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# **FIRST QUARTER 2007 GROUNDWATER MONITORING REPORT**

**2836 UNION STREET  
OAKLAND, CALIFORNIA**

*Prepared for:*

**LARRY WADLER  
2525 MANDELA PARKWAY  
OAKLAND, CA 94607**

**January 2007**

February 6, 2007

Mr. Barney Chan  
Hazardous Materials Specialist  
Alameda County Environmental Health Care Services Agency  
Department of Environmental Health – Local Oversight Program  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502

Subject: First Quarter 2007 Groundwater Monitoring Report  
Former Modern Mail Service, 2836 Union Street, Oakland, California  
Alameda County Environmental Health Department Fuel Leak Case No. RO2901

Dear Mr. Chan:

On behalf of the property owner and “Responsible Party” (Mr. Lawrence Wadler), Stellar Environmental Solutions, Inc. (SES) is submitting this First Quarter 2007 Groundwater Monitoring Report for the former Modern Mail Service Facility at 2836 Union Street, Oakland, California. The report documents The Q1-2007 groundwater monitoring and sampling event of January 2007 related to petroleum contamination from a former underground fuel storage tank as well as reports on excavation dewatering that occurred in December 2006. This is the second consecutive quarterly groundwater monitoring event at this site. This report follows corrective action activities and a baseline groundwater monitoring event conducted in October 2006; the report of those activities were uploaded to Alameda County Environmental Health and to the State Water Resources Control Board’s GeoTracker system.

In our professional opinion, the recent installation of ten monitoring wells to conduct quarterly groundwater monitoring is the appropriate action to further evaluate the magnitude and stability of the contaminant plume over time, and to determine whether additional corrective action might be warranted and if site closure criteria can be met. I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report are true and correct to the best of my knowledge. If you have any questions regarding this report, please contact us at (510) 644-3123.

Sincerely,



Henry Pietropaoli, R.G., R.E.A.  
Project Manager



Richard S. Makdisi, R.G., R.E.A.  
Principal



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GROUNDWATER MONITORING REPORT**

**2836 UNION STREET  
OAKLAND, CALIFORNIA**

*Prepared for:*

**LARRY WADLER  
2525 MANDELA PARKWAY  
OAKLAND, CA 94607**

*Prepared by:*

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**February 6, 2007**

# TABLE OF CONTENTS

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Section	Page
1.0 INTRODUCTION.....	1
Project Background.....	1
Site Description and history .....	1
Regulatory Status .....	4
scope of work.....	4
2.0 PHYSICAL SETTING.....	5
Topography and Drainage.....	5
Lithology and Hydrogeology .....	5
Groundwater Flow Direction .....	5
3.0 FIRST QUARTER 2007 GROUNDWATER MONITORING, SAMPLING AND EXCAVATION DEWATERING .....	7
Groundwater Monitoring .....	7
Excavation dewatering.....	8
4.0 REGULATORY CONSIDERATIONS, ANALYTICAL RESULTS, AND DISCUSSION OF FINDINGS.....	9
Regulatory Considerations and Screening Levels .....	9
Analytical Methods .....	10
Quality Control Sample Analytical Results .....	11
Analytical Results and Distribution of Contaminants.....	11
5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS.....	16
Summary and Conclusions.....	16
Recommendations .....	17

## TABLE OF CONTENTS (continued)

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Section	Page
6.0 REFERENCES.....	18
7.0 LIMITATIONS.....	20

### Appendices

Appendix A	Groundwater Monitoring and Sampling Field Report
Appendix B	SES Groundwater Standard Sampling Protocols
Appendix C	Certified Analytical Laboratory Reports and Chain-of-Custody Documentation
Appendix D	Excavation Dewatering, Profiling and Disposal Documentation

## **TABLES AND FIGURES**

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<b>Table</b>		<b>Page</b>
Table 1	Monitoring Well Groundwater Elevation Data - January 11, 2007 2836 Union Street, Oakland, California.....	8
Table 2	January 2007 Groundwater Analytical Results 2836 Union Street, Oakland, California.....	12
Table 3	January 2007 Groundwater Sample Analytical Results Lead Scavengers and Fuel Oxygenates 2836 Union Street, Oakland, California.....	13

<b>Figure</b>		<b>Page</b>
Figure 1	Site Location Map.....	2
Figure 2	Site Plan .....	3
Figure 3	Groundwater Elevation Map.....	6
Figure 4	TVH-gasoline Plume – January 10, 2007 .....	14

## **1.0 INTRODUCTION**

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### **PROJECT BACKGROUND**

Stellar Environmental Solutions, Inc. (SES) was contracted by Mr. Lawrence Wadler (property owner) to conduct corrective actions related to soil and groundwater contamination associated with a 10,000-gallon underground fuel storage tank (UFST) at 2836 Union Street in Oakland, California. A list of all known environmental reports is included in Section 6.0. This report discusses the work conducted between December 2006 through January 2007 (specifically, the second groundwater monitoring and sampling event conducted on January 9, 2007). Figure 1 shows the site location. Figure 2 shows the site plan with the locations of groundwater wells, borings, and the former UFST.

### **SITE DESCRIPTION AND HISTORY**

The approximately 7,200-square foot rectangular subject property is developed with one approximately 1,500-square foot two-story building. A narrow driveway borders the building to the north, and the rear of the property is undeveloped (paved). Adjacent uses include:

- A residence (to the north);
- A paved parking area (to the east);
- A residence (to the south); and
- A sidewalk, then Union Street, then an auto body repair facility (to the west).

The property operated as an express courier facility (Modern Mail Services, Inc.) between 1951 and 2003. One 10,000-gallon gasoline UFST was installed in the late 1970s. The UFST operated under Alameda County Environmental Health permit (permit No. STID 4065) until it was removed in 1998. The tank closure report was submitted to the Oakland Fire Department (Golden Gate Tank Removal, 1998).

An initial site characterization conducted by SES in November 2005, which included the advancement of four borings, revealed gasoline and associated aromatic hydrocarbons at elevated levels in both soil and groundwater. That investigation was summarized in a technical report (SES, 2005b).



**SITE LOCATION ON U.S.G.S. TOPOGRAPHIC MAP**

**2836 Union Street  
Oakland, CA**

By: MJC

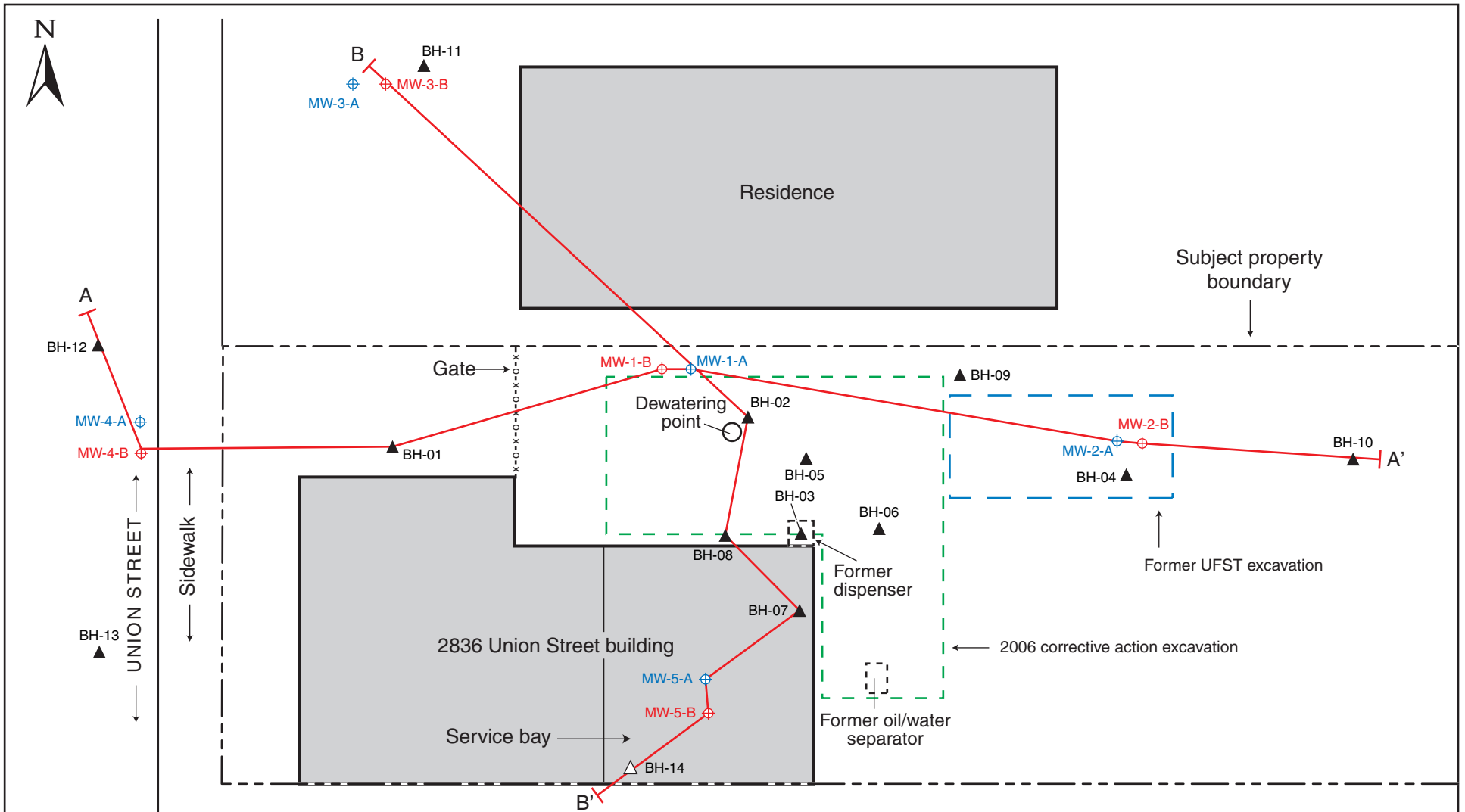
NOVEMBER 2005

**Figure 1**



2005-65-01





SCALE IN FEET (approx.)

**LEGEND**

- MW-1-A Groundwater monitoring well; 10'-13' deep screened interval
- MW-1-B Groundwater monitoring well; 19'-25' deep screened interval
- A-A' Cross-section A-A'
- BH-14 Exploratory borehole drilled during this investigation
- BH-01 Previous exploratory borehole (November 2005 and April 2006)

**SITE PLAN SHOWING LOCATIONS OF SOIL BORINGS**  
**2836 Union Street, Oakland, CA**

**Figure 2**

by: MJC NOVEMBER 2006

2005-65-47



Additional site investigation in April 2006 involved the advancing of nine exploratory boreholes to determine the areal and vertical extent of soil and groundwater contamination. Site data indicated the presence of petroleum hydrocarbons in soil and groundwater warranting groundwater monitoring and the removal of the remaining (accessible) contaminated soils by excavation, as an interim corrective action. That investigation is summarized in a technical report (SES, 2006b).

A corrective action implementing the April 2006 recommendations conducted between September and December 2006 involved: the installation of ten monitoring wells; the advancement of one soil boring; the removal of 398 tons of contaminated soil; and the pumping of 5,100 gallons of contaminated groundwater from the backfilled excavation. Approximately 30 to 40 cubic yards of petroleum hydrocarbon-contaminated soil, at estimated concentrations of 1,000+ milligrams per kilogram (mg/kg), was inaccessible for removal and still resides beneath the building on site. That investigation is summarized in a technical report (SES, 2006c).

## **REGULATORY STATUS**

The Alameda County Environmental Health Care Services Agency, Department of Environmental Health (Alameda County Environmental Health) is the lead regulatory agency for the case, acting as a Local Oversight Program (LOP) for the Regional Water Quality Control Board – San Francisco Bay Region (Water Board). There are no Alameda County Environmental Health or Water Board cleanup orders for the site; however, all site work has been conducted under oversight of Alameda County Environmental Health. Alameda County Environmental Health has assigned the site to its fuel leak case system (RO#2901), and a case officer has been assigned. The case has been assigned No. T0600105641 in the Water Board's GeoTracker system. Electronic uploads of required data/reports are submitted to both agencies.

The site has been granted a Letter of Commitment (and has been receiving financial reimbursement) from the California Underground Storage Tank Cleanup Fund.

## **SCOPE OF WORK**

This report discusses the work conducted between December 1, 2006 and March 31, 2007 (specifically the second groundwater monitoring and sampling event conducted on January 9, 2007). In addition, on December 5, 2006, approximately 4,000 gallons of petroleum-contaminated water was pumped from a temporary dewatering point in the backfilled excavation. On December 13, 2006, the purged groundwater was transported from the site and disposed of at a certified recycler.

## **2.0 PHYSICAL SETTING**

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### **TOPOGRAPHY AND DRAINAGE**

The mean elevation of the property is approximately 18 feet above mean sea level (amsl), and the general topographic gradient in the site vicinity is slight and to the west-southwest (toward San Francisco Bay). The site itself has no discernible slope. The nearest downgradient (to the west) permanent surface water body is the Airport Channel of San Leandro Bay (which is connected to San Francisco Bay), approximately 2 miles west of the subject property. According to the commercially available database, the site is not located within a flood zone or wetland.

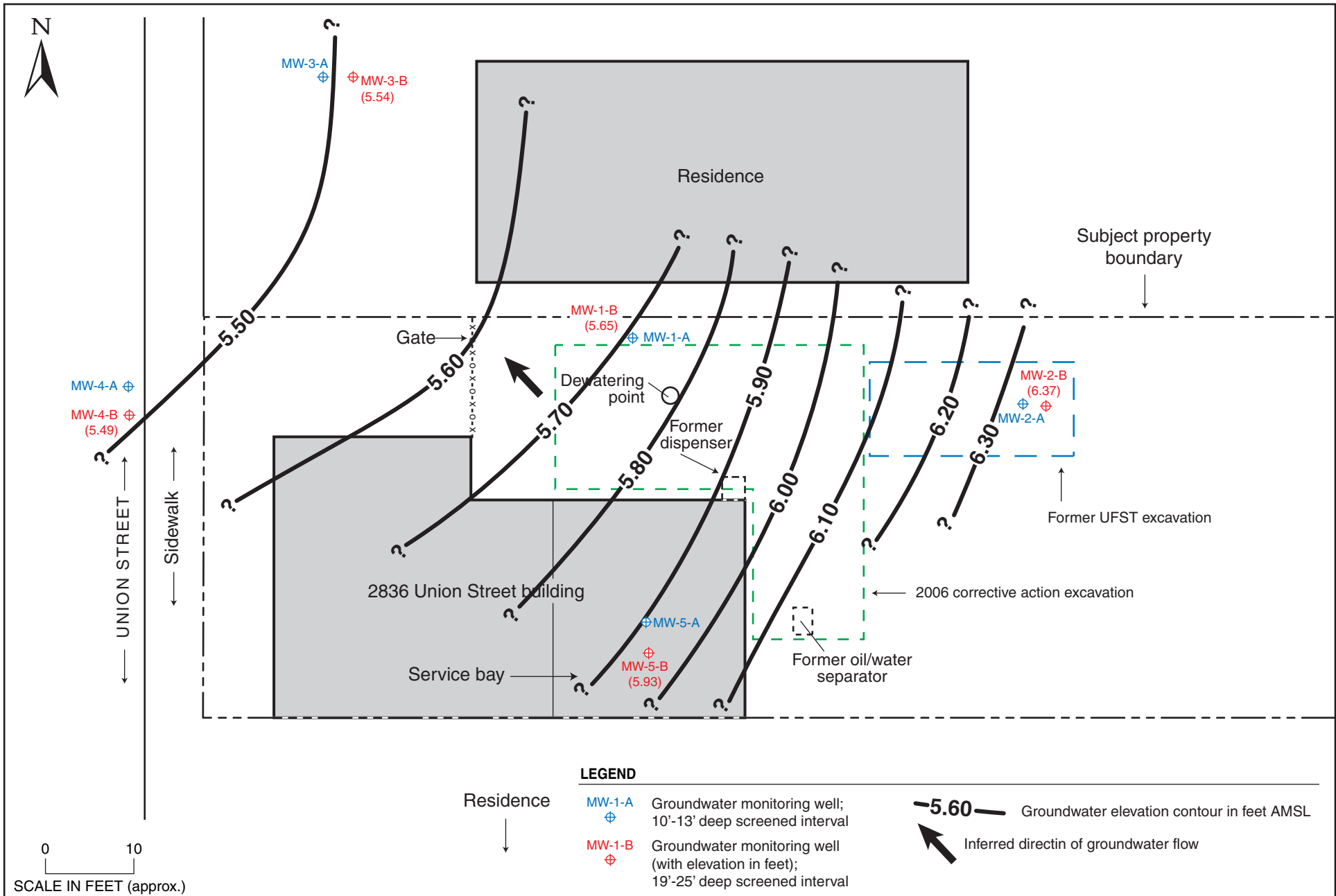
### **LITHOLOGY AND HYDROGEOLOGY**

The predominant soil type in all site boreholes was silty clay, generally firm and plastic. Several of the boreholes had no obvious sand or gravel units, although minor amounts of sand and gravel were occasionally present in the overall clay matrix with the occurrence of groundwater coincident in units with higher sandy-gravel than clay content. Local heterogeneities in shallow lithology and groundwater levels are typical of the alluvial deposits in this area.

