SELF-MONITORING REPORT – THIRD QUARTER 2008 NPDES PERMIT NO. CAG912002

GROUNDWATER REMEDIATION AT CITY OF OAKLAND MUNICIPAL SERVICES CENTER 7101 EDGEWATER DRIVE OAKLAND, CALIFORNIA

Prepared for

City of Oakland
Public Works Agency
Environmental Services Division
250 Frank H. Ogawa Plaza, Suite 5301
Oakland, CA94612

October 24, 2008

Prepared by

OTG

Enviroengineering Solutions, Inc.

464 19th Street, Suite 206
Oakland, CA 94612

under a subcontract to

Fugro West Inc.

1000 Broadway, Suite 440
Oakland, CA 94607

CITY OF OAKLAND

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Public Works Agency
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October 22, 2008

Ms. Lourdes Gonzales
Regional Water Quality Control Board –
San Francisco Bay Region
1515 Clay Street, Suite 1400
Oakland, CA 94612

Reference: RWQCB Order No. R2-2006-0075, NPDES Permit #CAG912002

Subject: Self-Monitoring Report – Third Quarter 2008
Groundwater Remediation at 7101 Edgewater Drive, Oakland, California

Dear Ms. Gonzales:

The City of Oakland is pleased to submit this Self-Monitoring Report, Third Quarter 2008, for the groundwater extraction, treatment, and discharge system at the City of Oakland Municipal Services Center located at 7101 Edgewater Drive, Oakland, California. The report has been prepared by Fugro West Inc. and OTG Enviroengineering Solutions, Inc. under a consultant service contract with the City of Oakland. No violations of RWQCB Order No. R2-2006-0075 or NPDES Permit #CAG912002 were identified during this reporting period.

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 me at (510)238-6361 if you have questions or comments.

Sincerely

Gopakumar Nair
Environmental Program Specialist

OTG EnviroEngineering Solutions, Inc.

October 24, 2008

Mr. Gopal Nair
Environmental Program Specialist
City of Oakland – PWA/ESD
250 Frank H. Ogawa Plaza, Suite 5301
Oakland, CA 94612

Reference: RWQCB Order No. R2-2006-0075, NPDES Permit #CAG912002

Subject: Self-Monitoring Report – Third Quarter 2008
Groundwater Remediation at 7101 Edgewater Drive, Oakland, CA

Dear Mr. Nair:

OTG Enviroengineering Solutions, Inc. (OTG) is pleased to submit this Self-Monitoring Report, Third Quarter 2008, for the groundwater extraction, treatment, and discharge system at the City of Oakland Municipal Services Center located at 7101 Edgewater Drive, Oakland, California. OTG conducted the work under a subcontract to Fugro West Inc. No violations of RWQCB Order No. R2-2006-0075 or NPDES Permit #CAG912002 were identified during this reporting period of time.

Certification

I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a 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 violations.

Please contact the undersigned at (510) 465-8982 if you have questions or comments.

Sincerely,
OTG EnviroEngineering Solutions, Inc.

Xinggang Tong, PhD, PE
Project Manager

cc: Mr. Glenn Young, P.G., Fugro West Inc.

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1 INTRODUCTION

The City of Oakland Municipal Services Center (MSC) is located at 7101 Edgewater Drive in Oakland, California (the Site; Figure 1). The approximately 17-acre site was originally part of a waterfront tidal marsh complex that was filled between 1950 and 1971. The City of Oakland (the City) leases the land from the Port of Oakland for use as a corporation yard. Bordering the MSC site to the west and the north is the Martin Luther King Regional Shoreline Park, which is also owned by the Port of Oakland. Damon Slough, which runs through the park, is located to the north, and commercial developments are located to the east and south.

The MSC site has been the subject of numerous environmental investigations beginning in about 1989. The suspected sources of on-site contamination include releases from underground storage tanks (USTs), gasoline and diesel fuel hydrant systems, and the floor drain waste collection pits formerly located adjacent to Building No. 5. In addition, some or all of the material used to fill the site may have been composed of waste material or contaminated fill. A comprehensive investigation conducted by Baseline in 2000 identified the existence of free-phase petroleum hydrocarbon product at four separate areas at the site, labeled as Plumes A through D on Figure 2. Baseline's investigation is documented in its *Site History and Characterization* Report (Baseline, January 2001).

Groundwater monitoring was conducted quarterly from fourth Quarter of 1989 through third quarter of 2002 and then semi-annually to current. Shallow groundwater elevation varies from 2 to 10 feet below ground surface and is partially subject to tidal influence. Shallow groundwater flow is toward the southwest to the nearest shoreline along San Leandro Bay across much of the site. In the northern portion of the MSC, groundwater flows in a more northerly direction toward the curving shoreline and Damon Slough (Baseline, January 2001)

Pilot-scale groundwater/soil vapor dual-phase extraction (DPE) tests were conducted in 2002 to enhance the removal of free-phase petroleum product from Plumes A through D (Cambria Environmental Technology, August 13, 2002 and URS Corporation, August 29, 2002). Extracted groundwater was treated on-site through two 2,000-lb granular activated carbon units connected in series and discharged to on-site storm drain in accordance with a National Pollutant Discharge Elimination System (NPDES) permit granted by the San Francisco Bay Regional Water Quality Control Board (NPDES Permit No. CAG912002). Based on the pilot test results, the City retained Cambria in May 2003 to design a full-scale product recovery and DPE system for Plumes C and D. Cambria's design was revised in October 2005 by Groundwater and Environmental Services (GES) to focus the first phase of product removal on Plume D. The final design drawings were included in Appendix A of the Startup Report (OTG, June 2006). Chemical oxidation and enhanced bioremediation through periodic injections of hydrogen peroxide have been implemented at Plumes A, B and C since July 2004.

In March 2006, the City retained URS Corporation and its subcontractor ERRG to construct GES' redesigned product recovery and DPE system in the Plume D area. A plan view of the system is presented in Figure 3. Construction was completed in early May 2006. Seven wells

within Plume D were connected to the extraction system. On May 22, 2006, the product recovery and groundwater extraction portion of the remediation system was turned on. On May 14, 2007, the DPE portion of the remediation system was turned on. Six additional extraction wells were installed within Plume D in March 2007 (URS, May 2007). They were connected to the DPE system and were brought on-line under extraction on June 11, 2007.

2. DESCRIPTION OF REMEDIATION SYSTEM

The remediation system consists of extraction of liquid (petroleum product and groundwater) and soil vapor from 13 wells located in the Plume D area, separation of petroleum product from groundwater, treatment of groundwater by activated carbon, discharge of treated water to local storm drain in accordance with the NPDES permit, treatment of soil vapor, and discharge of treated vapor to the atmosphere in accordance with an air discharge permit. A process and instrumentation diagram of the remediation system is illustrated on Figure 4. Design details were included in Appendix A of the Startup Report (OTG, June 2006).

The 13 extraction wells are: RW-D1 through RW-D11, TBW-5 and RW-1. Their locations are shown on Figure 3. Wells RW-D1 through RW-D5 were constructed in December 2001 and wells RW-D6 through RW-D11 in March 2007, specifically for remediation purposes. Wells RW-1 and TBW-5 were installed during backfilling of the excavation of former fuel hydrant lines in the early 1990s. All wells, except RW-D6 through RW-D11, were equipped with both total fluid recovery pneumatic pumps specifically designed for viscous petroleum product recovery and vacuum lines for liquid/soil vapor DPE. The pneumatic pumps were manufactured by Clean Environment Equipment in Oakland (Model # AP-Custom). An Ingersoll-Rand air compressor (model # SSR UP6-10) provides compressed air to the pneumatic pumps. All wells are piped into a high vacuum extraction unit that can produce up to 28 inches of mercury vacuum. This vacuum unit can be operated at either soil vapor extraction only mode or simultaneous soil vapor and liquid extraction mode. The pneumatic pumps and the vacuum extraction unit can be operated independently.

The liquid extracted by the pneumatic pumps and the vacuum unit is pumped into an oil/water separator (Model # AGM-3SS-90V, Hydro Quip, Inc.). Recovered oil is contained in 55-gallon drums, which are sent to an off-site oil recycling facility. Groundwater is treated through three (3) granular activated carbon (GAC) units connected in series (Model #ASC-2000, U.S.Filter/Westates Carbons) before been discharged into local storm drain. Each GAC unit contains 2,000 lbs of GAC. Figure 5 illustrates the groundwater treatment portion of the remediation system and identifies sampling ports.

A 40 hp liquid-ring vacuum pump capable of 500 actual cubic feet per minute (ACFM) and up to 28” Hg extracts soil vapor and liquid from the 13 wells. The vapor is abated by a combination of thermal and catalytic oxidizer. At low vapor organic concentrations, activated carbon can also be used for vapor abatement.

3 OPERATIONS AND MAINTENANCE

On May 22, 2006, the pneumatic pumps were turned on to initiate the remediation process. The vacuum extraction portion remained off line. Because the free-phase product appears to be a mixture of gasoline, diesel, and some other highly viscous organics (petroleum tank bottom or coal tar like material), the vacuum extraction, if turned on, will vaporize gasoline and a portion of the diesel and will make the removal of the viscous product even more difficult. The plan was to first use the pneumatic pumps to remove the free-phase product as much as practically achievable, and then to use the vacuum extraction system to enhance the removal of the remaining petroleum hydrocarbons.

The volume of free-phase product recovered by the pneumatic pumps decreased steadily from the startup in May 2006 through April 2007. On May 14, 2007, RW-D2, RW-D4 and RW-D5 were switched to vacuum DPE operation, while RW-D1, RW-D3, TBW-5 and RW-1 remained under pneumatic pump extraction. On June 11, 2007, the newly installed six wells (RW-D6 through RW-D11) were also brought on-line under DPE operations.

The groundwater extraction, treatment, and discharge system was operated intermittently during the Third Quarter 2008 due to extensive maintenance requirement. The highly viscous organics extracted has progressively clogged various parts of the extraction piping and control system. Major sections of piping and several flow control units were replaced during this quarter. Vacuum extraction oil was drained and replaced with new one, and the vacuum pump was repeatedly flushed with fresh vacuum oil in an attempt to remove deposit of the extracted viscous organics. Routine operations and maintenance (O&M) of the system were performed following the instruction of *Operation &Maintenance Manual for Groundwater Remediation System at City of Oakland Municipal Services Center, Draft* (OTG, July 2006), which included daily check of air compressor's oil & pressure levels, functions of liquid level sensors and pumps, draining condensate from air tank, removing oil from the oil/water separator, and other tasks necessary for maintaining proper functioning of the remediation system.

Monthly, quarterly, biannual, and annual groundwater and air samples were collected and analyzed from the system per the NPDES permit and the air permit. Figure 5 shows sampling ports for groundwater sample collection. Air samples were collected from the exhaust and the inlet of the DPE system. Extracted groundwater was measured on-site at the influent (prior to the carbon treatment) and at the effluent (after the carbon treatment) for temperature, pH, and electric conductivity using an Oakton pH/Con 10 meter (Serial #311648) and for turbidity using an Oakton T-100 meter (Serial #316738). Before measurement, the pH probe was calibrated with standard solutions of pH 4.00, 7.00, and 10.00; the electric conductivity probe was calibrated with 1413 ug/cm standard solution; and the turbidity meter was calibrated with standard solutions of 0.02, 20.0, 100, and 800 nephelometric turbidity units (NTUs).

Groundwater samples were analyzed by Curtis & Tompkins, Ltd of Berkeley, California, and air samples were analyzed by Torrent Laboratory, Inc., of Milpitas, California. Groundwater analytical methods are listed in Table 1. The laboratory data were found to be of acceptable quality, with qualifications as noted in the laboratory reports (Appendices A and B).

4 DISCHARGE MONITORING – THIRD QUARTER 2008

Field measured data and laboratory analysis results are summarized in the following tables:

- Table 1 – Laboratory Analytical Procedures;
- Table 2 – Operational Data and Field Measured Parameters;
- Table 3 – Petroleum Hydrocarbon Analytical Data;
- Table 4 – Inorganic Constituents Analytical Data & Fish Bioassay Results;
- Table 5 – Organic Constituents Analytical Data;
- Table 6 – Dual-Phase Extraction Vapor Monitoring Data;
- Table 7 – Petroleum Hydrocarbons Removed through Soil Vapor Extraction; and
- Table 8 – TPH removed through Groundwater Extraction, Floating Product Recovery, and Soil Vapor Extraction.

Major highlights for the Third Quarter 2008 are the following:

- Groundwater extracted by the pneumatic pumps and the DPE for this reporting period (July 1 through September 30, 2008) totaled 127,700 gallons, which was treated and discharged into the local storm drain, resulting in an average monthly flow rate of 1.187 gallons per minute (gpm) in July, 0.866 gpm in August, and 0.823 gpm in September (Table 2).
- No separate-phase floating product was recovered, Approximately 14.1 lbs of total petroleum hydrocarbons (TPH, gasoline + diesel) was removed through the extracted groundwater (dissolved in groundwater), and 380 lbs of TPH was removed through soil vapor by the DPE (Table 8). The total weight of TPH removed from Plume D this quarter was 394 lbs, of which 96% was removed by the DPE through soil vapor extracted. Since the remediation system started in May 2006, a total of 57,556 lbs, or 8,132 gallons, of TPH has been removed from Plume D (Table 8). The removed floating product is highly viscous and black in color. Its appearance does not resemble gasoline or diesel.
- Monthly monitoring was conducted on July 22, August 21, and September 26, respectively. Monthly monitoring results are summarized in Tables 2, 3, and 5.
- Effluent (treated groundwater) had pH values between 7.07 and 7.2, temperatures between 22.3 and 23.9 °C, conductivities between 11.49 and 17.61 mS/cm, and turbidities between 0.5 and 3.0 NTU (Table 2).
- TPH gas; TPH diesel; TPH motor oil; benzene, toluene, ethylbenzene, and xylenes (BTEX); and MTBE in the monthly effluent samples were all below their respective reporting limits. The reporting limit was 0.5 ug/L for BTEX, 2.0 ug/L for MTBE, 50 ug/L for TPH gas and TPH diesel, and 300 ug/L for TPH motor oil (Table 3).
- Daily mass discharges calculated based on the average daily flow rate and the quarterly monitoring data (March 14) for all inorganic constituents were significantly below their respective daily mass limits imposed by the discharge permit for the category of less than 10 gpm discharge rate (Table 4). After the first year of quarterly monitoring, these

inorganic constituents are under annual monitoring frequency for subsequent years of operations. The next monitoring event for these inorganic constituents is planned for the first quarter 2009.

- The August effluent monitoring included volatile organic compounds (VOCs) and fuel oxygenates analyzed by EPA8260, methanol and ethanol by EPA 8015, semi-VOCs by EPA8270 and EPA8310. All analyzed chemicals had concentrations below their respective reporting limits (Table 5), except tertiary Butyl Alcohol (TBA), which was detected at 130 ug/L in the effluent. Since TBA is a trigger compound listed in Table 3 of the NPDES permit and has a trigger value of 5 ug/L, it was analyzed again in September. The September samples reported TBA concentration of 59 ug/L in the influent (I-1), 70 ug/L after the first carbon unit (Btw-1), 100 ug/L after the second carbon unit (Btw-2), and 87 ug/L in the effluent (E-1). In accordance with Section VI.C.6 of the NPDES permit, TBA will be monitored again in effluent and influent in October and November. Detailed discussions for the TBA treatment options will be presented in the four quarter 2008 monitoring report.
- The rainbow trout survival rate was 100% in the 96-hour static renewal bioassay conducted for the effluent sample collected in the first quarter 2008 (Table 4). After the first year of quarterly testing, the fish bioassay is under annual monitoring schedule for subsequent years of operations. The next scheduled testing is in the first quarter 2009.
- The average concentrations for the influent (after the oil/water separator, but before the carbon treatment) for the third quarter 2008 were 1.67 mg/L TPH gas, 11.8 mg/L TPH diesel, and 0.015 mg/L benzene.

5 REFERENCES

Baseline Environmental Consulting, Site *History and Characterization*, January 2001

Cambria Environmental Technology, Inc. *TPE Pilot Test and Feasibility Report*, August 13, 2002.

California Regional Water Quality Control Board – San Francisco Bay Region, *Notice of General Permit Coverage for Discharge from the City of Oakland Municipal Service Center located at 7101 Edgewater Drive, Oakland, Alameda County, CA 94621, under the Requirements of Order No. R2-2006-0075, NPDES Permit No. CAG912002 (Fuel General Permit)*, March 12, 2007.

California Regional Water Quality Control Board – San Francisco Bay Region, *Authorization to Discharge Treated Groundwater Under the Requirements of Order No. 01-100, NPDES Permit No. CAG 912002*, April 23, 2002.

OTG Enviroengineering Solutions, Inc. *Operation & Maintenance Manual for Groundwater Remediation System at City of Oakland Municipal Services Center, Draft*, July 2006

OTG Enviroengineering Solutions, Inc. *Startup Report, Groundwater Remediation at City of Oakland Municipal Services Center*, June 2006

URS Corporation, *Results of Dual-Phase Extraction Pilot Test for Plumes A & B, City of Oakland Municipal Services Center*, August 29, 2002.

URS Corporation, Extraction Well Installation – City of Oakland Municipal Services Center Site – Plume D, May 9, 2007.

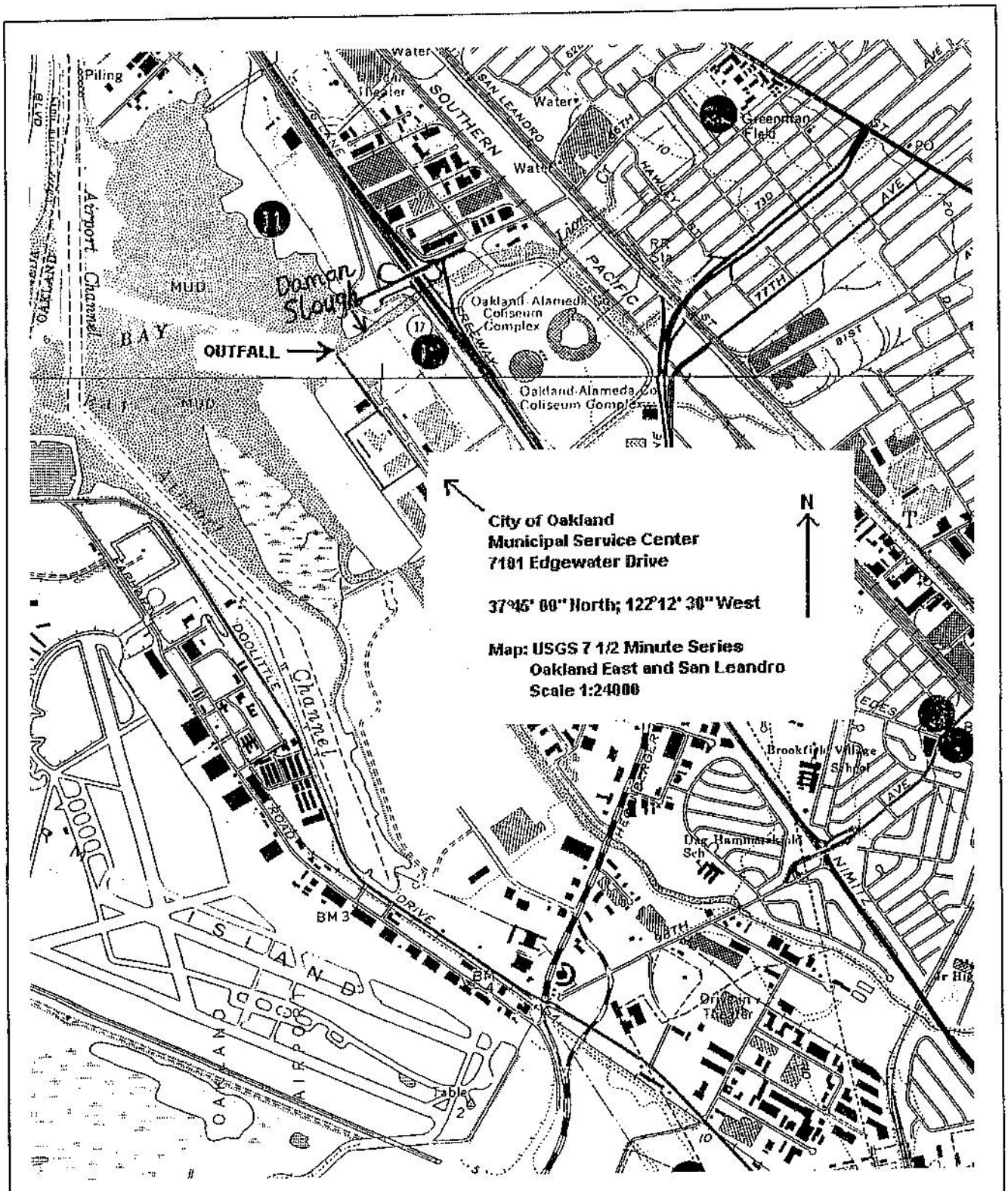


FIGURE 1 SITE LOCATION AND DISCHARGE LOCATION

EnviroEngineering Solutions, Inc.	City of Oakland Municipal Service Center 7101 EdgeWater Drive, Oakland, CA

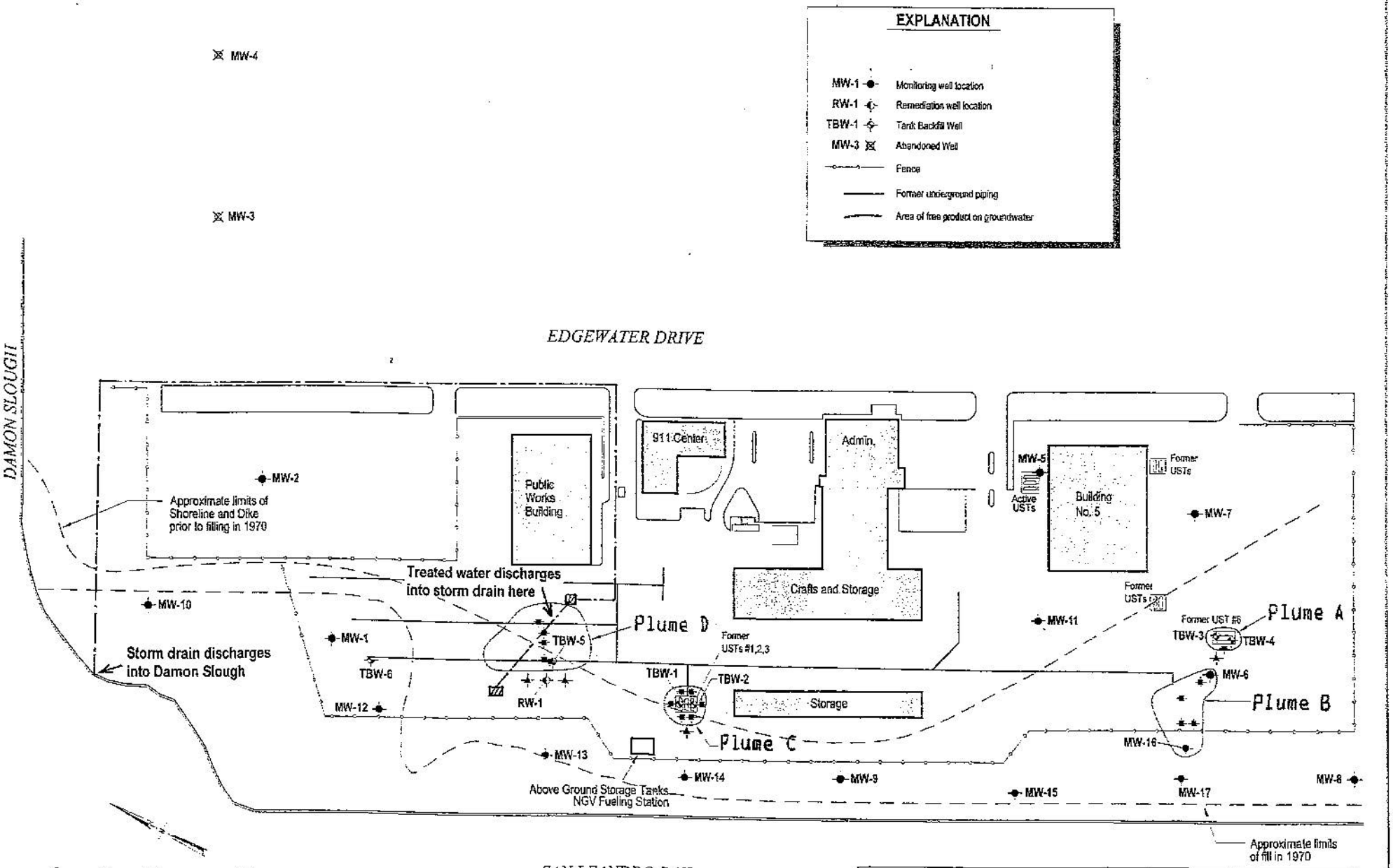


FIGURE 2 Identification of Free-Phase Petroleum Product Locations

EnviroEngineering Solutions, Inc.

