STELLAR
ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET, SUITE 201·BERKELEY, CA 94710
TEL: (510)644-3123 · FAX: (510)644-3859
GEOSCIENCE & ENGINEERING CONSULTING

RECEIVED
12:53 pm, May 11, 2009
Alameda County
Environmental Health

May 8, 2009

Mr. Jerry Wickham
Alameda County Health Care Services Agency
Environmental Health Services
Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: Groundwater Sampling and Assessment of Regulatory Site Closure for 5115 East Eighth Street, Oakland, CA (Alameda County Fuel Leak Case No. RO0000319)

Dear Mr. Wickham:

INTRODUCTION

On behalf of the representative of the subject property owner (Mr. Alvaro Avendano), Stellar Environmental Solutions, Inc. (SES) is providing Alameda County Environmental Health Department (ACEH) this report of findings of the groundwater sampling and assessment of the referenced subject property. This investigation was conducted in accordance with SES's February 18, 2009 proposal to address the ACEH letter dated January 20, 2008.

Figure 1 is a map showing the subject property location. Figure 2 shows the site lay-out the locations of the former UST excavations, historical borings, and monitoring well locations.

BACKGROUND HISTORICAL DISCUSSION

One 8,000-gallon diesel underground fuel storage tank (UFST) and one 8,000-gallon gasoline UFST were removed on March 26, 1991, along with 130 cubic yards of hydrocarbon contaminated soil and 4,000-gallons of petroleum contaminated groundwater. Three groundwater monitoring wells (MW-1, MW-2, and MW-3) and one extraction/observation well (OW-1) were installed in February 2001. Exploratory soil borings and groundwater sampling investigations were conducted in 1997, 2001, and 2003. The highest contamination in soil and groundwater was found in the vicinity of well OW-1. A total of 590,000 micrograms per liter (µg/L) total petroleum hydrocarbons (TPH) as gasoline was detected in a grab-groundwater in

1997 from bore EBA-3. A total of 2,000 milligrams per kilogram (mg/kg) was detected in soil which was collected at 3 feet below ground surface (bgs) during the installation of OW-1 in 2001. All of the soil investigations have shown the majority of the contamination to be in the vicinity of the former UFSTs. This contamination has been delineated as is being monitored by the four onsite monitoring wells. The only significant soil source contamination detected outside of the UFST and monitoring well array was 2,300 mg/kg TPH as gasoline in soil from a depth of 3 feet in September 1997 at location EBA-7 in the western area of the site.

Prior to this 2009 SES investigation, the last subsurface investigation was conducted by RGA Environmental of Oakland, CA, and was documented in a report dated June 16, 2003. During this investigation, a groundwater monitoring event was conducted and six exploratory borings were advanced. The 2003 RGA Environmental study showed that the groundwater contaminant plume is defined only to the south; and not to the north, east, or west. This prompted ACEH in to request additional site evaluation and assessment in order to move this site toward regulatory closure.

Lithology and Hydrogeology

The site straddles two mapped geologic units referred to as Bay Mud and fine-grained alluvium. Site-specific lithology has been characterized in previous investigations to range from dark plastic carbonaceous clay and silty clay, to fine grained alluvial silts and clays which most likely includes materials from both of these units. Surficial fill, ranging in thickness from one to five feet, has been encountered in historical site borings.

Groundwater flow direction has been recorded in previous studies to range from southeast to northwest, and the flow is sometimes gently mounded in many directions. The flow direction during this event was found to be toward the east-northeast. The groundwater gradient was approximately 0.01 feet/foot, which is within the historical range of between 0.01 feet/foot to 0.06 feet/foot. A flat gradient, variation and interfingering of different lithologic units, and tidal effects may be partly responsible for the variation in groundwater flow direction. In general, the regional directional flow is likely to be toward the San Francisco Bay wetlands, which are located approximately 0.5 mile to the southwest.

Figure 3 shows the groundwater elevations measured on the March 31, 2009. Data used to construct Figure 3 is summarized in Table 1.

GROUNDWATER MONITORING

Groundwater monitoring well water level measurements, sampling, and field analyses were conducted by Blaine Tech Services (San Jose, California) on March 31, 2009 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 historical analytical results).

As the first monitoring task, static water levels were measured in the four site wells using an electric water level indicator, the results of which are reported in Table 1. The wells were purged and sampled during which the groundwater quality parameters of temperature, pH, conductivity, and turbidity were field-measured using a Myron L meter which was calibrated the same day of sample collection. Groundwater sampling field data sheets are contained in Attachment A.

Approximately 51 gallons of sampling purge water was generated and containerized onsite in a labeled 55 gallon drum for disposal. The purge water will be disposed of under manifest by the responsible party at a later date.

Groundwater Sample Collection

Groundwater was purged from wells MW-1, MW-2, and MW-3 using a new disposable bailer at each well. Well OW-1 was purged using an electric submersible pump and sampled utilizing a disposable bailer. Three wetted well casing volumes were purged from all of the wells except MW-3, which dewatered after two casing volumes. Groundwater samples were collected in the appropriate laboratory-supplied containers, labeled, chilled, and transported to the analytical laboratory under chain-of-custody documentation.

Table 1
Groundwater Monitoring Well Elevation Data – March 31, 2009
5115 East Eighth Street, Oakland, California

Well	Well Depth Below TOC	Depth to Water Below TOC	TOC Elevation	Groundwater Elevation
MW-1	19.76	3.72	7.01	3.29
MW-2	18.50	3.78	7.11	3.33
MW-3	19.90	3.71	6.69	2.98
OW-1	19.89	3.96	7.06	3.10

Notes:

TOC = top of casing elevation survey data obtained from EBA Engineering, Quarterly Monitoring and Summary Report dated March 18, 2002.

Wells MW-1, MW-2, and MW-3 are 2-inch in diameter and screened from 5-20’ bgs; Well OW-1 is 4-inch in diameter and screened from 5-20’ bgs.

GROUNDWATER ANALYTICAL METHODS AND RESULTS

Groundwater Analytical Methods

Previous site investigations documented contamination by the following leaking underground fuel tank (LUFT)-related constituents: diesel; gasoline; benzene, toluene, ethyl benzene, and total xylenes (BTEX); and methyl *tertiary*-butyl ether (MTBE). Because previous investigations have indicated potential releases of contaminants other than fuel, ACEH requested samples be analyzed for the full 8260 analyte list in addition to the LUFT constituents.

The samples were analyzed using the following methods for:

- Total extractable hydrocarbons (TEH) diesel range by EPA Method 8015B;
- Total volatile hydrocarbons (TVH) gasoline range by EPA Method 8015B;
- Volatile organic compounds (VOCs) full scan including BTEX and MTBE by EPA Method 8260.

Laboratory analysis was conducted by Curtis and Tompkins, Ltd. (of Berkeley, California), which maintains current State of California Environmental Laboratory Accreditation Program (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, etc.) 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 analytical method.

REGULATORY CONSIDERATIONS AND SCREENING LEVELS

The Regional Water Quality Control Board (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.

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.

The appropriate ESLs for the subject site are based on the following:

- Commercial/industrial land use (for the subject property itself).
- 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/or 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; and
- 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. Exceeding 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.

Sensitive Receptors

The results of a sensitive receptor survey conducted in 2003 concluded that the closest surface water body, the San Leandro Canal, is located approximately 2,000 feet southwest from the site (RGA, 2003). Due to this distance, it would unlikely be impacted by residual site contaminants. The report noted that there were as many as five wells possibly located within 2,000 feet of the site that could not be located, and thus the potential impact on these wells could not be evaluated.

SOIL CONTAMINATION AND DISTRIBUTION

Residual soil contamination appears to be at depths of 18 feet or more in the area of the excavation and in the capillary fridge zone. The only significant soil source contamination detected outside of the UFST and monitoring well array was 2,300 mg/kg TPH as gasoline in soil from a depth of 3 feet in September 1997 at location EBA-7 in the western area of the site. All of the soil investigations have shown the majority of the contamination to be in the vicinity of the former UFSTs. A total of 2,000 milligrams per kilogram (mg/kg) was detected in soil which was collected at 3 feet below ground surface (bgs) during the installation of OW-1 in 2001. The soil contention is summarized in Figure 4.

GROUNDWATER ANALYTICAL RESULTS AND DISTRIBUTION OF CONTAMINANTS

This section discusses the results of the March 31, 2009 sampling event. Tables 2 and 3 below summarize the current and historical analytical results of detected petroleum compounds, and the current EPA 8260 list analytes detected in site groundwater wells, respectively. Historical soil, and grab groundwater analytical results are contained in Tables 4 and 5 (at the end of the report). The certified analytical results and chain of custody record are contained in Attachment B.

Diesel

TPH as diesel was detected above the ESL criteria of 210 µg/L for industrial/commercial sites where groundwater is considered a potential drinking water resource in all of the site wells. Diesel was detected at historical high concentrations in all of the wells except OW-1 which showed the highest concentration of 7,000 µg/L during this event but was still below the historical high of 8,000 µg/L detected in this well in 2001.

Gasoline

TPH as gasoline was detected in all the site wells, and ranged from 1,300 µg/L in source well OW-1 to 380 µg/L in the furthest downgradient well MW-1. All detections were above the ESL criteria of 210 µg/L for industrial/commercial sites where groundwater is considered a potential drinking water resource.

Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX)

Only a trace detection of 0.6 µg/L benzene was detected in well MW-2 during this investigation. That is below the ESL criteria of 1 µg/L for industrial/commercial sites where groundwater is considered a potential drinking water resource. BTEX has historically only been detected in well MW-2, with the exception of 2.6 µg/L of total xylenes that were detected in OW-1 in March 2003.

Methyl tertiary-Butyl Ether (MTBE)

MTBE was not detected above the laboratory detection limit during this investigation in any of the site wells. MTBE has only been detected one time in a grab-groundwater sample from boring B3 during the March 2003 RGA Environmental investigation.

EPA 8260 List Volatile Organic Compounds

No volatile organic compounds on the EPA 8260 list, other than those associated with petroleum hydrocarbons and their breakdown products, were detected. These are summarized in Table 3 below.

Table 2
Current and Historical Groundwater Monitoring
Analytical Results - Petroleum Hydrocarbons

Sample Date	TPHmo	TPHg	TPHd	Benzene	Toluene	Ethyl benzene	Total Xylenes	MTBE
Monitoring Well MW-1								
2/6/01	*NA*	**950**	**260**	*ND*	ND	*ND*	ND	*ND*
5/3/01	*NA*	**450**	**490**	*ND*	ND	*ND*	ND	*ND*
8/28/01	*NA*	**540**	**130**	*ND*	ND	*ND*	ND	*ND*
11/26/01	*NA*	**460**	**140**	*<0.30*	*<0.30*	*<1.5*	<7.3	*<1.0*
3/27/03	*<250*	*<50*	**130**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<5.0*
3/31/09	*NA*	**380**	**1,500**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
Monitoring Well MW-2								
2/6/01	*NA*	**2,600**	**530**	**1.1**	0.43	0.87	1.7	*ND*
5/3/01	*NA*	**2,400**	**530**	*ND*	ND	*ND*	ND	*ND*
8/28/01	*NA*	**1,700**	97	*ND*	ND	*ND*	ND	*ND*
11/26/01	*NA*	**3,400**	**470**	*<0.30*	*<9.6*	*<9.7*	<6.6	*<1.0*
3/27/03	*<250*	**860**	**600**	**1.8**	*ND*	0.74	1.9	*<5.0*
3/31/09	*NA*	**1,700**	**2,200**	0.6	*<0.5*	*<0.5*	*<0.5*	*<0.5*
Monitoring Well MW-3								
2/6/01	*NA*	**340**	**250**	*ND*	ND	*ND*	ND	*ND*
5/3/10	*NA*	**260**	**420**	*ND*	ND	*ND*	ND	*ND*
8/28/01	*NA*	**490**	**130**	*ND*	ND	*ND*	ND	*ND*
11/26/01	*NA*	**330**	**120**	*<0.30*	*<0.30*	*<0.79*	<1.8	*<1.4*
3/27/03	*<250*	**210**	**670**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<5.0*
3/31/09	*NA*	**400**	**1,200**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
Monitoring Well OW-1								
2/28/01	*NA*	**2,400**	**8,200**	*ND*	ND	*ND*	ND	*ND*
11/26/01	*NA*	**1,900**	**1,200**	*<1.1*	*<1.1*	*<3.0*	<8.7	*<9.0*
3/27/03	*<250*	**1,100**	**1,600**	*<0.5*	*<0.5*	*<0.5*	2.6	*<5.0*
3/31/09	*NA*	**1,300**	**7,000**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<0.5*
ESLs	100 / 210	100 / 210	100 / 210	1.0 / 46	40 / 130	30 / 43	20 / 100	5 / 1,800

Notes: ESLs = Water Board Environmental Screening Levels industrial sites where groundwater is/is not a potential drinking water resource (Water Board, 2008). Samples in **bold-face** type exceed the ESL criterion where groundwater is not a drinking water resource. TPHmo = total petroleum hydrocarbons as motor oil; TPHd = total petroleum hydrocarbons as diesel; TPHg = total petroleum hydrocarbons as gasoline; MTBE = methyl tertiary-butyl ether NA = Not analyzed; ND = None detected; All concentrations reported in micrograms per liter (µg/L)

Table 3
March 31, 2009 Analytical Results
Detected Volatile Organic Compounds – EPA 8260 List

Analyte	MW-1	MW-2	MW-3	OW-1	Groundwater ESL
isopropylbenzene	*<0.5*	6.8	*<0.5*	*<0.5*	NLP
propylbenzene	*<0.5*	4.8	*<0.5*	*<0.5*	NLP
tert-butylbenzene	0.9	1.0	*<0.5*	3.0	NLP
sec-butylbenzene	*<0.5*	4.8	*<0.5*	4.5	NLP
n-butylbenzene	*<0.5*	4.0	*<0.5*	2.1	NLP
para-isopropyltoluene	*<0.5*	1.2	*<0.5*	*<0.5*	NLP
chloroform	6.3	4.1	4.3	3.9	70

Notes:
ESL = Water Board Environmental Screening Levels for industrial sites where groundwater *is not* a potential drinking water resource (Water Board, 2008).
NLP = no level published
All concentrations reported in micrograms per liter (µg/L)

EVALUATION OF HYDROCHEMICAL TRENDS AND PLUME STABILITY

This section evaluates the observed hydrologic and hydrochemical trends with regard to plume stability and contaminant migration. An assessment is made of the nature of residual contaminated soil that acts as a continued source of groundwater contamination. A conceptual model (incorporating site lithology, hydrogeology, and hydrochemistry) is presented to explain the spatial extent and magnitude of the dissolved hydrocarbon plume.

Water Level Trends

The data support the following conclusions:

- In the six monitoring events at the property, four wee in 2001, one in 2003 and the last one reported here in 2009. In 2001 the flow direction varied form west, north northwest to northeast. In March 2003, the flow direction was toward the southeast and in the current March 2009 event, it is toward the east-northeast. Possible hydrologic influences effecting groundwater flow direction include tidal fluctuations, nearby groundwater dewatering, on site surface water infiltration.

- The groundwater gradient measured during this event was relatively flat, at 0.01 feet per foot. This is within the historically range of 0.06 to 0.01 feet per foot.

- Groundwater would be expected to flow toward the nearest surface water body which is San Leandro Bay, located approximately 0.5 miles to the southwest. The pattern of contaminant migration is partially indicated by historical grab-groundwater sampling and to a lesser degree by groundwater monitoring. The pattern of soil contamination shows some desorption of contaminants in groundwater onto downgradient soils.

- Groundwater appears to be under unconfined conditions. Except for a few measurements collected in February 2001, shortly after the site well installations, the water levels in all wells have occurred at less than 10 feet below ground surface.

HYDROCHEMICAL TRENDS

The contaminants of concern in groundwater (those significantly above regulatory ESLs) are diesel and gasoline grade hydrocarbons. Trace amounts benzene, ethylbenzene, and total xylenes have been detected in monitoring well MW-2, and trace amounts of total xylenes in well OW-1. All detections of BTEX components in soil have been in bores to the west of the historical UFST locations, which likely resulted from desorption of contaminants onto soil from downgradient groundwater migration. All of the dissolved-hydrocarbon contamination is relatively light in BTEX compared to the concentrations of TPH as gasoline, suggesting an "aged" plume.

The highest contamination in groundwater was found in the vicinity of well OW-1, in grab-groundwater sample EBA-3. Both OW-1 and EBA-3 are within about 5 feet of the diesel UST excavation. A total of 590,000 micrograms per liter (µg/L) total petroleum hydrocarbons (TPH) as gasoline was detected in a grab-groundwater in 1997 from bore EBA-3. This contamination has been delineated as is being monitored by the four onsite monitoring wells.

