ACEH File No. RO0002933

On behalf of Mrs. Shirley E. Thompson, Impact Environmental Services (IMPACT) Impact Environmental Services (IMPACT) is presenting this Dual-Phase Vacuum Extraction (DPE) Soil and Groundwater Remediation System Installation and Startup Report for 1409-1417 12th Street in Oakland, California (Figure 1). This document describes installation of the DPE System, associated DPE wells, subsurface piping and collection system, and soil-vapor emission control and groundwater treatment units. Also included in this report are system start-up protocol and procedures used during the initial phase of system operation.

SITE CONTACT INFORMATION

The site address and contact information is as follows:

Site Address:	**Contact Information:**
1409-1417 12th Street	Mrs. Shirley Thompson
Oakland, CA	Edward C. and Shirley E. Thompson Trust
APN 004-063-06	1155 Hopkins Street, Berkeley, CA 94702-1359

SITE BACKGROUND

The Subject Property is located in a predominately residential area in the western section of the city of Oakland, Alameda County, California (Figure 1). The subject Property comprises the Alameda County assessor parcel 004-063-06 and is bordered to the north by 12th Street and residential development, to the south by a vacant lot, on the east by Mandela Parkway, and to the west by a residential development (Figure 2). The property is located approximately 1-mile southeast north of Oakland Inner Harbor which connects to San Francisco Bay. The elevation of

the site is approximately 17 feet above mean sea level (USGS West Oakland 7.5 Minute Quadrangle). Portions of the site are paved with asphalt and the remainder is covered by grass and soil. A cinder-block DPE system containment building is the sole on-site structure.

Historical records indicate that the property was occupied by a service station from circa 1957 to the circa 1969. The subject property was either vacant or occupied by residential dwellings from at least 1902 to the mid 1950s. Sanborn maps from 1957, 1958, 1961 and 1967 appear to show three underground fuel storage tanks (USTs) located in the southeast corner of the service station. The 1961 Sanborn map appears to show a fourth UST or AST along the west property boundary. According to a previous report, a magnetometer survey performed at the subject property (circa 1999) revealed no magnetic anomalies indicative of buried underground storage tanks. However, communications with the Oakland Fire Department Hazardous Materials Division, confirmed that no records exist of UST removal from the Subject Property[1].

Geologic Setting

The Subject Property is located in the East Bay Plain of the San Francisco Bay Area. This region is dominated by northwest trending topography enclosed in the Coast Range Province of California. The site is located in the "Merritt Sand Outcrop" groundwater subarea, which has a maximum thickness of 65 feet, and the local gradient is directed toward the west to southwest[2]. Groundwater is first encountered between 10 and 12 feet below ground surface (bgs) and generally stabilizes at approximately 11 feet bgs.

Previous Environmental Investigations

In August 1999, East Bay Asian Local Development Corporation (EBALDC) contracted Blymer Engineers of Alameda, California to conduct an environmental assessment of the subject property[3]. EBALDC was considering purchasing the subject property from the current property owner for infill residential development.

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[1] Verbal Communication, *Leroy Griffin, Oakland Fire Department Hazardous Materials Division,* May 25, 2006.

[2] Hickenbottom and Muir, *Geohydrology and Groundwater Quality Overview of the East Bay Plain Area, Alameda County, California, 205 (J) Report*, 1988.

[3] Blymer Engineers, Inc., *Subsurface Investigation Vacant Parcel 1409-1417 12th Street, Oakland, California,* August 25, 1999.

The investigation included installation of five on-site exploratory borings (B1 through B5) and the collection of soil and grab groundwater samples. Soil and grab groundwater samples were analyzed at a California-certified laboratory for total petroleum hydrocarbons (TPH) as gasoline (TPHg) by modified EPA Method 8015; benzene, toluene, ethylbenzene and total xylenes (BTEX); and methyl *tert*-butyl ether (MTBE) by EPA Method 8020. All of the soil samples and three groundwater samples were analyzed for total lead using EPA Methods 6010 and 239.2. One grab groundwater sample was analyzed for Volatile Organic Compounds (VOCs) by EPA Method 8260.

Elevated concentrations of TPHg (1,500 milligrams per kilogram [mg/kg]) and benzene (5.9 mg/kg) were detected soil samples collected from two borings in the northeast and west-central portion of the site. Significant concentrations of TPHg (up to 110,000 micrograms per liter [µg/L]), BTEX (benzene up to 5,800 µg/L, toluene up to 16,000 µg/L, ethylbenzene up to 31,000 µg/L, and total xylenes up to 18,000 µg/L), and other VOCs were detected in grab groundwater samples collected from three of the five borings. The concentrations of TPHg and BTEX in these groundwater samples exceeded respective San Francisco Bay Regional Water Quality Control Board (RWQCB) environmental screening levels (ESLs)[4] for commercial and residential land use scenarios. As a result, EBALDC no longer considered the subject property a viable location for residential development.

In July, 2006, Impact conducted a Phase I Environmental Site Assessment (Phase I) for the Subject Property[5]. The Phase I did not find the subject property on any government environmental lists. However, the Phase I concluded that site contained recognized environmental conditions because: 1) the subject property was once occupied by a gasoline service station; 2) no records were found indicating the fuel tanks were removed; and 3) elevated concentrations of gasoline and related compounds were detected in soil and groundwater samples collected from the property.

In May 2007, Impact conducted site characterization study to further evaluate the presence of petroleum hydrocarbons and VOCs in soil, soil-vapor, and groundwater at the subject property.

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[4] *Screening For Environmental Concerns at Sites with Contaminated Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, November 2007.

[5] Impact Environmental Services, *Phase I Environmental Site Assessment 1409-1417 12th Street Oakland California*, August 25, 2006 (revised December 13, 2006).

Thirty-six discrete soil samples and nine grab groundwater samples from nine on-site exploratory borings. In addition, nine soil-vapor samples were collected from property[6]. Soil and grab groundwater samples were analyzed for TPH as diesel (TPHd) and motor oil (TPHmo) by EPA Method 8015, and TPHg, BTEX, MTBE, and other fuel oxygenates by EPA Method 8260. Soil-vapor samples were analyzed for TPHg (by modified EPA Method TO-3) and VOCs (by EPA Method TO-15). Elevated concentrations (exceeding residential ESLs) of petroleum hydrocarbons and fuel-related volatile organic compounds (VOCs) were confirmed to be present in soil, soil-vapor, and groundwater samples collected near the northeast corner and the center of the property.

Following a review of the Site Characterization Report, ACDEH requested that a Remediation Workplan be prepared to develop plans to mitigate petroleum hydrocarbon contamination at the property. In October 2007, Impact submitted a Remediation Workplan[7] to ACDEH. The workplan proposed groundwater extraction and treatment to remediate dissolved phase petroleum hydrocarbons in groundwater, and multi-phase vacuum extraction to remove free-product and residual hydrocarbons in the smear-zone. ACDEH approved the Remediation Workplan on July 31, 2008[8].

In March and April 2008, eleven groundwater monitoring wells (MW-1 through MW-8 and proposed groundwater extraction wells GW-1 through GW-3 were installed at the subject property by Woodward Drilling, under the direction of IMPACT[9]. Well locations are shown on Figure 2. Shallow groundwater monitoring wells (MW-1 through MW-7) were completed to a depth of approximately 14 feet bgs and groundwater extraction wells (GW-1 and GW-3) were installed to depths between 17 and 18 feet bgs. Well MW-8 was installed to a depth of 27 feet bgs within a conductor casing set at 19 feet bgs. The initial groundwater monitoring event was conducted at the site in June 2008 and groundwater monitoring has continued on a quarterly to semiannual basis to date.

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6 Impact Environmental Services, Site Characterization Report *1409-1417 12th Street Oakland California*, June 5, 2007.

7 Impact Environmental Services, Remediation Workplan Site *1409-1417 12th Street Oakland California*, October 17, 2007.

8 Alameda County Environmental Health Services Letter_Fuel Leak Case No. RO0002933 Global ID T0600158621, Thompson Property, 1409-1417 12th Street, Oakland, CA 94607-2003, dated July 31, 2008.

9 Impact Environmental Services, Groundwater Well Installation & Initial Quarterly Groundwater Monitoring Report for 1409 - 1417 Street, Oakland, California, October 9, 2008.

A DPE pilot test was conducted at the subject property from October 13 through October 18, 2008. The results of pilot test indicated that DPE is a viable technology for removing petroleum hydrocarbons from soil and groundwater from the subject property. Recommendations for DPE well installation and for instituting full-scale DPE at the site were included in the pilot test and submitted to ACDEH[10]. The ACDEH granted IMPACT approval to commence DPE operations to mitigate petroleum hydrocarbon contamination in soil and groundwater at the subject property.

DUAL PHASE VACUUM ENHANCED EXTRACTION DESIGN & TECHNOLOGY

DPE is an accepted and proven technique for removing gasoline-range petroleum hydrocarbons and VOCs from subsurface soil and groundwater and is typically applicable at sites where groundwater extraction/treatment (GWE) in addition to soil-vapor extraction (SVE) is desired. Another advantage of DPE is that it combines two remediation technologies (SVE and GWE) in one piece of equipment. The high vacuum generated by the dual phase extractor draws vapors out of the well and surrounding soils via a sealed drop tube (i.e., stinger) installed in each DPE recovery wells. The high vacuum literally pulls water from the DPE well through the stinger and any additional groundwater that enters the well due to recharge is immediately drawn into the stinger. The water level is maintained at the bottom of the drop tube. The DPE system uses an oil-sealed, liquid-ring, vacuum pump in conjunction with a moisture separator. Vapors extracted from the DPE wells first enter the moisture separator through a side inlet. This creates a vortex in the knockout tank, which helps to drop out liquids. Vapors then exit the top of the moisture separator and pass through an inline filter, which removes any particulate. The contaminated vapors then pass through the vacuum pump and are discharged to the thermal oxidizer. Treated emissions are then discharged to the atmosphere.

DPE is an in-situ technology by which the volatilization of VOCs is induced in the subsurface and the constituents are removed in extracted vapor and groundwater. The use of DPE results in the removal of VOCs from the subsurface and consequently reduces the potential for further transport of VOCs[11, 12] .

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[10] Impact Environmental Services, Dual-Phase Vacuum-Enhanced Extraction Pilot Test for 1409 - 1417 Street, Oakland, California, November 7, 2008.

[11] United States Environmental Protection Agency (EPA) Office of Research and Development, *Soil Vapor Extraction Technology, Reference Handbook (EPA/540/2-91/00),* February 1991.

The removal of VOCs by DPE may be controlled by one or more of the following processes: advection, volatilization, desorption and diffusion. During DPE, as air is drawn through the soil pore space, VOCs volatilize and are carried with the air to extraction wells via advection. This removal induces further volatilization from the impacted soils. Impacted areas that are not in direct contact with the advective air flow rely on diffusion of VOCs toward Zones of enhanced air flow. Diffusion is a slower, rate-limiting process compared to advection[13].

After a typical DPE system has been operating continuously for an extended period of time, the system becomes diffusion driven and removal rates decrease to a non-zero asymptotic level. If the system is turned off at this point, diffusion of VOCs from lower to higher permeability zones can occur, resulting in more effective mass removal upon restarting the system. This phenomenon is generally known as the "rebound" effect. In these situations, cycling or pulsing of the system is generally employed to remove additional VOC mass at the final stage of site cleanup. Termination of the DPE system operation generally occurs when, following system cycling, the system has achieved the maximum practical removal effectiveness.

The extent to which VOCs volatilize into the vapor phase is governed by the physical properties of the compounds, including the Henry's Law constant and vapor pressure. The Henry's Law constant describes the equilibrium partitioning of a chemical between the vapor phase and aqueous phase. The larger the Henry's Law constant, the more constituent tends to partition into the vapor phase. The vapor pressure of a chemical describes the tendency of a chemical to evaporate and is described as the pressure exerted by that compound in the vapor phase at equilibrium with the pure compound (in solid or liquid form) in a closed system. Compounds with a Henry's Law constant greater than 0.01 (dimensionless) and a vapor pressure greater than 0.5 mm of mercury (Hg) are generally amenable to removal by DPE[14]. Contaminants at the property are primarily a mixture of benzene and TPHg. Both compounds are amenable to removal by DPE based on their Henry's Law constants and vapor pressures.

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[12] United States Environmental Protection Agency (EPA) Office of Solid Waste and Emergency Response, *Volume 8, Innovative Site Remediation Technology: Vacuum Vapor Extraction (EPA/542/B-94/002)/00),* April 1995.

[13] United States Army Corp of Engineers, Engineering and Design: Soil Vapor Extraction and Bioventing (Engineer Manual No. 1110-1-4001), June 3, 2002.

[14] United States Environmental Protection Agency, Engineering Forum Issue Paper: Soil Vapor Extraction Implementation Experiences (EPA/540/f-95/030), 1997.

Site Geology / Lithology

Soil beneath the site consists primarily of sand and silts with occasion sandy clays and clayey sand. Dark yellowish-brown sandy clay was observed from the surface to approximately 3 to 4 feet bgs. In general, a moderate yellowish-brown to moderate reddish-brown silty-sand unit was observed beneath the surface clay layer to the maximum depth of exploration at 27 feet bgs. In the western part of the site, a clayey sand unit was observed from a depth of approximately 5 to 10 feet bgs and a fine to medium-grained sand unit was observed on occasion from this same depth interval in other parts of the site. Groundwater at the site was first encountered at depths ranging from 10 to 12 feet bgs. Perched groundwater was observed from approximately 5 to 7 feet bgs at several boring locations.

Area of Remediation

The areas to be remediated were defined based on exceedances of environmental screening-levels[15] primarily for TPHg and benzene in soil, soil-vapor, and groundwater samples. Based on existing site information, it appears that there are two distinct groundwater hydrocarbon plumes. Plume A is located near the center of the site, in the vicinity of wells MW-8, GW-1, DPE-1B, DPE-2B, and DPE-5. Plume B is located near the northeast section of the site, in the vicinity of wells GW-3 and DPE-3. The location of the plumes is shown on Figure 2.

The DPE well network was designed and based on the results of the DPE pilot test in addition to the results of soil, soil-vapor, and groundwater samples collected during previous site assessments and during installations of groundwater monitoring wells and DPE recovery wells. A conservative radius of influence (ROI) for a DPE well screened at the site has been estimated to be about 10 feet.

DPE RECOVERY WELL INSTALLATION

In January 2009, eight dual phase extraction wells (DPE-1, DPE-1B, DPE-2, DPE-2B, DPE-3, DPE-5, DPE-6, and DPE-7) were installed at the property by HEW Drilling Company (HEW) of

[15] *Screening For Environmental Concerns at Sites with Contaminated Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, November 2007.

East Palo Alto under the direction of IMPACT. The location of the DPE wells and dual-use DPE/Monitoring wells are shown on Figure 2. DPE wells were installed to recover petroleum hydrocarbons and vapors from unsaturated soil and to remove groundwater impacted by dissolved-phase petroleum hydrocarbons.

Rationale for DPE Recovery Well Locations

IMPACT proposed that eleven DPE wells be installed at the property. However during the drilling of DPE well borings, it was evident from PID readings, olfactory and visual observations of soil samples, and laboratory analysis of soil samples collected from select DPE well borings, that soil and groundwater in the vicinity of proposed wells DPE-1, DPE-2, DPE-4, DPE-6, DPE-7, DPE-8, and DPE-9 were not impacted by petroleum hydrocarbons. Field observations of grab groundwater samples collected from these specific DPE wells appeared to indicate that groundwater was also not significantly impacted by petroleum hydrocarbons at these locations. As a result, proposed wells DPE-4, DPE-8, and DPE-9 were not installed at the property because extraction at these locations could induce migration of constituents of concern (COCs) into areas not of the site. Wells DPE-1, DPE-2, DPE-6, and DPE-7 were installed as planned at the proposed locations and are expected to be used as possible "bleeder wells" to supplemental air flow to the subsurface and promote hydrocarbon degradation. In the future, these wells could also be used to capture petroleum hydrocarbons should contaminants migrate to these locations.

To further support IMPACT's decision to not install DPE wells, soil samples were collected from well borings for proposed wells DPE-4, DPE-7, DPE-8, and DPE-9 at five, ten, and fifteen feet bgs and analyzed for TPHg, BTEX, and fuel oxygenates. An additional soil sample was collected from a depth of twenty feet bgs from the well boring for proposed DPE-4. A total of thirteen soil samples were collected from well borings for proposed DPE wells DPE-4, DPE-7, DPE-8, and DPE-9. Soil samples from these specific DPE well borings were analyzed for COCs including TPHg, BTEX, and fuel oxygenates using EPA Method 8260. Soil samples collected from well boring for DPE-4 were also analyzed for TPHd by EPA Method 8015. The samples were analyzed by Torrent Laboratory (Torrent) of Milpitas, California. The results confirmed that COCs were not present at concentrations at or above laboratory method detection limits in any of the thirteen soil samples collected from well borings for DPE-4, DPE-7, DPE-8, and DPE-9. These DPE well soil samples results are summarized in Table 1 and certified laboratory analytical reports are shown in Appendix A.

Wells DPE-1B, DPE-2B, DPE-3, and DPE-5 were installed within the footprint of hydrocarbon plumes to function as primary points of recovery of petroleum hydrocarbons and associated VOCs from soil and groundwater. In addition, existing groundwater monitoring wells MW-8, GW-1, and GW-3 (located within plume footprints) were converted for dual-use as DPE recovery wells in addition to groundwater monitoring wells.

Sample Collection and DPE Well Installation

Soil samples were collected from DPE well borings at approximate five-foot intervals from five feet bgs to total depth of wells for lithologic identification. Soil samples were collected from well boreholes by driving a 2-inch diameter, California Modified sampler through and in advance of 10-inch diameter hollow-stem augers (HSAs). The sampler was driven with a 140-pound hammer falling 30 inches. The number of blows required to drive the samplers 18 or 24 inches were recorded as the penetration resistance (blows/foot) on the boring logs. Soil samples were collected in 2-inch diameter, 6-inch long, brass liners. Soil samples collected for chemical analysis were filled to the fullest extent possible to reduce the potential for loss of volatiles and sealed with Teflon-lined plastic caps, labeled and placed in a cooled container and transported under chain-of-custody control to a laboratory certified by the State of California for the analysis performed.

DPE wells were constructed using 4-inch-diameter, flush-threaded, Schedule 40 PVC casing, with a 0.020-inch slotted well screen with solid riser pipe. The screened portion was surrounded by a #3 sand filter pack. The vertical screen for the wells DPE-1, DPE-2, DPE-3, DPE-5, DPE-6, and DPE-7 were constructed from approximately 6 feet to 22 feet bgs. Two deeper wells, DPE-1B and DPE-2B, were constructed with the vertical screen from 6 feet to 27 feet bgs. Filter pack material was installed from the bottom of the well to approximately 1-foot above the screened section. Approximately 1 foot of bentonite pellets were placed above the filter pack material. A neat cement sanitary seal was placed above the bentonite to within 6-inches of the ground surface. Well installation procedures and details for wells MW-8, GW-1, and GW-3 were described in a previous report[16].

[16] Impact Environmental Services, Groundwater Well Installation & Initial Quarterly Groundwater Monitoring Report for 1409 - 1417 Street, Oakland, California, October 9, 2008.

The wellhead was surrounded by a watertight vault encased in a concrete platform raised approximately 3-inches above grade. The well casing was capped with a watertight, well seal with a ½-inch diameter measuring port, a ¾-inch diameter sample port and a 1-inch opening fitted with an extraction 1-inch diameter drop tube. The drop tube is connected to a tee fitting with a 1-inch PVC pipe that is connected and runs horizontal from the tee fitting to a 1-inch to 2-inch connected 2-inch Schedule 40 PVC piping that is plumbed below grade to the DPE system containment building.

Soils were logged under the direction of a registered Professional Geologist in accordance with the Unified Soil Classification System (USCS). All down-hole equipment was steam-cleaned before use and between borings. Soil cuttings and decontamination rinsate were placed in 55-gallon drums for proper disposal. DPE Well Details are presented in Table 2. DPE well installation permits are presented in Appendix B and DPE Well Completion Reports/Logs are presented in Appendix C.

Well Development

In February 2009, all new DPE wells were developed using the surge and bail method. DPE wells were developed until the water was relatively free of sediment and field water quality parameters (i.e., pH, temperature, electrical conductivity) had stabilized. Purge water generated during well development was placed in a 6,000-gallon water storage tank and combined with groundwater generated during the DPE-pilot test. Purge water was sampled and disposed of by Phillips Services Corporation. Well development logs and certified well survey data are presented in Appendix D. Purge water sample results are presented in Appendix E.

DPE EQUIPMENT AND COMPONENTS

This section describes the main equipment and components that comprise the Dual Phase Vacuum-Enhanced Extraction soil and groundwater remediation system. The following section describes the DPE/Thermal Oxidizer vapor recovery and treatment system and the groundwater treatment system for 1409-1417 12th Street, in Oakland.

DPE System Containment Building

A cinder-block DPE system containment building was constructed at the site from May through September 2009. The containment building was constructed to provide added security for the DPE and groundwater treatment systems. Ashby Excavation & Contractors (Ashby) of Vallejo, California, constructed a four-inch thick reinforced concrete slab with dimensions 40-foot by 18-feet and erected a 13-foot high cinder-block enclosure along the south, west and east margins of the concrete slab. Eagle Ironwork Inc. of Richmond, California installed two 13-foot high, reinforced iron-gates on the north end. The building construction was completed with the installation of steel-slated roof. A schematic of the containment building is shown on Figure 3.

Construction and investigation derived soil and materials generated during: 1) excavation of trenches associated DPE conveyance pipe and natural gas line; 2) grading the pad for the containment building concrete foundation; and 3) installation of the DPE recovery wells was stockpiled, sampled and loaded into bins for off-site disposal. Results of the soil stockpile sample are attached in Appendix F.

DPE Well Network

The DPE well network consists of eleven extraction points including wells including: DPE-1, DPE-1B, DPE-2, DPE-2B, DPE-3, DPE-5, DPE-6, DPE-7, GW-1, GW-3, and MW-8. The location of the DPE wells and dual-use DPE/Monitoring wells are shown on Figures 2 and 4.

DPE Conveyance Piping

DPE recovery wells were plumbed individually to the DPE system enclosure building using 2-inch diameter, Schedule 80 PVC conveyance pipe installed and routed below grade. Each conveyance pipe was installed in a 2 to 3 foot deep trench extending from each DPE wellhead through a central piping gallery to a piping manifold located in the containment building. The piping size of 2-inch diameter was chosen to prevent unreasonable pressure drops that could potentially lead to low vacuum at the well heads. All piping was run sub-horizontally and sloped at a minimum of 1% from the DPE system enclosure to each DPE well to prevent condensate buildup in the piping. The DPE conveyance piping layout is shown in Figure 4. Figure 5 shows a cross-section of a conveyance system pipe and trench design.