Local groundwater flow direction is generally to the west (toward San Francisco Bay and following local topography) in this area of west Oakland. Groundwater in the immediate vicinity of the former UFST occurs at a depth of less than 10 feet, and appears under at least semi-confining conditions, rising from approximately 20 feet below ground surface to as high as 6 feet below grade, such that groundwater is in contact with residual contaminated soil. The groundwater contaminant plume has not been fully delineated, but appears to have an elliptical configuration with the long axis trending east to west-northwest.

### **GROUNDWATER FLOW DIRECTION**

Figure 3 is a groundwater elevation map, based on the January 9, 2007 groundwater elevation measurements. The flow direction is indicated to be to toward the west-northwest (toward San Francisco Bay), generally parallel to the long dimension of the groundwater contaminant plume.



### GROUNDWATER ELEVATION MAP (B-WELLS)

2836 Union Street, Oakland, CA

### Figure 3

by: MJC

JANUARY 2007

### **3.0 FIRST QUARTER 2007 GROUNDWATER MONITORING, SAMPLING AND EXCAVATION DEWATERING**

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This section presents the groundwater sampling and analytical methods for the most recent event (First Quarter 2007), conducted on January 9, 2007. In addition, approximately 4,000 gallons of groundwater was pumped from the excavation on December 5, 2006 as a corrective action measure (to remove dissolved contaminant mass).

#### **GROUNDWATER MONITORING**

Groundwater monitoring well water level measurements, sampling, and field analyses were conducted by Blaine Tech Services (San Jose, California) on January 9, 2006, under the direct supervision of SES personnel. To minimize the potential for cross-contamination, wells were purged and sampled in order of anticipated increasing contamination (based on analytical results from the previous quarter). Monitoring wells MW-3A and MW-5A did not recharge after purging, and therefore could not be sampled during this event.

As the first monitoring task, static water levels were measured in the ten site wells using an electric water level indicator. The wells were then sampled with a peristaltic pump, during which the groundwater quality parameters of temperature, pH, conductivity, and turbidity were field-measured using daily-calibrated instruments. Approximately 6.8 gallons of sampling purge water was generated and containerized onsite. The purge water was containerized onsite, and will be disposed of at later date after subsequent monitoring events and additional purge water has accumulated. The samples were placed in an ice chest with ice at approximately 4°C and transported to the analytical laboratory under chain-of-custody the same day. Laboratory analysis was conducted by Curtis and Tompkins, Ltd. (Berkeley, California), an analytical laboratory certified by the State of California Environmental Laboratory Accreditation Program (ELAP).

The locations of all site monitoring wells are shown on Figure 2. Well construction information and groundwater elevation data are summarized in Table 1. Appendix A contains the groundwater monitoring field records for the current event. Appendix B outlines SES's standard sampling protocol for groundwater. Groundwater analytical results are presented and discussed in Section 4.0. The certified analytical results are contained in Appendix C

**Table 1**  
**Monitoring Well Groundwater Elevation Data - January 11, 2007**  
**2836 Union Street, Oakland, California**

Well	Well Depth Below TOC	Rim Elevation	TOC Elevation	Groundwater Elevation (1/9/06)
MW-1A	12.59	12.52	12.25	2.45
MW-1B	22.52	12.48	12.05	5.65
MW-2A	12.69	13.06	12.82	6.24
MW-2B	24.59	13.16	12.96	6.37
MW-3A	13.06	11.76	11.59	5.27
MW-3B	25.06	12.10	11.95	5.54
MW-4A	12.28	11.25	11.02	5.38
MW-4B	24.32	11.25	11.04	5.49
MW-5A	12.58	12.56	12.42	6.10
MW-5B	25.39	12.57	12.38	5.93

Notes:

TOC = top of casing

Wells are 1-inch diameter.

All elevations are in feet above mean sea level.

## **EXCAVATION DEWATERING**

On December 5, 2006, approximately 4,000 gallons of petroleum-contaminated water was pumped from a temporary dewatering point in the backfilled excavation. The pumped water was stored onsite in a 4,500-gallon plastic tank. A sample for disposal purposes was collected, prior to removal and disposal of the water by Evergreen Environmental Services on December 13, 2006. Appendix D contains excavation dewatering analytical results, disposal, and transport documentation. Analytical results of the purged groundwater discussed in Section 4.0

## 4.0 REGULATORY CONSIDERATIONS, ANALYTICAL RESULTS, AND DISCUSSION OF FINDINGS

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### REGULATORY CONSIDERATIONS AND SCREENING LEVELS

The Water Board has established Environmental Screening Levels (ESLs) for evaluating the likelihood of environmental impact. ESLs are conservative screening-level criteria for soil and groundwater, designed to be generally protective of both drinking water resources and aquatic environments; they incorporate both environmental and human health risk considerations. ESLs are not cleanup criteria (i.e., health-based numerical values or disposal-based values). Rather, they are used as a preliminary guide in determining whether additional remediation and/or investigation may be warranted. Exceedance of ESLs suggests that additional investigation and/or remediation is warranted.

Different ESLs are published for commercial/industrial vs. residential land use, for sites where groundwater is a potential drinking water resource vs. is not a drinking water resource, and the type of receiving water body. A Water Board-published map of the East Bay shows areas where groundwater is, and is not, a potential drinking water resource.

In our professional opinion, the appropriate ESLs for the subject site are based on the following:

- Residential land use (due to the residence adjoining the property) and commercial/industrial use (for the subject property itself). Note that, for both soil and groundwater contaminants, all ESLs for site contaminants are the same for both residential and commercial/industrial land use.
- Groundwater is a potential drinking water resource. In our professional opinion, the appropriate ESLs for the subject site are *commercial/industrial land use* and *groundwater is a potential drinking water resource*. This is based on both the property zoning status (commercial/industrial) and the designation of this area of Oakland as “Zone A – Significant Drinking Water Resource (Water Board, 1999).
- The receiving body for groundwater discharge is an estuary (San Francisco Bay).

The State of California has also promulgated drinking water standards (Maximum Contaminant Levels [MCLs]) for some of the site contaminants. Drinking water standards may also be

utilized by regulatory agencies to evaluate the potential risk associated with groundwater contamination. For the site contaminants, MCLs are generally the same as the ESLs (except that there is no MCL for gasoline).

Once ESLs or drinking water standards are exceeded, the need for and type of additional investigative and corrective actions are generally driven by the potential risk associated with the contamination. Minimum regulatory criteria generally applied to fuel leak cases in groundwater include:

- The contaminant source has been removed, including reasonably accessible contaminated soils that pose a long-term impact to groundwater.
- The extent of residual contamination has been fully characterized, to obtain sufficient lithologic and hydrogeologic understanding (generally referred to as a Site Conceptual Model).
- Groundwater wells have been installed and are monitored periodically to evaluate groundwater contaminant concentrations and hydrochemical trends.
- The stability of the contaminant plume has been evaluated to determine whether it is moving or increasing in concentration.
- A determination has been made as to whether the residual contamination poses an unacceptable risk to sensitive receptors.

As stated above, ESLs are used as a preliminary guide in determining whether additional remediation or other action is warranted. Exceedance of ESLs may warrant additional actions, such as monitoring plume stability to demonstrate no risk to sensitive receptors in the case of sites where drinking water is not threatened.

## **ANALYTICAL METHODS**

The initial site characterization documented contamination by the following LUFT-related constituents: gasoline; BTEX; and methyl *tertiary*-butyl ether (MTBE). In addition, several other contaminants were analyzed (as required by Alameda County Environmental Health)—ethanol; fuel oxygenates (*tertiary*-butyl alcohol [TBA], di-isopropyl ether [DIPE], ethyl *tertiary*-butyl ether [ETBE], and *tertiary*-amyl methyl ether [TAME]); and lead scavengers (1,2-dichloroethane [EDC] and 1,2-dibromoethane [EDB]). Fuel oxygenates and lead scavengers were analyzed in monitoring wells for which there were no data or in those that showed previous laboratory detectable concentrations for these constituents.

Groundwater samples were analyzed using the following methods for:

- Total volatile hydrocarbons (TVH) – gasoline range, by EPA Method 8015M



- BTEX and MTBE, by EPA Method 8260
- TBA, DIPE, ETBE, and TAME, by EPA Method 8260B (in accordance with Alameda County Environmental Health requirement)
- EDC and EDB, by EPA Method 8260B (in accordance with Alameda County Environmental Health requirement)

All groundwater samples were analyzed by Curtis & Tompkins, Ltd. (Berkeley, California) which maintains current ELAP certifications for all the analytical methods utilized in this investigation.

### **QUALITY CONTROL SAMPLE ANALYTICAL RESULTS**

Laboratory quality control (QC) samples (e.g., method blanks, matrix spikes, surrogate spikes) were analyzed by the laboratory in accordance with requirements of each analytical method. All laboratory QC sample results and sample holding times were within the acceptance limits of the methods (see Appendix C).

### **ANALYTICAL RESULTS AND DISTRIBUTION OF CONTAMINANTS**

Table 2 summarizes the groundwater monitoring and the excavation dewatering analytical results for TVHg, associated hydrocarbons, and MTBE. Table 3 presents the analytic results of the fuel oxygenates and lead scavengers analysis. The certified laboratory reports are contained in Appendix C.

#### **Groundwater Analytical Results**

TVHg and benzene were detected above their ESLs in all monitoring wells in which they were detected. MTBE was detected above its ESL in wells MW-1A, MW-2B, MW-4A, and MW-5B, the wells with the highest contaminant concentration closest to the source area. Ethylbenzene was detected in wells MW-1A, MW-2B, and MW-5B. Toluene and total xylenes were also detected in wells MW-2B and MW-5B. The lead scavenger 1,2-dichloroethane was detected above its ESL in wells MW-1B and MW-2B.

Figure 4 shows an isoconcentration contour map of TVHg concentration in groundwater based on the January 2007 monitoring well analytical results. The plume geometry indicates a west-by-northwest migrational pattern, which is in line with general groundwater flow direction in this area.

**Table 2**  
**January 2007 Groundwater Analytical Results**  
**2836 Union Street, Oakland, California**

Sample	TVHg	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
<b>Monitoring Wells</b>						
MW-1A	<b>790</b>	<b>94</b>	<0.5	8.6	<0.5	<b>100</b>
MW-1B	<b>350</b>	<1.3	<1.3	<1.3	<1.3	3.6
MW-2A	<b>490</b>	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2B	<b>2,000</b>	<0.5	1.1	6.7	0.8	<b>19</b>
MW-3A	NS	NS	NS	NS	NS	NS
MW-3B	<b>1,900</b>	<8.3	<8.3	<8.3	<8.3	<8.3
MW-4A	<50	<0.5	<0.5	<0.5	<0.5	<b>72</b>
MW-4B	<b>1,300</b>	<4.2	<4.2	<4.2	<4.2	<4.2
MW-5A	NS	NS	NS	NS	NS	NS
MW-5B	<b>6,600</b>	<b>4.0</b>	<0.5	10	1.0	<b>22</b>
<b>Excavation Dewatering <sup>(a)</sup></b>						
EGW-4	<b>4,800</b>	<b>110</b>	<b>42</b>	<b>260</b>	<b>324</b>	<b>180</b>
<b>Groundwater ESLs</b>	100	1.0	40	30	13	5.0
<b>MCLs</b>		1.0	40	30	20	5.0

Notes:

<sup>(a)</sup> Sample collected from temporary excavation dewatering point.

ESLs = Water Board Environmental Screening Levels for residential or commercial/industrial sites where groundwater is a potential drinking water resource (Water Board 2005). California MCLs = Maximum Contaminant Levels

MTBE = methyl tertiary-butyl ether

TVHg = total volatile hydrocarbons as gasoline

NA = not analyzed for this constituent; NS = not sampled

All concentrations are in micrograms per liter (µg/L). Samples in **bold-face** type exceed the ESL criterion.

**Table 3**  
**January 2007 Groundwater Sample Analytical Results**  
**Lead Scavengers and Fuel Oxygenates**  
**2836 Union Street, Oakland, California**

Sample I.D.	EDC	EDB	ETBE	DIPE	TAME	TBA
<b>Groundwater Analyses (µg/L)</b>						
MW-1A	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
MW-1B	<b>3.3</b>	<1.3	<1.3	<1.3	<1.3	<25
MW-2A	NA	NA	NA	NA	NA	NA
MW-2B	<b>4.1</b>	< 0.5	< 0.5	< 0.5	<0.5	<10
MW-3A	NS	NS	NS	NS	NS	NS
MW-3B	NA	NA	NA	NA	NA	NA
MW-4A	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5
MW-4B	NA	NA	NA	NA	NA	NA
MW-5A	NS	NS	NS	NS	NS	NS
MW-5B	<0.5	<0.5	<0.5	<0.5	< 0.5	< 10
<b>Water Board Environmental Screening Levels</b>						
<b>Groundwater ESLs</b>	0.05	0.005	NLP	NLP	NLP	NLP

Notes:

ESLs = Water Board Environmental Screening Levels for residential or commercial/industrial sites where groundwater is a potential drinking water resource.

NLP = no level published

EDB = ethylene dibromide (1,2-dibromoethane)

EDC = ethylene dichloride (1,2-dichloroethane).