Prior to this 2009 SES investigation, the last subsurface investigation, conducted in June 2003, entailed groundwater monitoring and the advancement of six exploratory borings (RGA, 2003). The six borings were evenly placed around the property perimeter, about 10 feet inside the property line, and showed that the groundwater contaminant plume was defined only to the south. Three borings (B1, B2, and B3), collected near EBA-7 and to the northwest and southwest, did not reveal significant residual soil contamination. However, grab groundwater samples collected from boring B3 did show significant concentrations of TPH as diesel at 83,000 µg/L and TPH as gasoline at 9,100 µg/L. Two borings (B4 and B5) collected in the southern area of the site revealed lesser contaminant concentrations, suggesting that they were located in a transgradient distal area of the groundwater contaminant plume. Boring B6, located on the east side of the property between the former UFST excavations, showed 43,000 µg/L of TPH as

diesel. This indicates that the east-northeastern boundary of the plume is undefined in this area. Groundwater monitoring in 2003 showed the four site wells to contain TPH as diesel and TPH as gasoline at levels of regulatory concern, as well as a slightly elevated benzene level in one of the wells (RGA, 2003).

Figure 5 shows the distribution of onsite historical hydrocarbon contamination grab-groundwater, respectively. Tables 4 and 5 (at the end of this report) summarizes the historical soil and grab-groundwater analytical results, respectively. Figure 6 shows the current and historical groundwater monitoring analytical results, which were summarized in Table 2 above.

Plume Geometry and Migration Indications

Borehole grab-groundwater samples typically display contaminant concentrations higher than those in samples collected from nearby groundwater monitoring wells, particularly when the samples are turbid, as they are at this site. This is due to the sorbed-phase contamination from high dissolved solids (turbidity) in grab-groundwater samples, relative to lower-turbidity well samples that have been passively filtered through a well annular filter pack, displaying a higher fraction of dissolved phased contamination. Therefore, direct comparison of borehole grab-groundwater samples to monitoring well samples is problematic, and groundwater well data is considered more representative of the dissolved fraction in the contaminant plume. However, relative concentrations of individual borehole groundwater samples can still be useful in evaluating contaminant distribution, when coupled with existing knowledge of site groundwater well contaminant data.

The highest concentrations of groundwater contamination were found onsite in the immediate vicinity and to the west of the former UFSTs. The area immediately east of the former UFST excavations, represented by bores EBA-4 and EBA-5, do not show any residual soil contamination. However, the March 2003 grab-groundwater sample from bore B6, located between bores EBA-4 and EBA-5 and between the former excavations, showed very high TPH as diesel (43,000 μg/L), TPH as gasoline (2500 μg/L) and TPH as motor oil (2800 μg/L). This suggests the contamination has migrated in groundwater offsite and to the east. This is supported by the groundwater flow direction measured in this and past investigations. The plume geometry is a result of a flat gradient and is tidally influenced. The groundwater flow direction changes from the east-southeast to the west-northwest, and sometimes gently mounds in the middle of the site which creates a groundwater flow that can move in a wide range of directions. This has resulted is a thick contaminated source zone centered in the vicinity of well OW-1, with contamination gradually spreading in all directions. However, this flow is primarily towards the east and west, as is indicated by the contaminant patterns. The plume is not well defined but

measures a minimum of approximately 80 feet long by 60 feet wide. Based on our experience, it is likely that the contaminant concentrations attenuate to below ESL criteria no more than 75 feet off site. However, continued quarterly groundwater monitoring in site wells is warranted to confirm that groundwater contaminant concentrations do not continue to increase, and/or there is no indication of significant plume migration.

The plume geometry has not varied substantially since the first monitoring event in February 2001, although data is insufficient to determine the extent of seasonal fluctuations in contaminant concentrations. TPH as gasoline concentrations appear to be relatively stable, while diesel concentrations in all wells have increased. There is almost no BTEX component, which indicates that sufficient time has passed for the BTEX to have volatilized.

Migration of the dissolved-phase hydrocarbon contamination in groundwater does appear to have caused additional soil contamination by adsorption onto downgradient soils within the capillary fringe zone to the west of the former UFSTs. This is indicated by soil samples collected during previous investigations.

The limits of hydrocarbon plumes are controlled by complex multi-variable mechanisms, which include the existing contaminant mass distribution in soil and groundwater, lithologic and hydrogeologic characteristics, and the ability of natural degradation processes to control the plume migration.

Numerous field and laboratory studies have concluded that the subsurface behavior of petroleum hydrocarbons is significantly impacted by their high capacity to undergo biodegradation (Lawrence Livermore National Laboratory, 1995). A variety of naturally occurring micro-organisms utilize petroleum hydrocarbons as a carbon (food) source. Biodegradation of hydrocarbons can occur under anaerobic conditions, but is more highly favored in aerobic conditions. Most hydrocarbon plume conceptual models show biodegradation of petroleum hydrocarbons in groundwater as having a significant role in creating a stable plume, minimizing groundwater plume configuration and concentrations over time (Lawrence Livermore National Laboratory, 1995).

In general, natural attenuation of petroleum in groundwater is very likely occurring, unless petroleum concentrations are sufficient to overwhelm the biodegradation process. In these areas, biodegradation progresses until one of the process-limiting factors (usually oxygen) is depleted to the point at which biodegradation is not supported.

PROJECTED FUTURE TRENDS AND REMEDIAL OPTIONS

Projected Future Trends

The hydrocarbon groundwater plume will remain stable or will diminish over the long term, once the main source of contamination has been remediated in both the soil and groundwater. Historical soil sample data indicates that there is significant residual petroleum hydrocarbon contaminated soil that lies below groundwater that will continue to degrade groundwater as it moves downgradient.

Potential Remedial Action

At this point, the groundwater contaminant plume should be better delineated. This should be followed by groundwater monitoring to demonstrate a stable or attenuating plume. Depending on the outcome of monitoring, additional remedial action might be necessary.

Injection of a product such as Oxygen Reducing Compound™ (ORC™) could significantly enhance biodegradation bringing this site closer to case closure.

Groundwater Impacts and Beneficial Uses

How much groundwater contamination impacts the current and projected beneficial use of the groundwater? In general, impacts of contamination on the environment by petroleum products are evaluated on a case-by-case basis by the regulators, with consideration given to Water Board ESLs. While there are detected concentrations of TPH as diesel and TPH as gasoline at orders of magnitude above the ESLs, and benzene at a trace level above the ESL, there appears to be no nearby sensitive receptors. However, the area is considered to be a sensitive groundwater recharge area that should be protected.

CLOSURE CRITERIA ASSESSMENT AND PROPOSED ACTIONS

The Water Board generally requires that the following criteria be met before issuing regulatory closure of contaminant cases:

> ***The contaminant source has been removed (i.e., the source of the discharge and obviously contaminated soil).***
>
> *This criterion has been partially met.* The two UFSTs, dispenser, and 130 cubic yards of residual soil contamination sources have been removed. Previous investigation borehole soil sampling indicates that a substantial mass of residual TPH as diesel and gasoline contaminated soil, as deep as 18 feet bgs, exists in the vicinity of the former UFSTs between

MW-3 and OW-1. This mass of contaminated soil likely extends westerly toward MW-1 and MW-2 where it pinches out at 1.5 to 2.5 feet bgs. This could be conservatively measured to represent a volume of 600-700 cubic yards of hydrocarbon impacted soil containing contaminant concentrations above regulatory ESLs.

The majority of contaminated soil lies in the capillary fringe zone, or below the groundwater table, and residual hydrocarbons will act as an ongoing source of groundwater contamination for many years.

The groundwater contaminant plume is well characterized, and is stable or reducing in magnitude and extent.

This criterion has not been met. The 2003 RGA Environmental investigation demonstrated that the groundwater contaminant plume's extent is fairly well-defined only on the south side (by grab-groundwater samples) of the property and not to the north, east, or west. The plume appears to migrate offsite to the north, east, and west. The extent to which the current monitoring event flow direction to the east is anomalous or tidally or seasonally influenced is not known, but the eastward flow direction is contrary to the regional flow westward towards the Bay. Seasonal trends and stability has not been established through the typical four consecutive quarterly monitoring events required to evaluate hydrologic and hydrochemcial variations.

A minimum of four consecutive quarterly groundwater monitoring events will be needed (and required by the regulatory agency) to evaluate the plume stability. Contaminant concentration in the wells (MW-1 and MW-2) furthest from the source UFSTs have substantially increased since the previous March 2003 monitoring event, suggesting the plume is not stable.

If residual contamination (soil or groundwater) exists, there is no reasonable risk to sensitive receptors (i.e., contaminant discharge to surface water or water supply wells) or to site occupants.

This criterion has been partially met. The results of a sensitive receptor survey in the June 2003 RGA Environmental Inc. report concluded that the closest surface water body, the San Leandro Canal, was located approximately 2,000 feet southwest from the site and would unlikely be impacted by residual site contaminants. The report also noted that there were as many as five wells possibly located within 2,000 feet of the site that could not be located and thus the potential impact on these wells could not be evaluated.

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

- Residual soil contaminant mass remains at the site and is continuing to impact groundwater. Historical borehole soil sampling showed a substantial mass of residual TPH as diesel and gasoline-contaminated soil as deep as 18 feet bgs in the vicinity of the former UFSTs (between MW-3 and OW-1). This could conservatively represent a subsurface volume of 600-700 cubic yards of hydrocarbon impacted soils at concentrations above regulatory ESLs that will act as an ongoing source of groundwater contamination for many years.

- The dissolved hydrocarbons as diesel and gasoline are at higher concentration in all four groundwater wells in the March 2009 sampling event compared to the March 2003 monitoring event.

- TPH as diesel was detected at historically high concentrations in all of the wells except OW-1 which showed the highest concentration of 7,000 µg/L during this event (but was below the historical high of 8,000 µg/L detected in this well in 2001). TPH as gasoline was detected in all wells during this event, and concentrations ranged from 1,300 µg/L in source well OW-1 to 380 µg/L in downgradient well MW-1. All detections were above the regulatory ESL criteria of 210 µg/L dissolved hydrocarbons for industrial/commercial sites where groundwater is considered a potential drinking water resource.

- Previous grab-groundwater samples suggest there is free-floating hydrocarbon product at the site in the vicinity of the former diesel UST. .

- Dissolved BTEX is of minimal concern with a trace detection of 0.6 µg/L benzene detected in well MW-2 during this investigation (which is below the ESL criteria of 1 µg/L for industrial/commercial sites where groundwater is considered a potential drinking water resource) and 2.6 µg/L total xylenes detected in OW-1 in March 2003.

- MTBE was not detected during this investigation. MTBE has only been detected one time in a grab-groundwater sample from boring B3 during the March 2003 RGA Environmental investigation at this site.

- No volatile organic compounds on the EPA 8260 list, other than those associated with petroleum hydrocarbons and their breakdown products, were detected during this monitoring event.

- The flow direction during this event was found to be toward the east-northeast with a relatively flat groundwater gradient of 0.01 feet per foot. This is within the historically range of 0.06 to 0.01 feet per foot. This flow direction is contrary to the regional westerly flow direction.

- The plume geometry is a result of a flat gradient and is probably tidally influenced; moving to and fro from the east-southeast to west-northwest. This results in a slow spreading of the source contamination. Previous monitoring events indicate that groundwater sometimes gently mounds in the middle of the site which can create flow in a wide range of directions.

- The groundwater contaminant plume has not been fully delineated, but appears to be migrating offsite, and exhibits a slightly elliptical configuration with its long axis trending east to west. The plume is not well defined on three sides but measures a minimum of approximately 80 feet long by 60 feet wide on site.

- While there are detected concentrations of TPH as diesel and TPH as gasoline at orders of magnitude above the ESLs, there appears to be no nearby sensitive receptors. However, the area is considered to be a sensitive groundwater recharge area that should be protected.

Proposed Action Recommendations

- Fill the data gaps to define the extent of contamination, using grab-groundwater sampling to most cost effectively determine if there are areas of concern outside the definition the four existing wells.

- ACEH may require the installation of additional monitoring wells to delineate the groundwater contaminant plume based on the outcome of the additional characterization.

- Conduct four consecutive quarterly groundwater monitoring events to evaluate the stability of the groundwater contaminant plume. Continue quarterly groundwater monitoring in site wells to determine whether or not the plume is stable.

- Evaluate remedial action alternatives such as excavation of the contaminated soils, groundwater extraction, or ORC™ product injection to move the site toward regulatory closure.

- Conduct a field survey of the downgradient area of the site to locate and verify the presence or absence of up to five wells which were identified as data gaps in the June 2003 RGA Environmental Inc. study.

- We recommend following up with the ACEH following the receipt of this report, to discuss the requirements to move the site toward regulatory closure.

- All future technical reports should be provided to the appropriate regulatory agencies, including electronic uploads ACEH's "ftp" system and the State Water Board's GeoTracker system.

- This and previous investigation activities may be eligible for reimbursement from the Fund, depending largely on the permit status of the UFST and other factors. SES recommends the completion of an initial application for the Fund after an assessment to determine eligibility. If the results are favorable, the Fund application can then be further pursued.

This report has been prepared for the exclusive use by Mr. Alvaro Avendano (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. A copy of this report has been electronic uploaded to Alameda County Environmental Health's "ftp" system and the State Water Board's GeoTracker system.

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

cc: Mr. Alvaro Avendano
ACEH "ftp" server; CA Geotracker

REFERENCES

EBA Wastechnologies, 1997. Subsurface Investigation, Former Western Stucco Products, 5115 East Eighth Street, Oakland, CA December.

EBA Wastechnologies, 2000. Additional Groundwater Investigation, Former Western Stucco Products, 5115 East Eighth Street, Oakland, CA October 13.

EBA Wastechnologies, 2001. Additional Groundwater Investigation, Former Western Stucco Products, 5115 East Eighth Street, Oakland, CA March 12.

EBA Wastechnologies, 2001. Quarterley Monitoring Report, Former Western Stucco Products, 5115 East Eighth Street, Oakland, CA. June 6.

EBA Wastechnologies, 2001. Addendum to Quarterley Groundwater Monitoring Report, Former Western Stucco Products, 5115 East Eighth Street, Oakland, CA. June 20.

EBA Wastechnologies, 2001. Quarterley Monitoring Report, Former Western Stucco Products, 5115 East Eighth Street, Oakland, CA. September 21.

EBA Engineering, 2002. Quarterley Monitoring and Summary Report, former Western Stucco Products, 5115 East Eighth Street, Oakland, CA. March 18.

Kaprealian Engineering Inc. 199. Soil Sampling Report, Western Stucco Products (UST Removal Confirmation Soil and Groundwater Sampling). May 7.

Lawrence Livermore National Laboratory, 1995. California Leaking Underground Fuel Tank Historical Case Analyses (UCRL-AR-121762).

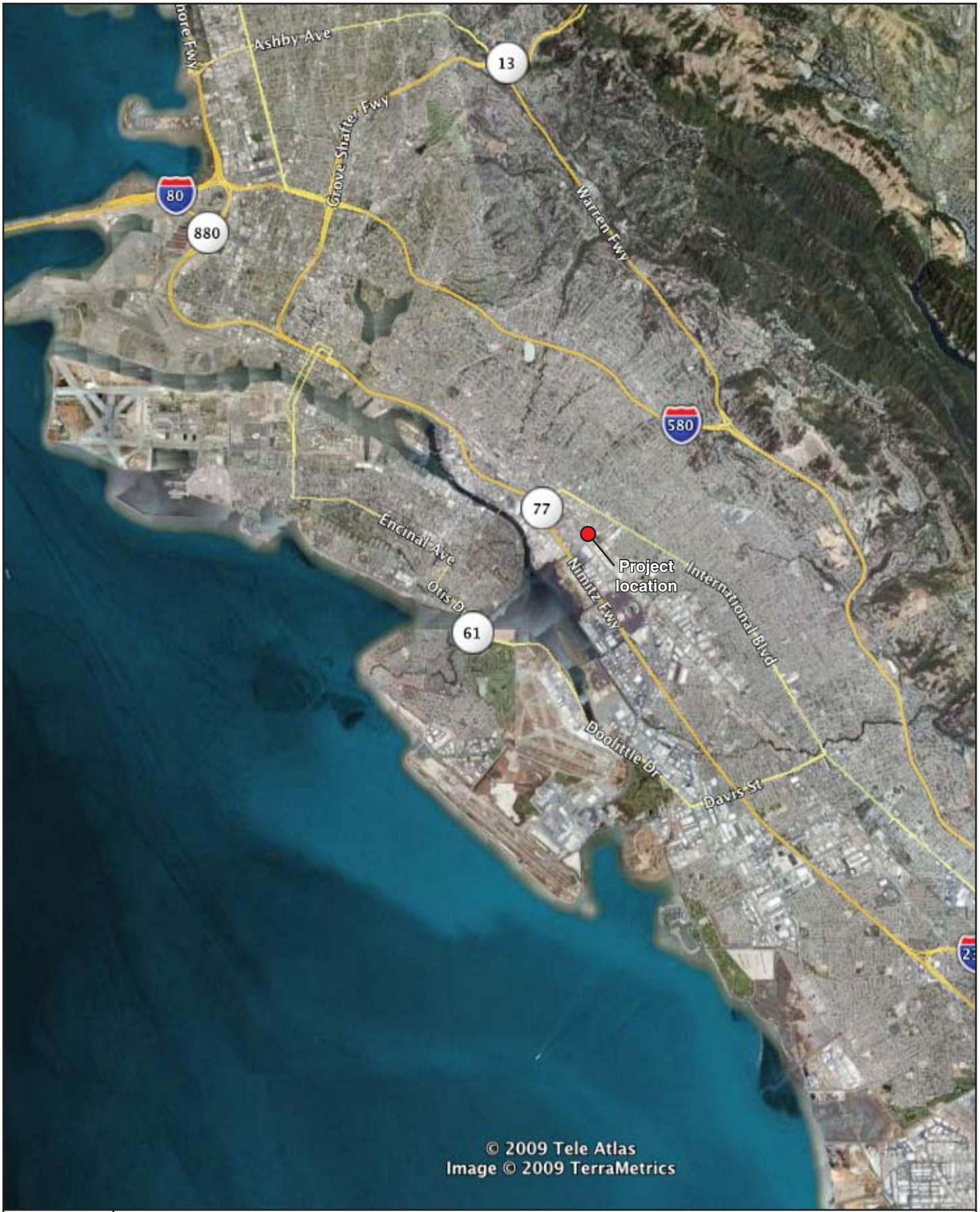
Regional Water Quality Control Board (Water Board), 1999. East Bay Plains Beneficial Use Study, San Francisco Bay. June 15.

