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**FIRST SEMIANNUAL 2012
GROUNDWATER MONITORING AND
PRODUCT EXTRACTION REPORT**

**EMERYBAY CONDO PHASE I PARKING GARAGE
6400 CHRISTIE AVENUE
EMERYVILLE, CALIFORNIA**

Prepared for:

**EMERYBAY COMMERCIAL ASSOCIATION
EMERYVILLE, CA 94608**

June 2012

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EMERYVILLE, CALIFORNIA**

Prepared for:

**EMERYBAY COMMERCIAL ASSOCIATION
6475 CHRISTIE AVENUE, SUITE 550
EMERYVILLE, CA 94608**

Prepared by:

**STELLAR ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET
BERKELEY, CALIFORNIA 94710**

June 11, 2012

Project No. 2007-65

June 11, 2012

Mr. Mark Detterman
Hazardous Materials Specialist
Alameda County Department of Environmental Health
Local Oversight Program
1131 Harbor Bay Parkway, Suite 250
Alameda, California 94502

Subject: First Semiannual 2012 Groundwater Monitoring & Product Extraction Report
EmeryBay Commercial Association Phase I Condo Parking Garage
6400 Christie Avenue, Emeryville, California

Dear Mr. Detterman:

Enclosed is the Stellar Environmental Solutions, Inc. report summarizing the site activities conducted in March 2012 at the referenced site. This report is being submitted on behalf of the owner and Responsible Party, Emerybay Commercial Association. The subject site activities included a product extraction event and the first semiannual 2012 groundwater monitoring event.

This report summarizes the 17th sampling event conducted at the site since 1988. The plume underlying the open parking garage appears stable when compared to the last two March semiannual events, with the main residual contamination concentrated around wells MW-2, MW-12, MW-13 MW-14, and MW-15. In accordance with regulatory requirements, an electronic copy of this report has been uploaded to ACEH and to the State Water Resources Control Board's GeoTracker system.

We 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 our knowledge. If you have any questions regarding this report, please contact us at (510) 644-3123.

Sincerely,



Richard S. Makdisi, P.G., R.E.A.
Principal Geochemist & President



Ms. Katherine Collins
Emerybay Commercial Assoc.



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1.0 INTRODUCTION

PROJECT BACKGROUND

The subject property, located at 6400 Christie Avenue in Emeryville, California, is owned by the Emerybay Commercial Association, for which Stellar Environmental Solutions, Inc. (Stellar Environmental) provides environmental consulting services. The site has undergone fuel tank-related investigations and remediation since 1988 (by Stellar Environmental since 2007). All known environmental documents for the subject property are listed in the References and Bibliography section (Section 7.0) of this report. Previous remediation and investigation activities are outlined in the final subsection of this chapter.

SITE AND VICINITY DESCRIPTION

The project site is located at 6400 Christie Avenue in Emeryville, California (see Figure 1). The project site, which slopes to the south, is wholly developed with an open ground-floor parking area and apartment complex known as the Emery Bay Phase I Condos and parking garage. The area of monitoring and product extraction is primarily located in the northeastern portion of the parking garage. Figure 2 is a site plan. The site is bordered to the east by the Emery Bay Phase II Condos and parking garage, to the north by 65th Avenue, beyond Christie Avenue and to the west by the Bay Center Offices, and to the south by 64th Avenue. The surrounding area is developed with apartment complexes, offices, and commercial stores.

PREVIOUS INVESTIGATIONS

Historical groundwater well analytical results are presented in Appendix A, and are discussed in detail in Section 5.0 of this report.

The subject property parcel was developed as early as 1958 with the Garrett Motor Freight Station, associated with Delta Lines, Inc. The Delta Lines complex contained an “Oil and Gas” building, located at the site of the present-day Emery Bay Phase I Condo complex and parking garage. The building remained on the property until 1986, when it was demolished to build the present-day structures. Twelve underground fuel storage tanks (UFSTs) containing diesel and gasoline were removed from the Emery Bay Phase I and Phase II Condo complex parcels in 1987, at which time soil and groundwater contamination was discovered.



Image courtesy of the U.S. Geological Survey



SITE LOCATION ON AERIAL PHOTO

**6400 Christie Ave.
Emeryville, CA**

By: MJC

JANUARY 2008

Figure 1



2007-565-01



LEGEND

--- Subject property boundary

Image © 2008 TerraMetrics

© 2007 Google



SITE PLAN AND ADJACENT LAND USE

6400 Christie Ave.
Emeryville, CA

By: MJC

JANUARY 2008

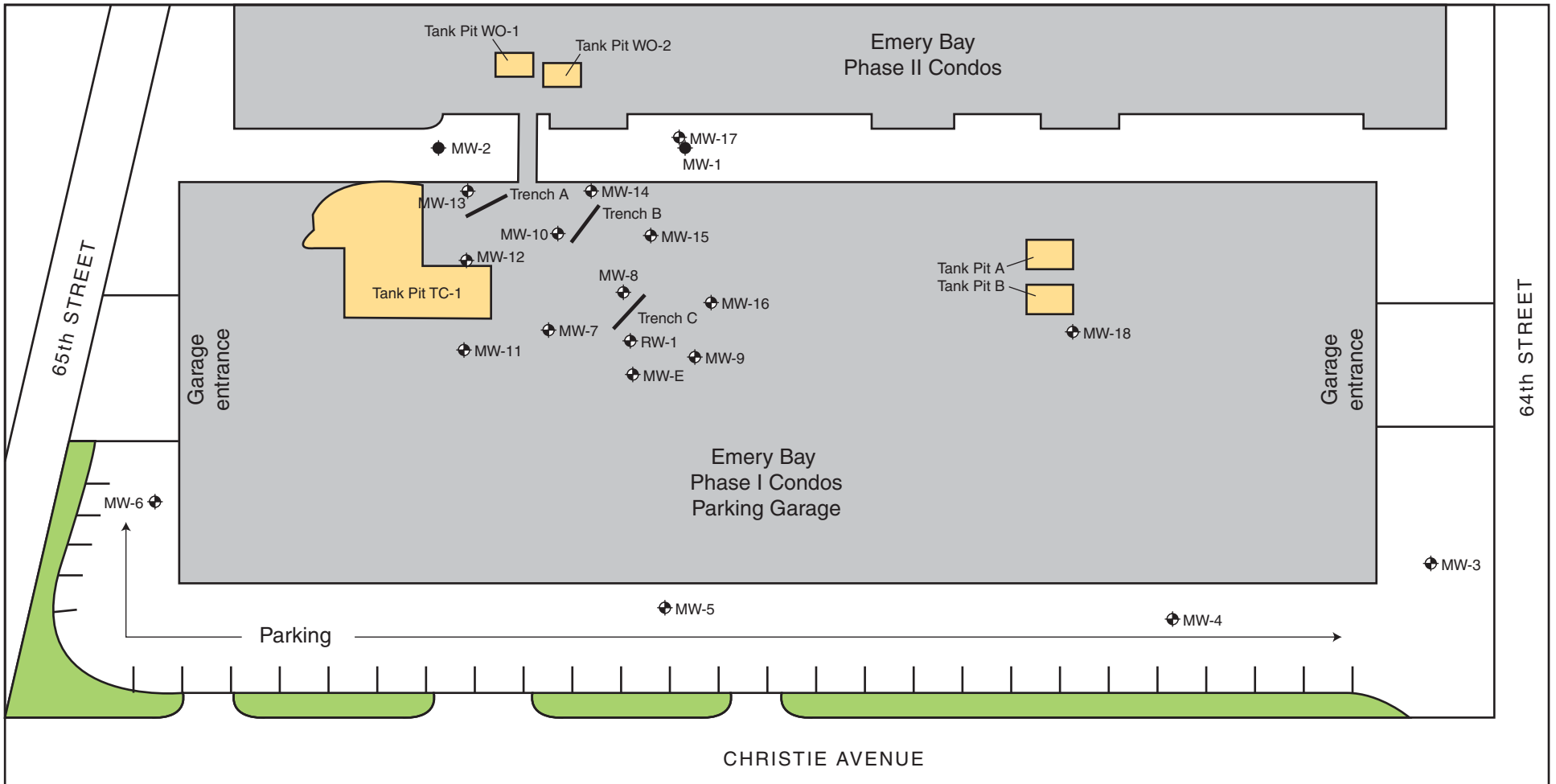
Figure 2



The subsurface contamination originated from the trucking terminal that was operated by the Garrett Freight Line and Delta Lines, and existed at the site of the Bay Center Apartments before its development in the late 1980s. Site investigations identified a total of 12 UFSTs in three areas of the trucking terminal. These UFST areas were referred to as: 1) Tank Pits A and B (each containing one 10,000-gallon diesel tank); 2) Tank Pit TC-1 (four 12,000-gallon diesel tanks, two 10,000-gallon diesel tanks, and one 6,000-gallon gasoline tank); and 3) Tank Pit WO-1 and WO-2 (one 6,000-gallon tank, one 4,000-gallon tank, and one 1,000-gallon tank). Nine UFSTs were located beneath the current footprint of the Emery Bay Phase I Condo complex, while three were beneath the Emery Bay Phase II Condo complex. Figure 2 shows the historical locations where the tanks were removed.

To remediate the hydrocarbon contamination beneath the garage area of the Emery Bay Phase I Condo complex, a light non-aqueous phase liquid (LNAPL) groundwater pump-and-treat system was installed by Groundwater Technology, Inc. (GTI) in 1989. The system extracted approximately one million gallons of groundwater, yielding approximately 100 gallons of LNAPL from recovery well RW-1 from July 1990 to March 1991. Three monitoring wells had previously been installed in 1985. GTI installed (and repaired) several more monitoring wells between 1987 and 1990, for a total of seven monitoring wells and one extraction well by 1990. The system and groundwater monitoring wells were designed and monitored as a condition of discharge permits granted by the East Bay Municipal Utility District (EBMUD) and the Bay Area Air Quality Management District (BAAQMD). The first groundwater monitoring event for MW-1 through MW-6 occurred in December 1988. The second monitoring event, which also included MW-E and RW-1, was conducted in March 1989. Subsequently, the groundwater extraction system operated by GTI was closed in late 1990 when corrosion and other mechanical problems caused the system to fail. Recovery of LNAPL continued manually on RW-1 until 1991, and a third groundwater sampling event occurred in February 1991. In 1994, the GTI recovery system was abandoned. Appendix A contains the historical analytical results. Figure 3 shows the locations of the monitoring wells and trenches.

No groundwater monitoring events had occurred at the site between 1991 and 2004, when PES Environmental, Inc. (PES) was retained to evaluate and implement remediation of the residual contamination at the TC-1 (former location of seven UFSTs) Emery Bay Phase I Condo complex area. (Note: Harding Lawson Associates conducted soil and groundwater sampling on the Phase II Apartment complex area during this time, but not for the purpose of product extraction or remediation.) In 2004, PES installed an additional 10 groundwater monitoring wells (monitoring wells MW-1 and MW-2 were either abandoned or paved over with asphalt during construction), bringing the current total to 17 monitoring wells and one extraction well in the Phase I parking garage



LEGEND

- ⊕ Monitoring well
- Monitoring well (presumed abandoned)
- Trench location
- Historical tank pit area
- Landscaping

0 60
SCALE: 1/2" = 60 FEET



area. The first groundwater monitoring event for the current wells was conducted in March 2004, and the second event conducted in December 2006. A previous Stellar Environmental report (Stellar Environmental, 2007) fully discusses previous site remediation and investigations, site geology and hydrogeology, and residual site contamination. Tabular summaries of historical groundwater well water elevations and analytical results are included in Appendices D and A, respectively.

OBJECTIVES AND SCOPE OF WORK

This report discusses the following activities conducted/coordinated by Stellar Environmental in the current annual monitoring period:

- LNAPL passive product extraction from Trenches A and C, and active product extraction on select groundwater monitoring wells, trench sump wells, and recovery well RW-1
- Collection of water levels in site wells to determine groundwater flow direction
- Sampling of site wells for contaminant analysis
- Evaluation of hydrochemical and groundwater elevation trends in the context of plume stability and case closure assessment

REGULATORY OVERSIGHT

Alameda Department of Environmental Health (ACEH) is the lead regulatory agency for the case, acting as a Local Oversight Program for the Regional Water Quality Control Board (Water Board). There are currently no ACEH or Water Board cleanup orders for the site; however, all site work has been conducted under the oversight of ACEH. ACEH assigned the site to its fuel leak case system (RO #2799), and the case officer is currently Mr. Mark Detterman (whom replaced Ms. Barbara Jakub of ACEH in mid 2010). In a November 2008 meeting with the Responsible Party (represented by Ms. Sarah Irving), Stellar Environmental (represented by Ms. Teal Glass and Mr. Richard Makdisi), and ACEH (represented by Ms. Jakub and Ms. Donna Drogas), it was agreed that quarterly sampling could be reduced to a semiannual schedule with the stipulation that an indoor air and preferential pathway study be completed. Stellar Environmental submitted a letter on November 24, 2008 to ACEH documenting the change in sampling frequency. The Indoor Air Survey and Preferential Pathway Report (Stellar Environmental, 2009b) was submitted to ACEH on April 6, 2009. Stellar Environmental conducted an additional indoor air survey in the ground floor office area on March 22, 2010. The results were presented in a separate report, which was submitted to ACEH on April 6, 2010 (Stellar Environmental, 2010).

The case has been assigned No. SLT2005561 in the Water Board's GeoTracker system. Electronic uploads of required data/reports are submitted to both agencies.

2.0 PHYSICAL SETTING

The following evaluation of the physical setting of the site—including topography, drainage, and geologic and hydrogeologic conditions—is based on previous (1986 through 2006) site investigations conducted by others, and site inspections and subsurface data collection by Stellar Environmental in 2007 and 2008.

TOPOGRAPHY AND DRAINAGE

The mean elevation of the property is about 13 feet above mean sea level, and the general topographic gradient in the vicinity of the property is to the southwest, although the regional gradient is to the west-southwest.

The nearest receiving water body is San Francisco Bay, located approximately 700 feet to the west of the subject property. East of the site lies the Oakland Hills, which rise to an elevation of approximately 1,000 feet and are situated 2.5 miles east of the subject property. The subject property is not listed within a 100- or 500-year flood zone.

Storm drains from the roof collect storm runoff for discharge onto the asphalt-paved parking lots. Drainage collected in storm sewers from the parking lot and from Christie, 64th, and 65th Streets discharges into San Francisco Bay. Stellar Environmental noted several storm drains, in the parking lot area and on the surrounding streets.

GEOLOGY

The subject property area is underlain with material mapped “Qhbm,” designated early pleistocene alluvium, that is moderately consolidated, deeply weathered, poorly sorted, irregularly interbedded clay, silt, sand, and gravel. A geotechnical survey conducted in 1985 revealed that the upper 15 to 20 feet of soil consists of a combination of fill and soft bay sediment. The upper 1 to 2 feet of soil is generally pavement and imported fill. This is underlain by approximately 20 feet of firm soil consisting of primarily dense, silty sand with intermittent layers of silty and sandy clay. Stiff to very stiff clay lies a depth of approximately 40 feet and extends to the depth of the borings, approximately 101.5 feet (Geomatrix, 1988).

The closest major fault, the Hayward Fault, is located about 3 miles east of the property. While the site is located in a seismically active area, it is not within an Alquist-Priolo Special Studies active

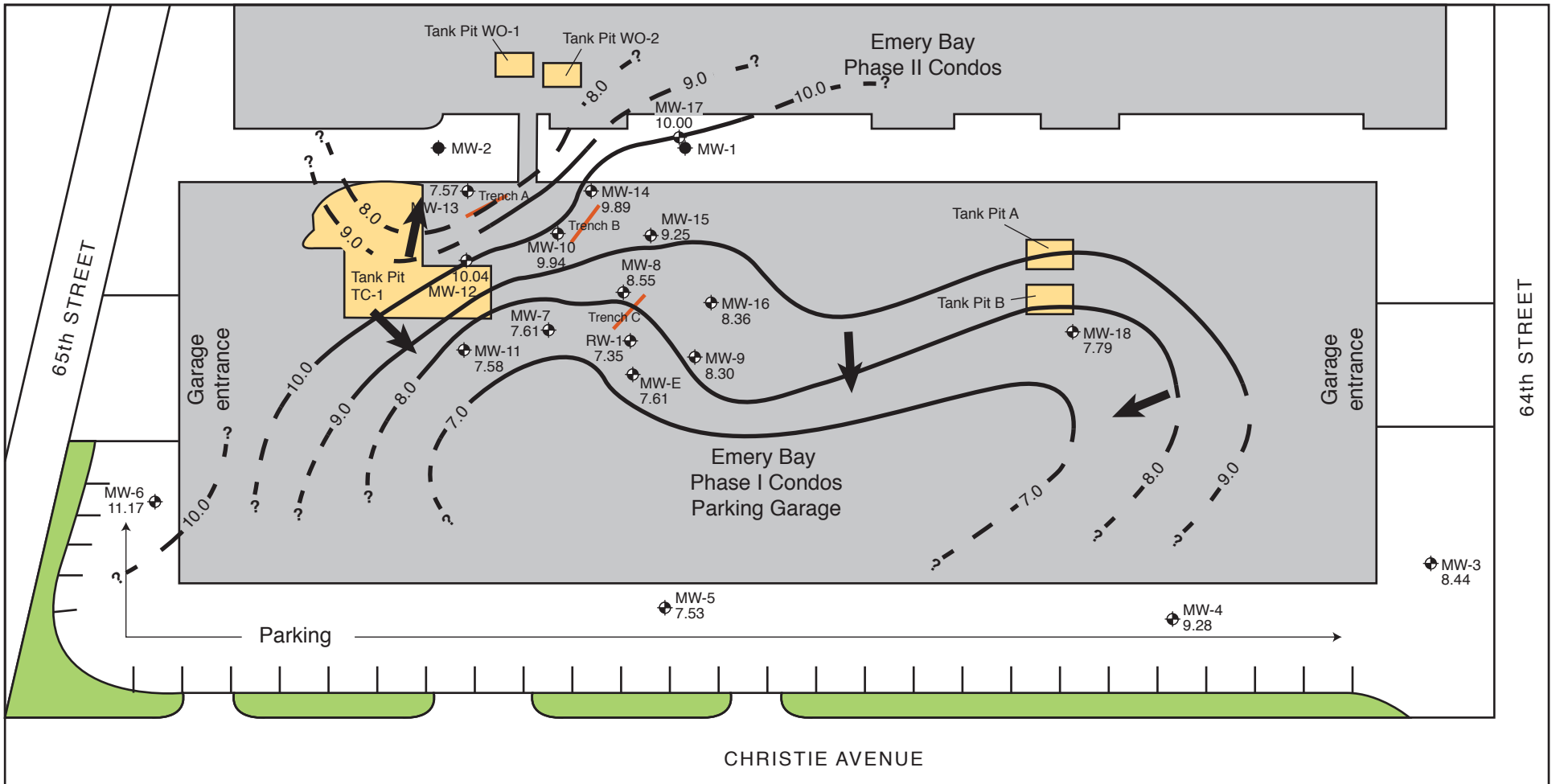
fault zone, the legislatively defined zone of restricted land use 200 feet around an active fault due to the high probability of ground rupture.

GROUNDWATER HYDROLOGY

Regulatory agency records indicate that the direction of shallow groundwater flow in the site vicinity is to the west-northwest, toward San Francisco Bay. However, water levels and flow direction in this area are influenced by tidal patterns, natural topography modifications and the historical LNAPL, resulting in a relatively slow moving and stable plume pattern.