City of Oakland Municipal Services Center
7101 Edgewater Drive, Oakland, CA

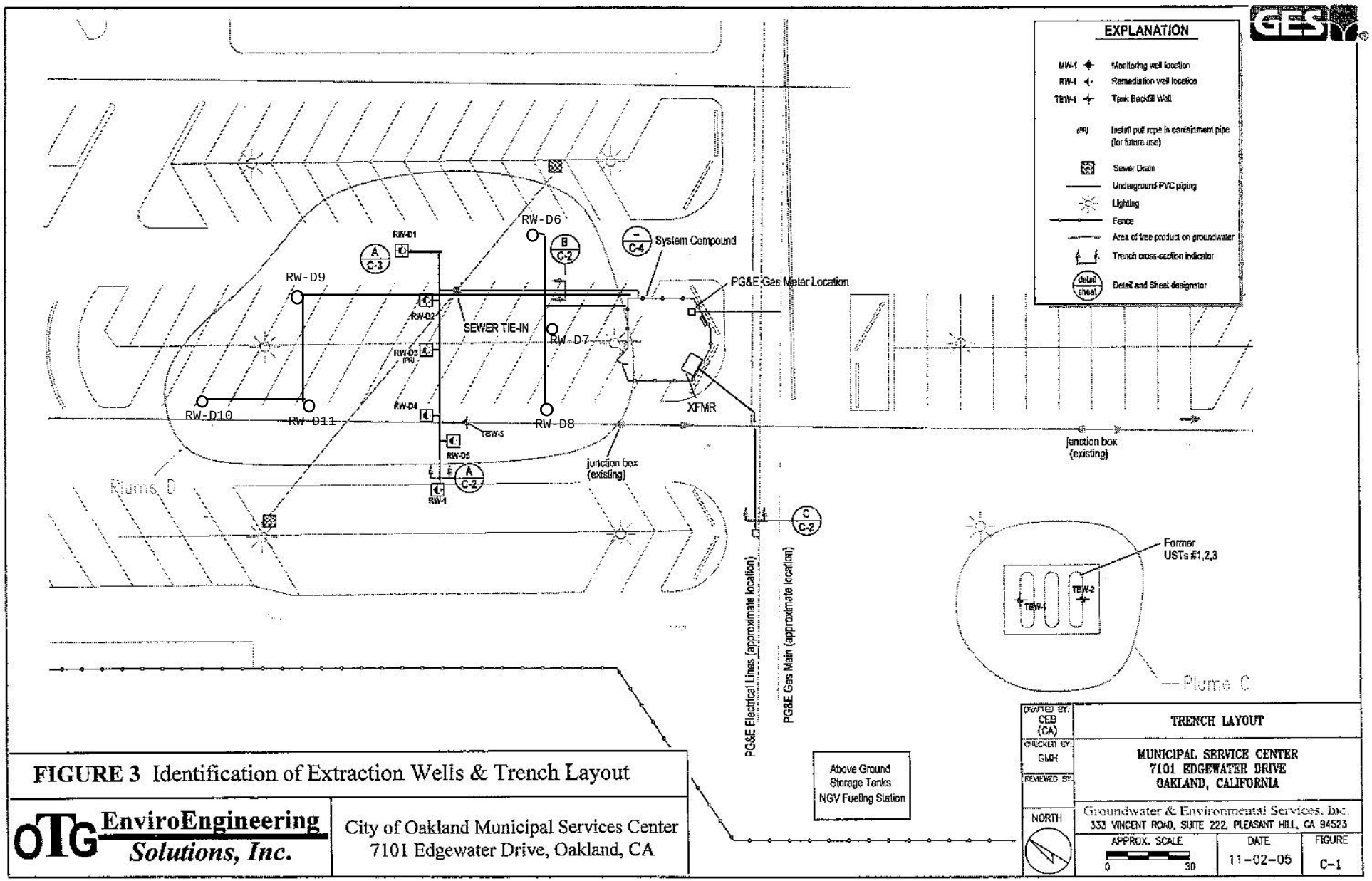
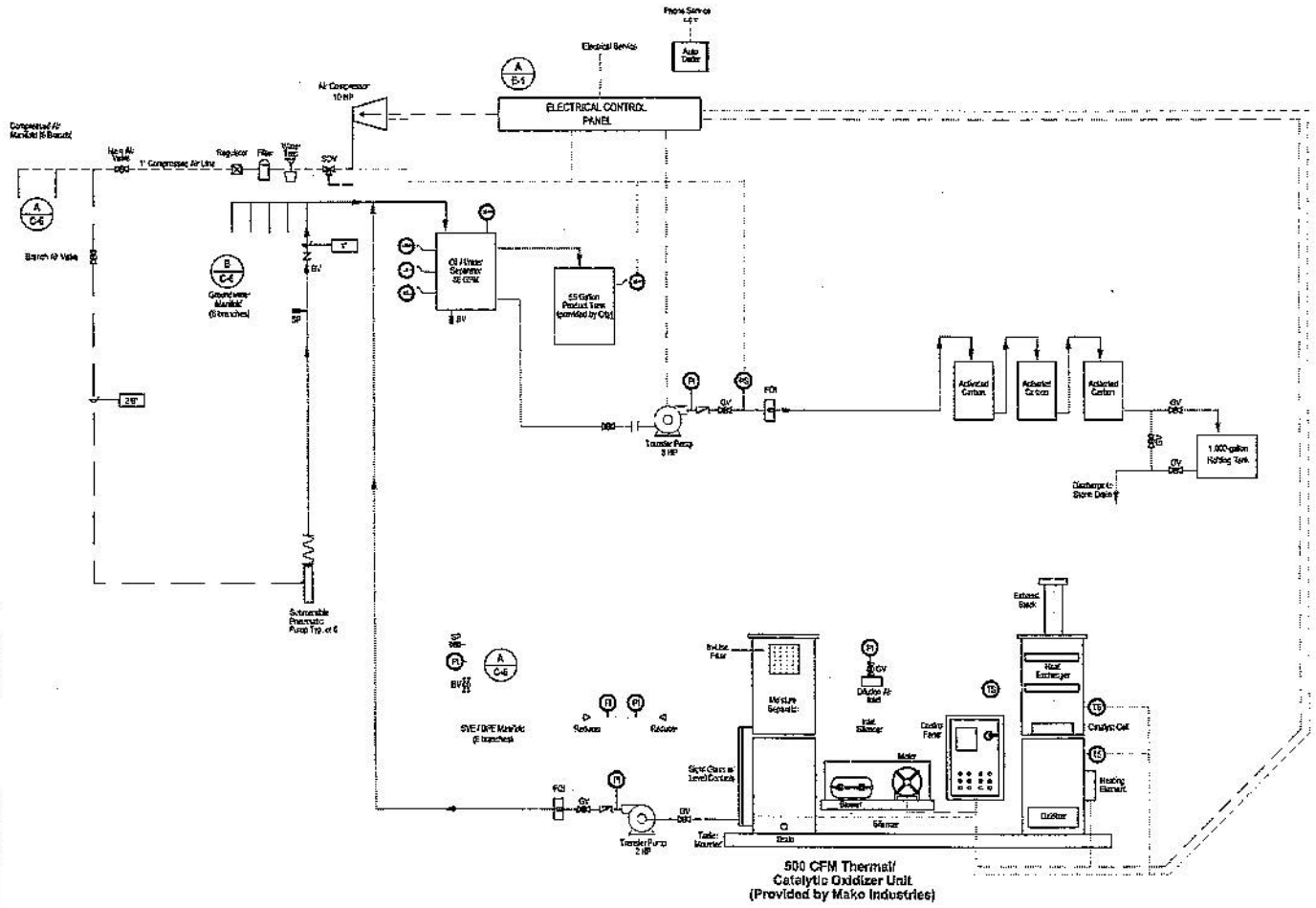


FIGURE 3 Identification of Extraction Wells & Trench Layout

EnviroEngineering Solutions, Inc.

City of Oakland Municipal Services Center
7101 Edgewater Drive, Oakland, CA



EXPLANATION

- Flowmeter/Indicator
- BV = Ball Valve
- GV = Gate Valve
- Sample Port
- Flexible Hose
- Pressure Transmitting Switch
- Flow Indicator
- Temperature Sensor
- Pressure Indicator
- Missing or Needs Replacement On Existing Equipment
- Vacuum Breaker
- Quick Disconnect
- Check Valve
- Solenoid Valve
- SVE Piping
- Electrical Control Wiring
- Electrical Power Wiring
- Compressed Air Line
- Groundwater Piping

FIGURE 4 Remediation System Process & Instrumentation Diagram

EnviroEngineering Solutions, Inc.

City of Oakland Municipal Services Center
7101 Edgewater Drive, Oakland, CA

DRAFTED BY: CEB (CA)	PROCESS AND INSTRUMENTATION DIAGRAM
CHECKED BY: GMH	MUNICIPAL SERVICE CENTER 7101 EDGEWATER DRIVE OAKLAND, CALIFORNIA
REVIEWED BY:	
NORTH	Groundwater & Environmental Services, Inc. 333 VINCENT ROAD, SUITE 222, PLEASANT HILL, CA 94523
NOT TO SCALE	DATE: 11-02-05 / FIGURE: M-1

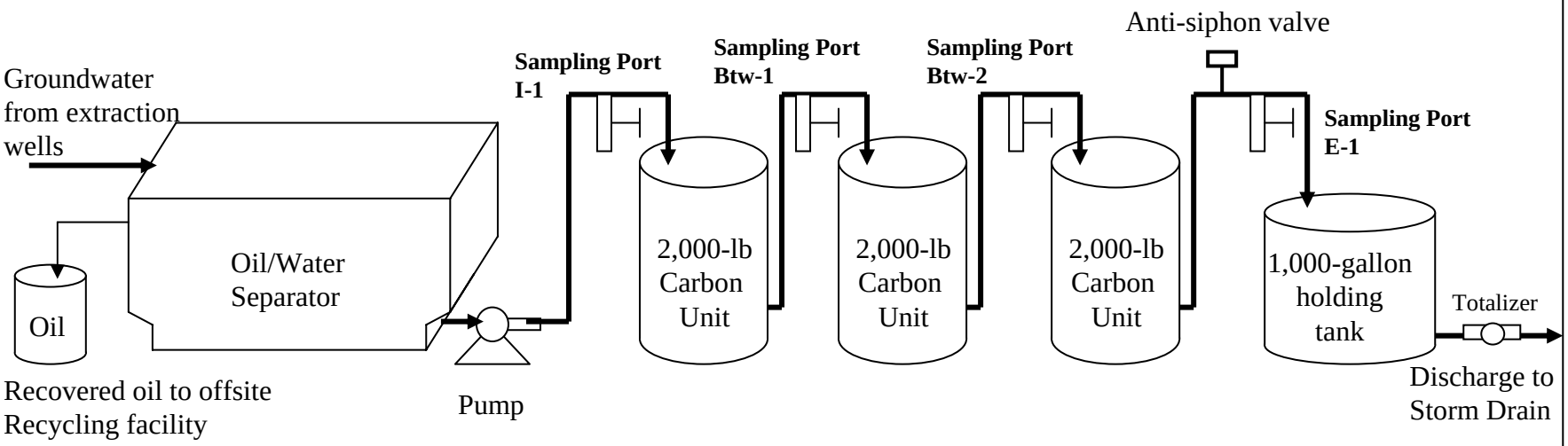


FIGURE 5 Schematic of Groundwater Treatment System and Sampling Locations

June 2006

EnviroEngineering Solutions, Inc.

City of Oakland Municipal Services Center
7101 Edgewater Drive, Oakland, CA

Table 1 - Laboratory Analytical Procedures
City of Oakland Municipal Services Center Groundwater Remediation Project

	5/22/06	5/30/06	6/26/06	7/25/06 & 8/11/06	9/5/06	10/4/06 & 12/6/06	11/8/06	1/19/07 & 2/22/07	3/14/07	4/24/07 5/17 & 6/21	7/27/07
Flow rate	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer
Turbidity	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	--
pH	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site
Temperature	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site
E. conductivity	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site
Fish bioassay			EPA/821/R-02/012		EPA/821/R-02/012		EPA/821/R-02/012		EPA/821/R-02/012		
Benzene	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B
Toluene	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B
Ethylbenzene	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B
Total xylenes	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B
MTBE	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B
TPHg & TPHd	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B
EDB	--	EPA 8260B	--	--	EPA 8260B	--	--	--	EPA 8260B	--	--
VOCs	--	EPA 8260B	--	--	EPA 8260B	--	--	--	EPA 8260B	--	--
TAME	--	EPA 8260B	--	--	EPA 8260B	--	--	--	EPA 8260B	--	--
DIPE	--	EPA 8260B	--	--	EPA 8260B	--	--	--	EPA 8260B	--	--
ETBE	--	EPA 8260B	--	--	EPA 8260B	--	--	--	EPA 8260B	--	--
TBA	--	EPA 8260B	--	--	EPA 8260B	--	--	--	EPA 8260B	--	--
Ethanol	--	EPA 8015B	--	--	EPA 8260B	--	--	--	EPA 8015B	--	--
Methanol	--	EPA 8015B	--	--	EPA 8015B	--	--	--	EPA 8015B	--	--
SVOCs	--	EPA 625	--	--	EPA 8270C	--	--	--	EPA 8270C	--	--
PAHs	--	EPA 610	--	--	EPA 8310	--	--	--	EPA 8310	--	--
Hardness	SM 2340B	SM 2340B	SM 2340B	--	SM 2340B	--	SM 2340B	--	SM 2340B	--	--
Antimony	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Arsenic	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Beryllium	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Cadmium	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Chromium	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Cr +6	EPA 7196	EPA 7196	EPA 7199	--	EPA 7199	--	EPA 7199	--	EPA 7199	--	--
Copper	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Cyanide	EPA 335.2	EPA 335.2	EPA 335.2	--	EPA 335.2	--	EPA 335.2	--	EPA 335.2	--	--
Lead	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Mercury	EPA 245.1	EPA 245.1	EPA 7470A	--	EPA 7470A	--	EPA 7470A	--	EPA 7470A	--	--
Nickel	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Selenium	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Silver	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Thallium	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--
Zinc	EPA 200.8	EPA 200.8	EPA 6020	--	EPA 6020	--	EPA 6020	--	EPA 6020	--	--

Notes:

1. pH, conductivity, and temperature were measured on site using an Oakton pH/Con 10 meter, serial #311648, calibrated daily before use.
2. Turbidity was measured on site using an Oakton T-100 meter, serial #316738, calibrated daily before use.
3. Monthly air samples are analyzed for TPHg and BTEX.

Abbreviations:

BTEX = benzene, toluene, ethylbenzene, and total xylenes
Cr +6 = chromium-VI
DIPE = diisopropyl ether
EDB = ethylene dibromide
EPA = U.S. Environmental Protection Agency
ETBE = ethyl tertiary butyl ether
MTBE = methyl tertiary butyl ether
PAHs = polycyclic aromatic hydrocarbons
SM = Standard Method
SVOCs = semivolatile organic compounds
TAME = tertiary amyl ether
TBA = tertiary butyl alcohol
TPHd = total petroleum hydrocarbons quantified as diesel
TPHg = total petroleum hydrocarbons quantified as gasoline
VOCs = volatile organic compounds

Table 1 - Laboratory Analytical Procedures
City of Oakland Municipal Services Center Groundwater Remediation Project

	8/28/07	09/19/07	10/24/07	11/21/07	12/20/07	1/21/08	2/20/08	3/18/08	4/23/08	5/20 & 6/16/08 & 7/22/08	8/21/08
Flow rate	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer	on-site totalizer
Turbidity	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site
pH	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site
Temperature	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site
E. conductivity	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site	on-site
Fish bioassay							EPA/821/R-02/012				
Benzene	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8260B
Toluene	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8260B
Ethylbenzene	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8260B
Total xylenes	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8260B
MTBE	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8021B	EPA 8260B	EPA 8021B	EPA 8260B
TPHg & TPHd	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B	EPA 8015B
EDB	EPA 8260B	EPA 8260B	--	--	--	--	--	--	--	--	EPA 8260B
VOCs	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	--	--	--	EPA 8260B
TAME	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	--	--	--	EPA 8260B
DIPE	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	--	--	--	EPA 8260B
ETBE	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	--	--	--	EPA 8260B
TBA	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	EPA 8260B	--	--	--	EPA 8260B
Ethanol	EPA 8260B	--	--	--	--	--	EPA 8015B	--	--	--	EPA 8015B
Methanol	EPA 8015B	--	--	--	--	--	EPA 8015B	--	--	--	EPA 8015B
SVOCs	EPA 8270C	--	--	--	--	--	EPA 8270C	--	--	--	EPA 8270C
PAHs	EPA 8310	--	--	--	--	--	EPA 8310	--	--	--	EPA 8310
Hardness	--	--	--	--	--	--	SM 2340B	--	--	--	--
Antimony	--	--	--	--	--	--	EPA 6020	--	--	--	--
Arsenic	--	--	--	--	--	--	EPA 6020	--	--	--	--
Beryllium	--	--	--	--	--	--	EPA 6020	--	--	--	--
Cadmium	--	--	--	--	--	--	EPA 6020	--	--	--	--
Chromium	--	--	--	--	--	--	EPA 6020	--	--	--	--
Cr +6	--	--	--	--	--	--	EPA 7199	--	--	--	--
Copper	--	--	--	--	--	--	EPA 6020	--	--	--	--
Cyanide	--	--	--	--	--	--	SM4500CN-E	--	--	--	--
Lead	--	--	--	--	--	--	EPA 6020	--	--	--	--
Mercury	--	--	--	--	--	--	EPA 7470A	--	--	--	--
Nickel	--	--	--	--	--	--	EPA 6020	--	--	--	--
Selenium	--	--	--	--	--	--	EPA 6020	--	--	--	--
Silver	--	--	--	--	--	--	EPA 6020	--	--	--	--
Thallium	--	--	--	--	--	--	EPA 6020	--	--	--	--
Zinc	--	--	--	--	--	--	EPA 6020	--	--	--	--

Table 1 - Laboratory Analytical Procedures
City of Oakland Municipal Services Center Groundwater Remediation Project

	9/26/08	
Flow rate	on-site totalizer	
Turbidity	on-site	
pH	on-site	
Temperature	on-site	
E. conductivity	on-site	
Fish bioassay		
Benzene	EPA 8260B	
Toluene	EPA 8260B	
Ethylbenzene	EPA 8260B	
Total xylenes	EPA 8260B	
MTBE	EPA 8260B	
TPHg & TPHd	EPA 8015B	
EDB	EPA 8260B	
VOCs	EPA 8260B	
TAME	EPA 8260B	
DIPE	EPA 8260B	
ETBE	EPA 8260B	
TBA	EPA 8260B	
Ethanol	--	
Methanol	--	
SVOCs	--	
PAHs	--	
Hardness	--	
Antimony	--	
Arsenic	--	
Beryllium	--	
Cadmium	--	
Chromium	--	
Cr +6	--	
Copper	--	
Cyanide	--	
Lead	--	
Mercury	--	
Nickel	--	
Selenium	--	
Silver	--	
Thallium	--	
Zinc	--	

Table 2 - Operational Data and Field-Measured Parameters
City of Oakland Municipal Services Center Groundwater Remediation Project

Date	Time	Effluent (E-1)				Influent (I-1)			Btw-1	Btw-2	Totalizer Reading (gallons)	Monthly Treated (gallons)	Monthly Ave. Rate (gpm)	Cumulative Floating Product Recovered (gallons)	Notes
		pH	Temp. (ºC)	E. cond. (mS/cm)	Turbidity (NTU)	pH	Temp. (ºC)	E. cond. (mS/cm)							
5/22/2006	7:00	--	--	--	--	--	--	--	--	--	1,389	--	--	--	Before turn on system
5/22/2006	11:25	8.30	20.4	8.81	0.20	7.12	21.4	10.20	sampled	--	2,050	--	--	--	treated water held in tank
5/22/2006	14:15	--	--	--	--	--	--	--	--	--	2,414	--	--	--	stopped, waiting for analy data
5/24/2006	13:00	--	--	--	--	--	--	--	--	--	2,414	--	--	--	system on, start discharge
5/30/2006	12:30	7.48	19.4	8.25	0.04	6.98	23.1	8.32	sampled	--	14,230	--	--	20	
5/31/2006	10:00	--	--	--	--	--	--	--	--	--	18,980	17,591	1.705	--	
6/2/2006	16:30	--	--	--	--	--	--	--	sampled	sampled	31,080	--	--	--	
6/9/2006	8:30	--	--	--	--	--	--	--	--	--	48,610	--	--	--	
6/16/2006	10:20	--	--	--	--	--	--	--	--	--	67,755	--	--	--	
6/19/2006	9:40	--	--	--	--	--	--	--	--	--	74,670	--	--	--	
6/22/2006	11:00	--	--	--	--	--	--	--	--	--	90,480	--	--	--	
6/26/2006	9:00	7.32	22.3	13.00	0.10	7.37	23.3	13.40	sampled	sampled	106,950	--	--	--	Monthly monitoring
6/30/2006	9:00	--	--	--	--	--	--	--	--	--	122,860	103,880	2.405	100	
7/5/2006	10:00	--	--	--	--	--	--	--	--	--	140,500	--	--	--	Two full drums of product
7/12/2006	9:30	--	--	--	--	--	--	--	sampled	sampled	163,230	--	--	--	
7/19/2006	9:30	--	--	--	--	--	--	--	--	--	182,740	--	--	--	
7/25/2006	9:30	7.35	23.6	12.50	0.04	7.40	24.2	13.10	sampled	--	197,030	--	--	--	Monthly monitoring
7/31/2006	19:30	--	--	--	--	--	--	--	--	--	212,010	89,150	1.997	155	
8/2/2006	19:30	--	--	--	--	--	--	--	--	--	216,790	--	--	165	Three full drums of product
8/9/2006	9:00	--	--	--	--	--	--	--	--	--	233,260	--	--	--	Morgan removed 3 drums product
8/11/2006	9:30	6.95	21.5	12.80	0.10	7.25	22.3	12.60	sampled	sampled	238,380	--	--	--	Monthly monitoring
8/14/2006	8:00	--	--	--	--	--	--	--	--	--	246,180	--	--	--	Lowered pumps in wells
8/17/2006	11:30	--	--	--	--	--	--	--	--	--	255,030	--	--	--	
8/28/2006	11:30	--	--	--	--	--	--	--	--	--	283,080	--	--	--	
9/1/2006	18:30	--	--	--	--	--	--	--	--	--	294,910	82,900	1.801	220	One full drum of product on site
9/5/2006	11:00	7.00	19.7	12.30	0.10	7.10	22.8	11.50	sampled	sampled	301,450	--	--	--	Monthly & Qtrly monitoring
9/9/2006	18:00	--	--	--	--	--	--	--	--	--	310,750	--	--	--	
9/17/2006	13:00	--	--	--	--	--	--	--	--	--	333,310	--	--	--	
9/22/2006	13:30	--	--	--	--	--	--	--	--	--	349,210	--	--	--	
9/27/2006	10:00	--	--	--	--	--	--	--	--	--	364,350	--	--	--	
9/29/2006	15:00	--	--	--	--	--	--	--	--	--	371,290	--	--	--	
10/2/2006	14:30	--	--	--	--	--	--	--	--	--	380,360	85,450	1.925	245	
10/4/2006	11:00	7.10	19.4	12.67	0.04	7.30	21.5	12.22	sampled	sampled	386,160	--	--	--	Monthly monitoring
10/9/2006	13:00	--	--	--	--	--	--	--	--	--	402,090	--	--	--	
10/16/2006	11:00	--	--	--	--	--	--	--	--	--	417,310	--	--	--	
10/23/2006	17:00	--	--	--	--	--	--	--	--	--	436,170	--	--	--	
10/27/2006	18:30	--	--	--	--	--	--	--	--	--	443,640	--	--	--	
10/30/2006	11:00	--	--	--	--	--	--	--	--	--	448,220	--	--	275	Two full drums of product
11/1/2006	10:30	--	--	--	--	--	--	--	--	--	453,340	72,980	1.689	--	
11/8/2006	11:00	7.35	18.6	10.03	0.10	7.03	21.7	10.79	sampled	sampled	461,210	--	--	--	Monthly & quarterly monitoring
11/14/2006	12:30	--	--	--	--	--	--	--	--	--	483,660	--	--	--	
11/20/2006	10:30	--	--	--	--	--	--	--	--	--	487,970	--	--	--	

Table 2 - Operational Data and Field-Measured Parameters
City of Oakland Municipal Services Center Groundwater Remediation Project

Date	Time	Effluent (E-1)				Influent (I-1)			Btw-1	Btw-2	Totalizer Reading (gallons)	Monthly Treated (gallons)	Monthly Ave. Rate (gpm)	Cumulative Floating Product Recovered (gallons)	Notes
		pH	Temp. (ºC)	E. cond. (mS/cm)	Turbidity (NTU)	pH	Temp. (ºC)	E. cond. (mS/cm)							
12/1/2006	11:30	--	--	--	--	--	--	--	--	--	499,540	46,200	1.069	295	
12/6/2006	11:00	7.10	12.3	15.40	0.08	8.45	14.8	17.70	sampled	sampled	504,500	--	--	--	Monthly monitoring
12/15/2006	10:00	--	--	--	--	--	--	--	--	--	513,050	--	--	--	
12/22/2006	14:30	--	--	--	--	--	--	--	--	--	533,130	--	--	--	
12/27/2006	10:00	--	--	--	--	--	--	--	--	--	540,340	--	--	315	2 full drums plus 40 gal product
1/2/2007	9:00	--	--	--	--	--	--	--	--	--	548,820	49,280	1.073	--	
1/10/2007	11:00	--	--	--	--	--	--	--	--	--	559,230	--	--	--	
1/19/2007	10:00	7.15	9.4	19.90	0.04	8.00	13.5	19.50	sampled	sampled	569,740	--	--	--	Monthly monitoring
1/30/2007	10:00	--	--	--	--	--	--	--	--	--	592,780	--	--	330	3 full drums product on site
2/2/2007	10:00	--	--	--	--	--	--	--	--	--	607,920	59,100	1.322	--	
2/8/2007	16:30	--	--	--	--	--	--	--	--	--	615,000	--	--	--	
2/22/2007	10:00	7.12	13.8	15.50	0.04	7.67	15.2	19.13	sampled	sampled	672,610	--	--	--	Monthly monitoring
2/28/2007	10:30	--	--	--	--	--	--	--	--	--	693,430	85,510	2.282	343	
3/9/2007	10:00	--	--	--	--	--	--	--	--	--	729,160	--	--	--	
3/14/2007	11:30	7.25	17.6	13.34	0.04	7.28	18.2	13.05	sampled	sampled	748,440	--	--	--	Monthly & quarterly monitoring
3/21/2007	12:00	--	--	--	--	--	--	--	--	--	776,540	--	--	--	
3/30/2007	10:00	--	--	--	--	--	--	--	--	--	809,690	116,260	2.693	355	3 full drums+25 gal prod on site
4/2/2007	10:00	--	--	--	--	--	--	--	--	--	819,750	--	--	--	
4/13/2007	10:00	--	--	--	--	--	--	--	--	--	849,540	--	--	--	
4/24/2007	10:00	7.45	15.7	7.10	0.08	7.30	18.6	6.90	sampled	sampled	866,110	--	--	--	
4/30/2007	19:00	--	--	--	--	--	--	--	--	--	875,415	65,725	1.455	360	3 full drums+30 gal prod on site
5/4/2007	10:30	--	--	--	--	--	--	--	--	--	880,280	--	--	--	
5/14/2007	12:00	--	--	--	--	--	--	--	--	--	--	--	--	--	DPE online with D2,D4,D5 wells
5/14/2007	18:00	--	--	--	--	--	--	--	--	--	--	--	--	--	DPE in & out vapor sampling
5/17/2007	11:30	7.22	18.0	14.15	0.04	7.55	19.8	14.54	sampled	sampled	907,175	--	--	--	Monthly monitoring
5/22/2007	11:15	--	--	--	--	--	--	--	--	--	952,055	--	--	--	DPE down for Phase II tie-in
5/31/2007	11:00	--	--	--	--	--	--	--	--	--	954,120	78,705	1.782	364	3 full drums+34 gal prod on site
6/11/2007	10:00	--	--	--	--	--	--	--	--	--	954,920	--	--	--	DPE restart with all wells
6/14/2007	10:00	--	--	--	--	--	--	--	--	--	973,900	--	--	--	
6/21/2007	10:00	7.38	19.2	15.13	0.04	7.45	20.1	15.24	sampled	sampled	991,590	--	--	--	Monthly monitoring
6/26/2007	18:40	--	--	--	--	--	--	--	--	--	1,028,960	--	--	--	DPE in & out vapor sampling
6/29/2007	18:30	--	--	--	--	--	--	--	--	--	1,047,840	93,720	2.220	368	3 full drums+38 gal prod on site
7/3/2007	11:30	--	--	--	--	--	--	--	--	--	1,051,974	--	--	--	DPE down, knockout pump fail
7/11/2007	15:00	--	--	--	--	--	--	--	--	--	1,053,090	--	--	--	Changed knockout tank pump
7/16/2007	8:15	--	--	--	--	--	--	--	--	--	1,095,560	--	--	--	DPE down, insulation worn out
7/19/2007	10:00	--	--	--	--	--	--	--	--	--	1,096,110	--	--	--	DPE unit to factory for repair
7/23/2007	11:00	--	--	--	--	--	--	--	--	--	1,096,610	--	--	--	Removed 6 gal oil fr o/w septr
7/27/2007	9:30	7.16	21.0	11.79	--	7.07	19.4	19.57	sampled	sampled	1,096,780	--	--	--	Monthly monitoring
7/31/2007	13:00	--	--	--	--	--	--	--	--	--	1,097,310	49,470	1.081	374	Re-installed DPE, started at 11a
8/7/2007	19:30	--	--	--	--	--	--	--	--	--	1,118,930	--	--	--	Removed 5 gal oily sludge fr DPE
8/17/2007	10:00	--	--	--	--	--	--	--	--	--	1,147,080	--	--	--	Morgan removed 4 drums product
8/28/2007	11:36	7.08	25.9	18.64	4.60	7.13	25.6	18.55	sampled	sampled	1,198,870	--	--	--	Monthly monitoring

Table 2 - Operational Data and Field-Measured Parameters
City of Oakland Municipal Services Center Groundwater Remediation Project