Regional Water Quality Control Board (Water Board), 2007. SanFrancisco Bay Basin (Region 2) Water Quality Contra Board (Basin Plan). January 18.

Regional Water Quality Control Board (Water Board), 2008. Environmental Screening Levels, Revised May 2008.

RGA Environmental. Inc. (RGA) 2003. Subsurface Investigation and Sensitive Survey Report, Former Western Stucco Products Site, 5115 East Eighth Street, Oakland, CA. June 16.

Figures



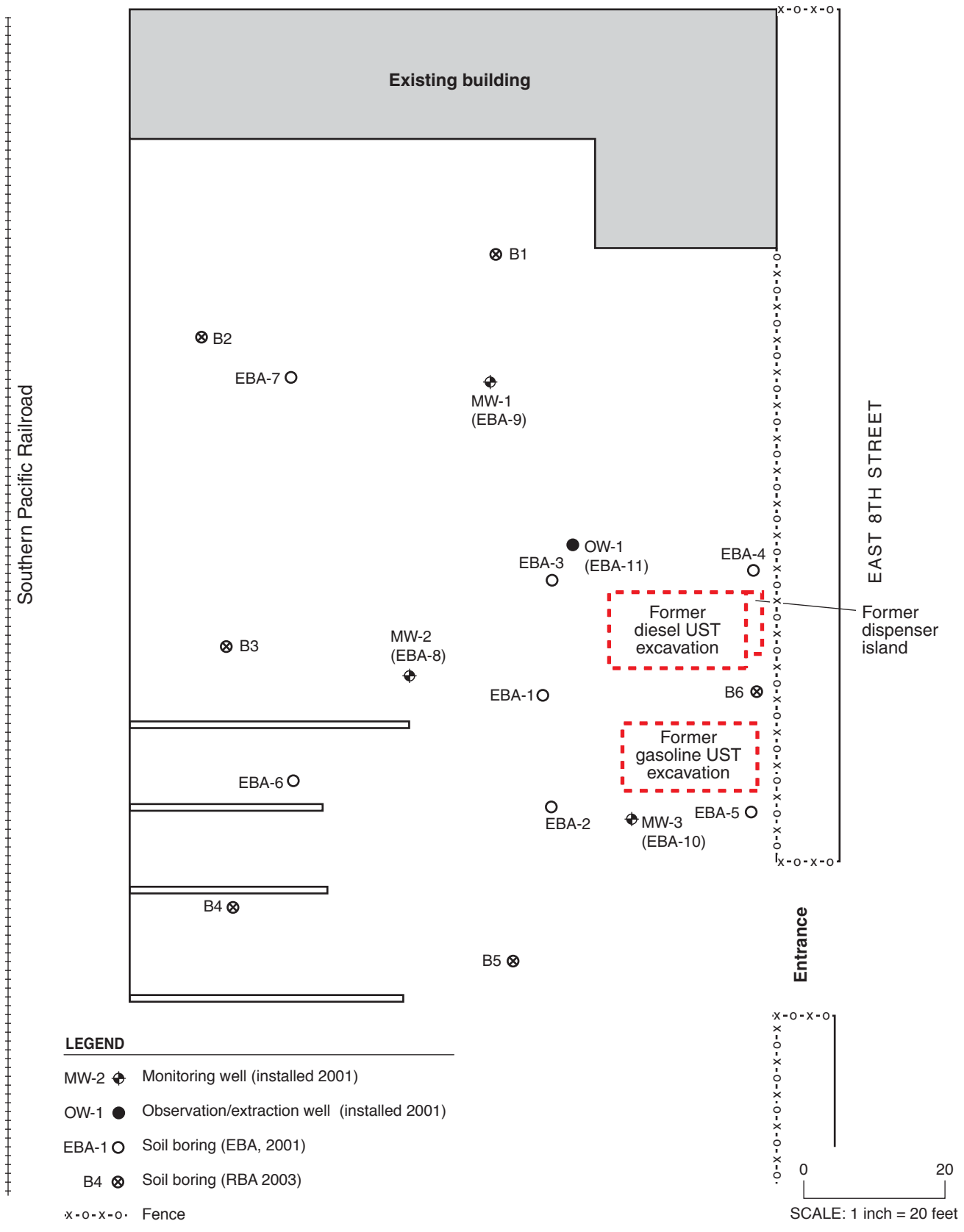
N

SUBJECT PROPERTY LOCATION

5115 East 8th St. Oakland, CA	By: MJC	APRIL 2009
	Figure 1	

STELLAR ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

2009-12-01

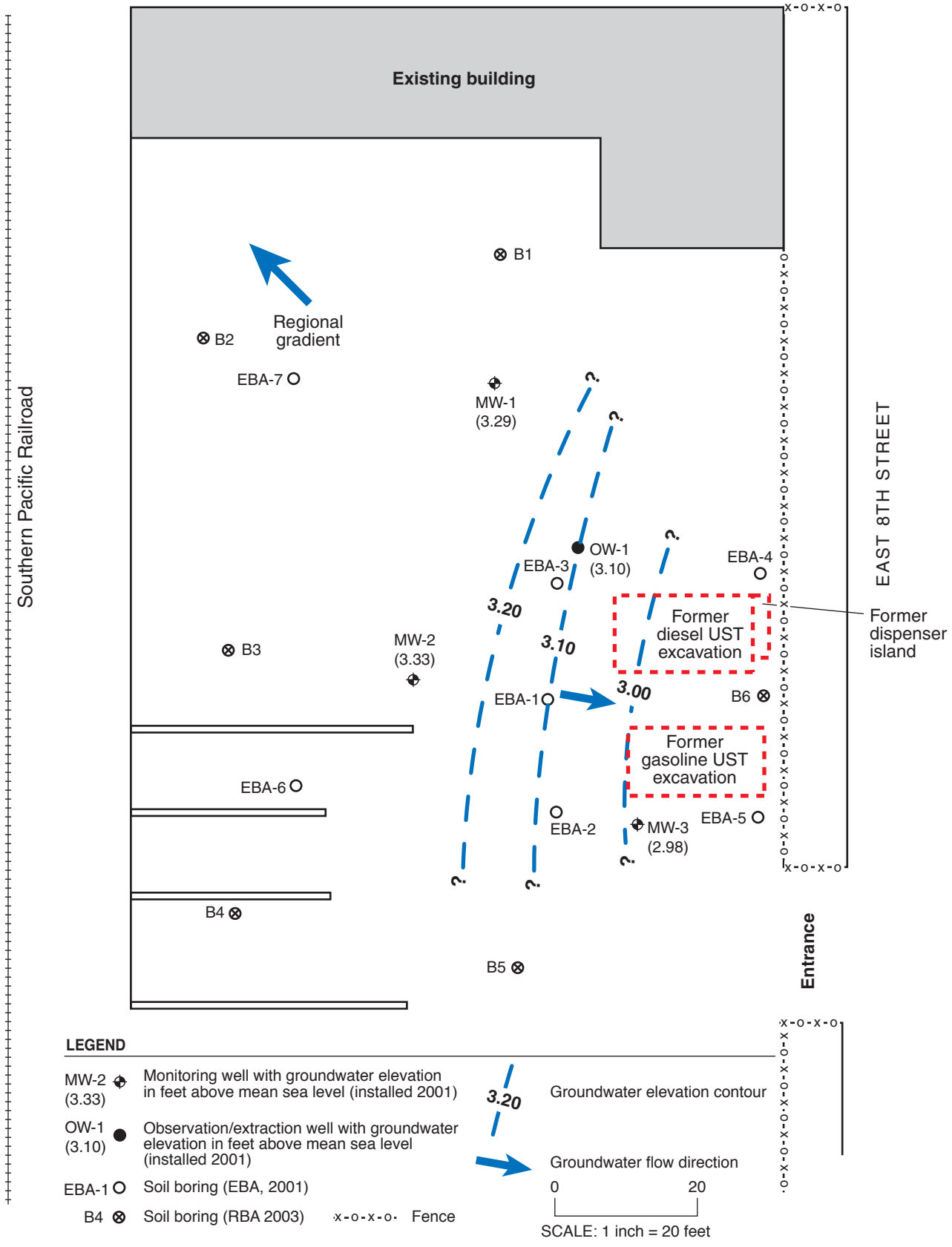


SITE PLAN SHOWING LOCATIONS OF SITE WELLS AND HISTORICAL BORINGS

5115 East 8th St. Oakland, CA	By: MJC	MAY 2009
	Figure 2	

STELLAR ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

2009-12-03

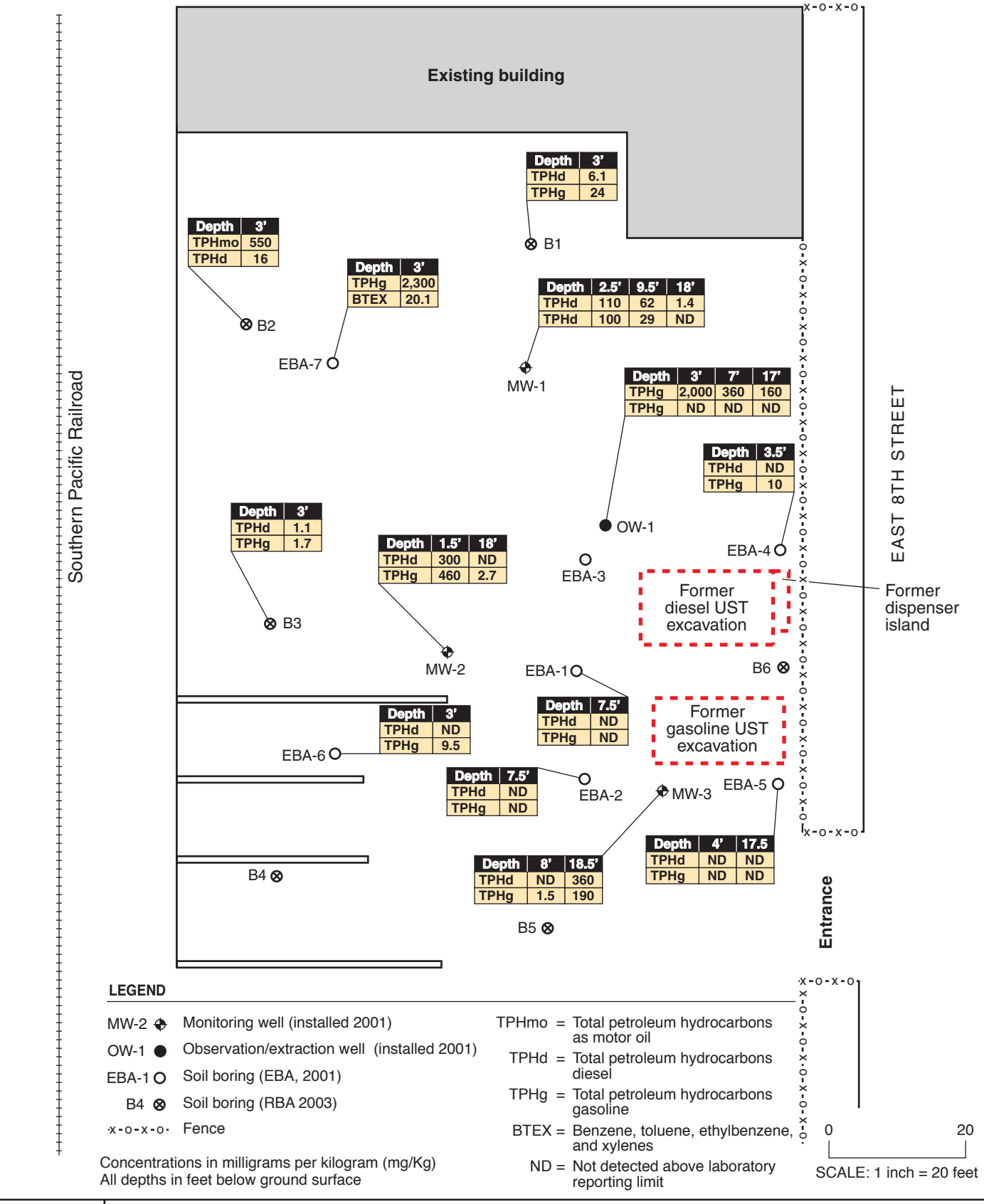


SITE PLAN AND GROUNDWATER ELEVATION MAP, MARCH 31, 2009

5115 East 8th St. Oakland, CA	By: MJC	MAY 2009
	Figure 3	

STELLAR ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

2009-12-02

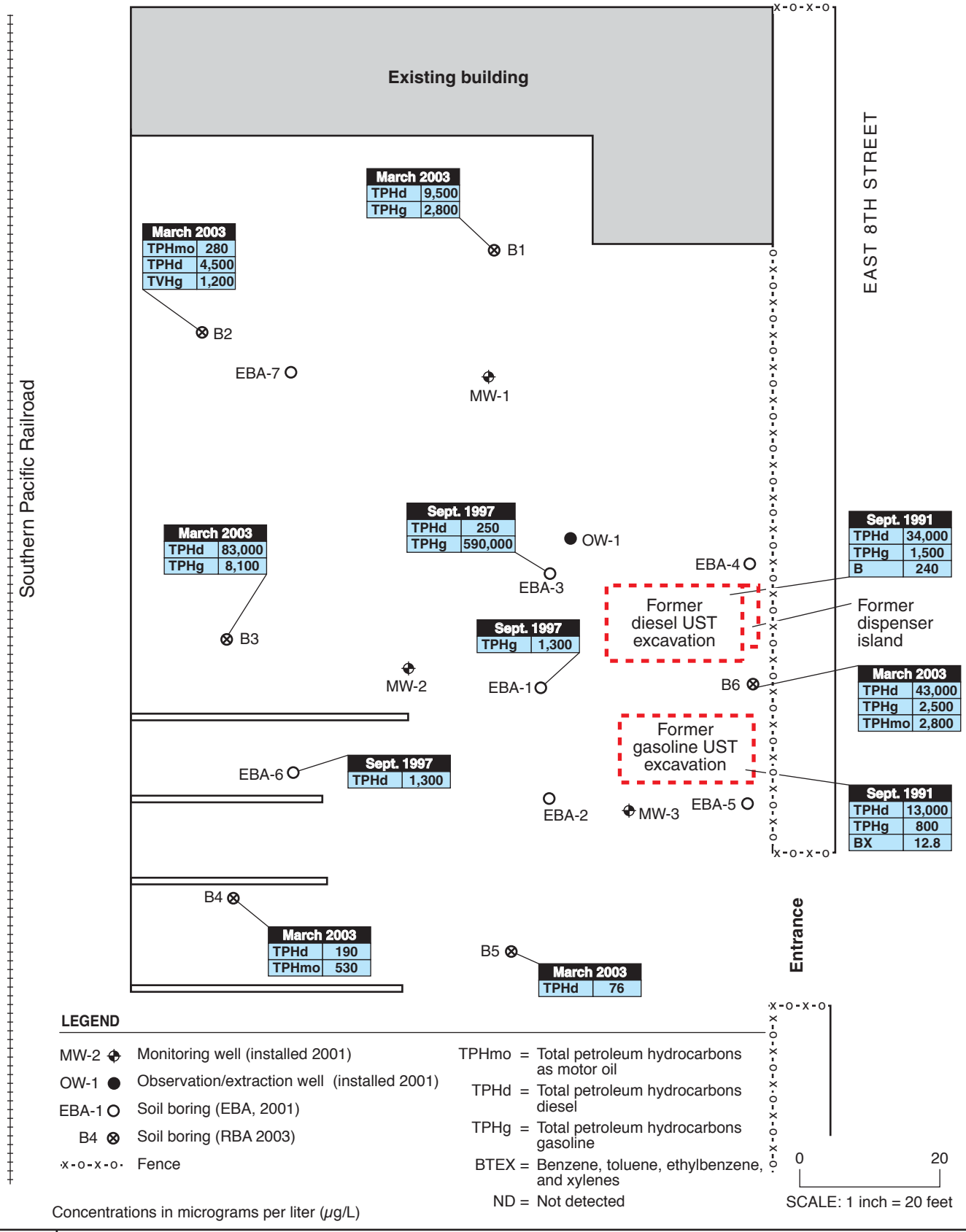


HISTORICAL CONTAMINANT DETECTIONS IN SOIL BORINGS

5115 East 8th St. Oakland, CA	By: MJC	MAY 2009
	Figure 4	

STELLAR ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

2009-12-04

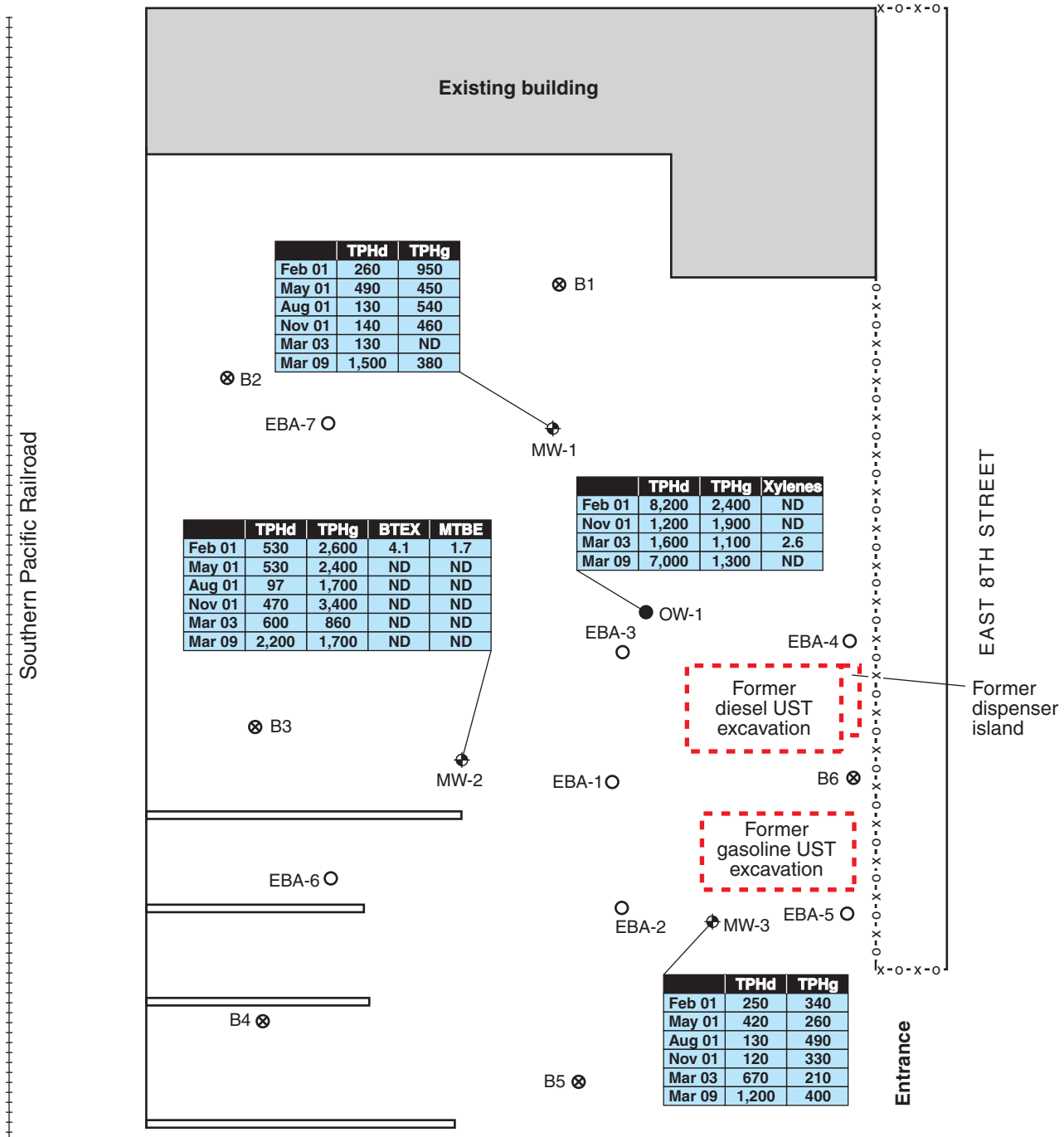


HISTORICAL TPH and TPHg CONTAMINANT DETECTIONS IN GRAB GROUNDWATER SAMPLES

5115 East 8th St. Oakland, CA	By: MJC	MAY 2009
	Figure 5	

STELLAR ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

2009-12-05



	TPHd	TPHg
Feb 01	260	950
May 01	490	450
Aug 01	130	540
Nov 01	140	460
Mar 03	130	ND
Mar 09	1,500	380

	TPHd	TPHg	BTEX	MTBE
Feb 01	530	2,600	4.1	1.7
May 01	530	2,400	ND	ND
Aug 01	97	1,700	ND	ND
Nov 01	470	3,400	ND	ND
Mar 03	600	860	ND	ND
Mar 09	2,200	1,700	ND	ND

	TPHd	TPHg	Xylenes
Feb 01	8,200	2,400	ND
Nov 01	1,200	1,900	ND
Mar 03	1,600	1,100	2.6
Mar 09	7,000	1,300	ND

	TPHd	TPHg
Feb 01	250	340
May 01	420	260
Aug 01	130	490
Nov 01	120	330
Mar 03	670	210
Mar 09	1,200	400

LEGEND

MW-2 ⊕ Monitoring well (installed 2001)

OW-1 ● Observation/extraction well (installed 2001)

EBA-1 ○ Soil boring (EBA, 2001)

B4 ⊗ Soil boring (RBA 2003)

·x-o-x-o· Fence

Concentrations in micrograms per liter (µg/L)

TPHd = Total petroleum hydrocarbons as motor oil

TPHg = Total petroleum hydrocarbons diesel

BTEX = Benzene, toluene, ethylbenzene, and xylenes

MTBE = Methyl tertiary butyl ether

ND = Not detected above laboratory reporting limit

SCALE: 1 inch = 20 feet

CURRENT AND HISTORICAL GROUNDWATER MONITORING WELL CONTAMINANT DETECTIONS

5115 East 8th St.
Oakland, CA

By: MJC | MAY 2009

Figure 6

STELLAR ENVIRONMENTAL SOLUTIONS, INC
GEOSCIENCE & ENGINEERING CONSULTING

2009-12-06

Historical Tables

Table 4: Historical Soil Analytical Results
5115 East Eighth Street, Oakland, California

Sample ID	Sample Depth (feet bgs)	TPHmo	TPHd	TPHg	Benzene	Toluene	Ethyl benzene	Total Xylenes	MTBE
January 1991Post Excavation UST Confirmation Soil Samples (mg/kg)									
SW-1	8.5	*NA*	**100**	**120**	*ND*	0.014	0.53	*0.028*	*NA*
SW-2	8.5	*NA*	*ND*	*ND*	*ND*	*ND*	0.009	*ND*	*NA*
SW-3	8.5	*NA*	21	120	*ND*	*ND*	0.51	*ND*	*NA*
SW-4	8.5	*NA*	*ND*	*ND*	*ND*	*ND*	0.006	*ND*	*NA*
September 1997 Soil Boring Samples (mg/kg)									
EBA-1	7.5-8.0	*NA*	*<1.0*	*<0.5*	*<0.005*	*<0.005*	*<0.005*	*<0.010*	*<0.005*
EBA-2	7.5-8.0	*NA*	*<1.0*	*<0.5*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
EBA-4	3.5-4.0	*NA*	*<1.0*	10	*<0.005*	*<0.005*	*<0.005*	0.11	*<0.005*
EBA-5	4.0	*NA*	*<1.0*	*<0.5*	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
EBA-5	7.5-8.0	*NA*	*<1.0*	0.5	*<0.005*	*<0.005*	*<0.005*	*<0.005*	*<0.005*
EBA-6	3.0	*NA*	*<1.0*	9.5	*<0.005*	*<0.005*	*<0.005*	0.3	*<0.005*
EBA-7	3.0-3.5	*NA*	*<1.0*	**2,300**	**<0.25**	0.58	**5.5**	**14**	**<0.25**
February 2001 Soil Boring Samples (mg/kg)									
MW-2	1.5	*NA*	**300**	**460**	*ND*	*ND*	*ND*	*ND*	*ND*
MW-2	18.0	*NA*	ND	2.7	*ND*	*ND*	*ND*	*ND*	*ND*
MW-1	2.5	*NA*	**100**	**110**	*ND*	*ND*	0.11	*ND*	*ND*
MW-1	9.5	*NA*	29	62	*ND*	*ND*	0.65	*ND*	*ND*
MW-1	18.0	*NA*	ND	1.4	*ND*	*ND*	*ND*	*ND*	*ND*
MW-3	8.0	*NA*	ND	1.5	*ND*	*ND*	*ND*	*ND*	*ND*
MW-3	18.5	*NA*	**360**	**190**	*ND*	*ND*	*ND*	*ND*	*ND*
OW-1	3.0	*NA*	**2000**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
OW-1	7.0	*NA*	**360**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
OW-1	17.0	*NA*	**160**	*ND*	*ND*	*ND*	*ND*	*ND*	*ND*
March 2003 Soil Boring Samples (mg/kg)									
B1-3	3.0-3.5	*<5.0*	6.1	24	*<0.01*	*<0.01*	*<0.01*	*<0.01*	*<0.01*
B2-3	3.0-3.5	550	16	*<1.0*	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*
B3-3	3.0-.3.5	*<5.0*	1.1	1.7	*<0.05*	*<0.05*	*<0.05*	*<0.05*	*<0.05*
Soil ESLs		2500	83/180	83/180	0.044/0.27	2.9/9.3	3.3/4.7	2.3/11	.023/8.4

Notes:
ESLs = Water Board Environmental Screening Levels for commercial/industrial sites where groundwater is/is not a potential drinking water resource. Samples in bold-face type exceed the ESL criterion where groundwater is a drinking water resource.