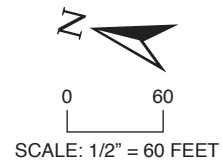
The groundwater gradient measured during the March 2012 monitoring event ranged from the southwest (on the northern portion of the site) to the west (on the central portion of the site) to the northwest (on the southern portion of the site). In addition, the floating product in well MW-13 is depressing the groundwater elevation in that area creating a local northeasterly component towards that well. According to current and historical water level data obtained from onsite monitoring wells, depth to groundwater ranges from approximately 6 to 11 feet below ground surface (bgs). Groundwater elevations during the March 2012 event ranged from 7.35 to 11.17 feet above mean sea level. The average groundwater gradient was 0.003 foot/foot.

Figure 4 is a groundwater elevation map from the recent groundwater-monitoring event (activities discussed in Section 4.0).



LEGEND

- Monitoring well
- Monitoring well (presumed abandoned)
- Trench location
- Historical tank pit area
- Landscaping
- Inferred direction of groundwater flow
- Groundwater elevation contour in feet amsl
- Extrapolated groundwater elevation contour



GROUNDWATER ELEVATION MAP – March 29, 2012
6400 Christie Ave., Emeryville, CA

Figure 4

by: MJC MAY 2012

2007-65-56



3.0 MARCH 2012 GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

This section presents the groundwater sampling and analytical methods for the most recent event. Table 1 summarizes monitoring well construction and groundwater monitoring data. Groundwater analytical results are summarized in Section 4.0.

SAMPLING METHODS AND ACTIVITIES

Activities for this event include:

- Measuring static water levels in all 18 wells
- Collecting post-purge groundwater samples from the 18 wells for laboratory analysis of the following contaminants:
 - benzene, toluene, ethyl benzene, and xylenes (BTEX)
 - methyl tertiary-butyl ether (MTBE)
 - total petroleum hydrocarbons as gasoline (TPHg)
 - total petroleum hydrocarbons as diesel (TPHd)

The site monitoring well sampling locations are shown on Figure 3. Well construction information and water level data are summarized in Table 1. Appendix B contains the groundwater monitoring field records.

CURRENT MONITORING EVENT

Blaine Tech Services conducted groundwater monitoring well level measurements, purging, sampling, and field analyses on March 29, 2012 under the supervision of Stellar Environmental personnel. Groundwater sampling was conducted in accordance with State of California guidelines for sampling dissolved analytes in groundwater associated with leaking UFSTs. As the first task of the monitoring event, static water levels and free product levels were measured in the 18 wells using an electric water level indicator. The depth of free product was recorded, and the water level was adjusted to reflect the groundwater elevation.

Table 1
March 29, 2012
Groundwater Monitoring Well Construction and Groundwater Elevation Data
6400 Christie Avenue, Emeryville, California

Well	Well Depth (feet bgs)	Screened Interval	Top of Well Casing Elevation ^(a)	Depth to Free Product (TOC)	Thickness of Free Product (feet)	Groundwater Elevation (March 29, 2012)
MW-3	25	5 to 20	16.65	NM	NM	8.44
MW-4	25	5 to 20	16.29	NP	NP	9.28
MW-5	25	5 to 20	16.72	NP	NP	7.53
MW-6	25	5 to 20	16.82	NP	NP	11.17
MW-7	20	5 to 20	17.73	NP	NP	7.61
MW-8	16	5 to 16	17.84	9.01	0.28	8.55
MW-9	20	5 to 20	17.84	NP	NP	8.30
MW-10	20	5 to 20	17.83	7.75	0.14	9.94
MW-11	20	5 to 20	17.76	NP	NP	7.58
MW-12	20	5 to 20	17.83	NP	NP	10.04
MW-13	20	5 to 20	17.66	9.02	1.07	7.57
MW-14	20	5 to 20	17.60	7.61	0.10	9.89
MW-15	20	5 to 20	17.80	NM	NM	9.25
MW-16	20	5 to 20	17.74	NP	NP	8.36
MW-17	20	5 to 20	18.17	NP	NP	10.0
MW-18	20	5 to 20	16.35	NP	NP	7.79
MW-E	47	7 to 40	17.47	NP	NP	7.61
RW-1	30	unknown	16.70	NP	NP	7.35
TA-E	11-13	6-8 to 11-13	17.20	NM	NM	NM
TA-M	11-13	6-8 to 11-13	17.21	NM	NM	NM
TA-W	11-13	6-8 to 11-13	17.28	NM	NM	NM
TB-E	11-13	6-8 to 11-13	17.24	NM	NM	NM
TB-M	11-13	6-8 to 11-13	17.30	NM	NM	NM
TB-W	11-13	6-8 to 11-13	17.33	NM	NM	NM
TC-E	11-13	6-8 to 11-13	17.07	NM	NM	NM
TC-M	11-13	6-8 to 11-13	17.37	NM	NM	NM
TC-W	11-13	6-8 to 11-13	17.32	NM	NM	NM

Notes:

^(a) Relative to mean sea level.

^(b) Depth to groundwater and/or of free product could not be determined because free product density would not allow a clear delineation.

bgs = below ground surface

TOC = below top of casing

NP = no free product in well)

NM = depth to groundwater and/or free product could not be determined due to the presence of tar

MW-3 through MW-6 and MW-E are 2-inch PVC. MW-7 through MW-18 are ¾-inch PVC. RW-1 is 10-inch steel.

Approximately 50 gallons of purge water and equipment decontamination rinse water from the current groundwater sampling event was placed in the onsite 1,100 gallon above ground storage tank (AST) located in a locked fenced area on the northeast corner of the property. In addition, approximately 1,030 gallons of water and 0.275 gallons of product were removed/purged from select wells during the active product removal; 0.1 gallon was removed by passive product removal.

On June 5, 2012, Evergreen Oil, Inc. vacuumed and transported the water to its recycling facility under manifest number 00864349 (EPA ID No. CAL000374146). Appendix F contains copies of the manifest and recycling certificate.

4.0 REGULATORY CONSIDERATIONS, ANALYTICAL RESULTS, AND DISCUSSION OF FINDINGS

This section presents the analytical results of the most recent monitoring event and summarizes the relevant regulatory considerations. Appendix C contains the certified analytical laboratory report and chain-of-custody record.

REGULATORY CONSIDERATIONS

As specified in the East Bay Plain Groundwater beneficial Use Evaluation Report by the San Francisco Bay Region Water Board (Water Board, 1999), all groundwater is considered a potential source of drinking water unless otherwise indicated by the Water Board, and is assumed to ultimately discharge to a surface water body and potentially impact aquatic organisms. The subject property is listed as occurring within Zone B, designated as groundwater that is unlikely to be used as a drinking water resource. The basin is shallow in this area, with depths of less than 300 feet. Groundwater in this area is used for backyard irrigation, industrial supply, and commercial irrigation. There is a low likelihood that this water will be used as a public water supply in the near future.

The Water Board publishes Environmental Screening Levels (ESLs) for residential and commercial/industrial properties where groundwater is/is not a likely drinking water resource. As stipulated in the ESL document (Water Board, 2008), ESLs are not cleanup criteria; rather, they are conservative screening-level criteria designed to be protective of both drinking water resources and aquatic environments. The groundwater ESLs are composed of one or more components—including ceiling value, human toxicity, indoor air impacts, and aquatic life protection. Exceedance of ESLs suggests that additional remediation and/or investigation (e.g., monitoring plume stability to demonstrate no risk to sensitive receptors where drinking water is not threatened) may be warranted. Because the subject property is a residential property where groundwater is not a likely drinking water resource, the contaminant levels at the site will be compared to the ESLs for these criteria.

Contaminants detected above the ESLs during this sampling event include gasoline, diesel, benzene, toluene, ethylbenzene, and total xylenes. In general, concentrations of gasoline and diesel have decreased as compared to both the previous quarter and the same quarter last year.

GROUNDWATER SAMPLE RESULTS

Table 2 and Figure 5 summarize the contaminant analytical results of the current monitoring event samples.

Table 2
Groundwater Sample Analytical Results – March 29, 2012
6400 Christie Avenue, Emeryville, California

Well ID	Analytical Results						
	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
MW-3	430	1,900	3.3	<0.5	<0.5	2.5	2.7
MW-4	<50	340	<0.5	<0.5	<0.5	<0.5	< 2.0
MW-5	<50	3,600	<0.5	<0.5	<0.5	<0.5	< 2.0
MW-6	<50	2,300	0.82	<0.5	<0.5	<0.5	< 2.0
MW-7	740	7,900	220	150	14	140	<2.0
MW-8	380	9,800	100	3	5.9	20	<2.0
MW-9	140	9,400	6.2	0.61	<0.5	0.51	<2.0
MW-10	2,400	3,500	240	27	10	33.6	<2.0
MW-11	5,700	4,600	2,100	27	12	16.7	<2.0
MW-12	17,000	2,500	6,300	160	180	124	<2.0
MW-13	260,000	1,100,000	23,000	1,500	5,700	4,100	<2.0
MW-14	13,000	4,400	3,000	1,400	340	870	<2.0
MW-15	16,000	3,500	7,200	110	160	177	<2.0
MW-16	66	8,400	12	1.8	<0.5	1.07	<2.0
MW-17	5,800	2,200	1,500	57	58	67	<2.0
MW-18	<50	9,200	<0.5	<0.5	<0.5	<0.5	<2.0
MW-E	6,500	5,800	2,600	50	52	84	<2.0
RW-1	502	1,900	78	2.0	2.2	2.13	<2.0
ESLs ^(a)	100 / 210	100 / 210	1.0 / 46	40 / 130	30 / 43	20 / 100	5.0 / 1,800

Notes:

^(a) Water Board Environmental Screening Levels for residential sites where groundwater *is/is not* a drinking water resource (Water Board, 2008).

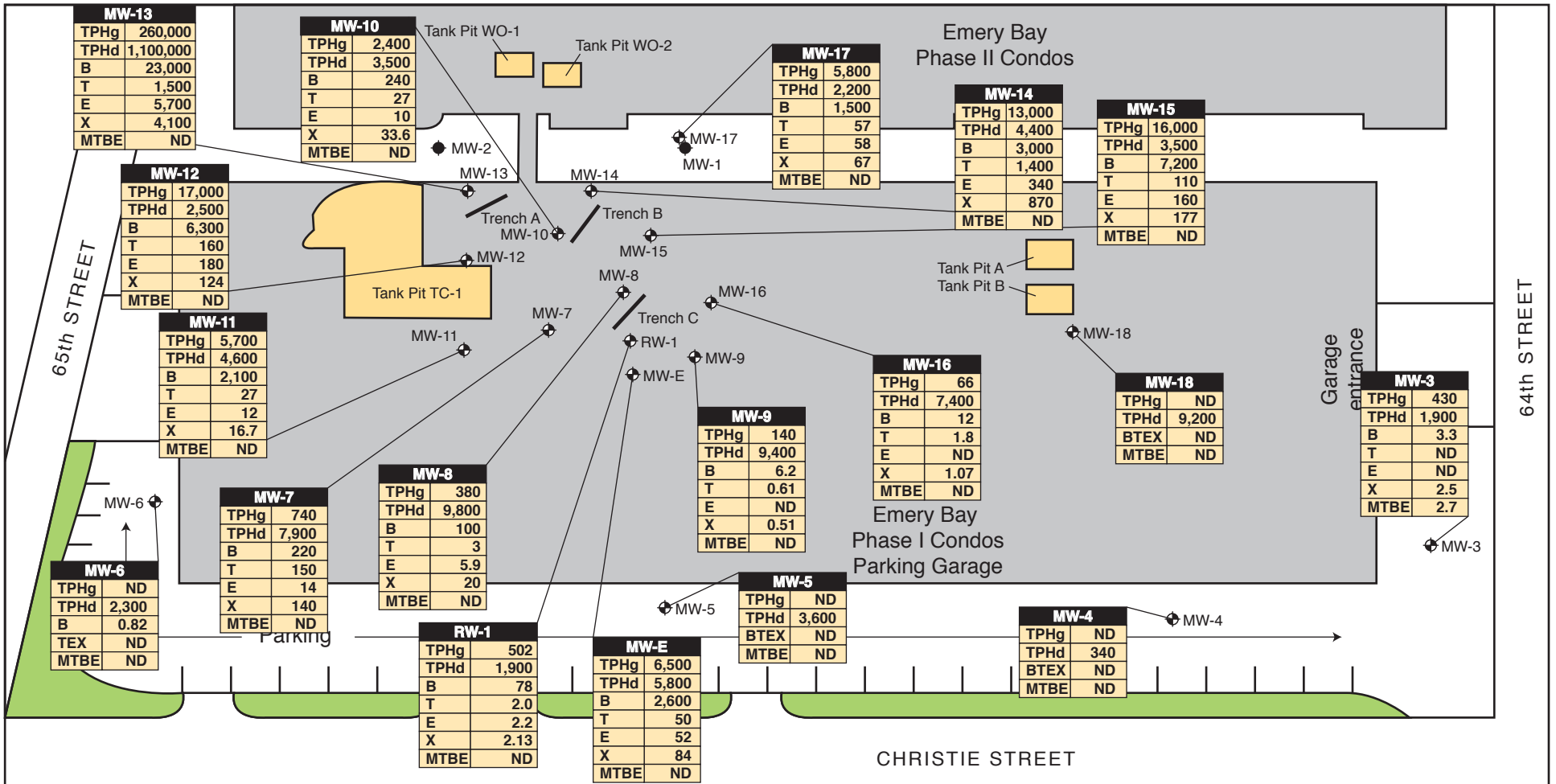
MTBE = methyl tertiary-butyl ether

TPHd = total petroleum hydrocarbons – diesel range (equivalent to total extractable hydrocarbons – diesel range)

TPHg = total petroleum hydrocarbons – gasoline range (equivalent to total volatile hydrocarbons – gasoline range)

All concentrations are expressed in micrograms per liter (µg/L), equivalent to parts per billion (ppb).

Results listed in **bold-face type** are at or above the ESLs where groundwater *is not* a drinking water resource.



LEGEND

- ◆ Monitoring well
 - ◆ Monitoring well (presumed abandoned)
 - Trench location
 - Historical tank pit area
 - Landscaping
- TPHg = Total petroleum hydrocarbons as gasoline
 TPHd = Total petroleum hydrocarbons as diesel
 B = Benzene
 T = Toluene
 E = Ethylbenzene
 X = Total xylenes
 ND = Below the laboratory detection limit
 MTBE = Methyl Tertiary Butyl Ether
- All concentrations in micrograms per liter (µg/L)



GROUNDWATER MONITORING WELL ANALYTICAL RESULTS

6400 Christie Ave., Emeryville, CA

Figure 5

by: MJC

MAY 2012

Hydrocarbon Contaminants

During the March 2012 sampling event, several wells had reported hydrocarbon concentrations greatly in excess of the Water Board ESLs. However, hydrocarbon concentrations in wells can be significantly affected by the purging of accumulated hydrocarbons product, so large swings in concentration (both reductions and increases) could be seen due to this occurrence.

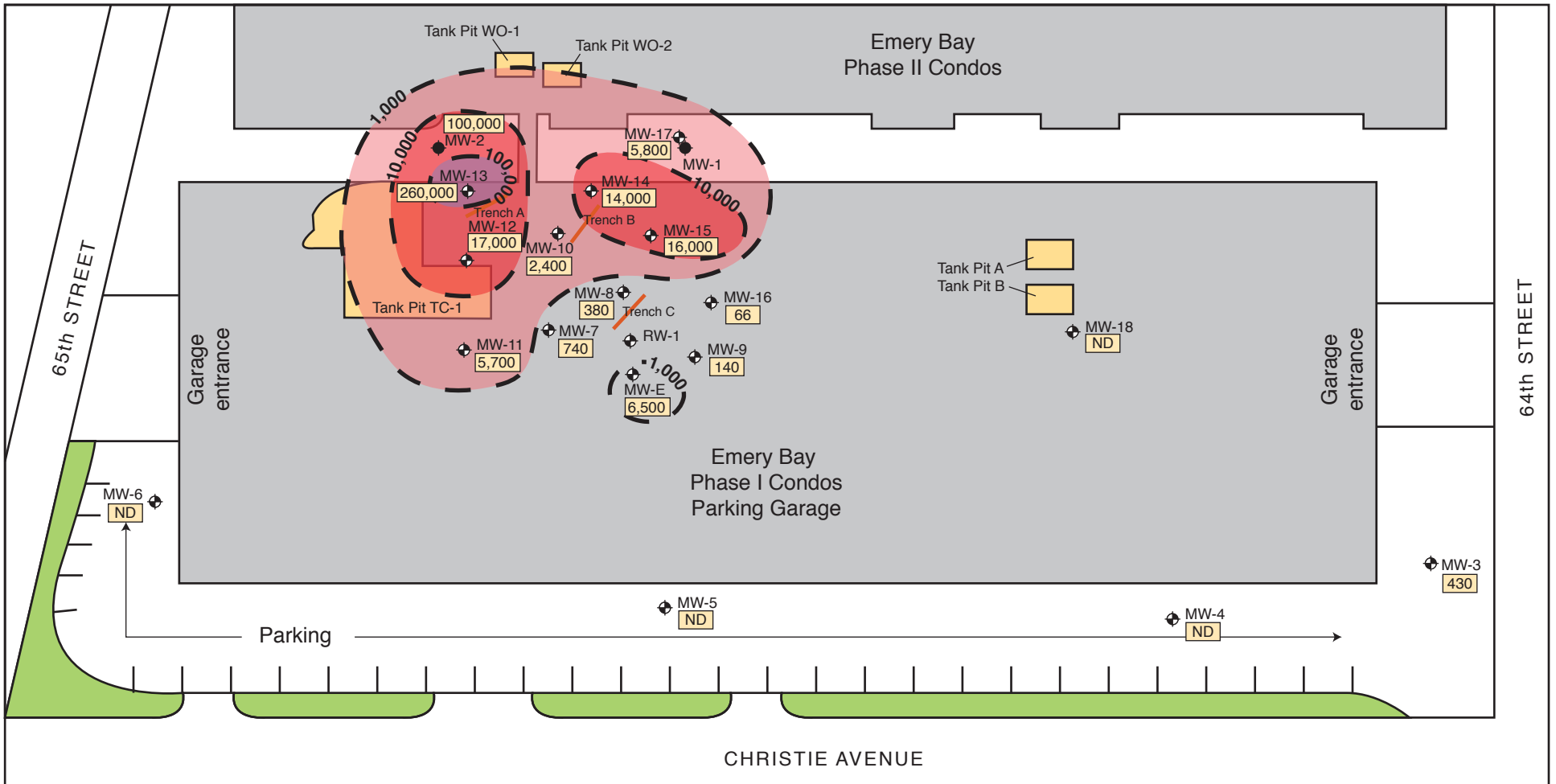
Figure 6 shows an isoconcentration contour map of TPHg concentrations in groundwater based on the April 2012 monitoring well analytical results. Increases in March 2012 compared to the March 2011 monitoring event were observed in wells MW-7, MW-12, MW-13, MW-15, MW-16, MW-E and RW-1. This represents seven wells exhibiting an increase as compared to nine wells for the March 2011 sampling event. The remaining wells either remained below laboratory detection limits (in the perimeter wells MW-4, MW-5 and MW-6) or exhibited a decrease. The higher than average rainfall in the month of March (over 8 inches) may have contributed to the results observed.

Gasoline was detected in MW-3, MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-17, MW-E and RW-1 above the ESL where groundwater is not a likely drinking water resource (210 micrograms per liter [$\mu\text{g/L}$]). Gasoline was also detected in MW-9 and MW-16 but at concentrations below the ESL.

Diesel was detected in all site wells above the ESL of 210 $\mu\text{g/L}$ (where groundwater is not a likely drinking water resource), but showed a decrease in concentration in nine of the 18 wells sampled as compared to 4 of 18 wells in the March 2011 sampling event.