Date	Time	Effluent (E-1)				Influent (I-1)			Btw-1	Btw-2	Totalizer Reading (gallons)	Monthly Treated (gallons)	Monthly Ave. Rate (gpm)	Cumulative Floating Product Recovered (gallons)	Notes
		pH	Temp. (ºC)	E. cond. (mS/cm)	Turbidity (NTU)	pH	Temp. (ºC)	E. cond. (mS/cm)							
8/31/2007	10:30	--	--	--	--	--	--	--	--	--	1,216,800	119,490	2.686	379	
9/7/2007	9:30	--	--	--	--	--	--	--	--	--	1,263,270	--	--	--	
9/14/2007	11:30	--	--	--	--	--	--	--	--	--	1,309,960	--	--	--	Display meter blinks
9/19/2007	10:50	6.96	19.8	18.64	6.92	7.08	20.8	18.65	sampled	sampled	1,340,410	--	--	--	Monthly monitoring
9/26/2007	10:20	--	--	--	--	--	--	--	--	--	1,352,170	--	--	--	Shutdown DPE, T sensor pblm
9/28/2007	12:00	--	--	--	--	--	--	--	--	--	1,352,690	135,890	3.363	379	only pneumatic pumps on
10/2/2007	12:00	--	--	--	--	--	--	--	--	--	1,353,380	--	--	--	
10/8/2007	17:30	--	--	--	--	--	--	--	--	--	1,354,020	--	--	--	DPE on at 4:30 pm
10/17/2007	11:00	--	--	--	--	--	--	--	--	--	1,394,995	--	--	--	
10/24/2007	14:13	7.08	25.5	14.32	0.66	7.19	29.6	14.23	sampled	sampled	1,406,110	--	--	--	Monthly monitoring
10/31/2007	10:30	--	--	--	--	--	--	--	--	--	1,418,260	65,570	1.382	379	
11/7/2007	11:00	--	--	--	--	--	--	--	--	--	1,427,640	--	--	--	
11/16/2007	10:30	--	--	--	--	--	--	--	--	--	1,500,460	--	--	--	
11/21/2007	10:21	7.10	20.5	OR	0.30	7.04	20.1	OR	sampled	sampled	1,537,150	--	--	--	Monthly monitoring
11/30/2007	9:30	--	--	--	--	--	--	--	--	--	1,584,070	165,810	3.844	379	
12/7/2007	10:30	--	--	--	--	--	--	--	--	--	1,621,980	--	--	--	
12/13/2007	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Shutdown for carbon change
12/14/2007	13:00	--	--	--	--	--	--	--	--	--	--	--	--	--	DPE on at 1:00 pm
12/17/2007	11:15	--	--	--	--	--	--	--	--	--	1,643,760	--	--	--	
12/20/2007	18:30	7.20	15.1	23.50	0.10	7.20	13.7	25.20	sampled	sampled	1,658,560	--	--	--	Monthly monitoring
12/31/2007	9:00	--	--	--	--	--	--	--	--	--	1,685,340	101,270	2.270	379	
1/4/2008	14:30	--	--	--	--	--	--	--	--	--	1,701,860	--	--	--	
1/15/2008	13:00	--	--	--	--	--	--	--	--	--	1,725,190	--	--	--	
1/21/2008	9:30	--	--	--	--	--	--	--	sampled	sampled	1,742,110	--	--	--	Monthly monitoring
1/30/2008	11:30	--	--	--	--	--	--	--	--	--	1,791,840	106,500	2.457	379	
2/1/2008	15:30	--	--	--	--	--	--	--	--	--	1,799,660	--	--	--	
2/11/2008	11:00	--	--	--	--	--	--	--	--	--	1,826,520	--	--	--	
2/20/2008	11:18	6.95	17.40	12.85	1.15	6.99	20.10	12.71	sampled	sampled	1,844,380	--	--	--	Monthly/Annual Monitoring
2/29/2008	10:30	--	--	--	--	--	--	--	--	--	1,862,840	71,000	1.646	379	
3/3/2008	11:30	--	--	--	--	--	--	--	--	--	1,868,500	--	--	--	
3/14/2008	11:00	--	--	--	--	--	--	--	--	--	1,906,770	--	--	--	
3/18/2008	10:25	7.02	18.40	14.01	2.32	6.99	19.10	12.34	sampled	sampled	1,928,330	--	--	--	Monthly monitoring
3/20/2008	11:00	--	--	--	--	--	--	--	--	--	1,939,430	--	--	--	
3/31/2008	9:00	--	--	--	--	--	--	--	--	--	1,990,150	127,310	2.858	379	
4/7/2008	9:00	--	--	--	--	--	--	--	--	--	2,019,060	--	--	--	
4/14/2008	10:00	--	--	--	--	--	--	--	--	--	2,044,990	--	--	--	
4/18/2008	11:00	--	--	--	--	--	--	--	--	--	2,058,850	--	--	--	
4/23/2008	10:35	7.00	18.60	19.62	1.58	7.03	20.00	19.38	sampled	sampled	2,075,700	--	--	--	Monthly monitoring
4/30/2008	10:00	--	--	--	--	--	--	--	--	--	2,082,390	92,240	2.132	379	
5/15/2008	11:00	--	--	--	--	--	--	--	--	--	2,082,540	--	--	--	
5/20/2008	10:45	7.09	20.40	18.87	6.42	7.10	21.20	18.70	sampled	sampled	2,117,920	--	--	--	Monthly monitoring
5/29/2008	10:30	--	--	--	--	--	--	--	--	--	2,135,490	53,100	1.271	379	

Table 2 - Operational Data and Field-Measured Parameters
City of Oakland Municipal Services Center Groundwater Remediation Project

Date	Time	Effluent (E-1)				Influent (I-1)			Btw-1	Btw-2	Totalizer Reading (gallons)	Monthly Treated (gallons)	Monthly Ave. Rate (gpm)	Cumulative Floating Product Recovered (gallons)	Notes
		pH	Temp. (ºC)	E. cond. (mS/cm)	Turbidity (NTU)	pH	Temp. (ºC)	E. cond. (mS/cm)							
6/2/2008	10:30	--	--	--	--	--	--	--	--	--	2,153,070	--	--	--	
6/9/2008	10:30	--	--	--	--	--	--	--	--	--	2,167,260	--	--	--	
6/16/2008	10:45	7.08	17.50	19.69	1.37	7.15	19.10	19.33	sampled	sampled	2,190,790	--	--	--	Monthly monitoring
6/30/2008	10:30	--	--	--	--	--	--	--	--	--	2,197,580	62,090	1.347	379	
7/8/2008	10:00										2,211,120				
7/16/2008	11:00										2,222,440				
7/22/2008	15:30	7.11	22.30	17.61	0.50	7.16	27.70	19.92	sampled	sampled	2,235,190				monthly monitoring
7/31/2008	19:00										2,251,160	53,580	1.187		
8/11/2008	10:00										2,266,510				
8/21/2008	12:45	7.20	23.90	14.63	1.00	7.24	25.40	15.26	sampled	sampled	2,282,900				monthly monitoring
8/29/2008	11:00										2,286,920	35,760	0.866		
9/11/2008	11:00										2,288,400				
9/26/2008	12:20	7.07	23.50	11.49	3.00	7.12	27.30	11.85	sampled	sampled	2,308,430				monthly monitoring
9/30/2008	19:30										2,325,280	38,360	0.823		
10/6/2008	11:00										2,325,310				
		--	--	--	--	--	--	--	--	--					

Abbreviations:
"--" indicates no value obtained for given field
^{o}C = degree Celsius
DPE = dual-phase extraction
gpm = gallon(s) per minute
mS/cm = milliSiemen(s) per centimeter
NTU = nephelometric turbidity unit
OR = sample was out of range (>19.99 mS/cm)

Table 3 - Petroleum Hydrocarbon Analytical Data
City of Oakland Municipal Services Center Groundwater Remediation Project

Date	Effluent (E-1)								Influent (I-1)							
	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
	(µg/L)	(µg/L)	(ug/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Eff. Limit	50	50	50	5	5	5	5	5								
5/22/06	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**52,000**	**25,000 (h,l)**	--	**6,100**	**5,200**	**1,200**	**6,100**	ND (100)
5/30/06	ND (50)	**130 (y, a1)**	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**57,000**	**9,200 (l,y)**	--	**4,900**	**5,300**	**1,100**	**7,100**	ND (36)
6/2/06	--	ND (50)	--	--	--	--	--	--	--	--	--	--	--	--	--	--
6/26/06	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**50,000**	**10,000 (h,l,y)**	--	**4,800**	**6,900**	**1,100**	**7,200**	ND (50)
7/12/06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
7/25/06	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**60,000**	**4,000 (l,y)**	--	**5,800**	**8,800**	**1,100**	**9,000**	ND (80)
8/11/06	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**4.6 (a1a)**	**59,000**	**4,100 (l,y)**	--	**4,900**	**7,300**	**930**	**7,000**	ND (100)
9/5/06	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**44,000**	**4,800 (l,y)**	--	**4,700**	**4,800**	**1,200**	**5,400**	ND (50)
10/4/06	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**42,000**	**9,100 (h,l,y)**	--	**5,100**	**7,300**	**1,400**	**6,700**	ND (100)
11/8/06	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**32,000**	**7,800 (h,l,y)**	--	**3,100**	**3,800**	**590**	**2,880**	ND (50)
12/6/06	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**55,000**	**7,600 (h,l,y)**	--	**5,800**	**8,600**	**820**	**6,600**	ND (50)
1/19/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**49,000**	**3,600 (l,y)**	--	**3,900**	**5,400**	**390**	**5,900**	ND (50)
2/22/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**38,000**	**7,900 (l,y)**	--	**4,100**	**4,500**	**250**	**5,200**	ND (40)
3/14/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**32,000**	**7,800 (h,l,y)**	--	**2,700**	**2,900**	**310**	**4,100**	ND (13)
4/24/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**11,000**	**6,200 (h,l)**	**1,500 (l)**	**930**	**110**	**26**	**760**	ND (10)
5/17/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**84,000**	**180,000 (h,l,y)**	**27,000 (l)**	**1,100**	**3,100**	**1,200**	**8,800**	ND (100)
6/21/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**8,900**	**7,700 (h,l,y)**	**2,900 (l)**	**460**	**520**	**34**	**1,060**	ND (2.0)
7/27/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**16,000**	**9,100 (h,l,y)**	--	**250**	**770**	ND (2.5)	**2,390**	ND (10)
8/28/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**5,100**	**8,100 (h,l)**	--	**130**	**110**	**11**	**620**	ND (2.0)
9/19/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**3,000**	**12,000 (h,l)**	**6,100 (h,l)**	**78**	**68**	**13**	**230**	ND (0.5)
10/24/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**1,900**	**12,000 (y)**	**2,500**	**22**	**10**	**4.3**	**144**	ND (2.0)
11/21/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**3,600**	**9,000**	**2,700**	**120**	**150**	**2.8**	**440**	--
12/20/07	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**5,100**	**25,000**	**2,200 (y)**	**160**	**330**	**43**	**750**	ND (2.0)
1/21/08	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**14,000**	**14,000 (y)**	**1,100**	**100**	**360**	**22**	**2,250**	ND (10)
2/20/08	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND(0.5)	ND (50)	**6,100**	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
3/18/08	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**2,300**	**9,000**	**2,300**	**43**	**120**	**25**	**430**	ND (2.0)
4/23/08	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**2,300**	**14,000**	**7,000**	**19**	**66**	**9.7**	**470**	ND (0.5)
5/20/08	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**2,900**	**20,000**	**2,500**	**23**	**70**	**11**	**390**	ND (2.0)
6/16/08	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**1,400**	**6,700**	**1,100**	**9**	**23**	**9.3**	**159**	ND (2.0)
7/22/08	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	**2,300**	**9,400 (y)**	**6,300**	**16**	**37**	**5.6**	**280**	ND (2.0)
8/21/08	ND (50)	ND (50)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**1,300**	**12,000**	--	**10**	**15**	**2.2**	**137**	ND (2.0)
9/26/08	ND (50)	ND (50)	ND (300)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**1,400**	**14,000**	**5,900**	**18**	**21**	**4.4**	**168**	ND (0.5)

Table 3 - Petroleum Hydrocarbon Analytical Data
City of Oakland Municipal Services Center Groundwater Remediation Project

Date	After 1st Carbon Unit (Btw-1)								After 2nd Carbon Unit (Btw-2)							
	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE	TPHg	TPHd	TPHmo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
	(µg/L)	(µg/L)	(ug/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(ug/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Eff. Limit	50	50		5	5	5	5	5	50	50		5	5	5	5	5
5/22/06	**57 (y)**	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	--	--		--	--	--	--	--
5/30/06	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--		--	--	--	--	--
6/2/06	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	ND (50)		--	--	--	--	--
6/26/06	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
7/12/06	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**3.9 (a2)**
7/25/06	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**2.7**	--	--		--	--	--	--	--
8/11/06	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**5.1 (a2a)**	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**5.4 (a2a)**
9/5/06	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	--	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
10/4/06	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
11/8/06	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
12/6/06	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
1/19/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
2/22/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
3/14/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**3.9**	--	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
4/24/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
5/17/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
6/21/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
7/27/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
8/28/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**5.6 (a)**	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
9/19/07	ND (50)	ND (50)*		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**6.7**	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
10/24/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	**7.6**	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
11/21/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--
12/20/07	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
1/21/08	**60 (y)**	**84 (y)**		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
2/20/08	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	--	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
3/18/08	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
4/23/08	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
5/20/08	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND(2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
6/16/08	ND (50)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND(2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
7/22/08	92 (y,z)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND(2.0)	78 (y,z)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)
8/21/08	55 (y)	ND (50)		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND(2.0)	ND (50)	--		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
9/26/08	--	--	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	76 (y,z)	ND (50)	ND (300)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)

Table 3 - Petroleum Hydrocarbon Analytical Data
City of Oakland Municipal Services Center Groundwater Remediation Project

Notes:

(a1) - false positive detection, confirmed ND on 6/2/06 with samples at E-1, Btw-1, and Btw-2
(a) - Presence confirmed, but RPD between columns exceeds 40 percent
(a2) - false positive detection, confirmed ND after the first carbon unit
(a2a) - false positive detection, confirmed ND with 9/5/06 sample
(h) - heavier hydrocarbons contributed to the quantitation
(l) - lighter hydrocarbons contributed to the quantitation
(y) - sample exhibits chromatographic pattern that does not resemble standard
(z) - sample exhibits unknown single peak or peaks
* - Sample analyitical result for TPHd was erroneously switched between Btw-1 and Btw-2 in the laboratory report, due to mislabeling in the field.

Abbreviations:

"--" indicates not analyzed for constituent indicated
MTBE = methyl tertiary butyl ether
µg/L = microgram(s) per liter
ND ( ) = non-detected lab values
TPHd = total petroleum hydrocarbons quantifed as diesel
TPHg = total petroleum hydrocarbon quantified as gasoline
TPHmo = total petroleum hydrocarbon quantified as motor oil

Table 4 - Inorganic Constituents Analytical Data and Fish Bioassay Results
City of Oakland Municipal Services Center Groundwater Remediation Project

Constituent	Unit	Eff Limit	Effluent (E-1)							
		(<10 gpm)	5/22/06	5/30/06	6/26/06	9/5/06	11/8/06	3/14/07	8/28/07	2/20/2008
Antimony	µg/L	6	**2.30**	**1.80**	**0.12**	**0.13**	**0.35**	**0.15**	--	**0.47 J**
	g/day	3	**0.02137**	**0.01672**	**0.00157**	**0.00138**	**0.00243**	**0.00163**	--	**0.004216**
Arsenic	µg/L	10	**36.00**	**24.00**	**7.00**	**3.00**	**4.30**	**1.60**	--	**4.40**
	g/day	1	**0.33444**	**0.22296**	**0.09170**	**0.03177**	**0.02980**	**0.01736**	--	**0.039468**
Beryllium	µg/L	1	ND (0.35)	ND (0.5)	ND (0.055)	ND (0.12)	ND (0.12)	ND (0.17)	--	ND (1.0)
	g/day	3	--	--	--	--	--	--	--	--
Cadmium	µg/L	0.07	**1.00**	**0.50**	ND (0.14)	ND (0.17)	ND (0.17)	**0.12**	--	**0.26 J**
	g/day	1	**0.00929**	**0.00465**	--	--	--	**0.00130**	--	**0.002332**
Total Cr	µg/L	11	**3.10**	ND (0.5)	**0.62**	**0.86**	**0.78**	**0.61**	--	**0.25 J**
	g/day	2	**0.02880**	**--**	**0.00812**	**0.00911**	**0.00541**	**0.00662**	--	**0.002243**
Cr +6	µg/L	11	ND (1.0)	ND (10)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
	g/day	2	--	--	--	--	--	--	--	--
Copper	µg/L	3.1	**1.30**	**0.90**	**1.30**	**1.50**	**1.20**	ND (0.28)	--	**0.70 J**
	g/day	3	**0.01208**	**0.00836**	**0.01703**	**0.01589**	**0.00832**	--	--	**0.006279**
Lead	µg/L	2	ND (0.1)	ND (0.25)	**0.26**	**0.30**	**0.30**	**0.75**	--	**1.70**
	g/day	5	--	--	**0.00341**	**0.00318**	**0.00208**	**0.00814**	--	**0.015249**
Mercury	µg/L	0.025	ND(0.008)	ND(0.2)	ND (0.2)	ND (0.06)	ND (0.02)	**0.06**	--	ND (0.2)
	g/day	0.01	--	--	--	--	--	**0.00068**	--	--
Nickel	µg/L	8.2	**11.00**	**67.00**	**15.00**	**9.60**	**2.90**	**1.50**	--	**8.10**
	g/day	5	**0.10219**	**0.62243**	**0.19650**	**0.10166**	**0.02010**	**0.01628**	--	**0.072657**
Selenium	µg/L	5	**3.00**	**3.00**	**1.20**	ND (0.35)	**1.20**	ND (0.27)	--	ND (1.0)
	g/day	2	**0.02787**	**0.02787**	**0.01572**	--	**0.00832**	--	--	--
Silver	µg/L	1.9	ND (0.02)	ND (0.1)	ND (0.041)	ND (0.07)	ND (0.07)	ND (0.079)	--	ND (1.0)
	g/day	1	--	--	--	--	--	--	--	--
Thallium	µg/L	0.1	**0.06**	ND (0.1)	**0.21**	ND (0.03)	ND (0.03)	ND (0.3)	--	ND (1.0)
	g/day	3	**0.00056**	--	**0.00275**	--	--	--	--	--
Zinc	µg/L	35	**2.00**	ND (10)	**44.00**	**11.00**	**1.90**	**10.00**	--	**6.40**
	g/day	10	**0.01858**		**0.57640**	**0.11649**	**0.01317**	**0.10850**	--	**0.057408**
Cyanide	µg/L	1	ND (0.8)	ND (3)	ND (10)	ND (10)	ND (10)	ND (10)	--	**0.08**
	g/day		--	--	--	--	--	--	--	**0.000718**
Hardness	mg/L $CaCO_3$		**560**	**960**	**1,100**	**1,100**	**1,500**	**1,400**	--	**1,800**
Fish Bioassay -										
% Survival of Rainbow Trout			--	--	**100%**	**100%**	**100%**	**100%**	--	**100%**

Table 4 - Inorganic Constituents Analytical Data and Fish Bioassay Results
City of Oakland Municipal Services Center Groundwater Remediation Project

Constituent	Unit	Eff Limit	Influent (I-1)							
		(<10 gpm)	5/22/06	5/30/06	6/26/06	9/5/06	11/8/06	3/14/07	8/28/07	2/20/08
Antimony	µg/L		ND (60)	ND (1)	--	--	--	**1.10**	--	**0.74 J**
	g/day	3	--	--	--	--	--	**0.01194**	--	**0.006279**
Arsenic	µg/L		**7.20**	**8.50**	--	--	--	**5.40**	--	**6.1**
	g/day	1	**0.06689**	**0.07897**	--	--	--	**0.05859**	--	**0.054717**
Beryllium	µg/L		ND (2)	ND (1)	--	--	--	ND (0.17)	--	ND (1.0)
	g/day	3	--	--	--	--	--	--	--	--
Cadmium	µg/L		**34.00**	**10.00**	--	--	--	**0.33**	--	**1.6**
	g/day	1	**0.31586**	**0.09290**	--	--	--	**0.00358**	--	**0.014352**
Total Cr	µg/L		ND (10)	ND (1)	--	--	--	**0.91**	--	**0.72 J**
	g/day	2	--	--	--	--	--	**0.00987**	--	**0.006279**
Cr +6	µg/L		ND (0.5)	ND (0.5)	--	--	--	ND (0.5)	--	ND (0.5)
	g/day	2	--	--	--	--	--	--	--	--
Copper	µg/L		**250.00**	**25.00**	--	--	--	ND (0.28)	--	**9.2**
	g/day	3	**2.32250**	**0.23225**	--	--	--	--	--	**0.082524**
Lead	µg/L		**28.00**	**21.00**	--	--	--	**8.10**	--	**18**
	g/day	5	**0.26012**	**0.19509**	--	--	--	**0.08789**	--	**0.16146**
Mercury	µg/L		ND (0.2)	ND (0.2)	--	--	--	**0.05**	--	ND (0.2)
	g/day	0.01	--	--	--	--	--	**0.00051**	--	--
Nickel	µg/L		**68.00**	**19.00**	--	--	--	**2.80**	--	**6.4**
	g/day	5	**0.63172**	**0.17651**	--	--	--	**0.03038**	--	**0.057408**
Selenium	µg/L		**9.40**	ND (1)	--	--	--	**0.31**	--	**0.34 J**
	g/day	2	**0.08733**	--	--	--	--	**0.00336**	--	**0.006279**
Silver	µg/L		ND (5)	ND (1)	--	--	--	ND (0.079)	--	ND (1.0)
	g/day	1	--	--	--	--	--	--	--	--
Thallium	µg/L		**25.00**	ND (1)	--	--	--	ND (0.30)	--	ND (1.0)
	g/day	3	**0.23225**	--	--	--	--	--	--	--
Zinc	µg/L		**31.00**	**57.00**	--	--	--	**23.00**	--	**37**
	g/day	10	**0.28799**	**0.52953**	--	--	--	**0.24955**	--	**0.33189**
Cyanide	µg/L		**10.00**	**10.00**	--	--	**20.00**	**30.00**	--	**0.8**
	g/day		**0.09290**	**0.09290**	--	--	--	**0.32550**	--	**0.007176**

Abbreviations:

"--" indicates no value obtained for given field
Cr +6 = chromium-VI
g/day = grams per day
gpm = gallon(s) per minute
J = Estimated value
mg/L $CaCO_3$ = milligram(s) per liter of calcium carbonate
µg/L= microgram(s) per liter
ND ( ) = non-detected lab value

Table 5 - Organic Constituents Analytical Data
City of Oakland Municipal Services Center Groundwater Remediation Project

Effluent (E-1)																	
	Max Daily Effluent Limit	5/30/06	9/5/06	3/14/07	8/28/07	9/19/07	10/24/07	11/21/07	12/20/07	1/21/08	2/20/08	3/18/08	4/23/08	5/20/08	6/16/08	8/21/08	9/26/08
VOCs	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Benzene	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon tetrachloride	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Chloroform	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,1-Dichloroethane	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,2-Dichloroethane	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,1-Dichloroethene	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Ethylbenzene	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Methylene chloride	5	ND (0.5)	ND (0.5)	ND (10)	ND (10)	--	--	--	--	--	ND (10)	--	--	--	--	ND (10)	ND (10)
Tetrachloroethene	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Toluene	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
c-1,2-Dichloroethene	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
t-1,2-Dichloroethene	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Trichloroethene	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Vinyl chloride	1	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Total xylenes	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
MTBE	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (2.0)	ND (2.0)	ND (0.5)	ND(2.0)	ND (0.5)	ND (2.0)	ND (2.0)	ND (0.5)	ND (0.5)
Ethylene dibromide	5	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Trichlorotrifluoroethane	5	ND (5)	ND (5)	ND (5)	ND (1.0)	--	--	--	--	--	--	--	--	--	--	ND (2.0)	ND (2.0)
TPHg	50	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)
TPHd	50	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)
TAME		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
DIPE		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
ETBE		ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
TBA		ND (10)	ND (10)	ND (10)	**140**	**140**	**160**	**160**	ND (10)	ND (10)	ND (10)	--	--	--	--	**130**	**87**
Ethanol		ND (1,000)	ND (1,000)	ND (1,000)	ND (1,000)	--	--	--	--	--	ND (1,000)	--	--	--	--	ND(1,000)	
Methanol		ND (1,000)	ND (1,000)	ND (1,000)	ND (1,000)	--	--	--	--	--	ND (1,000)	--	--	--	--	ND 1,000)	
PAHs (EPA 8310 or 610)																	
All analytes		ND (1.0)	ND (0.1)	ND (0.1)	ND (0.1)	--	--	--	--	--	ND (0.1)	--	--	--	--	ND (0.09)	
SVOCs (EPA 8270C or 625)																	
All analytes		ND (5.0)	ND (9.4)	ND (9.6)	ND (9.7)	--	ND (0.5)	ND (0.5)	ND (0.5)	--	ND (9.4)	--	--	--	--	ND (9.4)	

Table 5 - Organic Constituents Analytical Data
City of Oakland Municipal Services Center Groundwater Remediation Project

Influent (I-1)																	
		5/30/06	9/5/06	3/14/07	8/28/07	9/19/07	10/24/07	11/21/07	12/20/07	1/21/08	2/20/08	3/18/08	4/23/08	5/20/08	6/16/08	8/21/08	9/26/08
VOCs		(µg/L)		(µg/L)		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		(µg/L)
Benzene		**4,900**	**--**	**2,700**	--	**78**	**22**	**120**	**160**	**100**	ND (0.5)	**43**	**19**	**23**	**9**	--	**18**
Carbon tetrachloride		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
Chloroform		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
1,1-Dichloroethane		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
1,2-Dichloroethane		ND (36)	**--**	ND (13)	--	**2.2**	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
1,1-Dichloroethene		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
Ethylbenzene		**1,100**	**--**	**310**	--	**13**	**4.3**	**2.8**	**43**	**22**	ND (0.5)	**25**	**9.7**	**11**	**9.3**	--	**4.4**
Methylene chloride		ND (36)	**--**	ND (250)	--	--	--	--	--	--	ND (10)	--	--	--	--	--	ND (10)
Tetrachloroethene		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	**--**	**--**	**--**	**--**	--	ND (0.5)
Toluene		**5,300**	**--**	**2,900**	--	**68**	**10**	**150**	**330**	**360**	ND (0.5)	**120**	**66**	**70**	**23**	--	**21**
c-1,2-Dichloroethene		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
t-1,2-Dichloroethene		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
1,1,1-Trichloroethane		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
1,1,2-Trichloroethane		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
Trichloroethene		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
Vinyl chloride		ND (36)	**--**	ND (13)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
Total xylenes		**7,100**	**--**	**4,100**	--	**230**	**144**	**440**	**750**	**2,250**	ND (0.5)	**430**	**470**	**390**	**159**	--	**168**
MTBE		ND (36)	**--**	ND (13)	--	ND (0.5)	ND (2.0)	--	ND (2.0)	ND (10)	ND (0.5)	ND (2.0)	ND (0.5)	ND (2.0)	ND (2.0)	--	ND (0.5)
Ethylene dibromide		ND (36)	**--**	ND (13)	--	ND (0.5)	--	--	--	--	--	--	--	--	--	--	ND (0.5)
Trichlorotrifluoroethane		ND (360)	**--**	ND (13)	--	--	--	--	--	--	--	--	--	--	--	--	ND (2.0)
TPHg		**57,000**	**--**	**32,000**	--	**3,000**	**1,900**	**3,600**	**5,100**	**14,000**	ND (50)	**2,300**	**2,300**	**2,900**	**1,400**	--	**1,400**
TPHd		**9,200**	**--**	**7,800**	--	**12,000 (h,l)**	**12,000 (y)**	**9,000**	**25,000**	**14,000**	**6,100**	**9,000**	**14,000**	**20,000**	**6,700**	--	**14,000**
TAME		ND (36)	**--**	ND (13)	--	ND (0.5)	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
DIPE		ND (36)	**--**	ND (13)	--	ND (0.5)	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
ETBE		ND (36)	**--**	ND (13)	--	ND (0.5)	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
TBA		ND (710)	**--**	ND (25)	--	**40**	--	--	--	--	**71**	--	--	--	--	--	**59**
Ethanol		ND(1,000)	**--**	ND(1,000)	--	--	--	--	--	--	ND (1,000)	--	--	--	--	--	
Methanol		ND(1,000)	**--**	ND(1,000)	--	--	--	--	--	--	ND (1,000)	--	--	--	--	--	
Isopropylbenzene		**40**	**--**	**16**	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	ND (0.5)
Propylbenzene		**120**	**--**	**36**	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	**0.7**
1,3,5-Trimethylbenzene		**410**	**--**	**270**	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	**36**
1,2,4-Trimethylbenzene		**1,500**	**--**	**960**	--	--	--	--	--	--	ND (0.5)	--	--	--	--	--	**60**
Naphthalene		**370**	**--**	**260**	--	--	--	--	--	--	ND (2.0)	--	--	--	--	--	**16**
PAHs (EPA 8310 or 610)																	
Benzo(a)anthracene		**1.7**	**--**	**0.14**	--	--	--	--	--	--	ND (0.1)	--	--	--	--	--	
Benzo(a)pyrene		**1.6**	**--**	**0.12**	--	--	--	--	--	--	**0.15**	--	--	--	--	--	
Benzo(g,h,i)perylene		ND (1.0)	**--**	**0.21**	--	--	--	--	--	--	**0.44**	--	--	--	--	--	
Chrysene		**2.6**	**--**	**0.17**	--	--	--	--	--	--	**0.13**	--	--	--	--	--	
Fluoranthene		**3.8**	**--**	**0.63**	--	--	--	--	--	--	ND (0.2)	--	--	--	--	--	
Naphthalene		**130**	**--**	**230**	--	--	--	--	--	--	ND (0.98)	--	--	--	--	--	
Pyrene		**3.3**	**--**	**0.56**	--	--	--	--	--	--	**0.28**	--	--	--	--	--	
Acenaphthene		ND (1.0)	**--**	**130**	--	--	--	--	--	--	ND (0.98)	--	--	--	--	--	
Acenaphthylene		ND (1.0)	**--**	**58**	--	--	--	--	--	--	ND (2.0)	--	--	--	--	--	
Fluorene		ND (1.0)	**--**	**6.4**	--	--	--	--	--	--	ND (0.2)	--	--	--	--	--	
Phenanthrene		ND (1.0)	**--**	**1.6**	--	--	--	--	--	--	ND (0.1)	--	--	--	--	--	
Anthracene		ND (1.0)	**--**	**0.13**	--	--	--	--	--	--	ND (0.1)	--	--	--	--	--	
SVOCs (EPA 8270C or 625)																	
Dimethylphthalate		**28**	--	ND (97)	--	--	--	--	--	--	ND (.94)	--	--	--	--	--	
bis(2-Ethylhexyl)phthalate		**12**	--	ND (97)	--	--	--	--	--	--	ND (.94)	--	--	--	--	--	
Naphthalene		**290**	--	**160**	--	--	--	--	--	--	ND (.94)	--	--	--	--	--	
Phenol		**13**	--	**270**	--	--	--	--	--	--	ND (.94)	--	--	--	--	--	
All other SVOCs		ND (5)	--	ND (97)	--	--	--	--	--	--	ND (.94)	--	--	--	--	--	