DPE/Thermal Oxidizer System Trailer

DPE equipment including the entrained liquid separator, oil-sealed liquid ring vacuum pump, thermal/catalytic oxidizer unit, liquid transfer pump, and electrical control panel are contained in a fully enclosed, sound-attenuating, 3,500 lbs. dual axle trailer. The DPE/Thermal Oxidizer trailer is 16-feet in length, 7-feet wide, and 9-feet in height. The trailer is equipped with double swing open back-doors, a side door, cooling fan and exhaust louvers, high temperature shut-down control, LEL sensor with limit controller, industrial lighting, main disconnect and emergency shut-off buttons. Views of the outside and inside of the trailer are shown in Figures 6 and 7, respectively.

DPE/Thermal Oxidizer Treatment System

The DPE/Thermal Oxidizer Recovery and Vapor Treatment system includes the following equipment to control and support vapor extraction and treatment and groundwater recovery:

- DPE control manifold which diverts vapor and groundwater from the wells to the moisture separator and consists of piping, throttling valves, vacuum gauges, and sampling ports.
- Electric service panel for control and monitoring of DPE system;
- Moisture separator (knock-out) tank with liquid transfer pump;
- Blower package including a 25 horsepower, oil-sealed, liquid ring vacuum pump capable of 400 ACFM air flow and up to 28" Hg vacuum;
- Thermal/Catalytic Oxidizer including oxidizer chamber, fuel train and burner;

Figures 8 and 9 present process and instrumentation diagrams (P&IDs) of equipment and major components of the DPE/Thermal Oxidizer and a picture of the system.

Moisture Separator (Knock-Out) Tank

The DPE systems entrainment (moisture) separator or knock-out tank is provided to separate contaminated vapor (vapor phase) and groundwater/condensation (liquid phase) recovered from the DPE well. The moisture separator has a tangential inlet that cyclonically separates the water and vapors with 99% + efficiency. The entrainment separator dimensions are 28 inches in diameter x 60 inches tall. The minimum working volume of moisture separator is 50 gallons.

The moisture separator is equipped with clear site tube on the side to visually note the liquid level and consistency. High and low liquid-level float switches located within the site tube. The High Liquid Level (HLL) Switch activates the liquid transfer pump when it is triggered and the Low Liquid Level (LLL) Switch stops the liquid transfer pump when liquid from the knockout tank has been evacuated. The knockout tank is also equipped with a high-high level (HHL) switch which automatically shuts down the DPE system when the HHL switch is triggered.

The entrainment separator is equipped with two butterfly valves, the Process Isolation Valve (PIV) and the Dilution Valve (DV), are actuated by a drive motor. The PIV isolates contaminated untreated vapors: 1) during start-up; 2) when an alarm occurs; 3) and when the oxidizer chamber is not at an appropriate operating temperature for thermal oxidation treatment. The DV continually modulates and maintains the vapor discharge temperatures at a pre-set temperature.

Knockout Tank Liquid Transfer Pump

The liquid transfer pump is used to evacuate liquid from the knockout tank to the granulated activated carbon (GAC) vessels for treatment before discharge to the storm drain. The liquid transfer pump is triggered when water (separated from vapor) fills the knockout tank and reaches the HHL switch. The pump shuts off automatically when water is removed from the knockout tank and reaches the LLL switch. The pump directs water from the knockout tank to two 2,000 lbs. GAC vessels at a rate of approximately 10 gallons per minute (gpm) against a total vacuum of approximately 50-in H_20. The liquid transfer pump utilizes a solenoid valve on the inlet pipe to protect the pump from the vacuum when not in use.

Oil-Sealed Liquid Ring Vacuum Pump

The DPE Blower consists of a Travaina *DynaSeal* 400 ACFM oil-sealed liquid ring vacuum pump extracts vapors (separated from water) from the knockout tank and directs them to the thermal oxidizer for treatment and ultimate discharge. The vacuum pump is capable of generating a vacuum up to 28" mercury and is powered by a 25 horsepower motor. The blower is a compatible with the vapor stream contaminants and is equipped with an inlet filter, inlet and outlet silencers, discharge temperature gauges, and discharge pressure gauge. The galvanized

steel outlet pipe from the blower is routed along the top of the trailer to the thermal oxidizer vapor treatment unit. Due to potential heat increase after the blower, the discharge pipe inside the enclosure is insulated for safety reasons. A High Oil Level (HOL) switch and Low Oil Level (LOL) switch monitor oil levels in the blower and automatically turns the DPE system off when either switch is activated.

Thermal Oxidizer Chamber

Contaminated vapors are directed from the entrainment separator and vacuum pump to an oxidizer combustion chamber constructed of 3/16 inch carbon steel lined with a 5 inch ceramic fiber high temperature lining that provides a safe cold face temperature while operating at 1,450°F + on the hot face. An excess air burner is installed in the oxidizer chamber to provide the necessary heat for the pre-heating of the incoming vapors. The operating range for the burner is 1450°F to 1800°F. The fuel train is a NFPA double blocking valve type with proportional gas modulation and is modulated by a temperature controller. The combustion chamber and burner are connected to an exhaust stack that is mounted on the top of the DPE trailer. The exhaust stack employs air induction and is rated for vertical discharge of 13 feet from the top of the stack.

The Thermal Oxidizer Chamber is equipped with a Flow Transmitter which measures and chart recorder which records the total volumetric vapor flow to the oxidizer chamber. The Flow Transmitter receives a high and low air pressure signal from the pilot tube in the process line and transmits a signal to the chart recorder.

The Thermal Oxidizer unit is equipped with a Temperature Controller which receives a signal from the control thermocouple and maintains the pre-set operating temperature by modulating the fuel-train drive motor and valve. The Thermal Oxidizing unit is equipped with a Dilution Controller which receives a signal from the stack thermocouple and maintains a pre-set operating temperature by modulating the dilution drive motor and valve. In addition, the oxidizing unit has a High Limit Temperature Controller which receives a signal from the stack thermocouple and shuts the thermal oxidizer off when the exhaust temperature exceeds 1800°F.

Valves and Instrumentation

The following valves and instrumentation are utilized in the DPE system:

- Level switches: float or contact switches that activate upon contact with water to control the condensate transfer pump or signal high level alarm conditions;
- Pressure indicator: pressure gauge to evaluate blower discharge measurements;
- Sample port: to collect vapor samples and take vacuum or pressure measurements;
- Temperature indicator: temperature gauges to evaluate vapor temperature before and after the blower;
- Temperature transmitter: to monitor the blower discharge temperature and shut down the DPE system if necessary;
- Valves: for use in throttling flow or for shutoff;
- Vacuum transmitter: to monitor the blower inlet vacuum and shut down the DPE system if necessary; and,
- Gas transmitters: to monitoring combustible gas (%LEL) and oxygen levels inside the DPE system enclosures, and shut down the DPE system if there are unacceptable levels.

DPE System Control Panel

The DPE System Control Panel is located along the north wall inside the DPE trailer and contains a main disconnect, on/off switches, operator interface lights, controllers, chart recorder, fuses, motor starters, relays and wiring. The panel is NEMA 4 type rated for outdoor use. The DPE System control panel controls and monitor the system and displays alarm conditions. The control panel consists of a relay/timer-based control system mounted in the front of the system trailer. The front control panel contains the following key components:

- Switches: Three position (hand-off-auto) for the liquid transfer pump; Two position (On-Off) for system power and lighting;
- 1 yellow LED light that illuminates when the combustion chamber is at temperature;
- 1 green LED light that illuminates when the DPE equipment is running within operational limits;
- 1 red LED light that illuminates when DPE component (s) and or equipment is in alarm;
- Run time meter: (Six digit; hours/tenths and hundredths) for blower and transfer operation;
- Chart Recorder;
- Emergency Stop Button.
- Blower Start Button

- Limit Reset Button
- Panel disconnect switch; and,
- Temperature Controller: Controls Temperature of Fuel-Train Drive
- Dilution Controller: Continually Modulates and Maintains Vapor Discharge Temperature;
- Heat Exchange Limit Controller: Modulates Temperature in the Heat Exchanger;
- Enclosure Controller: Regulates the Temperature of the DPE Trailer;
- %Lower Explosion Limit Controller: Measures and regulates the %LEL in the DPE Trailer; and
- Eleven (11) Alarm Channels: Blower Trip; Oxidizer Trip (low temperature); Low Gas Pressure; High Gas Pressure; High Oxidizer Temperature; Low Air flow; High-High Knockout Tank Level; Blower High or Low Level; High Height Exchange Temperature; High Enclosure Temperature; and High %LEL in Enclosure.

If any of the alarms are triggered, the DPE System will automatically shut down and will require correction of the alarm condition prior to restating the system. A SCADA auto dialer is connected to the DPE System and has been programmed to notify local personnel if any of the ELEVEN ALARMS indicated above are triggered, and in the event of a power outage.

Electrical Power Service

Power for the DPE system is provided by Pacific Gas and Electric (PG&E). Electrical power lines and PG&E meter are connected to a temporary power pole located near the northeast corner of the property. Electrical power lines from the on-site temporary power pole are connected to the top of the east wall of the DPE containment building and are wired to the NEMA 4 electrical power panel located inside and on the east wall the containment building. Power lines are connected from the power panel to the control panel located inside the DPE trailer. The DPE system operates on 230 volts, 3-Phase, and 100 amps. Electrical service will be required for the following equipment:

- Blowers;
- Transfer pumps;
- Control panels and related equipment control;
- Building heaters, ventilation systems, and lighting; and
- Float-switch for the effluent water holding tank.

Electrical equipment installed inside the DPE system enclosures are rated for non-classified areas. The DPE system trailer is equipped with ventilation fans and gas transmitters for monitoring combustible gas (%Lower Explosive Limit [LEL]) and oxygen levels inside the DPE system trailer. If the meter indicates that dangerous %LEL levels exist inside the DPE trailer, the entire DPE system will shut down automatically.

Natural Gas Service

Natural gas is supplied by PG&E to the DPE system via a line connected to the thermal oxidizer. Ashby installed the 1-inch PVC natural gas line into a 30-inch deep trench which extended from the PG&E gas main and meter located in the northwest part of the subject site. The gas line and trench extended from the meter to the west side of the containment building and was plumbed through the containment building wall and DPE trailer wall into the thermal oxidizer system. The gas line trench was backfilled to PG&E specifications.

Telephone Service

AT&T telephone service is connected to the DPE enclosure to support alarm callout functions for the SCADA auto dialer.

GROUNDWATER TREATMENT SYSTEM

Groundwater evacuated from the moisture separator is directed to a groundwater treatment system and discharged via a below-grade pipeline to a local storm drain. The groundwater treatment system and components are illustrated in Figure 10. The equipment included in the groundwater discharge system includes:

- Two (2) 2,000 lbs. Granular Activated Carbon (GAC) treatment chambers;
- Water Influent (INF-1) and Effluent (EFF-1) Sampling Ports and associated Piping;
- One 3,000-gallon polyethylene (treated water) holding storage tank;
- Totalizing Flow Meter; and
- Sub-grade groundwater discharge lines.

Liquid-Phase Granular Activated Carbon Vessels

The DPE system utilizes two 2,000 lbs. liquid-phase granular activated carbon (GAC) vessels (Siemens ASC-2000) connected in series to remove contaminants from groundwater recovered from the entrainment moisture separator. GAC vessels are shown on Figure 11.

The GAC vessels are equipped with a piping manifold with pressure valves and three primary sample ports. The GAC treatment system is rated for a maximum of 60 gallons per minute and 75psig and achieves a minimum 98% removal efficiency. The GAC system has three primary water sampling ports: INF-1, CARBON-1, and EFF-1. Sampling port INF-1 is located in front of GAC vessel #1 and monitors influent water that is evacuated from moisture separator before undergoing GAC treatment. Sampling port EFF-1 is located after GAC vessel #2 and monitors effluent water after passing through both GAC vessels. An intermediate sampling port, CARBON-1, is located after INF-1 and before EFF-1 and is used to monitor contaminant breakthrough at the lead carbon vessel. An auxiliary or secondary effluent sampling port is located after EFF-1 and before the water holding tank.

When carbon change-out is necessary, the second or lag (GAC #2) carbon vessel will be re-configured as the lead unit (GAC #1). The vessel with the recharged GAC will be configured as the lag carbon unit to ensure efficient carbon usage.

Treated Groundwater Storage Tank and Discharge Piping

The effluent water from the lag carbon (GAC #2) vessel is plumbed to a 3,000-gallon plastic storage tank (Figure 12) located near the northwest corner of the containment building. The storage tank dimensions are 95-inches in diameter and 109-inches in tall. The storage tank is equipped with a 1.5-inch fill fitting and a 2-inch drain fitting. The tank is equipped with a 16-inch man-way and two drain fittings for accessing the cleaning the tank. A high level liquid float shut-off switch is situated near the top of the holding tank to prevent overflow of treated water from the holding tank. If the float switch is triggered, the DPE system shuts down automatically.

The storage tank drain-fitting is plumbed to a 3-inch diameter flexible hose that is connected to a brass totalizing flow meter. The flow meter effluent is connected to a 2-inch Schedule 80 PVC water discharge line (Figure 13) which is routed below grade (Figure 14) to a storm drain

adjacent to the subject property along Mandela Parkway (Figure 15). Pipe clean outs were incorporated at critical parts in the discharge line to allow for intermittent removal of condensate and debris.

DPE SYSTEM STARTUP AND OPERATION

Start-Up Sampling and Monitoring

Initial shakedown testing and monitoring of the DPE\Thermal Oxidizer and groundwater treatment system was conducted at the site from December 2009 through January 2010. Shakedown testing and monitoring was conducted to verify proper operation of each system component prior to bringing the system on line. System monitoring will include week, probe, and DPE system vacuums, groundwater levels, vapor flows and temperatures, VOC concentrations in the DPE system influent and effluent, and ambient breathing zone air quality.

After six months of operation, the DPE System will be temporarily shut down and existing operational and groundwater/soil-vapor data will be evaluated to ensure that the system is operating at optimal capacity and that soil and groundwater contamination is being properly abated.

On-Going Sampling and Monitoring

On-going DPE system monitoring is conducted at the site and includes the following:

- Combustion and Heat Exchange Temperature;
- DPE System Air Flow;
- DPE System Applied Vacuum;
- Blower Filter;
- Blower Temperature;
- Gas Pressure;
- Totalizing Flow Meter Water Discharge Reading;
- DPE system groundwater and condensate generation rates;
- Blower and transfer pump runtime;
- Temperature and pressure after the blower;
- VOC concentrations extracted vapor prior to the thermal oxidizer;

- VOC concentrations of the treated vapor after thermal oxidizer;
- Periodic monitoring of groundwater monitoring wells, and
- GAC influent and effluent sampling per NPDES groundwater discharge requirements.

Reporting

Details of the DPE system remedial actions will be documented in the routine reports submitted to ACDEH for the subject site.

PERJURY STATEMENT

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

Joseph A. Cotton, P.G.7378
Principal Environmental Geologist

Distribution:
(1) Copies – Mrs. Shirley E. Thompson, 1155 Hopkins Way. Berkeley, CA
(1) Copies – Mr. Steven Plunkett, Alameda County Environmental Health

Attachments:

Tables
Table 1 –DPE Well Soil Sample Analytical Results
Table 2 –DPE Well Construction Details

Figures
Figure 1- Site Location Map
Figure 2– Site Plan
Figure 3– DPE System Containment Building
Figure 4– Map View of Soil and Groundwater Remediation System
Figure 5– Cross-Section of Conveyance Piping and Trench Design
Figure 6– Outside View of DPE Trailer
Figure 7– Inside View of DPE Trailer
Figure 8– Picture and Features of 400cfm MAKOCAT High Vacuum and Thermal Oxidizer System
Figure 9– Process Instrument Diagram of MAKOCAT High Vacuum/Thermal Oxidizer
Figure 10–Schematic of Groundwater Treatment System
Figure 11–View of Granular Activated Carbon Vessels
Figure 12–View of 3000-gallon Treated Water Holding Tank
Figure 13– View of Totalizing Flow Meter & Treated Water Discharge Line
Figure 14–View of Gas Line & Water Discharge Line Egress from Containment Building
Figure 15– View of Water Discharge Line and Storm Drain

Appendices
Appendix A –DPE Well Soil Sample Certified Laboratory Analytical Results
Appendix B – DPE Well Installation Permits
Appendix C – DPE Well Completion Logs
Appendix D – Well Development Logs and Well Survey Data
Appendix E –Soil Stockpile Sample Certified Laboratory Analytical Results (Construction Related)
Appendix F – Purgewater Sample Certified Laboratory Analytical Results

LIMITATIONS

Impact Environmental's actions on this project were performed in accordance with current generally accepted environmental consulting principles and practices. This warranty is in lieu of all others, be it expressed or implied. Environmental conditions may exist at the site that could not be observed. Where the scope of services was limited to observations made during site reconnaissance, interviews, and/or review of readily available reports and literature, our conclusions and recommendations are necessarily based largely on information supplied by others, the accuracy and sufficiency of which may not have been independently reviewed by us. Our professional analyses are based in part on interpretation of data from discrete sampling locations that may not represent actual conditions between such sampling points. Additional data from future work or changing conditions may lead to modifications to our professional opinions and recommendations. Any reliance on this report, or portions thereof, by a third party shall be at such party's sole risk.

Table 1
DPE Well Soil Analytical Results
1409-1417 12th Street
Oakland, California

Sample ID	Date Sampled	Sample Depth (ft-bgs)	TPHg (mg/kg)	TPHd (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylenes (mg/kg)	MTBE (mg/kg)	DIPE (mg/kg)	ETBE (mg/kg)	t-Butanol (mg/kg)	TAME (mg/kg)
DPE-4:5'	01/14/09	5	<1	<2.00	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-4:10'	01/14/09	10	<1	<2.00	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-4:15'	01/14/09	15	<1	<2.00	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-4:20'	01/14/09	20	<1	<2.00	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-7:5'	01/16/09	5	<1	NA	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-7:10'	01/16/09	10	<1	NA	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-7:15'	01/16/09	15	<1	NA	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-8:5'	01/16/09	5	<1	NA	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-8:10'	01/16/09	10	<1	NA	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-8:15'	01/16/09	15	<1	NA	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-9:5'	01/16/09	5	<1	NA	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-9:10'	01/16/09	10	<1	NA	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
DPE-9:15'	01/16/09	15	<1	NA	<0.005	<0.005	<0.005	<0.015	<0.010	<0.010	<0.010	<0.050	<0.010
Residential ESL for Shallow Soil (NDWS)			*210*	*180*	*0.27*	*9.3*	*4.7*	*4.7*	*8.4*	*NE*	*NE*	*NE*	*NE*
Residential ESL for Shallow Soil (DWS)			*83*	*83*	*0.044*	*2.9*	*3.3*	*2.3*	*0.23*	*NE*	*NE*	*NE*	*NE*

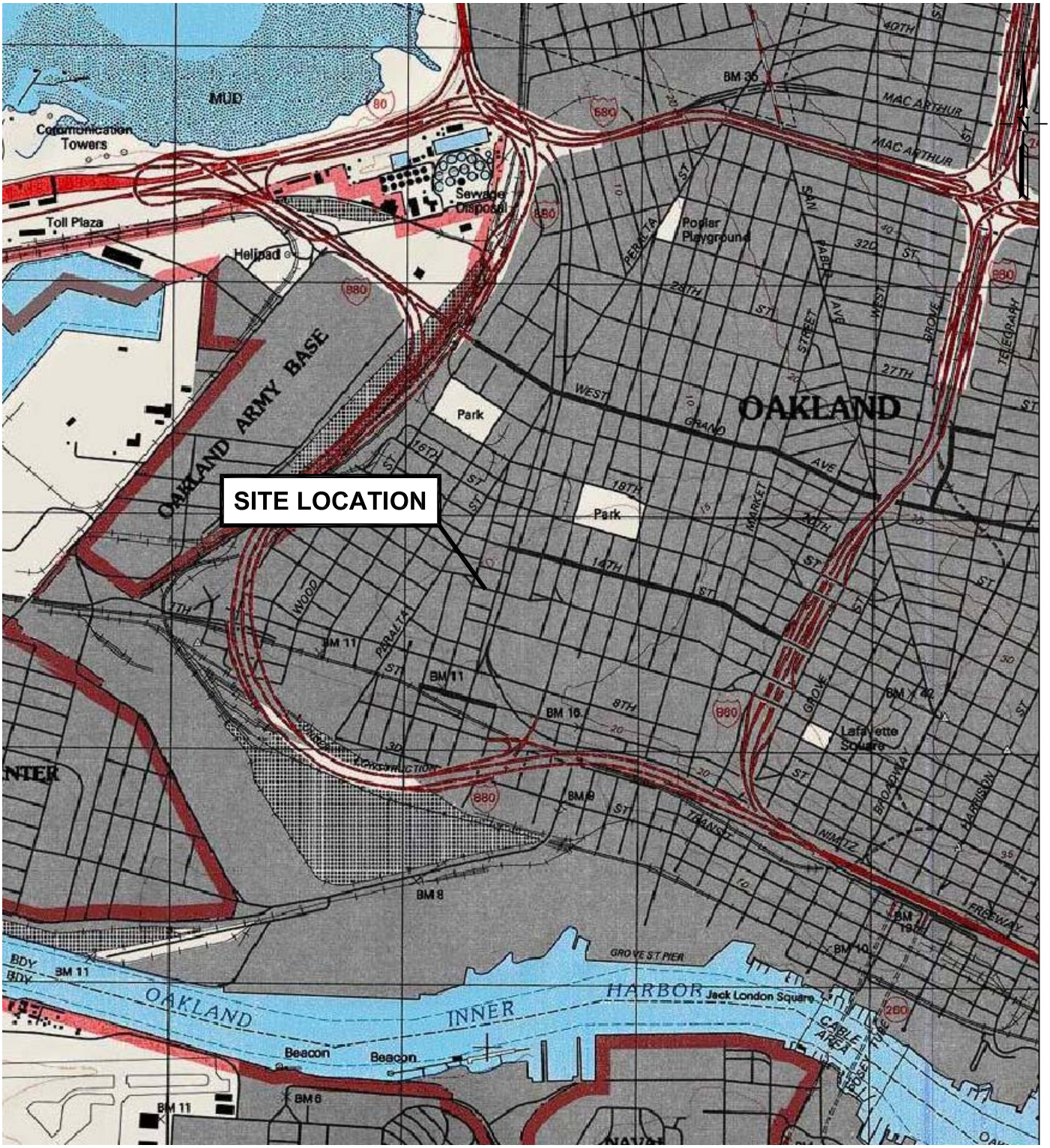
TPHg = Total petroleum hydrocarbons as gasoline by EPA Method 8260
TPHd = Total Petroleum Hydrocarbons as diesel by EPA Method 8015
Benzene, toluene, ethylbenzene, and xylenes, and oxygenates by EPA Method 8260
mg/kg = Milligrams per kilogram, equivalent to parts per million (ppm)
ESL= San Francisco Bay Regional Water Quality Control Board, Screening For Environmental Concerns at Sites With Contaminated Soil and Groundwater, May 2008.
NA = Not analyzed
NE = ESL not established for this constituent.