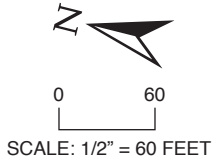
The highest concentrations of TVHg (260,000 $\mu\text{g/L}$) and TEHd (1,100,000 $\mu\text{g/L}$) observed during this event were in MW-13. The concentration of hydrocarbons in well MW-13 has decreased significantly below the historic high concentrations of 2,700,000 $\mu\text{g/L}$ TVHg and 3,100,000 $\mu\text{g/L}$ TEHd observed in this well. The decrease is attributed to the effective LNAPL recovery in 2010 and 2011. However, the average concentration of TEHd and TVHg has increased significantly for the current event as compared to March 2011 concentrations, which may be the result of the difficulties associated with sampling and analyzing water from a well with persistent LNAPL. While not as significant in percent reduction as the difference observed in well MW-13, monitoring wells MW-3, MW-4, MW-5, MW-8, MW-9, MW-10, MW-11, MW-16 and MW-18 showed decreased hydrocarbon concentrations in March 2012 as compared to March 2011. The concentrations in wells MW-6, MW-7, MW-14 and MW-17, while above the March 2011 values, were below their historic maxima.

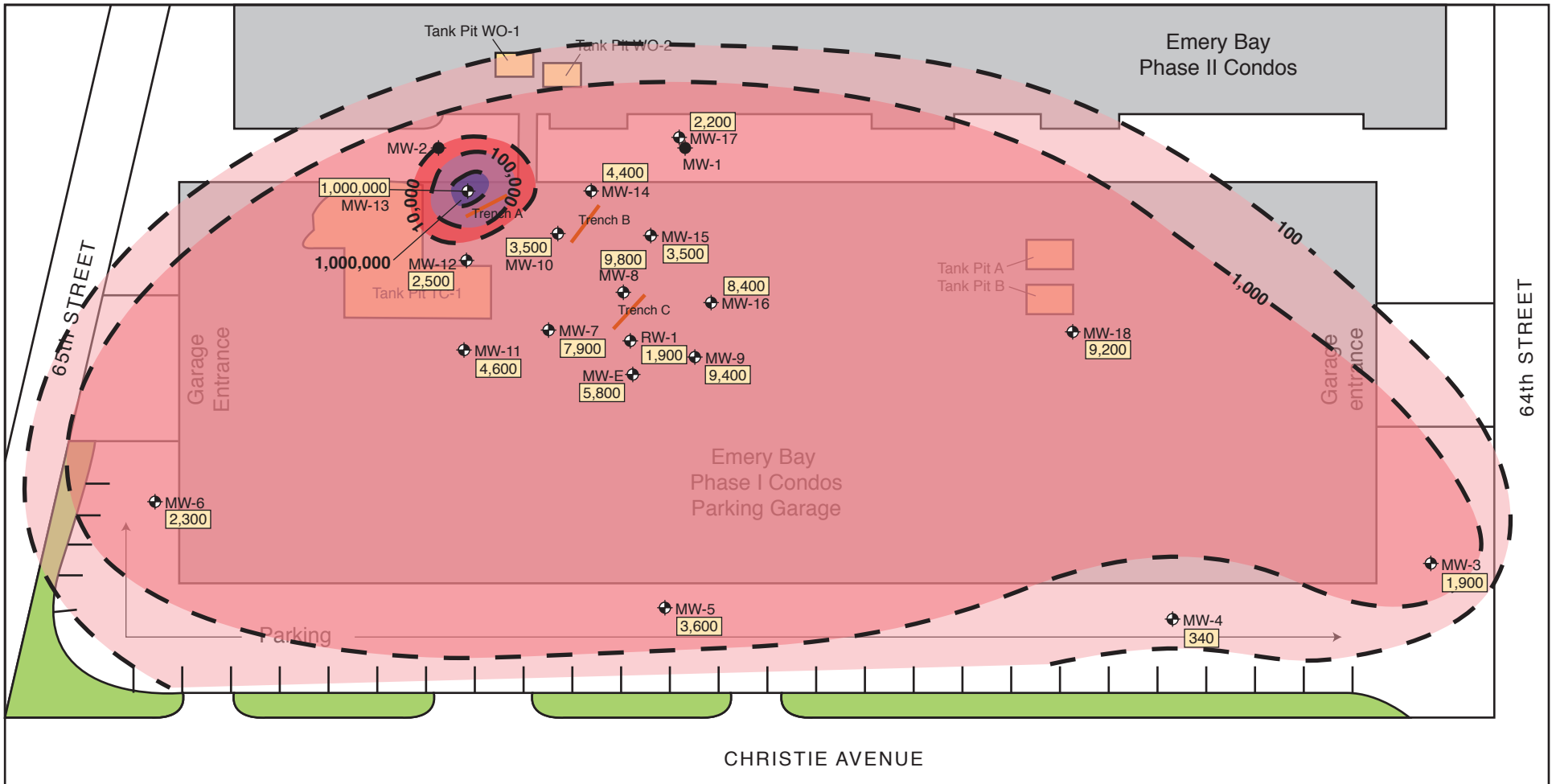
Figure 7 is an isoconcentration contour map of TPHd concentrations in groundwater based on the March 2012 monitoring well analytical results.



LEGEND

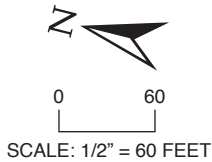
- Monitoring well
- Monitoring well (presumed abandoned)
- Trench location
- Historical tank pit area
- Landscaping
- Gasoline concentration contour
- 140 Total petroleum hydrocarbons as gasoline concentration in micrograms per liter (µg/L)





LEGEND

- Monitoring well
- Monitoring well (presumed abandoned)
- Trench location
- Historical tank pit area
- Landscaping
- Diesel concentration contour
- 340 Total petroleum hydrocarbons as diesel concentration in micrograms per liter (µg/L)



TOTAL PETROLEUM HYDROCARBON PLUME AS DIESEL
6400 Christie Ave., Emeryville, CA

Figure 7

by: MJC

MAY 2012

Figure 8 depicts historical groundwater analytical trends for TPHd in downgradient wells MW-5 and MW-6. Figure 9 depicts historical groundwater analytical trends for TPHd in source wells MW-11 and MW-12. Figure 10 depicts historical groundwater analytical trends for TPHd in crossgradient wells MW-3 and MW-18.

In monitoring wells MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-17, and MW-E and RW-1 concentrations of benzene exceeded the ESL of 46 µg/L where groundwater is not a drinking water resource. At the same time, decrease in benzene was observed in wells MW-3, MW-5, MW-7, MW-8, MW-10, MW-12, MW-13, MW-14, MW-16, and MW-18. Benzene was detected in MW-3, MW-6, MW-9 and MW-16, but at concentrations below the ESL.

Toluene was detected at or above the ESL of 130 µg/L in monitoring wells MW-7, MW-12, MW-13, MW-14 and MW-15. Toluene was also detected in wells MW-8, MW-9, MW-10, MW-11, MW-16, MW-17, MW-E and RW-1 but at levels below the ESL.

Ethylbenzene was detected above the 43-µg/L ESL (where groundwater is not a likely drinking water resource) in monitoring wells MW-12, MW-13, MW-14 and MW-15. Ethylbenzene was also detected in MW-7, MW-8, MW-10, MW-11, MW-17, MW-E and RW-1 but at levels below the ESL.

Total xylene concentrations in monitoring wells MW-7, MW-12, MW-13, MW-14 and MW-15 were above the 100-µg/L ESL where groundwater is not a likely drinking water resource. Total xylenes were also detected in MW-3, MW-8, MW-9, MW-10, MW-11, MW-16, MW-17, MW-E and RW-1 but below the ESL.

MTBE was not detected above the ESL of 1,800 µg/L in any of the monitoring wells. MTBE was detected in MW-3, but below the ESL. This result can be compared to the March 2011 sampling event when MTBE was detected in wells MW-4, MW-5, MW-6, MW-9, MW-16, MW-18 and RW-1 but below the ESL.

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 the requirements of each analytical method. All laboratory QC sample results and sample holding times were within the acceptance limits of the methods (Appendix C).

Figure 8
Historical Groundwater Analytical Results
Total Petroleum Hydrocarbons as Diesel (TPHd)
Downgradient Wells MW-5 and MW-6
February 1991 - March 2012

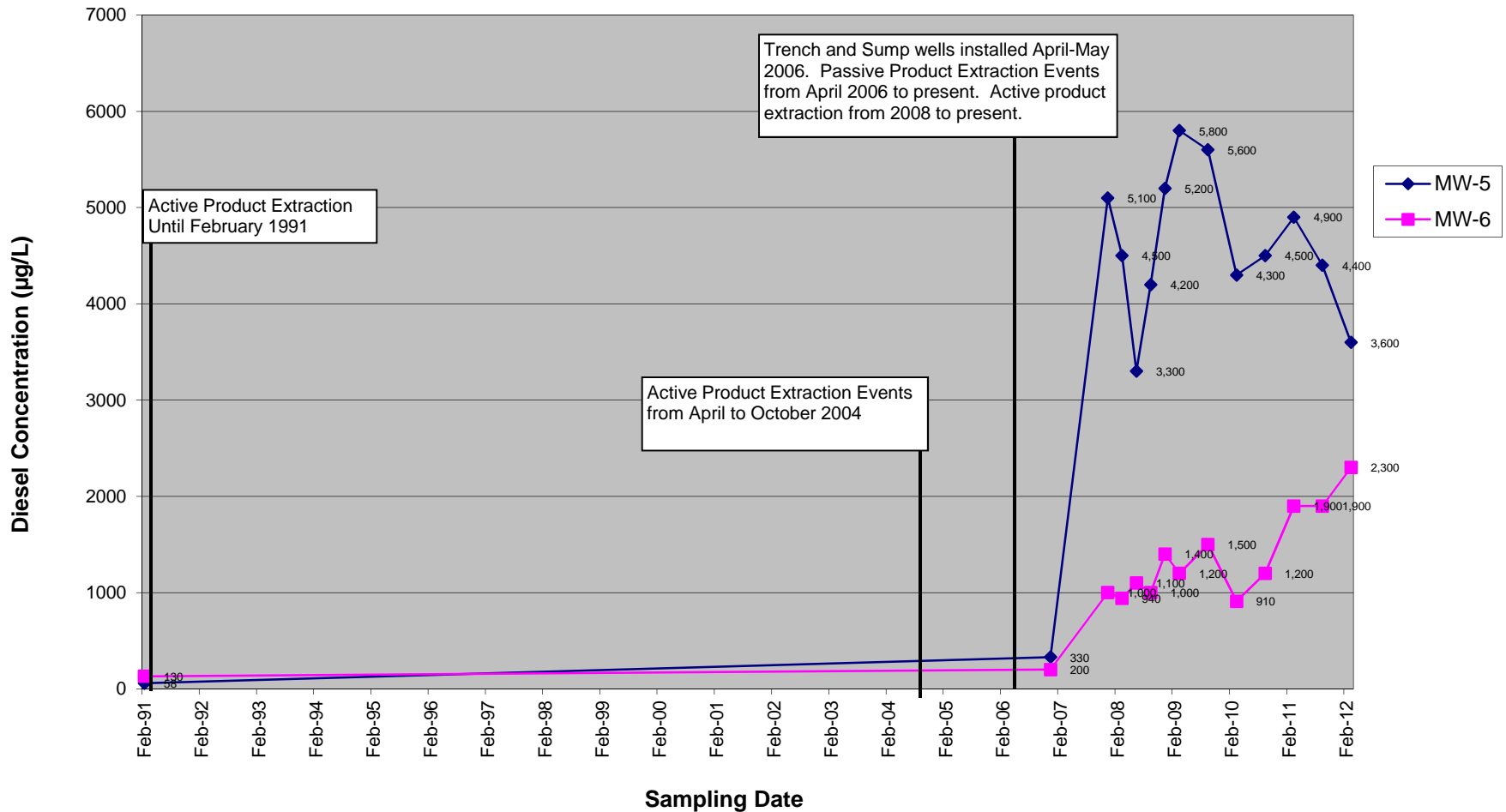


Figure 9
Historical Groundwater Analytical Results
Total Petroleum Hydrocarbons as Diesel (TPHd)
Source Wells MW-11 and MW-12
December 2006 - March 2012

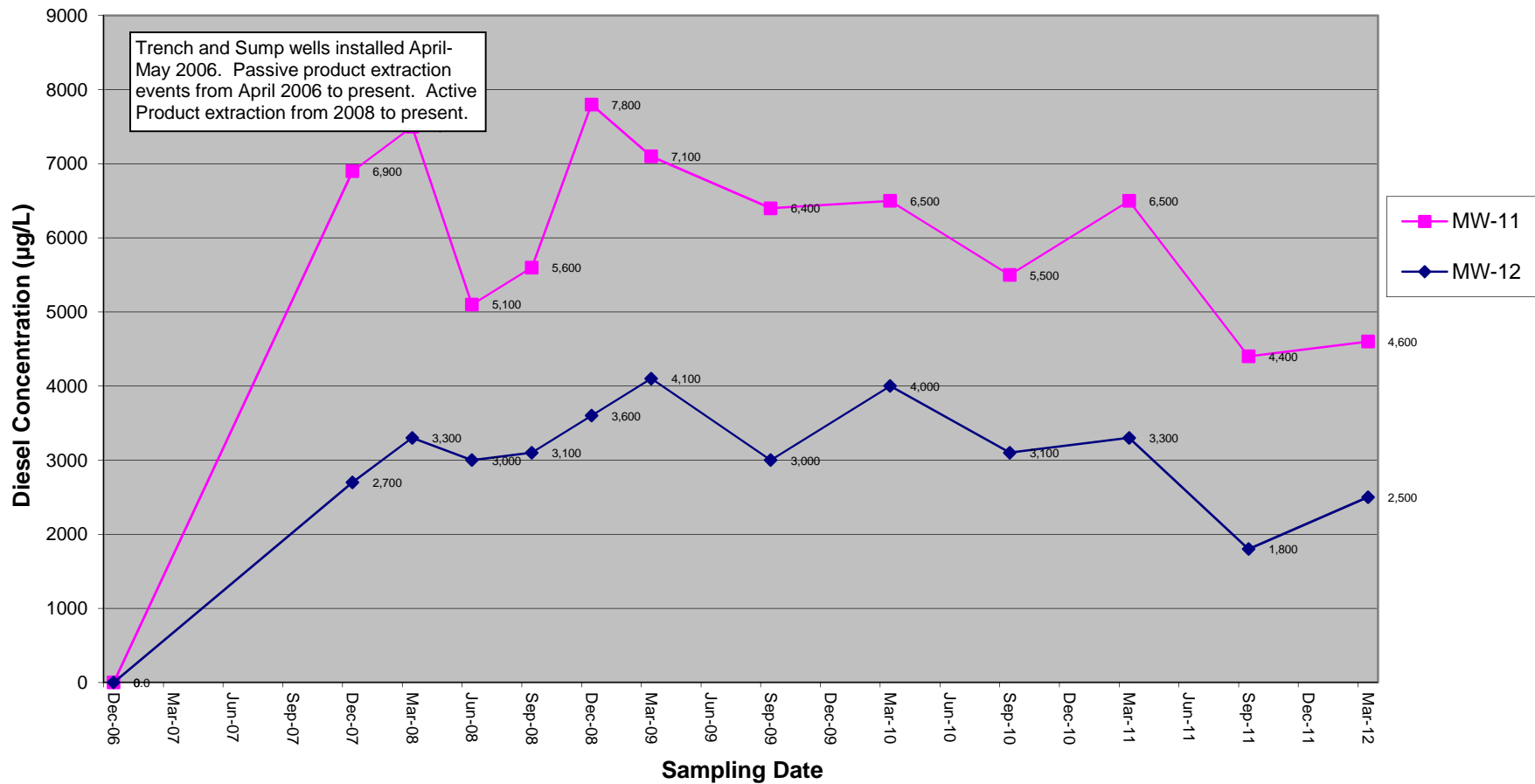
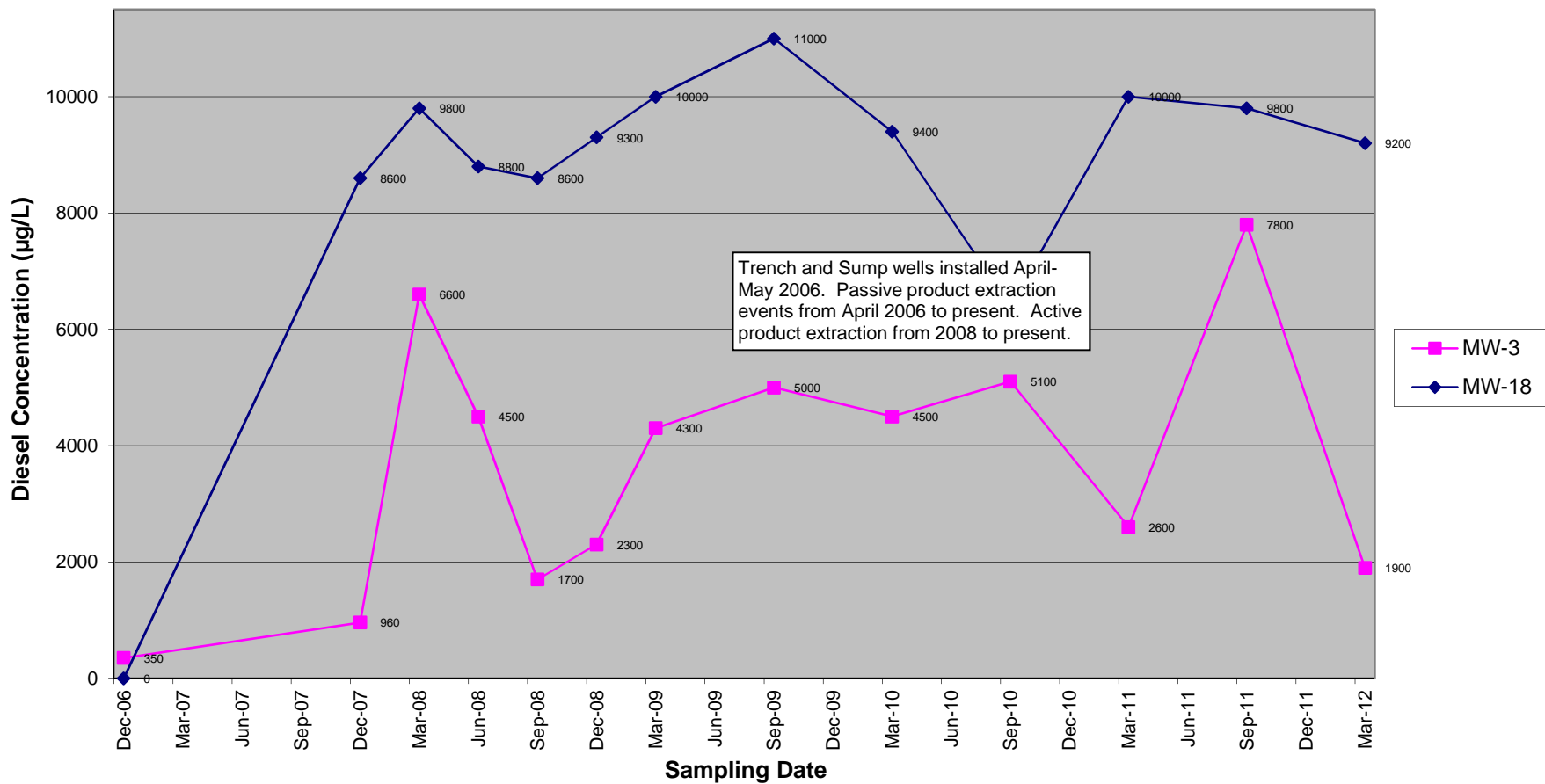


Figure 10
Historical Groundwater Analytical Results
Total Petroleum Hydrocarbons as Diesel (TPHd)
Crossgradient Well MW-3 and MW-18
December 2006 - March 2012



5.0 FREE-PHASE HYDROCARBON PRODUCT REMEDICATION SYSTEM

This section describes the historical extraction of the free product from the Emery Bay Phase I Condo parking garage, the construction details of the current LNAPL remediation system located on the northeastern portion of the garage, and the most recent product removal activities conducted on March 27 and 28, 2012 (immediately prior to the sampling event on March 29). Appendix E summarizes historical product removal.