Table 5 - Organic Constituents Analytical Data
City of Oakland Municipal Services Center Groundwater Remediation Project

After First Carbon Unit (Btw-1)																	
	Max Daily Effluent Limit	5/30/06	9/5/06	3/14/07	8/28/07	9/19/07	10/24/07	11/21/07	12/20/07	1/21/08	2/20/08	3/18/08	4/23/08	5/20/08	6/16/08	8/21/08	9/26/08
VOCs	(µg/L)	(µg/L)	(µg/L)			(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)		(µg/L)
Benzene	5	ND (0.5)	ND (0.5)	--	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	ND (0.5)
Carbon tetrachloride	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
Chloroform	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
1,1-Dichloroethane	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
1,2-Dichloroethane	5	ND (0.5)	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--	--	--	ND (0.5)
1,1-Dichloroethene	5	ND (0.5)	--	--	--		--	--	--	--	--	--	--	--	--	--	ND (0.5)
Ethylbenzene	5	ND (0.5)	ND (0.5)	--	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	ND (0.5)
Methylene chloride	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (10)
Tetrachloroethene	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
Toluene	5	ND (0.5)	ND (0.5)	--	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	ND (0.5)
c-1,2-Dichloroethene	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
t-1,2-Dichloroethene	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
1,1,1-Trichloroethane	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
1,1,2-Trichloroethane	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
Trichloroethylene	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
Vinyl chloride	5	ND (0.5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (0.5)
Total xylenes	5	ND (0.5)	ND (0.5)	--	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	--	ND (0.5)
MTBE	13	ND (0.5)	ND (2)	--	--	**6.7**	**7.6**	--	ND (2.0)	ND (2.0)	ND (2.0)	ND (2.0)	ND (0.5)	ND (2.0)	ND (2.0)	--	ND (0.5)
Ethylene dibromide	5	ND (0.5)	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--	--	--	ND (0.5)
Trichlorotrifluoroethane	5	ND (5)	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (2.0)
TPHg	50	ND (50)	ND (50)	--	--	ND (50)	ND (50)	ND (50)	ND (50)	**60 (y)**	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	--	--
TPHd	50	ND (50)	ND (50)	--	--	ND (50)*	ND (50)	ND (50)	ND (50)	**84 (y)**	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	--	--
TAME		ND (0.5)	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--	--	--	ND (0.5)
DIPE		ND (0.5)	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--	--	--	ND (0.5)
ETBE		ND (0.5)	--	--	--	ND (0.5)	--	--	--	--	--	--	--	--	--	--	ND (0.5)
TBA		ND (10)	--	--	--	**86**	--	--	--	--	**--**	--	--	--	--	--	**70**
Ethanol		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Methanol		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
PAHs (EPA 8310 or 610)		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
SVOCs (EPA 8270C or 625)		--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

Table 5 - Organic Constituents Analytical Data
City of Oakland Municipal Services Center Groundwater Remediation Project

	After Second Carbon Unit (Btw-2)																
	Max Daily Effluent Limit	5/30/06	9/5/06	3/14/07	8/28/07	9/19/07	10/24/07	11/21/07	12/20/07	1/21/08	2/20/08	3/18/08	4/23/08	5/20/08	6/16/08	8/21/08	9/26/08
VOCs	(µg/L)		(µg/L)	(µg/L)		(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Benzene	5	--	ND (0.5)	ND (0.5)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Carbon tetrachloride	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Chloroform	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,1-Dichloroethane	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,2-Dichloroethane	5	--	ND (0.5)	ND (0.5)	--	ND (0.5)	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,1-Dichloroethene	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Ethylbenzene	5	--	ND (0.5)	ND (0.5)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
Methylene chloride	5	--	ND (0.5)	ND (10)	--	--	--	--	--	--	ND (10)	--	--	--	--	ND (10)	ND (10)
Tetrachloroethene	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Toluene	5	--	ND (0.5)	ND (0.5)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
c-1,2-Dichloroethene	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
t-1,2-Dichloroethene	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,1,1-Trichloroethane	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
1,1,2-Trichloroethane	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Trichloroethene	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Vinyl chloride	5	--	ND (0.5)	ND (0.5)	--	--	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
Total xylenes	5	--	ND (0.5)	ND (0.5)	--	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)	ND (0.5)
MTBE	13	--	ND (0.5)	ND (0.5)	--	ND (0.5)	ND (2.0)	--	ND (2.0)	ND (2.0)	ND (0.5)	ND (2.0)	ND (0.5)	ND (2.0)	ND (2.0)	ND (0.5)	ND (0.5)
Ethylene dibromide	5	--	ND (0.5)	ND (0.5)	--	ND (0.5)	--	--	--	--	--	--	--	--	--	ND (0.5)	ND (0.5)
Trichlorotrifluoroethane	5	--	ND (5)	ND (5)	--	--	--	--	--	--	--	--	--	--	--	ND (2.0)	ND (2.0)
TPHg	50	--	--	--	--	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	--	ND (50)	ND (50)	ND (50)	ND (50)	ND (50)	76 (y,z)
TPHd	50	--	--	--	--	--	--	--	--	--	--	--	--	--	--	ND (50)	ND (50)
TAME		--	ND (0.5)	ND (0.5)	--	ND (0.5)	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
DIPE		--	ND (0.5)	ND (0.5)	--	ND (0.5)	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
ETBE		--	ND (0.5)	ND (0.5)	--	ND (0.5)	--	--	--	--	ND (0.5)	--	--	--	--	ND (0.5)	ND (0.5)
TBA		--	ND (10)	**110**	--	**130**	--	--	--	--	**22**	--	--	--	--	**140**	**100**
Ethanol		--	ND(1,000)	--	--	--	--	--	--	--	--	--	--	--	--		
Methanol		--	--	--	--	--	--	--	--	--	--	--	--	--	--		
PAHs (EPA 8310 or 610)		--	--	--	--	--	--	--	--	--	--	--	--	--	--		
SVOCs (EPA 8270C or 625)		--	--	--	--	--	--	--	--	--	--	--	--	--	--		

Notes:

(h) - heavier hydrocarbons contributed to the quantitation

(l) - lighter hydrocarbons contributed to the quantitation

(y) - sample exhibits chromatographic pattern which does not resemble standard

* - Sample analytical results for TPH-d were erroneously switched between Btw-1 and Btw-2 in the laboratory analytical reports due to mislabeling in the field.

Abbreviations:

"--" indicates not analyzed for constituent indicated	PAHs = polycyclic aromatic hydrocarbons
DIPE = diisopropyl ether	SVOCs = semivolatile organic compounds
EPA = U.S. Environmental Protection Agency	TAME = tertiary amyl ether
ETBE = ethyl tertiary butyl ether	TBA = tertiary butyl alcohol
µg/L = microgram(s) per liter	TPHd = total petroleum hydrocarbons quantified as diesel
MTBE = methyl tertiary butyl ether	TPHg = total petroleum hydrocarbons quantified as gasoline
ND ( ) = non-detected lab value	VOCs = volatile organic compounds

Table 6 - Dual-Phase Extraction Vapor Monitoring Data
City of Oakland Municipal Services Center Groundwater Remediation Project

Date	Time	DPE Run-time Meter Reading (cumulative hr)	Vapor Flow Rate (1) (acfm)	Thermo Oxidizer Temp. (ºF)	Vacuum Pump		A-2 Exhaust (Effluent)					A-2 Inlet (Influent)					Notes
					Vacuum (inch Hg)	Discharge Temp (ºF)	POC (2) (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Total Xylenes (ppmv)	POC (2) (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Total Xylenes (ppmv)	
5/14/07	12:00	12.5	275	1440	15	160	1.10	0.042	0.028	0.0059	0.021	2000	18.0	21	6.5	21.4	DPE startup
5/17/07	11:25	83.9	276	1448	15	160	--	--	--	--	--	--	--	--	--	--	NPDES sampling
5/22/07	11:15	203.7	284	1551	15	160	--	--	--	--	--	--	--	--	--	--	shutdown @11:30 PhII tie-in
5/31/07	11:00	203.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
6/11/07	10:00	204	235	1438	16.5	165	--	--	--	--	--	--	--	--	--	--	re-start with all wells
6/14/07	10:00	276.5	280	1455	15	170	--	--	--	--	--	--	--	--	--	--	
6/18/07	19:00	276.7	280	1460	11.5	160	--	--	--	--	--	--	--	--	--	--	
6/21/07	10:00	328.8	276	1450	15	165	--	--	--	--	--	--	--	--	--	--	NPDES sampling
6/26/07	18:40	446.7	288	1454	11.5	160	2.76	0.063	0.060	0.0023	0.018	2410	25.0	35	4.6	28.7	
6/29/07	18:30	518.5	294	1479	14	160	--	--	--	--	--	--	--	--	--	--	
7/3/07	11:30	536.2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	knockout tank pump down
7/11/07	15:00	536.9	227	1449	17	160	--	--	--	--	--	--	--	--	--	--	changed knockout tank pump
7/16/07	8:15	630	304	1435	13	160	--	--	--	--	--	--	--	--	--	--	DPE down, insulation worn
7/19/07	10:00	630	--	--	--	--	--	--	--	--	--	--	--	--	--	--	DPE unit to factory for repair
7/23/07	11:00	630	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
7/27/07	9:30	630	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
7/31/07	13:00	633.3	289	1460	14	160	--	--	--	--	--	--	--	--	--	--	re-installed DPE, on at 11am
8/7/07	19:30	669.5	307	1506	13.5	160	--	--	--	--	--	--	--	--	--	--	removed 5 gal oily sludge
8/17/07	10:00	719.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	DPE down, cleaned vac unit
8/28/07	10:00	895.5	297	1518	14	160	1.00	0.046	0.011	0.0008	0.005	3820	27.0	24	3.1	25.4	NPDES & vapor monitoring
8/31/07	10:30	968	298	1465	13.5	160	--	--	--	--	--	--	--	--	--	--	
9/7/07	9:30	1135	302	1520	13.5	160	--	--	--	--	--	--	--	--	--	--	
9/14/07	11:30	1305	289	1467	13	160	--	--	--	--	--	--	--	--	--	--	
9/19/07	10:00	1423.5	Note (3)	1485	10	160	1.40	0.021	0.015	0.0012	0.010	2460	6.6	8.6	1.0	7.5	NPDES & vapor monitoring
9/26/07	10:20	1591.3	--	1446	15	160	--	--	--	--	--	--	--	--	--	--	DPE down, T sensor pblm
9/28/07	12:00	1591.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	only pneumatic pumps on
10/2/07	12:00	1591.7	--	--	--	--	--	--	--	--	--	--	--	--	--	--	fixed T sensor
10/8/07	17:30	1592.9	--	1490	15	160	--	--	--	--	--	--	--	--	--	--	fixed data recorder
10/17/07	11:00	1757.3	--	1486	15	160	--	--	--	--	--	--	--	--	--	--	
10/24/07	14:00	1928	--	1479	15	160	2.40	0.038	0.023	ND (0.00005)	0.011	3700	4.4	ND (0.0005)	ND (0.0005)	1.8	NPDES & vapor monitoring
10/31/07	10:30	2092.1	--	1460	15	160	--	--	--	--	--	--	--	--	--	--	
11/7/07	11:00	2261.5	--	1458	15	160	--	--	--	--	--	--	--	--	--	--	
11/16/07	10:30	2476.9	--	1482	15	160	--	--	--	--	--	--	--	--	--	--	
11/21/07	10:09	2596.4	--	1492	15	160	1.40	0.038	0.040	0.0032	0.020	2500	13.0	35	3.2	24.1	NPDES & vapor monitoring
11/30/07	9:30	2811.8	--	1459	15	160	--	--	--	--	--	--	--	--	--	--	
12/7/07	10:30	2980.8	--	1512	15	160	--	--	--	--	--	--	--	--	--	--	
12/13/07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	System shut down for carbon change
12/14/07	13:00	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	DPE on line 1:00 pm
12/17/07	11:15	3105.8	--	1466	15	160	--	--	--	--	--	--	--	--	--	--	
12/20/07	11:00	3184.9	--	1503	15	160	3.11	0.110	0.086	0.0087	0.063	6018	33.0	69	8.6	83.0	NPDES & vapor monitoring
12/31/07	9:00	3439.3	--	1450	15	160	--	--	--	--	--	--	--	--	--	--	
1/4/08	14:30	3540.8	--	1452	15	160	--	--	--	--	--	--	--	--	--	--	
1/15/08	13:00	3753.5	--	1452	15	160	--	--	--	--	--	--	--	--	--	--	down on 1/11, restarted
1/21/08	9:30	3894	--	1458	15	160	6.86	0.091	0.190	0.0230	0.282	317	11.0	52	8.5	126.0	NPDES & vapor monitoring
1/30/08	11:30	4112	--	1459	15	160	--	--	--	--	--	--	--	--	--	--	D9 & D11 open only
2/1/08	15:30	4164	--	1460	16	160	--	--	--	--	--	--	--	--	--	--	
2/11/08	11:00	4399.5	--	1460	15	160	--	--	--	--	--	--	--	--	--	--	D10 & D11 open only
2/20/08	11:30	4616	--	1455	15	160	0.73	0.022	0.011	ND (0.00005)	0.007	273	0.5	ND (0.0005)	ND (0.0005)	0.5	NPDES & vapor monitoring
2/29/08	10:30	4831	--	1460	15	160	--	--	--	--	--	--	--	--	--	--	

Table 6 - Dual-Phase Extraction Vapor Monitoring Data
City of Oakland Municipal Services Center Groundwater Remediation Project

Date	Time	DPE Run-time Meter Reading (cumulative hr)	Vapor Flow Rate (1) (acfm)	Thermo Oxidizer Temp. (ºF)	Vacuum Pump		A-2 Exhaust (Effluent)					A-2 Inlet (Influent)					Notes
					Vacuum (inch Hg)	Discharge Temp (ºF)	POC (2) (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Total Xylenes (ppmv)	POC (2) (ppmv)	Benzene (ppmv)	Toluene (ppmv)	Ethylbenzene (ppmv)	Total Xylenes (ppmv)	
3/3/08	11:30	4904	--	1462	15	160	--	--	--	--	--	--	--	--	--	--	
3/14/08	11:00	5166.5	--	1455	15	160	--	--	--	--	--	--	--	--	--	--	D2 & D4 open only
3/18/08	10:00	5261.5	--	1460	15	160	2.00	0.062	0.064	0.0059	0.093	450	5.8	12	1.7	31.9	NPDES & vapor monitoring
3/20/08	11:00	5310.5	--	1462	15	160	--	--	--	--	--	--	--	--	--	--	D2, D4 & D7 open
3/31/08	9:00	5572.5	--	1460	15	160	--	--	--	--	--	--	--	--	--	--	
4/7/08	9:00	5740.5	--	1455	15	160	--	--	--	--	--	--	--	--	--	--	
4/14/08	10:00	5909.5	--	1452	15	160	--	--	--	--	--	--	--	--	--	--	
4/18/08	11:00	6006.5	--	1445	15	160	--	--	--	--	--	--	--	--	--	--	
4/24/08	10:30	6126	--	1455	15	160	2.12	0.057	0.055	0.0040	0.109	1280	2.4	10	1.0	42.0	
4/30/08	10:00	6174	--	--	--	--	--	--	--	--	--	--	--	--	--	--	down for maintenance
5/15/08	11:00	6175	--	1460	15	200	--	--	--	--	--	--	--	--	--	--	
5/20/08	10:31	6294.5	--	1460	15.5	180	2.10	0.045	0.043	0.0031	0.091	1200	3.0	9.3	ND (0.0005)	40.0	
5/29/08	10:30	6350.5	--	1461	15	180	--	--	--	--	--	--	--	--	--	--	
6/2/08	10:30	6446.5	--	1452	15	180	--	--	--	--	--	--	--	--	--	--	
6/9/08	10:30	6552.2	--	1470	15	160	--	--	--	--	--	--	--	--	--	--	
6/16/08	10:45	6720.2	--	1463	15	180	2.30	0.026	0.030	0.0023	0.071	790	1.1	3.5	ND (0.0005)	16.4	
6/30/08	10:30	6768.3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	down for repair
7/8/08	10:00	6791.3		1450	16	170											frequent overheating
7/16/08	11:00	6805.8		1471	16	160											
7/22/08	15:30	6828.8		1467	17	180	0.61	0.0083	0.011	ND (0.002)	0.031	490	0.65	1.3	0.61	9.1	
7/31/08	19:00	6879.4		1462	17	180											
8/11/08	10:00	6939.3		1471	16	170											
8/21/08	12:45	6972.8		1463	15	170	0.74	0.014	0.0073	ND (0.001)	0.023	430	0.95	1.6	ND (0.1)	9.1	
8/29/08	11:00	6977.4															down for repair
9/11/08	11:00	6978.5		1474	16.5	180											radiator clogged by viscous tar
9/26/08	12:20	7007.6		1460	17	160											
9/30/08	19:30	7035.1															down for repair
10/6/08	11:00	7035.2		1463	16	160											

Notes:
Note (1) - Measured at the discharge side of the vacuum pump, the pressure is approximately 1.05 atm.
Note (2) - POC = precursor organic compound measured as TPH volatiles in vapor.
Note (3) - The flow sensor was coated with highly viscous material and resulted in inaccurate readings; vaccuum readings were much more stable and accurate.

Abbreviations:
"--" indicates no value obtained for given field
acfm = actual cubic foot per minute
atm = standard atmosphere
DPE = dual-phase extraction
^{o}F = degree Fahrenheit
Hg = mercury
ND ( ) = non-detected lab value
ppmv = parts per million volume

Table 7 - Petroleum Hydrocarbons Removed through Soil Vapor Extraction
City of Oakland Municipal Services Center Groundwater Remediation Project

Month	DPE Run Time (hr)	Ave Flow (acfm)	Flow Pressure (atm)	Flow Temp. (^{o}F)	Ave Flow (scfm)	Total Volume (std m^3)	TPHg (ppmv)	TPHg (mg/m^3)	TPHg Removed (lb)	Influent Benzene Conc. (ppmv)	Influent Benzene Conc. (mg/m^3)	Benzene Removed (lb)
May-07	191.2	278	1.05	160	249	80,756	2,000	7,033	1,252	18	58	10
Jun-07	314.8	276	1.05	165	245	130,948	2,410	8,475	2,447	25	81	23
Jul-07	114.8	273	1.05	160	244	47,616	--	10,738	1,127	--	85	9
Aug-07	334.7	301	1.05	160	269	153,062	3,820	13,000	4,387	27	88	30
Sep-07	623.7	530	0.46	75	241	255,000	2,460	8,700	4,891	6.6	21	12
Oct-07	500.4	535	0.5	75	264	224,477	3,700	13,000	6,433	4.4	14	7
Nov-07	719.7	535	0.5	75	264	322,853	2,500	8,750	6,228	13	41	29
Dec-07	627.5	535	0.5	75	264	281,493	6,018	21,200	13,156	33	110	68
Jan-08	672.7	535	0.5	75	264	301,769	317	11,140	7,411	11	34	23
Feb-08	719	535	0.5	75	264	322,539	273	960	683	0.46	1.5	1
Mar-08	741.5	535	0.5	75	264	332,633	450	1,600	1,173	5.8	18	13
Apr-08	601.5	535	0.5	75	264	269,830	1,280	4,500	2,677	2.4	7.7	5
May-08	176.5	535	0.5	75	264	79,177	1,200	4,200	733	3	9.5	1.7
Jun-08	417.8	535	0.5	75	264	187,423	790	2,800	1,157	1.1	3.6	1.5
Jul-08	111.1	540	0.45	75	240	45,274	490	1,700	170	0.7	2.1	0.2
Aug-08	98	540	0.45	75	240	39,936	430	1,500	132	1.0	3.1	0.3
Sep-08	57.7	540	0.45	75	240	23,513	430	1,500	78	1.0	3	0.2

Notes:
Flow rates from May through August 2007 were recorded by the flow meter at the vacuum discharge side.
Flow rates after August 2007 were based on pump vacuum reading and pump performance chart for acfm.

Abbreviations
"--" indicates not analyzed for constituent indicated
acfm = actual cubic foot per minute
atm = standard atmosphere
DPE = dual-phase extraction
^{o}F = degree Fahrenheit
hr = hours(s)
lb = pound(s)
m^3 = cubic meter
mg/m^3 = milligram(s) per cubic meter
ppmv = parts per million volume
scfm = standard cubic foot per minute
TPHg = total petroleum hydrocarbons quantified as gasoline

Table 8 - TPH Removed through Groundwater Extraction, Floating Product Recovery, and Soil Vapor Extraction
City of Oakland Municipal Services Center Groundwater Remediation Project

Month	Groundwater	TPHg	TPHd	Mass Removed through Groundwater Extraction			Floating Product	TPH Removed	Total Monthly	Total Monthly	Cumulative Product Removed	
	Removed	Influent	Influent	As TPHg	As TPHd	Combined	Recovered	By Vapor	Removal	Removal	(floating + dissolved + vapor)	
	(gallons)	(mg/L)	(mg/L)	(lb)	(lb)	(lb)	(gallons)	(lb)	(gallons)	(lb)	(gallons)	(lb)
May-06	17,591	54.5	17.1	7.98	2.50	10.49	20	0	21.48	152	21.48	152
Jun-06	103,880	50	10	43.25	8.65	51.90	80	0	87.33	618	108.81	770
Jul-06	89,150	60	4	44.54	2.97	47.51	65	0	71.71	508	180.53	1,278
Aug-06	82,900	59	4.1	40.73	2.83	43.56	55	0	61.15	433	241.68	1,711
Sep-06	85,450	44	4.8	31.31	3.42	34.72	25	0	29.91	212	271.59	1,922
Oct-06	72,980	42	9.1	25.52	5.53	31.05	30	0	34.39	243	305.97	2,166
Nov-06	46,200	32	7.8	12.31	3.00	15.31	20	0	22.16	157	328.14	2,323
Dec-06	49,280	55	7.6	22.57	3.12	25.69	20	0	23.63	167	351.77	2,490
Jan-07	59,100	49	3.6	24.11	1.77	25.89	15	0	18.66	132	370.42	2,622
Feb-07	85,510	38	7.9	27.06	5.63	32.68	13	0	17.62	125	388.04	2,747
Mar-07	116,260	32	7.8	30.98	7.55	38.53	12	0	17.44	123	405.49	2,870
Apr-07	65,725	11	6.2	6.02	3.39	9.41	5	0	6.33	45	411.82	2,915
May-07	78,705	84	180	55.05	117.97	173.02	4	1,252	205.35	1,453	617.16	4,368
Jun-07	93,720	8.9	7.7	6.95	6.01	12.95	4	2,447	351.50	2,488	968.66	6,856
Jul-07	49,470	16	9.1	6.59	3.75	10.34	6	1,127	166.71	1,180	1,135.37	8,036
Aug-07	119,490	5.1	8.1	5.07	8.06	13.13	5	4,387	626.62	4,435	1,761.99	12,471
Sep-07	135,890	3	12	3.39	13.58	16.97	0	4,891	693.42	4,908	2,455.41	17,379
Oct-07	65,570	1.9	12	1.04	6.55	7.59	0	6,433	909.95	6,441	3,365.36	23,820
Nov-07	165,810	3.6	9	4.97	12.43	17.40	0	6,228	882.37	6,245	4,247.73	30,065
Dec-07	101,270	5.1	25	4.30	21.08	25.38	0	13,156	1862.32	13,181	6,110.05	43,247
Jan-08	106,500	14	14	12.42	12.42	24.83	0	7,411	1050.56	7,436	7,160.61	50,682
Feb-08	71,000	ND (50)	6.1	14.78	3.61	18.39	0	683	99.09	701	7,259.71	51,384
Mar-08	127,310	2.3	9	2.44	9.54	11.98	0	1,173	167.42	1,185	7,427.13	52,569
Apr-08	92,240	2.3	14	1.77	10.75	12.52	0	2,677	379.97	2,689	7,807.10	55,258
May-08	53,100	2.9	20	1.28	8.84	10.13	0	733	105.01	743	7,912.10	56,001
Jun-08	62,092	1.4	6.7	0.72	3.46	4.19	0	1,157	164.05	1,161	8,076.15	57,163
Jul-08	53,580	2.3	9.4	1.03	4.19	5.22	0	170	24.71	175	8,100.86	57,337
Aug-08	35,760	1.3	12	0.39	3.57	3.96	0	132	19.22	136	8,120.08	57,474
Sep-08	38,360	1.4	14	0.45	4.47	4.92	0	78	11.68	83	8,131.76	57,556

Note: Morgan Environmental disposed of three 55-gallon drums of recovered product on 8/9/06 and four 55-gallon dums of product on 8/17/07.
Non-detected lab values were reported as half the reporting limit in equations.