ETBE = ethyl tertiary-butyl ether

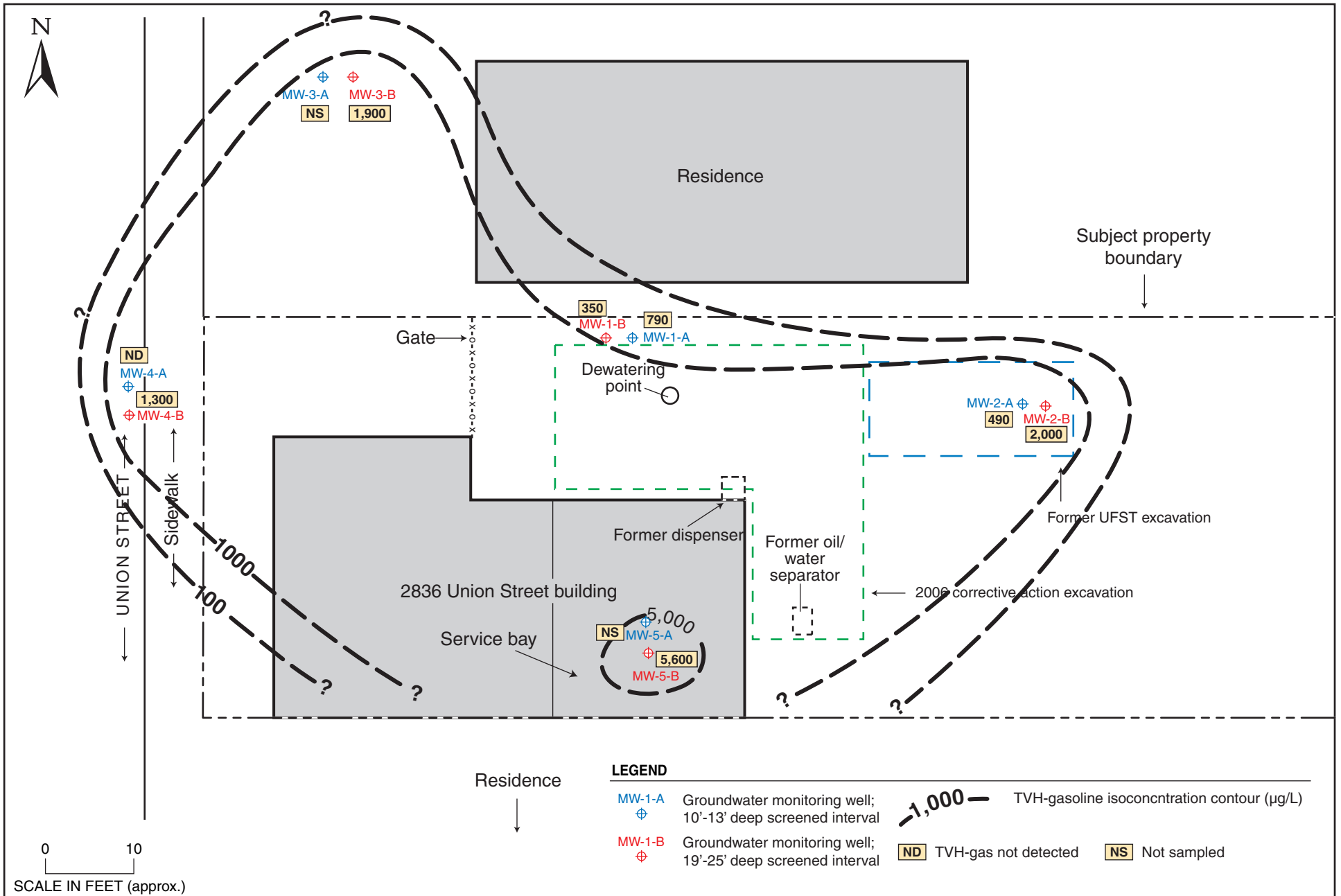
DIPE = isopropyl ether

TAME = tertiary-amyl methyl ether

TBA = tertiary-butyl alcohol

NA = not analyzed for this constituent; NS = not sampled

All concentrations are in micrograms per liter (µg/L). Samples in **bold-face** type exceed the ESL criterion.



**TVH-GASOLINE PLUME — JANUARY 9, 2007**  
**2836 Union Street, Oakland, CA**

**Figure 4**

by: MJC

JANUARY 2007

## **Excavation Dewatering and Estimated Contaminant Mass Removal**

On December 5, 2006, a total of 4,000 gallons of TVHg-contaminated groundwater was removed from the site, with an average concentration of 4,800 micrograms per liter ( $\mu\text{g/L}$ ). This represents a mass removal of approximately 0.16 pounds of gasoline.

The excavation water sample was collected at a dewatering point directly downgradient of the former UFST location, the area of highest residual soil contamination beneath the building. All contaminant concentrations were higher in the dewatering samples than in groundwater monitoring well samples. It is possible that groundwater contaminant concentrations in the developed groundwater monitoring wells are lower than the excavation water samples, due to the filtering capacity of the well pack material.

Appendix D contains the dewatering data, including certified analytical results, chain-of-custody record, disposal, and transport documentation for the excavation purge water.

## **5.0 SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS**

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### **SUMMARY AND CONCLUSIONS**

- One 10,000-gallon gasoline UFST was installed in the late 1970s. The UFST operated under Alameda County Environmental Health permit until its removal in 1998.
- A preliminary investigation was conducted in August 2005, additional site characterization investigations in October 2005 and April 2006 and a corrective action entailing contaminated soil excavation and the installation of ten monitoring wells was conducted in September to October 2006.
- In December 2006 approximately 4,000 gallons of contaminated groundwater was pumped from the backfilled excavation. Post-pumping excavation groundwater analytical results show that mass removal of 0.16 pound of TVHg was accomplished by the excavation dewatering.
- First quarter 2007 groundwater analytical results show a significant reduction in TVHg (a decrease from 13,000 to 6,600 µg/L) in the source area.
- The primary source (UFST) and secondary source (contaminated soil) have been remediated by excavation to the extent practical, without removing the garage building. It is estimated that between 30 and 40 cubic yards of contaminated material containing TVHg at present concentrations (estimated at 1,200 mg/kg) is located beneath the garage portion of the building and cannot be directly accessed without structurally compromising the building. Remediating the residual soil would require the application of an in-situ method, such as vapor extraction.
- Shallow groundwater will likely continue to be impacted by the remaining residual soil contamination by desorption from soil into groundwater. Groundwater contamination will continue to migrate downgradient from the source area, primarily by advection.
- The groundwater contaminate plume has not been fully delineated, but appears to be in elliptical configuration with its long axis trending east by west-northwest.
- Excavation dewatering has resulted in the capture of contaminant mass but has not resulted in the plume being drawn back on-site.

- The property owner has no plans to utilize site groundwater for any purpose, and assuming approval for site development is achieved, the former source area would remain paved to prevent any infiltrating precipitation from providing a migrational mechanism for the hydrocarbons still entrained in the soil. Groundwater in the immediate vicinity of the site is not likely to be a potential drinking water source, given its shallow depth and turbidity.

## **RECOMMENDATIONS**

- We recommend following up with Alameda County Environmental Health following its receipt of this report, to discuss the requirements to move the site toward regulatory closure. We further recommend that the Alameda County Environmental Health-requested work be implemented, and that all future technical reports be provided to the appropriate regulatory agencies, including electronic uploads to Alameda County Environmental Health's ftp system and the State Water Board's GeoTracker system.
- Quarterly groundwater monitoring should be continued to delineate seasonal trends and changes in flow direction and hydrochemistry.
- Analysis for lead scavengers and fuel oxygenates should be limited to the wells with a historical detection—namely, MW-1B and MW-2B.
- Additional excavation dewatering should be completed, followed by collection of post-pumping groundwater samples to evaluate the effectiveness of the pumping on controlling the plume migration.
- Depending on the outcome of future quarterly monitoring, additional remediation such as soil vapor extraction could be considered should natural attenuation fail to demonstrate a stable or reducing plume.

## 6.0 REFERENCES

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- Stellar Environmental Solutions, Inc. (SES), 2006a. Workplan for Groundwater Characterization and Interim Corrective Actions – 2836 Union Street, Oakland, California. May 3, 2006.
- Stellar Environmental Solutions, Inc. (SES), 2006b. Corrective Action Investigation: 2836 Union Street, Oakland, California, Alameda County Environmental Health Case No. RO0002901. May 3.



Stellar Environmental Solutions, Inc. (SES), 2006c. Underground Fuel Storage Tank-Related Corrective Action Report – 2836 Union Street, Oakland, California, Alameda County Environmental Health Case No. RO0002901. May 3.

Stellar Environmental Solutions, Inc. (SES), 2006d. Underground Fuel Storage Tank-Related Corrective Action Report – 2836 Union Street, Oakland, California, Alameda County Environmental Health Case No. RO0002901. December 3.

## 7.0 LIMITATIONS

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This report has been prepared for the exclusive use of Mr. Lawrence Wadler (subject property owner), the regulatory agencies, and their authorized assigns and/or representatives. No reliance on this report shall be made by anyone other than those for whom it was prepared.

The findings and conclusions presented in this report are based solely on the findings of the investigations discussed herein. This report has been prepared in accordance with generally accepted methodologies and standards of practice of the area. The personnel performing this assessment are qualified to perform such investigations and have accurately reported the information available, but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions, and recommendations included in the report.

## **APPENDIX A**

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# **GROUNDWATER MONITORING AND SAMPLING FIELD REPORT**



# WELLHEAD INSPECTION CHECKLIST

Page 1 of 1

Date 1/9/07 Client Stellar

Site Address 2836 Union St. Oakland Ca.

Job Number 070109-DRI Technician DR

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Debris Removed From Wellbox	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)
MW-4A	X							
MW-4B	X							
MW-3A	X							
MW-3B	X							
MW-1A	X							
MW-1B	X							
MW-2A	X							
MW-2B	X							
MW-5A	X							
MW-5B	X							

NOTES: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

# WELL GAUGING DATA

Project # 070109-DR1 Date 9/9/07 Client Stellar

Site 2836 Union St. Oakland CA

Well ID	Time	Well Size (in.)	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-4A	0815	3/4"				5.64	12.15	↓	
MW-4B	0812	3/4"				5.55	24.27		
MW-3A	0808	3/4"				6.32	12.95		
MW-3B	0804	3/4"				6.41	25.04		
MW-1A	0835	3/4"				9.80	12.44		
MW-1B	0838	3/4"				6.40	22.50		
MW-2A	0830	3/4"				6.58	12.75		
MW-2B	0827	3/4"				6.59	24.58		
MW-5A	0823	3/4"				6.72	12.47		
MW-5B	0820	3/4"				6.45	25.33		







WATER MONITORING DATA SHEET

Project #: 070109-DRI	Client: Skellar
Sampler: DR	Date: 1/9/07
Well I.D.: MW-2A	Well Diameter: 2 3 4 6 8 <u>3/4"</u>
Total Well Depth (TD): 12.75	Depth to Water (DTW): 6.58
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>VG</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.81	

Purge Method: Bailer Watertra Sampling Method: Bailer  
 Disposable Bailer  Peristaltic Disposable Bailer  
 Positive Air Displacement Extraction Pump Extraction Port  
 Electric Submersible Other \_\_\_\_\_  Dedicated Tubing

467.1 (ml) X 3 = 1401.3 parts/ml	Well Diameter	Multiplier	Well Diameter	Multiplier
1 Case Volume ml Specified Volumes Calculated Volume	1"	0.04	4"	0.65
	2"	0.16	6"	1.47
	3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	ml <del>Case</del> Removed	Observations
1045	15.8	7.4	865	173	467.1	clear
1047	16.7	7.4	784	62	934.2	"
1047	17.0	7.4	766	37	1401.3	"

Did well dewater? Yes  No  Gallons actually evacuated: 1401.3 ml

Sampling Date: 1/9/07 Sampling Time: 1050 Depth to Water: 6.83

Sample I.D.: MW-2A Laboratory: Kiff CalScience Other (LFT)

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See Col

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WATER MONITORING DATA SHEET

Project #: 070109-DRI	Client: Stellar
Sampler: DR	Date: 1/9/07
Well I.D.: MW-23	Well Diameter: 2 3 4 6 8 <u>3/4"</u>
Total Well Depth (TD): 24.59	Depth to Water (DTW): 6.59
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>VC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.19	

Purge Method: Bailer	Waterra	Sampling Method: Bailer
Disposable Bailer	<input checked="" type="checkbox"/> Peristaltic	Disposable Bailer
Positive Air Displacement	Extraction Pump	Extraction Port
Electric Submersible	Other _____	<input checked="" type="checkbox"/> Dedicated Tubing
Other: _____		

1361.8 (Gals.) X 3 = 4,085.4 Gals.	Well Diameter	Multiplier	Well Diameter	Multiplier
1 Case Volume	Specified Volumes	Calculated Volume	1"	0.04
			2"	0.16
			3"	0.37
			4"	0.65
			6"	1.47
			Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	ml <del>bars</del> Removed	Observations
1054	16.4	7.4	1177	>1000	1361.8	cloudy / odor
1057	16.9	7.5	1213	>1000	2723.6	"
1100	17.1	7.5	1249	>1000	4085.4	"

Did well dewater? Yes  No  Gallons actually evacuated: 4,085.4 ml

Sampling Date: 1/9/07 Sampling Time: 1105 Depth to Water: 10.10

Sample I.D.: MW-23 Laboratory: Kiff CalScience Other (LFT)

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See Col

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd): Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd): Pre-purge:	mV	Post-purge:	mV



WATER MONITORING DATA SHEET

Project #: 070109-D41 Client: Skellar  
 Sampler: DR Date: 1/9/07  
 Well I.D.: MW-3B Well Diameter: 2 3 4 6 8 3/4"  
 Total Well Depth (TD): 25.04 Depth to Water (DTW): 6.41  
 Depth to Free Product: Thickness of Free Product (feet):  
 Referenced to:  VVO Grade D.O. Meter (if req'd): YSI HACH  
 DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.14

Purge Method: Bailer Waterra Sampling Method: Bailer  
 Disposable Bailer  Peristaltic Disposable Bailer  
 Positive Air Displacement Extraction Pump Extraction Port  
 Electric Submersible Other \_\_\_\_\_  Dedicated Tubing  
 Other: \_\_\_\_\_

I Case Volume ml	Specified Volumes	Calculated Volume ml	Well Diameter	Multiplier	Well Diameter	Multiplier
1410.3	3	4230.9	1"	0.04	4"	0.65
			2"	0.16	6"	1.47
			3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	ml Removed	Observations
1308	17.6	7.0	1143	21000	1410.3	cloudy / orange
1310	17.4	7.0	1001	148	2820.6	light cloudy
1312	17.4	6.9	978	77	4230.9	clear

Did well dewater? Yes  No  
 Gallons actually evacuated: 4230.9 ml  
 Sampling Date: 1/9/07 Sampling Time: 1320 Depth to Water: 9.29  
 Sample I.D.: MW-3B Laboratory: Kiff CalScience Other  CTF  
 Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See Col  
 EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):  
 Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:  
 D.O. (if req'd): Pre-purge: mg/L Post-purge: mg/L  
 O.R.P. (if req'd): Pre-purge: mV Post-purge: mV

WATER MONITORING DATA SHEET

Project #: 070109-D41	Client: Skellar
Sampler: DR	Date: 1/9/07
Well I.D.: MW-4A	Well Diameter: 2 3 4 6 8 $\frac{3}{4}$ "
Total Well Depth (TD): 12.15	Depth to Water (DTW): 5.64
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <input checked="" type="checkbox"/> RVD Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.94	

Purge Method: Bailer	Water	Sampling Method: Bailer
Disposable Bailer	<input checked="" type="checkbox"/> Peristaltic	Disposable Bailer
Positive Air Displacement	Extraction Pump	Extraction Port
Electric Submersible	Other _____	<input checked="" type="checkbox"/> Dedicated Tubing
		Other: _____

$492.8 \text{ (ml)} \times 3 = 1478.4 \text{ (ml)}$	<table border="1"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius<sup>2</sup> * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius <sup>2</sup> * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius <sup>2</sup> * 0.163														
I Case Volume ml	Specified Volumes	Calculated Volume ml															

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	ml <del>Removed</del>	Observations
1207	15.1	7.1	1233	399	492.8	light cloudy
1210	15.8	7.1	1276	292	985.6	"
1213	16.0	7.1	1291	212	1478.4	"
Well	draw	down.	Had to	let	come	up to 80%. Never got
full	80%	recharge.				