LNAPL REMEDIATION SYSTEM CONSTRUCTION

In an attempt to maximize free product removal, PES constructed three trenches, each containing three sump wells, in the northeastern area of the Emery Bay Phase I Condo parking garage. Historically, this area has had the highest concentrations of contamination and accumulation of free product. The trenches (TA, TB, and TC) extend to depths of approximately 12.5 to 13 feet bgs, while the collection sumps (TA-W, TA-M, TA-E, TB-W, TB-M, TB-E, TC-W, TC-M, and TC-E) extend to approximately 11 to 13 feet bgs. The sumps were constructed using 10-inch-diameter schedule 40 polyvinyl chloride (PVC) casing. Blank casing was used from approximately 0.5 feet bgs to between 6 and 8 feet bgs. Slotted 0.06-inch PVC was used from between 6 and 8 feet bgs to 6 inches from the total depth of the trench. The trenches were then backfilled with high-porosity, high-permeability gravel designed to promote LNAPL migration (PES, 2007). Passive skimmers, manufactured by QED Environmental Systems (of Oakland, California) were then placed in each of the sumps in Trench A and in one of the sumps (TC-E) in Trench C.

The skimmers operate by floating on the surface of the water. Water and free product collect in a filtration reservoir, which allows water to pass through. A tube connected to the reservoir then filters the free product into a collection reservoir located below the water surface. The reservoir can be emptied by opening a valve located on the bottom of the cylindrical shaped reservoir. Each of these skimmers is attached to the sump lid by a rope, and can be removed and transferred to another sump as needed.

HISTORICAL FREE PRODUCT EXTRACTION

As mentioned under the “Previous Investigations” subsection in Section 1.0, in approximately 1986, contaminated soil and groundwater were discovered during the removal of 12 UFSTs from the Emery Bay Phase I and Phase II parcels. To dewater the excavation during the Phase I and Phase II Condo construction, a groundwater extraction and remediation system was installed by GTI in 1988. Approximately 1 million gallons of water yielding 100 gallons of hydrocarbon product was removed from RW-1 during its operation (PES, 2007). However, corrosion and other mechanical problems caused the system to fail in 1991, and it was decommissioned in 1994. In February 2008, Stellar Environmental removed all of the old parts of the system from the well vault.

In 2004, PES began manual extraction on RW-1, and was reported to have removed approximately 48 gallons of LNAPL (PES, 2004a)—although it is unclear whether the removed material was pure product or product mixed with water. To accelerate free product removal, PES constructed a new LNAPL hydrocarbon remediation system (described below) between April and May 2004 (PES, 2007). Several extraction events were conducted by PES from May 2004 through March 2007; the extraction events yielded a total of approximately 51 gallons of LNAPL. No extraction events were conducted by PES in 2005; approximately 50 gallons of hydrocarbons was removed in 2006; and approximately 0.6 gallon of hydrocarbons was removed by PES between January and November 2007. In November and December 2007, after Stellar Environmental was retained for the project, the skimmer system yielded 2.82 gallons. Figure 11 graphs the comparison of free product extraction on a yearly basis.

No historical product extraction reports were provided to Stellar Environmental by the previous owner or by PES. Therefore, there is little to no information on how active product extraction occurred during 2004 and 2006. Based on better defined recovery in 2008 through 2011 the volume of free product indicated to have been recovered during 2004 and 2006 appears unrealistically high, suggesting that free-phase product mixed with water was reported as free-phase product recovery.

MARCH 2012 PRODUCT REMOVAL EVENT

Historical yield from the trench recovery system has been unproductive and inconsistent, with the 1-liter passive skimmer collection reservoirs not filling up completely, or filling up with water rather than product. The highest hydrocarbon product yield has likely occurred from active pumping on recovery well RW-1 or at various other wells. Table 3 shows the allocation of free product removed from the collection skimmers in Trenches A and C.

Figure 11
Total Free Product Extracted Per Year
6400 Christie Avenue, Emeryville, CA

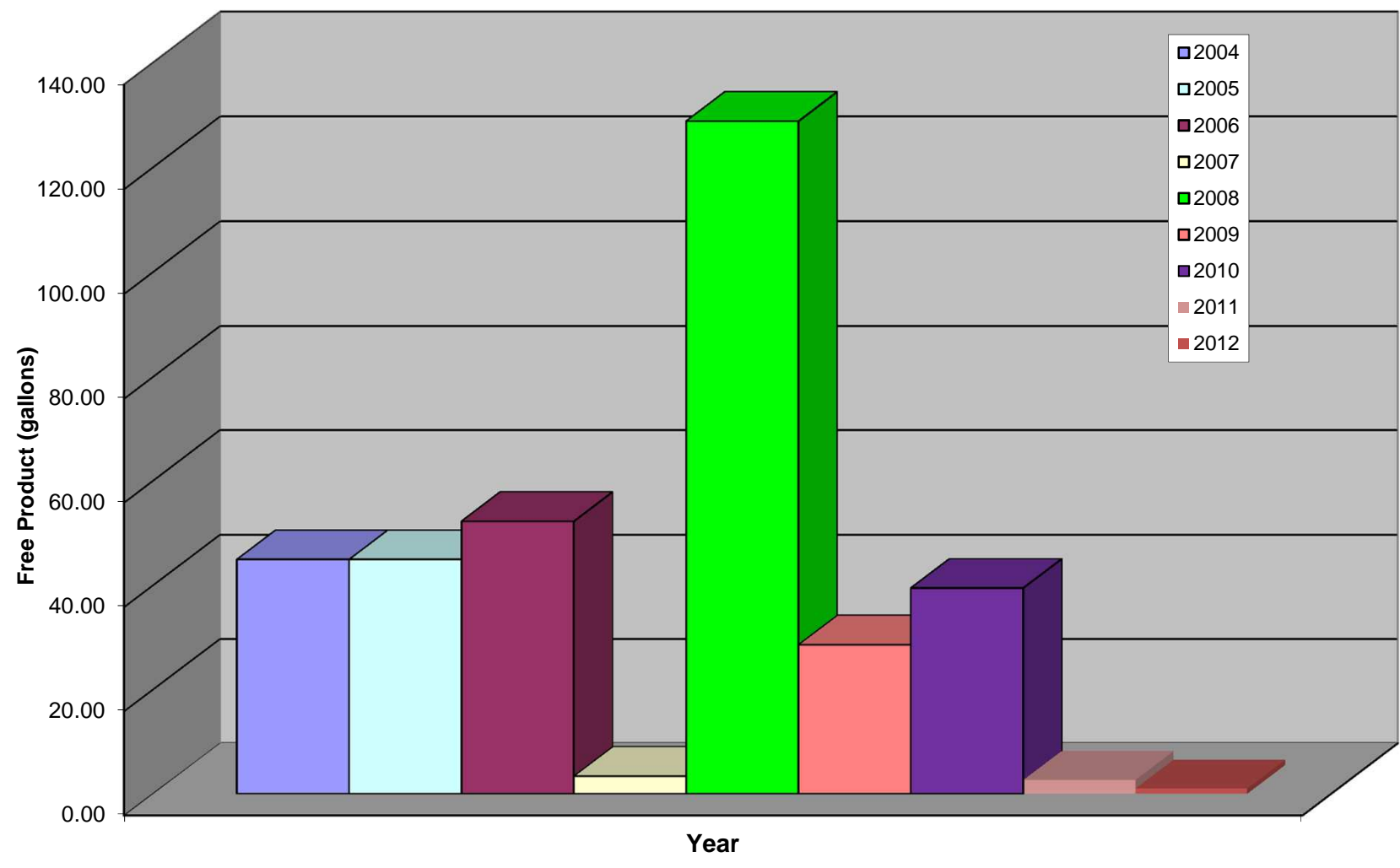


Table 3
Passive Skimmer Product Extraction in Trenches– March 27 and 28, 2012
6400 Christie Avenue, Emeryville, California

Trench ID	Number of Skimmers in Well	Total Product Removed (gallons)
TA-E	2	0.1
TA-M	2	0.0
TA-W	2	0.0
TB-E	0	NM
TB-M	0	NM
TB-W	0	NM
TC-E	1	0.0
TC-M	0	NM
TC-W	0	NM
Total Product Removed		0.1

Note:

NM = Not measured. No skimmer installed in the well.

Stellar Environmental conducted both passive and active product removal events during the 2 days prior (March 27 and 28) to the groundwater sampling event (March 29) to determine the recharge rate of free product in wells. A total of approximately 1,030 gallons of groundwater yielding approximately 0.275 gallons (Table 4) of free product were removed during the March 2012 active product removal event, in addition to 0.1 gallons (Table 3) removed passively from the skimmers.

Table 4
Active Product Extraction – March 27, 2012
6400 Christie Avenue, Emeryville, California

Well	Total Gallons of Product Removed	Well	Total Gallons of Product Removed
MW-3	0.015	MW-17	0.01
MW-4	0	MW-18	0
MW-5	0	MW-E	0
MW-6	0	RW-1	0.06
MW-7	0	TA-E	0.03
MW-8	0.015	TA-M	0.03
MW-9	0	TA-W	0.015
MW-10	0	TB-E	0
MW-11	0	TB-M	0.01
MW-12	0	TB-W	0
MW-13	0.06	TC-E	0
MW-14	0	TC-M	0.015
MW-15	0	TC-W	0.015
MW-16	0		
Total			0.275

Notes:

NP = not purged

Product removal estimates are based on the total amount of free product measured in the purge drum after pumping each well (0.277 gallons total)

The removal activities can be summarized as follows:

- On March 27-28, 2012 Stellar Environmental removed 100 gallons of groundwater and 0.045 gallons of product from TA-W and TA-M. The skimmers were also filled with water with little or no free product. The skimmer in TA-E contained 0.1 gallon of product and an additional 100 gallons of groundwater and 0.03 gallons of product were removed actively. Stellar Environmental removed 33 gallons of water each from TB-E, TB-M and TB-W along with 0.01 gallons of free product. On trench well TC-E, 50 gallons were removed actively. Only water was present in the skimmer in this well. Stellar Environmental removed 50 gallons each from TC-M and TC-W with 0.03 gallons of product. 200 gallons of water with 0.06 gallons of free product were removed actively from recovery well RW-1.

- On March 27-28, 2012, a total of approximately 0.275 gallons of petroleum product was removed along with the 1,030 gallons of liquid that was pumped from all of the monitoring wells and former extraction wells. The petroleum product was estimated based on free-product accumulation in the extraction drum after pumping each well. Higher petroleum product removal was realized (about 0.275 gallons) from the individual product purging of the site wells prior to the sampling event than was recovered from the “skimmers” (0.1 gallon) designed for the product removal. Product removal was most pronounced at wells MW-3, MW-6, MW-8, MW-11, MW-12, MW-13, MW-15 and MW-17.
- All of the purge water and free product extracted during these events was contained onsite in the 1,100-gallon AST located in the northeastern gated area of the garage. On June 5, 2012, Evergreen Oil vacuumed and transported the water to its recycling facility in Newark, California. The waste manifest and recycling certificate are included in Appendix F.

DISCUSSION

As mentioned under the “Historical Free Product Extraction” subsection of this chapter, no product extraction was conducted by PES in 2005. “Product” removal in 2006 was reported at a significant 52 gallons by PES; however, it was not achieved through collection from the trench hydrocarbon skimmers, but rather through active pumping; in addition, the “product” referred to by PES appears to actually have been a mixture of petroleum product and water. The PES report provides no documentation (e.g., manifests) of the removal of actual recovered petroleum product. The recovery by PES from the start of 2007 through October 2007 (when Stellar Environmental assumed environmental consulting activities) was limited to 0.6 gallon collected from the skimmers. In addition, there had been no removal of free product from well RW-1 since 2004, at which time approximately 50 gallons of free-floating product was apparently removed by active pumping. The majority of this petroleum product apparently was removed by active pumping and removal activities rather than from the trench well skimmers. Much of this may also have been a mixture of water and hydrocarbons. Thus, we conclude that the trench recovery system on its own has never been particularly effective. In 2007, passive extraction of free product through trench well skimmers removed only 3.41 gallons. Stellar Environmental removed approximately 5.65 gallons of free product from these passive skimmers during the 2008 removal events. Approximately 10.34 gallons of product were removed by active pumping on wells during 2008, 25.97 gallons in 2009, 38.77 gallons in 2010 and 17.5 gallons in 2011 indicating that the active pumping of site wells to be an effective means of product removal as compared to the passive skimmer system. Differences in volumes recovered can be attributed to fluctuations in groundwater levels due to rainfall amounts, and in an overall removal of product as the active pumping process continues from year to year.

As demonstrated by the analytical data, active pumping on certain wells has generally reduced gasoline concentrations; however, wells not included in the pumping schedule showed a lesser or no decrease. The very high hydrocarbon concentrations detected in in well MW-13 is likely due to that sample containing LNAPL. Diesel concentrations seem to be less affected by active pumping, even in wells that were included in the pumping schedule, such as RW-1. More active remediation will likely be required on this site to reduce the concentrations to levels acceptable to the regulatory community and to achieve eventual regulatory closure. However, with the exception of the current program of LNAPL removal from the skimmers and wells, no additional active remedies are proposed until a more cost-effective and productive method of removal is found.

6.0 SUMMARY, CONCLUSIONS, AND PROPOSED ACTIONS

FINDINGS AND CONCLUSIONS.

- The subject property parcel was developed as early as 1958 with the Motor Freight Station, associated with Delta Lines, Inc. The Delta Lines complex contained an “Oil and Gas” building, located at the site of the present-day Emery Bay Phase I Condo complex and parking garage. In 1986, the building was demolished, and 12 UFSTs containing diesel and gasoline were removed from the Emery Bay Phase I and Phase II Condo complex parcels. Soil and groundwater contamination was discovered.
- In response to the contamination, a LNAPL groundwater pump-and-treat system was installed in 1989, but failed in 1991. Active pumping of free product began again in 2004, and a product extraction system consisting of passive product removal was installed in 2006. Groundwater monitoring events have been sporadically conducted since 1988; quarterly groundwater monitoring events were conducted for the first time in 2008. The quarterly sampling was reduced to a semiannual frequency in 2009.
- The site currently contains 17 monitoring wells, 1 recovery well, and 9 product extraction trench wells. This is the 17th sampling event conducted since 1988.
- Site geological conditions consist of a combination of fill and soft bay sediment to between 15 and 20 feet bgs, covered by approximately 1 to 2 feet of pavement and imported fill. This is underlain by approximately 20 feet of firm soil consisting of primarily dense silty sand with intermittent layers of silty and sandy clay. Stiff to very stiff clay extends from a depth of approximately 40 feet to approximately 102 feet.
- The groundwater direction during this monitoring event was found to range from the southwest (on the northern portion of the site) to the west (on the central portion of the site) to the northwest (on the southern portion of the site).
- Groundwater elevations during the March 2012 event ranged from 7.35 to 11.97 feet above mean sea level. The average groundwater gradient was 0.001 foot/foot.
- Current contaminants of concern include TPHg, TPHd, and BTEX. Current groundwater concentrations exceeded the ESLs for these contaminants. MTBE was detected in MW-3, during this event; however, the concentration was well below the applicable ESL.

- The highest concentrations of TVHg (260,000 µg/L) and TEHd (1,100,000 µg/L) were observed in MW-13, which represents an increase from the previous sampling event. This may be attributable to isolated LNAPL in the sample. Overall, the concentration of hydrocarbons in well MW-13 has decreased significantly from the historic high concentrations of 2,700,000 µg/L TVHg and 3,100,000 µg/L TEHd observed in this well. The decrease is attributed to the effective LNAPL recovery in 2009 through 2011. However, the average concentration of TEHd and TVHg in the remaining site wells has remained about the same compared to March 2011.
- Monitoring wells MW-3, MW-4, MW-5, MW-10, MW-11, MW-16, MW-17, MW-18 and MW-E showed decreased diesel concentrations in March 2012 compared to March 2011. The concentrations in MW-6, MW-7, MW-8, MW-9, MW-12, MW-13, MW-14, MW-15 and RW-1, while above the March 2010 values, were below their historic maxima. The result of nine wells showing a decrease may be compared to four wells indicating a decrease in the March 2011 sampling event.
- Increases in gasoline concentrations compared to the March 2011 monitoring event were observed in wells MW-7, MW-11, MW-12, MW-13, MW-15, MW-E and RW-1. The remaining wells either remained below laboratory detection limits (in the perimeter wells MW-4, MW-5, and MW-6) or exhibited a decrease.
- Gasoline was detected in MW-3, MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-17, MW-E and RW-1 above the ESL where groundwater is not a likely drinking water resource (210 micrograms per liter [µg/L]). Gasoline was also detected in MW-9 and MW-16 but at concentrations below the ESL. This pattern is nearly identical to the March 2011 sampling event with the exception of well MW-18 which decreased from 68 µg/L TVHg to <50 µg/L TVHg.
- Benzene concentrations in monitoring wells MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-17, MW-E and RW-1 exceeded the ESL of 46 µg/L where groundwater is not a drinking water resource. Benzene was also detected in MW-3, MW-6, MW-9, and MW-16 but at concentrations below the ESL.
- Toluene was detected at or above the ESL of 130 µg/L in monitoring wells MW-7, MW-12, MW-13, MW-14 and MW-15. Toluene was also detected in wells MW-8, MW-9, MW-10, MW-11, MW-16, MW-17, MW-E and RW-1 but at levels below the ESL.
- Ethylbenzene was detected above the 43-µg/L ESL (where groundwater is not a likely drinking water resource) in monitoring wells MW-12, MW-13, MW-14, MW-15, MW-17 and MW-E. Ethylbenzene was also detected in MW-7, MW-8, MW-10, MW-11 and RW-1, but at levels below the ESL.

- Total xylene concentrations in monitoring wells MW-7, MW-12, MW-13, MW-14 and MW-15 were above the 100-µg/L ESL where groundwater is not a likely drinking water resource. Total xylenes were also detected in MW-3, MW-8, MW-9, MW-10, MW-11, MW-16, MW-17, MW-17, MW-E and RW-1 but below the ESL.
- MTBE was not detected above the ESL of 1,800 µg/L in any of the monitoring wells. MTBE was detected in MW-3 but below the ESL.
- Stellar Environmental conducted passive skimmer product removal on the trench wells during the March 2012 removal event. A total of approximately 0.01 gallons were removed from the skimmer in trench well TA-E. The skimmer in trench wells TA-M, TA-W and TC-E were filled with water and traces of product.
- Stellar Environmental also conducted active product removal on the trench wells, source area wells, recovery well, and select monitoring wells during the March 2012 event. A total of approximately 1,030 gallons of groundwater that includes approximately 0.1 gallons of free product from the passive skimmers and 0.275 gallons of free-floating petroleum product from all the wells was removed with the estimate based on free-product accumulation in the extraction drum after pumping each well.
- The trench recovery system, where free product is designed to collect in 1-liter skimmers, is effective in removing small amounts of free product, but is not effective in decreasing the size of the plume overall. Active pumping at various wells appears to have some effect in lowering gasoline concentrations, and appears to be affecting the concentrations of diesel (which had been steadily increasing, and showed a decrease in the March 2012 sampling).

RECOMMENDATIONS

- Groundwater monitoring should be continued on a semiannual basis to document contaminant concentrations over time.
- Both active and passive free product removal events should be continued to ascertain their effectiveness in reducing the plume size over time. Active product removal is being conducted on a semiannual basis immediately prior to the sampling event. Passive product removal from the skimmers is being conducted on a semiannual basis.
- Emergent best available technologies should continue to be evaluated, as a new technology might cost-effectively remediate the site to move it toward full regulatory closure.
- Electronic uploads to ACEH's ftp system and the State Water Board's GeoTracker system should be continued as required.