Abbreviations:
lb = pounds(s)
mg/L = milligram(s) per liter
TPH = total petroleum hydrocarbons
TPHd= total petroleum hydrocarbons quantified as diesel
TPHg= total petroleum hydrocarbons quantified as gasoline

APPENDIX A

Laboratory Analytical Reports for Groundwater Samples

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710. Phone (510) 486-0900

Laboratory Job Number 204810
ANALYTICAL REPORT

OTG Enviroengineering Solutions, Inc
464 19th Street Suite 206
Oakland, CA 94612

Project : 080AK02.1000
Location : MSC Remediation
Level : II

Sample ID	Lab ID
E-1	204810-001
BTW-2	204810-002
BTW-1	204810-003
I-1	204810-004

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 08/01/2008
Project Manager

Signature: _____ Date: 08/08/2008
Senior Program Manager

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 204810

Project No.: 080AK02.1000
Project Name: MSC Remediation
Project P.O.:
Turnaround Time: 5-day

Sampler: X. Tong
Report To: Xinggang Tong
Company: OTG Environengineering Solutions Inc
Telephone: (510) 465-8982
Fax: email: xtong@otgenv.com

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	Analysis: TPH gas, BTEX & MTBE	TPH diesel with silica gel cleanup	TPH diesel & motor oil
1	E-1	7/22/08, 2:20pm		X		4	X			X	X	X	
2	BfW-2	7/22/08, 2:25pm		X		3	X			X	X		
3	BfW-1	7/22/08, 2:30pm		X		4	X			X	X	X	
4	I-1	7/22/08, 2:40pm		X		4	X			X	X		X

Notes:

SAMPLE RECEIPT
☒ Intact ☒ Cold
☒ On Ice ☐ Ambient

Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:
7/23/08 10:15 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
7/23/08 10:15am DATE / TIME
DATE / TIME
DATE / TIME

SIGNATURE

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	204810	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000		
Matrix:	Water	Sampled:	07/22/08
Units:	ug/L	Received:	07/23/08
Diln Fac:	1.000	Analyzed:	07/24/08
Batch#:	140677		

Field ID: E-1 Lab ID: 204810-001
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	105	69-140	EPA 8015B
Bromofluorobenzene (FID)	120	73-144	EPA 8015B
Trifluorotoluene (PID)	83	60-146	EPA 8021B
Bromofluorobenzene (PID)	98	65-143	EPA 8021B

Field ID: BTW-2 Lab ID: 204810-002
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	78 Y Z	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	102	69-140	EPA 8015B
Bromofluorobenzene (FID)	115	73-144	EPA 8015B
Trifluorotoluene (PID)	82	60-146	EPA 8021B
Bromofluorobenzene (PID)	94	65-143	EPA 8021B

Y= Sample exhibits chromatographic pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	204810	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000		
Matrix:	Water	Sampled:	07/22/08
Units:	ug/L	Received:	07/23/08
Diln Fac:	1.000	Analyzed:	07/24/08
Batch#:	140677		

Field ID: BTW-1 Lab ID: 204810-003
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	92 Y Z	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	102	69-140	EPA 8015B
Bromofluorobenzene (FID)	112	73-144	EPA 8015B
Trifluorotoluene (PID)	81	60-146	EPA 8021B
Bromofluorobenzene (PID)	92	65-143	EPA 8021B

Field ID: I-1 Lab ID: 204810-004
Type: SAMPLE

Analyte	Result	RL	Analysis
Gasoline C7-C12	2,300	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	16	0.50	EPA 8021B
Toluene	37	0.50	EPA 8021B
Ethylbenzene	5.6	0.50	EPA 8021B
m,p-Xylenes	150	0.50	EPA 8021B
o-Xylene	130	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	125	69-140	EPA 8015B
Bromofluorobenzene (FID)	114	73-144	EPA 8015B
Trifluorotoluene (PID)	90	60-146	EPA 8021B
Bromofluorobenzene (PID)	94	65-143	EPA 8021B

Y= Sample exhibits chromatographic pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	204810	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000		
Matrix:	Water	Sampled:	07/22/08
Units:	ug/L	Received:	07/23/08
Diln Fac:	1.000	Analyzed:	07/24/08
Batch#:	140677		

Type: BLANK Lab ID: QC452380

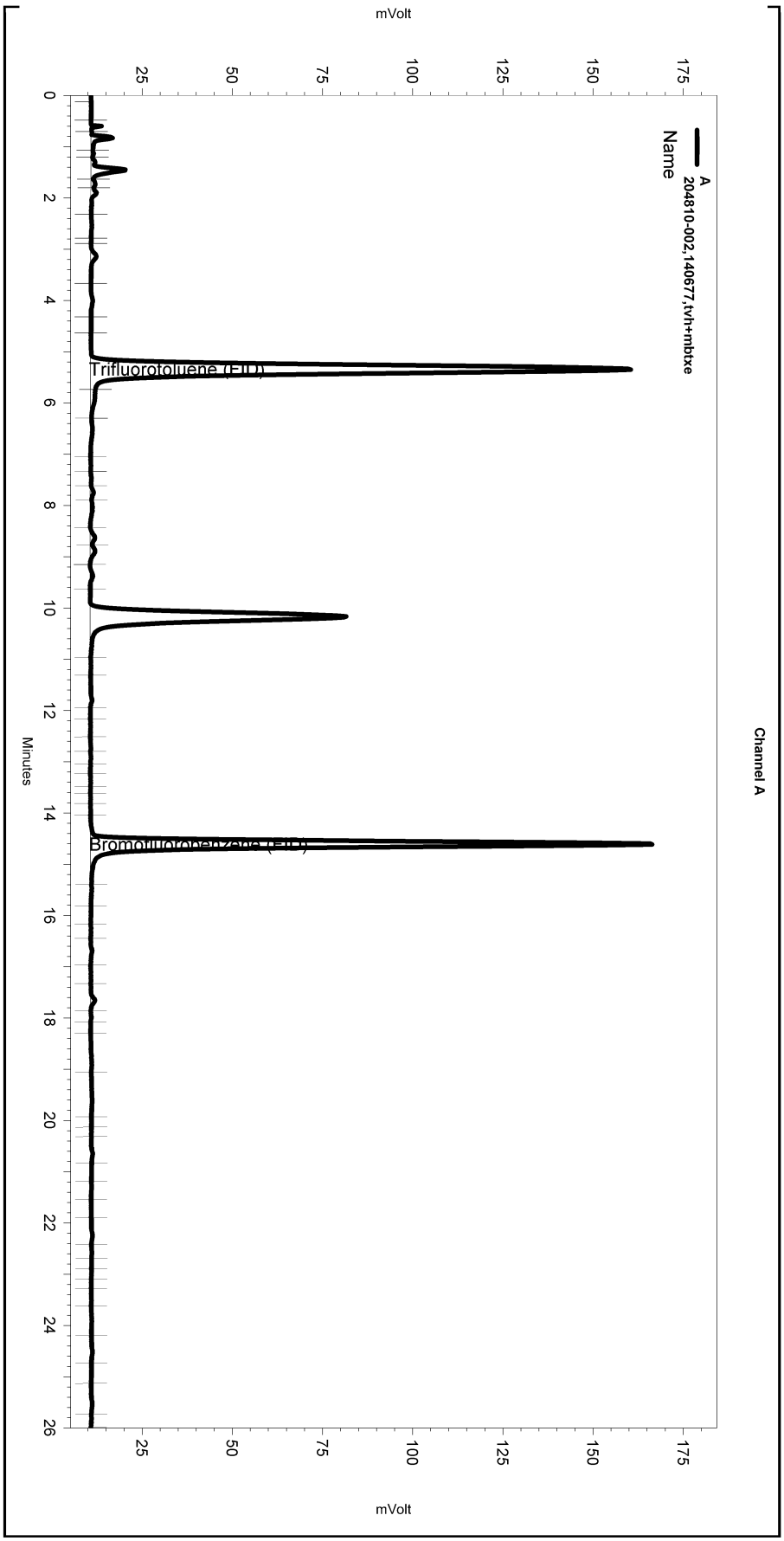
Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	105	69-140	EPA 8015B
Bromofluorobenzene (FID)	111	73-144	EPA 8015B
Trifluorotoluene (PID)	83	60-146	EPA 8021B
Bromofluorobenzene (PID)	91	65-143	EPA 8021B

Y= Sample exhibits chromatographic pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC07\Sequence\206.seq**
Sample Name: **204810-002,140677,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\206_020**
Instrument: GC07 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe176.met

Software Version 3.1.7
Run Date: 7/24/2008 8:37:18 PM
Analysis Date: 7/25/2008 4:07:23 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.3



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No items selected for this section

---< A >---

No items selected for this section

Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
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Yes	Threshold	0	0	50

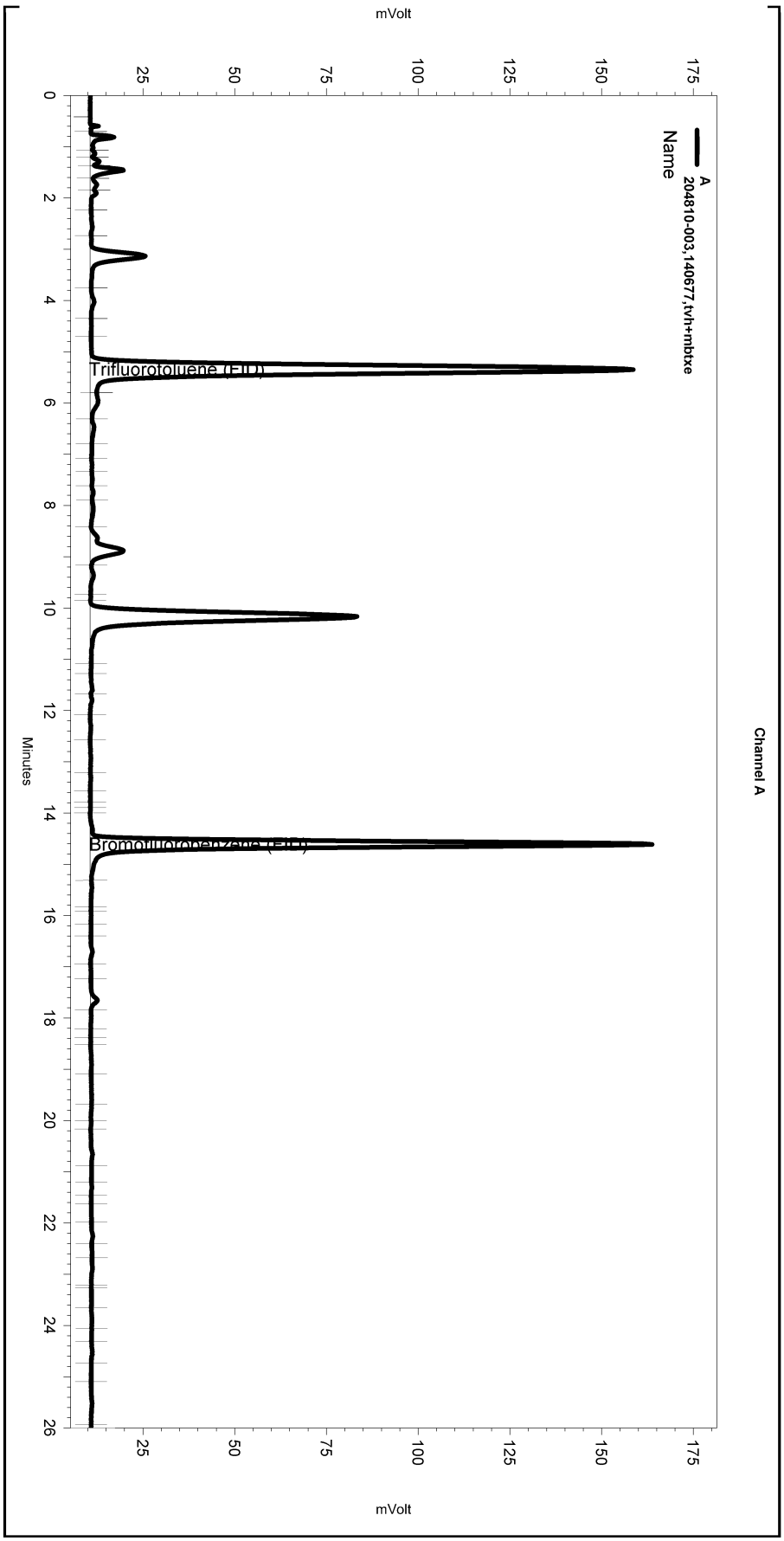
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\206_020

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.739	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC07\Sequence\206.seq**
Sample Name: **204810-003,140677,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\206_021**
Instrument: GC07 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe176.met

Software Version 3.1.7
Run Date: 7/24/2008 9:14:07 PM
Analysis Date: 7/25/2008 4:07:27 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.3



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
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Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\206_021

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
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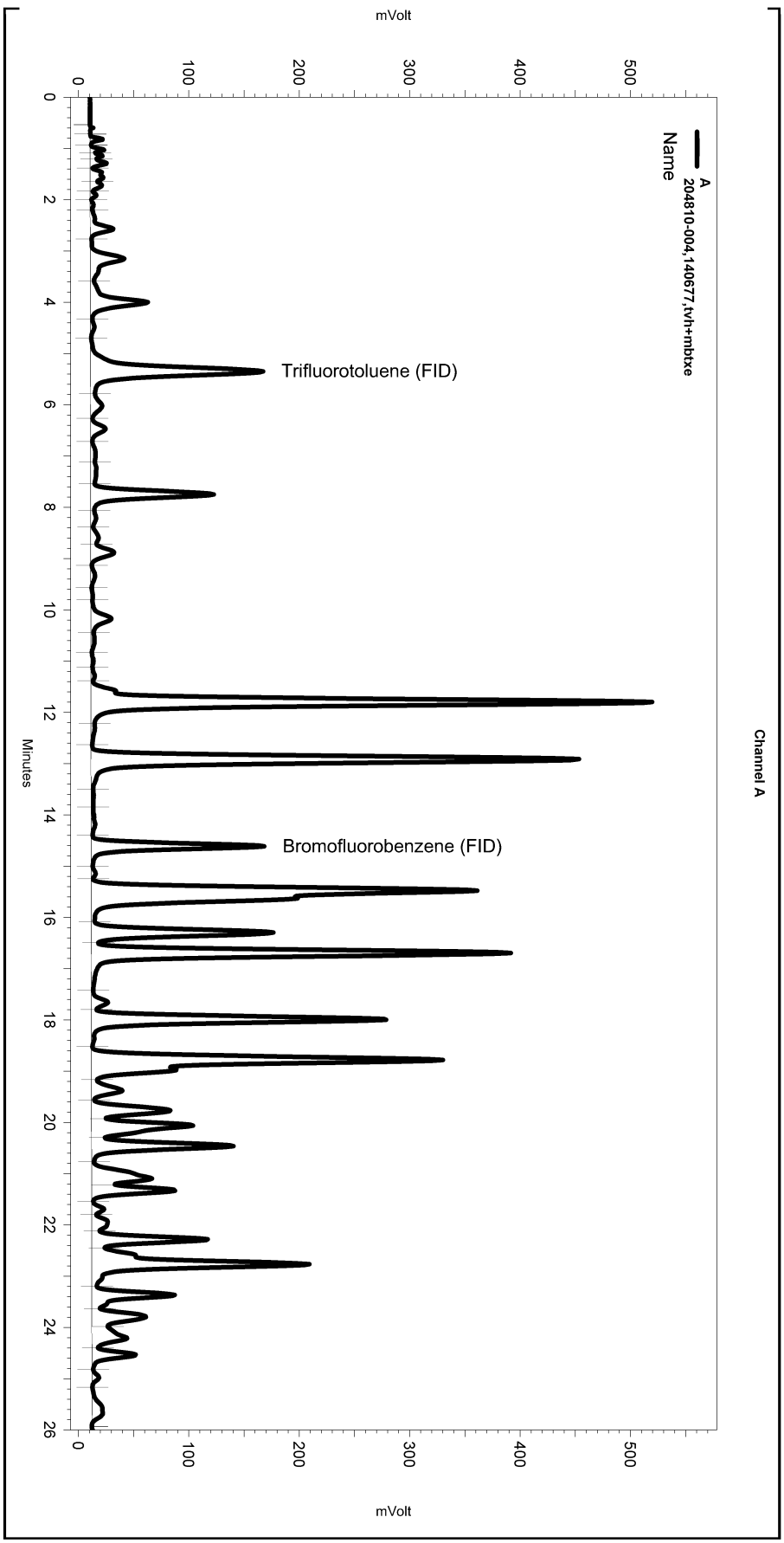
Sample Name: **204810-004,140677,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\206_022**
Instrument: GC07 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe176.met

Software Version 3.1.7
Run Date: 7/24/2008 9:50:54 PM
Analysis Date: 7/25/2008 4:08:26 PM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.3



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
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Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\206_022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

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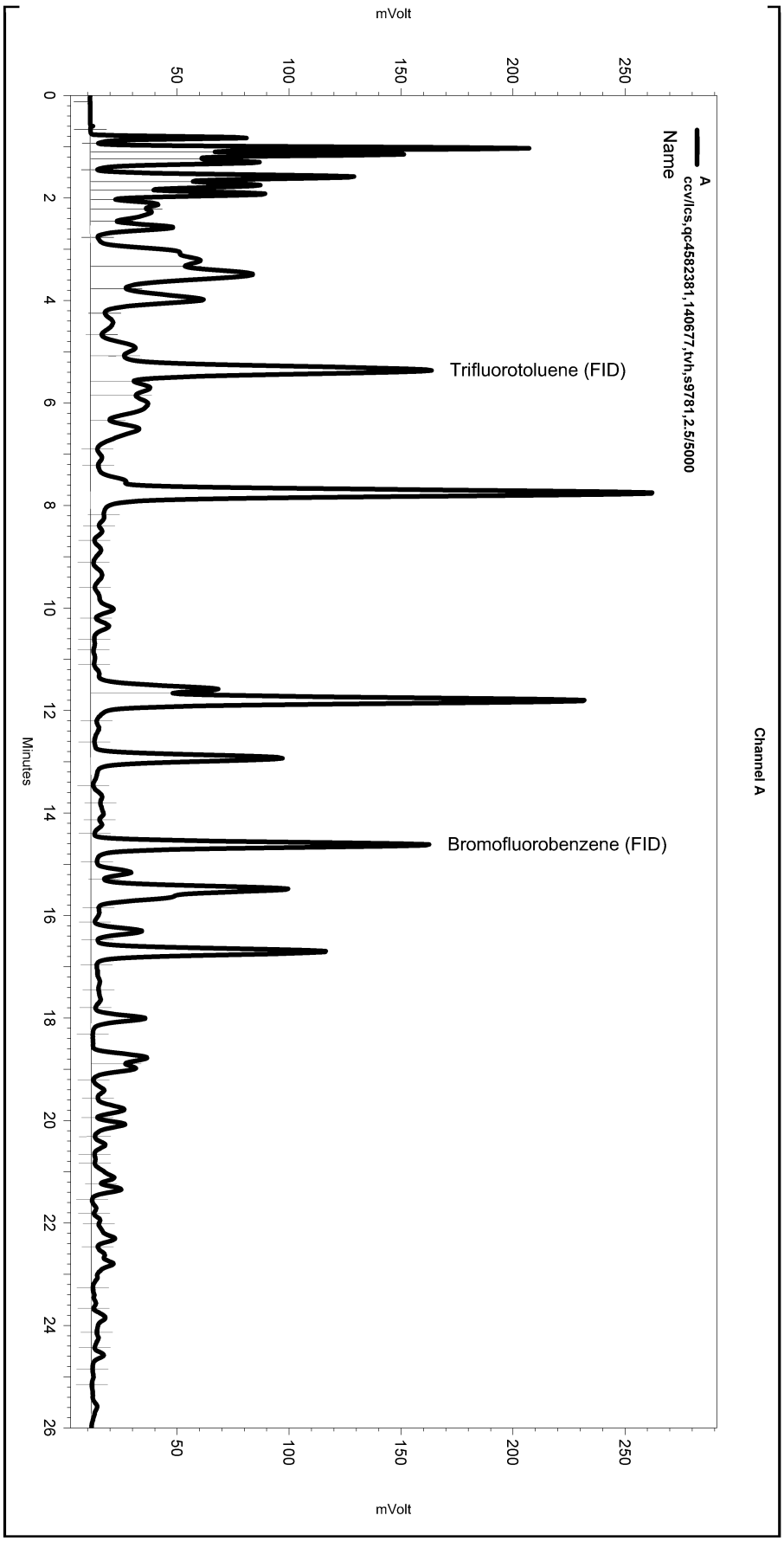
Data File: **\\Lims\gdrive\ezchrom\Projects\GC07\Data\206_003**
Instrument: GC07 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC07\Method\tvhbtxe176.met

Software Version 3.1.7
Run Date: 7/24/2008 8:50:05 AM
Analysis Date: 7/25/2008 7:37:11 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: {Data Description}



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
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Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC07\Data\206_003

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	204810	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	07/22/08
Units:	ug/L	Received:	07/23/08
Diln Fac:	1.000	Prepared:	07/24/08
Batch#:	140699	Analyzed:	07/25/08

Field ID: E-1 Lab ID: 204810-001
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	91	63-130

Field ID: BTW-1 Lab ID: 204810-003
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	90	63-130

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC452485

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	84	63-130

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	204810	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8015B
Field ID:	I-1	Sampled:	07/22/08
Matrix:	Water	Received:	07/23/08
Units:	ug/L	Prepared:	07/24/08
Diln Fac:	1.000	Analyzed:	07/25/08
Batch#:	140699		

Type: SAMPLE Lab ID: 204810-004

Analyte	Result	RL
Diesel C10-C24	9,400 Y	50
Motor Oil C24-C36	6,300	300

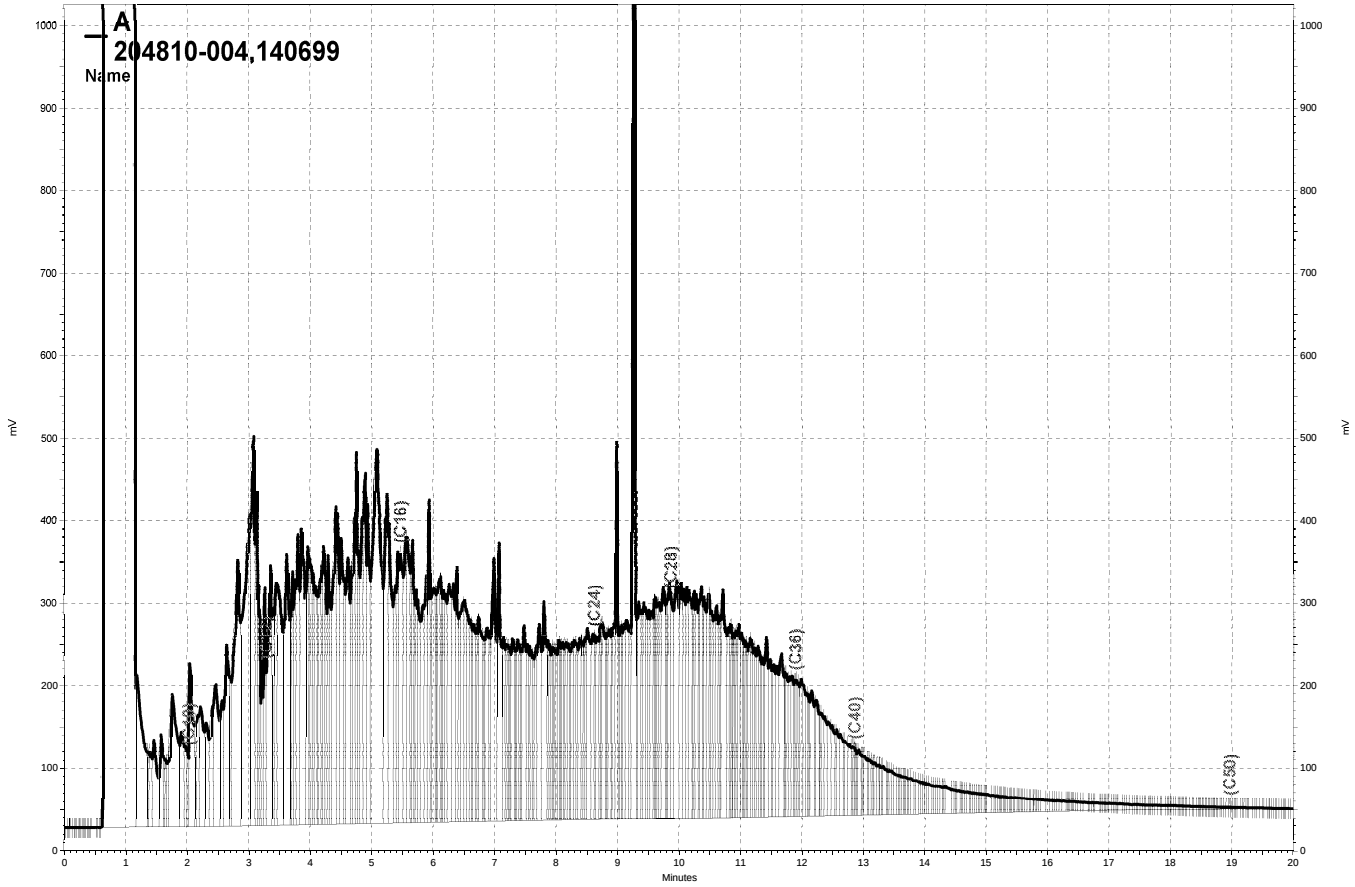
Surrogate	%REC	Limits
Hexacosane	104	63-130

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC452485

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	84	63-130

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit



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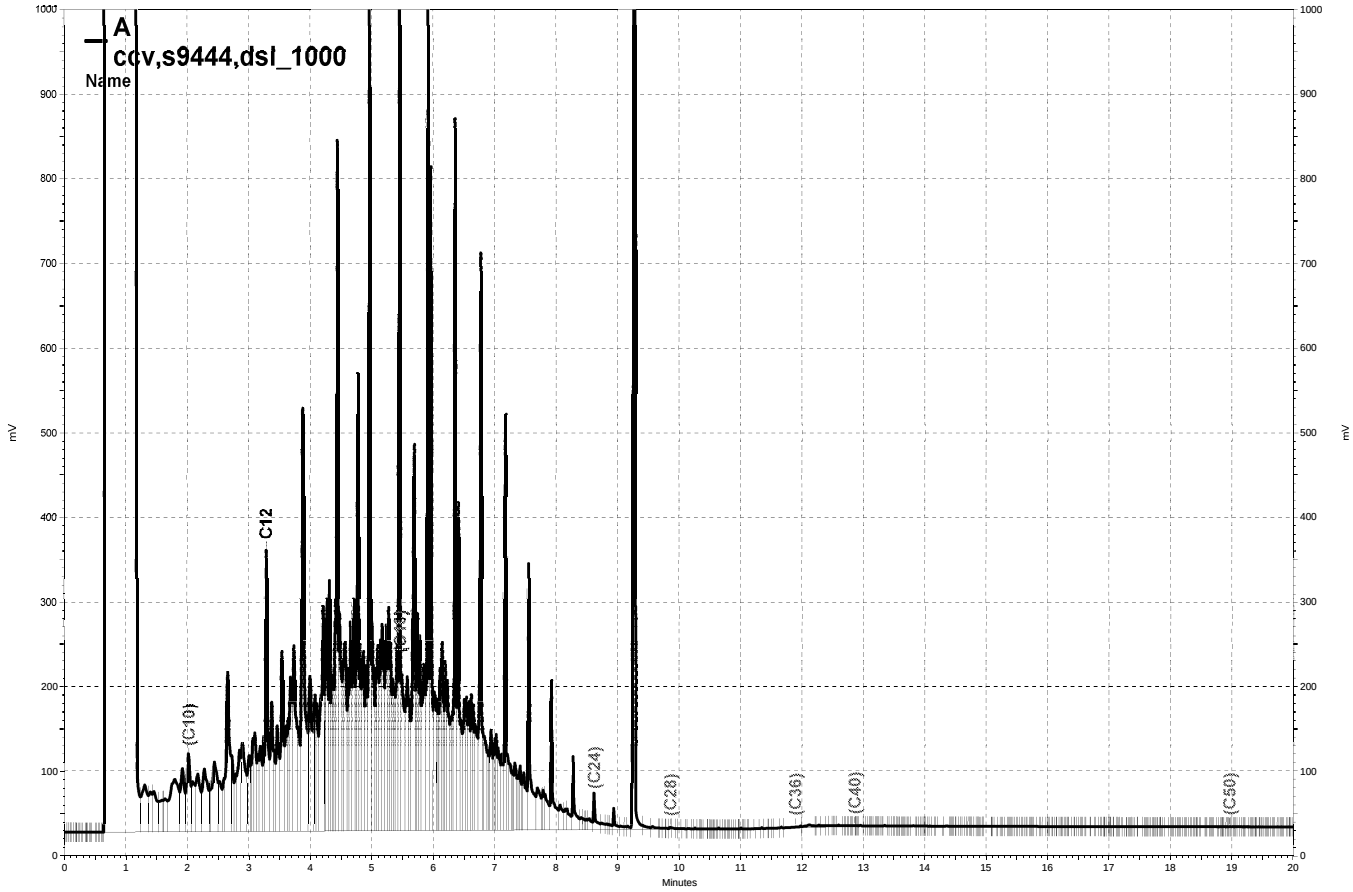