Did well dewater? Yes  No  Gallons actually evacuated: 1478.4 ml

Sampling Date: 1/9/07 Sampling Time: 1415 Depth to Water: 10.18

Sample I.D.: MW-4A Laboratory: Kiff CalScience Other:  CFI

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See Col

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV

WATER MONITORING DATA SHEET

Project #: 070109-D01	Client: Skellar
Sampler: DR	Date: 1/9/07
Well I.D.: MW-4B	Well Diameter: 2 3 4 6 8 <u>3/4"</u>
Total Well Depth (TD): 24.27	Depth to Water (DTW): 5.55
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>RVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.29	

Purge Method: Bailer Watertra Sampling Method: Bailer  
 Disposable Bailer  Peristaltic Disposable Bailer  
 Positive Air Displacement Extraction Pump Extraction Port  
 Electric Submersible Other \_\_\_\_\_  Dedicated Tubing  
 Other: \_\_\_\_\_

1417.1 (ml) X 3 = 4251.3 ml  
 1 Case Volume (ml) Specified Volumes Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius <sup>2</sup> * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	ml <del>Removed</del>	Observations
1238	15.3	7.0	1134	>1000	1417.1	cloudy
1240	16.6	7.0	986	88	2834.2	clear
1242	16.7	7.0	893	49	4251.3	"

Did well dewater? Yes  No  Gallons actually evacuated: 4251.3 ml

Sampling Date: 1/9/07 Sampling Time: 1250 Depth to Water: 8.13

Sample I.D.: MW-4B Laboratory: Kiff CalScience Other (LFT)

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: See Col

EB I.D. (if applicable): @ Time Duplicate I.D. (if applicable):

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	mV







# SPH or Purge Water Drum Log

Client: Stellco  
 Site Address: 2836 Union St. Oakland CA

STATUS OF DRUM(S) UPON ARRIVAL							
Date	10/5/06	1/9/07					
Number of drum(s) empty:	3	3 (Non BTS)					
Number of drum(s) 1/4 full:							
Number of drum(s) 1/2 full:							
Number of drum(s) 3/4 full:							
Number of drum(s) full:	0						
Total drum(s) on site: <u>Baker Tanks 2</u>	3						
Are the drum(s) properly labeled?							
Drum ID & Contents:							
If any drum(s) are partially or totally filled, what is the first use date:							

- If you add any SPH to an empty or partially filled drum, drum must have at least 20 gals. of Purgewater or DI Water.
- If drum contains SPH, the drum MUST be steel AND labeled with the appropriate label.
- All BTS drums MUST be labeled appropriately.

STATUS OF DRUM(S) UPON DEPARTURE							
Date	10/5/06	1/9/07					
Number of drums empty:	0						
Number of drum(s) 1/4 full:		1 (~10 gal)					
Number of drum(s) 1/2 full:							
Number of drum(s) 3/4 full:							
Number of drum(s) full:	0						
Total drum(s) on site:	0	1 (BTS) 3 (Non BTS)					
Are the drum(s) properly labeled?		BTS Yes					
Drum ID & Contents:		→ Purge H <sub>2</sub> O					

**LOCATION OF DRUM(S)**  
 Describe location of drum(s): 2 Baker Tanks along the fence line  
55 gal. drums inside garage.

FINAL STATUS							
Number of new drum(s) left on site this event	0	1					
Date of inspection:	10/5/06	1/9/07					
Drum(s) labelled properly:	-	U					
Logged by BTS Field Tech:	<u>DR</u>	<u>DR</u>					
Office reviewed by:	<u>AD</u>	<u>AD</u>					

## **APPENDIX B**

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# **SES GROUNDWATER STANDARD SAMPLING PROTOCOLS**

## **APPENDIX B: SES GROUNDWATER STANDARD SAMPLING PROTOCOLS**

### **SAMPLING AND ANALYSIS PERSONNEL**

Sampling and analysis is conducted by Blaine Tech Services, a subcontractor to SES, which uses appropriately trained personnel to perform the water level measurements, sampling, and analyses of key natural attenuation indicators.

### **SUMMARY OF SAMPLING PROCEDURES**

Activities that will occur during groundwater sampling are summarized as follows:

- Pre-arrangement with testing laboratory
- Assembly and preparation of equipment and supplies
- Groundwater sampling
  - water-level measurements
  - immiscible material measurements (with an interface probe, if applicable)
  - visual inspection of borehole water
  - well bore evacuation
  - sampling
- Sample preservation and shipment
  - sample preparation
  - onsite measurement of parameters using direct read instruments
  - sample labeling
- Completion of sample records
- Completion of chain-of-custody records
- Samples placed in chilled cooler
- Sample shipment

Detailed sampling and analysis procedures are presented in the following sections.

## **ARRANGEMENTS WITH ANALYTICAL LABORATORY**

Prior to sampling, arrangements will be made with an analytical laboratory to conduct the sample analyses. Samples will be analyzed by Curtis and Tompkins, Ltd. (C&T), an analytical laboratory in Berkeley, California. C&T has the required Department of Toxic Substances Control (DTSC) certification to perform the analyses, and will provide a sufficient number of sample containers for the wells to be sampled and the blanks to be included. C&T will determine the proper type and size for the containers based on the analyses requested. For samples requiring chemical preservation, preservatives will be added to containers by the C&T prior to shipping containers to the facility. Shipping containers (ice chests with adequate container padding) will be sent to the facility with the sample containers.

## **PREPARATION FOR SAMPLING**

Prior to the sampling episode, equipment to be used will be assembled and its operating condition verified, calibrated (if required), and properly cleaned (if required). In addition, all record-keeping materials will be prepared.

### **Equipment Calibration**

Where appropriate, equipment will be calibrated according to the manufacturer's specifications prior to field use. This applies to the equipment for making onsite chemical measurements of pH, conductivity, water temperature, and photoionization detector (PID).

### **Equipment Cleaning**

Portions of sampling and test equipment that will come into contact with the sample will be thoroughly cleaned before use. Such equipment includes water-level probe, bailers, lifting line, and other equipment or portions thereof that may be immersed. The procedure for cleaning non-dedicated equipment is as follows:

- Clean with potable water and phosphate-free detergent;
- Rinse with potable water;
- Rinse with distilled or deionized water; and
- Air dry the equipment prior to use.

Any deviations from these procedures will be documented in the permanent record of the sampling event.

Laboratory-supplied sample containers will be cleaned and sealed by the laboratory before shipping. The type of container provided and the method of container cleaning should be in the laboratory's permanent record of the sampling event.

Sampling equipment to be disposed of after use will be cleaned with potable water and phosphate-free detergent before disposal as solid waste. Rinse water will be stored in properly labeled 55-gallon drums for proper disposal, pending receipt of laboratory results of groundwater and soil sample analyses with assistance from SES.

## **SAMPLING PROCEDURES**

Special care will be exercised to prevent contamination of the groundwater and extracted samples during the sampling activities. Contamination of a sample can occur through contact with improperly cleaned equipment. Cross-contamination of the groundwater can occur through insufficient cleaning of equipment between wells. Pre-cleaned disposable sampling equipment will be rinsed with distilled water prior to use. Sampling equipment and sample containers will be thoroughly cleaned before and after field use and between uses at different sampling locations according to the procedures discussed above. In addition to the use of properly cleaned equipment, two further precautions will be taken:

- A new pair of clean, disposable latex (or similar) gloves will be worn each time a different well is sampled.
- Sample collection activities will progress from the least affected (upgradient) area to the most affected (downgradient) area. Wells described as "background" or "upgradient" wells will be sampled first.

The following paragraphs present procedures for the several activities that comprise groundwater sample acquisition. These activities will be performed in the same order as presented below. Exceptions to this procedure will be noted in the permanent sampling record.

### **Preparation of Location**

Prior to starting the sampling procedure, the area around the well will be cleared of foreign materials, such as brush, rocks, debris, etc. A clean (new) disposable plastic sheet will be placed around the well casing so that the sheet is flat on the ground. The sheet will be placed such that the flush-mount well projects through the center of the sheet. This preparation will prevent sampling equipment from inadvertently contacting the ground or exterior parts of the well.

### **Water-Level Measurement**

The first sampling operation will be water-level measurement. An electrical probe or a weighted tape will be used to measure the depth to groundwater below the datum to the nearest 0.01 foot.

The datum, usually the top of the inner casing (inside and below the protective steel cover), will be described in the monitoring well records. A permanent mark or scribe will be marked on the inner casing.

If the wells to be sampled are closely spaced, the water levels at all of the closely-spaced wells will be measured before any of the wells are evacuated. The water-level probe or weighted tape will be cleaned with phosphate-free detergent in distilled water and with a distilled water rinse between usage at different wells.

### **Total Depth Measurement**

Once the water level and immiscible material thickness is measured and recorded, the water-level probe or weighted tape will be slowly lowered to the bottom of the well. The depth to the bottom will be measured and recorded. The probe or tape will then be slowly withdrawn from the well. The bottom of the probe or tape will be observed after withdrawal to determine any evidence of viscous, heavy contaminants. Descriptions (and measurements, if possible) of such materials will be made from observation of the probe or tape.

### **Visual Inspection of Well Water**

Prior to well evacuation, a small quantity of water will be removed with a bailer that is not completely immersed. The recovered sample is representative of the top of the water column in the well casing. If immiscible materials are present as measured by the interface probe at the top of the water column, this technique can allow their detection. The water will be observed for the presence of any floating films or other indications of immiscible materials. Any sample odors will be noted. Observations regarding odor or visual evidence of immiscible materials will be recorded in the sampling record.

The well water sample will be discarded unless the site-specific protocol calls for retention of this sample. The sample will be placed in a labeled container for proper disposal.

### **Well Bore Evacuation**

Water contained within and adjacent to the well casing can potentially reflect chemical interaction with the atmosphere (by diffusion of gases down the casing) or the well construction materials (through prolonged residence adjacent to the casing).

Observations of this water will be recorded during removal and prior to it being discarded. Onsite parameter measurements of the purged water, as described in this section, will indicate when water-quality parameters have stabilized, and also will be recorded.

The volume of water contained within the well bore at the time of sampling will be calculated, and 4 times the calculated water volume will be removed from the well and discarded. A bailer will be used for well evacuation. The volume of water to be evacuated will be calculated as follows:

Number of Bailers:

$$\text{Number of bailers} = 4 \times \frac{\text{Volume of water in well (Vw)}}{\text{Volume of bailer (Vb)}}$$

Volume of Water in Well:

$$\frac{Vw = 3.142 \times dw^2 \times Lw}{4}$$

where:      Vw = water volume in well (ft<sup>3</sup>)  
               dw = inside diameter of well (ft)  
               Lw = length of water column in well (ft)

Volume of Water in Full Bailer:

$$\frac{Vb = 3.142 \times db^2 \times Lb}{4}$$

where:      Vb = water volume in bailer (ft<sup>3</sup>)  
               db = inside diameter of bailer (ft)  
               Lb = length of bailer (ft)

Wells that can be evacuated to a dry state will be evacuated completely; samples will be taken as soon as sufficient water for sampling is present. Sample compositing—sampling over a lengthy

period by accumulating small volumes of water at different times to eventually obtain a sample of sufficient volume—will not be conducted.

Water produced during well evacuation will be contained in a suitable container and temporarily stored onsite pending proper disposal.

Some chemical and physical parameters in water can change significantly within a short time of sample acquisition. The following parameters cannot be accurately measured in a laboratory located more than a few hours from the facility, and will be measured onsite with portable equipment:

- pH
- Specific conductance
- Temperature
- Turbidity units

These parameters will be measured in unfiltered, unpreserved, “fresh” water, using the same sampling technique as for laboratory analyses. The measurements will be made in a clean glass container separate from those intended for laboratory analyses. The tested sample will be discarded after use. The measured values will be recorded in the sampling record.

### **Natural Attenuation Field Measurements**

In addition to the meter reading above, following the indicators that groundwater has been purged sufficiently to represent water within the water bearing materials, natural attenuation parameters were measured by the Blaine Tech sampling personnel. These include meter readings for:

- Oxidation reduction potential;
- Dissolved oxygen; and
- Dissolved ferrous iron.

### **Sample Extraction**

Natural attenuation parameters are measured before the water is purged and sampled. Care will be taken during insertion of sampling equipment to prevent undue disturbance of water in the well.

The pump or bailer will be lowered into the water gently to prevent splashing, and extracted gently to prevent creation of an excessive vacuum in the well. The sample will be transferred directly into the appropriate container. While pouring water from a bailer, the water will be



carefully poured down the inside of the sample bottle to prevent significant aeration of the sample. Unless other instructions are given by the analytical laboratory, the sample containers will be completely filled so that no air space remains in the container. Excess water taken during sampling will be placed in a container for proper disposal.

## **SAMPLE HANDLING**

### **Sample Preservation**

Water samples will be properly prepared for transportation to the laboratory by refrigeration and chemical preservation, as necessary. The laboratory providing sample containers will add any necessary chemical preservatives to the sealed containers provided prior to shipment.

### **Container and Labels**

Glass containers and appropriate container lids will be provided by the laboratory. The containers will be filled and container lids tightly closed. Sample container lids will be sealed so as to make obvious any seal tampered with or broken. The label will be firmly attached to the container side (rather than the lid). The following information will be written with permanent marker on the label:

- Facility name;
- Sample identification;
- Sample type (groundwater, surface water, etc.);
- Sampling date;
- Sampling time; and
- Preservatives added, and sample collector's initials.

### **Sample Shipment**

In most instances, the concentration and type of compounds present in the groundwater are considered by the U.S. Department of Transportation to be non-hazardous. Thus, the following packaging and labeling requirements for the sample materials are appropriate for shipping the sample to the testing laboratory:

- Package sample so that it does not leak, spill, or vaporize from its packaging
- Label package with:
  - sample collector's name, address, and telephone number
  - laboratory's name, address, and telephone number

- description of sample
- quantity of sample
- date of shipment

To comply with packaging regulations and prevent damage to expensive groundwater samples, SES will follow packaging and shipping instructions supplied by the certified testing laboratory.

### **Chain-of-Custody Control**

After samples are obtained, chain-of-custody procedures will be followed to establish a written record concerning sample movement between the sampling site and the testing laboratory. Each shipping container will contain a chain-of-custody form to be completed by the sampling personnel packing the samples. The chain-of-custody form for each container will be completed in triplicate. One copy of this form will be maintained at the site; the other two copies will remain at the laboratory. One of the laboratory copies will become a part of the permanent record for the sample and will be returned with the sample analyses.

The record will contain the following minimum information:

- Collector's sample number
- Signature of collector
- Date and time of collection
- Place and address of collection
- Material type
- Preservatives added
- Analyses requested
- Signatures involved in the chain of possession
- Inclusive dates of possession

The shipping container will be sealed so as to make obvious any seal tampered with or broken. The chain-of-custody documentation will be placed inside the container so that it is immediately apparent to the laboratory personnel receiving the container, but could not be damaged or lost during shipping.