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8.0 LIMITATIONS

This report has been prepared for the exclusive use of Emerybay Commercial Association, their authorized representatives and assigns, and the regulatory agencies. No reliance on this report shall be made by anyone other than those for whom it was prepared.

The findings and conclusions presented in this report are based on a review of previous investigators' findings at the site, as well as site investigations conducted by SES in 2007, 2008, and 2009. This report has been prepared in accordance with generally accepted methodologies and standards of practice. The SES personnel who performed this limited remedial investigation are qualified to perform such investigations and have accurately reported the information available, but cannot attest to the validity of that information. No warranty, expressed or implied, is made as to the findings, conclusions, and recommendations included in the report.

The findings of this report are valid as of the date of this report. Site conditions may change with the passage of time, natural processes, or human intervention, which can invalidate the findings and conclusions presented in this report. As such, this report should be considered a reflection of the current site conditions as based on the activities completed.

APPENDIX A

Historical Groundwater Well Analytical Results

TABLE A
Historical Groundwater Monitoring Well Groundwater Analytical Results
Petroleum and Aromatic Hydrocarbons (µg/L)
6400 Christie Avenue, Emeryville, California

MW-1									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88	380	17,000		8,600	940	250	570	NA
2	May-89	130	24,000		16,000	2,100	300	1,200	NA
3	Feb-91	<10	22,000		6,800	3,500	410	2,000	NA
Monitoring well abandoned - date unclear									

MW-2									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88	72	22		0	0	0	0	
2	May-89	40	18		0	0	0	0	
3	Feb-91	83	0		0	0	0	0	
Monitoring well abandoned - date unclear									

MW-3									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88	<10	4,200		77	1,400	140	560	
2	May-89	110	1,800		64	250	61	110	
3	Feb-91	NS							
4	Mar-04	3,400	440	3,900	0	0	1.5	0	9.7
5	Dec-06	350	280	230	0	0	0	0	2.0
6	Dec-07	960	150		0	0	0	0	0
7	Mar-08	6,600	450		0	0	1.8	0	4.3
8	Jun-08	4,500	440		0	0	4.0	0	9.5
9	Sep-08	1,700	280		0	0	1.0	0.0	0
10	Dec-08	2,300	240		0	0	1.1	0.0	0
11	Mar-09	4,300	260		1.3	0	1.8	0.5	2.9
12	Sep-09	5,000	330		2.5	0	0.0	0.0	0
13	Mar-10	4,500	230	670	1.7	0	1.0	0.0	2.7
14	Sep-10	5,100	470		0	0.64	0.0	1.6	2.9
15	Mar-11	2,600	540		47	28	7.6	11.8	17
16	Sep-11	7,800	290		13	1.5	0.0	2.0	9.5
17	Mar-12	1,900	430		3.3	0	0.0	2.5	2.7

MW-4									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88	0	100		2.0	1.0	0	2.0	
2	May-89	60	18		1.0	0.0	0	0	
3	Feb-91	0	0		0	0	0	0	
4	Mar-04								
5	Dec-06	0	50	0	0	0	0	0	0
6	Dec-07	710	0		0	0	0	0	0
7	Mar-08	680	57		0	0	0	0	0
8	Jun-08	620	0		0	0	0	0	0
9	Sep-08	440	0		0	0	0	0	0
10	Dec-08	730	0		0	0	0	0	0
11	Mar-09	940	0		0	0	0	0	0
12	Sep-09	660	0		0	0	0	0	0
13	Mar-10	680	0	380	0	0	0	0	0
14	Sep-10	770	71		0	0	0	0	0
15	Mar-11	590	0		0	0	0	0	2.4
16	Sep-11	380	0		0	0	0	0	0
17	Mar-12	340	0		0	0	0	0	0

MW-5									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88	530	890		0.0	0.0	1.0	3.0	
2	May-89	90	5.0		1.0	0	0	0	
3	Feb-91	58	0		0.6	0	0	0	
5	Dec-06	330	0	0	0.60	0	0	0	0
6	Dec-07	5,100	1.3		1.3	0	0	1.23	0
7	Mar-08	4,500	0		0.53	0	0	0	0
8	Jun-08	3,300	0		0.64	0	0	0	0
9	Sep-08	4,200	0		0	0	0	0	0
10	Dec-08	5,200	0		0.61	0	0	0	0
11	Mar-09	5,800	0		0	0	0	0	0
12	Sep-09	5,600	0		0	0	0	0	0
13	Mar-10	4,300	0	5,400	4.9	0	0.0	0.0	0
14	Sep-10	4,500	0		0.58	0	0	0	2.0
15	Mar-11	4,900	0		1.3	0	0	0	5.9
16	Sep-11	4,400	0		0	0	0	0	0.0
17	Mar-12	3,600	0		0	0	0	0	0.0

MW-6									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88	0	52		1.0	0	0	0	
2	May-89	140	31		1.0	0	0	0	
3	Feb-91	130	40		0.8	0	0	0	
5	Dec-06	200	43	0	1.1	0	0	0	0
6	Dec-07	1,000	0		0.98	0.81	0	0.5	0
7	Mar-08	940	0		0.87	1.0	0	0	0
8	Jun-08	1,100	56		0.92	0	0	0	2.9
9	Sep-08	1,000	0		0.91	0	0	0	0
10	Dec-08	1,400	0		1	0	0	0	0
11	Mar-09	1,200	0		0	0	0.0	0.0	0
12	Sep-09	1,500	0		0.79	0	0.0	0.0	0
13	Mar-10	910	0	1,500	1.9	0	0.0	0.0	0
14	Sep-10	1,200	72		1.0	0	0	0	0
15	Mar-11	1,900	0		1.3	0	0	0	3.9
16	Sep-11	1,900	0		1.8	0	0	0	0
17	Mar-12	2,300	0		0.8	0	0	0	0

MW-7									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in March 2004									
1	Mar-04	1,600	490	1,900	240	100	14	56	0
2	Dec-06	420	0	470	0	0	0	0	0
3	Dec-07	6,300	3,100		640	28	48	231	0
4	Mar-08	7,000	360		140	5.8	11	58	0
5	Jun-08	5,400	1,700		480	15	28	139	0
6	Sep-08	9,400	1,200		330	12	21	88	0
7	Dec-08	8,700	2,200		640	100	43	185	0
8	Mar-09	8,700	1,700		510	33	47	220	0
9	Sep-09	6,800	540		310	9.5	27	117	0
10	Mar-10	8,700	330	6,800	68	2.2	10	31.6	0
11	Sep-10	10,000	1,300		580	54	35	163	0
12	Mar-11	8,100	630		160	5.3	14	65	0
13	Sep-11	8,000	2,900		900	46	51	284	0
14	Mar-12	7,900	740		220	150	14	140	0

MW-8									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in March 2004									
1	Mar-04	140,000	51,000	56,000	19,000	720	2,400	3,300	0
2	Dec-06	2,400	29,000	0	13,000	0	640	500	0
3	Dec-07	5,900	30,000		11,000	180	650	561	0
4	Mar-08	21,000	47,000		10,000	260	1,200	458	0
5	Jun-08	7,300	27,000		9,300	140	790	290	0
6	Sep-08	13,000	35,000		11,000	190	900	402	0
7	Dec-08	7,600	19,000		6,800	110	380	236	0
8	Mar-09	10,000	22,000		9,400	200	640	358	0
9	Sep-09	9,200	26,000		8,600	100	630	330	170
10	Mar-10	11,000	19,000	1,900	6,200	120	830	149	0
11	Sep-10	7,600	7,800		8,800	110	620	212	0
12	Mar-11	8,800	19,000		8,100	130	890	149	0
13	Sep-11	18,000	13,000		8,000	140	860	178	0
14	Mar-12	9,800	380		100	3	5.9	20	0

MW-9									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in March 2004									
1	Mar-04	1,300	95	1,500	4.7	0.68	0	0	0
2	Dec-06	Jan-00	92	0	2.8	0	0	0	0
3	Dec-07	8,400	84		4.7	1.1	0	1.9	0
4	Mar-08	8,600	100		4.1	1.1	0	0	2.0
5	Jun-08	5,900	98		4.9	0	0	0	2.3
6	Sep-08	9,300	130		4.6	0	0	0	0
7	Dec-08	7,800	95		4	0.54	0	0	0
8	Mar-09	9,400	130		4.6	0	0	0	0
9	Sep-09	8,200	100		4	0	0.0	0.0	0
10	Mar-10	6,500	140	4,000	5.2	0	0.0	0.0	0
11	Sep-10	6,400	170		4.8	0.77	0.0	0.0	0
12	Mar-11	11,000	150		5.9	0.61	0.0	0.5	0
13	Sep-11	9,400	62		4.2	0	0	0	0
14	Mar-12	9,400	140		6.2	0.61	0	0.51	0

MW-10									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in March 2004									
1	Mar-04	840,000	14,000	0	4,000	77	200	120	0
2	Dec-06	19,000	12,000	0	4,600	42	90	52	0
3	Dec-07	4,700	13,000		5,300	96	42	86	0
4	Mar-08	280,000	10,000		2,600	50	37	58.7	0
5	Jun-08	4,800	10,000		3,800	62	24	61	0
6	Sep-08	4,700	1,200		350	11	3.4	11	0
7	Dec-08	3,200	2,900		550	45	15	56	0
8	Mar-09	6,200	8,200		890	46	78	130	0
9	Sep-09	6,100	1,700		1,200	35	19	31	0
10	Mar-10	3,900	7,800	960	1,200	46	34	56	54
11	Sep-10	3,500	3,400		1,500	47	18	44	0
12	Mar-11	4,500	3,700		1,200	81	25	46.4	0
13	Sep-11	3,800	4,600		720	49	26	52.4	0
14	Mar-12	3,500	2,400		240	27	10	33.6	0

MW-11									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in May 2004									
1	Dec-06	0.0	920	0.0	26	4.5	1.8	5.4	0.0
2	Dec-07	6,900	1,500		320	44	53	140	0
3	Mar-08	7,500	1,200		120	7.6	10	24.9	3.0
4	Jun-08	5,100	2,000		190	11	7.7	16.3	0.0
5	Sep-08	5,600	2,200		260	20	34	60	0.0
6	Dec-08	7,800	2,100		270	14	7.6	15.6	0.0
7	Mar-09	7,100	1,400		200	6.4	7.3	10.4	0.0
8	Sep-09	6,400	1,900		320	13	9.8	15.2	2.0
9	Mar-10	6,500	1,600	6,900	150	0	3.9	12.8	2.9
10	Sep-10	5,500	1,300		330	15	9.2	17.3	0.0
11	Mar-11	6,500	3,400		1300	22	9.6	19.9	0.0
12	Sep-11	4,400	3,600		1200	36	16	39.1	0.0
13	Mar-12	4,600	5,700		2100	27	12	16.7	0.0

MW-12									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in May 2004									
1	Dec-06	0	19,000	0	9,100	51	0	110	0
2	Dec-07	2,700	17,000		8,000	110	25	115	0
3	Mar-08	3,300	33,000		9,200	140	85	116	0
4	Jun-08	3,000	17,000		6,600	95	50	110	0
5	Sep-08	3,100	14,000		6,200	79	18	83	0
6	Dec-08	3,600	19,000		7,900	140	72	124	0
7	Mar-09	4,100	14,000		6,100	150	130	111	0
8	Sep-09	3,000	2,000		4,500	80	14	51	0
9	Mar-10	4,000	15,000	1,900	6,200	110	73	101	0
10	Sep-10	3,100	4,900		5,900	97	47	73	0
11	Mar-11	3,300	15,000		7,900	180	200	127	0
12	Sep-11	1,800	8,600		2,700	85	31	63	0
13	Mar-12	2,500	17,000		6,300	160	180	124	0

MW-13									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in April 2004									
1	Dec-06	12,000	87,000	2,100	18,000	470	2,400	3,500	0
2	Dec-07		68,000		19,000	650	1,700	2,440	0
3	Mar-08	1,100,000	98,000		19,000	820	2,300	3,190	0
4	Jun-08	71,000	44,000		12,000	510	1,600	1,950	0
5	Sep-08	440,000	52,000		0	500	1,600	1,500	0
6	Dec-08	1,100,000	2,700,000		23,000	0	40,000	45,000	0
7	Mar-09	2,000,000	330,000		25,000	1,300	6,400	8,500	0
8	Sep-09	38,000	1,400,000		19,000	2,500	19,000	21,300	0
9	Mar-10	15,000	43,000	670	12,000	310	1,600	1,140	0
10	Sep-10	3,100,000	1,700,000		21,000	2,300	30,000	17,200	7,000
11	Mar-11	13,000	86,000		44,000	400	3,200	912	7,000
12	Sep-11	15,000	49,000		16,000	380	1,900	850	0
13	Mar-12	1,100,000	260,000		23,000	1500	5700	4100	0

MW-14									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in April 2004									
1	Dec-06	0.0	8,300	0	3,700	240	230	260	0
2	Dec-07	2,600	6,800		3,100	150	220	168	0
3	Mar-08	4,400	18,000		4,400	330	340	245	0
4	Jun-08	2,600	7,700		2,600	180	200	141	0
5	Sep-08	2,500	4,100		1,300	50	80	61	0
6	Dec-08	2,800	2,300		830	27	45	30.7	0
7	Mar-09	3,200	13,000		4,300	870	260	283	0
8	Sep-09	2,100	530		630	14	28	17	0
9	Mar-10	3,900	6,700	3,100	2,400	400	140	185	0
10	Sep-10	2,500	2,000		1,700	44	98	89	0
11	Mar-11	2,800	16,000		6,600	1600	450	600	0
12	Sep-11	5,900	20,000		6,600	690	550	740	0
13	Mar-12	4,400	13,000		3,000	1400	340	870	0

MW-15									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in April 2004									
1	Dec-06	0	9,200	0	3,700	0	60	57	0
2	Dec-07	3,300	8,100		3,000	48	28	44.5	0
3	Mar-08	3,000	13,000		3,600	66	210	59.5	0
4	Jun-08	2,900	15,000		5,800	61	230	56.4	0
5	Sep-08	3,400	18,000		7,800	73	270	59.9	0
6	Dec-08	3,000	20,000		7,600	95	300	84.2	0
7	Mar-09	3,400	17,000		7,200	91	170	60	0
8	Sep-09	2,700	2,400		6,200	71	68	42	0
9	Mar-10	3,700	14,000	910	5,900	74	170	69	0
10	Sep-10	3,500	5,800		8,100	95	170	71	0
11	Mar-11	3,200	11,000		5,600	88	110	66.1	0
12	Sep-11	2,200	15,000		6,400	100	71	77.7	0
13	Mar-12	3,500	16,000		7,200	110	160	177	0

MW-16									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in April 2004									
1	Dec-06	0	190	0	11.0	1.4	0	0	0
2	Dec-07	8,500	71		13	2.6	0	1.46	0
3	Mar-08	12,000	60		11	0.73	0	0	0
4	Jun-08	10,000	120		13	2.2	0	0	2
5	Sep-08	8,200	64		9.9	1.9	0	0	0
6	Dec-08	8,800	60		11	2.8	0	0.53	0
7	Mar-09	14,000	78		12	2.3	0	0	0
8	Sep-09	10,000	0		9.3	1.6	0	0	2.2
9	Mar-10	12,000	70	4,700	12	2.1	0.56	1.35	0
10	Sep-10	9,800	77		12	1.9	0	0.55	2
11	Mar-11	9,900	64		13	1.6	0	2.3	16
12	Sep-11	10,000	74		17	2.3	0	1.33	0
13	Mar-12	8,400	66		12	1.8	0	1.07	0

MW-17									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in April 2004									
1	Dec-06	0	14,000	0	3,400	1,100	480	0	0
2	Dec-07	2,900	5,000		1,100	260	110	206	0
3	Mar-08	3,100	6,800		1,200	110	91	94	21
4	Jun-08	2,900	7,200		1,100	45	75	66	0
5	Sep-08	3,300	5,500		900	63	69	69	0
6	Dec-08	3,200	7,100		1,100	530	190	390	0
7	Mar-09	3,000	5,400		770	150	87	161	0
8	Sep-09	3,000	2,500		120	3.1	11	1.6	0
9	Mar-10	3,400	5,000	1,900	910	66	73	93	0
10	Sep-10	2,800	3,500		1,400	62	46	76	0
11	Mar-11	3,900	6,100		1,100	44	55	70	0
12	Sep-11	2,400	4,600		850	49	51	64	0
13	Mar-12	2,200	5,800		1,500	57	58	67	0

MW-18									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
Installed in May 2004									
1	Dec-06	0	120	0	22	6.2	3.2	6.2	0
2	Dec-07	8,600	0		0.98	0	0	0	0
3	Mar-08	9,800	0		0.52	0	0	0	2.0
4	Jun-08	8,800	0		0	0	0	0	3.1
5	Sep-08	8,600	0		0	0	0	0	0.0
6	Dec-08	9,300	0		0	0	0	0	0.0
7	Mar-09	10,000	0		0	0	0	0	0.0
8	Sep-09	11,000	0		0	0	0.0	0.0	0
9	Mar-10	9,400	0	2,700	0	0	0.0	0.0	0
10	Sep-10	6,400	1,800		2,200	45	64.0	78.0	0
11	Mar-11	10,000	68		5.5	1.1	0.0	1.3	17
12	Sep-11	9,800	0		0.58	0	0.0	0.0	0
13	Mar-12	9,200	0	0	0	0	0.0	0.0	0

MW-E									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88	100	5,400		3,200	690	97	330	
4	Mar-04	470	810	0	340	6.1	2.2	7.7	0
5	Dec-06	280	1,900	0	910	0	10	0	0
6	Dec-07	6,900	7,000		3,300	50	51	80	0
7	Mar-08	6,300	2,700		780	17	20	20.9	12
8	Jun-08	5,200	7,400		2,900	43	85	50	0
9	Sep-08	7,800	11,000		3,800	170	130	257	0
10	Dec-08	9,400	9,100		3,400	110	180	182	0
11	Mar-09	5,600	850		270	7.5	13	17.5	0
12	Sep-09	6,200	510		1,200	22	37	37.2	0
13	Mar-10	3,800	2,400	5,100	1,000	20	37	26.9	4.9
14	Sep-10	6,600	1,800		2,200	45	64	78	0
15	Mar-11	5,900	4,400		2,600	46	64	90	0
16	Sep-11	7,600	3,600		4,500	150	340	402	0
17	Mar-12	5,800	6,500		2,600	50	52	84	0

RW-1									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88								
2	May-89								
3	Feb-91								
4	Mar-04								
5	Dec-06	0	640	0	100	1.3	2	1.6	0
6	Dec-07	2,100	770		110	0	3.8	1.96	0
7	Mar-08	11,000	890		100	4.2	4.4	2.0	0
8	Jun-08	1,500	1,200		290	4.8	10	4.8	0
9	Sep-08	1,900	1,400		280	9.8	10	6.7	0
10	Dec-08	54,000	1,100,000		500	0	3,200	530	0
11	Mar-09	2,800	950		180	3.6	13	3	0
12	Sep-09	770	360		120	3.1	11	2	0
13	Mar-10	810	200	0	0	0	0	0	0
14	Sep-10	980	860		170	4.0	5.6	2.8	8.0
15	Mar-11	810	310		15	4.4	2.5	3.9	8.8
16	Sep-11	440	230		28	2.7	1.7	1.5	0.0
17	Mar-12	1,900	502		70	2.0	2.2	2.1	0.0

Notes:
 The 1988, 1989, and 1991 sampling events were conducted by Groundwater Technology, Inc.
 The 2004 and 2006 sampling events were conducted by PES Environmental.
 NS = Not sampled
 NA = Not analyzed for this constituent
 All concentrations shown in µg/L.