Table 2
Well Constructions Details for Dual Phase Vacuum Extraction Recovery Wells
1409-1417 12th Street
Oakland, California

Well Number	TOC Elevation (feet) NAVD88	Well Location Northing NAD83	Well Location Easting NAD83	Total Depth of Boring (feet, bgs)	Total Depth of Well (feet, bgs)	Casing Diameter (inches)	Screened Interval (feet, bgs)	Slot Size (inches)	Filter Pack (feet, bgs)	Filter Pack Type	Bentonite Seal (feet, bgs)	Neat Cement Seal (feet, bgs)
DPE-1	19.52	37.8090900	-122.2926713	21	20	4	6-21	0.020	5-21	#3	5-6	5 - Surface
DPE-1B	19.85	37.8090414	-122.2926366	27	27	4	6-27	0.020	5-27	#3	5-6	5 - Surface
DPE-2	19.51	37.8090907	-122.2926179	21	20	4	6-21	0.020	5-21	#3	5-6	5 - Surface
DPE-2B	20.00	37.8089959	-122.2926414	27	27	4	6-27	0.020	5-27	#3	5-6	5 - Surface
DPE-3	19.4	37.8090791	-122.2925055	21	20	4	6-21	0.020	5-21	#3	5-6	5 - Surface
DPE-5	20.02	37.8090318	-122.2926756	21	20	4	6-21	0.020	5-21	#3	5-6	5 - Surface
DPE-6	19.54	37.8090250	-122.2925940	21	20	4	6-21	0.020	5-21	#3	5-6	5 - Surface
DPE-7	19.76	37.8090239	-122.2925291	21	20	4	6-21	0.020	5-21	#3	5-6	5 - Surface

Notes:

TOC - top of casing
feet, NAVD88 - feet relative to NAVD88
feet, bgs - feet below ground surface
BOH - bottom of well
Well were constructed using Schedule 40 PVC



Scale 1:24,000

1 1/2 0 1 Mile

1000 0 1000 2000 3000 4000 5000 6000 7000 Feet

1 .5 0 1 Kilometer

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Figure 1

1409 to 1417 12TH STREET
OAKLAND, CALIFORNIA

SITE LOCATION MAP

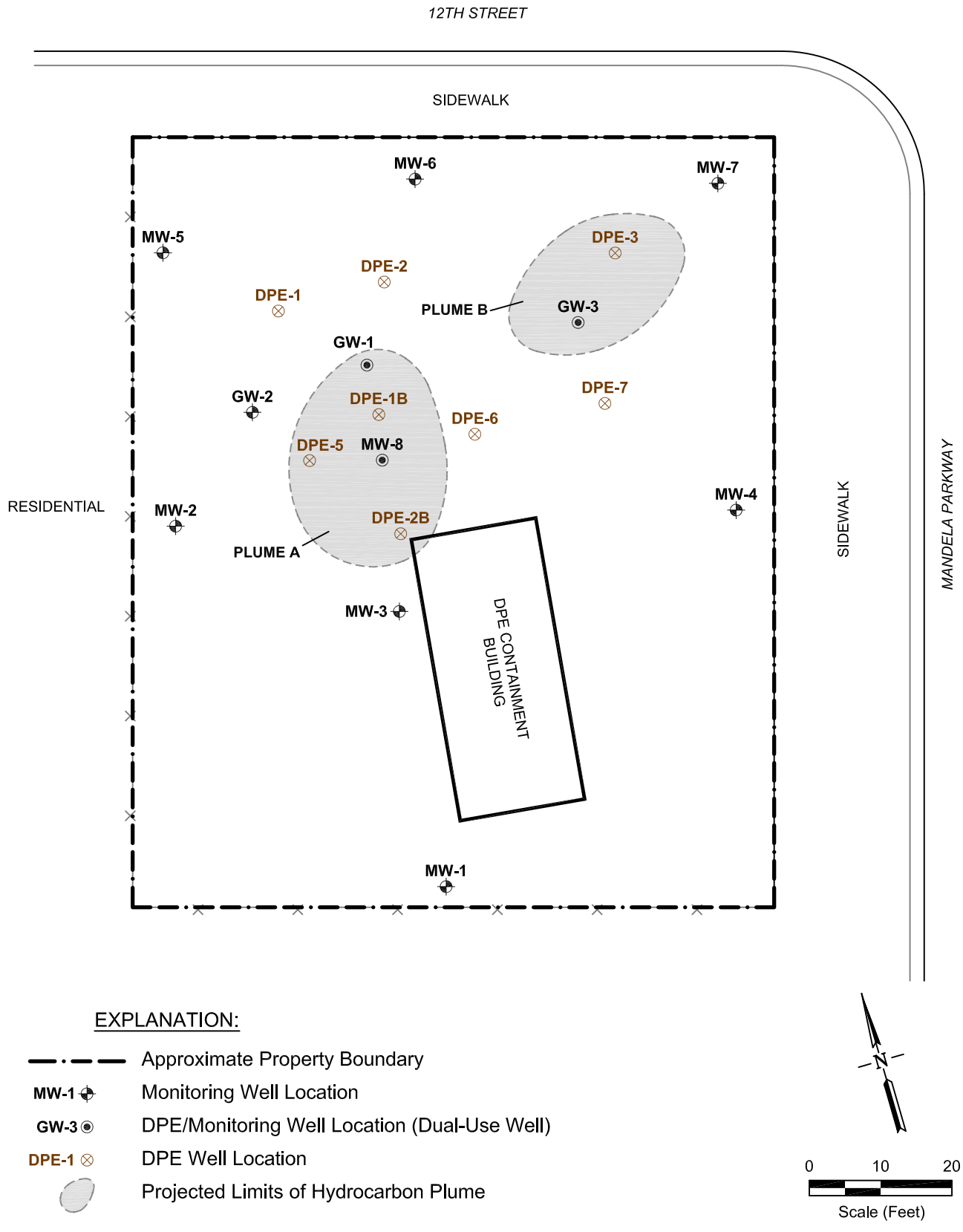

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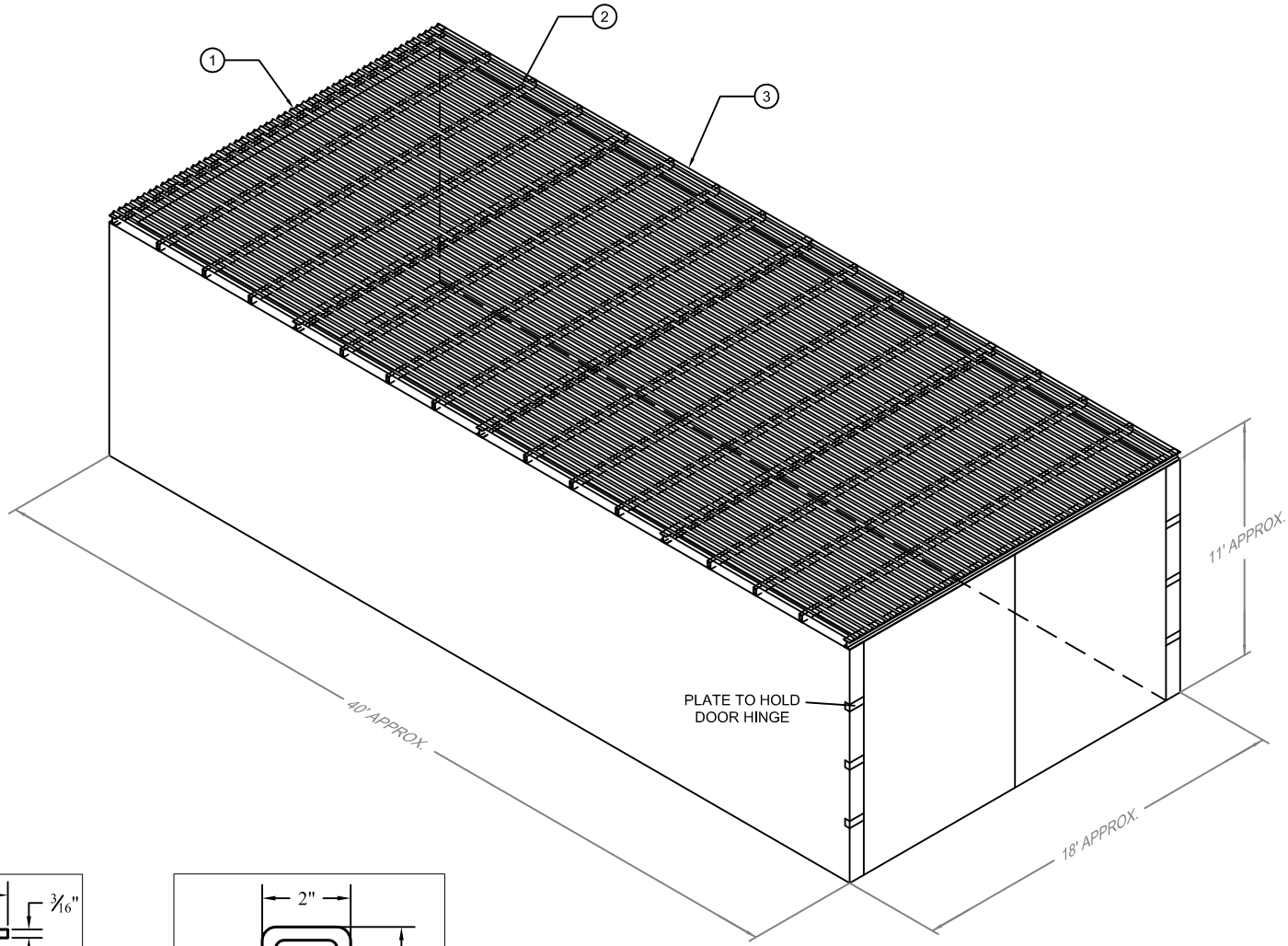
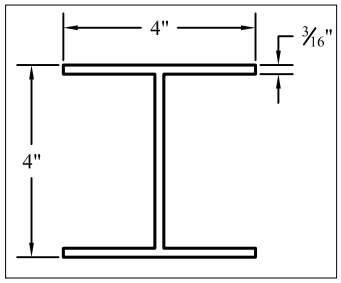
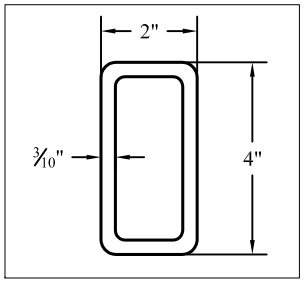
Figure 2
1409 to 1417 12TH STREET
OAKLAND, CALIFORNIA

SITE PLAN

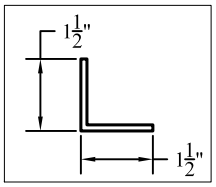




1 Steel Beam Across Spaced Every 10'
1/4"=1"



2 Steel Tubing Across Spaced Every 2'6"
1/4"=1"



3 Steel Across Beams Spaced Every 4"
1/4"=1"

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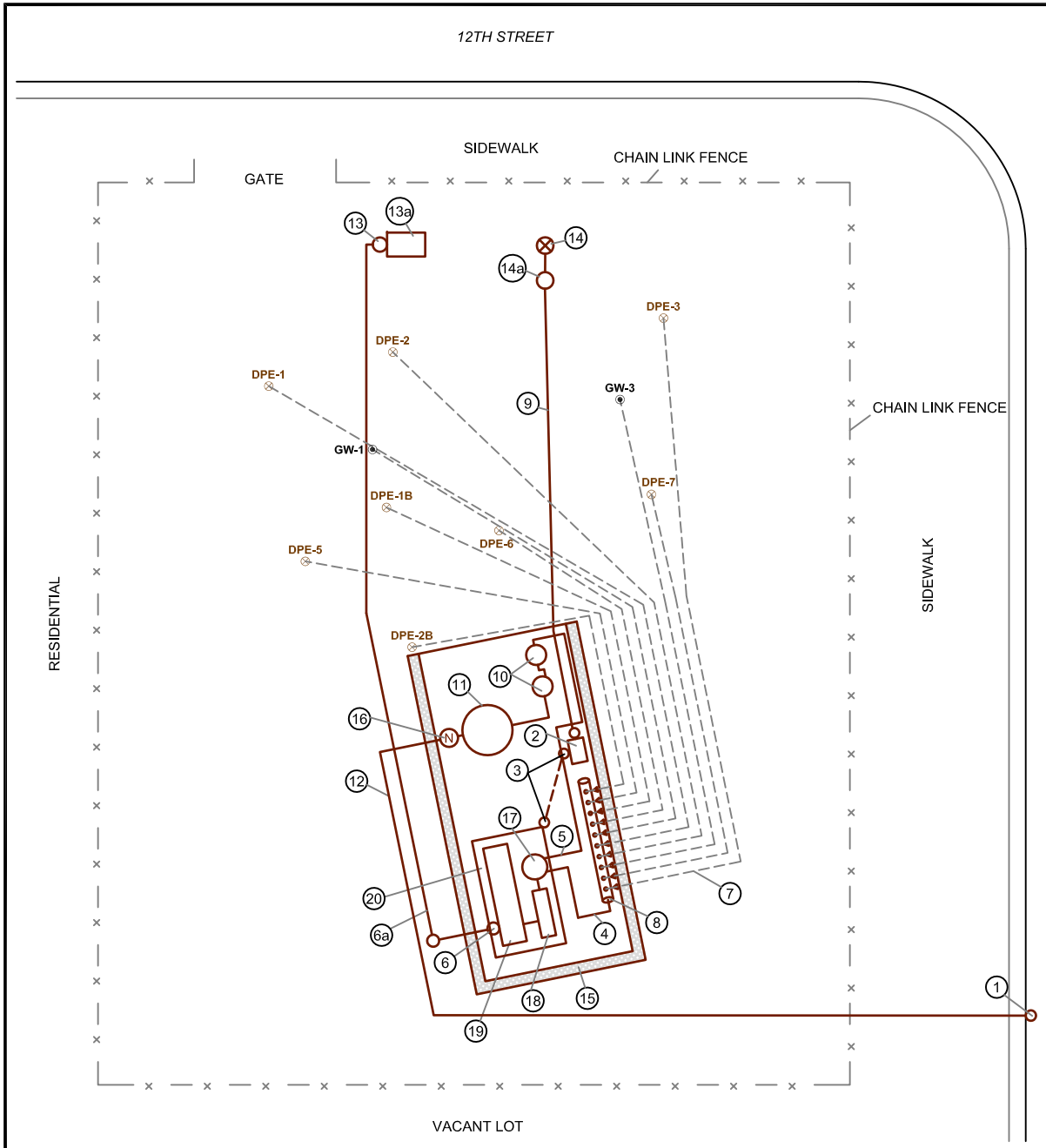
Figure 3
1409 12TH STREET
OAKLAND, CALIFORNIA

DPE SYSTEM CONTAINMENT BUILDING



EXPLANATION

MW-1	Monitoring Well Location
GW-3	DPE/Monitoring Well Location (Dual-Use Well)
DPE-1	DPE Well Location

1. Daylight 2" PVC pipe through curb for clean H2O discharge
2. Emergency ON/OFF power panel mounted on the block wall
3. Power connection #20
4. 3" Extraction input to the moisture separator from #8
5. 2" PVC pipe water output from #17 to #10
6. PG&E gas connection to thermal oxidizer

6a. 1" poly plastic gas pipe from (PG&E) - gas meter

7. 2" PVC pipe from wells A-J connected to #8
8. 3" PVC manifold connected to input #4 thermal oxidizer
9. 2" PVC electric pipe from #14a to #2
10. Liquid-Phase Granular Activated Carbon Vessels (#10 and #10a)
11. Clean discharge water holding tank (3000 gallons)
12. 2" PVC pipe water discharge line
13. Gas point of connection for PG&E

13a. Gas meter supply by PG&E

14. Temporary power pole

14a. Point of connection for electric to #14

15. Concrete slab
16. Water meter on the discharge line
17. Moisture separator
18. Liquid-Ring Vacuum Pump
19. Thermal Oxidizer
20. DPE/Thermal Oxidizer Trailer

N

0 10 20

Scale (Feet)

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Figure 4

1409 12TH STREET
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MAP VIEW OF SOIL AND GROUNDWATER DPE REMEDIATION SYSTEM

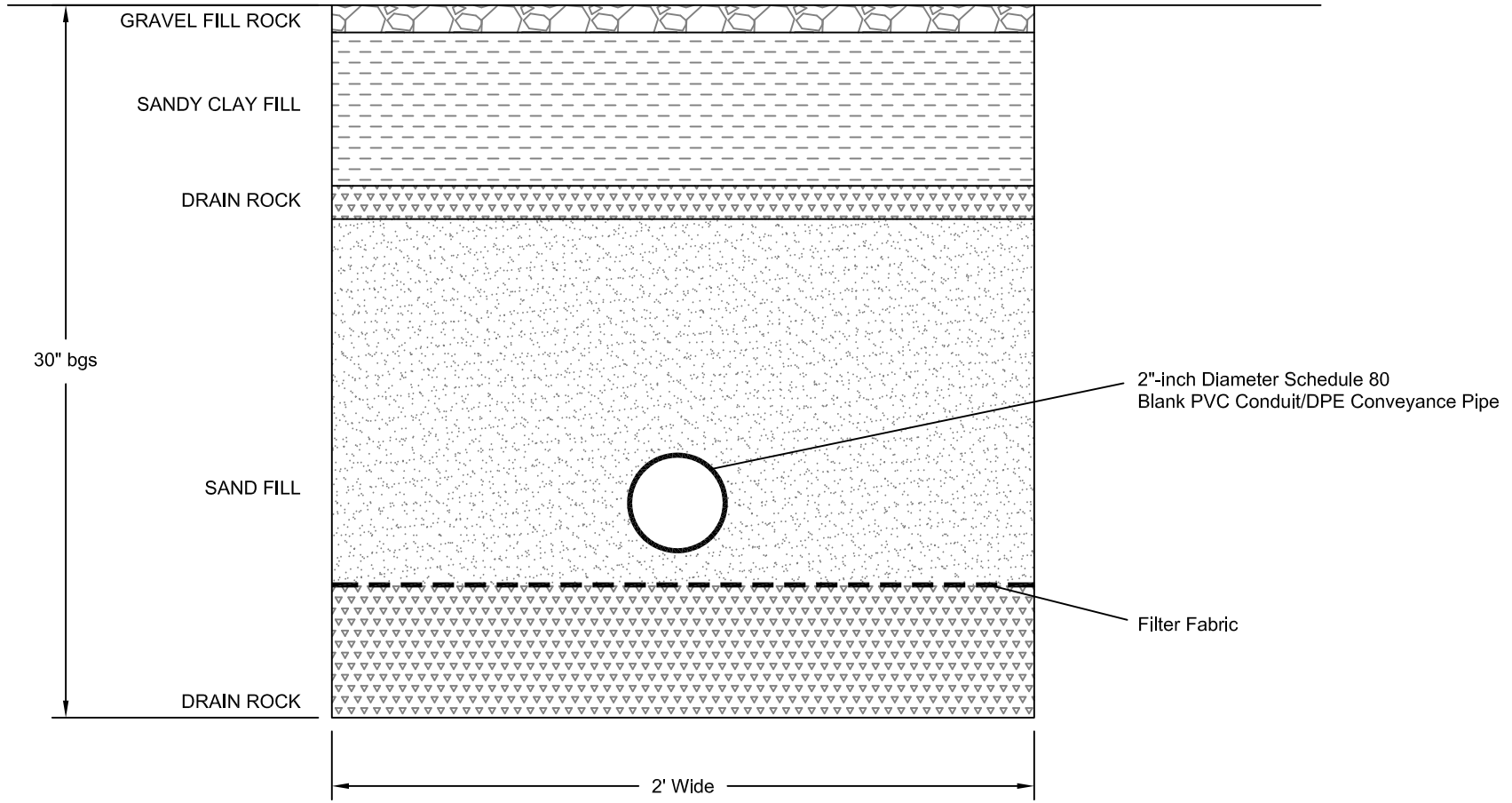

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Figure 5

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CROSS-SECTION OF CONVEYANCE PIPING AND TRENCH DESIGN

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Figure 6

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OUTSIDE VIEW OF DPE TRAILER

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Figure 7

1409 12TH STREET
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INSIDE VIEW OF DPE TRAILER

DPE System Features:

- Entrained Liquid Separator
- Dilution / Process Valves
- Stainless Steel Transfer Pump
- Oil Sealed Liquid Ring Blower
- Oil Cooler Assembly
- 25 Horsepower TEFC Motor
- Sound Enclosure
- Oxidizer Chamber
- Excess Air Packaged Burner
- Supplemental Fuel Train
- Flame Arrestor
- Digital Temperature Controller
- Digital Dilution Controller
- Pilot Tube / Pressure Transmitter
- Digital Chart Recorder
- UL Listed Electrical Enclosure
- Trailer Mounted System
- Totally Enclosed Sound-Proofed System

Standard Performance Specifications:

- Skid Dimensions = 6' Width x 7' Length x 13' Height
- Trailer Dimensions = 7' Width x 16' Length x 10' Height
- 3/16" Heavy Duty Steel Construction Throughout
- Electrical Requirement = 208/240 Volt/ 3 Phase/200 Amp
- Fuel Requirement = LPG or Natural Gas / 5 PSI / 400SCFH
- Process Flow = 400 CFM and up to 28" Hg. Vacuum
- VOC Loading = 15,000 PPMV Maximum
- Destruction Efficiency = 98%+

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Figure 8
1409 12TH STREET
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PICTURE AND FEATURES OF 400 CFM MAKOCAT HIGH VACUUM THERMAL OXIDIZER SYSTEM