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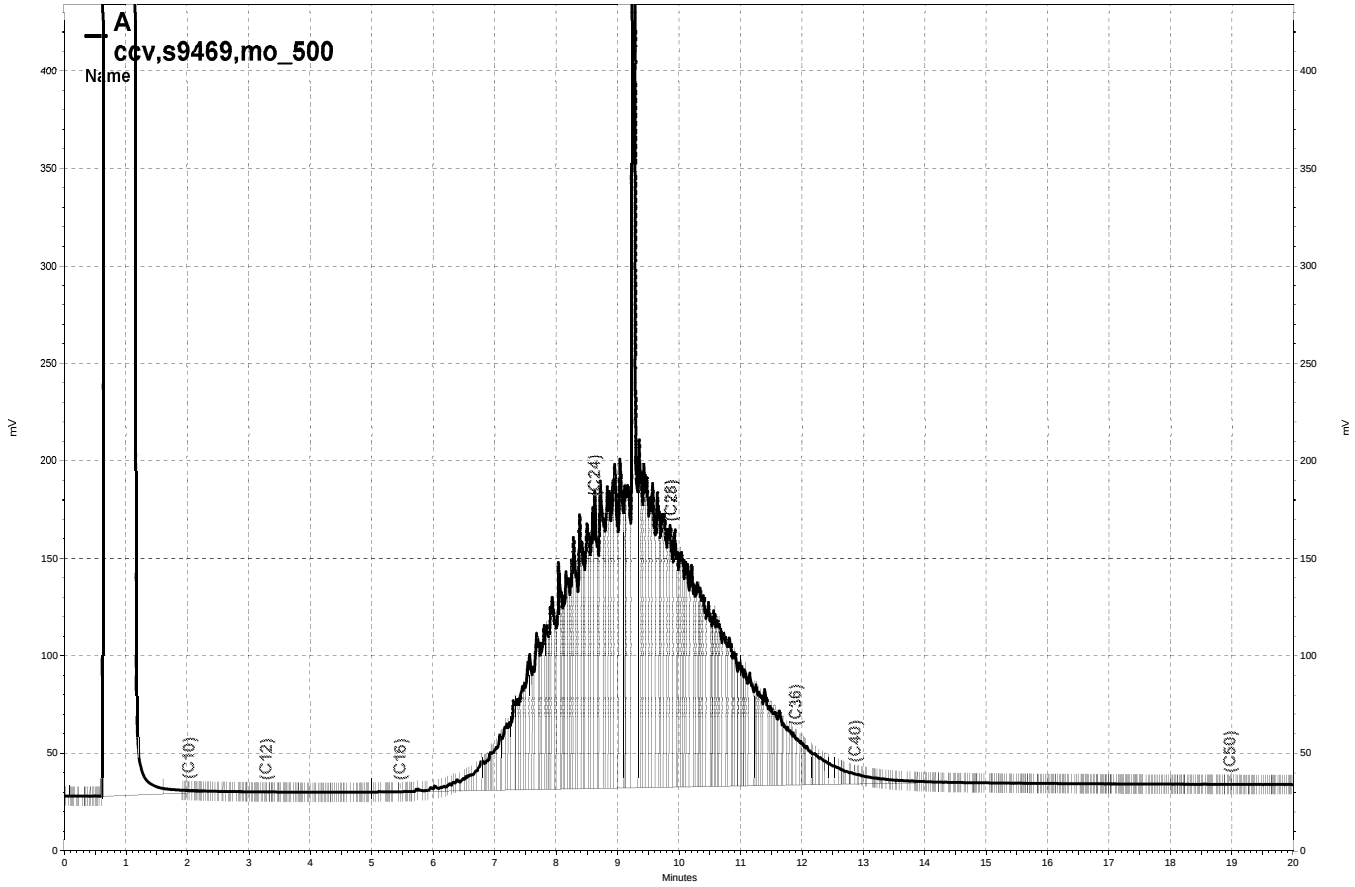

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Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 205486
ANALYTICAL REPORT

OTG Enviroengineering Solutions, Inc	Project : 080AK02.1000
464 19th Street Suite 206	Location : MSC Remediation
Oakland, CA 94612	Level : II

Sample ID	Lab ID
E-1	205486-001
BTW-2	205486-002
BTW-1	205486-003
I-1	205486-004

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 08/28/2008
Project Manager

Signature: _____ Date: 09/08/2008
Senior Program Manager

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 205486

Project No.: 080AK02.1000
Project Name: MSC Remediation
Project P.O.:
Turnaround Time: 5-day

Sampler: X. Tong
Report To: Xinggang Tong
Company: OTG Environgineering Solutions
Telephone: (510) 465-8982
Fax: xtong@otgenv.com

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste	# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE	Analysis: TPH gas	TPH gas, BTEX, MTBE	TPH diesel	TPH diesel with silica gel cleanup	EPA 8260 + 5 fuel oxygenates + EDB	Ethanol + Methanol		EPA 8270C for SVOCs	EPA 8310 for PAHs			
1	E-1	8/21/08, 12:10		X		13					X			X	X	X		X	X			
2	BfW-2	8/21/08, 12:15		X		6					X	X			X							
3	BfW-1	8/21/08, 12:20		X		4						X		X								
4	I-1	8/21/08, 12:25		X		4						X	X									

Notes:

SAMPLE RECEIPT
☒ Intact ☐ Cold
☐ On Ice ☒ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:
8/21/08 13:20 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
8/21/8 13:20 DATE / TIME
DATE / TIME
DATE / TIME

SIGNATURE

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000		
Matrix:	Water	Batch#:	141724
Units:	ug/L	Sampled:	08/21/08
Diln Fac:	1.000	Received:	08/21/08

Field ID: E-1
Type: SAMPLE
Lab ID: 205486-001

Analyzed: 08/22/08
Analysis: EPA 8015B

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	61-149
Bromofluorobenzene (FID)	105	65-146

Field ID: BTW-2
Type: SAMPLE
Lab ID: 205486-002

Analyzed: 08/23/08
Analysis: EPA 8015B

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	99	61-149
Bromofluorobenzene (FID)	108	65-146

Field ID: BTW-1
Type: SAMPLE

Lab ID: 205486-003
Analyzed: 08/23/08

Analyte	Result	RL	Analysis
Gasoline C7-C12	55 Y	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	88	61-149	EPA 8015B
Bromofluorobenzene (FID)	96	65-146	EPA 8015B
Trifluorotoluene (PID)	83	52-143	EPA 8021B
Bromofluorobenzene (PID)	92	56-141	EPA 8021B

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000		
Matrix:	Water	Batch#:	141724
Units:	ug/L	Sampled:	08/21/08
Diln Fac:	1.000	Received:	08/21/08

Field ID:	I-1	Lab ID:	205486-004
Type:	SAMPLE	Analyzed:	08/23/08

Analyte	Result	RL	Analysis
Gasoline C7-C12	1,300	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	10	0.50	EPA 8021B
Toluene	15	0.50	EPA 8021B
Ethylbenzene	2.2	0.50	EPA 8021B
m,p-Xylenes	72	0.50	EPA 8021B
o-Xylene	65	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	109	61-149	EPA 8015B
Bromofluorobenzene (FID)	103	65-146	EPA 8015B
Trifluorotoluene (PID)	89	52-143	EPA 8021B
Bromofluorobenzene (PID)	97	56-141	EPA 8021B

Type:	BLANK	Analyzed:	08/22/08
Lab ID:	QC456909		

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	100	61-149	EPA 8015B
Bromofluorobenzene (FID)	102	65-146	EPA 8015B
Trifluorotoluene (PID)	96	52-143	EPA 8021B
Bromofluorobenzene (PID)	101	56-141	EPA 8021B

Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC456910	Batch#:	141724
Matrix:	Water	Analyzed:	08/22/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,036	104	78-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	61-149
Bromofluorobenzene (FID)	104	65-146

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC456911	Batch#:	141724
Matrix:	Water	Analyzed:	08/22/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	10.00	8.989	90	61-143
Benzene	10.00	9.167	92	80-120
Toluene	10.00	9.462	95	77-120
Ethylbenzene	10.00	9.787	98	79-123
m,p-Xylenes	10.00	9.901	99	78-123
o-Xylene	10.00	9.830	98	78-122

Surrogate	%REC	Limits
Trifluorotoluene (PID)	99	52-143
Bromofluorobenzene (PID)	100	56-141

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	141724
MSS Lab ID:	205447-003	Sampled:	08/20/08
Matrix:	Water	Received:	08/20/08
Units:	ug/L	Analyzed:	08/22/08
Diln Fac:	1.000		

Type: MS Lab ID: QC456950

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	13.64	2,000	1,802	89	65-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	61-149
Bromofluorobenzene (FID)	108	65-146

Type: MSD Lab ID: QC456951

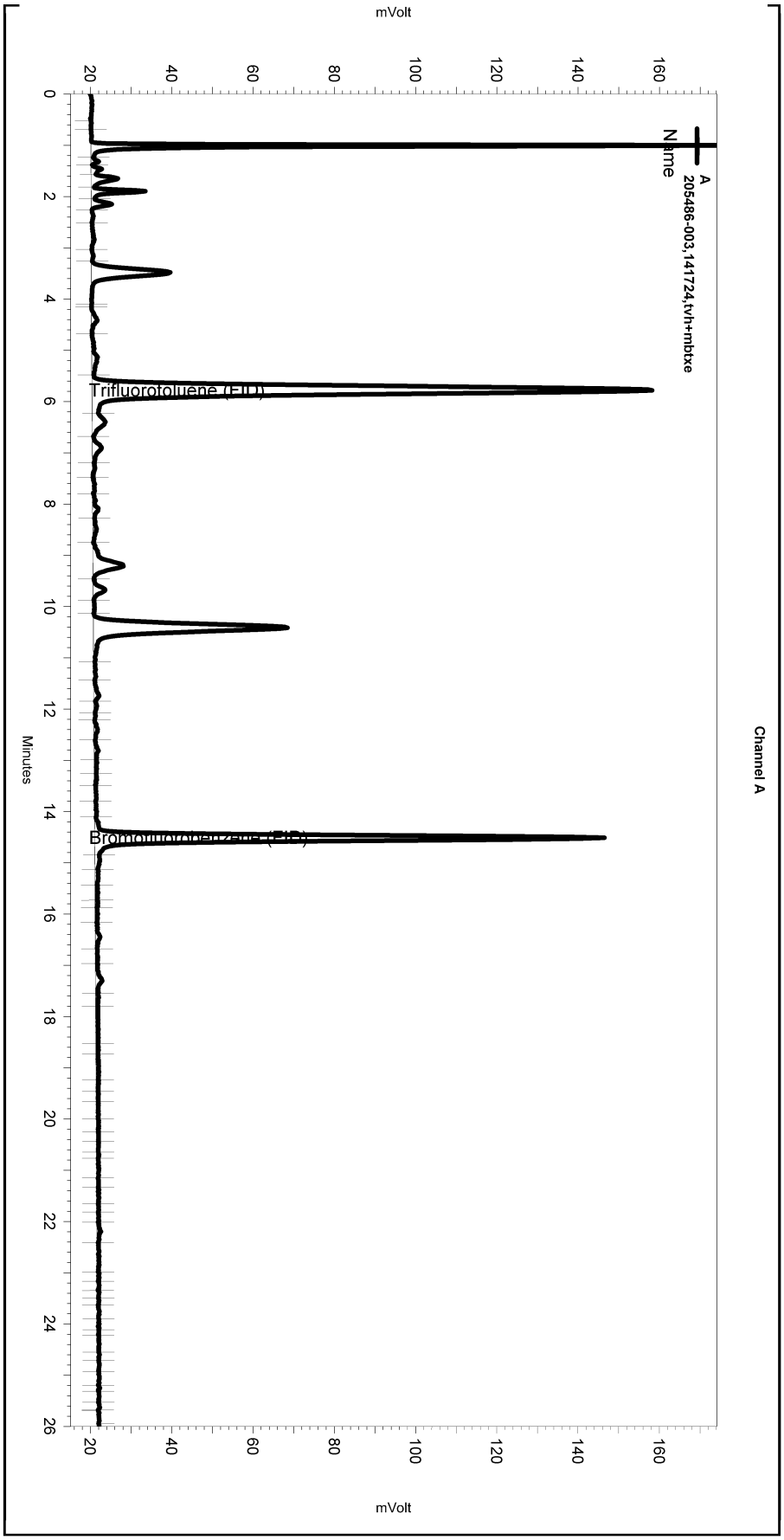
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,762	87	65-120	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	113	61-149
Bromofluorobenzene (FID)	109	65-146

RPD= Relative Percent Difference

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\235.seq**
Sample Name: **205486-003,141724,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\235_024**
Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe226.met

Software Version 3.1.7
Run Date: 8/23/2008 12:55:42 AM
Analysis Date: 8/23/2008 7:09:11 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.3



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

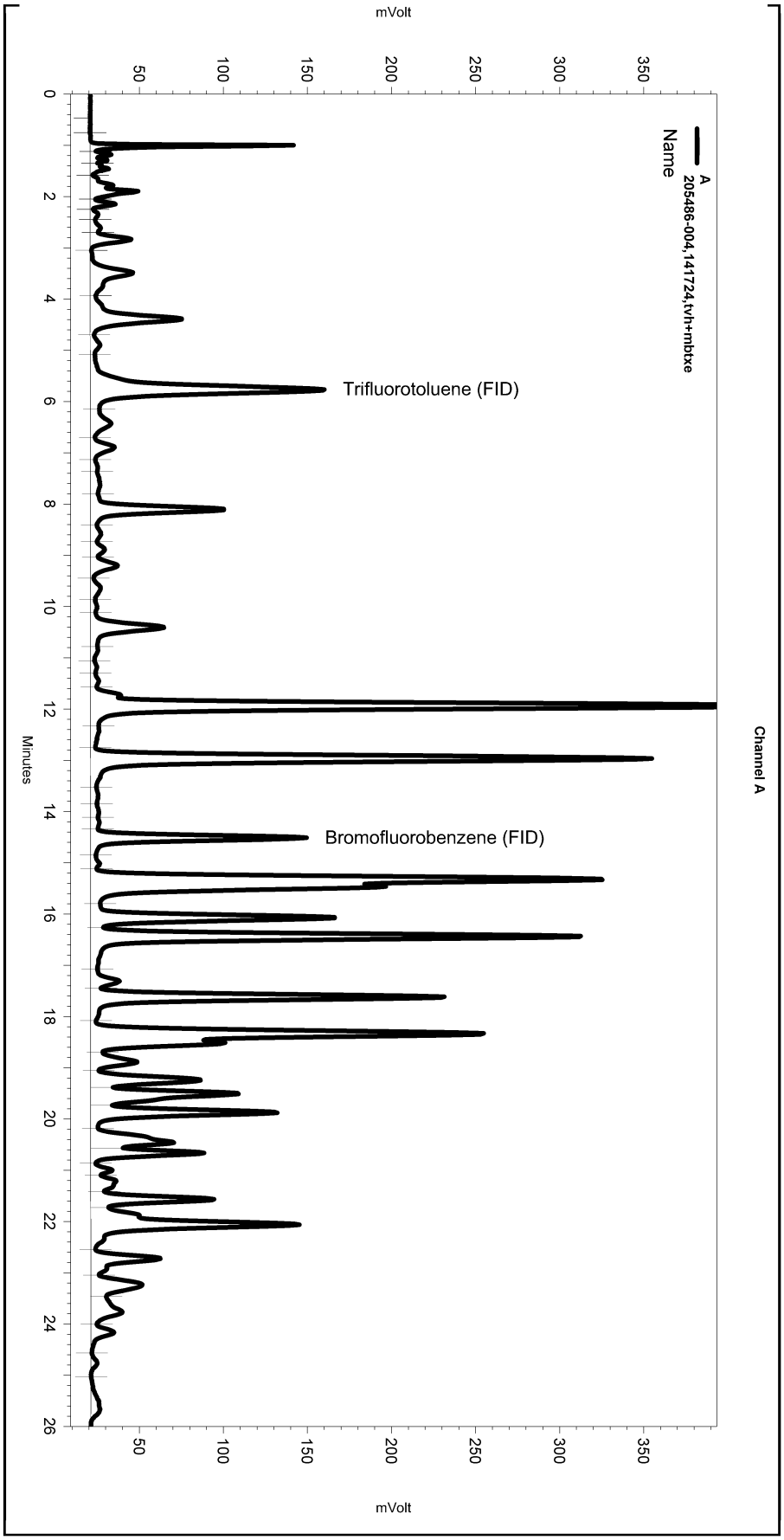
Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\235_024

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value

None

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\235.seq**
Sample Name: **205486-004,141724,tvh+mbtxe**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\235_025**
Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe226.met

Software Version 3.1.7
Run Date: 8/23/2008 1:33:16 AM
Analysis Date: 8/23/2008 7:09:15 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: a1.3



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

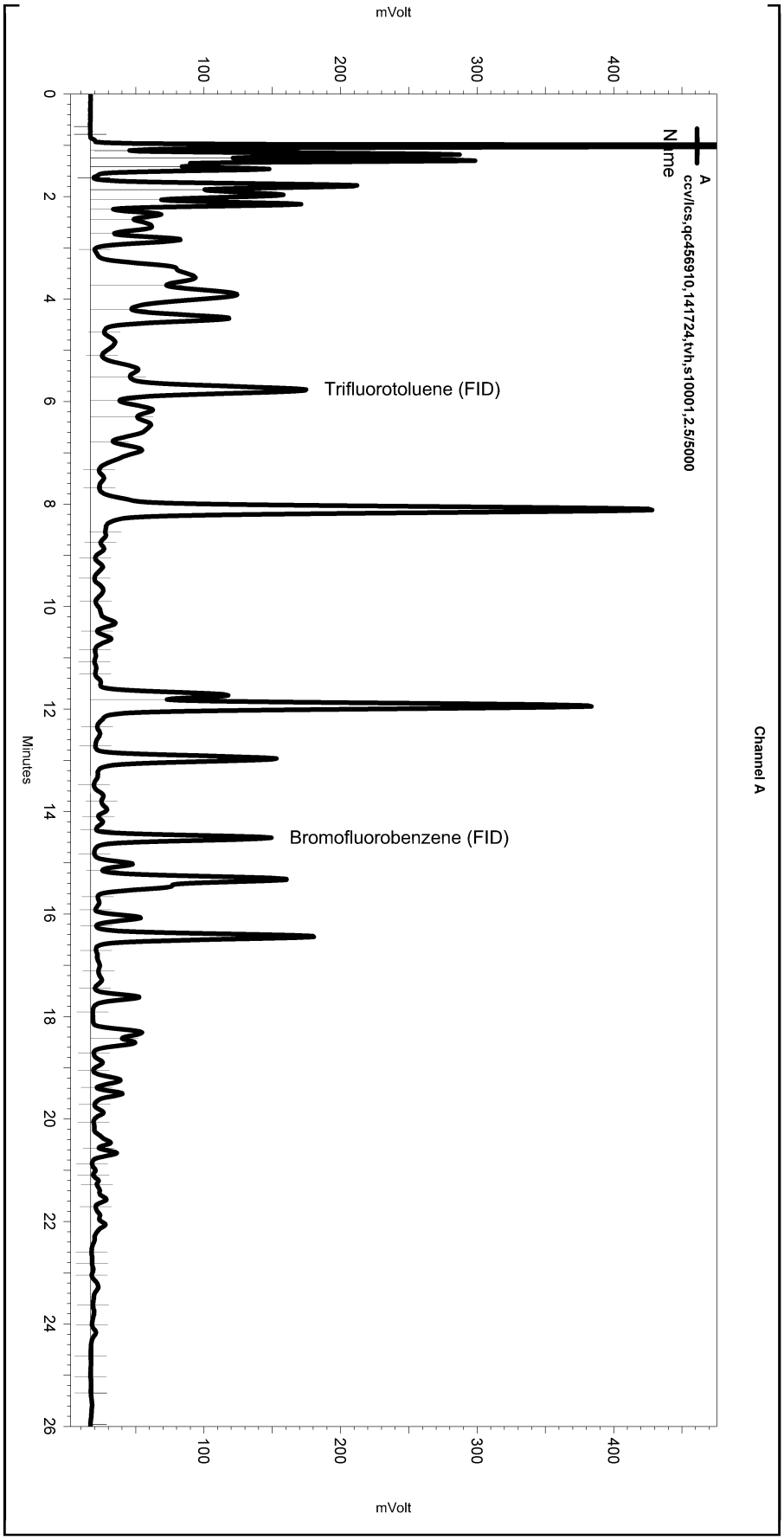
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\235_025

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC04\Sequence\235.seq**
Sample Name: **ccv/lcs,qc456910,141724,tvh,s10001,2.5/5000**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC04\Data\235_003**
Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbtxe226.met

Software Version 3.1.7
Run Date: 8/22/2008 11:07:24 AM
Analysis Date: 8/23/2008 7:07:38 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: {Data Description}



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Integration Events

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0.2
Yes	Threshold	0	0	50

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\235_003

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
None				

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	08/21/08
Units:	ug/L	Received:	08/21/08
Diln Fac:	1.000	Prepared:	08/25/08
Batch#:	141782	Analyzed:	08/28/08

Field ID: E-1 Lab ID: 205486-001
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	97	58-127

Field ID: BTW-1 Lab ID: 205486-003
Type: SAMPLE Cleanup Method: EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	90	58-127

Field ID: I-1 Lab ID: 205486-004
Type: SAMPLE

Analyte	Result	RL
Diesel C10-C24	12,000	50

Surrogate	%REC	Limits
Hexacosane	93	58-127

Type: BLANK Cleanup Method: EPA 3630C
Lab ID: QC457194

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
Hexacosane	86	58-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	141782
Units:	ug/L	Prepared:	08/25/08
Diln Fac:	1.000	Analyzed:	08/28/08

Type: BS
Lab ID: QC457195
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,181	87	52-120

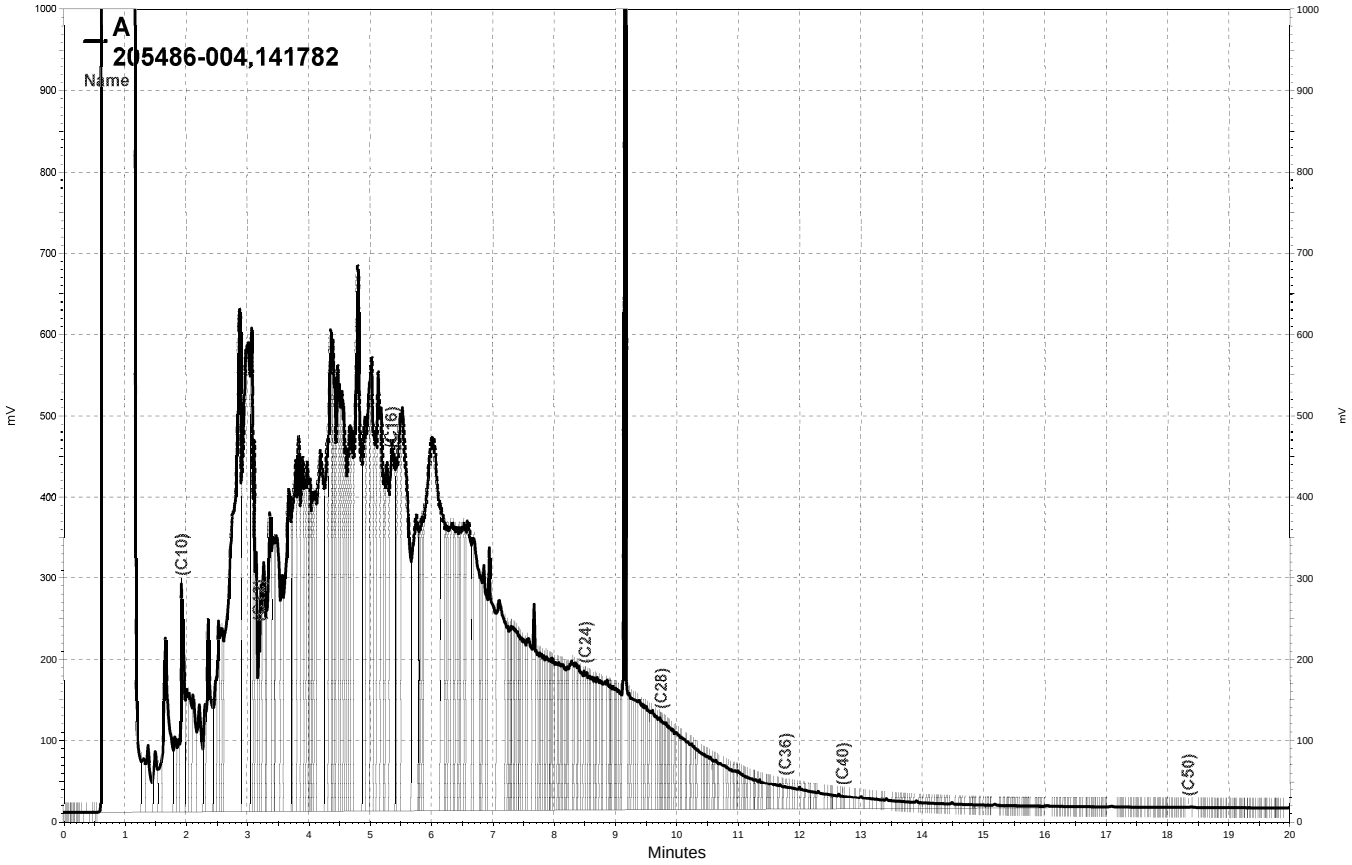
Surrogate	%REC	Limits
Hexacosane	96	58-127

Type: BSD
Lab ID: QC457196
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,840	74	52-120	17	30

Surrogate	%REC	Limits
Hexacosane	79	58-127

RPD= Relative Percent Difference



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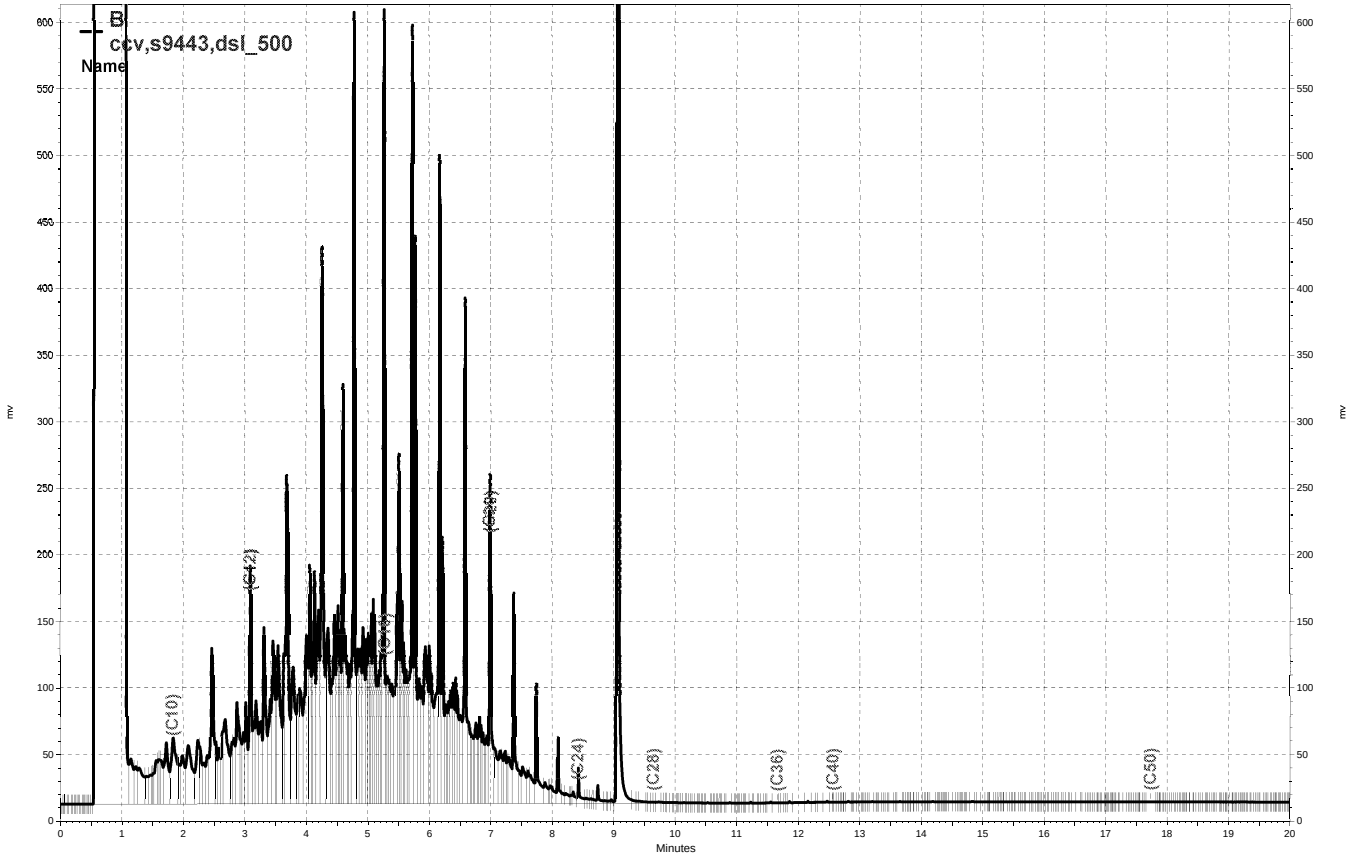

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Curtis & Tompkins, Ltd.