### **SAMPLING RECORDS**

To provide complete documentation of sampling, detailed records containing the following information will be maintained during sampling:

- Sample location (facility name)
- Sample identification (name and sample number)
- Sample location map or detailed sketch
- Date and time of sampling
- Sampling method
- Field observations of sample appearance and odor
- Weather conditions
- Samples identification
- Any other significant information

## **APPENDIX C**

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# **CERTIFIED ANALYTICAL LABORATORY REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION**

192023

# Chain of Custody Record

Laboratory CET  
 Address 2323 Fifth St.  
Berkeley, CA

Method of Shipment courier

Lab job no. \_\_\_\_\_

Date 1/9/07

Page 1 of 1

Project Owner LARRY WADLOR  
 Site Address 2836 Union St.  
Oak, CA  
 Project Name USTCIF Claim # 018639  
 Project Number 2005-65

Cooler No. \_\_\_\_\_  
 Project Manager R. MAUDISI  
 Telephone No. (510) 644-3123  
 Fax No. (510) 644-3859  
 Samplers: (Signature) D. [Signature]

Filtered	No. of Containers	Analysis Required										Remarks	
		TPH-9 (L)	TPH-9 (S)	BTEX (M)	BTEX (M) (B)	EDC (B)	EDC (B) (S)	EDC (B) (S) (M)	EDC (B) (S) (M) (S)	EDC (B) (S) (M) (S) (M)	EDC (B) (S) (M) (S) (M) (S)		
		X	X	X	X								
		X	X	X	X								
		X	X										
		X	X	X	X								
		X	X										
		X	X	X	X								
		X	X	X	X								

- 1-
- 2-
- 3-
- 4-
- 5-
- 6-
- 7-
- 8-

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Analysis Required										Remarks				
						Cooler	Chemical	TPH-9 (L)	TPH-9 (S)	BTEX (M)	BTEX (M) (B)	EDC (B)	EDC (B) (S)	EDC (B) (S) (M)	EDC (B) (S) (M) (S)	EDC (B) (S) (M) (S) (M)	EDC (B) (S) (M) (S) (M) (S)					
MW-1A		1/9/07	955		6 voas			X	X	X	X											
MW-1B			1040		6 voas			X	X	X	X											
MW-2A			1050		6 voas			X	X													
MW-2B			1105		6 voas			X	X	X	X											
MW-3B			1320		6 voas			X	X													
MW-4A			1415		6 voas			X	X	X	X											
MW-4B			1250		6 voas			X	X													
MW-5B			1140		6 voas			X	X	X	X											

Relinquished by: [Signature]  
 Signature \_\_\_\_\_  
 Printed Devin Roymal  
 Company BTS

Date 1/9/07  
 Received by: [Signature]  
 Signature \_\_\_\_\_  
 Printed Devin Roymal  
(Sample Custodian)  
 Company BTS

Date 1/9/07  
 Relinquished by: [Signature]  
 Signature \_\_\_\_\_  
 Printed R. JWH  
 Company BTS

Date 1/10/07  
 Received by: [Signature]  
 Signature \_\_\_\_\_  
 Printed Rick Grams  
 Company CJ7

Turnaround Time: \_\_\_\_\_  
 Comments: \_\_\_\_\_

Relinquished by: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed \_\_\_\_\_  
 Company \_\_\_\_\_

Date \_\_\_\_\_  
 Received by: \_\_\_\_\_  
 Signature \_\_\_\_\_  
 Printed \_\_\_\_\_  
 Company \_\_\_\_\_

intact cold ICC

2000-00-01

**CASE NARRATIVE**

Laboratory number: 192023  
Client: Stellar Environmental Solutions  
Project: 2005-65  
Location: USTCF Claim #018639  
Request Date: 01/10/07  
Samples Received: 01/10/07

This hardcopy data package contains sample and QC results for eight water samples, requested for the above referenced project on 01/10/07. The samples were received cold and intact.

**TPH-Purgeables and/or BTXE by GC (EPA 8015B):**

No analytical problems were encountered.

**Volatile Organics by GC/MS (EPA 8260B):**

No analytical problems were encountered.

### Total Volatile Hydrocarbons

Lab #: 192023	Location: USTCF Claim #018639
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2005-65	Analysis: EPA 8015B
Matrix: Water	Sampled: 01/09/07
Units: ug/L	Received: 01/10/07
Batch#: 121138	

Field ID: MW-1A	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 01/11/07
Lab ID: 192023-001	

Analyte	Result	RL
Gasoline C7-C12	790 Y	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	135	69-137
Bromofluorobenzene (FID)	102	80-133

Field ID: MW-1B	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 01/11/07
Lab ID: 192023-002	

Analyte	Result	RL
Gasoline C7-C12	350 Y Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	69-137
Bromofluorobenzene (FID)	102	80-133

Field ID: MW-2A	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 01/11/07
Lab ID: 192023-003	

Analyte	Result	RL
Gasoline C7-C12	490 Y	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	69-137
Bromofluorobenzene (FID)	102	80-133

Y= Sample exhibits chromatographic pattern which does not resemble standard

Z= Sample exhibits unknown single peak or peaks

ND= Not Detected

RL= Reporting Limit

### Total Volatile Hydrocarbons

Lab #: 192023	Location: USTCF Claim #018639
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2005-65	Analysis: EPA 8015B
Matrix: Water	Sampled: 01/09/07
Units: ug/L	Received: 01/10/07
Batch#: 121138	

Field ID: MW-2B	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 01/11/07
Lab ID: 192023-004	

Analyte	Result	RL
Gasoline C7-C12	2,000 Y	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	132	69-137
Bromofluorobenzene (FID)	109	80-133

Field ID: MW-3B	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 01/11/07
Lab ID: 192023-005	

Analyte	Result	RL
Gasoline C7-C12	1,900 Y Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	115	69-137
Bromofluorobenzene (FID)	101	80-133

Field ID: MW-4A	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 01/11/07
Lab ID: 192023-006	

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	69-137
Bromofluorobenzene (FID)	109	80-133

Y= Sample exhibits chromatographic pattern which does not resemble standard

Z= Sample exhibits unknown single peak or peaks

ND= Not Detected

RL= Reporting Limit



### Total Volatile Hydrocarbons

Lab #: 192023	Location: USTCF Claim #018639
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2005-65	Analysis: EPA 8015B
Matrix: Water	Sampled: 01/09/07
Units: ug/L	Received: 01/10/07
Batch#: 121138	

Field ID: MW-4B	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 01/12/07
Lab ID: 192023-007	

Analyte	Result	RL
Gasoline C7-C12	1,300 Y Z	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	104	69-137
Bromofluorobenzene (FID)	98	80-133

Field ID: MW-5B	Diln Fac: 5.000
Type: SAMPLE	Analyzed: 01/11/07
Lab ID: 192023-008	

Analyte	Result	RL
Gasoline C7-C12	6,600 Y	250

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	69-137
Bromofluorobenzene (FID)	110	80-133

Type: BLANK	Diln Fac: 1.000
Lab ID: QC371381	Analyzed: 01/11/07

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	97	69-137
Bromofluorobenzene (FID)	95	80-133

Y= Sample exhibits chromatographic pattern which does not resemble standard

Z= Sample exhibits unknown single peak or peaks

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC371383	Batch#:	121138
Matrix:	Water	Analyzed:	01/11/07
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,873	94	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	107	69-137
Bromofluorobenzene (FID)	109	80-133

## Batch QC Report

Total Volatile Hydrocarbons			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	121138
MSS Lab ID:	192030-001	Sampled:	01/10/07
Matrix:	Water	Received:	01/11/07
Units:	ug/L	Analyzed:	01/11/07
Diln Fac:	1.000		

Type: MS Lab ID: QC371384

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	109.1	2,000	2,014	95	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	109	69-137
Bromofluorobenzene (FID)	107	80-133

Type: MSD Lab ID: QC371385

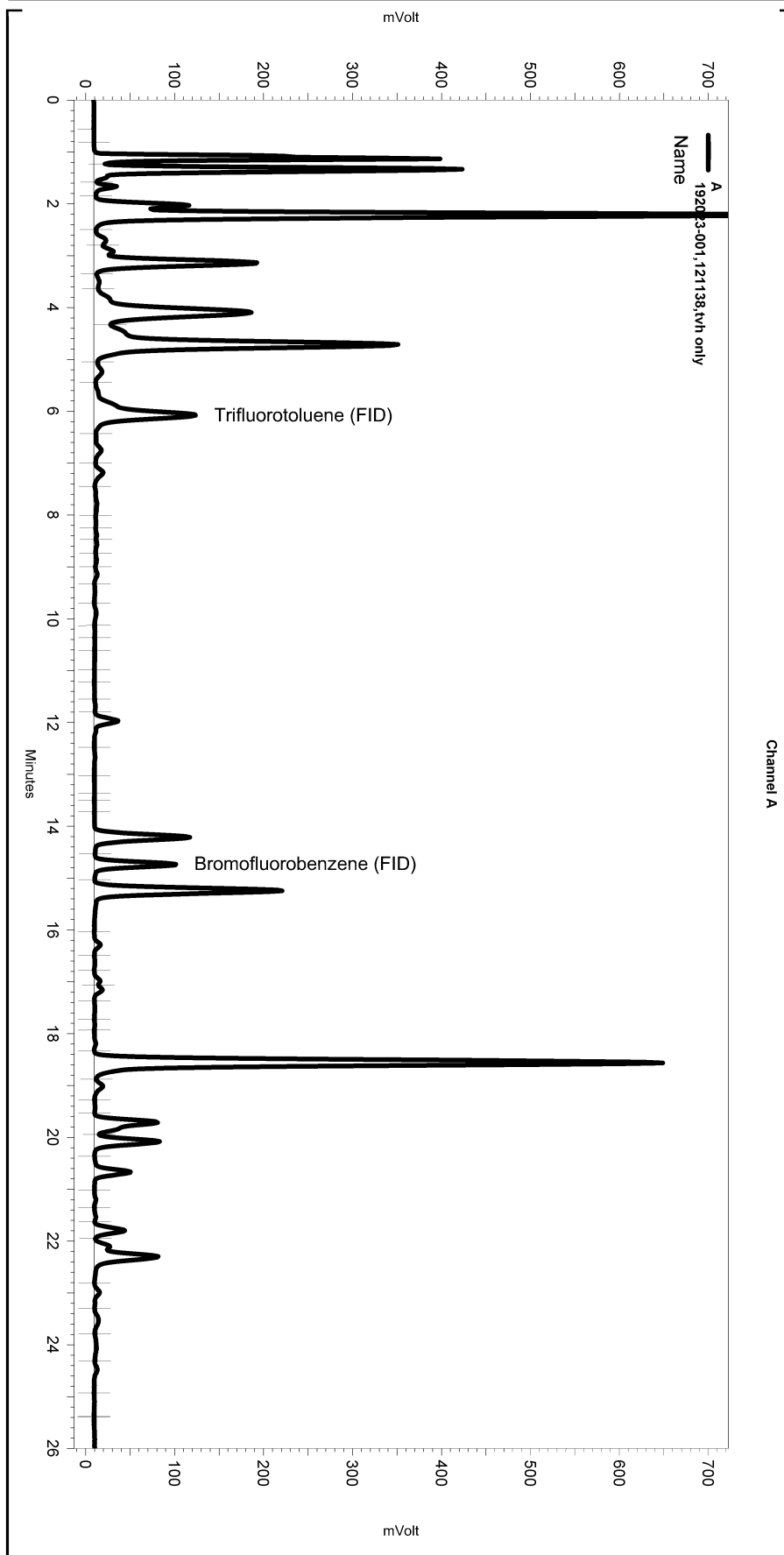
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,996	94	80-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	103	69-137
Bromofluorobenzene (FID)	104	80-133

RPD= Relative Percent Difference

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Software Version 3.1.7  
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 Sample Amount: 5 Multiplier: 5  
 Vial & pH or Core ID: A1.3



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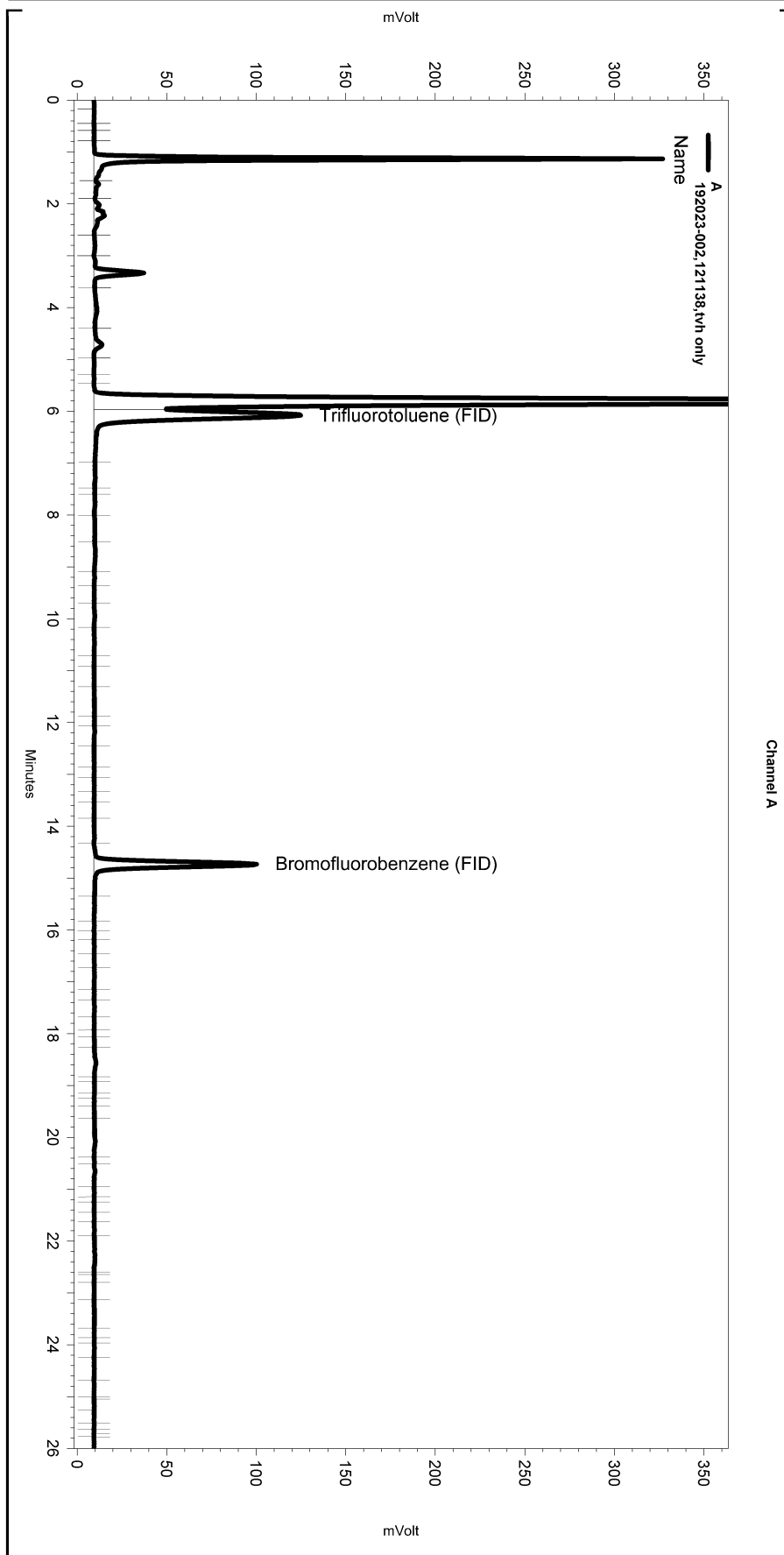
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 Vial & pH or Core ID: A1.3