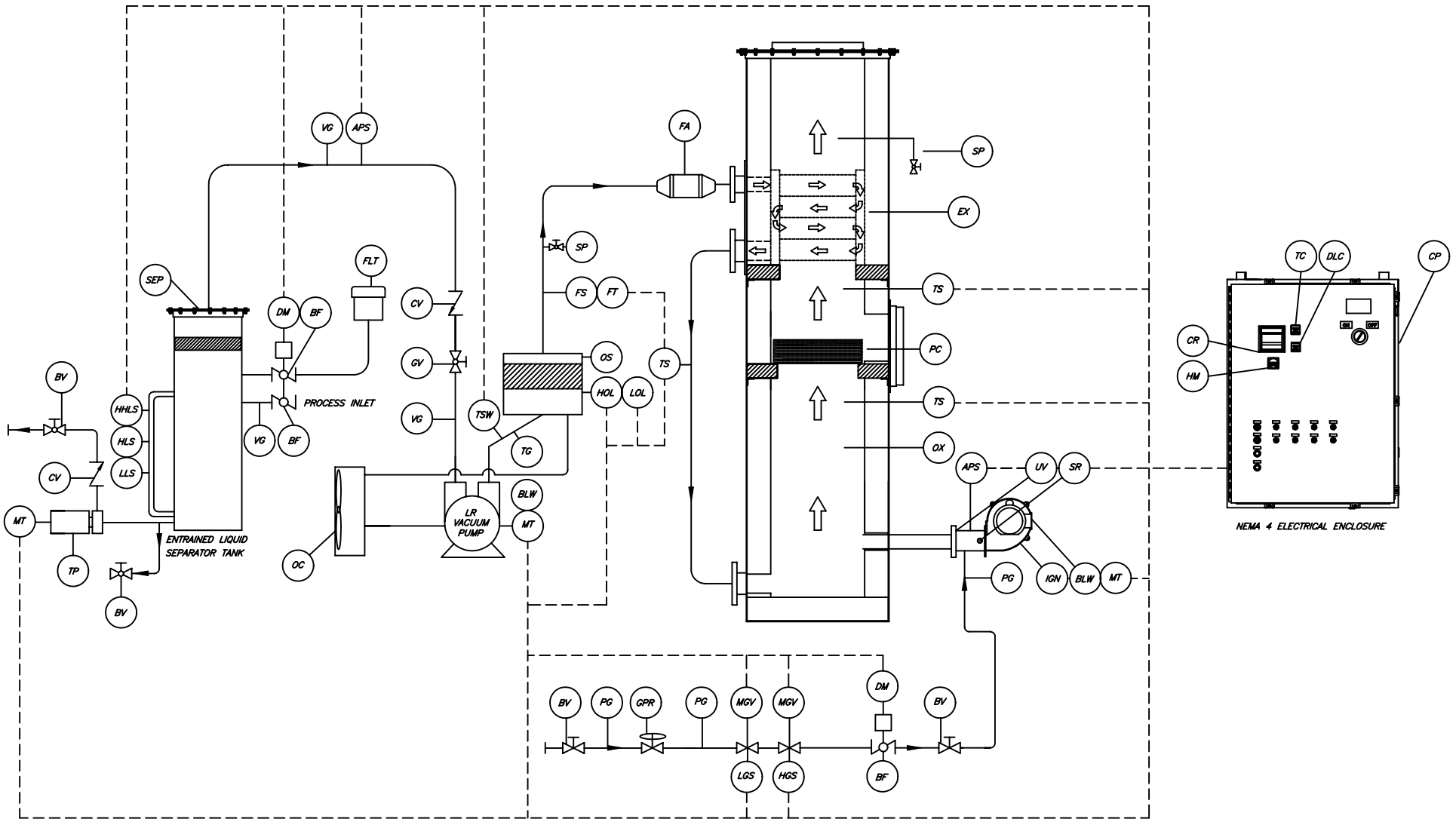

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Figure 9

1409 12TH STREET
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PROCESS INSTRUMENT DRAWING OF MAKOCAT HIGH VACUUM/THERMAL OXIDIZER

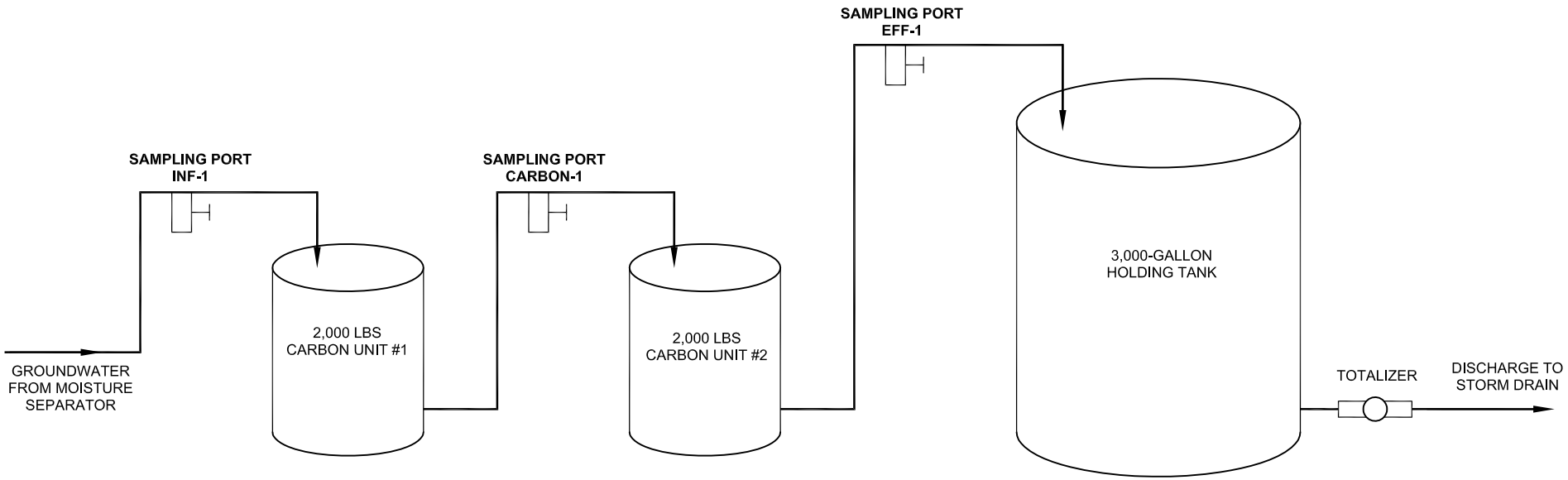

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Figure 10

1409 12TH STREET
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SCHEMATIC OF GROUNDWATER TREATMENT SYSTEM AND SAMPLING LOCATIONS

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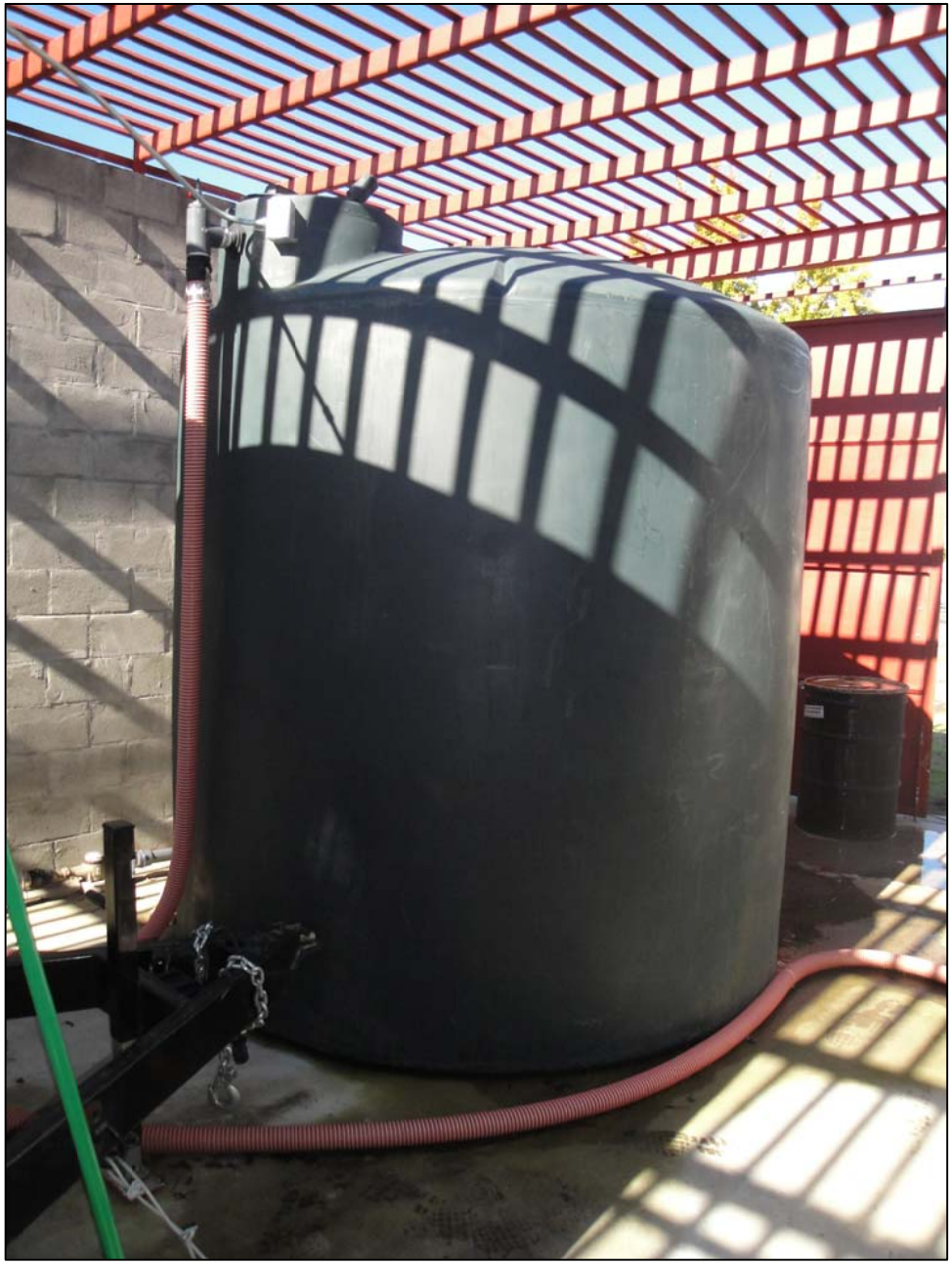
Figure 11

1409 12TH STREET
OAKLAND, CALIFORNIA

VIEW OF GRANULAR ACTIVATED CARBON VESSELS



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Fremont, CA 94538

Figure 12

1409 12TH STREET
OAKLAND, CALIFORNIA

VIEW OF 3,000-GALLON TREATED WATER HOLDING

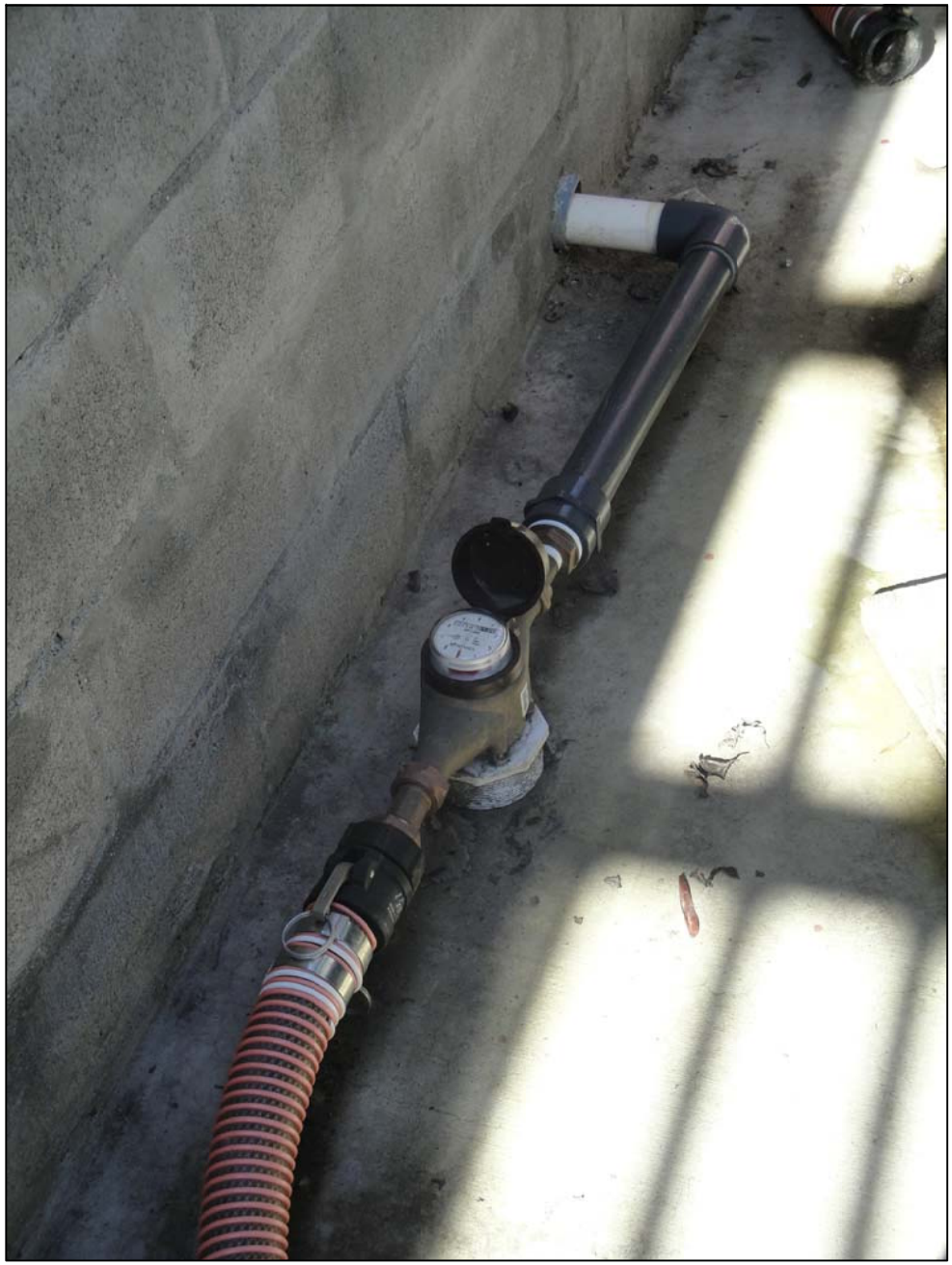

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Figure 13

1409 12TH STREET
OAKLAND, CALIFORNIA

VIEW OF TOTALIZING FLOW METER & TREATED WATER DISCHARGE LINE

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Figure 14

1409 12TH STREET
OAKLAND, CALIFORNIA

VIEW OF GAS LINE & WATER DISCHARGE LINE EGRESS FROM CONTAINMENT BUILDING

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Fremont, CA 94538

Figure 15

1409 12TH STREET
OAKLAND, CALIFORNIA

VIEW OF DAYLIGHT OF WATER DISCHARGE LINE AND STORM DRAIN

APPENDIX A

DPE Well Soil Sample Certified Laboratory Analytical Report

Torrent
LABORATORY, INC.

January 26, 2009

Mr. Joseph Cotton
Impact Environmental Services
39120 Arogonat Way, Suite 223
Fremont, CA 94538

TEL: 510-703-5420
FAX 510-713-7790

RE: 1409-1417 12th St. Oakland CA

Order No.: 0901080

Dear Mr. Joseph Cotton:

Torrent Laboratory, Inc. received 9 samples on 1/19/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director

1/26/09
Date

Patti Sandrock
QA Officer

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/19/2009
Date Reported: 1/26/2009

Client Sample ID: DPE-7:5
Sample Location: 1409-1417 12th St. Oakland CA
Sample Matrix: SOIL
Date/Time Sampled 1/16/2009 8:30:00 AM

Lab Sample ID: 0901080-001
Date Prepared: 1/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Diisopropyl ether (DIPE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethyl tert-butyl ether (ETBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethylbenzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Methyl tert-butyl ether (MTBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
t-Butyl alcohol (t-Butanol)	SW8260B	1/20/2009	50	1	50	ND	µg/Kg	R18472
tert-Amyl methyl ether (TAME)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Toluene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Xylenes, Total	SW8260B	1/20/2009	15	1	15	ND	µg/Kg	R18472
Surr: 4-Bromofluorobenzene	SW8260B	1/20/2009	0	1	55.8-141	111	%REC	R18472
Surr: Dibromofluoromethane	SW8260B	1/20/2009	0	1	59.8-148	95.2	%REC	R18472
Surr: Toluene-d8	SW8260B	1/20/2009	0	1	55.2-133	102	%REC	R18472
TPH (Gasoline)	SW8260B(TPH)	1/20/2009	100	1	100	ND	µg/Kg	G18472
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/20/2009	0	1	56.9-133	74.0	%REC	G18472

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/19/2009
Date Reported: 1/26/2009

Client Sample ID: DPE-7:10
Sample Location: 1409-1417 12th St. Oakland CA
Sample Matrix: SOIL
Date/Time Sampled 1/16/2009 8:50:00 AM

Lab Sample ID: 0901080-002
Date Prepared: 1/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Diisopropyl ether (DIPE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethyl tert-butyl ether (ETBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethylbenzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Methyl tert-butyl ether (MTBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
t-Butyl alcohol (t-Butanol)	SW8260B	1/20/2009	50	1	50	ND	µg/Kg	R18472
tert-Amyl methyl ether (TAME)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Toluene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Xylenes, Total	SW8260B	1/20/2009	15	1	15	ND	µg/Kg	R18472
Surr: 4-Bromofluorobenzene	SW8260B	1/20/2009	0	1	55.8-141	100	%REC	R18472
Surr: Dibromofluoromethane	SW8260B	1/20/2009	0	1	59.8-148	97.9	%REC	R18472
Surr: Toluene-d8	SW8260B	1/20/2009	0	1	55.2-133	95.0	%REC	R18472
TPH (Gasoline)	SW8260B(TPH)	1/20/2009	100	1	100	ND	µg/Kg	G18472
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/20/2009	0	1	56.9-133	86.0	%REC	G18472

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/19/2009
Date Reported: 1/26/2009

Client Sample ID: DPE-7:15
Sample Location: 1409-1417 12th St. Oakland CA
Sample Matrix: SOIL
Date/Time Sampled 1/16/2009 9:10:00 AM

Lab Sample ID: 0901080-003
Date Prepared: 1/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Diisopropyl ether (DIPE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethyl tert-butyl ether (ETBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethylbenzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Methyl tert-butyl ether (MTBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
t-Butyl alcohol (t-Butanol)	SW8260B	1/20/2009	50	1	50	ND	µg/Kg	R18472
tert-Amyl methyl ether (TAME)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Toluene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Xylenes, Total	SW8260B	1/20/2009	15	1	15	ND	µg/Kg	R18472
Surr: 4-Bromofluorobenzene	SW8260B	1/20/2009	0	1	55.8-141	96.4	%REC	R18472
Surr: Dibromofluoromethane	SW8260B	1/20/2009	0	1	59.8-148	96.6	%REC	R18472
Surr: Toluene-d8	SW8260B	1/20/2009	0	1	55.2-133	100	%REC	R18472
TPH (Gasoline)	SW8260B(TPH)	1/20/2009	100	1	100	ND	µg/Kg	G18472
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/20/2009	0	1	56.9-133	86.0	%REC	G18472

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/19/2009
Date Reported: 1/26/2009

Client Sample ID: DPE-8:5
Sample Location: 1409-1417 12th St. Oakland CA
Sample Matrix: SOIL
Date/Time Sampled 1/16/2009 10:00:00 AM

Lab Sample ID: 0901080-004
Date Prepared: 1/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Diisopropyl ether (DIPE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethyl tert-butyl ether (ETBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethylbenzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Methyl tert-butyl ether (MTBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
t-Butyl alcohol (t-Butanol)	SW8260B	1/20/2009	50	1	50	ND	µg/Kg	R18472
tert-Amyl methyl ether (TAME)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Toluene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Xylenes, Total	SW8260B	1/20/2009	15	1	15	ND	µg/Kg	R18472
Surr: 4-Bromofluorobenzene	SW8260B	1/20/2009	0	1	55.8-141	96.3	%REC	R18472
Surr: Dibromofluoromethane	SW8260B	1/20/2009	0	1	59.8-148	103	%REC	R18472
Surr: Toluene-d8	SW8260B	1/20/2009	0	1	55.2-133	98.7	%REC	R18472
TPH (Gasoline)	SW8260B(TPH)	1/20/2009	100	1	100	ND	µg/Kg	G18472
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/20/2009	0	1	56.9-133	80.0	%REC	G18472

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/19/2009
Date Reported: 1/26/2009

Client Sample ID: DPE-8:10
Sample Location: 1409-1417 12th St. Oakland CA
Sample Matrix: SOIL
Date/Time Sampled 1/16/2009 10:20:00 AM

Lab Sample ID: 0901080-005
Date Prepared: 1/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Diisopropyl ether (DIPE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethyl tert-butyl ether (ETBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethylbenzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Methyl tert-butyl ether (MTBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
t-Butyl alcohol (t-Butanol)	SW8260B	1/20/2009	50	1	50	ND	µg/Kg	R18472
tert-Amyl methyl ether (TAME)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Toluene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Xylenes, Total	SW8260B	1/20/2009	15	1	15	ND	µg/Kg	R18472
Surr: 4-Bromofluorobenzene	SW8260B	1/20/2009	0	1	55.8-141	105	%REC	R18472
Surr: Dibromofluoromethane	SW8260B	1/20/2009	0	1	59.8-148	95.6	%REC	R18472
Surr: Toluene-d8	SW8260B	1/20/2009	0	1	55.2-133	87.0	%REC	R18472
TPH (Gasoline)	SW8260B(TPH)	1/20/2009	100	1	100	ND	µg/Kg	G18472
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/20/2009	0	1	56.9-133	94.0	%REC	G18472

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/19/2009
Date Reported: 1/26/2009

Client Sample ID: DPE-8:15
Sample Location: 1409-1417 12th St. Oakland CA
Sample Matrix: SOIL
Date/Time Sampled 1/16/2009 10:53:00 AM

Lab Sample ID: 0901080-006
Date Prepared: 1/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Diisopropyl ether (DIPE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethyl tert-butyl ether (ETBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethylbenzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Methyl tert-butyl ether (MTBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
t-Butyl alcohol (t-Butanol)	SW8260B	1/20/2009	50	1	50	ND	µg/Kg	R18472
tert-Amyl methyl ether (TAME)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Toluene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Xylenes, Total	SW8260B	1/20/2009	15	1	15	ND	µg/Kg	R18472
Surr: 4-Bromofluorobenzene	SW8260B	1/20/2009	0	1	55.8-141	100	%REC	R18472
Surr: Dibromofluoromethane	SW8260B	1/20/2009	0	1	59.8-148	98.7	%REC	R18472
Surr: Toluene-d8	SW8260B	1/20/2009	0	1	55.2-133	88.8	%REC	R18472
TPH (Gasoline)	SW8260B(TPH)	1/20/2009	100	1	100	ND	µg/Kg	G18472
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/20/2009	0	1	56.9-133	76.0	%REC	G18472

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/19/2009
Date Reported: 1/26/2009