TPHg ,d or mo = total petroleum hydrocarbons as gasoline , diesel, or motor oil; MTBE = methyl tertiary-butyl ether
NA = Not analyzed; ND = None detected; bgs = below ground surface.

Table 5: Historical Grab-Groundwater Analytical Results
5115 East Eighth Street, Oakland, California

Sample ID	TPHmo	TPHd	TVHg	Benzene	Toluene	Ethyl benzene	Total Xylenes	MTBE
March 1991 UST Excavation Groundwater Sample (µg/L)								
W1	*NA*	**34,000**	**1,500**	**240**	*<0.3*	*<0.3*	*<0.3*	*NA*
W2	*NA*	**13,000**	**800**	**1.8**	*<0.3*	*<0.3*	11	*NA*
September 1997 Soil Borings (µg/L)								
EBA-1	*NA*	2	**2,000**	**9**	9	11	**30**	*<0.5*
EBA-3	*NA*	**250**	**590,000**	**560**	**290**	**1,700**	**3,800**	*<25*
EBA-6	*NA*	*NA*	**1,300**	*<0.5*	*<0.5*	*<0.5*	**32**	*<0.5*
March 2003 Soil Borings (µg/L)								
B1	*<250*	**9,500**	**2,800**	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<5.0*
B2	**280**	**4,500**	**1,200**	*<0.5*	*<0.5*	*<0.5*	5.4	*<5.0*
B3	***<25,000***	**83,000**	**8,100**	***<2.5***	4.0	*<0.5*	5.2	*<25*
B4	**530**	**190**	*<50*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<5.0*
B5	<250	76	*<50*	*<0.5*	*<0.5*	*<0.5*	*<0.5*	*<5.0*
B6	**2,800**	**43,000**	**2,500**	*<0.5*	*<0.5*	0.92	2.1	**33**
ESLs	100 / 210	100 / 210	100 / 210	1.0 / 46	40 / 130	30 / 43	20 / 100	5 / 1,800

Notes:

ESLs = Water Board Environmental Screening Levels industrial sites where groundwater *is/is not* a potential drinking water resource.

Samples in **bold-face type** exceed the ESL criterion where groundwater *is* a drinking water resource.

TPHmo = total petroleum hydrocarbons asmotor oil

TPHd = total petroleum hydrocarbons as diesel;

TPHg = total petroleum hydrocarbons as gasoline ;

MTBE = methyl tertiary-butyl ether
NA = Not analyzed; ND = None detected

ATTACHMENT A

Groundwater Sampling Field Data

WELLHEAD INSPECTION CHECKLIST

Date 03-31-09 Client Stellar

Site Address 5115 E. 8th St. Oakland, CA

Job Number 090331-MT3 Technician M. Todi

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-1	→	No cap on well, sitting in box, H_2O @ TOC						
MW-2	→	"					"	
MW-3	→	"				✓		
OW-1		well cap loose on well H_2O @ TOC						

NOTES:

WELL GAUGING DATA

Project # 03·31·09 Date 03·31·09 Client Stellar

Site 5115 E. 8th st, Oakland, CA

Well ID	Time	Well Size (in.)	Sheen / Odor	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-1	1009	2					3.72	19.76		
MW-2	1005	2					3.78	18.50		
MW-3	1015	2					3.71	19.90		
OW-1	1000	4					3.96	19.85		

WELL MONITORING DATA SHEET

Project #: 080331-MT3	Client: Stellar
Sampler: MT	Date: 03.31.09
Well I.D.: MW-1	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 19.76	Depth to Water (DTW): 3.72
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.93	

Purge Method: Bailer; ~~Disposable Bailer~~; Positive Air Displacement; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; ~~Disposable Bailer~~; Extraction Port; Dedicated Tubing; Other: _____

2.5 (Gals.) X	3	= 7.5 Gals.
1 Case Volume	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^2 * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1048	18.3	7.48	261.1	29	2.5	
1051	18.6	6.57	1083	195	5	
	Dewatered @ 5.3 gls			DTW = 18.73		
1215	19.1	7.02	1091	35	—	

Did well dewater? (Yes) No Gallons actually evacuated: 5.3

Sampling Date: 03.31.09 Sampling Time: 1215 Depth to Water: 15.96

Sample I.D.: MW-1 Laboratory: Kiff CalScience Other CFT

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

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

WELL MONITORING DATA SHEET

Project #: 030331-MT3	Client: Stellar
Sampler: MT	Date: 03.31.09
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 18.50	Depth to Water (DTW): 3.78
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.72	

Purge Method: Bailer, (Disposable Bailer), Positive Air Displacement, Electric Submersible, Waterra, Peristaltic, Extraction Pump, Other_____

Sampling Method: ~~Bailer~~, (~~Disposable Bailer~~), Extraction Port, Dedicated Tubing, Other: _____

1 Case Volume		Specified Volumes		Calculated Volume
2.3	(Gals.) X	3	=	6.9 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius^2 * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1105	17.1	6.92	831.5	71000	2.3	Black
1108	17.1	6.88	850.4	71000	4.6	"
1112	17.1	6.90	882.2	71000	6.9	"
						DTW=16.58

Did well dewater? Yes (No)		Gallons actually evacuated: 6.9	
Sampling Date: 03.31.09	Sampling Time: 1235	Depth to Water: 15.73	
Sample I.D.: MW-2		Laboratory: Kiff CalScience Other CFT	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5)		Other: See COC	
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

WELL MONITORING DATA SHEET

Project #: 090331-MT3	Client: Stellar
Sampler: MT	Date: 03-31-09
Well I.D.: MW-3	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): 19.90	Depth to Water (DTW): 3.971
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.95	

Purge Method: Bailer; ~~Disposable Bailer~~; Positive Air Displacement; Electric Submersible; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; ~~Disposable Bailer~~; Extraction Port; Dedicated Tubing; Other: _____