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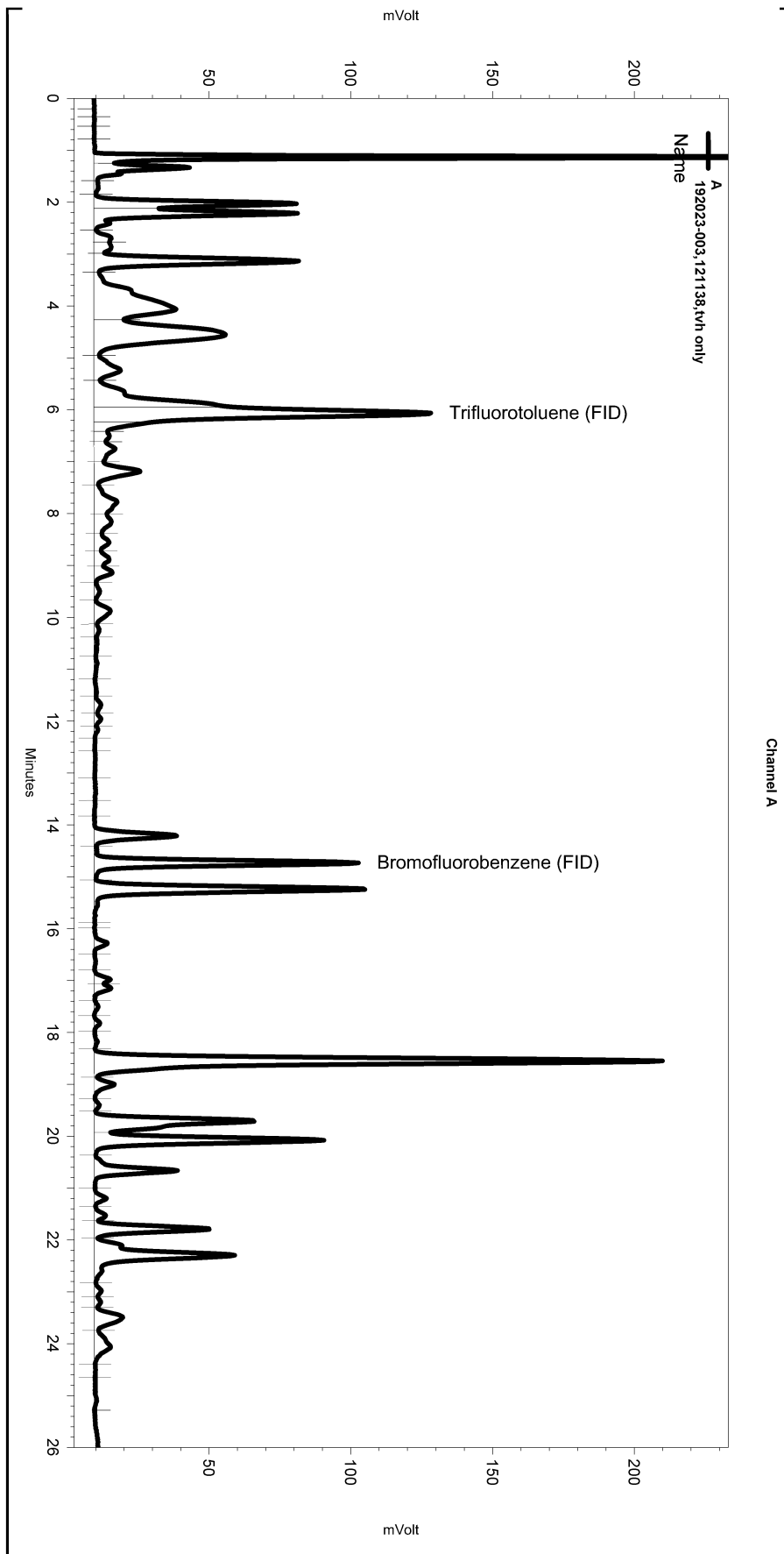
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 Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_018  
 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
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Software Version 3.1.7  
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 Analysis Date: 1/12/2007 8:29:17 AM  
 Sample Amount: 5 Multiplier: 5  
 Vial & pH or Core ID: A1.3



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Integration Events

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Yes	Threshold	0	0	10

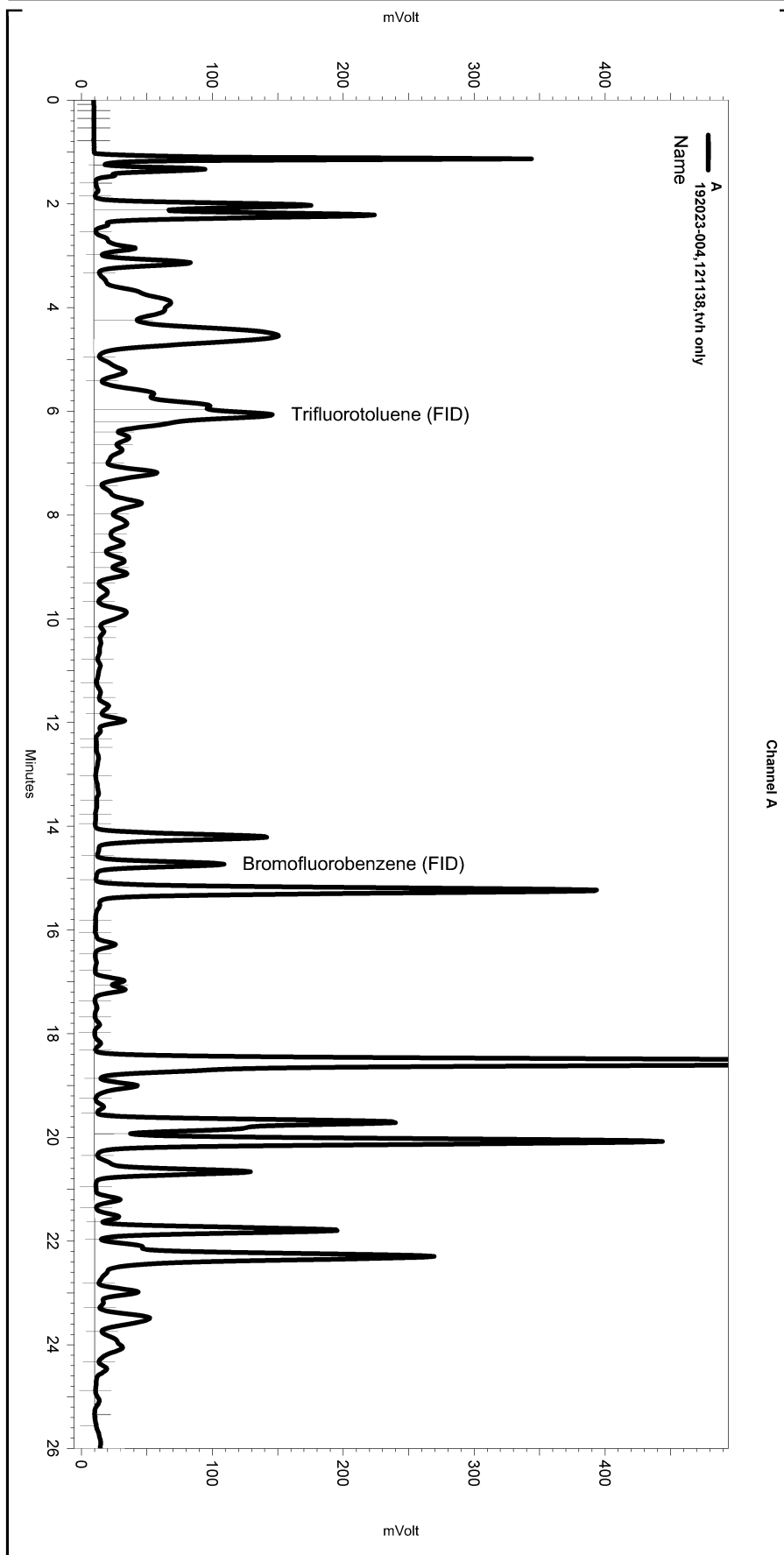
Manual Integration Fixes

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Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	5.942	0	0
Yes	Split Peak	6.237	0	0

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 Sample Name: 192023-004,121138,tvh only  
 Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_019  
 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
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 Analysis Date: 1/12/2007 8:29:21 AM  
 Sample Amount: 5 Multiplier: 5  
 Vial & pH or Core ID: A1.3



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Integration Events

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Yes	Width	0	0	0
Yes	Threshold	0	0	10

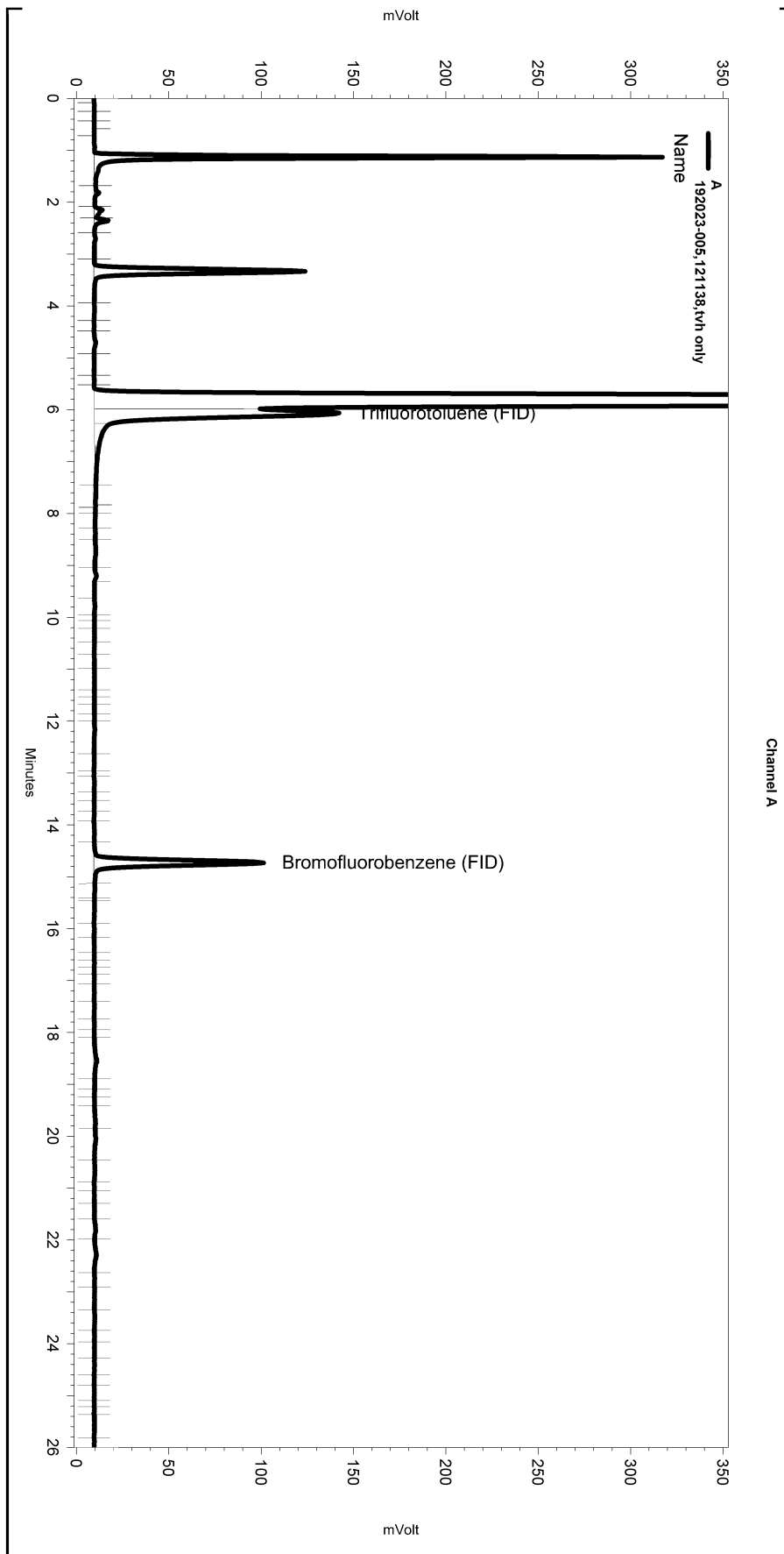
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_019

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Yes	Split Peak	5.963	0	0
Yes	Split Peak	6.207	0	0

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 Sample Name: 192023-005,121138,tvh only  
 Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_020  
 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
 Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\TVHBTX008.met

Software Version 3.1.7  
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 Analysis Date: 1/12/2007 8:29:25 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
Yes	Threshold	0	0	10

Manual Integration Fixes

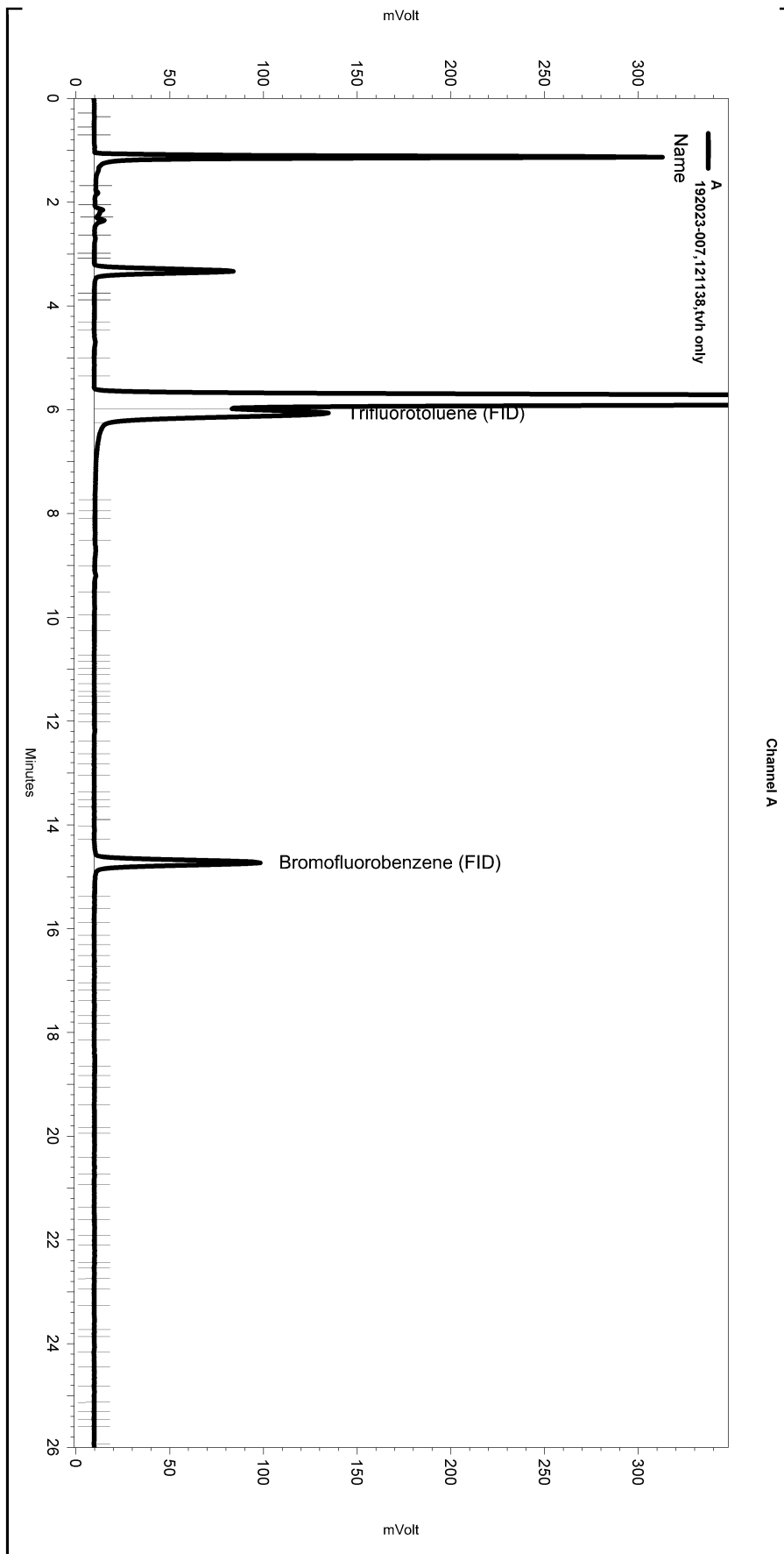
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Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	6.273	0	0



Sequence File: \\Lims\gdrive\ezchrom\Projects\GC04\Sequence\011.seq  
 Sample Name: 192023-007,121138,tvh only  
 Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_022  
 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
 Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\TVHBTX008.met

Software Version 3.1.7  
 Run Date: 1/12/2007 12:26:58 AM  
 Analysis Date: 1/12/2007 8:29:32 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
Yes	Threshold	0	0	10