Client Sample ID: DPE-9:5
Sample Location: 1409-1417 12th St. Oakland CA
Sample Matrix: SOIL
Date/Time Sampled 1/16/2009 12:20:00 PM

Lab Sample ID: 0901080-007
Date Prepared: 1/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Diisopropyl ether (DIPE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethyl tert-butyl ether (ETBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethylbenzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Methyl tert-butyl ether (MTBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
t-Butyl alcohol (t-Butanol)	SW8260B	1/20/2009	50	1	50	ND	µg/Kg	R18472
tert-Amyl methyl ether (TAME)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Toluene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Xylenes, Total	SW8260B	1/20/2009	15	1	15	ND	µg/Kg	R18472
Surr: 4-Bromofluorobenzene	SW8260B	1/20/2009	0	1	55.8-141	99.1	%REC	R18472
Surr: Dibromofluoromethane	SW8260B	1/20/2009	0	1	59.8-148	98.9	%REC	R18472
Surr: Toluene-d8	SW8260B	1/20/2009	0	1	55.2-133	98.8	%REC	R18472
TPH (Gasoline)	SW8260B(TPH)	1/20/2009	100	1	100	ND	µg/Kg	G18472
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/20/2009	0	1	56.9-133	76.0	%REC	G18472

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/19/2009
Date Reported: 1/26/2009

Client Sample ID: DPE-9:10
Sample Location: 1409-1417 12th St. Oakland CA
Sample Matrix: SOIL
Date/Time Sampled 1/16/2009 12:46:00 PM

Lab Sample ID: 0901080-008
Date Prepared: 1/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Diisopropyl ether (DIPE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethyl tert-butyl ether (ETBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethylbenzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Methyl tert-butyl ether (MTBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
t-Butyl alcohol (t-Butanol)	SW8260B	1/20/2009	50	1	50	ND	µg/Kg	R18472
tert-Amyl methyl ether (TAME)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Toluene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Xylenes, Total	SW8260B	1/20/2009	15	1	15	ND	µg/Kg	R18472
Surr: 4-Bromofluorobenzene	SW8260B	1/20/2009	0	1	55.8-141	95.0	%REC	R18472
Surr: Dibromofluoromethane	SW8260B	1/20/2009	0	1	59.8-148	115	%REC	R18472
Surr: Toluene-d8	SW8260B	1/20/2009	0	1	55.2-133	85.7	%REC	R18472
TPH (Gasoline)	SW8260B(TPH)	1/20/2009	100	1	100	ND	µg/Kg	G18472
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/20/2009	0	1	56.9-133	78.0	%REC	G18472

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/19/2009
Date Reported: 1/26/2009

Client Sample ID: DPE-9:15
Sample Location: 1409-1417 12th St. Oakland CA
Sample Matrix: SOIL
Date/Time Sampled 1/16/2009 1:13:00 PM

Lab Sample ID: 0901080-009
Date Prepared: 1/20/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Diisopropyl ether (DIPE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethyl tert-butyl ether (ETBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Ethylbenzene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Methyl tert-butyl ether (MTBE)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
t-Butyl alcohol (t-Butanol)	SW8260B	1/20/2009	50	1	50	ND	µg/Kg	R18472
tert-Amyl methyl ether (TAME)	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Toluene	SW8260B	1/20/2009	10	1	10	ND	µg/Kg	R18472
Xylenes, Total	SW8260B	1/20/2009	15	1	15	ND	µg/Kg	R18472
Surr: 4-Bromofluorobenzene	SW8260B	1/20/2009	0	1	55.8-141	96.6	%REC	R18472
Surr: Dibromofluoromethane	SW8260B	1/20/2009	0	1	59.8-148	107	%REC	R18472
Surr: Toluene-d8	SW8260B	1/20/2009	0	1	55.2-133	99.4	%REC	R18472
TPH (Gasoline)	SW8260B(TPH)	1/20/2009	100	1	100	ND	µg/Kg	G18472
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/20/2009	0	1	56.9-133	86.0	%REC	G18472

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

CLIENT: Impact Environmental Services
Work Order: 0901080
Project: 1409-1417 12th St. Oakland CA

ANALYTICAL QC SUMMARY REPORT

BatchID: G18472

Sample ID **MB_G18472**	SampType: **MBLK**	TestCode: **TPH_GAS_S**	Units: **µg/Kg**	Prep Date: **1/20/2009**	RunNo: **18472**
Client ID: **ZZZZZ**	Batch ID: **G18472**	TestNo: **SW8260B(TP**		Analysis Date: **1/20/2009**	SeqNo: **265898**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	50.00	0	50	0	100	56.9	133				

Sample ID **LCS_G18472**	SampType: **LCS**	TestCode: **TPH_GAS_S**	Units: **µg/Kg**	Prep Date: **1/20/2009**	RunNo: **18472**
Client ID: **ZZZZZ**	Batch ID: **G18472**	TestNo: **SW8260B(TP**		Analysis Date: **1/20/2009**	SeqNo: **265899**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	928.0	100	1000	0	92.8	48.2	132				
Surr: 4-Bromofllurobenzene	41.00	0	50	0	82.0	56.9	133				

Sample ID **LCSD_G18472**	SampType: **LCSD**	TestCode: **TPH_GAS_S**	Units: **µg/Kg**	Prep Date: **1/20/2009**	RunNo: **18472**
Client ID: **ZZZZZ**	Batch ID: **G18472**	TestNo: **SW8260B(TP**		Analysis Date: **1/20/2009**	SeqNo: **265900**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	895.0	100	1000	0	89.5	48.2	132	928	3.62	30	
Surr: 4-Bromofllurobenzene	49.00	0	50	0	98.0	56.9	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0901080

Company Name: IMPACT ENVIRONMENTAL	Location of Sampling: 1409-1417 12th St., OAKLAND, CA
Address: 39120 ARGONAUT WAY #223	Purpose: DPE Wall Installation
City: Fremont State: CA Zip Code: 94538	Special Instructions / Comments:
Telephone: (510) 703-5420 FAX: (510) 791-0271	
REPORT TO: JOSEPH COTTON SAMPLER: Joseph Cotton	P.O. #: EMAIL: JAC21462@aol.com

TURNAROUND TIME:
- ☐ 10 Work Days
- ☐ 3 Work Days
- ☐ Noon - Nxt Day
- ☐ 7 Work Days
- ☐ 2 Work Days
- ☐ 2 - 8 Hours
- ☒ 5 Work Days
- ☐ 1 Work Day
- ☐ Other

SAMPLE TYPE:
- ☐ Storm Water
- ☐ Air
- ☐ Waste Water
- ☐ Other
- ☐ Ground Water
- ☒ Soil

REPORT FORMAT:
- ☐ QC Level IV
- ☒ EDF
- ☒ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List ☐ / EPA 8260B - 8010 List ☐	BTEX ☒ / THP gas ☒ / MTBE ☒ / Oxygenates ☒	THP Diesel ☐ / Si-Gel ☐ / Motor Oil ☐	Pesticide - 8081 ☐	PCB - 8082 ☐	Metals ☐ / CAM - 17 ☐ / 7 Metals ☐ / LUFT 5 ☐	8270 Full List ☐ / PAHs Only ☐			REMARKS
001A	DPE-7:5	1-16-9 8:30	S	1	LINER BRASS										
002A	DPE-7:10	8:50													
003A	DPE-7:15	9:10													
004A	DPE-8:5	10:00													
005A	DPE-8:10	10:20													
006A	DPE-8:15	10:53													
007A	DPE-9:5	12:20													
008A	DPE-9:10	12:46													
009A	DPE-9:15	1-16-9 1:13													

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1		JOSEPH COTON	1-19-9	1:42		Raj Kaur	1-19-08	1:40.
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Were Samples Received in Good Condition? ☐ Yes ☐ NO Samples on Ice? ☐ Yes ☐ NO Method of Shipment D10 Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 1 of 1

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

TORRENT LAB

Torrent
LABORATORY, INC.

January 22, 2009

Mr. Joseph Cotton
Impact Environmental Services
39120 Arogonat Way, Suite 223
Fremont, CA 94538

TEL: 510-703-5420
FAX 510-713-7790

RE: 1409 12th ST. Oakland

Order No.: 0901056

Dear Mr. Joseph Cotton:

Torrent Laboratory, Inc. received 4 samples on 1/15/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director 1/21/09 Date

Patti Sandrock
QA Officer

CLIENT: Impact Environmental Services
Work Order: 0901080
Project: 1409-1417 12th St. Oakland CA

ANALYTICAL QC SUMMARY REPORT

BatchID: R18472

Sample ID **MB_R18472**	SampType: **MBLK**	TestCode: **8260B_S**	Units: **µg/Kg**	Prep Date: **1/20/2009**	RunNo: **18472**
Client ID: **ZZZZZ**	Batch ID: **R18472**	TestNo: **SW8260B**		Analysis Date: **1/20/2009**	SeqNo: **265767**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	48.88	0	50	0	97.8	55.8	141				
Surr: Dibromofluoromethane	46.86	0	50	0	93.7	59.8	148				
Surr: Toluene-d8	47.89	0	50	0	95.8	55.2	133				

Sample ID **LCS_R18472**	SampType: **LCS**	TestCode: **8260B_S**	Units: **µg/Kg**	Prep Date: **1/20/2009**	RunNo: **18472**
Client ID: **ZZZZZ**	Batch ID: **R18472**	TestNo: **SW8260B**		Analysis Date: **1/20/2009**	SeqNo: **265768**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	45.90	10	50	0	91.8	66.5	135				
Toluene	50.27	10	50	0	101	56.8	134				
Surr: 4-Bromofluorobenzene	47.53	0	50	0	95.1	55.8	141				
Surr: Dibromofluoromethane	45.64	0	50	0	91.3	59.8	148				
Surr: Toluene-d8	46.21	0	50	0	92.4	55.2	133				

Sample ID **LCSD_R18472**	SampType: **LCSD**	TestCode: **8260B_S**	Units: **µg/Kg**	Prep Date: **1/20/2009**	RunNo: **18472**
Client ID: **ZZZZZ**	Batch ID: **R18472**	TestNo: **SW8260B**		Analysis Date: **1/20/2009**	SeqNo: **265769**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	44.98	10	50	0	90.0	66.5	135	45.9	2.02	30	
Toluene	45.29	10	50	0	90.6	56.8	134	50.27	10.4	30	
Surr: 4-Bromofluorobenzene	48.60	0	50	0	97.2	55.8	141	0	0	0	
Surr: Dibromofluoromethane	48.16	0	50	0	96.3	59.8	148	0	0	0	
Surr: Toluene-d8	45.45	0	50	0	90.9	55.2	133	0	0	0	

Qualifiers:
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: Impact Environmental Services
Work Order: 0901080
Project: 1409-1417 12th St. Oakland CA

ANALYTICAL QC SUMMARY REPORT

BatchID: R18472

Sample ID **0901080-009A MS**	SampType: **MS**	TestCode: **8260B_S_PE**	Units: **µg/Kg**	Prep Date: **1/21/2009**	RunNo: **18472**
Client ID: **DPE-9:15**	Batch ID: **R18472**	TestNo: **SW8260B**		Analysis Date: **1/21/2009**	SeqNo: **265781**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	52.75	10	50	0	106	66.5	135				
Toluene	45.35	10	50	0	90.7	56.8	134				
Surr: 4-Bromofluorobenzene	55.17	0	50	0	110	55.8	141				
Surr: Dibromofluoromethane	49.82	0	50	0	99.6	59.8	148				
Surr: Toluene-d8	42.31	0	50	0	84.6	55.2	133				

Sample ID **0901080-009A MSD**	SampType: **MSD**	TestCode: **8260B_S_PE**	Units: **µg/Kg**	Prep Date: **1/21/2009**	RunNo: **18472**
Client ID: **DPE-9:15**	Batch ID: **R18472**	TestNo: **SW8260B**		Analysis Date: **1/21/2009**	SeqNo: **265782**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	57.52	10	50	0	115	66.5	135	52.75	8.65	30	
Toluene	46.47	10	50	0	92.9	56.8	134	45.35	2.44	30	
Surr: 4-Bromofluorobenzene	52.64	0	50	0	105	55.8	141	0	0	0	
Surr: Dibromofluoromethane	58.09	0	50	0	116	59.8	148	0	0	0	
Surr: Toluene-d8	44.19	0	50	0	88.4	55.2	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/15/2009
Date Reported: 1/22/2009

Client Sample ID: DPE-4:5
Sample Location: 1409 12th ST. Oakland
Sample Matrix: SOIL
Date/Time Sampled 1/14/2009 2:00:00 PM

Lab Sample ID: 0901056-001
Date Prepared: 1/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Diesel)	SW8015B	1/19/2009	2	1	2.00	ND	mg/Kg	R18473
Surr: Pentacosane	SW8015B	1/19/2009	0	1	59.7-129	92.6	%REC	R18473
Benzene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Diisopropyl ether (DIPE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Ethyl tert-butyl ether (ETBE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Ethylbenzene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Methyl tert-butyl ether (MTBE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
t-Butyl alcohol (t-Butanol)	SW8260B	1/17/2009	50	1	50	ND	µg/Kg	R18457
tert-Amyl methyl ether (TAME)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Toluene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Xylenes, Total	SW8260B	1/17/2009	15	1	15	ND	µg/Kg	R18457
Surr: 4-Bromofluorobenzene	SW8260B	1/17/2009	0	1	55.8-141	109	%REC	R18457
Surr: Dibromofluoromethane	SW8260B	1/17/2009	0	1	59.8-148	114	%REC	R18457
Surr: Toluene-d8	SW8260B	1/17/2009	0	1	55.2-133	90.6	%REC	R18457
TPH (Gasoline)	SW8260B(TPH)	1/17/2009	100	1	100	ND	µg/Kg	G18457
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/17/2009	0	1	56.9-133	78.0	%REC	G18457

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/15/2009
Date Reported: 1/22/2009

Client Sample ID: DPE-4:10
Sample Location: 1409 12th ST. Oakland
Sample Matrix: SOIL
Date/Time Sampled 1/14/2009 2:15:00 PM

Lab Sample ID: 0901056-002
Date Prepared: 1/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Diesel)	SW8015B	1/19/2009	2	1	2.00	ND	mg/Kg	R18473
Surr: Pentacosane	SW8015B	1/19/2009	0	1	59.7-129	105	%REC	R18473
Benzene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Diisopropyl ether (DIPE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Ethyl tert-butyl ether (ETBE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Ethylbenzene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Methyl tert-butyl ether (MTBE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
t-Butyl alcohol (t-Butanol)	SW8260B	1/17/2009	50	1	50	ND	µg/Kg	R18457
tert-Amyl methyl ether (TAME)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Toluene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Xylenes, Total	SW8260B	1/17/2009	15	1	15	ND	µg/Kg	R18457
Surr: 4-Bromofluorobenzene	SW8260B	1/17/2009	0	1	55.8-141	99.4	%REC	R18457
Surr: Dibromofluoromethane	SW8260B	1/17/2009	0	1	59.8-148	102	%REC	R18457
Surr: Toluene-d8	SW8260B	1/17/2009	0	1	55.2-133	93.0	%REC	R18457
TPH (Gasoline)	SW8260B(TPH)	1/17/2009	100	1	100	ND	µg/Kg	G18457
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/17/2009	0	1	56.9-133	84.0	%REC	G18457

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/15/2009
Date Reported: 1/22/2009

Client Sample ID: DPE-4:15
Sample Location: 1409 12th ST. Oakland
Sample Matrix: SOIL
Date/Time Sampled 1/14/2009 2:20:00 PM

Lab Sample ID: 0901056-003
Date Prepared: 1/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Diesel)	SW8015B	1/20/2009	2	1	2.00	ND	mg/Kg	R18473
Surr: Pentacosane	SW8015B	1/20/2009	0	1	59.7-129	99.1	%REC	R18473
Benzene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Diisopropyl ether (DIPE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Ethyl tert-butyl ether (ETBE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Ethylbenzene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Methyl tert-butyl ether (MTBE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
t-Butyl alcohol (t-Butanol)	SW8260B	1/17/2009	50	1	50	ND	µg/Kg	R18457
tert-Amyl methyl ether (TAME)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Toluene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Xylenes, Total	SW8260B	1/17/2009	15	1	15	ND	µg/Kg	R18457
Surr: 4-Bromofluorobenzene	SW8260B	1/17/2009	0	1	55.8-141	107	%REC	R18457
Surr: Dibromofluoromethane	SW8260B	1/17/2009	0	1	59.8-148	110	%REC	R18457
Surr: Toluene-d8	SW8260B	1/17/2009	0	1	55.2-133	88.4	%REC	R18457
TPH (Gasoline)	SW8260B(TPH)	1/17/2009	100	1	100	ND	µg/Kg	G18457
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/17/2009	0	1	56.9-133	94.0	%REC	G18457

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 1/15/2009
Date Reported: 1/22/2009

Client Sample ID: DPE-4:20
Sample Location: 1409 12th ST. Oakland
Sample Matrix: SOIL
Date/Time Sampled 1/14/2009 2:45:00 PM

Lab Sample ID: 0901056-004
Date Prepared: 1/17/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Diesel)	SW8015B	1/20/2009	2	1	2.00	ND	mg/Kg	R18473
Surr: Pentacosane	SW8015B	1/20/2009	0	1	59.7-129	71.5	%REC	R18473
Benzene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Diisopropyl ether (DIPE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Ethyl tert-butyl ether (ETBE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Ethylbenzene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Methyl tert-butyl ether (MTBE)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
t-Butyl alcohol (t-Butanol)	SW8260B	1/17/2009	50	1	50	ND	µg/Kg	R18457
tert-Amyl methyl ether (TAME)	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Toluene	SW8260B	1/17/2009	10	1	10	ND	µg/Kg	R18457
Xylenes, Total	SW8260B	1/17/2009	15	1	15	ND	µg/Kg	R18457
Surr: 4-Bromofluorobenzene	SW8260B	1/17/2009	0	1	55.8-141	107	%REC	R18457
Surr: Dibromofluoromethane	SW8260B	1/17/2009	0	1	59.8-148	101	%REC	R18457
Surr: Toluene-d8	SW8260B	1/17/2009	0	1	55.2-133	97.8	%REC	R18457
TPH (Gasoline)	SW8260B(TPH)	1/17/2009	100	1	100	ND	µg/Kg	G18457
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	1/17/2009	0	1	56.9-133	84.0	%REC	G18457

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

CLIENT: Impact Environmental Services
Work Order: 0901056
Project: 1409 12th ST. Oakland

ANALYTICAL QC SUMMARY REPORT

BatchID: G18457

Sample ID **MB_G18457**	SampType: **MBLK**	TestCode: **TPH_GAS_S**	Units: **µg/Kg**	Prep Date: **1/17/2009**	RunNo: **18457**
Client ID: **ZZZZZ**	Batch ID: **G18457**	TestNo: **SW8260B(TP**		Analysis Date: **1/17/2009**	SeqNo: **265538**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	47.00	0	50	0	94.0	56.9	133				

Sample ID **LCS_G18457**	SampType: **LCS**	TestCode: **TPH_GAS_S**	Units: **µg/Kg**	Prep Date: **1/17/2009**	RunNo: **18457**
Client ID: **ZZZZZ**	Batch ID: **G18457**	TestNo: **SW8260B(TP**		Analysis Date: **1/17/2009**	SeqNo: **265539**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	925.0	100	1000	0	92.5	48.2	132				
Surr: 4-Bromofllurobenzene	44.00	0	50	0	88.0	56.9	133				

Sample ID **LCSD_G18457**	SampType: **LCSD**	TestCode: **TPH_GAS_S**	Units: **µg/Kg**	Prep Date: **1/17/2009**	RunNo: **18457**
Client ID: **ZZZZZ**	Batch ID: **G18457**	TestNo: **SW8260B(TP**		Analysis Date: **1/17/2009**	SeqNo: **265540**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1085	100	1000	0	108	48.2	132	925	15.9	30	
Surr: 4-Bromofllurobenzene	46.00	0	50	0	92.0	56.9	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Impact Environmental Services
Work Order: 0901056
Project: 1409 12th ST. Oakland

ANALYTICAL QC SUMMARY REPORT

BatchID: R18457

Sample ID **MB_R18457**	SampType: **MBLK**	TestCode: **8260B_S**	Units: **µg/Kg**	Prep Date: **1/17/2009**	RunNo: **18457**
Client ID: **ZZZZZ**	Batch ID: **R18457**	TestNo: **SW8260B**		Analysis Date: **1/17/2009**	SeqNo: **265529**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Ethyl tert-butyl ether (ETBE)	ND	10									
Ethylbenzene	ND	10									
Methyl tert-butyl ether (MTBE)	ND	10									
t-Butyl alcohol (t-Butanol)	ND	50									
tert-Amyl methyl ether (TAME)	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	51.79	0	50	0	104	55.8	141				
Surr: Dibromofluoromethane	54.56	0	50	0	109	59.8	148				
Surr: Toluene-d8	45.84	0	50	0	91.7	55.2	133				

Sample ID **LCS_R18457**	SampType: **LCS**	TestCode: **8260B_S**	Units: **µg/Kg**	Prep Date: **1/17/2009**	RunNo: **18457**
Client ID: **ZZZZZ**	Batch ID: **R18457**	TestNo: **SW8260B**		Analysis Date: **1/17/2009**	SeqNo: **265530**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	44.44	10	50	0	88.9	66.5	135				
Toluene	42.42	10	50	0	84.8	56.8	134				
Surr: 4-Bromofluorobenzene	50.74	0	50	0	101	55.8	141				
Surr: Dibromofluoromethane	53.16	0	50	0	106	59.8	148				
Surr: Toluene-d8	45.20	0	50	0	90.4	55.2	133				

Sample ID **LCSD_R18457**	SampType: **LCSD**	TestCode: **8260B_S**	Units: **µg/Kg**	Prep Date: **1/17/2009**	RunNo: **18457**
Client ID: **ZZZZZ**	Batch ID: **R18457**	TestNo: **SW8260B**		Analysis Date: **1/17/2009**	SeqNo: **265531**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	53.42	10	50	0	107	66.5	135	44.44	18.4	30	
Toluene	46.46	10	50	0	92.9	56.8	134	42.42	9.09	30	
Surr: 4-Bromofluorobenzene	52.59	0	50	0	105	55.8	141	0	0	0	
Surr: Dibromofluoromethane	54.10	0	50	0	108	59.8	148	0	0	0	
Surr: Toluene-d8	42.61	0	50	0	85.2	55.2	133	0	0	0	

Qualifiers:
E Value above quantitation range
H Holding times for preparation or analysis exceeded
J Analyte detected below quantitation limits
ND Not Detected at the Reporting Limit
R RPD outside accepted recovery limits
S Spike Recovery outside accepted recovery limits