Alcohols by GC-FID

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	METHOD
Project#:	080AK02.1000	Analysis:	EPA 8015B
Field ID:	E-1	Batch#:	141842
Matrix:	Water	Sampled:	08/21/08
Units:	mg/L	Received:	08/21/08
Diln Fac:	1.000	Analyzed:	08/26/08

Type: SAMPLE Lab ID: 205486-001

Analyte	Result	RL
Methanol	ND	1.0
Ethanol	ND	1.0

Surrogate	%REC	Limits
1-Pentanol	113	72-120

Type: BLANK Lab ID: QC457464

Analyte	Result	RL
Methanol	ND	1.0
Ethanol	ND	1.0

Surrogate	%REC	Limits
1-Pentanol	91	72-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Alcohols by GC-FID

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	METHOD
Project#:	080AK02.1000	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	141842
Units:	mg/L	Analyzed:	08/26/08
Diln Fac:	1.000		

Type: BS Lab ID: QC457465

Analyte	Spiked	Result	%REC	Limits
Methanol	50.00	44.35	89	73-120
Ethanol	50.00	41.23	82	77-120

Surrogate	%REC	Limits
1-Pentanol	97	72-120

Type: BSD Lab ID: QC457466

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Methanol	50.00	37.75	76	73-120	16	22
Ethanol	50.00	50.31	101	77-120	20	20

Surrogate	%REC	Limits
1-Pentanol	95	72-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	E-1	Batch#:	141827
Lab ID:	205486-001	Sampled:	08/21/08
Matrix:	Water	Received:	08/21/08
Units:	ug/L	Analyzed:	08/26/08
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	130	10
Chloromethane	ND	1.0
Isopropyl Ether (DIPE)	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Chloroethane	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	0.5
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	E-1	Batch#:	141827
Lab ID:	205486-001	Sampled:	08/21/08
Matrix:	Water	Received:	08/21/08
Units:	ug/L	Analyzed:	08/26/08
Diln Fac:	1.000		

Analyte	Result	RL
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	100	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	BTW-2	Batch#:	141827
Lab ID:	205486-002	Sampled:	08/21/08
Matrix:	Water	Received:	08/21/08
Units:	ug/L	Analyzed:	08/26/08
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	140	10
Chloromethane	ND	1.0
Isopropyl Ether (DIPE)	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Chloroethane	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	0.5
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	BTW-2	Batch#:	141827
Lab ID:	205486-002	Sampled:	08/21/08
Matrix:	Water	Received:	08/21/08
Units:	ug/L	Analyzed:	08/26/08
Diln Fac:	1.000		

Analyte	Result	RL
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	101	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Type:	BLANK	Dil'n Fac:	1.000
Lab ID:	QC457404	Batch#:	141827
Matrix:	Water	Analyzed:	08/26/08
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	ND	10
Chloromethane	ND	1.0
Isopropyl Ether (DIPE)	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Chloroethane	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	0.5
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC457404	Batch#:	141827
Matrix:	Water	Analyzed:	08/26/08
Units:	ug/L		

Analyte	Result	RL
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-125
1,2-Dichloroethane-d4	92	80-137
Toluene-d8	97	80-120
Bromofluorobenzene	96	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	141827
Units:	ug/L	Analyzed:	08/26/08
Diln Fac:	1.000		

Type: BS Lab ID: QC457405

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	126.6	127	59-152
Isopropyl Ether (DIPE)	20.00	22.48	112	67-126
Ethyl tert-Butyl Ether (ETBE)	20.00	24.46	122	69-127
Methyl tert-Amyl Ether (TAME)	20.00	23.11	116	80-122
1,1-Dichloroethene	20.00	22.40	112	73-133
Benzene	20.00	19.61	98	80-120
Trichloroethene	20.00	22.13	111	80-120
Toluene	20.00	20.55	103	80-120
Chlorobenzene	20.00	20.38	102	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-125
1,2-Dichloroethane-d4	94	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	91	80-122

Type: BSD Lab ID: QC457406

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	100.0	128.1	128	59-152	1	20
Isopropyl Ether (DIPE)	20.00	21.92	110	67-126	3	20
Ethyl tert-Butyl Ether (ETBE)	20.00	23.77	119	69-127	3	20
Methyl tert-Amyl Ether (TAME)	20.00	22.91	115	80-122	1	20
1,1-Dichloroethene	20.00	22.16	111	73-133	1	20
Benzene	20.00	18.93	95	80-120	4	20
Trichloroethene	20.00	20.94	105	80-120	6	20
Toluene	20.00	19.54	98	80-120	5	20
Chlorobenzene	20.00	19.61	98	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-125
1,2-Dichloroethane-d4	91	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	91	80-122

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8270C
Field ID:	E-1	Batch#:	141734
Lab ID:	205486-001	Sampled:	08/21/08
Matrix:	Water	Received:	08/21/08
Units:	ug/L	Prepared:	08/22/08
Diln Fac:	1.000	Analyzed:	08/25/08

Analyte	Result	RL
N-Nitrosodimethylamine	ND	9.4
Phenol	ND	9.4
bis(2-Chloroethyl)ether	ND	9.4
2-Chlorophenol	ND	9.4
1,3-Dichlorobenzene	ND	9.4
1,4-Dichlorobenzene	ND	9.4
Benzyl alcohol	ND	9.4
1,2-Dichlorobenzene	ND	9.4
2-Methylphenol	ND	9.4
bis(2-Chloroisopropyl) ether	ND	9.4
4-Methylphenol	ND	9.4
N-Nitroso-di-n-propylamine	ND	9.4
Hexachloroethane	ND	9.4
Nitrobenzene	ND	9.4
Isophorone	ND	9.4
2-Nitrophenol	ND	19
2,4-Dimethylphenol	ND	9.4
Benzoic acid	ND	47
bis(2-Chloroethoxy)methane	ND	9.4
2,4-Dichlorophenol	ND	9.4
1,2,4-Trichlorobenzene	ND	9.4
Naphthalene	ND	9.4
4-Chloroaniline	ND	9.4
Hexachlorobutadiene	ND	9.4
4-Chloro-3-methylphenol	ND	9.4
2-Methylnaphthalene	ND	9.4
Hexachlorocyclopentadiene	ND	19
2,4,6-Trichlorophenol	ND	9.4
2,4,5-Trichlorophenol	ND	9.4
2-Chloronaphthalene	ND	9.4
2-Nitroaniline	ND	19
Dimethylphthalate	ND	9.4
Acenaphthylene	ND	9.4
2,6-Dinitrotoluene	ND	9.4
3-Nitroaniline	ND	19
Acenaphthene	ND	9.4
2,4-Dinitrophenol	ND	19
4-Nitrophenol	ND	19
Dibenzofuran	ND	9.4
2,4-Dinitrotoluene	ND	9.4
Diethylphthalate	ND	9.4
Fluorene	ND	9.4
4-Chlorophenyl-phenylether	ND	9.4
4-Nitroaniline	ND	19
4,6-Dinitro-2-methylphenol	ND	19
N-Nitrosodiphenylamine	ND	9.4
Azobenzene	ND	9.4
4-Bromophenyl-phenylether	ND	9.4
Hexachlorobenzene	ND	9.4
Pentachlorophenol	ND	19
Phenanthrene	ND	9.4
Anthracene	ND	9.4
Di-n-butylphthalate	ND	9.4
Fluoranthene	ND	9.4

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Semivolatile Organics by GC/MS

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8270C
Field ID:	E-1	Batch#:	141734
Lab ID:	205486-001	Sampled:	08/21/08
Matrix:	Water	Received:	08/21/08
Units:	ug/L	Prepared:	08/22/08
Diln Fac:	1.000	Analyzed:	08/25/08

Analyte	Result	RL
Pyrene	ND	9.4
Butylbenzylphthalate	ND	9.4
3,3'-Dichlorobenzidine	ND	19
Benzo(a)anthracene	ND	9.4
Chrysene	ND	9.4
bis(2-Ethylhexyl)phthalate	ND	9.4
Di-n-octylphthalate	ND	9.4
Benzo(b)fluoranthene	ND	9.4
Benzo(k)fluoranthene	ND	9.4
Benzo(a)pyrene	ND	9.4
Indeno(1,2,3-cd)pyrene	ND	9.4
Dibenz(a,h)anthracene	ND	9.4
Benzo(g,h,i)perylene	ND	9.4

Surrogate	%REC	Limits
2-Fluorophenol	82	40-120
Phenol-d5	84	43-120
2,4,6-Tribromophenol	86	40-122
Nitrobenzene-d5	77	56-120
2-Fluorobiphenyl	89	55-120
Terphenyl-d14	61	34-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8270C
Type:	BLANK	Dil'n Fac:	1.000
Lab ID:	QC456976	Batch#:	141734
Matrix:	Water	Prepared:	08/22/08
Units:	ug/L	Analyzed:	08/24/08

Analyte	Result	RL
N-Nitrosodimethylamine	ND	10
Phenol	ND	10
bis(2-Chloroethyl)ether	ND	10
2-Chlorophenol	ND	10
1,3-Dichlorobenzene	ND	10
1,4-Dichlorobenzene	ND	10
Benzyl alcohol	ND	10
1,2-Dichlorobenzene	ND	10
2-Methylphenol	ND	10
bis(2-Chloroisopropyl) ether	ND	10
4-Methylphenol	ND	10
N-Nitroso-di-n-propylamine	ND	10
Hexachloroethane	ND	10
Nitrobenzene	ND	10
Isophorone	ND	10
2-Nitrophenol	ND	20
2,4-Dimethylphenol	ND	10
Benzoic acid	ND	50
bis(2-Chloroethoxy)methane	ND	10
2,4-Dichlorophenol	ND	10
1,2,4-Trichlorobenzene	ND	10
Naphthalene	ND	10
4-Chloroaniline	ND	10
Hexachlorobutadiene	ND	10
4-Chloro-3-methylphenol	ND	10
2-Methylnaphthalene	ND	10
Hexachlorocyclopentadiene	ND	20
2,4,6-Trichlorophenol	ND	10
2,4,5-Trichlorophenol	ND	10
2-Chloronaphthalene	ND	10
2-Nitroaniline	ND	20
Dimethylphthalate	ND	10
Acenaphthylene	ND	10
2,6-Dinitrotoluene	ND	10
3-Nitroaniline	ND	20
Acenaphthene	ND	10
2,4-Dinitrophenol	ND	20
4-Nitrophenol	ND	20
Dibenzofuran	ND	10
2,4-Dinitrotoluene	ND	10
Diethylphthalate	ND	10
Fluorene	ND	10
4-Chlorophenyl-phenylether	ND	10
4-Nitroaniline	ND	20
4,6-Dinitro-2-methylphenol	ND	20
N-Nitrosodiphenylamine	ND	10
Azobenzene	ND	10
4-Bromophenyl-phenylether	ND	10
Hexachlorobenzene	ND	10
Pentachlorophenol	ND	20
Phenanthrene	ND	10
Anthracene	ND	10
Di-n-butylphthalate	ND	10
Fluoranthene	ND	10

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8270C
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC456976	Batch#:	141734
Matrix:	Water	Prepared:	08/22/08
Units:	ug/L	Analyzed:	08/24/08

Analyte	Result	RL
Pyrene	ND	10
Butylbenzylphthalate	ND	10
3,3'-Dichlorobenzidine	ND	20
Benzo(a)anthracene	ND	10
Chrysene	ND	10
bis(2-Ethylhexyl)phthalate	ND	10
Di-n-octylphthalate	ND	10
Benzo(b)fluoranthene	ND	10
Benzo(k)fluoranthene	ND	10
Benzo(a)pyrene	ND	10
Indeno(1,2,3-cd)pyrene	ND	10
Dibenz(a,h)anthracene	ND	10
Benzo(g,h,i)perylene	ND	10

Surrogate	%REC	Limits
2-Fluorophenol	75	40-120
Phenol-d5	76	43-120
2,4,6-Tribromophenol	63	40-122
Nitrobenzene-d5	78	56-120
2-Fluorobiphenyl	80	55-120
Terphenyl-d14	77	34-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Semivolatile Organics by GC/MS

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8270C
Matrix:	Water	Batch#:	141734
Units:	ug/L	Prepared:	08/22/08
Diln Fac:	1.000	Analyzed:	08/25/08

Type: BS Lab ID: QC456977

Analyte	Spiked	Result	%REC	Limits
Phenol	80.00	61.19	76	45-120
2-Chlorophenol	80.00	64.93	81	52-120
1,4-Dichlorobenzene	80.00	64.48	81	47-120
N-Nitroso-di-n-propylamine	80.00	60.31	75	38-120
1,2,4-Trichlorobenzene	80.00	63.84	80	46-120
4-Chloro-3-methylphenol	80.00	66.41	83	55-120
Acenaphthene	30.00	25.56	85	54-120
4-Nitrophenol	80.00	67.62	85	46-120
2,4-Dinitrotoluene	80.00	77.39	97	56-120
Pentachlorophenol	80.00	65.14	81	50-121
Pyrene	30.00	27.90	93	54-120

Surrogate	%REC	Limits
2-Fluorophenol	79	40-120
Phenol-d5	83	43-120
2,4,6-Tribromophenol	91	40-122
Nitrobenzene-d5	80	56-120
2-Fluorobiphenyl	85	55-120
Terphenyl-d14	77	34-120

Type: BSD Lab ID: QC456978

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Phenol	80.00	62.28	78	45-120	2	24
2-Chlorophenol	80.00	65.76	82	52-120	1	23
1,4-Dichlorobenzene	80.00	64.69	81	47-120	0	29
N-Nitroso-di-n-propylamine	80.00	60.30	75	38-120	0	25
1,2,4-Trichlorobenzene	80.00	63.91	80	46-120	0	28
4-Chloro-3-methylphenol	80.00	66.78	83	55-120	1	20
Acenaphthene	30.00	25.60	85	54-120	0	20
4-Nitrophenol	80.00	66.83	84	46-120	1	23
2,4-Dinitrotoluene	80.00	76.93	96	56-120	1	20
Pentachlorophenol	80.00	65.41	82	50-121	0	23
Pyrene	30.00	27.22	91	54-120	2	22

Surrogate	%REC	Limits
2-Fluorophenol	81	40-120
Phenol-d5	84	43-120
2,4,6-Tribromophenol	91	40-122
Nitrobenzene-d5	81	56-120
2-Fluorobiphenyl	87	55-120
Terphenyl-d14	78	34-120

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Polynuclear Aromatics by HPLC

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8310
Field ID:	E-1	Batch#:	141738
Lab ID:	205486-001	Sampled:	08/21/08
Matrix:	Water	Received:	08/21/08
Units:	ug/L	Prepared:	08/22/08
Diln Fac:	1.000	Analyzed:	08/25/08

Analyte	Result	RL
Naphthalene	ND	0.94
Acenaphthylene	ND	1.9
Acenaphthene	ND	0.94
Fluorene	ND	0.19
Phenanthrene	ND	0.09
Anthracene	ND	0.09
Fluoranthene	ND	0.19
Pyrene	ND	0.09
Benzo(a)anthracene	ND	0.09
Chrysene	ND	0.09
Benzo(b)fluoranthene	ND	0.19
Benzo(k)fluoranthene	ND	0.09
Benzo(a)pyrene	ND	0.09
Dibenz(a,h)anthracene	ND	0.19
Benzo(g,h,i)perylene	ND	0.19
Indeno(1,2,3-cd)pyrene	ND	0.09

Surrogate	%REC	Limits
1-Methylnaphthalene (UV)	136 *	62-120
1-Methylnaphthalene (F)	134 *	60-120

*= Value outside of QC limits; see narrative
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polynuclear Aromatics by HPLC

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8310
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC456988	Batch#:	141738
Matrix:	Water	Prepared:	08/22/08
Units:	ug/L	Analyzed:	08/25/08

Analyte	Result	RL
Naphthalene	ND	1.0
Acenaphthylene	ND	2.0
Acenaphthene	ND	1.0
Fluorene	ND	0.20
Phenanthrene	ND	0.10
Anthracene	ND	0.10
Fluoranthene	ND	0.20
Pyrene	ND	0.10
Benzo(a)anthracene	ND	0.10
Chrysene	ND	0.10
Benzo(b)fluoranthene	ND	0.20
Benzo(k)fluoranthene	ND	0.10
Benzo(a)pyrene	ND	0.10
Dibenz(a,h)anthracene	ND	0.20
Benzo(g,h,i)perylene	ND	0.20
Indeno(1,2,3-cd)pyrene	ND	0.10

Surrogate	%REC	Limits
1-Methylnaphthalene (UV)	88	62-120
1-Methylnaphthalene (F)	86	60-120

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Polynuclear Aromatics by HPLC

Lab #:	205486	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8310
Matrix:	Water	Batch#:	141738
Units:	ug/L	Prepared:	08/22/08
Diln Fac:	1.000	Analyzed:	08/25/08

Type: BS Lab ID: QC456989

Analyte	Spiked	Result	%REC	Limits
Naphthalene	10.00	11.10	111	71-120
Acenaphthylene	20.00	22.99	115	77-120
Acenaphthene	10.00	10.90	109	74-120
Fluorene	2.000	2.243	112	76-120
Phenanthrene	1.000	1.111	111	76-120
Anthracene	1.000	1.146	115	75-120
Benzo(k)fluoranthene	1.000	1.076	108	78-120
Indeno(1,2,3-cd)pyrene	1.000	1.093	109	76-120

Surrogate	%REC	Limits
1-Methylnaphthalene (UV)	108	62-120
1-Methylnaphthalene (F)	107	60-120

Type: BSD Lab ID: QC456990

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Naphthalene	10.00	11.65	117	71-120	5	28
Acenaphthylene	20.00	24.28	121 *	77-120	5	23
Acenaphthene	10.00	11.60	116	74-120	6	24
Fluorene	2.000	2.358	118	76-120	5	23
Phenanthrene	1.000	1.163	116	76-120	5	21
Anthracene	1.000	1.199	120	75-120	5	21
Benzo(k)fluoranthene	1.000	1.130	113	78-120	5	20
Indeno(1,2,3-cd)pyrene	1.000	1.115	112	76-120	2	20

Surrogate	%REC	Limits
1-Methylnaphthalene (UV)	114	62-120
1-Methylnaphthalene (F)	113	60-120

*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

Laboratory Job Number 206407
ANALYTICAL REPORT

OTG Enviroengineering Solutions, Inc	Project : 080AK02.1000
464 19th Street Suite 206	Location : MSC Remediation
Oakland, CA 94612	Level : II

Sample ID	Lab ID
E-1	206407-001
BTW-2	206407-002
BTW-1	206407-003
I-1	206407-004

This data package has been reviewed for technical correctness and completeness. Release of this data has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signatures. The results contained in this report meet all requirements of NELAC and pertain only to those samples which were submitted for analysis. This report may be reproduced only in its entirety.

Signature: _____ Date: 10/08/2008
Project Manager

Signature: _____ Date: 10/09/2008
Senior Program Manager

Curtis & Tompkins, Ltd.
Analytical Laboratory Since 1878
2323 Fifth Street
Berkeley, CA 94710
(510) 486-0900 Phone
(510) 486-0532 Fax

CHAIN OF CUSTODY

C & T LOGIN #: 206407

Sampler: X. Tong
Project No.: 080AK02.1000
Report To: Xinggang Tong
Project Name: MSC Remediation
Company: OTG Environmental Solutions
Project P.O.:
Telephone: (510) 465-8982
Turnaround Time: 5-day
Fax: xtong@otgenv.com

Lab No.	Sample ID.	Sampling Date Time	Matrix: Soil	Water	Waste		# of Containers	Preservative: HCL	H_2SO_4	HNO_3	ICE		Analysis: TPH 995	TPH diesel & mo with Silica gel cleanup	TPH diesel & mo	8260 for BTEX & 5 Fuel Oxygenates (MTBE, TAME, DIPE, ETBE, TBA)							
1	E-1	9/26/08, 11:30		x			7	x			x		x	x		x							
2	Btw-2	9/26/08 11:40		x			7	x			x		x	x		x							
3	Btw-1	9/26/08 11:50		x			3	x			x					x							
4	I-1	9/26/08 11:55			x		7	x			x		x		x	x							

Notes:

SAMPLE RECEIPT
☒ Intact ☐ Cold
☒ On Ice ☐ Ambient
Preservative Correct?
☐ Yes ☐ No ☐ N/A

RELINQUISHED BY:
9/26/08 12:55 DATE / TIME
DATE / TIME
DATE / TIME

RECEIVED BY:
9/26/08 12:55pm DATE / TIME
DATE / TIME
DATE / TIME

SIGNATURE

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	143048
Units:	ug/L	Sampled:	09/26/08
Diln Fac:	1.000	Received:	09/26/08

Field ID: E-1 Lab ID: 206407-001
Type: SAMPLE Analyzed: 09/30/08

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	61-149
Bromofluorobenzene (FID)	107	65-146

Field ID: BTW-2 Lab ID: 206407-002
Type: SAMPLE Analyzed: 09/30/08

Analyte	Result	RL
Gasoline C7-C12	76 Y Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	61-149
Bromofluorobenzene (FID)	109	65-146

Field ID: I-1 Lab ID: 206407-004
Type: SAMPLE Analyzed: 09/30/08

Analyte	Result	RL
Gasoline C7-C12	1,400	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	117	61-149
Bromofluorobenzene (FID)	108	65-146

Type: BLANK Analyzed: 09/29/08
Lab ID: QC462628

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	100	61-149
Bromofluorobenzene (FID)	102	65-146

Y= Sample exhibits chromatographic pattern which does not resemble standard
Z= Sample exhibits unknown single peak or peaks
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC462629	Batch#:	143048
Matrix:	Water	Analyzed:	09/29/08
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	1,003	100	78-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	61-149
Bromofluorobenzene (FID)	105	65-146

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	143048
MSS Lab ID:	206379-015	Sampled:	09/24/08
Matrix:	Water	Received:	09/25/08
Units:	ug/L	Analyzed:	09/29/08
Diln Fac:	1.000		

Type: MS Lab ID: QC462630

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	32.65	2,000	2,019	99	65-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	132	61-149
Bromofluorobenzene (FID)	109	65-146

Type: MSD Lab ID: QC462631

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,972	97	65-120	2	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	127	61-149
Bromofluorobenzene (FID)	106	65-146

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/26/08
Units:	ug/L	Received:	09/26/08

Field ID:	E-1	Batch#:	143266
Type:	SAMPLE	Prepared:	10/04/08
Lab ID:	206407-001	Analyzed:	10/07/08
Diln Fac:	1.000	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	76	58-127

Field ID:	BTW-2	Batch#:	143266
Type:	SAMPLE	Prepared:	10/04/08
Lab ID:	206407-002	Analyzed:	10/07/08
Diln Fac:	1.000	Cleanup Method:	EPA 3630C

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	89	58-127

Field ID:	I-1	Batch#:	143212
Type:	SAMPLE	Prepared:	10/02/08
Lab ID:	206407-004	Analyzed:	10/06/08
Diln Fac:	3.000		

Analyte	Result	RL
Diesel C10-C24	14,000	150
Motor Oil C24-C36	5,900	900

Surrogate	%REC	Limits
Hexacosane	93	58-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	09/26/08
Units:	ug/L	Received:	09/26/08

Type:	BLANK	Prepared:	10/02/08
Lab ID:	QC463364	Analyzed:	10/06/08
Diln Fac:	1.000	Cleanup Method:	EPA 3630C
Batch#:	143212		

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	83	58-127

Type:	BLANK	Prepared:	10/04/08
Lab ID:	QC463592	Analyzed:	10/06/08
Diln Fac:	1.000	Cleanup Method:	EPA 3630C
Batch#:	143266		

Analyte	Result	RL
Diesel C10-C24	ND	50
Motor Oil C24-C36	ND	300

Surrogate	%REC	Limits
Hexacosane	90	58-127

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC463365	Batch#:	143212
Matrix:	Water	Prepared:	10/02/08
Units:	ug/L	Analyzed:	10/06/08

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,669	107	52-120

Surrogate	%REC	Limits
Hexacosane	86	58-127

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	143212
MSS Lab ID:	206438-001	Sampled:	09/29/08
Matrix:	Water	Received:	09/29/08
Units:	ug/L	Prepared:	10/02/08
Diln Fac:	1.000	Analyzed:	10/06/08

Type: MS Lab ID: QC463366

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	79.38	2,500	2,738	106	43-121

Surrogate	%REC	Limits
Hexacosane	87	58-127

Type: MSD Lab ID: QC463367

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,731	106	43-121	0	36

Surrogate	%REC	Limits
Hexacosane	86	58-127

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 3520C
Project#:	080AK02.1000	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	143266
Units:	ug/L	Prepared:	10/04/08
Diln Fac:	1.000	Analyzed:	10/07/08

Type: BS
Lab ID: QC463593
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,119	85	52-120

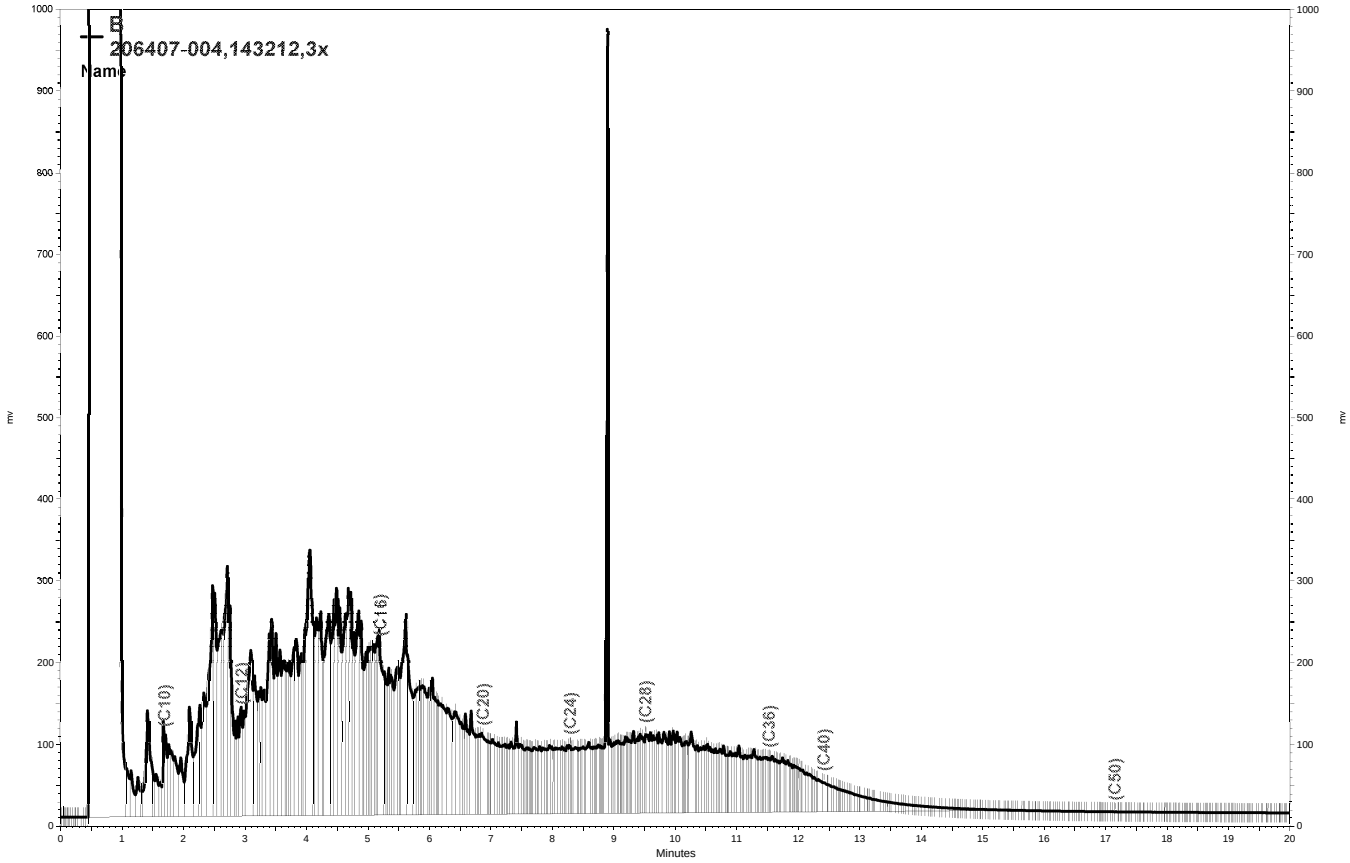
Surrogate	%REC	Limits
Hexacosane	81	58-127

Type: BSD
Lab ID: QC463594
Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,015	81	52-120	5	30