2.5 (Gals.) X 3 = 7.5 Gals.
1 Case Volume | 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^2 * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1123	16.8	6.94	703.5	202	2.5	
1127	17.3	~~6~~.99	693.5	217	5	
1131	17.2	6.80	726.7	220	7.5	
					DTW=18.07	

Did well dewater? Yes (No) Gallons actually evacuated: 7.5

Sampling Date: 03-31-09 Sampling Time: 1248 Depth to Water: 16.03

Sample I.D.: MW-3 Laboratory: Kiff CalScience Other CT

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

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

WELL MONITORING DATA SHEET

Project #: 090331-MT3	Client: Stellar
Sampler: MT	Date: 03-31-09
Well I.D.: OW-1	Well Diameter: 2 3 (4) 6 8 ___
Total Well Depth (TD): 19.89	Depth to Water (DTW): 3.96
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.15	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; ~~Electric Submersible~~; Waterra; Peristaltic; Extraction Pump; Other_____

Sampling Method: Bailer; ~~Disposable Bailer~~; Extraction Port; Dedicated Tubing; Other: _____

10.3 (Gals.) X 3 = 30.9 Gals.
1 Case Volume | 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^2 * 0.163

Time	Temp (°F or (°C))	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1032	18.8	7.40	786.1	43	10	
1034	18.6	7.04	853.3	69	20	
1036	18.5	6.87	1029	65	31	DTW = 17.43

Did well dewater? Yes (No) Gallons actually evacuated: 31

Sampling Date: 03-31-09 Sampling Time: 1142 Depth to Water: 6.02

Sample I.D.: OW-1 Laboratory: Kiff CalScience Other CTT

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

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

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME	STELLAR GIS ENGINEERING	PROJECT NUMBER	090331-MT3				
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
Utrameter	6209574	03/31/09 952	PH 4/7/10	398 7.02 10.05	yes	18.0	MT
↓	↓	↓ 954	cond 3900	3896	yes	17.9	MT
Turbidimeter	27/100	↓ 956	20/100	19/102	yes	—	MT

S[illegible] or Purge Water Drum Lo[illegible]

Client: STellar

Site Address: 5115 East 8th St Oakland, CA

STATUS OF DRUM(S) UPON ARRIVAL						
Date	03/31/09					
Number of drum(s) empty:						
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:						
Total drum(s) on site:	Ø					
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	03/31/09					
Number of drums empty:						
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:	1					
Total drum(s) on site:	1					
Are the drum(s) properly labeled?	Y					
Drum ID & Contents:	Water					

LOCATION OF DRUM(S)
Describe location of drum(s):

FINAL STATUS						
Number of new drum(s) left on site this event	1					
Date of inspection:	03/31/09					
Drum(s) labelled properly:	Y					
Logged by BTS Field Tech:	MT					
Office reviewed by:	[illegible]					

Chain of Custody Record

Lab job no. _____
Date 03.31.09
Page 1 of 1

Laboratory CURTIS & TOMPKINS
Address 2323 FIFTH ST.
BERKELEY, CA

Project Owner _____
Site Address 5115 E. 8TH ST.
OAKLAND, CA

Project Name _____
Project Number 2009-12

Method of Shipment LAB COURIER
Shipment No. _____
Airbill No. _____
Cooler No. _____
Project Manager HENRY PIETROPAOLI
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: *(Signature)* _____

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	Analysis Required: TVH-G (8015M)	Analysis Required: M BTEX (8015M)	Analysis Required: VOCs (8260)	Analysis Required: *	Analysis Required: TEH-D (8015M)	Remarks
OW-1		03.31.09	1142	W	2-1L Amber NP 6-HCL VOAS	Y	HCL		8	X	X	X		X	
MW-1		"	1215	"	"	"	"		8	X	X	X		X	
MW-2		"	1235	"	"	"	"		8	X	X	X		X	
MW-3		"	1240	"	"	"	"		8	X	X	X		X	

Relinquished by:	Date	Received by:	Date	Relinquished by:	Date	Received by:	Date
Signature	03.31.09	Signature	3/31/09	Signature (Sample Custody)	4/3/09	Signature	4/3/09
Printed M. Todi	Time 1615	Printed M. Todi (Sample custody)	Time 1615	Printed W JONES	Time 1355	Printed RICK GRIMES	Time 1355
Company BTS		Company BTS		Company BTS		Company CT	

Turnaround Time: STANDARD TAT
Comments: EDF REQUIRED
GLOBAL ID: T0600102059

Relinquished by:	Date	Received by:	Date
Signature		Signature	
Printed	Time	Printed	Time
Company		Company	

2000-00-01

Stellar Environmental Solutions

2198 Sixth Street #201, Berkeley, CA 94710

intact cold RC

ATTACHMENT B

Laboratory Analytical Results
and Chain of Custody Documentation


Curtis & Tompkins, Ltd.
Analytical Laboratories, Since 1878

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

Laboratory Job Number 211163
ANALYTICAL REPORT

Stellar Environmental Solutions	Project : 2009-12
2198 6th Street	Location : 5115 E. 8th Street Oakland
Berkeley, CA 94710	Level : II

Sample ID	Lab ID
OW-1	211163-001
MW-1	211163-002
MW-2	211163-003
MW-3	211163-004

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

Signature: _____ Date: 04/20/2009
Project Manager

Signature: _____ Date: 04/20/2009
Project Manager

NELAP # 01107CA

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**211163**
Client:	**Stellar Environmental Solutions**
Project:	**2009-12**
Location:	**5115 E. 8th Street Oakland**
Request Date:	**04/03/09**
Samples Received:	**04/03/09**

This data package contains sample and QC results for four water samples, requested for the above referenced project on 04/03/09. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B):
High surrogate recoveries were observed for bromofluorobenzene (FID) in OW-1 (lab # 211163-001), MW-1 (lab # 211163-002), and MW-2 (lab # 211163-003). High surrogate recovery was observed for trifluorotoluene (FID) in MW-2 (lab # 211163-003). No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
High recovery was observed for diesel C10-C24 in the MSD for batch 149698; the parent sample was not a project sample, the LCS was within limits, and the associated RPD was within limits. No other analytical problems were encountered.

Volatile Organics by GC/MS (EPA 8260B):
No analytical problems were encountered.

211163

Chain of Custody Record

Lab job no. _____
Date 03-31-09
Page 1 of 1

Laboratory CURTIS & TOMPKINS
Address 2323 FIFTH ST. BERKELEY, CA
Project Owner _____
Site Address 5115 E. 8TH ST. OAKLAND, CA
Project Name _____
Project Number 2009-12

Method of Shipment LAB COURIER
Shipment No. _____
Airbill No. _____
Cooler No. _____
Project Manager HENRY PIETROPAOLI
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: (Signature) _____

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	TVH-G (8015M)	BTEX (8260)	VOCs (8260)	TEH-D (8015M)	Remarks
OW-1		03.31.09	1142	W	2-1L Amber HP 6-HCL VOAs	Y	HCL		8	X	X	X	X	
MW-1			1215						8	X	X	X	X	
MW-2			1235						8	X	X	X	X	
MW-3			1240						8	X	X	X	X	

Analysis Required

Relinquished by:	Date	Received by:	Date	Relinquished by:	Date	Received by:	Date
Signature	03.31.09	Signature	3/31/09	Signature (Sample Custody)	4/3/09	Signature	4/3/09
Printed M. Todi	Time 1615	Printed M. Todi (Sample custody)	Time 1615	Printed W JONES	Time 1355	Printed Rick Grams	Time 1355
Company BTS		Company BTS		Company BTS		Company CT	

Turnaround Time: STANDARD TAT
Comments: EDF REQUIRED
GLOBAL ID: T0600102059

Relinquished by:	Date	Received by:	Date
Signature		Signature	
Printed	Time	Printed	Time
Company		Company	

2000-00-01

★ Stellar Environmental Solutions

2198 Sixth Street #201, Berkeley, CA 94710

intact cold RC

Z11163

Chain of Custody Record

Lab job no. _____
Date 03-31-09
Page 1 of 1

Laboratory CURTIS & TOMPKINS
Address 2323 FIFTH ST. BERKELEY, CA
Project Owner _____
Site Address 5115 E. 8TH ST. OAKLAND, CA
Project Name _____
Project Number 2009-12

Method of Shipment LAB COURIER
Shipment No. _____
Airbill No. _____
Cooler No. _____
Project Manager HENRY PIETROPAOLI
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: *(Signature)* _____

Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	TVH-G (8015M)	MBTEX (8015M)	VOCs (8260)	#	TEH-D (8015M)	Remarks
OW-1		03.31.09	1142	W	2-1L Amber HP 6-HCL VOAS	Y	HCL		8	X	X	X		X	
MW-1			1215						8	X	X	X		X	
MW-2			1235						8	X	X	X		X	
MW-3			1249						8	X	X	X		X	

Analysis Required

Relinquished by:	Date	Received by:	Date	Relinquished by:	Date	Received by:	Date
Signature	03.31.09	Signature	3/31/09	Signature (Sample Custody)	4/3/09	Signature	4/3/09
Printed M. Todi	Time 1615	Printed M. Todi (Sample custodian)	Time 1615	Printed W JAMES	Time 1355	Printed Rick Grams	Time 1355
Company BTS		Company BTS		Company BTS		Company CT	

Turnaround Time: STANDARD TAT
Comments: EDF REQUIRED
GLOBAL ID : T0600102059

Relinquished by:	Date	Received by:	Date
Signature		Signature	
Printed	Time	Printed	Time
Company		Company	

2000-00-01

★ Stellar Environmental Solutions

2198 Sixth Street #201, Berkeley, CA 94710

intact cold RC

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 211163 Date Received 4-3-09 Number of coolers 1
Client STEVARD Project 515 E. 8TH ST

Date Opened 4-3-09 By (print) S EVANS (sign)
Date Logged in " By (print) " (sign) "

1. Did cooler come with a shipping slip (airbill, etc) YES NO
   Shipping info
2A. Were custody seals present? ... ☐ YES (circle) on cooler on samples ☒ NO
   How many Name Date
2B. Were custody seals intact upon arrival? YES NO N/A
3. Were custody papers dry and intact when received? YES NO
4. Were custody papers filled out properly (ink, signed, etc)? YES NO
5. Is the project identifiable from custody papers? (If so fill out top of form) YES NO
6. Indicate the packing in cooler: (if other, describe)

☐ Bubble Wrap ☐ Foam blocks ☑ Bags ☐ None
☐ Cloth material ☐ Cardboard ☐ Styrofoam ☐ Paper towels

7. Temperature documentation:

Type of ice used: ☑ Wet ☐ Blue/Gel ☐ None Temp(°C)

☑ Samples Received on ice & cold without a temperature blank

☐ Samples received on ice directly from the field. Cooling process had begun

8. Were Method 5035 sampling containers present? YES NO
   If YES, what time were they transferred to freezer?
9. Did all bottles arrive unbroken/unopened? YES NO
10. Are samples in the appropriate containers for indicated tests? YES NO
11. Are sample labels present, in good condition and complete? YES NO
12. Do the sample labels agree with custody papers? YES NO
13. Was sufficient amount of sample sent for tests requested? YES NO
14. Are the samples appropriately preserved? YES NO N/A
15. Are bubbles > 6mm absent in VOA samples? YES NO N/A
16. Was the client contacted concerning this sample delivery? YES NO
   If YES, Who was called? Teal By TLB Date: 4-6-09

COMMENTS

they only need TVH by 8015
mbtE will be reported by the 8260 1-5.

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	149801
Units:	ug/L	Sampled:	03/31/09
Diln Fac:	1.000	Received:	04/03/09

Field ID: OW-1 Lab ID: 211163-001
Type: SAMPLE Analyzed: 04/10/09

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

Surrogate	%REC	Limits
Trifluorotoluene (FID)	126	63-146
Bromofluorobenzene (FID)	327 *	70-140

Field ID: MW-1 Lab ID: 211163-002
Type: SAMPLE Analyzed: 04/10/09

Analyte	Result	RL
Gasoline C7-C12	380 Y	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	118	63-146
Bromofluorobenzene (FID)	191 *	70-140

Field ID: MW-2 Lab ID: 211163-003
Type: SAMPLE Analyzed: 04/10/09

Analyte	Result	RL
Gasoline C7-C12	1,700 Y	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	276 *	63-146
Bromofluorobenzene (FID)	183 *	70-140

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Total Volatile Hydrocarbons

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	149801
Units:	ug/L	Sampled:	03/31/09
Diln Fac:	1.000	Received:	04/03/09

Field ID:	MW-3	Lab ID:	211163-004
Type:	SAMPLE	Analyzed:	04/10/09

Analyte	Result	RL
Gasoline C7-C12	400 Y	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	102	63-146
Bromofluorobenzene (FID)	137	70-140

Type:	BLANK	Analyzed:	04/09/09
Lab ID:	QC491131		

Analyte	Result	RL
Gasoline C7-C12	ND	50

Surrogate	%REC	Limits
Trifluorotoluene (FID)	87	63-146
Bromofluorobenzene (FID)	93	70-140

*= Value outside of QC limits; see narrative
Y= Sample exhibits chromatographic pattern which does not resemble standard
ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC491132	Batch#:	149801
Matrix:	Water	Analyzed:	04/09/09
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	3,000	2,878	96	76-121

Surrogate	%REC	Limits
Trifluorotoluene (FID)	120	63-146
Bromofluorobenzene (FID)	127	70-140

Curtis & Tompkins, Ltd.

Batch QC Report

Total Volatile Hydrocarbons

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Diln Fac:	1.000
MSS Lab ID:	211145-006	Batch#:	149801
Matrix:	Water	Sampled:	04/01/09
Units:	ug/L	Received:	04/03/09

Type: MS Analyzed: 04/09/09
Lab ID: QC491135

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	153.3	2,000	1,783	82	66-120

Surrogate	%REC	Limits
Trifluorotoluene (FID)	106	63-146
Bromofluorobenzene (FID)	103	70-140

Type: MSD Analyzed: 04/10/09
Lab ID: QC491136

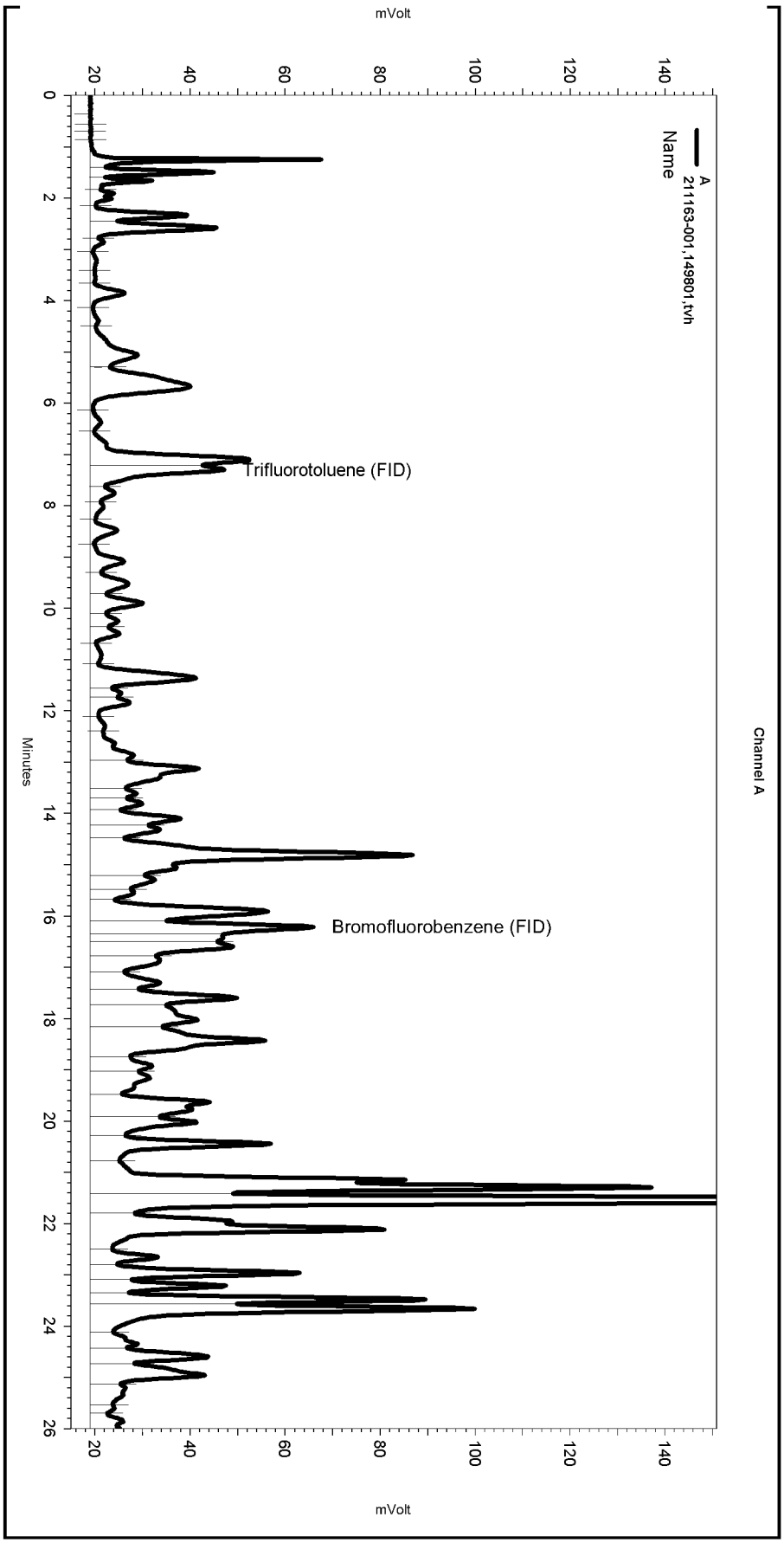
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,764	81	66-120	1	20