CLIENT: Impact Environmental Services
Work Order: 0901056
Project: 1409 12th ST. Oakland

ANALYTICAL QC SUMMARY REPORT

BatchID: R18457

Sample ID **0901056-004A ms**	SampType: **MS**	TestCode: **8260B_S_PE**	Units: **µg/Kg**	Prep Date: **1/17/2009**	RunNo: **18457**
Client ID: **DPE-4:20**	Batch ID: **R18457**	TestNo: **SW8260B**		Analysis Date: **1/17/2009**	SeqNo: **265536**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	58.74	10	50	0	117	66.5	135				
Toluene	48.74	10	50	0	97.5	56.8	134				
Surr: 4-Bromofluorobenzene	54.64	0	50	0	109	55.8	141				
Surr: Dibromofluoromethane	55.47	0	50	0	111	59.8	148				
Surr: Toluene-d8	42.13	0	50	0	84.3	55.2	133				

Sample ID **0901056-004A msd**	SampType: **MSD**	TestCode: **8260B_S_PE**	Units: **µg/Kg**	Prep Date: **1/17/2009**	RunNo: **18457**
Client ID: **DPE-4:20**	Batch ID: **R18457**	TestNo: **SW8260B**		Analysis Date: **1/17/2009**	SeqNo: **265537**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	56.80	10	50	0	114	66.5	135	58.74	3.36	30	
Toluene	52.01	10	50	0	104	56.8	134	48.74	6.49	30	
Surr: 4-Bromofluorobenzene	53.97	0	50	0	108	55.8	141	0	0	0	
Surr: Dibromofluoromethane	52.19	0	50	0	104	59.8	148	0	0	0	
Surr: Toluene-d8	43.73	0	50	0	87.5	55.2	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Impact Environmental Services
Work Order: 0901056
Project: 1409 12th ST. Oakland

ANALYTICAL QC SUMMARY REPORT

BatchID: R18473

Sample ID	0901056-002A MS	SampType:	MS	TestCode:	TPHD_S	Units:	mg/Kg	Prep Date:	1/19/2009	RunNo:	18473
Client ID:	DPE-4:10	Batch ID:	R18473	TestNo:	SW8015B			Analysis Date:	1/19/2009	SeqNo:	265833

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	29.65	2.00	33.33	0	89.0	52.7	115				
Surr: Pentacosane	3.246	0	3.3	0	98.4	59.7	129				

Sample ID	0901056-002A MSD	SampType:	MSD	TestCode:	TPHD_S	Units:	mg/Kg	Prep Date:	1/19/2009	RunNo:	18473
Client ID:	DPE-4:10	Batch ID:	R18473	TestNo:	SW8015B			Analysis Date:	1/19/2009	SeqNo:	265834

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	29.61	2.00	33.33	0	88.8	52.7	115	29.65	0.135	30	
Surr: Pentacosane	3.125	0	3.3	0	94.7	59.7	129	0	0	0	

Sample ID	SD090116A-MB	SampType:	MBLK	TestCode:	TPHDO_S	Units:	mg/Kg	Prep Date:	1/19/2009	RunNo:	18473
Client ID:	ZZZZZ	Batch ID:	R18473	TestNo:	SW8015B			Analysis Date:	1/19/2009	SeqNo:	265813

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.00									
Surr: Pentacosane	3.192	0	3.3	0	96.7	59.7	129				

Sample ID	SD090116A-LCS	SampType:	LCS	TestCode:	TPHDO_S	Units:	mg/Kg	Prep Date:	1/19/2009	RunNo:	18473
Client ID:	ZZZZZ	Batch ID:	R18473	TestNo:	SW8015B			Analysis Date:	1/19/2009	SeqNo:	265814

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	27.55	2.00	33.33	0	82.7	52.7	115				
Surr: Pentacosane	2.971	0	3.3	0	90.0	59.7	129				

Sample ID	SD090116A-LCSD	SampType:	LCSD	TestCode:	TPHDO_S	Units:	mg/Kg	Prep Date:	1/19/2009	RunNo:	18473
Client ID:	ZZZZZ	Batch ID:	R18473	TestNo:	SW8015B			Analysis Date:	1/19/2009	SeqNo:	265815

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	25.55	2.00	33.33	0	76.7	52.7	115	27.55	7.54	30	
Surr: Pentacosane	2.807	0	3.3	0	85.1	59.7	129	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent Laboratory, Inc.

WORK ORDER Summary

16-Jan-09

Work Order 0901056

Client ID: IMPACT ENV. SER.

Project: 1409 12th ST. Oakland **QC Level:**

Comments: 5 day TAT !;EDF/EXCEL/EDD requested Received 4 soils for TPHg , BTEX;MTBE ,TPHD and Oxygenates.

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0901056-001A	DPE-4:5	1/14/2009 2:00:00 PM	1/15/2009	1/21/2009	Soil	8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				1/21/2009		EDD	☐	☐	☐	☐	SR
				1/21/2009		EDF	☐	☐	☐	☐	SR
				1/21/2009		TPH_GAS_S_GCMS	☐	☐	☐	☐	SR
				1/21/2009		TPHD_S	☐	☐	☐	☐	SR
0901056-002A	DPE-4:10	1/14/2009 2:15:00 PM		1/21/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				1/21/2009		TPH_GAS_S_GCMS	☐	☐	☐	☐	SR
				1/21/2009		TPHD_S	☐	☐	☐	☐	SR
0901056-003A	DPE-4:15	1/14/2009 2:20:00 PM		1/21/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				1/21/2009		TPH_GAS_S_GCMS	☐	☐	☐	☐	SR
				1/21/2009		TPHD_S	☐	☐	☐	☐	SR
0901056-004A	DPE-4:20	1/14/2009 2:45:00 PM		1/21/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				1/21/2009		TPH_GAS_S_GCMS	☐	☐	☐	☐	SR
				1/21/2009		TPHD_S	☐	☐	☐	☐	SR

Torrent LABORATORY, INC.
483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0901056

Company Name: IMPACT ENVIRONMENTAL
Address: 39120 ARGONAUT WAY, #223
City: FREMONT State: CA Zip Code: 94538
Telephone: (510) 703-5128 FAX:
REPORT TO: Joseph Cotton SAMPLER: Joseph Cotton

Location of Sampling: 1409 12th St. OAKLAND
Purpose: DUAL-PHASE VACUUM Extraction Well Install
Special Instructions / Comments:
P.O. #:
EMAIL: jac21462@aol.com

TURNAROUND TIME:
☐ 10 Work Days ☐ 3 Work Days ☐ Noon - Nxt Day
☐ 7 Work Days ☐ 2 Work Days ☐ 2 - 8 Hours
☒ 5 Work Days ☐ 1 Work Day ☐ Other

SAMPLE TYPE:
☐ Storm Water ☐ Air
☐ Waste Water ☐ Other
☐ Ground Water
☒ Soil

REPORT FORMAT:
☐ QC Level IV
☒ EDF
☒ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List / EPA 8260B - 8010 List	BTEX / MTBE / THP gas / Oxygenates	Si-Gel / THP Diesel / Motor Oil	Pesticide - 8081	PCB - 8082	Metals / CAM - 17 / LUFT 5 / 7 Metals	8270 Full List / PAHs Only	REMARKS
001A	DPE-5'; 5	1-14-9 2:00	S	1	BRASS		X	X					
002A	DPE-4'; 10	2:15	S	1			X	X					
003A	DPE-4'; 15	2:20	S	1			X	X					
004A	DPE-4'; 20	1-14-9 2:45	S	1			X	X					

TORRENT LAB

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1		Joseph Cotton	1-15-9	1045		R. G. Ghodasara NAVIN	1-15-09	1045
2								

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment: Drop off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 1 of 1

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

APPENDIX B

DPE Well Installation Permits

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: 05/01/2007 By jamesy

Permit Numbers: W2007-0564
Permits Valid from 05/07/2007 to 05/11/2007

Application Id: 1177491534307 **City of Project Site:** Oakland
Site Location: 1409- 1417 12TH STREET
SOUTHWEST CORNER OF 12TH ST. & MANDELA PARKWAY
Project Start Date: 05/07/2007 **Completion Date:** 05/11/2007

Applicant: IMPACT ENVIRONMENTAL SERVICES - **Phone:** 510-703-5420
JOSEPH COTTON
39120 ARGONAUT WAY, SUITE 223, FREMONT, CA 94538
Property Owner: SHIRLEY THOMPSON **Phone:** 510-527-5702
1155 HOPKINS STREET, BERKELEY, CA 94702
Client: ** same as Property Owner **
Contact: Joseph Cotton **Phone:** 510-703-5420
Cell: 510-791-0271

Total Due: $200.00
Receipt Number: WR2007-0191 **Total Amount Paid:** $200.00
Payer Name : Joseph A. Cotton Paid By: MC **PAID IN FULL**

Works Requesting Permits:

Borehole(s) for Investigation-Contamination Study - 10 Boreholes
Driller: Environmental Control Associates - Lic #: 695970 - Method: DP **Work Total: $200.00**

Specifications

Permit Number	Issued Dt	Expire Dt	# Boreholes	Hole Diam	Max Depth
W2007-0564	05/01/2007	08/05/2007	10	2.50 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, properly 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 Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@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.

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: 12/11/2008 By jamesy

Permit Numbers: W2008-0948
Permits Valid from 01/12/2009 to 01/16/2009

Application Id: 1228748874754
City of Project Site: Oakland
Site Location: 1409 12th Street, Oakland, CA
Project Start Date: 12/29/2008
Completion Date: 12/30/2008
Requested Inspection: 12/29/2008
Scheduled Inspection: 12/29/2008 at 2:00 PM (Contact your inspector, Vicky Hamlin at (510) 670-5443, to confirm.)
Extension Start Date: 01/12/2009
Extension End Date: 01/16/2009
Extension Count: 2
Extended By: vickyh1

Applicant: IMPACT ENVIRONMENTAL - JOSEPH COTTON
39120 ARGONAUT WAY, #223, FREMONT, CA 94538
Phone: 510-703-5420

Property Owner: THOMPSON SHIRLEY
1155 HOPKINS STREET, BERKELEY, CA 94702
Phone: 510-527-5702

Client: ** same as Property Owner **

Contact: JOSEPH COTTON
Phone: 510-703-5420
Cell: 510-703-5420

Total Due: $230.00
Receipt Number: WR2008-0453 **Total Amount Paid:** $230.00
Payer Name : JOSEPH A. COTTON Paid By: MC **PAID IN FULL**

Works Requesting Permits:

Remediation Well Construction-Vapor Remediation Well - 9 Wells
Driller: WOODWARD DRILLING CO. HEW (604987) - Lic #: 710079 - Method: hstem **Work Total: $230.00**

Specifications

Permit #	Issued Date	Expire Date	Owner Well Id	Hole Diam.	Casing Diam.	Seal Depth	Max. Depth
W2008-0948	12/11/2008	03/29/2009	VX-1	10.00 in.	4.00 in.	7.00 ft	25.00 ft
W2008-0948	12/11/2008	03/29/2009	VX-2	10.00 in.	4.00 in.	7.00 ft	25.00 ft
W2008-0948	12/11/2008	03/29/2009	VX-3	10.00 in.	4.00 in.	7.00 ft	25.00 ft
W2008-0948	12/11/2008	03/29/2009	VX-4	10.00 in.	4.00 in.	7.00 ft	25.00 ft
W2008-0948	12/11/2008	03/29/2009	VX-5	10.00 in.	4.00 in.	7.00 ft	25.00 ft
W2008-0948	12/11/2008	03/29/2009	VX-6	10.00 in.	4.00 in.	7.00 ft	25.00 ft
W2008-0948	12/11/2008	03/29/2009	VX-7	10.00 in.	4.00 in.	7.00 ft	25.00 ft
W2008-0948	12/11/2008	03/29/2009	VX-8	10.00 in.	4.00 in.	7.00 ft	25.00 ft
W2008-0948	12/11/2008	03/29/2009	VX-9	10.00 in.	4.00 in.	7.00 ft	25.00 ft

Specific Work Permit Conditions

1. Permittee shall assume entire responsibility for all activities and uses under this permit and shall indemnify, defend and save the Alameda County Public Works Agency, its officers, agents, and employees free and harmless from any and all expense, cost, liability in connection with or resulting from the exercise of this Permit including, but not limited to,

properly damage, personal injury and wrongful death.

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

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

4. Applicant shall contact Vicky Hamlin for an inspection time at 510-670-5443 or email to vickyh@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.

5. Minimum seal depth (Neat Cement Seal) is 2 feet below ground surface (BGS).

6. Minimum surface seal thickness is two inches of cement grout placed by tremie

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

8. Prior to any drilling activities onto any public right-of-ways, it shall be the applicants responsibilities to contact and coordinate a Underground Service Alert (USA), obtain encroachment permit(s), excavation permit(s) or any other permits required for that City or to the County and follow all City or County Ordinances. It shall also be the applicants responsibilities to provide to the Cities or to Alameda County a Traffic Safety Plan for any lane closures or detours planned. No work shall begin until all the permits and requirements have been approved or obtained.

APPENDIX C

Well Completion Logs

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

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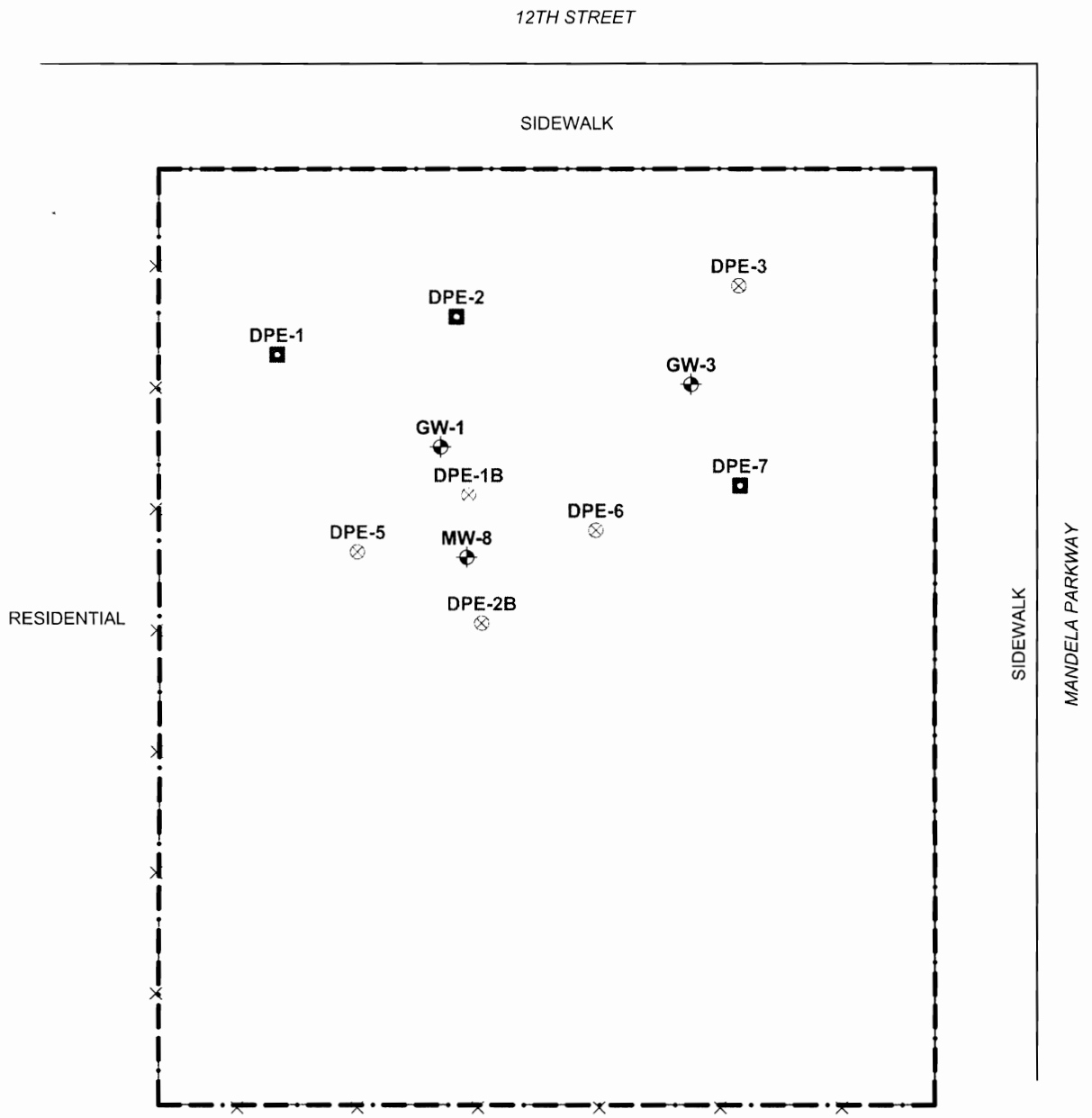
STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED

CONFIDENTIAL

STATE OF CALIFORNIA DWR
WELL COMPLETION REPORT
(WELL LOGS)

REMOVED



EXPLANATION:

- Approximate Property Boundary
- MW-8 — DPE/Monitoring Well Location
- DPE-3 — DPE Well Location
- DPE-1 — DPE Bleeder Well Location

N

0 10 20

Scale (Feet)

C:\Work\EnviroCAD\IES\1409-1417 12th Street\DPE Well Installation Report\Figure 2-3.dwg Layout: Fig 3 Feb 16, 2009 - 11:54am

Impact Environmental Services
39120 Aronaut Way, Suite 223
Fremont, CA 94538

Figure 3
1409 to 1417 12TH STREET
OAKLAND, CALIFORNIA

DUAL-PHASE VACUUM EXTRACTION WELL LOCATIONS

APPENDIX D

Well Development Logs and Certified Well Survey Reports

R TECHNOLOGIES

1409 12th ST
OAKLAND. CA

WELL DEVELOPMENT LOG

ALL MEASUREMENTS TAKEN FROM	TOP OF CASING X	GROUND LEVEL		SAMPLE ID	N/A
WELL NUMBER	DPE-1	BOREHOLE DIAMETER	8"	GALLONS PURGED	120 GAL TOTAL
DATE	2-26-09	SCREEN LENGTH	6' TO 20'	DEVELOPMENT METHOD	
TIME START	1045 END 1415	WELL DEPTH (PRE DEVELOPMENT)	20.51	SURGE	X
CLIENT		WELL DEPTH (POST DEVELOPMENT	20.84	BAIL	X
PROJECT		STATIC WATER LEVEL	7.73	PUMP	X
JOB NUMBER		STANDING WATER COLUMN	13.11	AIR	
INSTALLATION DATE		ONE WELL VOLUME(GAL)	8.5	OTHER	1.5 GAL PER MIN @
WELL DIAMETER	4"	CASING DIAMETER			14.1 FEET TO DTW

TIME	VOLUME	COMMENTS								WATER QUALITY
1100	10 GAL	REMOVED SILTS OF BOTTOM W/BAILER, SURGE SCREEN								SILTY. NO SAND
1200	30 GAL	BAILED WELL AND SURGED SCREEN 3 EACH 10 MIN								
1230		SET PUMP. 1 FOOT FROM BOTTOM. START PURGE								LIGHT SILT
1300	30 GAL	WELL CLEAN ENOUGH TO TAKE READINGS								
		TEMP	PH	EC	TDS	DO	ORP	TURB		
1315	10	18.80	7.80	87	.641	11.57	-5.1	>100		NO SILT LIGHT IN COLOR
1330	10	18.88	7.79	46	.647	10.95	-12	100		CLEARING CLOUDY
1345	10	18.75	7.78	942	.613	13.10	-15.8	75		CLEARING
1400	5	18.76	7.77	846	.545	11.76	-10.7	42		CLEAR
1405	5	18.76	7.78	869	.566	11.57	-7.1	17		CLEAR
1410	5	18.76	7.77	868	.568	11.65	-8.1	8		CLEAR
1415	5	18.75	7.78	862	.566	11.81	-8.9	9		CLEAR

NOTE DO LOOK HIGH RECAL.