APPENDIX B

Groundwater Monitoring Field Data Sheets

WELL GAUGING DATA

Project # 120329-PC1

Date 8/29/17

Client Stellar

Site 65th & Bay St., Emeryville

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-3	0831	2	S	-			** 8.21	-		
MW-4	0753	2					7.01	24.86		
MW-5	0757	2					9.19	24.77		
MW-6	0800	2					5.05	23.28		
MW-7	0839	3/4					10.12	19.82		
MW-8	0842	3/4		9.01			9.29	-		
MW-9	0814	3/4					9.54	19.62		
MW-10	0815	3/4	S/O	3.75 6.75			7.89 6.89	-		
MW-11	0835	3/4	0				10.18	19.69		
MW-12	0828	3/4					7.79	18.94		
MW-13	0825	3/4		* 9.02			* 10.09	-		
MW-14	0821	3/4		7.61			7.71	-		
MW-15	0809	3/4					8.55	18.83		
MW-16	0813	3/4					9.38	19.04		
MW-17	0800	3/4					8.17	19.54		
MW-18	0823	3/4					8.56	19.57		
MW-E	0826	2					9.86	45.74		↓

*SPH very thick - not possible to exactly measure levels

WELL GAUGING DATA

Project # 120329-PC1

Date 3/29/12

Client Stellar

Site 65th & Bay St., Emeryville

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
RW-1	0845	1.0	S/O				9.33	37.39	TOB	
↳ * Probe coated when pulled out of well - no SPH tone on instrument										

WELLHEAD INSPECTION CHECKLIST

Date 3/29/12 Client stellar

Site Address 65th & Bay St., Emeryville

Job Number 120329-PC1 Technician P. Cornish, B. Powell

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-3							X	
MW-4							X	
MW-5							X	
MW-6							X	
MW-7							X	
MW-8	X							
MW-9							X	
MW-10								
MW-11	X							
MW-12	X							
MW-13	X							
MW-14	X							
MW-15							X	
MW-16	X							
MW-17							X	
18							X	

NOTES: MW-7 1/2 bolts missing, MW-3 no lock, MW-4 no lock,
 MW-5 no lock, MW-6: no lock, MW-9 missing 2 1/2 bolts MW-E:
 missing 2 1/2 bolts, no lock MW-17
 MW-15 2 1/2 bolts missing

WELLHEAD INSPECTION CHECKLIST

Date 3/29/12 Client Stellar

Site Address 65th of Bay St., Emeryville

Job Number 120379-PC1 Technician P. Cowden

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-E							X	
RW-1							X	

NOTES: RW-1 1/2 tabs stripped MW-E 2 1/2 bolts missing

WELL MONITORING DATA SHEET

Project #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: PC / <u>BP</u>	Date: 3/29/12
Well I.D.: MW-3	Well Diameter: <u>2</u> 3 4 6 8 _____
Total Well Depth (TD): <u>24.66</u>	Depth to Water (DTW): <u>8.17</u>
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>11.46</u>	

Purge Method: Bailer	Watterra	Sampling Method: Bailer
Disposable Bailer	Peristaltic	<u>Disposable Bailer</u>
Positive Air Displacement	Extraction Pump	Extraction Port
Electric Submersible	Other _____	Dedicated Tubing
Other: _____		

$\frac{2.6 \text{ (Gals.)} \times 3}{1 \text{ Case Volume Specified Volumes}} = 7.9 \text{ Gals. Calculated Volume}$	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1522	17.9	6.97	1224	41	2.6	
1525	18.0	6.80	1321	33	5.2	
1529	18.2	6.77	1354	29	7.9	

* Thick SPH detected on interface probe, no product detected by probe

Did well dewater?	Yes	<input checked="" type="radio"/> No	Gallons actually evacuated: <u>7.9</u>
Sampling Date: 3/29/12	Sampling Time: <u>1535</u>	Depth to Water: <u>11.32</u>	
Sample I.D.: MW-3	Laboratory: Curtis & Tompkins		
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome			
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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: PC / BP	Date: 3/29/12
Well I.D.: MW-4	Well Diameter: 2 3 4 6 8
Total Well Depth (TD): 29.86	Depth to Water (DTW): 7.01
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]: 10.58	

Purge Method: Bailer Waterra Sampling Method: Bailer

~~Disposable Bailer~~ Peristaltic ~~Disposable Bailer~~

Positive Air Displacement Extraction Pump Extraction Port

Electric Submersible Other _____ Dedicated Tubing

Other: _____

$2.9 \text{ (Gals.)} \times 3 = 8.7 \text{ Gals.}$ 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0926	14.8	6.69	902	56	3.0	
0931	14.7	6.74	869	73	6.0	
0936	14.7	6.80	863	69	9.0	

Did well dewater? Yes **No** Gallons actually evacuated: 9.0

Sampling Date: 3/29/12 Sampling Time: 0940 Depth to Water: 7.10

Sample I.D.: MW-4 Laboratory: Curtis & Tompkins

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome

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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: PC / <u>BP</u>	Date: 3/29/12
Well I.D.: MW-5	Well Diameter: <u>2</u> 3 4 6 8 _____
Total Well Depth (TD): 24.77	Depth to Water (DTW): 9.19
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 12.30	

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

2.5 (Gals.) X 3 = 7.5 Gals. 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </table>	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
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 <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
0957	16.5	7.24	2359	>1000	2.5	slight odor
1002	17.2	7.43	2331	>1000	5.0	slight odor
1016	17.2 17.2	7.49	2351	>1000	7.5	slight odor
Net at 80%						

Did well dewater? Yes No Gallons actually evacuated: 7.5

Sampling Date: 3/29/12 Sampling Time: 1330 Depth to Water: 9.37

Sample I.D.: MW-5 Laboratory: Curtis & Tompkins

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome

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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: PC / <u>BP</u>	Date: 3/29/12
Well I.D.: MW-6	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth (TD): 23.28	Depth to Water (DTW): 5.65
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.17	

Purge Method: Bailer	Watterra	Sampling Method: Bailer
<u>Disposable Bailer</u>	Peristaltic	<u>Disposable Bailer</u>
Positive Air Displacement	Extraction Pump	Extraction Port
Electric Submersible	Other _____	Dedicated Tubing
Other: _____		

$\frac{2.8 \text{ (Gals.)} \times 3 \text{ Specified Volumes}}{1 \text{ Case Volume}} = 8.4 \text{ Gals. Calculated Volume}$	<table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </table>	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
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
1028	13.8	11.43	1317	34	2.8	
1033	13.7	11.47	1352	24	5.6	
1037	13.7	11.49	1340	30	8.4	

Did well dewater? Yes <input type="radio"/> No <input checked="" type="radio"/>	Gallons actually evacuated: 8.4	
Sampling Date: 3/29/12	Sampling Time: 1040	Depth to Water: 5.84
Sample I.D.: MW-6	Laboratory: Curtis & Tompkins	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome		
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	

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

✓ high pH w/ 2nd Myron L Ultrameter

WELL MONITORING DATA SHEET

Project #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: <u>PC</u> / BP	Date: 3/29/12
Well I.D.: MW-7	Well Diameter: 2 3 4 6 8 <u>3/4"</u>
Total Well Depth (TD): <u>19.82</u>	Depth to Water (DTW): <u>10.12</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>12.06</u>	

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

0.2 (Gals.) X 3 = 0.6 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
0945	14.7	8.04	11.32	735	0.2	
0950	14.7	8.23	10.70	247	0.4	
0956	14.7	8.16	10.15	118	0.6	

Did well dewater? Yes No Gallons actually evacuated: 0.6

Sampling Date: 3/29/12 Sampling Time: 1008 Depth to Water: 12.05

Sample I.D.: MW-7 Laboratory: Curtis & Tompkins

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome

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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: <u>PC</u> BP	Date: 3/29/12
Well I.D.: MW-8	Well Diameter: 2 3 4 6 8 <u>3/4</u>
Total Well Depth (TD): -	Depth to Water (DTW): 9.29
Depth to Free Product: 9.01	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

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

_____ (Gals.) X _____ = _____ Gals. 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1312						start purge @ 400ml/min
1320						sample well
						unable to measure SPH/WL during purge

Did well dewater? Yes No	Gallons actually evacuated: 2.4 L	
Sampling Date: 3/29/12	Sampling Time: 1320	Depth to Water: 9.39
Sample I.D.: MW-8	Laboratory: Curtis & Tompkins	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome		
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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: PC / <u>BP</u>	Date: 3 / / 12
Well I.D.: MW- 9	Well Diameter: 2 3 4 6 8 <u>3/4"</u>
Total Well Depth (TD): <u>19.62</u>	Depth to Water (DTW): <u>9.54</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>11.56</u>	

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Waterra <u>Peristaltic</u> Extraction Pump Other _____	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other: <u>new tubing</u>
--	---	---

0.2 (Gals.) X 3 = 0.6 Gals.
 I 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 μ S)	Turbidity (NTUs)	Gals. Removed	Observations
1113	14.6	9.57	2274	298	0.2	
1114	14.8	9.61	2819	469	0.4	
1115	14.8	9.62	2901	475	0.6	

Did well dewater? Yes No Gallons actually evacuated: 0.6

Sampling Date: 3/29/12 Sampling Time: 1120 Depth to Water: 11.47

Sample I.D.: MW- 9 Laboratory: Curtis & Tompkins

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome

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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: PC / <u>BP</u>	Date: 3/29/12
Well I.D.: MW-10	Well Diameter: 2 3 4 6 8 _____
Total Well Depth (TD): _____	Depth to Water (DTW): 7.89
Depth to Free Product: 7.75	Thickness of Free Product (feet): 0.14
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: _____	

Purge Method: Bailer Waterra Sampling Method: Bailer
 Disposable Bailer Peristaltic Disposable Bailer
 Positive Air Displacement Extraction Pump Extraction Port
 Electric Submersible Other _____ Dedicated Tubing
 Other: new tubing

$(\text{Gals.}) \times \frac{\text{Specified Volumes}}{\text{Calculated Volume}} = \text{Gals.}$	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or <u>µS</u>)	Turbidity (NTUs)	Gals. Removed	Observations
1458	start	purge	@ 450	ml/min		odor
1504	stop	purge				

* Unable to gauge w/ interface probe during purge, due to well diameter. diameter: 50

Did well dewater? Yes No Gallons actually evacuated: _____

Sampling Date: 3/29/12 Sampling Time: 1510 Depth to ^{Product} Water: 7.89

Sample I.D.: MW-10 Laboratory: Curtis & Tompkins

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome

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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: <u>PC</u> / BP	Date: 3/29/12
Well I.D.: MW-11	Well Diameter: 2 3 4 6 8 <u>3/4"</u>
Total Well Depth (TD): <u>19.69</u>	Depth to Water (DTW): <u>10.18</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>17.08</u>	

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Waterra <input checked="" type="checkbox"/> Peristaltic Extraction Pump Other _____	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing <input checked="" type="checkbox"/> Other: <u>New Tubing</u>
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0.2 (Gals.) X 3 = 0.6 Gals. 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
1025	14.4	7.52	1822	46	0.2	
1030	14.4	7.47	1717	76	0.4	
1034	14.4	7.52	1710	71	0.6	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>0.6</u>	
Sampling Date: 3/29/12	Sampling Time: <u>1040</u>	Depth to Water: <u>10.19</u>
Sample I.D.: MW-11	Laboratory: Curtis & Tompkins	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome		
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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: <u>PC</u> / BP	Date: 3/29/12
Well I.D.: MW-12	Well Diameter: 2 3 4 6 8 <u>3/4</u>
Total Well Depth (TD): 18.94	Depth to Water (DTW): 7.79
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.02	

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Waterra <input checked="" type="checkbox"/> Peristaltic Extraction Pump Other _____	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing <input checked="" type="checkbox"/> Other: <u>New Tubing</u>
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$0.2 \text{ (Gals.)} \times 3 = 0.6 \text{ Gals.}$ I Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse; font-size: small;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
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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
1102	13.8	7.35	923.7	14	0.2	
1106	13.9	7.24	913.7	6	0.4	
1110	13.9	7.23	901.5	4	0.6	

Did well dewater? Yes <input type="checkbox"/> No	Gallons actually evacuated: 0.6	
Sampling Date: 3/29/12	Sampling Time: 1116	Depth to Water: 7.82
Sample I.D.: MW-12	Laboratory: Curtis & Tompkins	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5)	Other: Diss. Chrome & Hex Chrome	
EB I.D. (if applicable): @	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:
O.R.P. (if req'd): Pre-purge:	mV	Post-purge:
		mg/L
		mV

WELL MONITORING DATA SHEET

Project #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: PC / BP	Date: 3/29/12
Well I.D.: MW-13	Well Diameter: 2 3 4 6 8 <u>3/4"</u>
Total Well Depth (TD): <u>19.30</u>	Depth to Water (DTW): <u>10.09</u>
Depth to Free Product: <u>9.02</u>	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Waterra <input checked="" type="checkbox"/> Peristaltic Extraction Pump Other _____	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing <input checked="" type="checkbox"/> Other: <u>New Tubing</u>
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_____ (Gals.) X _____ = _____ Gals. 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </table>	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
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1"	0.04	4"	0.65														
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3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1603	start					purge @ 400 ml/min
1609	stop					purge DTP/DTW: 19.10
						waited for well to recharge
1645						DTW/DTP 19.29
						unable to measure DTW/SPH during purge

Did well dewater? Yes No	Gallons actually evacuated: <u>2.4 L</u>	
Sampling Date: <u>3/29/12</u>	Sampling Time: <u>1645</u>	Depth to Water:
Sample I.D.: <u>MW-13</u>	Laboratory: <u>Curtis & Tompkins</u>	
Analyzed for: TPH-G BTEX MTBE TPH-D	Oxygenates (5)	Other: Diss. Chrome & Hex Chrome
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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: <u>PC</u> / BP	Date: 3/29/12
Well I.D.: MW-14	Well Diameter: 2 3 4 6 8 <u>3 1/4"</u>
Total Well Depth (TD):	Depth to Water (DTW): 7.61 ^{RE} 7.71
Depth to Free Product: 7.71 7.61	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

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

_____ (Gals.) X _____ = _____ Gals. 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </table>	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	
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
1400						start Purge @ 400 ml/min
1406						stop Purge
						unable to measure SPH/dL during purge

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: <u>2.4 L</u>	
Sampling Date: 3/29/12	Sampling Time: <u>1420</u>	Depth to Water: <u>7.69</u>
Sample I.D.: MW-14	Laboratory: Curtis & Tompkins	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome		
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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: PC / BP	Date: 3/29/12
Well I.D.: MW- 16	Well Diameter: 2 3 4 6 8 3/4"
Total Well Depth (TD): 1904	Depth to Water (DTW): 9.38
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]: 11.31	

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: **New Tubing**

0.2 (Gals.) X 3 = 0.6 Gals. 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1309	14.6	10.12	4105	475	0.2	
1310	14.6	10.14	4176	352	0.4	
1311	14.6	10.16	4181	439	0.6	

Did well dewater? Yes No Gallons actually evacuated: 0.6

Sampling Date: 3/29/12 Sampling Time: 1315 Depth to Water: 9.93

Sample I.D.: MW- 16 Laboratory: Curtis & Tompkins

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome

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

Blaine Tech Services, Inc. 1680 Rogers Ave., San Jose, CA 95112 (408) 573-0555

✓✓ high pH w/ 2nd Myron L Ultrameter

WELL MONITORING DATA SHEET

Project #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: <u>PC</u> / <u>BP</u>	Date: 3/29/12
Well I.D.: MW-17	Well Diameter: 2 3 4 6 8 <u>3/4"</u>
Total Well Depth (TD): 19.50	Depth to Water (DTW): 8.17
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 10.44	

Purge Method: Bailer Disposable Bailer Positive Air Displacement Electric Submersible	Waterra <u>Peristaltic</u> Extraction Pump Other _____	Sampling Method: Bailer Disposable Bailer Extraction Port Dedicated Tubing Other: <u>New tubing</u>
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0.3 (Gals.) X 3 = 0.9 Gals. 1 Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or μ S)	Turbidity (NTUs)	Gals. Removed	Observations
1051	14.4	8.18	917	38	0.3	
1052	14.6	8.14	883	46	0.6	
1054	14.7	8.06	868	51	0.9	

Did well dewater? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Gallons actually evacuated: 0.9	
Sampling Date: 3 / / 12	Sampling Time: 1100	Depth to Water: 8.32
Sample I.D.: MW-17	Laboratory: Curtis & Tompkins	
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome		
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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: <u>PC</u> / BP	Date: 3/29/12
Well I.D.: MW-18	Well Diameter: 2 3 4 6 8 <u>3/4"</u>
Total Well Depth (TD): <u>19.57</u>	Depth to Water (DTW): <u>8.56</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>10.76</u>	

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

0.2 (Gals.) X 3 = 0.6 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
1220	14.2	6.97	6704	854	0.2	
1226	14.3	7.02	7081	726	0.4	
1231	14.3	7.05	7234	>1000	0.6	

Did well dewater? Yes No Gallons actually evacuated: 0.6

Sampling Date: 3/29/12 Sampling Time: 1238 Depth to Water: 10.62

Sample I.D.: MW-18 Laboratory: Curtis & Tompkins

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome

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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: <u>PC</u> / BP	Date: 3/29/12
Well I.D.: <u>RW-1</u>	Well Diameter: 2 3 4 6 8 <u>10</u> "
Total Well Depth (TD): <u>37.39</u>	Depth to Water (DTW): <u>9.35</u>
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]:	

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

_____ (Gals.) X _____ = _____ Gals. I Case Volume Specified Volumes Calculated Volume	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>Well Diameter</th> <th>Multiplier</th> <th>Well Diameter</th> <th>Multiplier</th> </tr> </thead> <tbody> <tr> <td>1"</td> <td>0.04</td> <td>4"</td> <td>0.65</td> </tr> <tr> <td>2"</td> <td>0.16</td> <td>6"</td> <td>1.47</td> </tr> <tr> <td>3"</td> <td>0.37</td> <td>Other</td> <td>radius² * 0.163</td> </tr> </tbody> </table>	Well Diameter	Multiplier	Well Diameter	Multiplier	1"	0.04	4"	0.65	2"	0.16	6"	1.47	3"	0.37	Other	radius ² * 0.163
Well Diameter	Multiplier	Well Diameter	Multiplier														
1"	0.04	4"	0.65														
2"	0.16	6"	1.47														
3"	0.37	Other	radius ² * 0.163														

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	(FL) DTW Observations
<u>1434:50</u>			<u>start purge @ 400ml/min</u>		<u>1507</u>	<u>9.37</u>
<u>1513</u>			<u>stop purge</u>		<u>1513</u>	<u>9.40</u>

Did well dewater? Yes No	Gallons actually evacuated: <u>2.4 L</u>
Sampling Date: <u>3/29/12</u>	Sampling Time: <u>1520</u> Depth to Water: <u>9.42</u>
Sample I.D.: <u>RW-1</u>	Laboratory: Curtis & Tompkins
Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5)	Other: Diss. Chrome & Hex Chrome
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 #: 120329-PC1	Client: Stellar Environmental Solutions
Sampler: PC / <u>BP</u>	Date: 3/29/12
Well I.D.: MW-E	Well Diameter: <u>2</u> 3 4 6 8 _____
Total Well Depth (TD): <u>45.74</u>	Depth to Water (DTW): <u>9.86</u>
Depth to Free Product: _____	Thickness of Free Product (feet): _____
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): YSI HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: <u>17.03</u>	

Purge Method: Bailer Water Sampling Method: Bailer

~~Disposable Bailer~~ Peristaltic ~~Disposable Bailer~~ 60

Positive Air Displacement Extraction Pump

Electric Submersible Other _____ Dedicated Tubing

Other: New tubing

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

5.7 (Gals.) X 3 = 17.1 Gals.