Surrogate	%REC	Limits
Hexacosane	81	58-127

RPD= Relative Percent Difference



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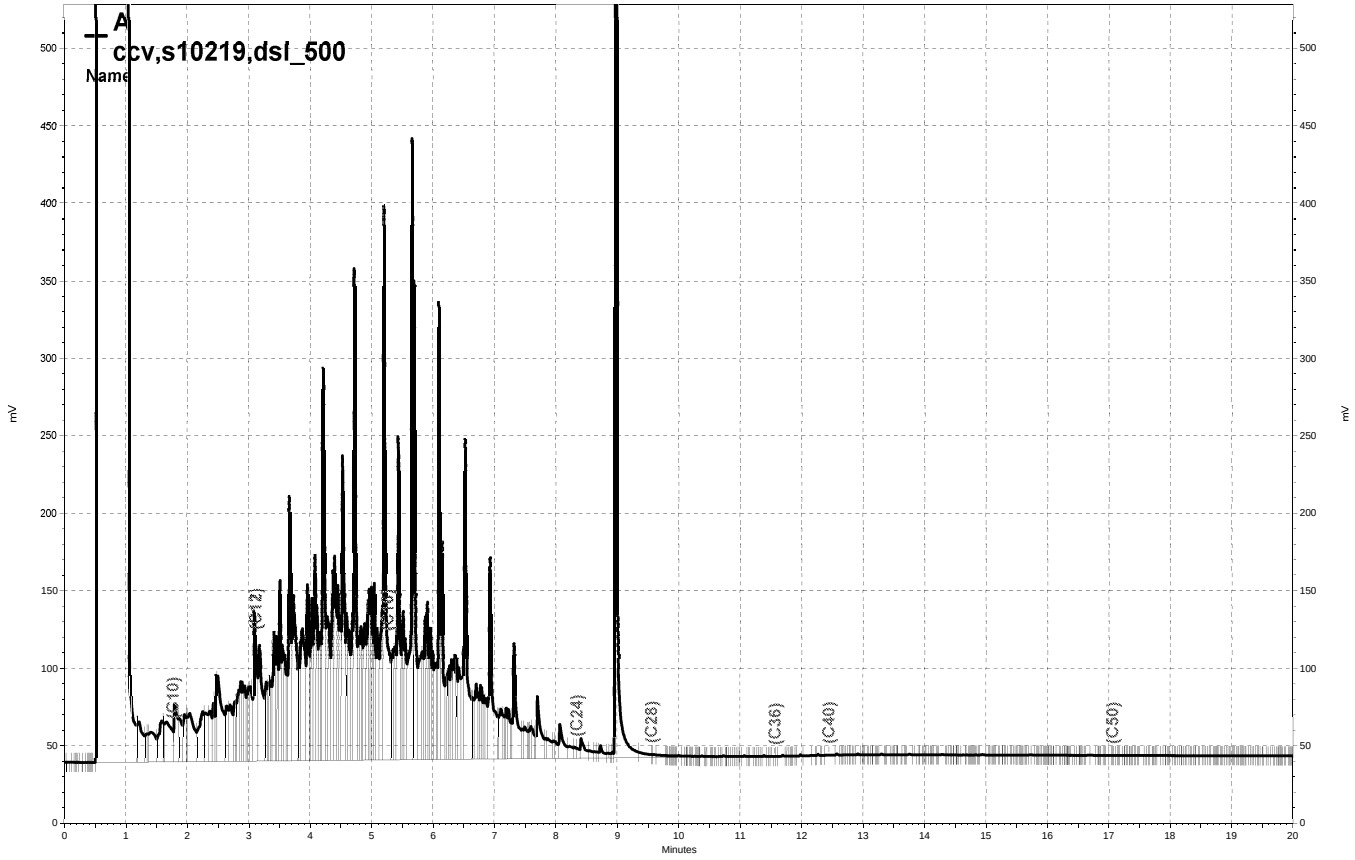

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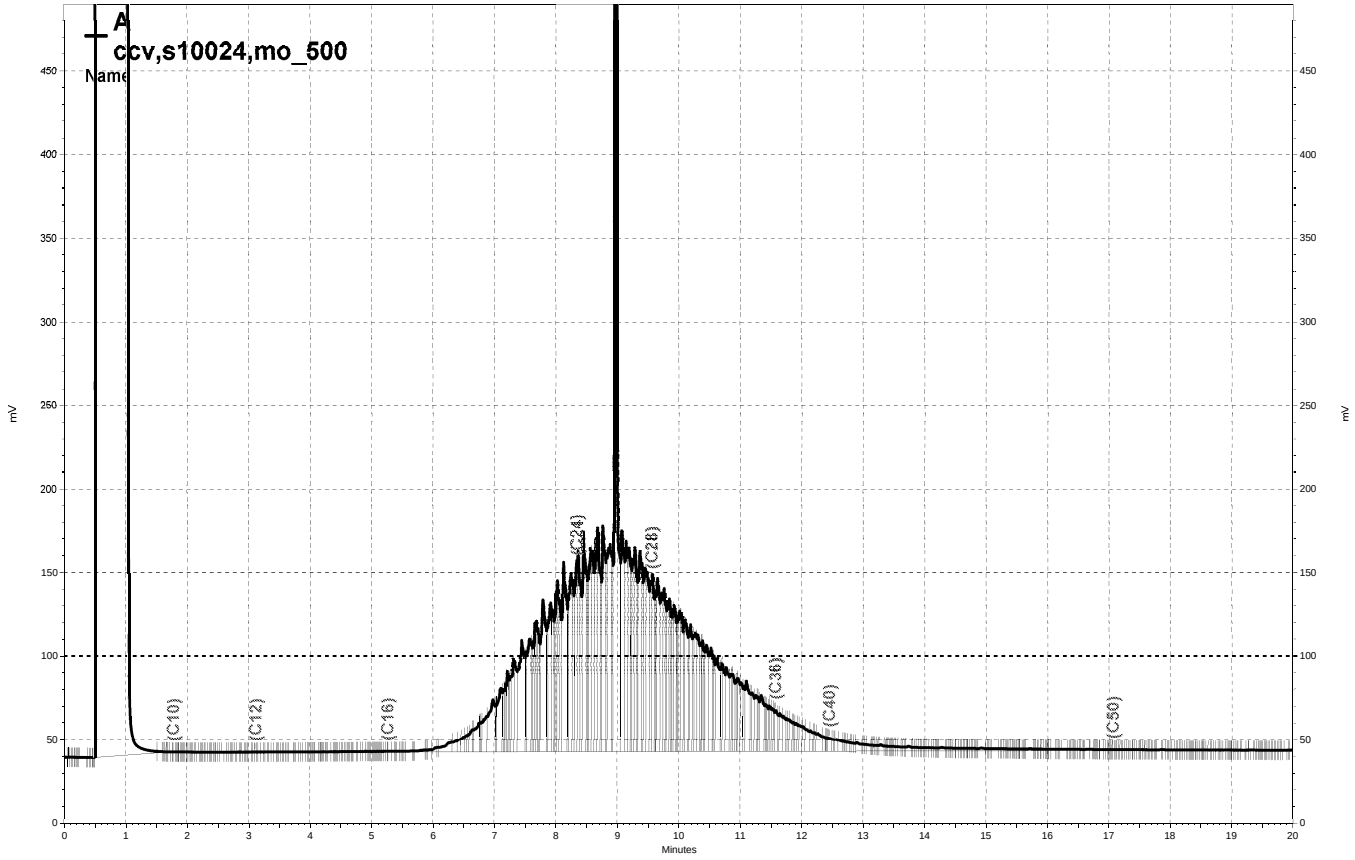

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Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	E-1	Batch#:	143176
Lab ID:	206407-001	Sampled:	09/26/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	87	10
Chloromethane	ND	1.0
Isopropyl Ether (DIPE)	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Chloroethane	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	0.5
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	E-1	Batch#:	143176
Lab ID:	206407-001	Sampled:	09/26/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Analyte	Result	RL
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-125
1,2-Dichloroethane-d4	102	80-137
Toluene-d8	101	80-120
Bromofluorobenzene	98	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	BTW-2	Batch#:	143176
Lab ID:	206407-002	Sampled:	09/26/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	100	10
Chloromethane	ND	1.0
Isopropyl Ether (DIPE)	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Chloroethane	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	0.5
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	BTW-2	Batch#:	143176
Lab ID:	206407-002	Sampled:	09/26/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Analyte	Result	RL
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-125
1,2-Dichloroethane-d4	106	80-137
Toluene-d8	104	80-120
Bromofluorobenzene	99	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	BTW-1	Batch#:	143176
Lab ID:	206407-003	Sampled:	09/26/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	70	10
Chloromethane	ND	1.0
Isopropyl Ether (DIPE)	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Chloroethane	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	0.5
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	BTW-1	Batch#:	143176
Lab ID:	206407-003	Sampled:	09/26/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Analyte	Result	RL
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-125
1,2-Dichloroethane-d4	106	80-137
Toluene-d8	102	80-120
Bromofluorobenzene	98	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	I-1	Batch#:	143176
Lab ID:	206407-004	Sampled:	09/26/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	59	10
Chloromethane	ND	1.0
Isopropyl Ether (DIPE)	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Chloroethane	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	0.5
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	18	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	21	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	4.4	0.5
m,p-Xylenes	95	0.5
o-Xylene	73	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	0.7	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Field ID:	I-1	Batch#:	143176
Lab ID:	206407-004	Sampled:	09/26/08
Matrix:	Water	Received:	09/26/08
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Analyte	Result	RL
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	36	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	60	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	0.7	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	16	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	93	80-125
1,2-Dichloroethane-d4	104	80-137
Toluene-d8	102	80-120
Bromofluorobenzene	97	80-122

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	143176
Units:	ug/L	Analyzed:	10/02/08
Diln Fac:	1.000		

Type: BS Lab ID: QC463201

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	100.0	98.83	99	59-152
Isopropyl Ether (DIPE)	20.00	19.27	96	67-126
Ethyl tert-Butyl Ether (ETBE)	20.00	19.92	100	69-127
Methyl tert-Amyl Ether (TAME)	20.00	19.19	96	80-122
1,1-Dichloroethene	20.00	19.83	99	73-133
Benzene	20.00	19.89	99	80-120
Trichloroethene	20.00	20.48	102	80-120
Toluene	20.00	19.93	100	80-120
Chlorobenzene	20.00	19.58	98	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-125
1,2-Dichloroethane-d4	101	80-137
Toluene-d8	100	80-120
Bromofluorobenzene	102	80-122

Type: BSD Lab ID: QC463202

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	100.0	105.4	105	59-152	6	20
Isopropyl Ether (DIPE)	20.00	18.50	92	67-126	4	20
Ethyl tert-Butyl Ether (ETBE)	20.00	19.51	98	69-127	2	20
Methyl tert-Amyl Ether (TAME)	20.00	19.17	96	80-122	0	20
1,1-Dichloroethene	20.00	19.20	96	73-133	3	20
Benzene	20.00	19.57	98	80-120	2	20
Trichloroethene	20.00	20.49	102	80-120	0	20
Toluene	20.00	19.70	99	80-120	1	20
Chlorobenzene	20.00	19.15	96	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-125
1,2-Dichloroethane-d4	102	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	99	80-122

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Type:	BLANK	Dil'n Fac:	1.000
Lab ID:	QC463203	Batch#:	143176
Matrix:	Water	Analyzed:	10/02/08
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
tert-Butyl Alcohol (TBA)	ND	10
Chloromethane	ND	1.0
Isopropyl Ether (DIPE)	ND	0.5
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
Chloroethane	ND	1.0
Methyl tert-Amyl Ether (TAME)	ND	0.5
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Methylene Chloride	ND	10
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Volatile Organics

Lab #:	206407	Location:	MSC Remediation
Client:	OTG Enviroengineering Solutions, Inc	Prep:	EPA 5030B
Project#:	080AK02.1000	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC463203	Batch#:	143176
Matrix:	Water	Analyzed:	10/02/08
Units:	ug/L		

Analyte	Result	RL
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-125
1,2-Dichloroethane-d4	103	80-137
Toluene-d8	99	80-120
Bromofluorobenzene	98	80-122

ND= Not Detected
RL= Reporting Limit

APPENDIX B

Laboratory Analytical Reports for DPE Vapor Samples

Torrent
LABORATORY, INC.

July 30, 2008

Xinggang Tong
OTG Enviroengineering Solutions,Inc
464 19th Street,Suite 206
Oakland, CA 94612

TEL: (510) 465-8982
FAX

RE:

Order No.: 0807150

Dear Xinggang Tong:

Torrent Laboratory, Inc. received 2 samples on 7/23/2008 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

7/30/08
Date

Nutan Kabir
PM

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: Xinggang Tong
OTG Enviroengineering Solutions,Inc

Date Received: 7/23/2008
Date Reported: 7/30/2008

Client Sample ID: A-2 Exhaust
Sample Location: 7101 Edgewater Dr, Oakland
Sample Matrix: AIR
Date/Time Sampled 7/22/2008 2:00:00 PM

Lab Sample ID: 0807150-001
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	TO-15	7/25/2008	1.6	6.15	9.8	27	µg/m³	R16941
Ethyl Benzene	TO-15	7/25/2008	1.67	6.15	10	ND	µg/m³	R16941
m,p-Xylene	TO-15	7/25/2008	2.05	6.15	13	89	µg/m³	R16941
o-xylene	TO-15	7/25/2008	2.7	6.15	17	49	µg/m³	R16941
Toluene	TO-15	7/25/2008	1.89	6.15	12	43	µg/m³	R16941
Surr: 4-Bromofluorobenzene	TO-15	7/25/2008	0	6.15	65-135	97.3	%REC	R16941
Gasoline	TO-3(MOD)	7/25/2008	352	2.46	870	2120x	µg/m³	G16941

Note: x- Although TPH as Gasoline compounds are present, results are elevated due to presence of heavy end compounds within range of C5-C12 quantified as Gasoline.

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

Report prepared for: Xinggang Tong
OTG Enviroengineering Solutions,Inc

Date Received: 7/23/2008
Date Reported: 7/30/2008

Client Sample ID: A-2 Inlet
Sample Location: 7101 Edgewater Dr, Oakland
Sample Matrix: AIR
Date/Time Sampled 7/22/2008 2:00:00 PM

Lab Sample ID: 0807150-002
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	TO-15	7/24/2008	1.6	500	800	2100	µg/m³	R16941
Ethyl Benzene	TO-15	7/24/2008	1.67	500	840	2700	µg/m³	R16941
m,p-Xylene	TO-15	7/24/2008	2.05	500	1000	27000	µg/m³	R16941
o-xylene	TO-15	7/24/2008	2.7	500	1400	13000	µg/m³	R16941
Toluene	TO-15	7/24/2008	1.89	500	940	4900	µg/m³	R16941
Surr: 4-Bromofluorobenzene	TO-15	7/24/2008	0	500	65-135	104	%REC	R16941
Gasoline	TO-3(MOD)	7/26/2008	352	500	180000	1700000x	µg/m³	G16941

Note: x- Sample chromatogram does not resemble gasoline standard pattern. Although TPH as Gasoline constituents are present, TPH value includes a significant portion of non-gasoline hydrocarbons within range of C5-C12 quantified as Gasoline that biases the quantitation.

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: OTG Enviroengineering Solutions,Inc
Work Order: 0807150
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: G16941

Sample ID **MB-G**	SampType: **MBLK**	TestCode: **TO-3Gas (MO**	Units: **ppbv**	Prep Date: **7/25/2008**	RunNo: **16941**
Client ID: **ZZZZZ**	Batch ID: **G16941**	TestNo: **TO-3(MOD)**		Analysis Date: **7/25/2008**	SeqNo: **243206**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	100									

Sample ID **LCS-G**	SampType: **LCS**	TestCode: **TO-3Gas (MO**	Units: **ppbv**	Prep Date: **7/25/2008**	RunNo: **16941**
Client ID: **ZZZZZ**	Batch ID: **G16941**	TestNo: **TO-3(MOD)**		Analysis Date: **7/25/2008**	SeqNo: **243207**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	465.8	100	500	0	93.2	50	150				

Sample ID **LCSD-G**	SampType: **LCSD**	TestCode: **TO-3Gas (MO**	Units: **ppbv**	Prep Date: **7/25/2008**	RunNo: **16941**
Client ID: **ZZZZZ**	Batch ID: **G16941**	TestNo: **TO-3(MOD)**		Analysis Date: **7/25/2008**	SeqNo: **243208**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	477.1	100	500	0	95.4	50	150	465.8	2.38	30	

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: OTG Enviroengineering Solutions,Inc
Work Order: 0807150
Project:

ANALYTICAL QC SUMMARY REPORT

BatchID: R16941

Sample ID **mb**	SampType: **MBLK**	TestCode: **TO-15**	Units: **ppbv**	Prep Date: **7/24/2008**	RunNo: **16941**
Client ID: **ZZZZZ**	Batch ID: **R16941**	TestNo: **TO-15**		Analysis Date: **7/24/2008**	SeqNo: **242758**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Ethyl Benzene	ND	0.50									
m,p-Xylene	ND	0.50									
o-xylene	ND	0.50									
Toluene	ND	0.50									
Surr: 4-Bromofluorobenzene	21.85	0	20	0	109	65	135				

Sample ID **LCS**	SampType: **LCS**	TestCode: **TO-15**	Units: **ppbv**	Prep Date: **7/24/2008**	RunNo: **16941**
Client ID: **ZZZZZ**	Batch ID: **R16941**	TestNo: **TO-15**		Analysis Date: **7/24/2008**	SeqNo: **242759**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.58	0.50	20	0	108	65	135				
Ethyl Benzene	20.17	0.50	20	0	101	65	135				
m,p-Xylene	39.60	0.50	40	0	99.0	65	135				
o-xylene	20.72	0.50	20	0	104	65	135				
Toluene	20.81	0.50	20	0	104	65	135				
Surr: 4-Bromofluorobenzene	20.96	0	20	0	105	65	135				

Sample ID **LCSD**	SampType: **LCSD**	TestCode: **TO-15**	Units: **ppbv**	Prep Date: **7/24/2008**	RunNo: **16941**
Client ID: **ZZZZZ**	Batch ID: **R16941**	TestNo: **TO-15**		Analysis Date: **7/24/2008**	SeqNo: **242760**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.72	0.50	20	0	109	65	135	21.58	0.647	30	
Ethyl Benzene	20.87	0.50	20	0	104	65	135	20.17	3.41	30	
m,p-Xylene	43.56	0.50	40	0	109	65	135	39.6	9.52	30	
o-xylene	21.73	0.50	20	0	109	65	135	20.72	4.76	30	
Toluene	20.75	0.50	20	0	104	65	135	20.81	0.289	30	
Surr: 4-Bromofluorobenzene	21.04	0	20	0	105	65	135	0	0	30	

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: 0807150

Company Name: OTG Enviroengineering Solutions, Inc
Address: 464 19th St, Suite 206
City: Oakland State: CA Zip Code: 94612
Telephone: 510-465-8982 FAX:
REPORT TO: Xinggang Tong SAMPLER: X Tong

Location of Sampling: 7101 Edgewater Dr. Oakland
Purpose:
Special Instructions / Comments:
P.O. #: EMAIL: xtong@otgenv.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	TPHgas & BTEX			Summa Canister ID		Initial Vacuum ("Hg)		Final Vacuum ("Hg)		REMARKS
001A	A-2 Exhaust	7/22/08 14:00	Air	1	6-L summa	X			1248		30		3		
002A	A-2 Inlet		Air	1	6-L summa	X			1252		30		1		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]	Xinggang Tong	7/23/08	11:50 AM	Tony HSD		7-23-08	11:50 AM
2	Tony HSD		7-23-08	12:47 PM	H.S. Khalsa		7/23/08	12:50 PM

Were Samples Received in Good Condition? ☒ Yes ☐ NO Samples on Ice? ☐ Yes ☒ NO Method of Shipment Hi Speed 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: VSO Date: 7/24 Log In Reviewed By: ____ Date: ____

TORRENT LAB

Torrent
LABORATORY, INC.

August 29, 2008

Xinggang Tong
OTG Enviroengineering Solutions,Inc
464 19th Street,Suite 206
Oakland, CA 94612

TEL: (510) 465-8982
FAX

RE: 7101 Edgewater Dr, Oakland

Order No.: 0808103

Dear Xinggang Tong:

Torrent Laboratory, Inc. received 2 samples on 8/22/2008 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 8/29/08 Date

Nutan Kabir
PM

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: Xinggang Tong
OTG Enviroengineering Solutions,Inc

Date Received: 8/22/2008
Date Reported: 8/29/2008

Client Sample ID: A-2 Exhaust
Sample Location: 7101 Edgewater Dr,Oakland.
Sample Matrix: AIR
Date/Time Sampled 8/21/2008 11:20:00 AM

Lab Sample ID: 0808103-001
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	TO-15	8/28/2008	1.6	2	3.2	46	µg/m³	R17118
Ethyl Benzene	TO-15	8/28/2008	1.67	2	3.3	ND	µg/m³	R17118
m,p-Xylene	TO-15	8/28/2008	2.05	2	4.1	64	µg/m³	R17118
o-xylene	TO-15	8/28/2008	2.7	2	5.4	37	µg/m³	R17118
Toluene	TO-15	8/28/2008	1.89	2	3.8	28	µg/m³	R17118
Surr: 4-Bromofluorobenzene	TO-15	8/28/2008	0	2	65-135	102	%REC	R17118
Gasoline	TO-3(MOD)	8/28/2008	352	2	700	2600x	µg/m³	G17118

Note: x- Although TPH as Gasoline constituents are present, TPH value includes a significant portion of non-gasoline hydrocarbons within range of C5-C12 quantified as Gasoline that biases the quantitation.

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

Report prepared for: Xinggang Tong
OTG Enviroengineering Solutions,Inc

Date Received: 8/22/2008
Date Reported: 8/29/2008

Client Sample ID: A-2 Inlet
Sample Location: 7101 Edgewater Dr,Oakland.
Sample Matrix: AIR
Date/Time Sampled 8/21/2008 11:30:00 AM

Lab Sample ID: 0808103-002
Date Prepared:

Parameters	Analysis Method	Date Analyzed	RL	Dilution Factor	MRL	Result	Units	Analytical Batch
Benzene	TO-15	8/28/2008	1.6	250	400	3100	µg/m³	R17118
Ethyl Benzene	TO-15	8/28/2008	1.67	250	420	ND	µg/m³	R17118
m,p-Xylene	TO-15	8/28/2008	2.05	250	510	26000	µg/m³	R17118
o-xylene	TO-15	8/28/2008	2.7	250	680	14000	µg/m³	R17118
Toluene	TO-15	8/28/2008	1.89	250	470	6200	µg/m³	R17118
Surr: 4-Bromofluorobenzene	TO-15	8/28/2008	0	250	65-135	95.2	%REC	R17118
Gasoline	TO-3(MOD)	8/28/2008	352	1000	350000	1500000x	µg/m³	G17118

Note: x- Although TPH as Gasoline constituents are present, TPH value includes a significant portion of non-gasoline hydrocarbons within range of C5-C12 quantified as Gasoline that biases the quantitation.

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: OTG Enviroengineering Solutions,Inc
Work Order: 0808103
Project: 7101 Edgewater Dr, Oakland

ANALYTICAL QC SUMMARY REPORT

BatchID: G17118

Sample ID **MB-G17118**	SampType: **MBLK**	TestCode: **TO-3Gas (MO**	Units: **ppbv**	Prep Date: **8/26/2008**	RunNo: **17118**
Client ID: **ZZZZZ**	Batch ID: **G17118**	TestNo: **TO-3(MOD)**		Analysis Date: **8/26/2008**	SeqNo: **245551**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	ND	100									

Sample ID **LCS-G17118**	SampType: **LCS**	TestCode: **TO-3Gas (MO**	Units: **ppbv**	Prep Date: **8/26/2008**	RunNo: **17118**
Client ID: **ZZZZZ**	Batch ID: **G17118**	TestNo: **TO-3(MOD)**		Analysis Date: **8/26/2008**	SeqNo: **245552**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	999.0	100	1000	0	99.9	50	150				

Sample ID **LCSD-G17118**	SampType: **LCSD**	TestCode: **TO-3Gas (MO**	Units: **ppbv**	Prep Date: **8/26/2008**	RunNo: **17118**
Client ID: **ZZZZZ**	Batch ID: **G17118**	TestNo: **TO-3(MOD)**		Analysis Date: **8/26/2008**	SeqNo: **245595**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline	986.0	100	1000	0	98.6	50	150	999	1.31	30	

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: OTG Enviroengineering Solutions,Inc
Work Order: 0808103
Project: 7101 Edgewater Dr, Oakland

ANALYTICAL QC SUMMARY REPORT

BatchID: R17118

Sample ID **MB**	SampType: **MBLK**	TestCode: **TO-15**	Units: **ppbv**	Prep Date: **8/26/2008**	RunNo: **17118**
Client ID: **ZZZZZ**	Batch ID: **R17118**	TestNo: **TO-15**		Analysis Date: **8/26/2008**	SeqNo: **245432**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	ND	0.50									
Ethyl Benzene	ND	0.50									
m,p-Xylene	ND	0.50									
o-xylene	ND	0.50									
Toluene	ND	0.50									
Surr: 4-Bromofluorobenzene	20.59	0	20	0	103	65	135				

Sample ID **LCS**	SampType: **LCS**	TestCode: **TO-15**	Units: **ppbv**	Prep Date: **8/25/2008**	RunNo: **17118**
Client ID: **ZZZZZ**	Batch ID: **R17118**	TestNo: **TO-15**		Analysis Date: **8/25/2008**	SeqNo: **245437**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.61	0.50	20	0	108	65	135				
Ethyl Benzene	18.91	0.50	20	0	94.6	65	135				
m,p-Xylene	37.40	0.50	40	0	93.5	65	135				
o-xylene	19.14	0.50	20	0	95.7	65	135				
Toluene	19.98	0.50	20	0	99.9	65	135				
Surr: 4-Bromofluorobenzene	18.73	0	20	0	93.6	65	135				

Sample ID **LCSD**	SampType: **LCSD**	TestCode: **TO-15**	Units: **ppbv**	Prep Date: **8/26/2008**	RunNo: **17118**
Client ID: **ZZZZZ**	Batch ID: **R17118**	TestNo: **TO-15**		Analysis Date: **8/26/2008**	SeqNo: **245434**

Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzene	21.37	0.50	20	0	107	65	135	21.61	1.12	30	
Ethyl Benzene	21.59	0.50	20	0	108	65	135	18.91	13.2	30	
m,p-Xylene	42.61	0.50	40	0	107	65	135	37.4	13.0	30	
o-xylene	22.20	0.50	20	0	111	65	135	19.14	14.8	30	
Toluene	21.17	0.50	20	0	106	65	135	19.98	5.78	30	
Surr: 4-Bromofluorobenzene	18.53	0	20	0	92.6	65	135	0	0	30	

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.
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CHAIN OF CUSTODY

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

LAB WORK ORDER NO: 0808103

Company Name: OTG Environengineering Solutions, Inc
Address: 464 19th st, Suite 206
City: Oakland State: CA Zip Code: 94612
Telephone: (510)465-8982 FAX:
REPORT TO: Xinggang Tong SAMPLER: X. Tong

Location of Sampling: 701 Edgewater Dr., Oakland, CA
Purpose:
Special Instructions / Comments:
P.O. #: EMAIL: xtong@otgenv.com

TURNAROUND TIME:
- [ ] 10 Work Days
- [ ] 3 Work Days
- [ ] Noon - Nxt Day
- [ ] 7 Work Days
- [ ] 2 Work Days
- [ ] 2 - 8 Hours
- [x] 5 Work Days
- [ ] 1 Work Day
- [ ] Other

SAMPLE TYPE:
- [ ] Storm Water
- [ ] Waste Water
- [ ] Ground Water
- [ ] Soil
- [x] 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	TPHg & BTEX	Summa Canister ID	Initial Vacuum (-Hg ")	Final Vacuum (-Hg ")	REMARKS
001A	A-2 Exhaust	8/21/08 11:20	Air	1	6-L Summa	X	482	30"	2"	
002A	A-2 Inlet	8/21/08 11:30	Air	1	6-L Summa	X	874	30"	1"	

TORRENT LAB

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]	Xinggang Tong	8/22/08	11:30	[signature]	Jeff Farva	8/22/08	11:30
2	[signature]	Jeff Farva	8/22/08	1:00	Raj Kaur		8/22/08	1:00pm

Were Samples Received in Good Condition? [ ] Yes [ ] NO Samples on Ice? [ ] Yes [ ] NO Method of Shipment: H. Speed 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: _____