R TECHNOLOGIES

1409 12th Street Oakland CA

WELL DEVELOPMENT LOG

ALL MEASUREMENTS TAKEN FROM	TOP OF CASING x	GROUND LEVEL	SAMPLE ID N/A
WELL NUMBER DPE-1B	BOREHOLE DIAMETER 8"		GALLONS PURGED 140 TOTAL GAL
DATE 2-26-09	SCREEN LENGTH 20' TO 26'		DEVELOPMENT METHOD
TIME START 1430 END 1635	WELL DEPTH (PRE DEVELOPMENT)	26.10	SURGE x
CLIENT	WELL DEPTH (POST DEVELOPMENT	27.0	BAIL X
PROJECT	STATIC WATER LEVEL	18.8	PUMP X
JOB NUMBER	STANDING WATER COLUMN	17.2	AIR
INSTALLATION DATE	ONE WELL VOLUME(GAL)	11.2	OTHER 3.5 GAL PER MIN @
WELL DIAMETER 4"	CASING DIAMETER		22' FEET TO DATE

TIME	VOLUME	COMMENTS	WATER QUALITY
1435	10 GAL	BAIL SEDIMENT OFF BOTTOM, SAND AND SILT REMOVED -90'	SAND AND SILT
1445	10 GAL	SURGE, BAIL 3 TIMES FOR 10 MIN. UNTIL CLEAN FOR	SILTY.
1500	20 GAL	PUMP.	FINE SILT
1510		SET PUMP 1 FOOT OFF BOTTOM START PURGE.	FINE SILTS (BROWN)

		TEMP	PH	EC	TDS	DO	ORP	TURB			
1515	—	20.34	7.58	726	472	10.96					Light Brown
1530	20	20.56	7.57	696	452	9.21	N/A	>100			Cloudy No Silt
1545	20	20.04	7.56	615	399	10.81		91			Clearing
1600	20	20.10	7.59	675	374	10.68		62			clear
1615	20	19.56	7.59	541	351	10.88		35			clear
1630	20	20.29	7.59	542	350	10.71		16			clear
1635	—	20.31	7.58	542	349	10.62		11			

Note ORP Readings Not Displayin

R TECHNOLOGIES

1409 12th ST
OAKLAND CA

WELL DEVELOPMENT LOG

ALL MEASUREMENTS TAKEN FROM	TOP OF CASING X	GROUND LEVEL	SAMPLE ID N/A
WELL NUMBER DPE-2	BOREHOLE DIAMETER 8"		GALLONS PURGED 100 TOTAL GAL
DATE 2-26-99	SCREEN LENGTH 6' TO 20'		DEVELOPMENT METHOD
TIME START 1640 END 1830	WELL DEPTH (PRE DEVELOPMENT) 20.8		SURGE X
CLIENT	WELL DEPTH (POST DEVELOPMENT 21.1		BAIL X
PROJECT	STATIC WATER LEVEL 8.78		PUMP X
JOB NUMBER	STANDING WATER COLUMN 12.02		AIR
INSTALLATION DATE	ONE WELL VOLUME(GAL) 7.8		OTHER 1.0 gpm @ 14.3
WELL DIAMETER 4"	CASING DIAMETER		@ THIS DATE

TIME	VOLUME	COMMENTS									WATER QUALITY
1640	10	Bail Sediment off Bottom 0.3 in. Surge screen 10 min									SANDY
1	30	Bail of Bottom Sandy & Dirty, Repeat 3 more sets									Sandy & Dirty
1715		Set Pump 1 foot of Bottom Start Purge.									Sandy w/silts
1730	10	water to Dirty for Flow cell. Need to clean up									Cloudy & Silts
		TEMP	PH	EC	TDS	DO	ORP	TURB			Cloudy
1750	10	20.11	7.78	734	477	9.46		>100			cloudy No Silts
1800	10	19.45	7.63	637	413	13.67	N/A	>100			clearing
1810	10	19.77	7.49	618	402	13.22	|	88			Clear
1815	5	19.20	7.49	617	401	12.49	|	71			clear
1820	5	19.76	7.50	595	403	11.29	|	69			"
1825	5	19.74	7.48	598	395	13.43	|	45			"
1830	5	19.75	7.50	591	401	11.30	|	20			"

R TECHNOLOGIES

1409 12TH STREET
OAKLAND CA

WELL DEVELOPMENT LOG

ALL MEASUREMENTS TAKEN FROM	TOP OF CASING X	GROUND LEVEL	SAMPLE ID N/A
WELL NUMBER	DPE-2B	BOREHOLE DIAMETER	8"
DATE	2-27-09	SCREEN LENGTH	20' TO 28'
TIME START 800	END 1000	WELL DEPTH (PRE DEVELOPMENT)	27.0
CLIENT		WELL DEPTH (POST DEVELOPMENT	28.5
PROJECT		STATIC WATER LEVEL	8.50
JOB NUMBER		STANDING WATER COLUMN	18.5
INSTALLATION DATE		ONE WELL VOLUME(GAL)	12.0
WELL DIAMETER	4"	CASING DIAMETER	

GALLONS PURGED	190 TOTAL GAL
DEVELOPMENT METHOD	
SURGE	X
BAIL	X
PUMP	X
AIR	
OTHER	3.0 GPM @ 23'

TIME	VOLUME	COMMENTS	WATER QUALITY
800		BAIL SEDIMENT FROM BOTTOM REMOVED 1.4 FT OF SAND	SANDY & DIRTY
815	10	AND SILT. SURGE SCREEN BAIL OUT 6" OF SANDY SILTS REPEAT	SAND & SILTS
845	20	2 MORE SETS. VARY SMALL FINES. SET PUMP. START PURGE	light BROWN IN COLOR
850		VARY DIRTY BROWN IN COLOR,	light w/ silts

TIME	VOLUME	TEMP	PH	EC	TDS	DO	ORP	TURB			WATER QUALITY
		TEMP	PH	EC	TDS	DO	ORP	TURB			Clowdy & silts
900	20	19.54	6.80	624	406	10.69	N/A	7100			cloudy/silts
910	20	19.58	6.81	620	403	10.14		96			Clearing Fines
920	20	19.60	6.80	613	398	9.99		88			Clearing
930	20	19.62	6.81	603	389	10.09		81			Clearing No Fines
940	20	19.61	6.80	596	387	9.58		52			Clear
950	20	19.74	6.83	587	382	9.34		36			Clear
1000	20	19.69	6.81	586	381	10.01		18			Clear

R TECHNOLOGIES

1409 12th STREET
OAKLAND CA

WELL DEVELOPMENT LOG

ALL MEASUREMENTS TAKEN FROM	TOP OF CASING	GROUND LEVEL	SAMPLE ID: N/A
WELL NUMBER: DPE-3	BOREHOLE DIAMETER: 8"		GALLONS PURGED: 115 TOTAL gal
DATE: 2-28-09	SCREEN LENGTH: 6' TO 20'		DEVELOPMENT METHOD
TIME START: 8AM END: 1115	WELL DEPTH (PRE DEVELOPMENT): 20.75		SURGE: x
CLIENT	WELL DEPTH (POST DEVELOPMENT: 21.0		BAIL: x
PROJECT	STATIC WATER LEVEL: 8.25		PUMP: x
JOB NUMBER	STANDING WATER COLUMN: 12.5		AIR
INSTALLATION DATE	ONE WELL VOLUME(GAL): 8.1		OTHER: .5 gpm @ 18'
WELL DIAMETER: 4"	CASING DIAMETER		@ THIS DATE

TIME	VOLUME	COMMENTS									WATER QUALITY
8AM		BAIL OFF BOTTOM TO Remove Sediment NO SAND HARD									Silty
815	10 gal	CAP. SURGE AND BAIL 3 more SETS, SET PUMP 1 FOOT									
900	20 gal	OFF BOTTOM START PURGE.									
930	20 gal	Silty WILL BROWN. STILL TO Silty FOR Flow Cell									Cloudy
1000	15 gal	TEMP	PH	EC	TDS	DO	ORP	TURB			Clearing
1005		21.03	6.81	984	.700	13.22	N/A	7100			Clearing
1015	10	20.04	6.82	764	.490	12.65	↓	7100			Clear
1030	10	19.99	6.72	707	.458	9.20		75			↓
1045	10	20.01	6.68	647	.421	10.18		61			
1100	10	20.03	6.65	689	.448	12.43		38			
1105	5	20.01	6.66	687	.404	11.73		11			
1110	5	20.02	6.68	685	.401	10.99	↓	7			

R TECHNOLOGIES

1409 12th STREET
OAKLAND CA

WELL DEVELOPMENT LOG

ALL MEASUREMENTS TAKEN FROM		☒ TOP OF CASING ☐ GROUND LEVEL		SAMPLE ID	N/A
WELL NUMBER	DPE-5	BOREHOLE DIAMETER	8"	GALLONS PURGED	110 TOTAL GAL.
DATE	2/28/09	SCREEN LENGTH	6' TO 20'	DEVELOPMENT METHOD	
TIME START	1130 END 1415	WELL DEPTH (PRE DEVELOPMENT)	20.75	SURGE	X
CLIENT		WELL DEPTH (POST DEVELOPMENT		BAIL	X
PROJECT		STATIC WATER LEVEL	8.45	PUMP	X
JOB NUMBER		STANDING WATER COLUMN	12.3	AIR	
INSTALLATION DATE		ONE WELL VOLUME(GAL)	8.0	OTHER	1.0
WELL DIAMETER	4"	CASING DIAMETER			

9PM @ 14 FEET @ THIS DATE

TIME	VOLUME	COMMENTS									WATER QUALITY
1130		Remove Sediment From Bottom. HARD CAP							SURGE 10 MIN		BROWN & Silty
1145	10	Remove AND Sediment THAT CAME IN. SURGE AND BAIL									light BROWN
1200	10	2 more sets. Set Pump START Purge.							WATER		
1215	10	Silty AND Dirty but clean up well.									cloudy no silt
1230	10	TEMP	PH	EC	TDS	DO	ORP	TURBIDITY			clearing
1245	10	19.91	6.59	602	408	13.11	N/A	>100			
1300	10	20.22	7.04	530	399	12.95		96			clear
1315	10	19.99	6.82	544	394	12.61		80			
1330	10	19.98	6.89	531	398	11.89		51			clear
1345	10	19.98	6.88	529	397	10.22		38			
1400	10	19.97	6.88	530	398	12.16		18			
1415	10	19.20	6.87	532	389	11.04	—	16			clear

R TECHNOLOGIES

1409 12th STREET OAKLAND CA.

WELL DEVELOPMENT LOG

ALL MEASUREMENTS TAKEN FROM		TOP OF CASING X	GROUND LEVEL	SAMPLE ID	N/A
WELL NUMBER	DPE-6	BOREHOLE DIAMETER	8"	GALLONS PURGED	180 TOTAL GAL
DATE	2-27-09	SCREEN LENGTH	6' TO 20'	DEVELOPMENT METHOD	
TIME START	1030 END 1315	WELL DEPTH (PRE DEVELOPMENT)	20.92	SURGE	X
CLIENT		WELL DEPTH (POST DEVELOPMENT	21.0	BAIL	X
PROJECT		STATIC WATER LEVEL	7.9	PUMP	X
JOB NUMBER		STANDING WATER COLUMN	13.1	AIR	
INSTALLATION DATE		ONE WELL VOLUME(GAL)	8.5	OTHER	1.5 gpm @ 17.6 Feet
WELL DIAMETER	4"	CASING DIAMETER			@ THIS DATE

TIME	VOLUME	COMMENTS								WATER QUALITY
1030	10	BAIL OFF BOTTOM (HARD CAP) VERY little silt								light Brown/silts
1100	30	SURGE AND BAIL OFF BOTTOM 3 more SETS								same
		well look good set Pump. START PURGE.								cloudy & silts
1115	20	water clean Enough To START Perameters								Clearing up
1130	20	TEMP	PH	EC	TDS	DO	ORP	TURB		clearing w/silts
1145	20	20.75	7.14	661	431	10.45	N/A	>100		Cloudy again
1200	20	19.85	6.72	705	458	9.11		>100		clearing
1215	20	19.84	6.76	810	527	10.69		98		clearing +
1230	20	19.76	6.78	659	482	12.33		56		clear
1245	20	19.80	6.79	742	400	12.68		31		clear
1300	20	19.81	6.69	616	399	11.34		35		clear
1315	20	19.81	6.78	615	401	10.98		22		clear

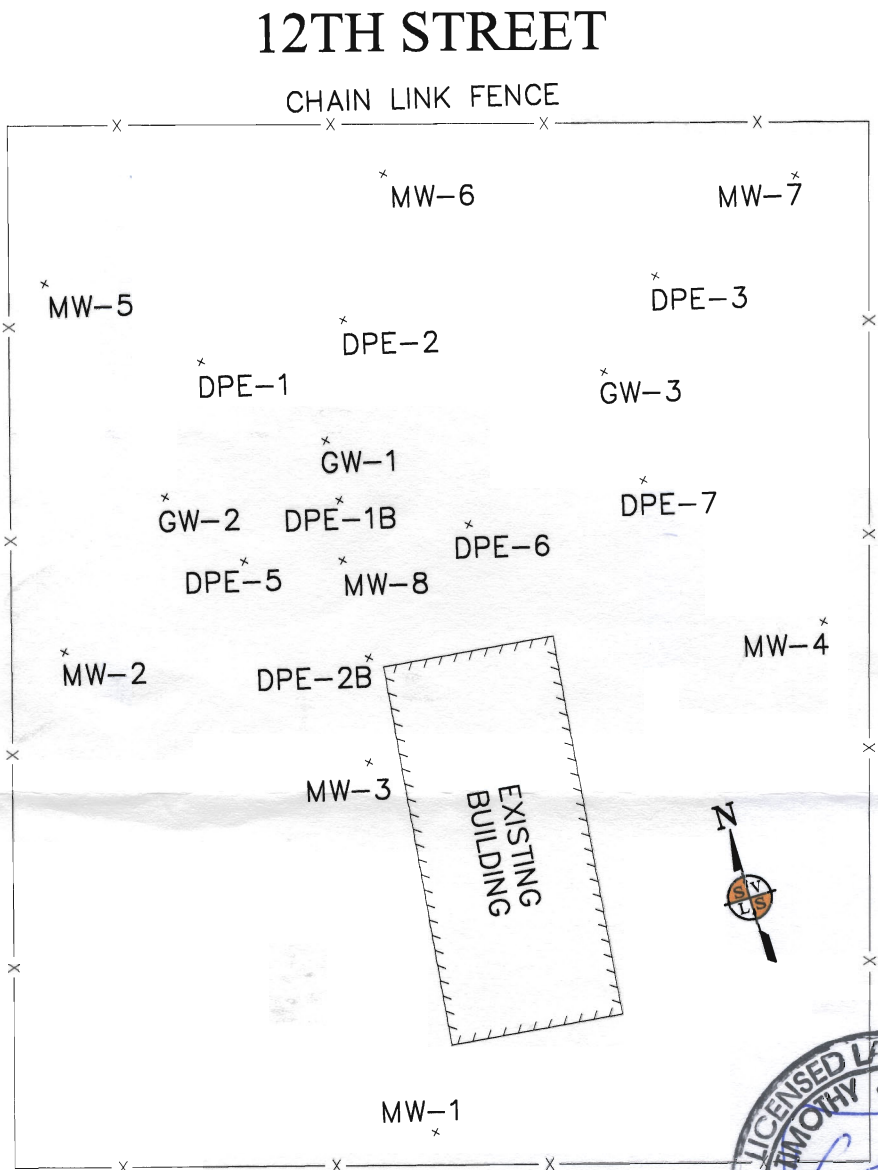
R TECHNOLOGIES

1409 12th STREET
OAKLAND CA.

WELL DEVELOPMENT LOG

ALL MEASUREMENTS TAKEN FROM	TOP OF CASING X	GROUND LEVEL	SAMPLE ID N/A		
WELL NUMBER	DPE-7	BOREHOLE DIAMETER	8"	GALLONS PURGED	135 TOTAL GAL
DATE	2/28/09	SCREEN LENGTH	6' TO 20'	DEVELOPMENT METHOD	
TIME START	1500 END	WELL DEPTH (PRE DEVELOPMENT)	20.64	SURGE	X
CLIENT		WELL DEPTH (POST DEVELOPMENT	21.00	BAIL	X
PROJECT		STATIC WATER LEVEL	7.67	PUMP	X
JOB NUMBER		STANDING WATER COLUMN	13.33	AIR	
INSTALLATION DATE		ONE WELL VOLUME(GAL)	8.7	OTHER	2.0 PPM @ 17 FEET
WELL DIAMETER	4"	CASING DIAMETER			@ THIS DATE.

TIME	VOLUME	COMMENTS									WATER QUALITY
1500	~~10~~	BAIL SEDIMENT OFF BOTTOM, VERY LITTLE SILTS SURGE									DIRTY BROWN
1515	10	~~FOR 10 MIN~~ RESUME BAILING WATER LOOK GOOD SURGE & BAIL									SILTY
1530	10	2 MORE SETS SET PUMP, START PURGE									
1545	20	WATER LIGHT BROWN W/SILT									SILTY
1600	20	TEMP	PH	EC	TDS	DO	ORP	TURB			CLOUDY
1615	15	19.02	6.58	632	.411	9.12	N/A	>100			
1630	15	18.99	6.57	636	.413	10.53	↑	<100			CLEARING
1646	15	19.01	6.57	635	.414	11.75	|	99			
1700	15	20.61	6.57	640	.390	10.40	|	71			CLEAR
1705	5	19.02	6.56	641	.396	10.90	|	46			CLEAR
1710	5	19.51	6.56	599	.398	10.98	|	36			
1715	5	19.31	6.58	601	.400	10.87	↓	22			CLEAR



LICENSED LAND SURVEYOR
TIMOTHY JOHN REDD
Exp. 12-31-11
No. L7527
STATE OF CALIFORNIA

PLAT OF MONITORING WELLS
1409 12TH STREET, OAKLAND, CA

SCALE: 1"=20"
DESIGN BY:
DRAWN BY: AA
CHECK BY:

SILICON VALLEY LAND SURVEYING, INC.
LAND AND ENGINEERING SURVEYS
1093 NORTH FIFTH ST., SAN JOSE, CA 95112
TEL. (408) 971-3800 FAX (408) 971-8501

DATE: 03/19/10
SURV. DATE 03/17/10
JOB NO: 08-0150
SHEET 1 OF 1 SHEETS

GeoTracker_XY Report for
Monitoring Wells Surveyed at 1409-17 12th Street, Oakland, CA.
by Silicon Valley Land Surveying, Inc. for Impact Environmental, Inc.

FIELD_PT_NAME	XY_SURVEY_DATE	LATITUDE	LONGTITUDE	XY_METHOD	XY_DATUM	XY_ACC_VAL	XY_SURVEY_ORG	GPS_EQUIP_TYPE
DPE-1	03/17/2010	37.8090900	-122.2926713	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-1B	03/17/2010	37.8090414	-122.2926366	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-2	03/17/2010	37.8090907	-122.2926179	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-2B	03/17/2010	37.8089959	-122.2926414	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-3	03/17/2010	37.8090791	-122.2925055	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-5	03/17/2010	37.8090318	-122.2926756	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-6	03/17/2010	37.8090250	-122.2925940	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-7	03/17/2010	37.8090239	-122.2925291	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
GW-1	03/17/2010	37.8090589	-122.2926356	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
GW-2	03/17/2010	37.8090554	-122.2926968	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
GW-3	03/17/2010	37.8090567	-122.2925324	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-1	03/17/2010	37.8088602	-122.2926636	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-2	03/17/2010	37.8090204	-122.2927466	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-3	03/17/2010	37.8089671	-122.2926514	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-4	03/17/2010	37.8089713	-122.2924801	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-5	03/17/2010	37.8091232	-122.2927182	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-6	03/17/2010	37.8091278	-122.2925900	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-7	03/17/2010	37.8090962	-122.2924472	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-8	03/17/2010	37.8090246	-122.2926412	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530

GeoTracker_XY Report for
Monitoring Wells Surveyed at 1409-17 12th Street, Oakland, CA.
by Silicon Valley Land Surveying, Inc. for Impact Environmental, Inc.

FIELD_PT_NAME	XY_SURVEY_DATE	LATITUDE	LONGTITUDE	XY_METHOD	XY_DATUM	XY_ACC_VAL	XY_SURVEY_ORG	GPS_EQUIP_TYPE
DPE-1	03/17/2010	37.8090900	-122.2926713	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-1B	03/17/2010	37.8090414	-122.2926366	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-2	03/17/2010	37.8090907	-122.2926179	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-2B	03/17/2010	37.8089959	-122.2926414	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-3	03/17/2010	37.8090791	-122.2925055	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-5	03/17/2010	37.8090318	-122.2926756	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-6	03/17/2010	37.8090250	-122.2925940	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
DPE-7	03/17/2010	37.8090239	-122.2925291	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
GW-1	03/17/2010	37.8090589	-122.2926356	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
GW-2	03/17/2010	37.8090554	-122.2926968	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
GW-3	03/17/2010	37.8090567	-122.2925324	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-1	03/17/2010	37.8088602	-122.2926636	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-2	03/17/2010	37.8090204	-122.2927466	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-3	03/17/2010	37.8089671	-122.2926514	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-4	03/17/2010	37.8089713	-122.2924801	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-5	03/17/2010	37.8091232	-122.2927182	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-6	03/17/2010	37.8091278	-122.2925900	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-7	03/17/2010	37.8090962	-122.2924472	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530
MW-8	03/17/2010	37.8090246	-122.2926412	CGPS	NAD83	2	Silicon Valley Land Surveying Inc.	L530

3/19/10

APPENDIX E

Soil Stockpile Sample Certified Laboratory Analytical Report

(Construction Related)

Torrent
LABORATORY, INC.

May 28, 2009

Mr. Joseph Cotton
Impact Environmental Services
39120 Arogonat Way, Suite 223
Fremont, CA 94538

TEL: 510-703-5420
FAX 510-713-7790

RE:

Order No.: 0905129

Dear Mr. Joseph Cotton:

Torrent Laboratory, Inc. received 1 sample on 5/20/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director 5/22/09 Date

Patti Sandrock
QA Officer

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 5/20/2009
Date Reported: 5/28/2009

Client Sample ID: Stockpile -09
Sample Location: 1409 12th St.,Oakland
Sample Matrix: SOIL
Date/Time Sampled 5/19/2009

Lab Sample ID: 0905129-001
Date Prepared: 5/21/2009-5/26/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Lead	SW6010B	5/26/2009	1	1	1.0	15	mg/Kg	5217
TPH (Diesel)	SW8015B	5/27/2009	2	2	4.0	ND	mg/Kg	R19637
TPH (Motor Oil)	SW8015B	5/27/2009	4	2	8.0	130	mg/Kg	R19637
Surr: Pentacosane	SW8015B	5/27/2009	0	2	59.7-129	88.5	%REC	R19637
Benzene	SW8260B	5/26/2009	10	1	10	ND	µg/Kg	R19665
Toluene	SW8260B	5/26/2009	10	1	10	ND	µg/Kg	R19665
Ethylbenzene	SW8260B	5/26/2009	10	1	10	ND	µg/Kg	R19665
Xylenes, Total	SW8260B	5/26/2009	15	1	15	ND	µg/Kg	R19665
Surr: 4-Bromofluorobenzene	SW8260B	5/26/2009	0	1	55.8-141	81.3	%REC	R19665
Surr: Dibromofluoromethane	SW8260B	5/26/2009	0	1	59.8-148	103	%REC	R19665
Surr: Toluene-d8	SW8260B	5/26/2009	0	1	55.2-133	91.1	%REC	R19665
TPH (Gasoline)	SW8260B(TPH)	5/26/2009	100	1	100	ND	µg/Kg	G19665
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	5/26/2009	0	1	56.9-133	72.0	%REC	G19665

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

CLIENT: Impact Environmental Services
Work Order: 0905129
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: G19665

Sample ID **MB_G19665**	SampType: **MBLK**	TestCode: **TPH_GAS_S**	Units: **µg/Kg**	Prep Date: **5/26/2009**	RunNo: **19665**
Client ID: **ZZZZZ**	Batch ID: **G19665**	TestNo: **SW8260B(TP**		Analysis Date: **5/26/2009**	SeqNo: **284419**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	100									
Surr: 4-Bromofllurobenzene	42.00	0	50	0	84.0	56.9	133				

Sample ID **LCS_G19665**	SampType: **LCS**	TestCode: **TPH_GAS_S**	Units: **µg/Kg**	Prep Date: **5/27/2009**	RunNo: **19665**
Client ID: **ZZZZZ**	Batch ID: **G19665**	TestNo: **SW8260B(TP**		Analysis Date: **5/27/2009**	SeqNo: **284420**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	979.0	100	1000	0	97.9	48.2	132				
Surr: 4-Bromofllurobenzene	53.00	0	50	0	106	56.9	133				

Sample ID **LCSD_G19665**	SampType: **LCSD**	TestCode: **TPH_GAS_S**	Units: **µg/Kg**	Prep Date: **5/27/2009**	RunNo: **19665**
Client ID: **ZZZZZ**	Batch ID: **G19665**	TestNo: **SW8260B(TP**		Analysis Date: **5/27/2009**	SeqNo: **284421**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	1169	100	1000	0	117	48.2	132	979	17.7	30	
Surr: 4-Bromofllurobenzene	57.00	0	50	0	114	56.9	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Impact Environmental Services
Work Order: 0905129
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19637