1 Case Volume Specified Volumes Calculated Volume

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1404	14.9	8.18	3035	285	5.7	odor
1418	15.1	7.90	3188	322	11.4	↓ NOT AT 80%
1424	15.1	7.85	3220	366	17.1	

Did well dewater? Yes No Gallons actually evacuated: 17.1

Sampling Date: 3/29/12 Sampling Time: 1445 Depth to Water: 16.97

Sample I.D.: MW-E Laboratory: Curtis & Tompkins

Analyzed for: TPH-G BTEX MTBE TPH-D Oxygenates (5) Other: Diss. Chrome & Hex Chrome

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

APPENDIX C

Analytical Laboratory Report and Chain-of-Custody Record



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 235257
ANALYTICAL REPORT

Stellar Environmental Solutions
2198 6th Street
Berkeley, CA 94710

Project : 2007-65
Location : Bay Center Apartment
Level : II

Table with 2 columns: Sample ID and Lab ID. Rows include MW-3 through MW-18, MW-E, and RW-1 with corresponding Lab IDs from 235257-001 to 235257-018.

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 signature. 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: [Handwritten Signature]
Project Manager

Date: 04/06/2012

CASE NARRATIVE

Laboratory number: 235257
Client: Stellar Environmental Solutions
Project: 2007-65
Location: Bay Center Apartment
Request Date: 03/30/12
Samples Received: 03/30/12

This data package contains sample and QC results for eighteen water samples, requested for the above referenced project on 03/30/12. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):

MW-8 (lab # 235257-006) and MW-18 (lab # 235257-016) had pH greater than 2. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):

MW-13 (lab # 235257-011) was diluted due to the dark and viscous nature of the sample extract. No other analytical problems were encountered.

Chain of Custody Record 235257

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

Method of Shipment HAND DELIVERY or LAB COURIER

Lab job no. _____

Date _____

Page 1 of 2

Project Owner _____
 Site Address 6400 CHRISTIE AVE
BERKELEY, CA

Airbill No. _____
 Cooler No. _____

Project Manager R. MAK DVI

Telephone No. (510) 644-3123

Project Name BAY CENTER APARTMENTS

Fax No. (510) 644-3859

Project Number 2007-65

Samplers: (Signature) POTW

Filtered	No. of Containers	Analysis Required												Remarks	
		TEH-D (8015M)	TPH-G (8015M)	BTEX + MTBE											

	Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		N	G	X	X	X								
							Cooler	Chemical													
1	MW-3	153B	3/29	1530	W	40ml VOA/BOD canister	X	HCl/NP													
2	MW-4	180240		0940						6	X	X	X								
3	MW-5			1330						6	X	X	X								
4	MW-6			1040						6	X	X	X								
5	MW-7			1008						6	X	X	X								
6	MW-8			1320						6	X	X	X								
7	MW-9			1120						6	X	X	X								
8	MW-10			1510						6	X	X	X								
9	MW-11			1040						6	X	X	X								
10	MW-12			1116						6	X	X	X								
11	MW-13			1645						6	X	X	X								
12	MW-14			1420						6	X	X	X								

Relinquished by: Signature <u>POTW</u> Printed <u>Pete Collins</u> Company <u>BTS</u>	Date <u>3/29/12</u>	Received by: Signature <u>[Signature]</u> Printed <u>Ben Panell</u> Company <u>BTS</u>	Date <u>3/29/12</u>	Relinquished by: Signature <u>[Signature]</u> Printed <u>Michael Nimokala</u> Company <u>BTS</u>	Date <u>3/29/12</u>	Received by: Signature <u>[Signature]</u> Printed <u>Ricky Grams</u> Company <u>CST</u>	Date <u>3/30/12</u>		
Turnaround Time: <u>STANDARD</u>		Relinquished by: Signature <u>[Signature]</u> Printed <u>Ricky Grams</u> Company <u>CST</u>		Date <u>3/30/12</u>		Received by: Signature <u>[Signature]</u> Printed <u>ISABELLE CHOY</u> Company <u>CST</u>		Date <u>3/30/12</u>	
Comments: <u>EDF REQUIRED</u> <u>GLOBAL ID # SLT2005561</u>								Time <u>1630</u>	Time <u>1630</u>

Stellar Environmental Solutions

2198 Sixth Street #201, Berkeley, CA 94710

intact cold RC

3 of 6

Chain of Custody Record

235257

Lab job no. _____
 Date _____
 Page 2 of 2

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

Method of Shipment HAND DELIVERY or LAB COURIER

Project Owner _____
 Site Address 6400 CHRISTIE AVE.
BERKELEY, CA

Shipment No. _____
 Airbill No. _____
 Cooler No. _____
 Project Manager R. MAKOWI
 Telephone No. (510) 644-3123

Project Name RAY CENTER APARTMENT
 Project Number 2007-65

Fax No. (510) 644-3859
 Samplers: (Signature) [Signature]

Field Sample Number	Location/Depth	Date	Time	Sample Type	Type/Size of Container	Preservation		Analysis Required										Remarks					
						Cooler	Chemical	TEH-D (BOISM)	TPH-G (BOISM)	BTEX + MTBE													
13	MW-15	3/29	1458	W	40ml VOA/samples	X	HCl/NP	N	C	X	X	X											
14	MW-16		1315							6	X	X	X										
15	MW-17		1100							6	X	X	X										
16	MW-18		1238							6	X	X	X										
17	MW-E		1445							6	X	X	X										
18	RW-1		1520							6	X	X	X										

Relinquished by: [Signature]
 Signature _____
 Printed Pete Lavish
 Company BTS

Date 3-29-12
 Received by: [Signature]
 Signature _____
 Printed Ben Farrell
 Company BTS

Date 3-29-12
 Relinquished by: [Signature]
 Signature _____
 Printed Michael Wra bala
 Company BTS

Date 3/30/12
 Received by: [Signature]
 Signature _____
 Printed Ricky Grans
 Company C&T

Date 3/30/12
 Received by: [Signature]
 Signature _____
 Printed Nabele Choi
 Company C&T

Turnaround Time: STANDARD
 Comments: EDF REQUIRED
GLOBAL ID # SLT2005561

Relinquished by: [Signature]
 Signature _____
 Printed Ricky Grans
 Company C&T

Date 3/30/12
 Received by: [Signature]
 Signature _____
 Printed Nabele Choi
 Company C&T

Date 3/30/12
 Received by: [Signature]
 Signature _____
 Printed Nabele Choi
 Company C&T

10-000-00-01

infect cold RC

COOLER RECEIPT CHECKLIST



Curtis & Tompkins, Ltd.

Login # 235257 Date Received 3/30/12 Number of coolers 2
Client STELLAR ENVIRONMENTAL Project 2007-05 BAY CENTER APARTMENT

Date Opened 3/30/12 By (print) I-CH01 (sign) [Signature]
Date Logged in [Signature] By (print) [Signature] (sign) [Signature]

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 [X] 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 [X] Bags [] None
[] Cloth material [] Cardboard [] Styrofoam [] Paper towels

7. Temperature documentation: * Notify PM if temperature exceeds 6°C

Type of ice used: [X] Wet [] Blue/Gel [] None Temp(°C) 5.4, 5.3°C

[X] Samples Received on ice & cold without a temperature blank; temp. taken with IR gun

[] 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 there any missing / extra samples? YES NO

11. Are samples in the appropriate containers for indicated tests? YES NO

12. Are sample labels present, in good condition and complete? YES NO

13. Do the sample labels agree with custody papers? YES NO

14. Was sufficient amount of sample sent for tests requested? YES NO

15. Are the samples appropriately preserved? YES NO N/A

16. Did you check preservatives for all bottles for each sample? YES NO N/A

17. Did you document your preservative check? YES NO N/A

18. Did you change the hold time in LIMS for unpreserved VOAs? YES NO N/A

19. Did you change the hold time in LIMS for preserved terracores? YES NO N/A

20. Are bubbles > 6mm absent in VOA samples? YES (NO) N/A

21. Was the client contacted concerning this sample delivery? YES (NO)
If YES, Who was called? By Date:

COMMENTS

12)-001: NO SAMPLE LABEL PRESENT ON 1 500ML AMBER BOTTLES.
LD CAME IN SAME BAG W/ CONTAINER LABELED "MN-3"

20)-011: 1 of 4 VOAs rec'd w/ bubbles

Curtis & Tompkins Laboratories Analytical Report

Lab #: 235257	Location: Bay Center Apartment
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2007-65	
Matrix: Water	Sampled: 03/29/12
Units: ug/L	Received: 03/30/12

Field ID: MW-3	Diln Fac: 1.000
Type: SAMPLE	Batch#: 185140
Lab ID: 235257-001	Analyzed: 04/02/12

Analyte	Result	RL	Analysis
Gasoline C7-C12	430 Y	50	EPA 8015B
MTBE	2.7	2.0	EPA 8021B
Benzene	3.3	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	2.5 C	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	106	76-121	EPA 8015B
Bromofluorobenzene (PID)	113	70-125	EPA 8021B

Field ID: MW-4	Diln Fac: 1.000
Type: SAMPLE	Batch#: 185140
Lab ID: 235257-002	Analyzed: 04/02/12

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

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	97	76-121	EPA 8015B
Bromofluorobenzene (PID)	108	70-125	EPA 8021B

Field ID: MW-5	Diln Fac: 1.000
Type: SAMPLE	Batch#: 185140
Lab ID: 235257-003	Analyzed: 04/02/12

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

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	99	76-121	EPA 8015B
Bromofluorobenzene (PID)	108	70-125	EPA 8021B

C= Presence confirmed, but RPD between columns exceeds 40%
 Y= Sample exhibits chromatographic pattern which does not resemble standard
 ND= Not Detected
 RL= Reporting Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #: 235257	Location: Bay Center Apartment
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2007-65	
Matrix: Water	Sampled: 03/29/12
Units: ug/L	Received: 03/30/12

Field ID: MW-6	Diln Fac: 1.000
Type: SAMPLE	Batch#: 185140
Lab ID: 235257-004	Analyzed: 04/02/12

Analyte	Result	RL	Analysis
Gasoline C7-C12	ND	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	0.82	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	96	76-121	EPA 8015B
Bromofluorobenzene (PID)	105	70-125	EPA 8021B

Field ID: MW-7	Lab ID: 235257-005
Type: SAMPLE	

Analyte	Result	RL	Diln Fac	Batch#	Analyzed	Analysis
Gasoline C7-C12	740	500	10.00	185194	04/04/12	EPA 8015B
MTBE	ND	2.0	1.000	185140	04/03/12	EPA 8021B
Benzene	220	5.0	10.00	185194	04/04/12	EPA 8021B
Toluene	150	0.50	1.000	185140	04/03/12	EPA 8021B
Ethylbenzene	14	5.0	10.00	185194	04/04/12	EPA 8021B
m,p-Xylenes	140	0.50	1.000	185140	04/03/12	EPA 8021B
o-Xylene	32	0.50	1.000	185140	04/03/12	EPA 8021B

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed	Analysis
Bromofluorobenzene (FID)	93	76-121	10.00	185194	04/04/12	EPA 8015B
Bromofluorobenzene (PID)	116	70-125	1.000	185140	04/03/12	EPA 8021B

Field ID: MW-8	Diln Fac: 5.000
Type: SAMPLE	Batch#: 185140
Lab ID: 235257-006	Analyzed: 04/02/12

Analyte	Result	RL	Analysis
Gasoline C7-C12	380	250	EPA 8015B
MTBE	ND	10	EPA 8021B
Benzene	100	2.5	EPA 8021B
Toluene	3.0 C	2.5	EPA 8021B
Ethylbenzene	5.9	2.5	EPA 8021B
m,p-Xylenes	20	2.5	EPA 8021B
o-Xylene	5.1 C	2.5	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	92	76-121	EPA 8015B
Bromofluorobenzene (PID)	102	70-125	EPA 8021B

C= Presence confirmed, but RPD between columns exceeds 40%
 Y= Sample exhibits chromatographic pattern which does not resemble standard
 ND= Not Detected
 RL= Reporting Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Sampled:	03/29/12
Units:	ug/L	Received:	03/30/12

Field ID: MW-9 Diln Fac: 1.000
 Type: SAMPLE Batch#: 185140
 Lab ID: 235257-007 Analyzed: 04/02/12

Analyte	Result	RL	Analysis
Gasoline C7-C12	140 Y	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	6.2	0.50	EPA 8021B
Toluene	0.61	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	0.51 C	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	94	76-121	EPA 8015B
Bromofluorobenzene (PID)	103	70-125	EPA 8021B

Field ID: MW-10 Diln Fac: 1.000
 Type: SAMPLE Batch#: 185140
 Lab ID: 235257-008 Analyzed: 04/02/12

Analyte	Result	RL	Analysis
Gasoline C7-C12	2,400 Y	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	240	0.50	EPA 8021B
Toluene	27	0.50	EPA 8021B
Ethylbenzene	10 C	0.50	EPA 8021B
m,p-Xylenes	26	0.50	EPA 8021B
o-Xylene	7.6	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	98	76-121	EPA 8015B
Bromofluorobenzene (PID)	109	70-125	EPA 8021B

Field ID: MW-11 Diln Fac: 1.000
 Type: SAMPLE Batch#: 185140
 Lab ID: 235257-009 Analyzed: 04/02/12

Analyte	Result	RL	Diln Fac	Batch#	Analyzed	Analysis
Gasoline C7-C12	5,700	1,000	20.00	185194	04/03/12	EPA 8015B
MTBE	ND	2.0	1.000	185140	04/02/12	EPA 8021B
Benzene	2,100	10	20.00	185194	04/03/12	EPA 8021B
Toluene	27	10	20.00	185194	04/03/12	EPA 8021B
Ethylbenzene	12 C	0.50	1.000	185140	04/02/12	EPA 8021B
m,p-Xylenes	13	10	20.00	185194	04/03/12	EPA 8021B
o-Xylene	3.7	0.50	1.000	185140	04/02/12	EPA 8021B

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed	Analysis
Bromofluorobenzene (FID)	90	76-121	20.00	185194	04/03/12	EPA 8015B
Bromofluorobenzene (PID)	109	70-125	1.000	185140	04/02/12	EPA 8021B

C= Presence confirmed, but RPD between columns exceeds 40%
 Y= Sample exhibits chromatographic pattern which does not resemble standard
 ND= Not Detected
 RL= Reporting Limit

Curtis & Tompkins Laboratories Analytical Report

Lab #: 235257	Location: Bay Center Apartment
Client: Stellar Environmental Solutions	Prep: EPA 5030B
Project#: 2007-65	
Matrix: Water	Sampled: 03/29/12
Units: ug/L	Received: 03/30/12

Field ID: MW-18 Diln Fac: 1.000
 Type: SAMPLE Batch#: 185140
 Lab ID: 235257-016 Analyzed: 04/03/12

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

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	95	76-121	EPA 8015B
Bromofluorobenzene (PID)	107	70-125	EPA 8021B

Field ID: MW-E Lab ID: 235257-017
 Type: SAMPLE

Analyte	Result	RL	Diln Fac	Batch#	Analyzed	Analysis
Gasoline C7-C12	6,500	1,300	25.00	185194	04/04/12	EPA 8015B
MTBE	ND	2.0	1.000	185140	04/03/12	EPA 8021B
Benzene	2,600	13	25.00	185194	04/04/12	EPA 8021B
Toluene	50	0.50	1.000	185140	04/03/12	EPA 8021B
Ethylbenzene	52	0.50	1.000	185140	04/03/12	EPA 8021B
m,p-Xylenes	63	0.50	1.000	185140	04/03/12	EPA 8021B
o-Xylene	21	0.50	1.000	185140	04/03/12	EPA 8021B

Surrogate	%REC	Limits	Diln Fac	Batch#	Analyzed	Analysis
Bromofluorobenzene (FID)	90	76-121	25.00	185194	04/04/12	EPA 8015B
Bromofluorobenzene (PID)	106	70-125	1.000	185140	04/03/12	EPA 8021B

Field ID: RW-1 Diln Fac: 1.000
 Type: SAMPLE Batch#: 185194
 Lab ID: 235257-018 Analyzed: 04/04/12

Analyte	Result	RL	Analysis
Gasoline C7-C12	520	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	78	0.50	EPA 8021B
Toluene	2.0	0.50	EPA 8021B
Ethylbenzene	2.2	0.50	EPA 8021B
m,p-Xylenes	1.2	0.50	EPA 8021B
o-Xylene	0.93	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	101	76-121	EPA 8015B
Bromofluorobenzene (PID)	108	70-125	EPA 8021B

C= Presence confirmed, but RPD between columns exceeds 40%
 Y= Sample exhibits chromatographic pattern which does not resemble standard
 ND= Not Detected
 RL= Reporting Limit

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC634027	Batch#:	185140
Matrix:	Water	Analyzed:	04/02/12
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	921.8	92	79-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	90	76-121

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	185140
Units:	ug/L	Analyzed:	04/02/12
Diln Fac:	1.000		

Type: BS Lab ID: QC634029

Analyte	Spiked	Result	%REC	Limits
MTBE	10.00	8.510	85	45-159
Benzene	10.00	10.40	104	78-120
Toluene	10.00	9.966	100	80-120
Ethylbenzene	10.00	10.03	100	80-120
m,p-Xylenes	10.00	9.761	98	80-120
o-Xylene	10.00	9.816	98	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	97	70-125

Type: BSD Lab ID: QC634030

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	10.00	8.498	85	45-159	0	70
Benzene	10.00	10.65	107	78-120	2	31
Toluene	10.00	10.04	100	80-120	1	20
Ethylbenzene	10.00	10.18	102	80-120	1	20
m,p-Xylenes	10.00	9.847	98	80-120	1	20
o-Xylene	10.00	10.04	100	80-120	2	20

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	97	70-125

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Field ID:	RW-1	Batch#:	185140
MSS Lab ID:	235257-018	Sampled:	03/29/12
Matrix:	Water	Received:	03/30/12
Units:	ug/L	Analyzed:	04/03/12
Diln Fac:	1.000		

Type: MS Lab ID: QC634031

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	484.3	2,000	2,226	87	68-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	76-121

Type: MSD Lab ID: QC634032

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,205	86	68-120	1	21

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	98	76-121

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC634220	Batch#:	185194
Matrix:	Water	Analyzed:	04/03/12
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	3,000	2,860	95	79-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	97	76-121

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	185194
Units:	ug/L	Analyzed:	04/03/12
Diln Fac:	1.000		

Type: BS Lab ID: QC634221

Analyte	Spiked	Result	%REC	Limits
MTBE	20.00	21.60	108	45-159
Benzene	20.00	22.03	110	78-120
Toluene	20.00	20.90	104	80-120
Ethylbenzene	20.00	21.31	107	80-120
m,p-Xylenes	20.00	20.18	101	80-120
o-Xylene	20.00	20.76	104	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	102	70-125

Type: BSD Lab ID: QC634222

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	22.71	114	45-159	5	70
Benzene	20.00	21.84	109	78-120	1	31
Toluene	20.00	20.82	104	80-120	0	20
Ethylbenzene	20.00	21.42	107	80-120	1	20
m,p-Xylenes	20.00	20.14	101	80-120	0	20
o-Xylene	20.00	20.95	105	80-120	1	20

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	103	70-125

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	185194
MSS Lab ID:	235254-005	Sampled:	03/30/12
Matrix:	Water	Received:	03/30/12
Units:	ug/L	Analyzed:	04/03/12
Diln Fac:	1.000		

Type: MS Lab ID: QC634224

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	112.1	2,000	2,076	98	68-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	102	76-121

Type: MSD Lab ID: QC634225

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,052	97	68-120	1	21

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	99	76-121

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	185239
Units:	ug/L	Analyzed:	04/04/12
Diln Fac:	1.000		

Type: BS Lab ID: QC634400

Analyte	Spiked	Result	%REC	Limits
Benzene	20.00	22.03	110	78-120
Toluene	20.00	20.96	105	80-120
Ethylbenzene	20.00	21.27	106	80-120
m,p-Xylenes	20.00	20.64	103	80-120
o-Xylene	20.00	21.19	106	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	104	70-125