Surrogate	%REC	Limits
Trifluorotoluene (FID)	112	63-146
Bromofluorobenzene (FID)	103	70-140

RPD= Relative Percent Difference

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC19\Sequence\099.seq**
Sample Name: **211163-001,149801,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC19\Data\099_031**
Instrument: GC19 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC19\Method\tvhbtxe098A.met

Software Version 3.1.7
Run Date: 4/10/2009 6:03:09 AM
Analysis Date: 4/16/2009 11:12:08 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: B1.3



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

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

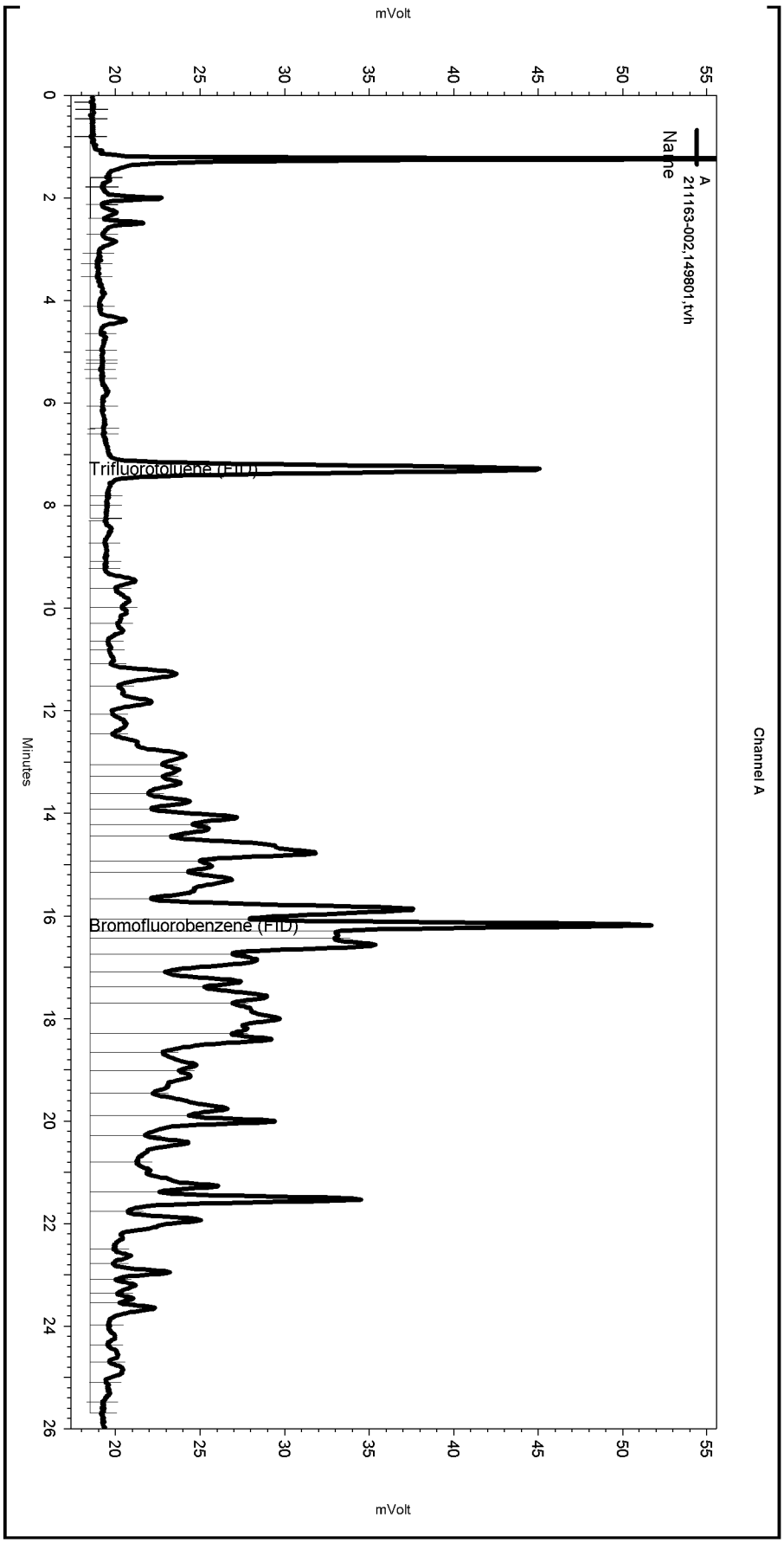
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC19\Data\099_031

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0	26.017	0
Yes	Split Peak	16.358	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC19\Sequence\099.seq**
Sample Name: **211163-002,149801,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC19\Data\099_032**
Instrument: GC19 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC19\Method\tvhbtxe098A.met

Software Version 3.1.7
Run Date: 4/10/2009 6:40:44 AM
Analysis Date: 4/16/2009 11:12:12 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: B1.3



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

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

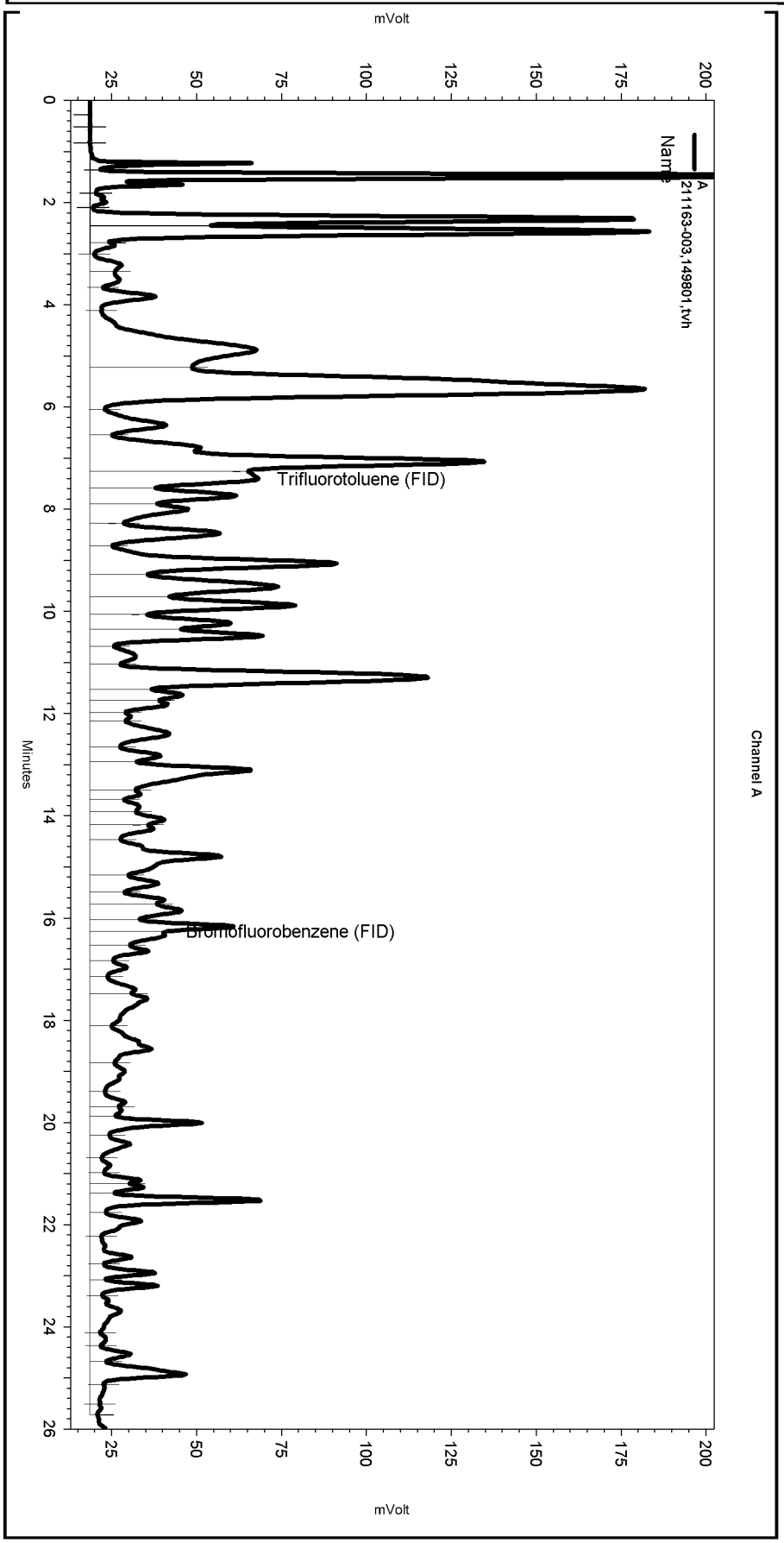
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC19\Data\099_032

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0	26.017	0
Yes	Split Peak	16.299	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC19\Sequence\099.seq**
Sample Name: **211163-003,149801,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC19\Data\099_033**
Instrument: GC19 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC19\Method\tvhbtxe098A.met

Software Version 3.1.7
Run Date: 4/10/2009 7:18:17 AM
Analysis Date: 4/16/2009 11:12:15 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: B1.3



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

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

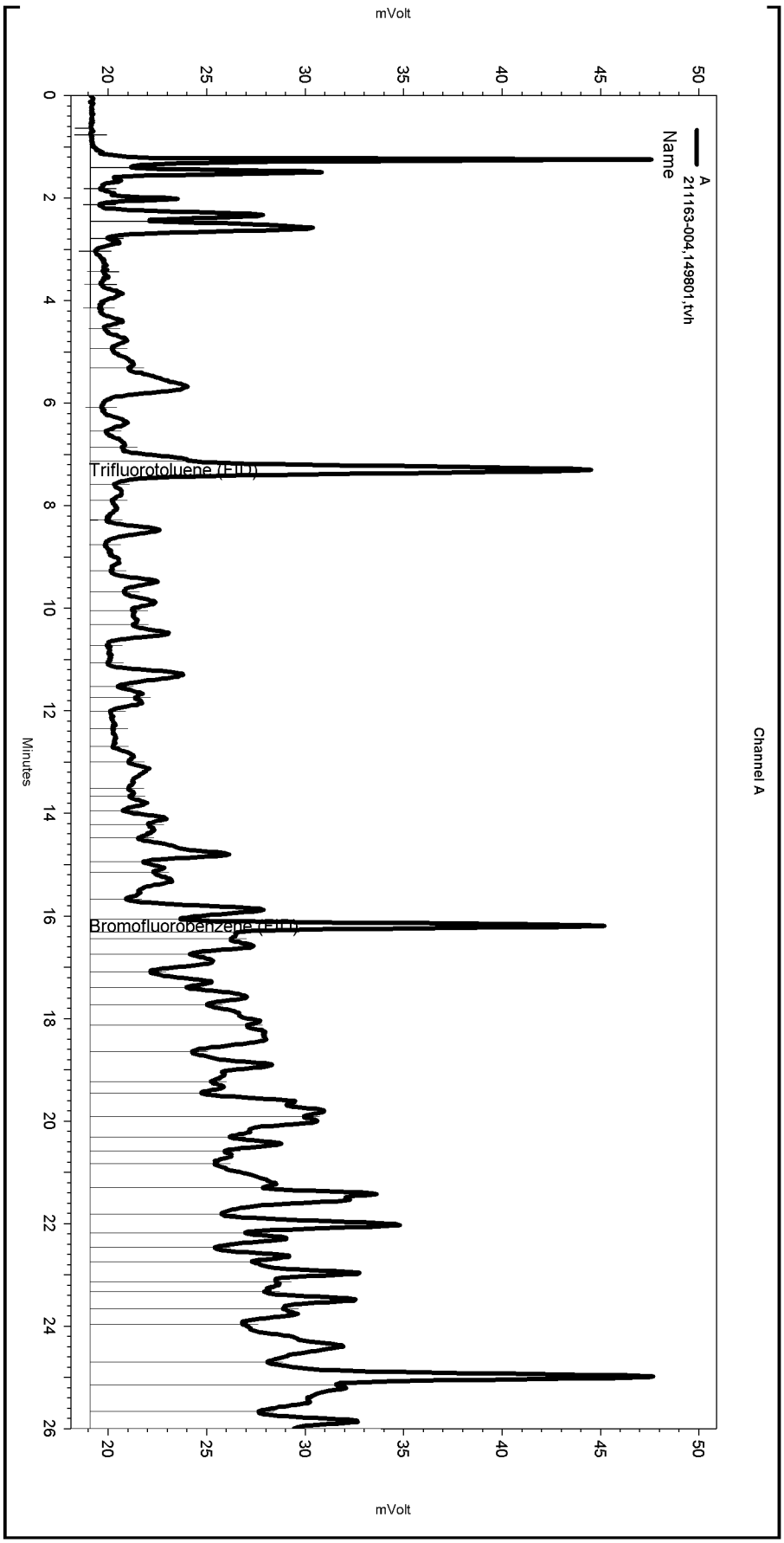
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC19\Data\099_033

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0	26.017	0
Yes	Split Peak	16.27	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC19\Sequence\099.seq**
Sample Name: **211163-004,149801,tvh**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC19\Data\099_034**
Instrument: GC19 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC19\Method\tvhbtxe098A.met

Software Version 3.1.7
Run Date: 4/10/2009 7:55:48 AM
Analysis Date: 4/16/2009 11:12:19 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: B1.3



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

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

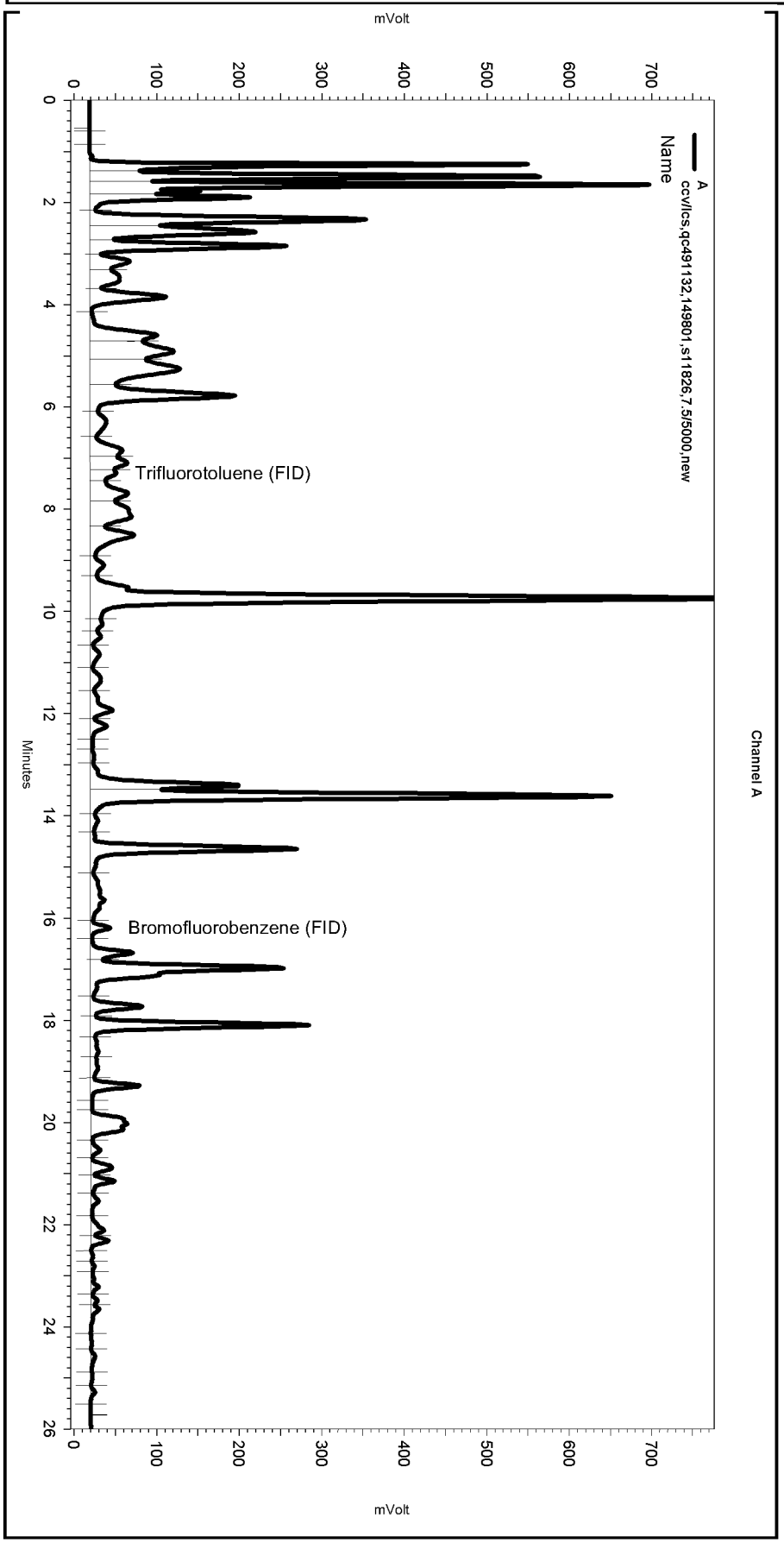
Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC19\Data\099_034