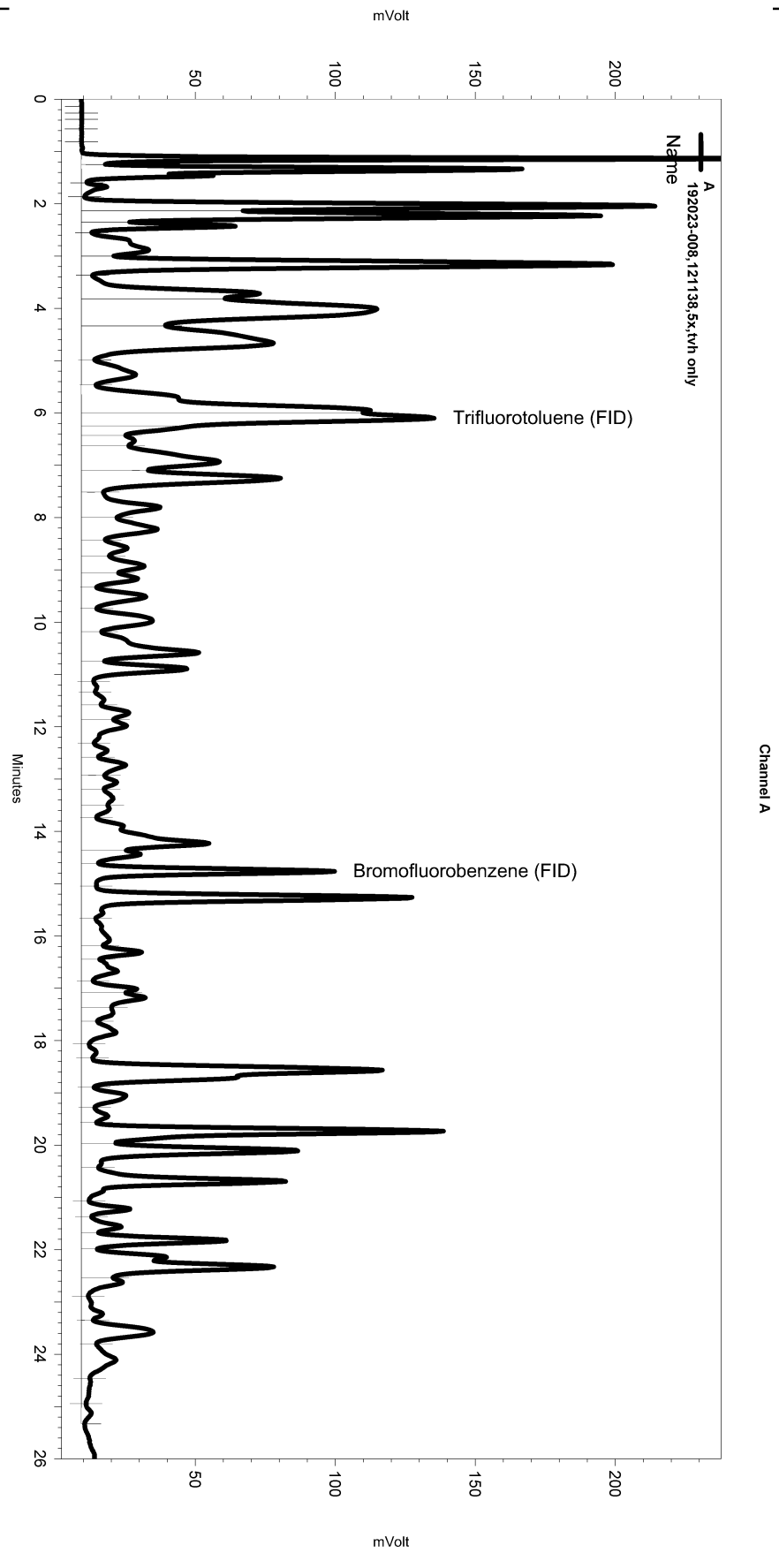
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_022

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	6.256	0	0

Sequence File: \\Lims\gdrive\ezchrom\Projects\GC04\Sequence\011.seq  
 Sample Name: 192023-008,121138,5x,tvh only  
 Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_005  
 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
 Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\TVHBTXE008.met

Software Version 3.1.7  
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 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
Yes	Threshold	0	0	10

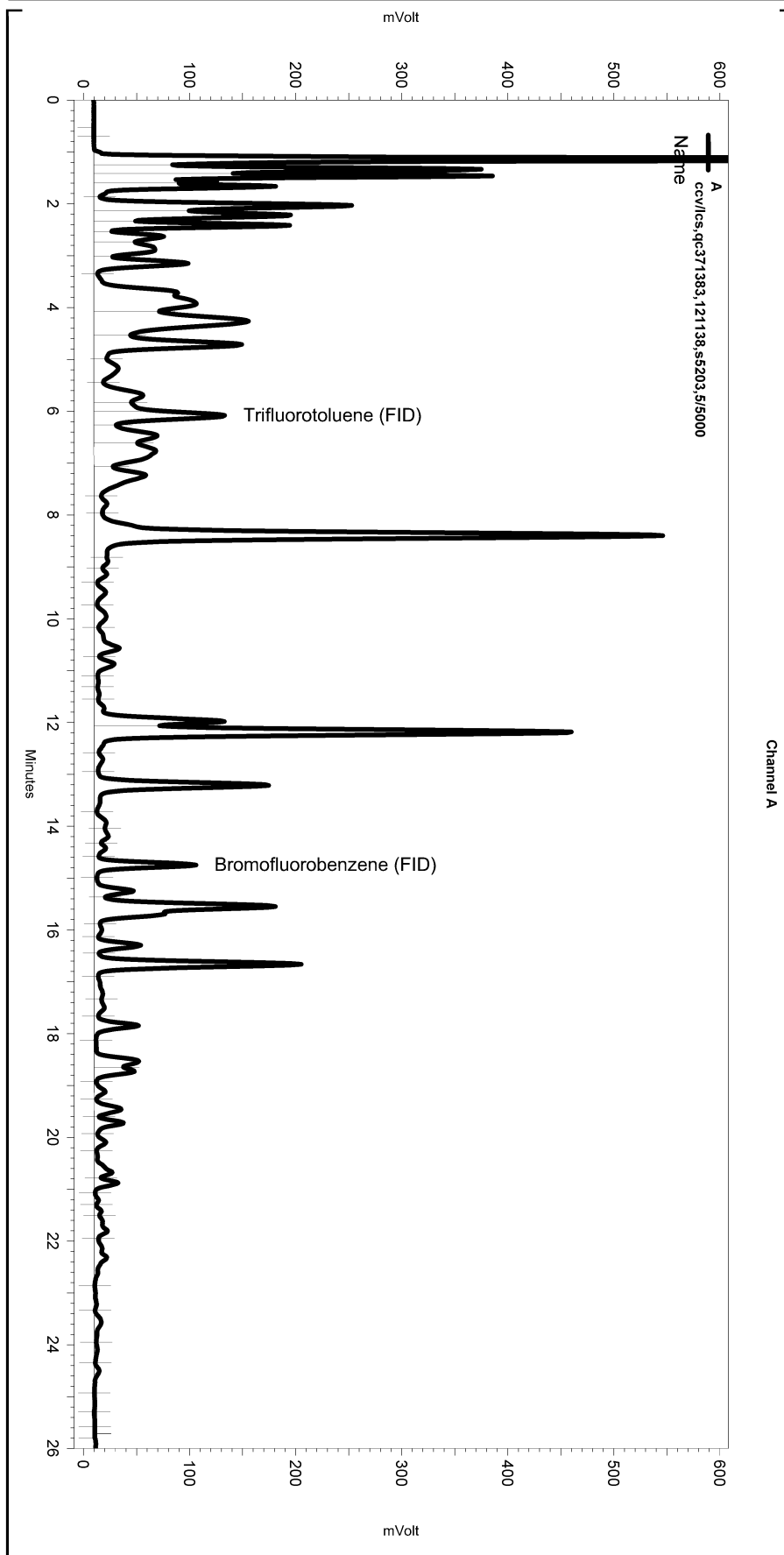
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_005

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Yes	Lowest Point Horizontal Baseline	0	26.017	0
Yes	Split Peak	5.999	0	0
Yes	Split Peak	6.253	0	0

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 Sample Name: ccv/lcs,qc371383,121138,s5203,5/5000  
 Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_002  
 Instrument: GC04 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)  
 Method Name: \\Lims\gdrive\ezchrom\Projects\GC04\Method\tvhbx008.met

Software Version 3.1.7  
 Run Date: 1/11/2007 9:51:11 AM  
 Analysis Date: 1/12/2007 8:28:17 AM  
 Sample Amount: 5 Multiplier: 5  
 Vial & pH or Core ID: {Data Description}



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 Integration Events  
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Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Width	0	0	0
Yes	Threshold	0	0	10

-----  
 Manual Integration Fixes  
 -----

Data File: \\Lims\gdrive\ezchrom\Projects\GC04\Data\011\_002

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Split Peak	6.007	0	0

**Purgeable Aromatics by GC/MS**

Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Field ID:	MW-2A	Batch#:	121309
Lab ID:	192023-003	Sampled:	01/09/07
Matrix:	Water	Received:	01/10/07
Units:	ug/L	Analyzed:	01/17/07
Diln Fac:	1.000		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	99	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	98	80-122

ND= Not Detected

RL= Reporting Limit

**Purgeable Aromatics by GC/MS**

Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Field ID:	MW-3B	Batch#:	121309
Lab ID:	192023-005	Sampled:	01/09/07
Matrix:	Water	Received:	01/10/07
Units:	ug/L	Analyzed:	01/17/07
Diln Fac:	16.67		

Analyte	Result	RL
MTBE	ND	8.3
Benzene	ND	8.3
Toluene	ND	8.3
Ethylbenzene	ND	8.3
m,p-Xylenes	ND	8.3
o-Xylene	ND	8.3
1,2-Dichlorobenzene	ND	8.3

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	105	80-122

ND= Not Detected  
 RL= Reporting Limit

**Purgeable Aromatics by GC/MS**

Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Field ID:	MW-4B	Batch#:	121232
Lab ID:	192023-007	Sampled:	01/09/07
Matrix:	Water	Received:	01/10/07
Units:	ug/L	Analyzed:	01/15/07
Diln Fac:	8.333		

Analyte	Result	RL
MTBE	ND	4.2
Benzene	ND	4.2
Toluene	ND	4.2
Ethylbenzene	ND	4.2
m,p-Xylenes	ND	4.2
o-Xylene	ND	4.2
1,2-Dichlorobenzene	ND	4.2

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	130	80-130
Toluene-d8	104	80-120
Bromofluorobenzene	100	80-122

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC371746	Batch#:	121232
Matrix:	Water	Analyzed:	01/15/07
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	118	80-130
Toluene-d8	103	80-120
Bromofluorobenzene	98	80-122

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	121232
Units:	ug/L	Analyzed:	01/15/07
Diln Fac:	1.000		

Type: BS Lab ID: QC371747

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	21.60	86	72-120
Benzene	25.00	23.74	95	80-120
Toluene	25.00	24.22	97	80-120
Ethylbenzene	25.00	23.47	94	80-120
m,p-Xylenes	50.00	51.62	103	80-121
o-Xylene	25.00	25.66	103	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	80-130
Toluene-d8	103	80-120
Bromofluorobenzene	92	80-122

Type: BSD Lab ID: QC371748

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	21.68	87	72-120	0	20
Benzene	25.00	23.14	93	80-120	3	20
Toluene	25.00	23.79	95	80-120	2	20
Ethylbenzene	25.00	22.74	91	80-120	3	20
m,p-Xylenes	50.00	50.09	100	80-121	3	20
o-Xylene	25.00	25.28	101	80-120	1	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	105	80-130
Toluene-d8	104	80-120
Bromofluorobenzene	93	80-122

RPD= Relative Percent Difference



## Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	121309
Units:	ug/L	Analyzed:	01/17/07
Diln Fac:	1.000		

Type: BS Lab ID: QC372056

Analyte	Spiked	Result	%REC	Limits
MTBE	25.00	22.58	90	72-120
Benzene	25.00	24.90	100	80-120
Toluene	25.00	25.81	103	80-120
Ethylbenzene	25.00	27.24	109	80-120
m,p-Xylenes	50.00	53.51	107	80-121
o-Xylene	25.00	26.74	107	80-120

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	102	80-130
Toluene-d8	98	80-120
Bromofluorobenzene	98	80-122

Type: BSD Lab ID: QC372057

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	25.00	21.59	86	72-120	4	20
Benzene	25.00	24.09	96	80-120	3	20
Toluene	25.00	25.70	103	80-120	0	20
Ethylbenzene	25.00	26.76	107	80-120	2	20
m,p-Xylenes	50.00	52.09	104	80-121	3	20
o-Xylene	25.00	25.75	103	80-120	4	20

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	99	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	97	80-122

RPD= Relative Percent Difference

## Batch QC Report

Purgeable Aromatics by GC/MS			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC372058	Batch#:	121309
Matrix:	Water	Analyzed:	01/17/07
Units:	ug/L		

Analyte	Result	RL
MTBE	ND	0.5
Benzene	ND	0.5
Toluene	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
1,2-Dichlorobenzene	ND	0.5

Surrogate	%REC	Limits
1,2-Dichloroethane-d4	103	80-130
Toluene-d8	100	80-120
Bromofluorobenzene	102	80-122

ND= Not Detected

RL= Reporting Limit

BTXE & Oxygenates			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Field ID:	MW-1A	Units:	ug/L
Lab ID:	192023-001	Sampled:	01/09/07
Matrix:	Water	Received:	01/10/07

Analyte	Result	RL	Diln Fac	Batch#	Analyzed
tert-Butyl Alcohol (TBA)	ND	10	1.000	121180	01/12/07
MTBE	100	1.0	2.000	121228	01/15/07
Isopropyl Ether (DIPE)	ND	0.5	1.000	121180	01/12/07
Ethyl tert-Butyl Ether (ETBE)	ND	0.5	1.000	121180	01/12/07
1,2-Dichloroethane	ND	0.5	1.000	121180	01/12/07
Benzene	94	1.0	2.000	121228	01/15/07
Methyl tert-Amyl Ether (TAME)	ND	0.5	1.000	121180	01/12/07
Toluene	ND	0.5	1.000	121180	01/12/07
1,2-Dibromoethane	ND	0.5	1.000	121180	01/12/07
Ethylbenzene	8.6	0.5	1.000	121180	01/12/07
m,p-Xylenes	ND	0.5	1.000	121180	01/12/07
o-Xylene	ND	0.5	1.000	121180	01/12/07

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed
Dibromofluoromethane	106	80-120	1.000	121180	01/12/07
1,2-Dichloroethane-d4	111	80-130	1.000	121180	01/12/07
Toluene-d8	105	80-120	1.000	121180	01/12/07
Bromofluorobenzene	108	80-122	1.000	121180	01/12/07

ND= Not Detected  
 RL= Reporting Limit

BTXE & Oxygenates			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Field ID:	MW-1B	Batch#:	121228
Lab ID:	192023-002	Sampled:	01/09/07
Matrix:	Water	Received:	01/10/07
Units:	ug/L	Analyzed:	01/15/07
Diln Fac:	2.500		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	25
MTBE	3.6	1.3
Isopropyl Ether (DIPE)	ND	1.3
Ethyl tert-Butyl Ether (ETBE)	ND	1.3
1,2-Dichloroethane	3.3	1.3
Benzene	ND	1.3
Methyl tert-Amyl Ether (TAME)	ND	1.3
Toluene	ND	1.3
1,2-Dibromoethane	ND	1.3
Ethylbenzene	ND	1.3
m,p-Xylenes	ND	1.3
o-Xylene	ND	1.3

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-120
1,2-Dichloroethane-d4	105	80-130
Toluene-d8	102	80-120
Bromofluorobenzene	104	80-122