Sample ID **SD090521A-MB**	SampType: **MBLK**	TestCode: **TPHDO_S**	Units: **mg/Kg**	Prep Date: **5/21/2009**	RunNo: **19637**
Client ID: **ZZZZZ**	Batch ID: **R19637**	TestNo: **SW8015B**		Analysis Date: **5/21/2009**	SeqNo: **284014**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	2.0									
TPH (Motor Oil)	ND	4.0									
Surr: Pentacosane	2.982	0	3.3	0	90.4	59.7	129				

Sample ID **SD090521A-LCS**	SampType: **LCS**	TestCode: **TPHDO_S**	Units: **mg/Kg**	Prep Date: **5/21/2009**	RunNo: **19637**
Client ID: **ZZZZZ**	Batch ID: **R19637**	TestNo: **SW8015B**		Analysis Date: **5/21/2009**	SeqNo: **284015**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	25.09	2.0	33.33	0	75.3	52.7	115				
Surr: Pentacosane	2.696	0	3.3	0	81.7	59.7	129				

Sample ID **SD090521A-LCSD**	SampType: **LCSD**	TestCode: **TPHDO_S**	Units: **mg/Kg**	Prep Date: **5/21/2009**	RunNo: **19637**
Client ID: **ZZZZZ**	Batch ID: **R19637**	TestNo: **SW8015B**		Analysis Date: **5/21/2009**	SeqNo: **284016**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	27.06	2.0	33.33	0	81.2	52.7	115	25.09	7.57	30	
Surr: Pentacosane	2.988	0	3.3	0	90.5	59.7	129	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Impact Environmental Services
Work Order: 0905129
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R19665

Sample ID **MB_R19665**	SampType: **MBLK**	TestCode: **8260B_S**	Units: **µg/Kg**	Prep Date: **5/26/2009**	RunNo: **19665**
Client ID: **ZZZZZ**	Batch ID: **R19665**	TestNo: **SW8260B**		Analysis Date: **5/26/2009**	SeqNo: **284406**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	10									
Ethylbenzene	ND	10									
Toluene	ND	10									
Xylenes, Total	ND	15									
Surr: 4-Bromofluorobenzene	45.16	0	50	0	90.3	55.8	141				
Surr: Dibromofluoromethane	57.21	0	50	0	114	59.8	148				
Surr: Toluene-d8	44.74	0	50	0	89.5	55.2	133				

Sample ID **LCS_R19665**	SampType: **LCS**	TestCode: **8260B_S**	Units: **µg/Kg**	Prep Date: **5/26/2009**	RunNo: **19665**
Client ID: **ZZZZZ**	Batch ID: **R19665**	TestNo: **SW8260B**		Analysis Date: **5/26/2009**	SeqNo: **284407**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	56.84	10	50	0	114	66.5	135				
Toluene	58.43	10	50	0	117	56.8	134				
Surr: 4-Bromofluorobenzene	46.45	0	50	0	92.9	55.8	141				
Surr: Dibromofluoromethane	53.00	0	50	0	106	59.8	148				
Surr: Toluene-d8	53.00	0	50	0	106	55.2	133				

Sample ID **LCSD_R19665**	SampType: **LCSD**	TestCode: **8260B_S**	Units: **µg/Kg**	Prep Date: **5/26/2009**	RunNo: **19665**
Client ID: **ZZZZZ**	Batch ID: **R19665**	TestNo: **SW8260B**		Analysis Date: **5/26/2009**	SeqNo: **284408**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	54.55	10	50	0	109	66.5	135	56.84	4.11	30	
Toluene	44.88	10	50	0	89.8	56.8	134	58.43	26.2	30	
Surr: 4-Bromofluorobenzene	43.97	0	50	0	87.9	55.8	141	0	0	0	
Surr: Dibromofluoromethane	52.59	0	50	0	105	59.8	148	0	0	0	
Surr: Toluene-d8	44.64	0	50	0	89.3	55.2	133	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent Laboratory, Inc.

WORK ORDER Summary

21-May-09

Work Order 0905129

Client ID: IMPACT ENV. SER.

Project: **QC Level:**

Comments: 5 day TAT!!! Pls .email result to jac21462@aol.com.

Sample ID	Client Sample ID	Collection Date	Date Received	Date Due	Matrix	Test Code	Hld	MS	SEL	Sub	Storage
0905129-001A	Stockpile -09	5/19/2009	5/20/2009	5/27/2009	Soil	3050B_S	☐	☐	☐	☐	SR
				5/27/2009		6010B_S	☐	☐	☑	☐	SR
				5/27/2009		8260B_S_PETROLEUM	☐	☐	☑	☐	SR
				5/27/2009		TPH_GAS_S_GCMS	☐	☐	☐	☐	SR
				5/27/2009		TPHDO_S	☐	☐	☐	☐	SR

Torrent LABORATORY, INC.

483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

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• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0905129

Company Name: IMPACT ENVIRONMENTAL	Location of Sampling: 1409 12th St., OAKLAND
Address: 39120 ARGONAUT WAY, #223	Purpose: Soil Stockpile Sampling
City: FREMONT State: CA Zip Code: 94538	Special Instructions / Comments:
Telephone: 510 7035420 FAX: (510) 791-0271	
REPORT TO: Joseph Cotton SAMPLER: J. Cotton	P.O. #: EMAIL: jac21462@aol.com

TURNAROUND TIME:
- ☐ 10 Work Days
- ☐ 3 Work Days
- ☐ Noon - Nxt Day
- ☐ 7 Work Days
- ☐ 2 Work Days
- ☐ 2 - 8 Hours
- ☒ 5 Work Days
- ☐ 1 Work Day
- ☐ Other

SAMPLE TYPE:
- ☐ Storm Water
- ☐ Waste Water
- ☐ Ground Water
- ☐ Soil
- ☐ Air
- ☐ Other

REPORT FORMAT:
- ☐ QC Level IV
- ☐ EDF
- ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List ☐ / EPA 8260B - 8010 List ☐	THP gas ☒ BTEX ☐ MTBE / Oxygenates ☐	THP Diesel ☒ Si-Gel ☐ / Motor Oil ☒	Pesticide - 8081 ☐	PCB - 8082 ☐	Metals ☐ CAM - 17 ☐ / LUFT 5 ☐ 7 Metals	8270 Full List ☐ / PAHs Only ☐	TOTAL LEAD		REMARKS
001A	Stockpile-09	5-19-9	S	2	Glass Jars		X	X					X		

TORRENT LAB

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1		Joseph Cotton	5-19-9	12:25 p.m.	D. L. Khodasara	NAVIN	5/20/09	12:25 p.m.
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Were Samples Received in Good Condition? ☑ Yes ☐ NO Samples on Ice? ☑ Yes ☐ NO Method of Shipment Drop-off Sample seals intact? ☐ Yes ☐ NO ☑ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 1 of 1

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

PSC
ENVIRONMENTAL SERVICES GROUP
Western Region

***24 HOUR EMERGENCY RESPONSE, CALL (877) 577-2669 ***

BILL OF LADING

535 Getty Court, Suite H
Benicia, CA 94510
(877) 748-3040

Lading Manifest: 133101-09

	DELIVERY DATE: JOB # 1023523
SHIPPER / CUSTOMER: SHIRLEY THOMPSON	POINT OF CONTACT: JOSEPH COTTON
ADDRESS: 1409 12TH. STREET	PHONE #: (510)703-5420
CITY, STATE, ZIP: OAKLAND CA 94607	
CARRIER / TRANSPORTER: 21st CENTURY ENVIRONMENTAL	PHONE #: (877)748-3040
CONSIGNEE / FACILITY: ALTAMONT LANDFILL	POINT OF CONTACT:
ADDRESS: 10840 ALTAMONT PASS ROAD	PHONE #: (925)449-6349
CITY, STATE, ZIP: LIVERMORE , CA 94550	

HM	US DOT Description *(Including Proper Shipping Name, Hazard Class, and ID Number)*	Containers No.	Containers Type	Total Quantity	UOM
A	NON-HAZARDOUS WASTE SOLID (SOIL)	1	CM	32,000	T 16
B					
C					
D					

Special Handling Instruction and Additional Information:

a) [redacted] - PROFILE 110956CA PO#71806-01 - STAB01 WAT05 (4)

Placards Provided YES _____ NO X

Emergency Phone # **(877) 748-3040**

SHIPPER'S CERTIFICATION: i hereby declared that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway, vessel, and rail according to applicable international and national government regulations.

		MONTH	DAY	YEAR
(SHIPPER) PRINT OR TYPE NAME: X Joseph Cotten	SIGNATURE: X	09	03	09
(CARRIER/TRANSPORTER) PRINT OR TYPE NAME: X Jerry Boster	SIGNATURE: X	09	03	09
(CONSIGNEE/FACILITY) PRINT OR TYPE NAME: X	SIGNATURE: X			

Form # PSC-209 - RV 9/07

SHIPPER

APPENDIX F

Purgewater Sample Certified Laboratory Analytical Report

Torrent
LABORATORY, INC.

June 25, 2009

Mr. Joseph Cotton
Impact Environmental Services
39120 Arogonat Way, Suite 223
Fremont, CA 94538

TEL: 510-703-5420
FAX 510-713-7790

RE: 1409 12th St. Oakland,CA

Order No.: 0906184

Dear Mr. Joseph Cotton:

Torrent Laboratory, Inc. received 1 sample on 6/23/2009 for the analyses presented in the following report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.
Reported data is applicable for only the samples received as part of the order number referenced above.

Torrent Laboratory, Inc, is certified by the State of California, ELAP #1991. If you have any questions regarding these tests results, please feel free to contact the Project Management Team at (408)263-5258;ext: 204.

Sincerely,

Laboratory Director 6/25/09
Date

Patti Sandrock
QA Officer

TORRENT LABORATORY, INC.

483 Sinclair Frontage Road • Milpitas, CA • Phone: (408) 263-5258 • Fax: (408) 263-8293

Visit us at www.torrentlab.com email: analysis@torrentlab.com

Report prepared for: Mr. Joseph Cotton
Impact Environmental Services

Date Received: 6/23/2009
Date Reported: 6/25/2009

Client Sample ID: Water tank
Sample Location: 1409 12th St. Oakland,CA
Sample Matrix: WATER
Date/Time Sampled 6/23/2009 11:00:00 AM

Lab Sample ID: 0906184-001
Date Prepared: 6/23/2009

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
TPH (Diesel)	SW8015B	6/24/2009	0.1	1	0.10	ND	mg/L	R20010
Surr: Pentacosane	SW8015B	6/24/2009	0	1	57.9-125	92.0	%REC	R20010
Benzene	SW8260B	6/23/2009	0.5	1	0.50	ND	µg/L	R20019
Toluene	SW8260B	6/23/2009	0.5	1	0.50	ND	µg/L	R20019
Ethylbenzene	SW8260B	6/23/2009	0.5	1	0.50	ND	µg/L	R20019
Xylenes, Total	SW8260B	6/23/2009	1.5	1	1.5	ND	µg/L	R20019
Surr: Dibromofluoromethane	SW8260B	6/23/2009	0	1	61.2-131	92.1	%REC	R20019
Surr: 4-Bromofluorobenzene	SW8260B	6/23/2009	0	1	64.1-120	68.8	%REC	R20019
Surr: Toluene-d8	SW8260B	6/23/2009	0	1	75.1-127	79.4	%REC	R20019
TPH (Gasoline)	SW8260B(TPH)	6/23/2009	50	1	50	ND	µg/L	G20019
Surr: 4-Bromofllurobenzene	SW8260B(TPH)	6/23/2009	0	1	53-118	95.7	%REC	G20019

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

Definitions, legends and Notes

Note	Description
ug/kg	Microgram per kilogram (ppb, part per billion).
ug/L	Microgram per liter (ppb, part per billion).
mg/kg	Milligram per kilogram (ppm, part per million).
mg/L	Milligram per liter (ppm, part per million).
LCS/LCSD	Laboratory control sample/laboratory control sample duplicate.
MDL	Method detection limit.
MRL	Modified reporting limit. When sample is subject to dilution, reporting limit times dilution factor yields MRL.
MS/MSD	Matrix spike/matrix spike duplicate.
N/A	Not applicable.
ND	Not detected at or above detection limit.
NR	Not reported.
QC	Quality Control.
RL	Reporting limit.
% RPD	Percent relative difference.
a	pH was measured immediately upon the receipt of the sample, but it was still done outside the holding time.
sub	Analyzed by subcontracting laboratory, Lab Certificate #

These analyses were performed according to State of California Environmental Laboratory Accreditation program, Certificate # 1991

CLIENT: Impact Environmental Services
Work Order: 0906184
Project: 1409 12th St. Oakland,CA

ANALYTICAL QC SUMMARY REPORT

BatchID: G20019

Sample ID **MB_G20019**	SampType: **MBLK**	TestCode: **TPH_GAS_W**	Units: **µg/L**	Prep Date: **6/23/2009**	RunNo: **20019**
Client ID: **ZZZZZ**	Batch ID: **G20019**	TestNo: **SW8260B(TP**		Analysis Date: **6/23/2009**	SeqNo: **289698**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	ND	50									
Surr: 4-Bromofllurobenzene	11.79	0	11.36	0	104	53	118				

Sample ID **LCS_G20019**	SampType: **LCS**	TestCode: **TPH_GAS_W**	Units: **µg/L**	Prep Date: **6/23/2009**	RunNo: **20019**
Client ID: **ZZZZZ**	Batch ID: **G20019**	TestNo: **SW8260B(TP**		Analysis Date: **6/23/2009**	SeqNo: **289699**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	255.0	50	227	22	103	52.4	127				
Surr: 4-Bromofllurobenzene	11.83	0	11.36	0	104	53	118				

Sample ID **LCSD_G20019**	SampType: **LCSD**	TestCode: **TPH_GAS_W**	Units: **µg/L**	Prep Date: **6/23/2009**	RunNo: **20019**
Client ID: **ZZZZZ**	Batch ID: **G20019**	TestNo: **SW8260B(TP**		Analysis Date: **6/23/2009**	SeqNo: **289700**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Gasoline)	218.0	50	227	22	86.3	52.4	127	255	15.6	20	
Surr: 4-Bromofllurobenzene	10.69	0	11.36	0	94.1	53	118	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Impact Environmental Services
Work Order: 0906184
Project: 1409 12th St. Oakland,CA

ANALYTICAL QC SUMMARY REPORT

BatchID: R20010

Sample ID	WD090623A-MB	SampType:	MBLK	TestCode:	TPHD_W	Units:	mg/L	Prep Date:	6/23/2009	RunNo:	20010
Client ID:	ZZZZZ	Batch ID:	R20010	TestNo:	SW8015B			Analysis Date:	6/23/2009	SeqNo:	289540

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	ND	0.10									
Surr: Pentacosane	0.09900	0	0.1	0	99.0	57.9	125				

Sample ID	WD090623A-LCS	SampType:	LCS	TestCode:	TPHD_W	Units:	mg/L	Prep Date:	6/23/2009	RunNo:	20010
Client ID:	ZZZZZ	Batch ID:	R20010	TestNo:	SW8015B			Analysis Date:	6/23/2009	SeqNo:	289541

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.7270	0.10	1	0	72.7	50.3	125				
Surr: Pentacosane	0.1050	0	0.1	0	105	57.9	125				

Sample ID	WD090623A-LCSD	SampType:	LCSD	TestCode:	TPHD_W	Units:	mg/L	Prep Date:	6/23/2009	RunNo:	20010
Client ID:	ZZZZZ	Batch ID:	R20010	TestNo:	SW8015B			Analysis Date:	6/23/2009	SeqNo:	289542

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPH (Diesel)	0.8340	0.10	1	0	83.4	50.3	125	0.727	13.7	30	
Surr: Pentacosane	0.1130	0	0.1	0	113	57.9	125	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

CLIENT: Impact Environmental Services
Work Order: 0906184
Project: 1409 12th St. Oakland,CA

ANALYTICAL QC SUMMARY REPORT

BatchID: R20019

Sample ID **MB_R20019**	SampType: **MBLK**	TestCode: **8260B_W_PE**	Units: **µg/L**	Prep Date: **6/23/2009**	RunNo: **20019**
Client ID: **ZZZZZ**	Batch ID: **R20019**	TestNo: **SW8260B**		Analysis Date: **6/23/2009**	SeqNo: **289694**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Toluene	ND	0.50									
Ethylbenzene	ND	0.50									
Xylenes, Total	ND	1.5									
Surr: Dibromofluoromethane	10.20	0	11.36	0	89.8	61.2	131				
Surr: 4-Bromofluorobenzene	9.990	0	11.36	0	87.9	64.1	120				
Surr: Toluene-d8	10.70	0	11.36	0	94.2	75.1	127				

Sample ID **LCS_R20019**	SampType: **LCS**	TestCode: **8260B_W_PE**	Units: **µg/L**	Prep Date: **6/23/2009**	RunNo: **20019**
Client ID: **ZZZZZ**	Batch ID: **R20019**	TestNo: **SW8260B**		Analysis Date: **6/23/2009**	SeqNo: **289695**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	13.86	0.50	17.04	0	81.3	66.9	140				
Toluene	14.01	0.50	17.04	0	82.2	76.6	123				
Surr: Dibromofluoromethane	10.18	0	11.36	0	89.6	61.2	131				
Surr: 4-Bromofluorobenzene	10.08	0	11.36	0	88.7	64.1	120				
Surr: Toluene-d8	10.30	0	11.36	0	90.7	75.1	127				

Sample ID **LCSD_R20019**	SampType: **LCSD**	TestCode: **8260B_W_PE**	Units: **µg/L**	Prep Date: **6/23/2009**	RunNo: **20019**
Client ID: **ZZZZZ**	Batch ID: **R20019**	TestNo: **SW8260B**		Analysis Date: **6/23/2009**	SeqNo: **289696**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	15.58	0.50	17.04	0	91.4	66.9	140	13.86	11.7	20	
Toluene	15.01	0.50	17.04	0	88.1	76.6	123	14.01	6.89	20	
Surr: Dibromofluoromethane	10.67	0	11.36	0	93.9	61.2	131	0	0	0	
Surr: 4-Bromofluorobenzene	9.640	0	11.36	0	84.9	64.1	120	0	0	0	
Surr: Toluene-d8	10.68	0	11.36	0	94.0	75.1	127	0	0	0	

Qualifiers:

E	Value above quantitation range	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
ND	Not Detected at the Reporting Limit	R	RPD outside accepted recovery limits	S	Spike Recovery outside accepted recovery limits

Torrent LABORATORY, INC.

483 Sinclair Frontage Road
Milpitas, CA 95035
Phone: 408.263.5258
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CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 0906184

Company Name: IMPACT ENVIRONMENTAL	Location of Sampling: 1409 12th Street, OAKLAND, CA
Address: 39120 ARGONAUT WAY, #223	Purpose: Discharge Water Disposal
City: FREMONT State: CA Zip Code: 94538	Special Instructions / Comments: Email results to jac21462@aol.com
Telephone: (510) 7035420 FAX: (510) 791-0271	
REPORT TO: Joseph Cotton SAMPLER: Joseph Cotton	P.O. #: EMAIL: jac21462@aol.com

TURNAROUND TIME:
- ☐ 10 Work Days
- ☐ 3 Work Days
- ☐ Noon - Nxt Day
- ☐ 7 Work Days
- ☐ 2 Work Days
- ☐ 2 - 8 Hours
- ☐ 5 Work Days
- ☒ 1 Work Day
- ☐ Other

SAMPLE TYPE:
- ☐ Storm Water
- ☐ Air
- ☐ Waste Water
- ☐ Other
- ☐ Ground Water
- ☐ Soil

REPORT FORMAT:
- ☐ QC Level IV
- ☐ EDF
- ☐ Excel / EDD

ANALYSIS REQUESTED

LAB ID	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	EPA 8260B - Full List ☐ / EPA 8260B - 8010 List ☐	THP gas ☒ / BTEX ☒ / Oxygenates ☐ / MTBE ☐	THP Diesel ☒ / Si-Gel ☐ / Motor Oil ☐	Pesticide - 8081 ☐	PCB - 8082 ☐	Metals ☐ / CAM - 17 ☐ / LUFT 5 ☐ / 7 Metals ☐	8270 Full List ☐ / PAHs Only ☐			REMARKS
001A	WATER TANK	6-23-2009 1100	W	5	VOAs 1L Amber		X	X							

RUSH
1 DAY

TORRENT LAB

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]	JOSEPH COTTON	6-23-9	2:35 P	[signature]		6/23/09	2:35 pm
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☒ Yes ☐ NO Method of Shipment Delivered Sample seals intact? ☐ Yes ☐ NO ☒ N/A

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page ____ of ____

Log In By: _____ Date: _____ Log In Reviewed By: _____ Date: _____

******* WORKING COPY *******

Invoice # WC1149286

Invoice Date 10/01/2009
Customer 39311
Terms Net 30 days

ATTN.: ACCOUNTS PAYABLE
IMPACT ENVIRONMENTAL
39120 ARGONAUT WAY, SUITE 223
FREMONT, CA 94538

SITE ADDRESS:
SHIRLEY THOMPSON
1409 12TH. STREET
OAKLAND, CA 94607

ORDER 994341 SHIRLEY THOMPSON

THANK YOU, WE APPRECIATE YOUR BUSINESS

07/07/2009

Direct Disposal :			
DIR-08 00001	DISPOSAL TO EBMUD	2,800.00 @ 0.060 / G	[redacted]
Equipment and Other :			
EQ37D-1 00001	PPE, (LEVEL D)	[redacted]	[redacted]
EQ50N-1 00002	VEHICLE, (VACCUM TRUCK), PER HOUR RATE	[redacted]	[redacted]
EQ38A-2 00003	PRESSURE WASHER	[redacted]	[redacted]
EQ50L-2 00004	GEAR TRUCK	[redacted]	[redacted]
EQ26A-5 00005	LADDER	[redacted]	[redacted]
Labor Charge :			
LB20S1 00001	PROJECT MANAGER, STRAIGHT TIME, HOURLY RATE	[redacted]	[redacted]
LB10S1 00002	FIELD TECHNICIAN, STRAIGHT TIME, HOURLY RATE	[redacted]	[redacted]

Sub Total	[redacted]
Energy Charge	[redacted]
INVOICE TOTAL	[redacted]

We honor the above merchant cards for payment. Please contact our local PSC billing office for payment instructions.

East Bay MUD Resource Recovery
Permit Billing Detail Report

Delivery Dates 01-Jul-09 through 31-Jul-09

21st Century EMI -Getty Ct Benicia Permit 21CE3000-022 (Empty Le

Ref#	Date - Time	Decal	Quantity - Rate	Charge
171678	07/07/2009 01:18 PM	10261	2,800 gallons	
Totals for 21CE3000-022:		1 Loads	**2,800 gallons**	