Enabled	Event Type	Start (Minutes)	Stop (Minutes)	Value
Yes	Lowest Point Horizontal Baseli	0	26.017	0
Yes	Split Peak	7.136	0	0
Yes	Split Peak	16.321	0	0

Sequence File: **\\Lims\gdrive\ezchrom\Projects\GC19\Sequence\099.seq**
Sample Name: **ccv/lcs,qc491132,149801,s11826,7.5/5000,new**
Data File: **\\Lims\gdrive\ezchrom\Projects\GC19\Data\099_005**
Instrument: GC19 (Offline) Vial: N/A Operator: Tvh 2. Analyst (lims2k3\tvh2)
Method Name: \\Lims\gdrive\ezchrom\Projects\GC19\Method\tvhbtxe098A.met

Software Version 3.1.7
Run Date: 4/9/2009 11:37:57 AM
Analysis Date: 4/16/2009 11:10:42 AM
Sample Amount: 5 Multiplier: 5
Vial & pH or Core ID: {Data Description}



---< General Method Parameters >---

No items selected for this section

---< A >---

No items selected for this section

Integration Events

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

Manual Integration Fixes

Data File: \\Lims\gdrive\ezchrom\Projects\GC19\Data\099_005

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2009-12	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/31/09
Units:	ug/L	Received:	04/03/09
Diln Fac:	1.000	Prepared:	04/07/09
Batch#:	149698		

Field ID: OW-1 Lab ID: 211163-001
Type: SAMPLE Analyzed: 04/17/09

Analyte	Result	RL
Diesel C10-C24	7,000 Y	50

Surrogate	%REC	Limits
o-Terphenyl	113	61-127

Field ID: MW-1 Lab ID: 211163-002
Type: SAMPLE Analyzed: 04/17/09

Analyte	Result	RL
Diesel C10-C24	1,500 Y	50

Surrogate	%REC	Limits
o-Terphenyl	112	61-127

Field ID: MW-2 Lab ID: 211163-003
Type: SAMPLE Analyzed: 04/17/09

Analyte	Result	RL
Diesel C10-C24	2,200 Y	50

Surrogate	%REC	Limits
o-Terphenyl	111	61-127

Field ID: MW-3 Lab ID: 211163-004
Type: SAMPLE Analyzed: 04/17/09

Analyte	Result	RL
Diesel C10-C24	1,200 Y	50

Surrogate	%REC	Limits
o-Terphenyl	99	61-127

Type: BLANK Analyzed: 04/18/09
Lab ID: QC490738

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
o-Terphenyl	105	61-127

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

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2009-12	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC490739	Batch#:	149698
Matrix:	Water	Prepared:	04/07/09
Units:	ug/L	Analyzed:	04/15/09

Cleanup Method: EPA 3630C

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	1,996	80	50-120

Surrogate	%REC	Limits
o-Terphenyl	97	61-127

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2009-12	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	149698
MSS Lab ID:	211124-006	Sampled:	04/02/09
Matrix:	Water	Received:	04/02/09
Units:	ug/L	Prepared:	04/07/09
Diln Fac:	1.000	Analyzed:	04/16/09

Type: MS Lab ID: QC490740

Analyte	MSS Result	Spiked	Result	%REC	Limits
Diesel C10-C24	1,849	2,500	4,666	113	38-127

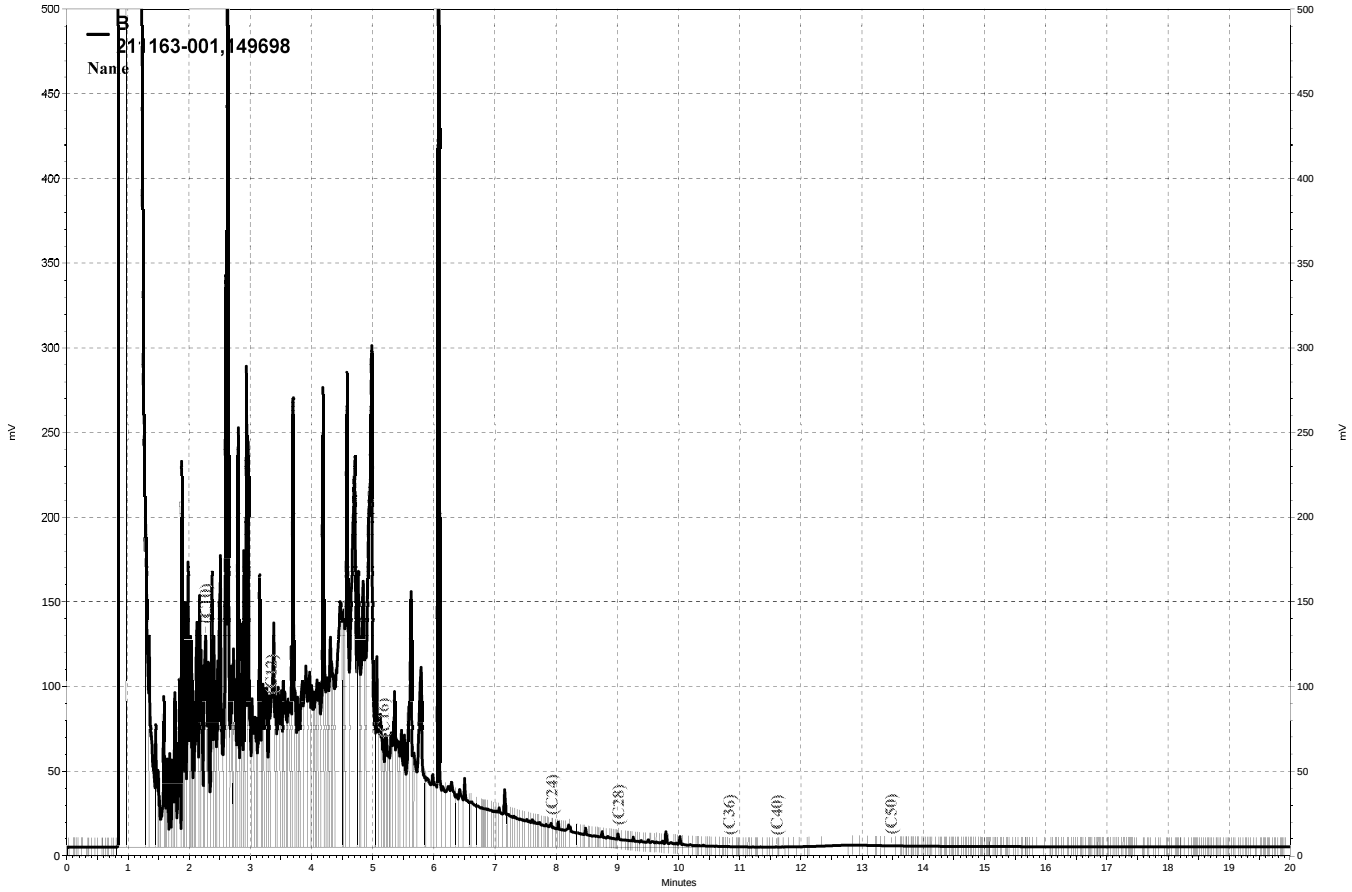
Surrogate	%REC	Limits
o-Terphenyl	112	61-127

Type: MSD Lab ID: QC490741

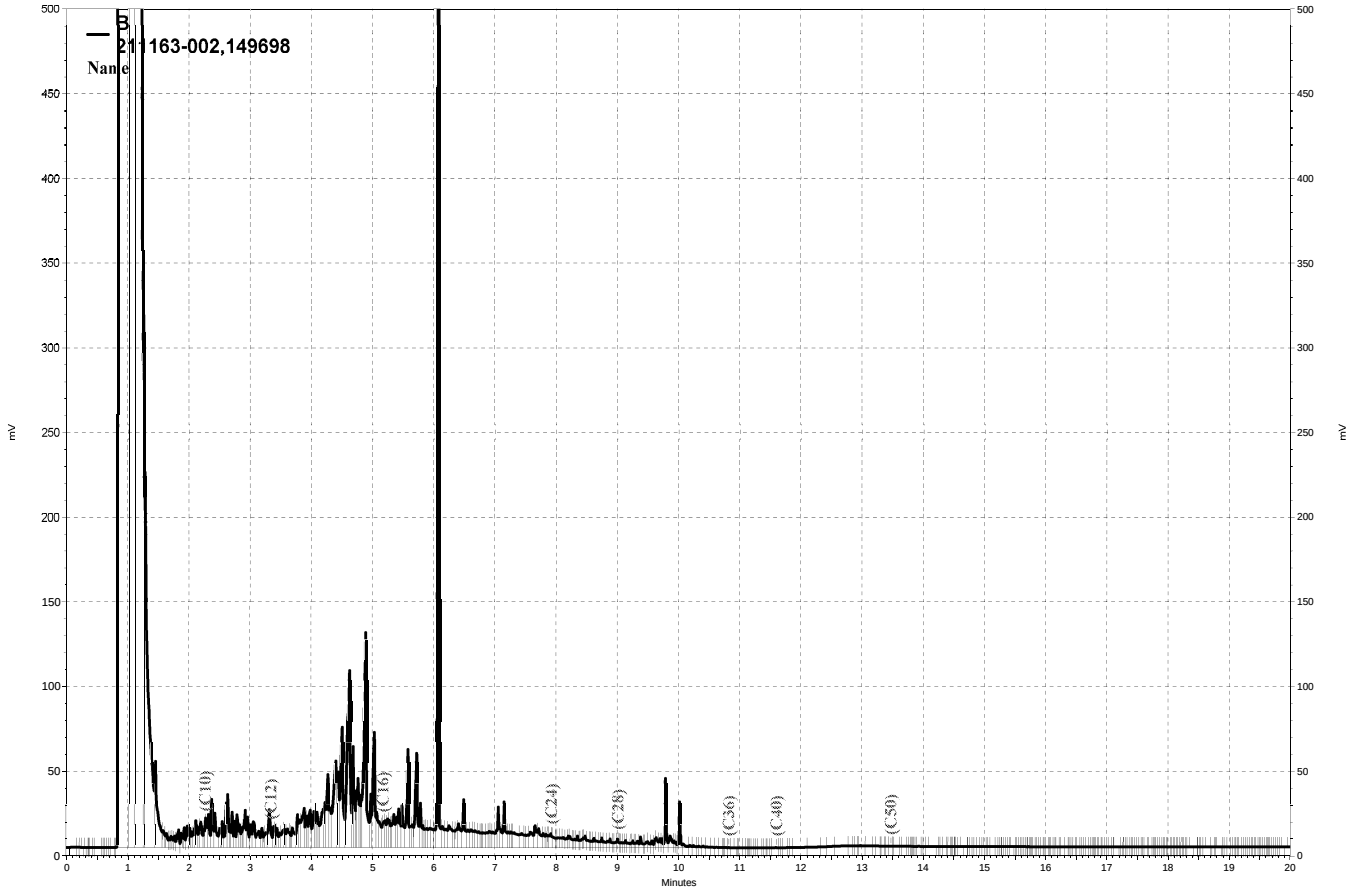
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	5,098	130 *	38-127	9	37

Surrogate	%REC	Limits
o-Terphenyl	117	61-127

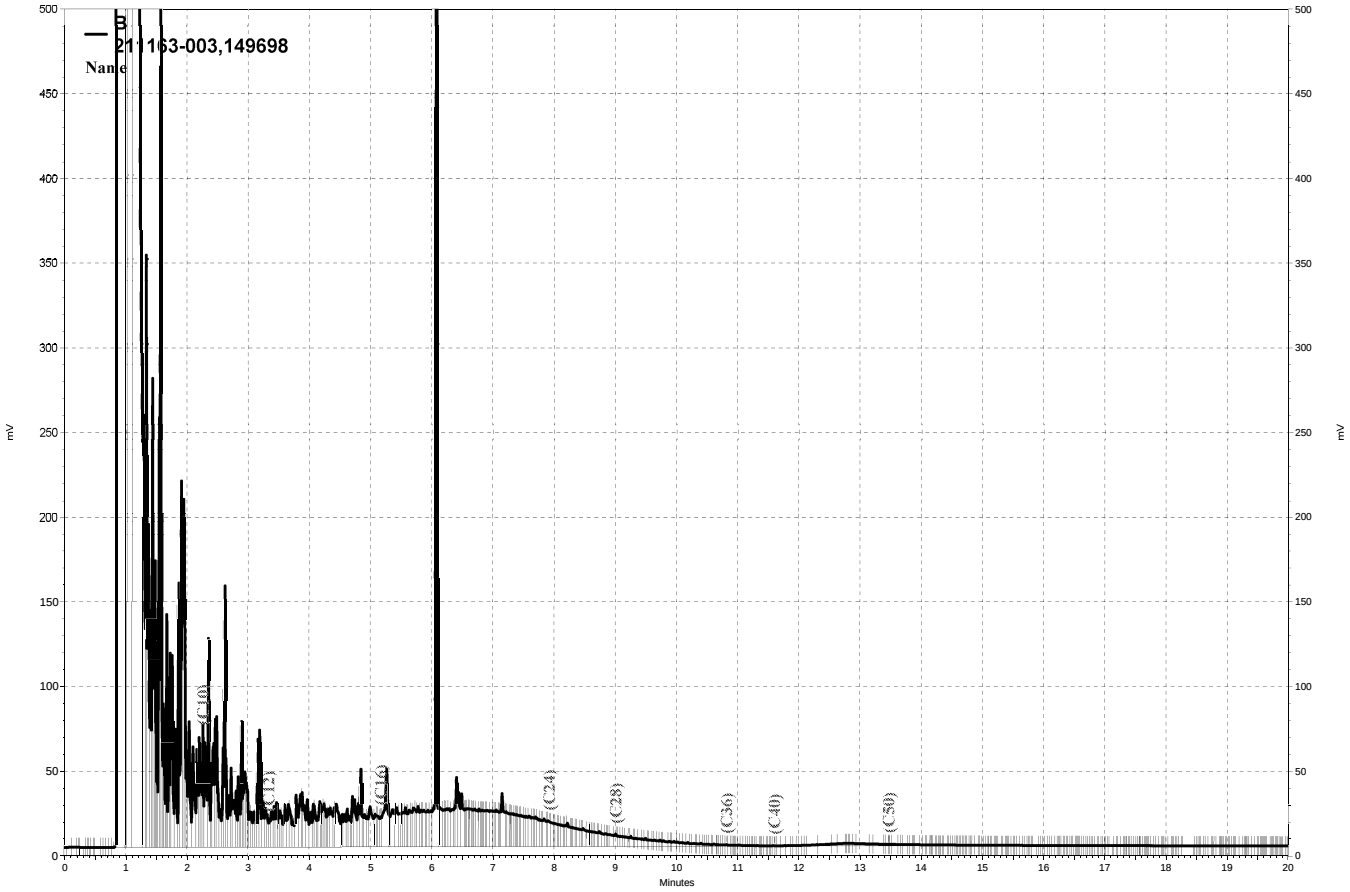
*= Value outside of QC limits; see narrative
RPD= Relative Percent Difference