ND= Not Detected  
 RL= Reporting Limit

<b>BTXE &amp; Oxygenates</b>			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Field ID:	MW-2B	Batch#:	121256
Lab ID:	192023-004	Sampled:	01/09/07
Matrix:	Water	Received:	01/10/07
Units:	ug/L	Analyzed:	01/16/07
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	19	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	4.1	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	1.1	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	6.7	0.5
m,p-Xylenes	0.8	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-120
1,2-Dichloroethane-d4	99	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	93	80-122

ND= Not Detected  
 RL= Reporting Limit

<b>BTXE &amp; Oxygenates</b>			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Field ID:	MW-4A	Batch#:	121256
Lab ID:	192023-006	Sampled:	01/09/07
Matrix:	Water	Received:	01/10/07
Units:	ug/L	Analyzed:	01/16/07
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	72	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	94	80-120
1,2-Dichloroethane-d4	99	80-130
Toluene-d8	98	80-120
Bromofluorobenzene	98	80-122

ND= Not Detected  
 RL= Reporting Limit

<b>BTXE &amp; Oxygenates</b>			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Field ID:	MW-5B	Batch#:	121256
Lab ID:	192023-008	Sampled:	01/09/07
Matrix:	Water	Received:	01/10/07
Units:	ug/L	Analyzed:	01/16/07
Diln Fac:	1.000		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	22	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	4.0	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	10	0.5
m,p-Xylenes	1.0	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-120
1,2-Dichloroethane-d4	100	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	92	80-122

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

<b>BTXE &amp; Oxygenates</b>			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC371544	Batch#:	121180
Matrix:	Water	Analyzed:	01/12/07
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	138.2	111	64-141
MTBE	25.00	23.61	94	72-120
Isopropyl Ether (DIPE)	25.00	21.98	88	68-123
Ethyl tert-Butyl Ether (ETBE)	25.00	26.95	108	77-129
1,2-Dichloroethane	25.00	24.26	97	77-120
Benzene	25.00	27.13	109	80-120
Methyl tert-Amyl Ether (TAME)	25.00	23.58	94	77-120
Toluene	25.00	27.17	109	80-120
1,2-Dibromoethane	25.00	24.18	97	80-120
Ethylbenzene	25.00	28.47	114	80-120
m,p-Xylenes	50.00	54.96	110	80-121
o-Xylene	25.00	27.28	109	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-120
1,2-Dichloroethane-d4	100	80-130
Toluene-d8	103	80-120
Bromofluorobenzene	102	80-122



## Batch QC Report

BTXE & Oxygenates			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC371545	Batch#:	121180
Matrix:	Water	Analyzed:	01/12/07
Units:	ug/L		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-120
1,2-Dichloroethane-d4	104	80-130
Toluene-d8	103	80-120
Bromofluorobenzene	104	80-122

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

BTXE & Oxygenates			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Field ID:	ZZZZZZZZZZ	Batch#:	121180
MSS Lab ID:	192030-001	Sampled:	01/10/07
Matrix:	Water	Received:	01/11/07
Units:	ug/L	Analyzed:	01/12/07
Diln Fac:	1.000		

Type: MS Lab ID: QC371546

Analyte	MSS Result	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	<1.601	125.0	121.6	97	68-148
MTBE	0.3228	25.00	26.02	103	75-120
Isopropyl Ether (DIPE)	<0.06972	25.00	25.75	103	74-125
Ethyl tert-Butyl Ether (ETBE)	<0.04508	25.00	30.07	120	80-131
1,2-Dichloroethane	<0.08786	25.00	25.79	103	80-124
Benzene	<0.04131	25.00	28.45	114	80-122
Methyl tert-Amyl Ether (TAME)	<0.1297	25.00	24.60	98	78-120
Toluene	<0.08342	25.00	26.84	107	80-120
1,2-Dibromoethane	<0.06100	25.00	23.46	94	80-120
Ethylbenzene	<0.07640	25.00	27.91	112	80-121
m,p-Xylenes	<0.2248	50.00	53.88	108	80-121
o-Xylene	<0.05810	25.00	26.42	106	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	107	80-120
1,2-Dichloroethane-d4	109	80-130
Toluene-d8	104	80-120
Bromofluorobenzene	108	80-122

Type: MSD Lab ID: QC371547

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	124.5	100	68-148	2	23
MTBE	25.00	25.48	101	75-120	2	20
Isopropyl Ether (DIPE)	25.00	24.91	100	74-125	3	20
Ethyl tert-Butyl Ether (ETBE)	25.00	29.08	116	80-131	3	20
1,2-Dichloroethane	25.00	26.09	104	80-124	1	20
Benzene	25.00	27.79	111	80-122	2	20
Methyl tert-Amyl Ether (TAME)	25.00	24.37	97	78-120	1	20
Toluene	25.00	26.56	106	80-120	1	20
1,2-Dibromoethane	25.00	23.48	94	80-120	0	20
Ethylbenzene	25.00	27.07	108	80-121	3	20
m,p-Xylenes	50.00	51.57	103	80-121	4	20
o-Xylene	25.00	25.72	103	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	106	80-120
1,2-Dichloroethane-d4	110	80-130
Toluene-d8	106	80-120
Bromofluorobenzene	106	80-122

RPD= Relative Percent Difference

## Batch QC Report

BTXE & Oxygenates			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	121228
Units:	ug/L	Analyzed:	01/15/07
Diln Fac:	1.000		

Type: BS Lab ID: QC371728

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	112.4	90	64-141
MTBE	25.00	21.69	87	72-120
Isopropyl Ether (DIPE)	25.00	19.65	79	68-123
Ethyl tert-Butyl Ether (ETBE)	25.00	24.77	99	77-129
1,2-Dichloroethane	25.00	23.49	94	77-120
Benzene	25.00	24.78	99	80-120
Methyl tert-Amyl Ether (TAME)	25.00	22.38	90	77-120
Toluene	25.00	25.34	101	80-120
1,2-Dibromoethane	25.00	23.65	95	80-120
Ethylbenzene	25.00	26.36	105	80-120
m,p-Xylenes	50.00	51.91	104	80-121
o-Xylene	25.00	25.84	103	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-120
1,2-Dichloroethane-d4	98	80-130
Toluene-d8	101	80-120
Bromofluorobenzene	99	80-122

Type: BSD Lab ID: QC371729

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	125.1	100	64-141	11	22
MTBE	25.00	22.14	89	72-120	2	20
Isopropyl Ether (DIPE)	25.00	19.88	80	68-123	1	20
Ethyl tert-Butyl Ether (ETBE)	25.00	25.16	101	77-129	2	20
1,2-Dichloroethane	25.00	23.43	94	77-120	0	20
Benzene	25.00	25.11	100	80-120	1	20
Methyl tert-Amyl Ether (TAME)	25.00	23.50	94	77-120	5	20
Toluene	25.00	25.16	101	80-120	1	20
1,2-Dibromoethane	25.00	24.17	97	80-120	2	20
Ethylbenzene	25.00	26.00	104	80-120	1	20
m,p-Xylenes	50.00	50.75	102	80-121	2	20
o-Xylene	25.00	24.92	100	80-120	4	20

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-120
1,2-Dichloroethane-d4	100	80-130
Toluene-d8	102	80-120
Bromofluorobenzene	100	80-122

RPD= Relative Percent Difference

## Batch QC Report

<b>BTXE &amp; Oxygenates</b>			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC371730	Batch#:	121228
Matrix:	Water	Analyzed:	01/15/07
Units:	ug/L		

Analyte	Result	RL
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-120
1,2-Dichloroethane-d4	102	80-130
Toluene-d8	102	80-120
Bromofluorobenzene	100	80-122

ND= Not Detected

RL= Reporting Limit

## Batch QC Report

BTXE & Oxygenates			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	121256
Units:	ug/L	Analyzed:	01/16/07
Diln Fac:	1.000		

Type: BS Lab ID: QC371855

Analyte	Spiked	Result	%REC	Limits
tert-Butyl Alcohol (TBA)	125.0	118.1	95	64-141
MTBE	25.00	20.61	82	72-120
Isopropyl Ether (DIPE)	25.00	18.34	73	68-123
Ethyl tert-Butyl Ether (ETBE)	25.00	23.64	95	77-129
1,2-Dichloroethane	25.00	25.50	102	77-120
Benzene	25.00	25.19	101	80-120
Methyl tert-Amyl Ether (TAME)	25.00	22.60	90	77-120
Toluene	25.00	26.62	106	80-120
1,2-Dibromoethane	25.00	25.90	104	80-120
Ethylbenzene	25.00	27.45	110	80-120
m,p-Xylenes	50.00	53.39	107	80-121
o-Xylene	25.00	26.72	107	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-120
1,2-Dichloroethane-d4	98	80-130
Toluene-d8	98	80-120
Bromofluorobenzene	98	80-122

Type: BSD Lab ID: QC371856

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
tert-Butyl Alcohol (TBA)	125.0	123.4	99	64-141	4	22
MTBE	25.00	21.16	85	72-120	3	20
Isopropyl Ether (DIPE)	25.00	18.56	74	68-123	1	20
Ethyl tert-Butyl Ether (ETBE)	25.00	23.46	94	77-129	1	20
1,2-Dichloroethane	25.00	26.11	104	77-120	2	20
Benzene	25.00	25.91	104	80-120	3	20
Methyl tert-Amyl Ether (TAME)	25.00	23.13	93	77-120	2	20
Toluene	25.00	27.34	109	80-120	3	20
1,2-Dibromoethane	25.00	26.81	107	80-120	3	20
Ethylbenzene	25.00	27.98	112	80-120	2	20
m,p-Xylenes	50.00	54.29	109	80-121	2	20
o-Xylene	25.00	27.42	110	80-120	3	20

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-120
1,2-Dichloroethane-d4	100	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	97	80-122

RPD= Relative Percent Difference

## Batch QC Report

<b>BTXE &amp; Oxygenates</b>			
Lab #:	192023	Location:	USTCF Claim #018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC371857	Batch#:	121256
Matrix:	Water	Analyzed:	01/16/07
Units:	ug/L		

<b>Analyte</b>	<b>Result</b>	<b>RL</b>
tert-Butyl Alcohol (TBA)	ND	10
MTBE	ND	0.5
Isopropyl Ether (DIPE)	ND	0.5
Ethyl tert-Butyl Ether (ETBE)	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Methyl tert-Amyl Ether (TAME)	ND	0.5
Toluene	ND	0.5
1,2-Dibromoethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5

<b>Surrogate</b>	<b>%REC</b>	<b>Limits</b>
Dibromofluoromethane	94	80-120
1,2-Dichloroethane-d4	97	80-130
Toluene-d8	99	80-120
Bromofluorobenzene	100	80-122

ND= Not Detected

RL= Reporting Limit

## **APPENDIX D**

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# **EXCAVATION DEWATERING PROFILING AND DISPOSAL DOCUMENTATION**

# NON-HAZARDOUS WASTE MANIFEST

EES19

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.		Manifest Document No. <b>NH 4294</b>		2. Page 1 of 1	
3. Generator's Name and Mailing Address <b>Larry Wadler 2836 Union St Oakland Ca 94608</b>							
4. Generator's Phone <b>(510) 644-3123</b>							
5. Transporter 1 Company Name <b>EVERGREEN ENVIRONMENTAL SERVICES</b>		6. US EPA ID Number <b>CAD982413262</b>		A. State Transporter's ID			
7. Transporter 2 Company Name		8. US EPA ID Number		B. Transporter 1 Phone <b>510 795-4400</b>			
9. Designated Facility Name and Site Address <b>EVERGREEN OIL, INC. 6880 Smith Avenue Newark, CA 94560</b>		10. US EPA ID Number <b>CAD980887418</b>		C. State Transporter's ID			
				D. Transporter 2 Phone			
				E. State Facility's ID <b>CAD980887418</b>			
				F. Facility's Phone <b>510 795-4400</b>			
11. WASTE DESCRIPTION			12. Containers		13. Total Quantity		14. Unit
			No.	Type			Wt./Vol.
a. Non-Hazardous waste, liquid			001	TT	4000		G
b.							
c.							
d.							
G. Additional Descriptions for Materials Listed Above				H. Handling Codes for Wastes Listed Above <b>01</b>			
15. Special Handling Instructions and Additional Information							
Profile # <u>NEW</u> Do not ingest Wear protective clothing In case of emergency call: CHEMTREC 800-424-9300 DOT ERG 171				Invoice: <b>371841</b> Sales Order: <b>W0C04561</b>			
16. GENERATOR'S CERTIFICATION: I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.							
Printed/Typed Name <b>H. Petroparli</b>			Signature <i>[Signature]</i>			Date Month Day Year <b>12   13   06</b>	
Printed/Typed Name <b>Fred Okino</b>			Signature <i>[Signature]</i>			Date Month Day Year <b>12   13   06</b>	
Printed/Typed Name			Signature			Date Month Day Year	
19. Discrepancy Indication Space							
20. Facility Owner or Operator: Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.							
Printed/Typed Name <b>TONY FOSTER</b>			Signature <i>[Signature]</i>			Date Month Day Year <b>12   13   06</b>	

NON-HAZARDOUS WASTE

GENERATOR

TRANSPORTER

FACILITY





**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	191249	Location:	USTCF Claim No. 018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65		
Field ID:	TANK 4500(EGW-4)	Batch#:	120065
Matrix:	Water	Sampled:	12/05/06
Units:	ug/L	Received:	12/05/06
Diln Fac:	1.000	Analyzed:	12/05/06

Type: SAMPLE Lab ID: 191249-001

Analyte	Result	RL	Analysis
Gasoline C7-C12	4,800	50	EPA 8015B
MTBE	180	2.0	EPA 8021B
Benzene	110	0.50	EPA 8021B
Toluene	42	0.50	EPA 8021B
Ethylbenzene	260	0.50	EPA 8021B
m,p-Xylenes	230	0.50	EPA 8021B
o-Xylene	94	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Trifluorotoluene (FID)	121	69-137	EPA 8015B
Bromofluorobenzene (FID)	126	80-133	EPA 8015B
Trifluorotoluene (PID)	127	64-132	EPA 8021B
Bromofluorobenzene (PID)	116	80-120	EPA 8021B

Type: BLANK Lab ID: QC367077

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	69-137	EPA 8015B
Bromofluorobenzene (FID)	105	80-133	EPA 8015B
Trifluorotoluene (PID)	99	64-132	EPA 8021B
Bromofluorobenzene (PID)	101	80-120	EPA 8021B

ND= Not Detected  
 RL= Reporting Limit

## Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	191249	Location:	USTCF Claim No. 018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8021B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC367078	Batch#:	120065
Matrix:	Water	Analyzed:	12/05/06
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	17.57	88	72-124
Benzene	20.00	17.53	88	80-120
Toluene	20.00	19.82	99	80-120
Ethylbenzene	20.00	20.00	100	80-120
m,p-Xylenes	20.00	19.62	98	80-120
o-Xylene	20.00	20.24	101	80-120

Surrogate	%REC	Limits
Trifluorotoluene (PID)	96	64-132
Bromofluorobenzene (PID)	97	80-120

## Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	191249	Location:	USTCF Claim No. 018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC367079	Batch#:	120065
Matrix:	Water	Analyzed:	12/05/06
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,923	96	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	107	69-137
Bromofluorobenzene (FID)	109	80-133

## Batch QC Report

**Curtis & Tompkins Laboratories Analytical Report**

Lab #:	191249	Location:	USTCF Claim No. 018639
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2005-65	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	120065
MSS Lab ID:	191187-001	Sampled:	12/01/06
Matrix:	Water	Received:	12/01/06
Units:	ug/L	Analyzed:	12/05/06
Diln Fac:	1.000		

Type: MS Lab ID: QC367080

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	<27.03	2,000	2,123	106	80-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	124	69-137
Bromofluorobenzene (FID)	132	80-133

Type: MSD Lab ID: QC367081

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,053	103	80-120	3	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	116	69-137
Bromofluorobenzene (FID)	131	80-133

RPD= Relative Percent Difference