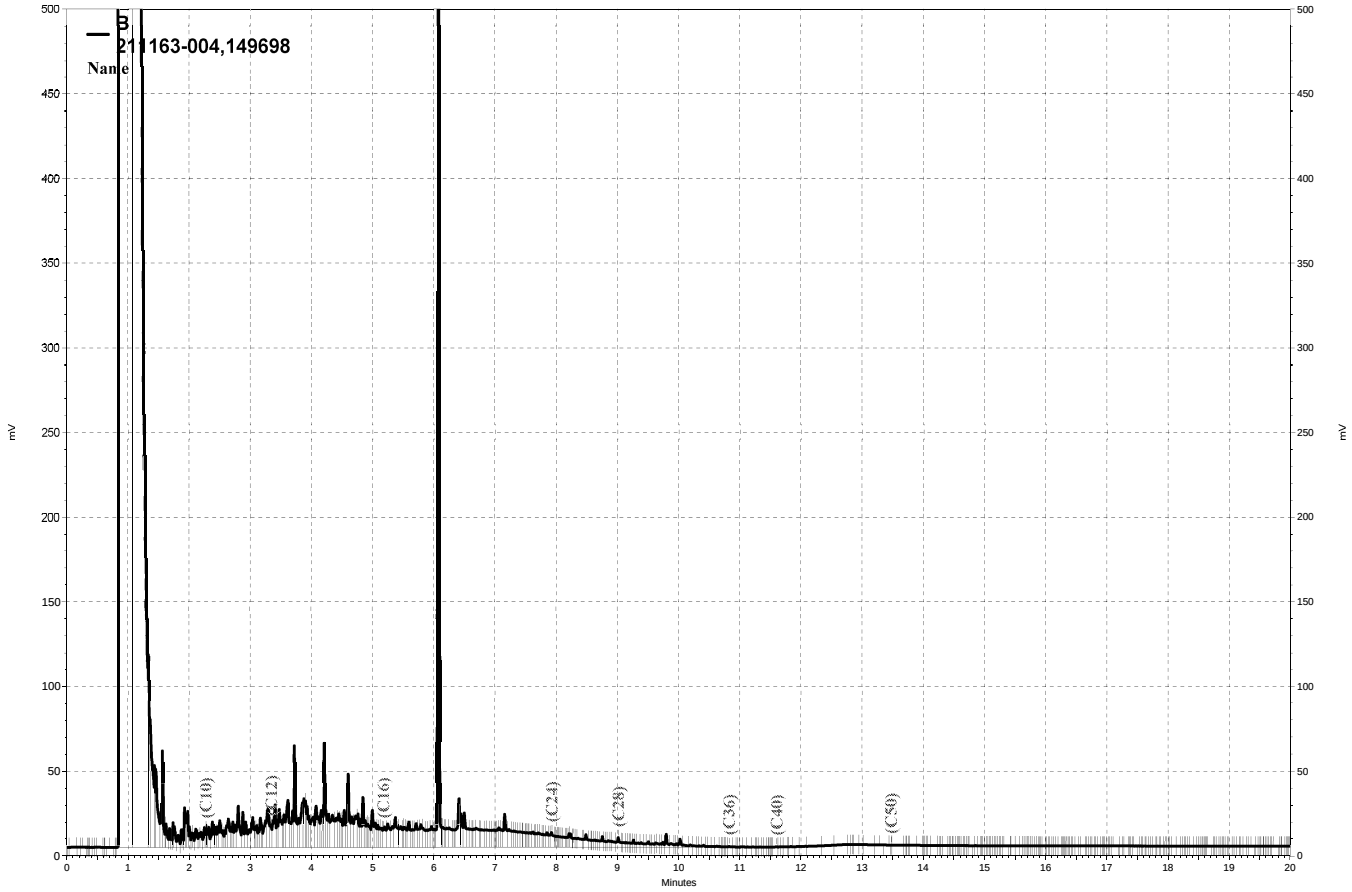
\\Lims\gdrive\ezchrom\Projects\GC26\Data\106b015, B



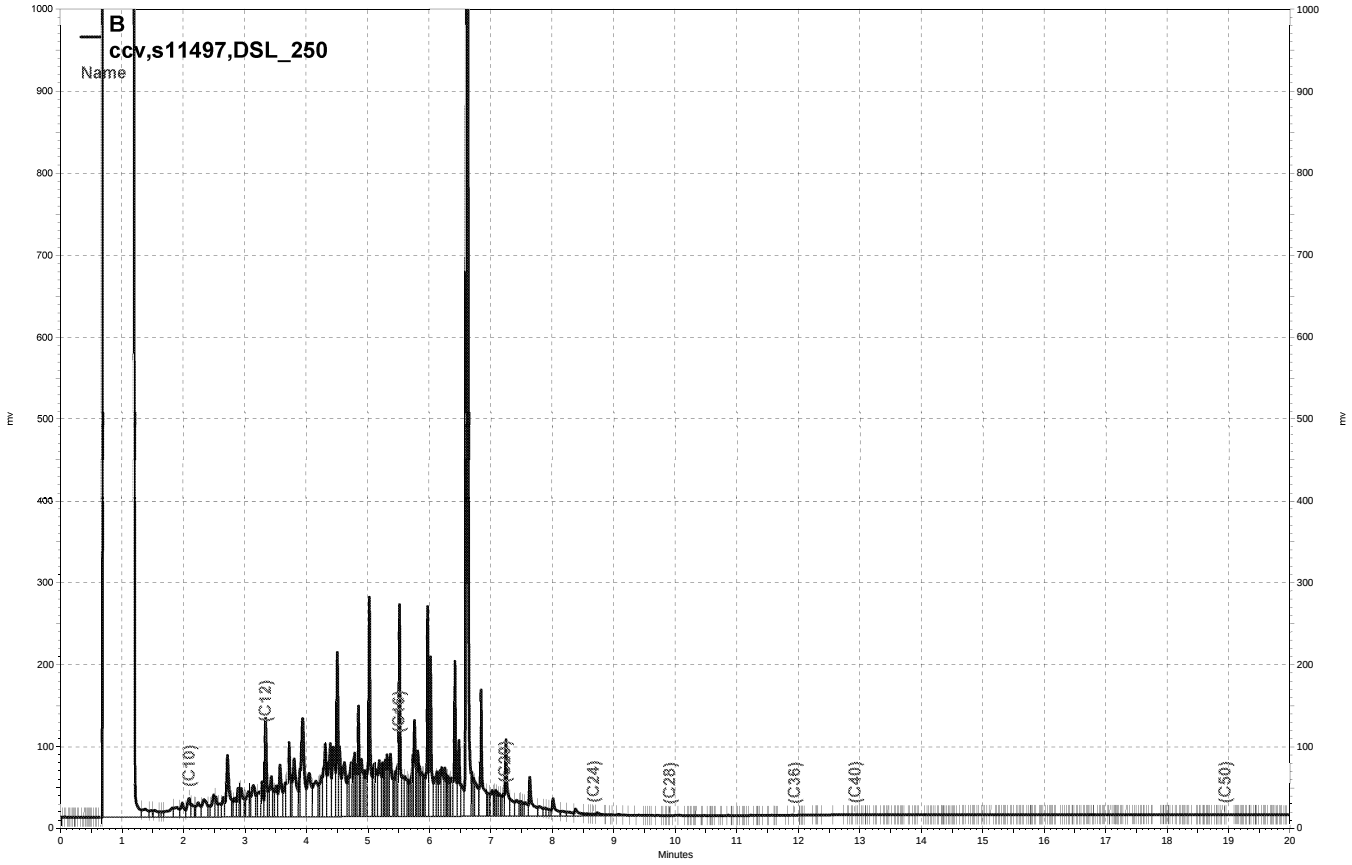
\\Lims\gdrive\ezchrom\Projects\GC26\Data\106b016, B



\\Lims\gdrive\ezchrom\Projects\GC26\Data\106b017, B



\\Lims\gdrive\ezchrom\Projects\GC26\Data\106b018, B



\\Lims\gdrive\ezchrom\Projects\GC15B\Data\106b003, B

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Field ID:	OW-1	Batch#:	149822
Lab ID:	211163-001	Sampled:	03/31/09
Matrix:	Water	Received:	04/03/09
Units:	ug/L	Analyzed:	04/10/09
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	3.9	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Field ID:	OW-1	Batch#:	149822
Lab ID:	211163-001	Sampled:	03/31/09
Matrix:	Water	Received:	04/03/09
Units:	ug/L	Analyzed:	04/10/09
Diln Fac:	1.000		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	3.0	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	4.5	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	2.1	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-122
1,2-Dichloroethane-d4	116	77-137
Toluene-d8	103	80-120
Bromofluorobenzene	102	80-125

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Field ID:	MW-1	Batch#:	149822
Lab ID:	211163-002	Sampled:	03/31/09
Matrix:	Water	Received:	04/03/09
Units:	ug/L	Analyzed:	04/10/09
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	6.3	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Field ID:	MW-1	Batch#:	149822
Lab ID:	211163-002	Sampled:	03/31/09
Matrix:	Water	Received:	04/03/09
Units:	ug/L	Analyzed:	04/10/09
Diln Fac:	1.000		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	0.9	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	97	80-122
1,2-Dichloroethane-d4	113	77-137
Toluene-d8	102	80-120
Bromofluorobenzene	98	80-125

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Field ID:	MW-2	Batch#:	149876
Lab ID:	211163-003	Sampled:	03/31/09
Matrix:	Water	Received:	04/03/09
Units:	ug/L	Analyzed:	04/13/09
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	4.1	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	0.6	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Field ID:	MW-2	Batch#:	149876
Lab ID:	211163-003	Sampled:	03/31/09
Matrix:	Water	Received:	04/03/09
Units:	ug/L	Analyzed:	04/13/09
Diln Fac:	1.000		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	6.8	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	4.8	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	1.0	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	4.8	0.5
para-Isopropyl Toluene	1.2	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	4.0	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-122
1,2-Dichloroethane-d4	110	77-137
Toluene-d8	105	80-120
Bromofluorobenzene	99	80-125

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Field ID:	MW-3	Batch#:	149822
Lab ID:	211163-004	Sampled:	03/31/09
Matrix:	Water	Received:	04/03/09
Units:	ug/L	Analyzed:	04/10/09
Diln Fac:	1.000		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	4.3	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Field ID:	MW-3	Batch#:	149822
Lab ID:	211163-004	Sampled:	03/31/09
Matrix:	Water	Received:	04/03/09
Units:	ug/L	Analyzed:	04/10/09
Diln Fac:	1.000		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	96	80-122
1,2-Dichloroethane-d4	113	77-137
Toluene-d8	101	80-120
Bromofluorobenzene	94	80-125

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC491222	Batch#:	149822
Matrix:	Water	Analyzed:	04/10/09
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC491222	Batch#:	149822
Matrix:	Water	Analyzed:	04/10/09
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-122
1,2-Dichloroethane-d4	113	77-137
Toluene-d8	101	80-120
Bromofluorobenzene	96	80-125

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC491441	Batch#:	149876
Matrix:	Water	Analyzed:	04/13/09
Units:	ug/L		

Analyte	Result	RL
Freon 12	ND	1.0
Chloromethane	ND	1.0
Vinyl Chloride	ND	0.5
Bromomethane	ND	1.0
Chloroethane	ND	1.0
Trichlorofluoromethane	ND	1.0
Acetone	ND	10
Freon 113	ND	2.0
1,1-Dichloroethene	ND	0.5
Carbon Disulfide	ND	0.5
MTBE	ND	0.5
trans-1,2-Dichloroethene	ND	0.5
Vinyl Acetate	ND	10
1,1-Dichloroethane	ND	0.5
2-Butanone	ND	10
cis-1,2-Dichloroethene	ND	0.5
2,2-Dichloropropane	ND	0.5
Chloroform	ND	0.5
Bromochloromethane	ND	0.5
1,1,1-Trichloroethane	ND	0.5
1,1-Dichloropropene	ND	0.5
Carbon Tetrachloride	ND	0.5
1,2-Dichloroethane	ND	0.5
Benzene	ND	0.5
Trichloroethene	ND	0.5
1,2-Dichloropropane	ND	0.5
Bromodichloromethane	ND	0.5
Dibromomethane	ND	0.5
4-Methyl-2-Pentanone	ND	10
cis-1,3-Dichloropropene	ND	0.5
Toluene	ND	0.5
trans-1,3-Dichloropropene	ND	0.5
1,1,2-Trichloroethane	ND	0.5
2-Hexanone	ND	10
1,3-Dichloropropane	ND	0.5
Tetrachloroethene	ND	0.5
Dibromochloromethane	ND	0.5

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Type:	BLANK	Diln Fac:	1.000
Lab ID:	QC491441	Batch#:	149876
Matrix:	Water	Analyzed:	04/13/09
Units:	ug/L		

Analyte	Result	RL
1,2-Dibromoethane	ND	0.5
Chlorobenzene	ND	0.5
1,1,1,2-Tetrachloroethane	ND	0.5
Ethylbenzene	ND	0.5
m,p-Xylenes	ND	0.5
o-Xylene	ND	0.5
Styrene	ND	0.5
Bromoform	ND	1.0
Isopropylbenzene	ND	0.5
1,1,2,2-Tetrachloroethane	ND	0.5
1,2,3-Trichloropropane	ND	0.5
Propylbenzene	ND	0.5
Bromobenzene	ND	0.5
1,3,5-Trimethylbenzene	ND	0.5
2-Chlorotoluene	ND	0.5
4-Chlorotoluene	ND	0.5
tert-Butylbenzene	ND	0.5
1,2,4-Trimethylbenzene	ND	0.5
sec-Butylbenzene	ND	0.5
para-Isopropyl Toluene	ND	0.5
1,3-Dichlorobenzene	ND	0.5
1,4-Dichlorobenzene	ND	0.5
n-Butylbenzene	ND	0.5
1,2-Dichlorobenzene	ND	0.5
1,2-Dibromo-3-Chloropropane	ND	2.0
1,2,4-Trichlorobenzene	ND	0.5
Hexachlorobutadiene	ND	2.0
Naphthalene	ND	2.0
1,2,3-Trichlorobenzene	ND	0.5

Surrogate	%REC	Limits
Dibromofluoromethane	100	80-122
1,2-Dichloroethane-d4	108	77-137
Toluene-d8	99	80-120
Bromofluorobenzene	97	80-125

ND= Not Detected
RL= Reporting Limit

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	149822
Units:	ug/L	Analyzed:	04/10/09
Diln Fac:	1.000		

Type: BS Lab ID: QC491220

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	20.00	17.65	88	74-132
Benzene	20.00	19.80	99	80-120
Trichloroethene	20.00	20.19	101	80-120
Toluene	20.00	19.87	99	80-120
Chlorobenzene	20.00	19.65	98	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	101	80-122
1,2-Dichloroethane-d4	114	77-137
Toluene-d8	103	80-120
Bromofluorobenzene	93	80-125

Type: BSD Lab ID: QC491221

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	20.00	17.16	86	74-132	3	20
Benzene	20.00	19.73	99	80-120	0	20
Trichloroethene	20.00	19.76	99	80-120	2	20
Toluene	20.00	19.79	99	80-120	0	20
Chlorobenzene	20.00	19.79	99	80-120	1	20

Surrogate	%REC	Limits
Dibromofluoromethane	99	80-122
1,2-Dichloroethane-d4	114	77-137
Toluene-d8	102	80-120
Bromofluorobenzene	92	80-125

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Purgeable Organics by GC/MS

Lab #:	211163	Location:	5115 E. 8th Street Oakland
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2009-12	Analysis:	EPA 8260B
Matrix:	Water	Batch#:	149876
Units:	ug/L	Analyzed:	04/13/09
Diln Fac:	1.000		

Type: BS Lab ID: QC491439

Analyte	Spiked	Result	%REC	Limits
1,1-Dichloroethene	20.00	17.41	87	74-132
Benzene	20.00	20.26	101	80-120
Trichloroethene	20.00	20.69	103	80-120
Toluene	20.00	20.15	101	80-120
Chlorobenzene	20.00	20.94	105	80-120

Surrogate	%REC	Limits
Dibromofluoromethane	95	80-122
1,2-Dichloroethane-d4	106	77-137
Toluene-d8	100	80-120
Bromofluorobenzene	92	80-125

Type: BSD Lab ID: QC491440

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
1,1-Dichloroethene	20.00	17.88	89	74-132	3	20
Benzene	20.00	20.75	104	80-120	2	20
Trichloroethene	20.00	20.83	104	80-120	1	20
Toluene	20.00	20.98	105	80-120	4	20
Chlorobenzene	20.00	21.38	107	80-120	2	20

Surrogate	%REC	Limits
Dibromofluoromethane	98	80-122
1,2-Dichloroethane-d4	106	77-137
Toluene-d8	100	80-120
Bromofluorobenzene	92	80-125

RPD= Relative Percent Difference