Type: BSD Lab ID: QC634401

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Benzene	20.00	21.73	109	78-120	1	31
Toluene	20.00	20.70	104	80-120	1	20
Ethylbenzene	20.00	20.49	102	80-120	4	20
m,p-Xylenes	20.00	20.73	104	80-120	0	20
o-Xylene	20.00	20.81	104	80-120	2	20

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	103	70-125

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC634402	Batch#:	185239
Matrix:	Water	Analyzed:	04/04/12
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	2,000	1,897	95	79-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	76-121

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	185239
MSS Lab ID:	235281-001	Sampled:	04/02/12
Matrix:	Water	Received:	04/02/12
Units:	ug/L	Analyzed:	04/05/12
Diln Fac:	1.000		

Type: MS Lab ID: QC634404

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	39.80	2,000	1,606	78	68-120

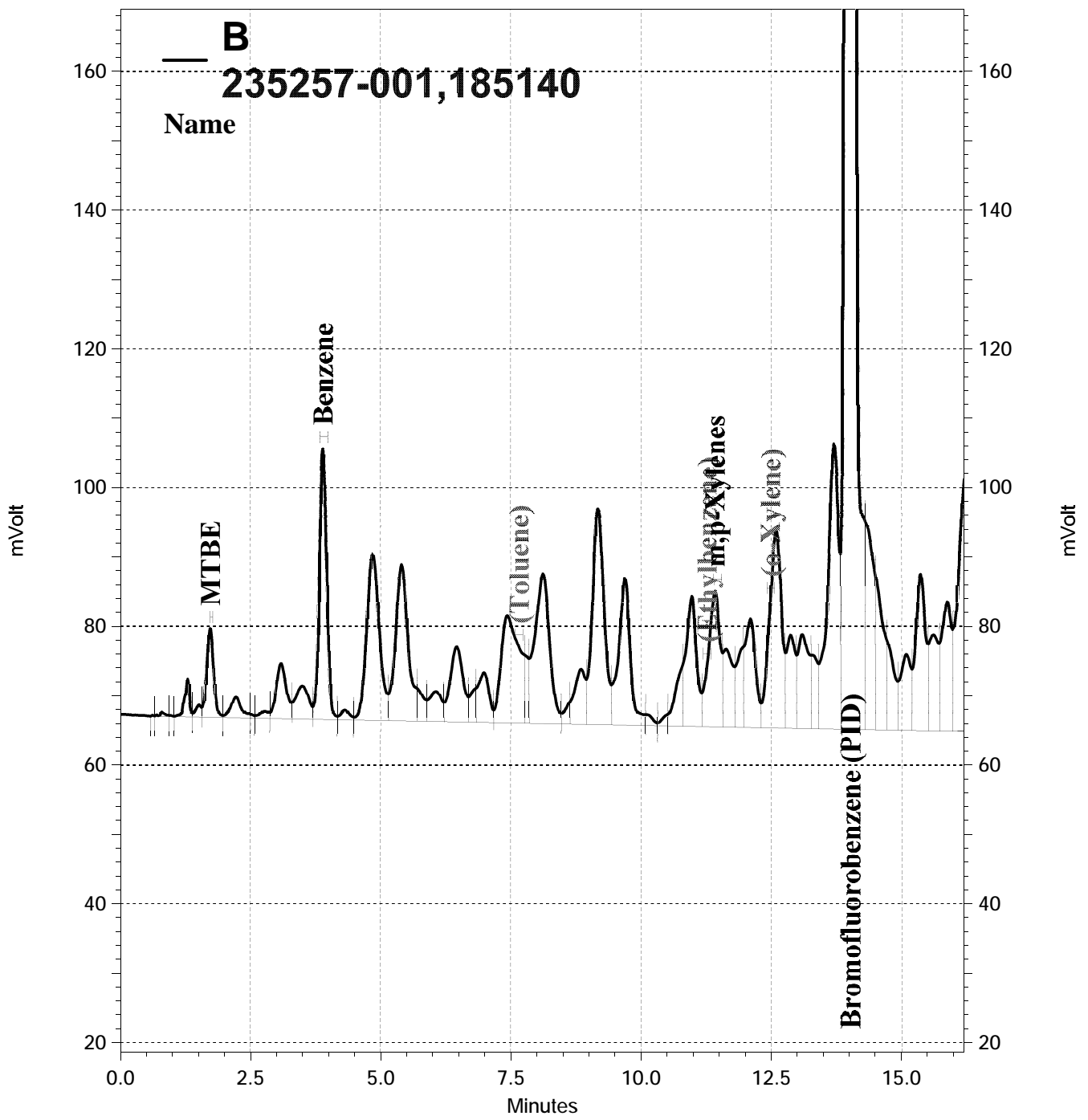
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Bromofluorobenzene (FID)	98	76-121

Type: MSD Lab ID: QC634405

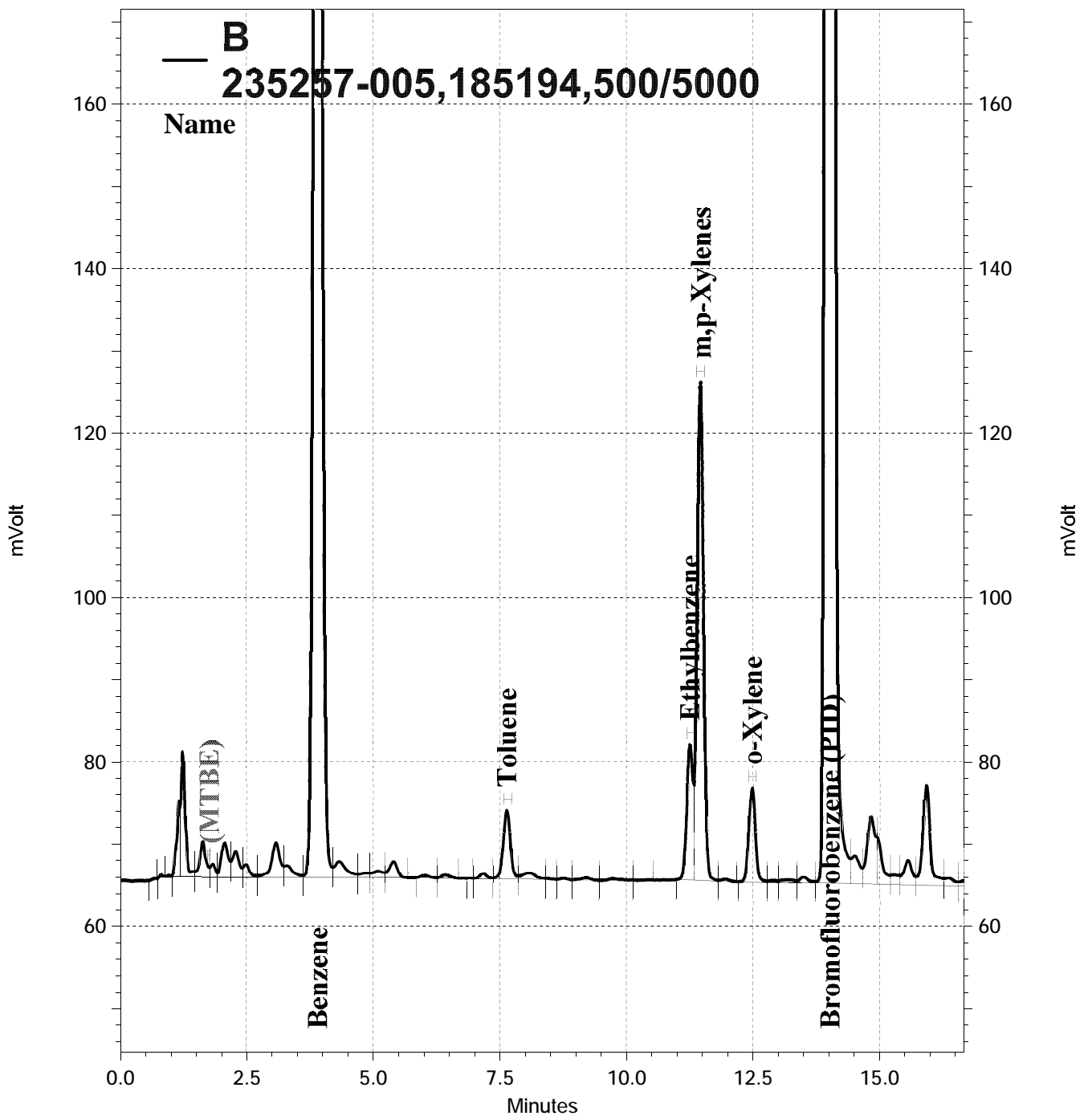
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Gasoline C7-C12	2,000	1,793	88	68-120	11	21

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	96	76-121

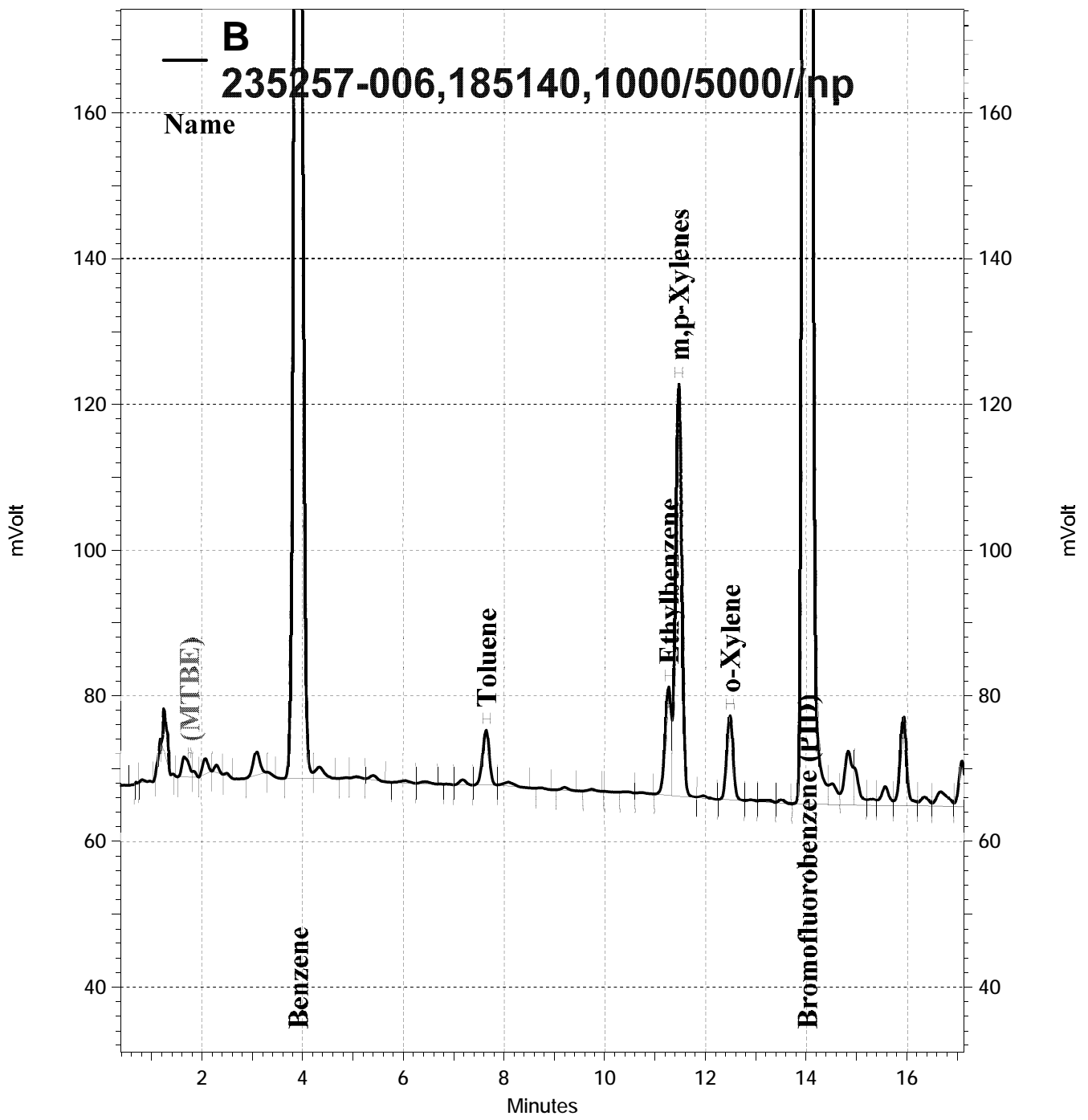
RPD= Relative Percent Difference



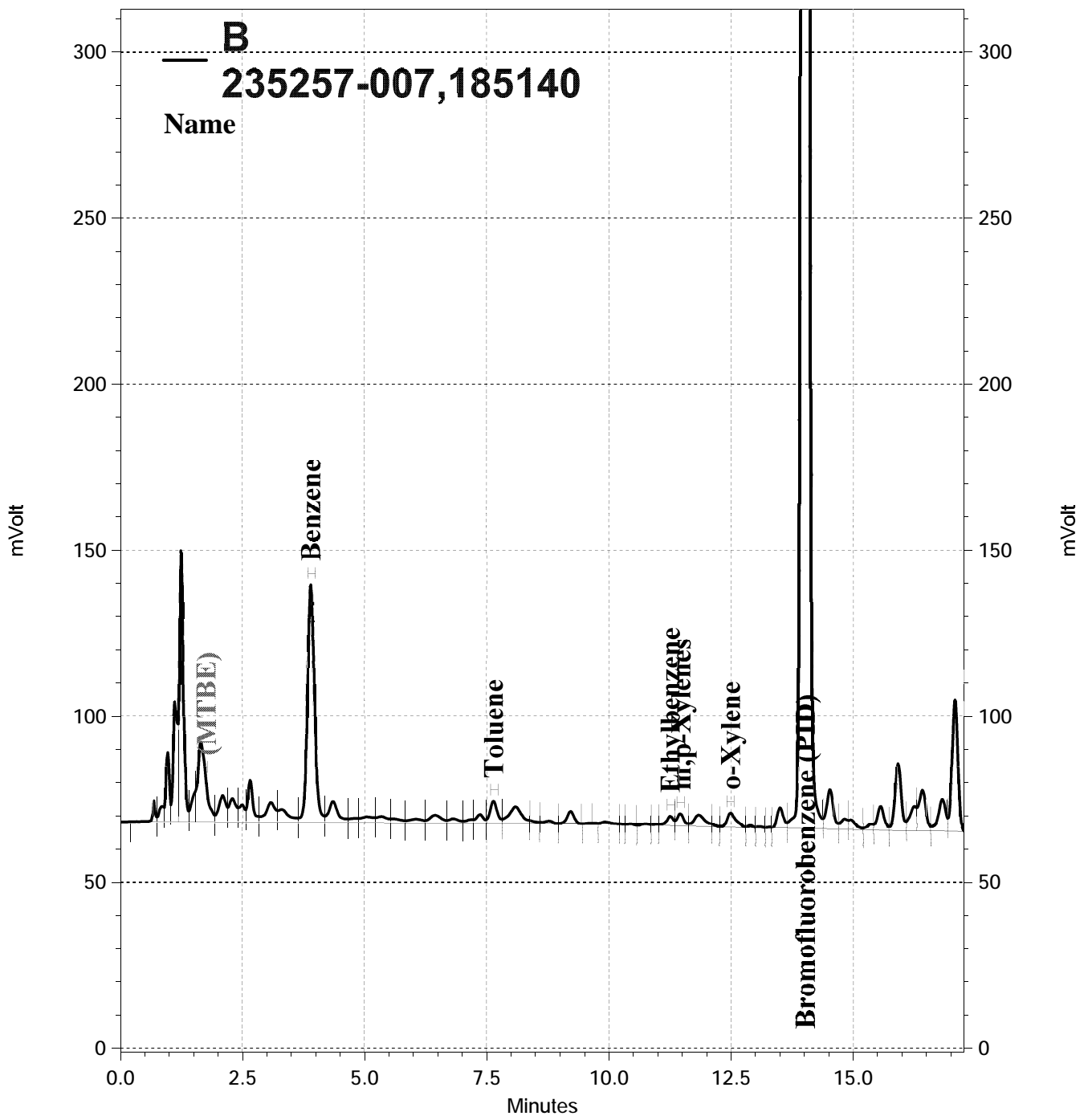
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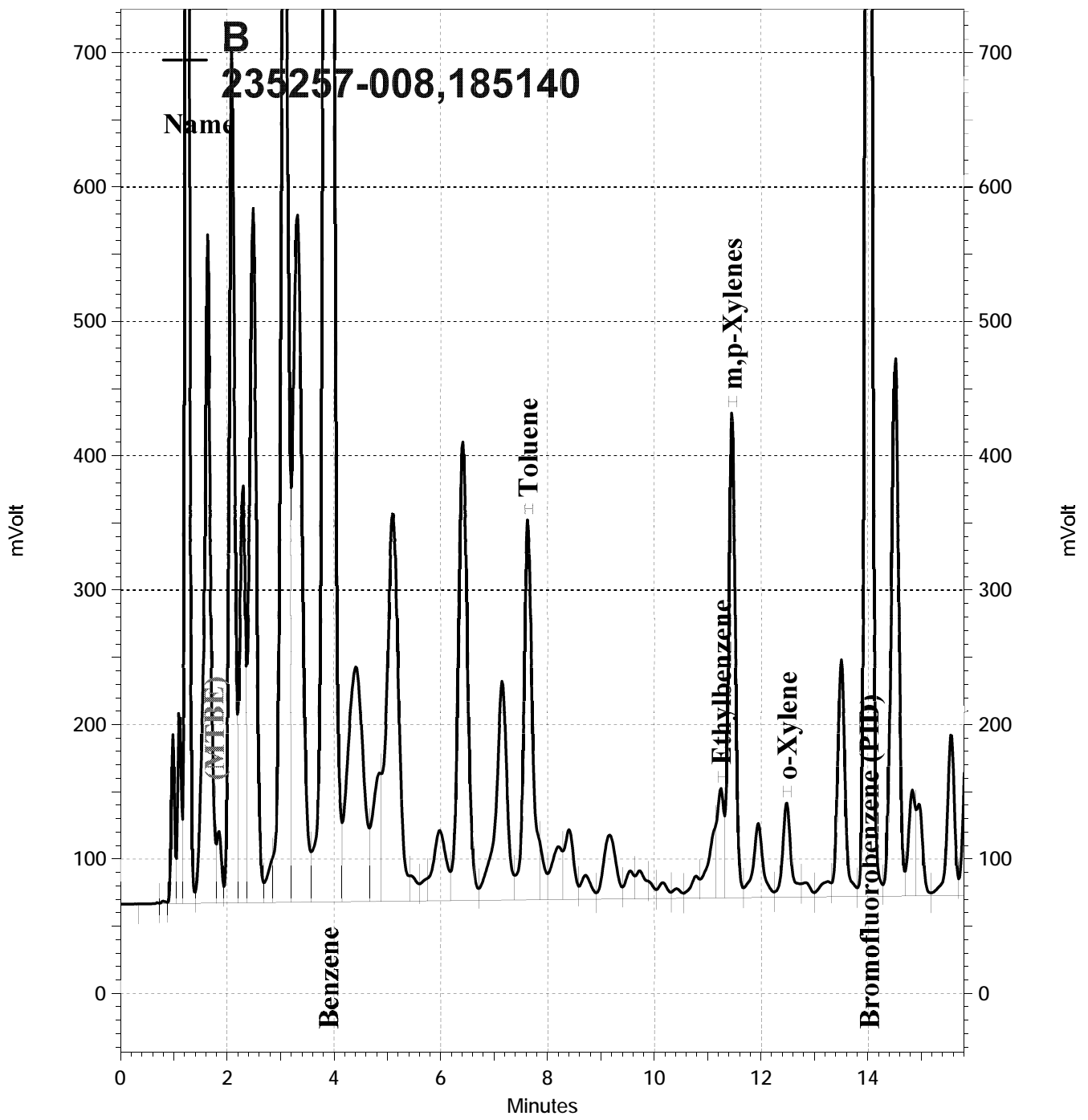
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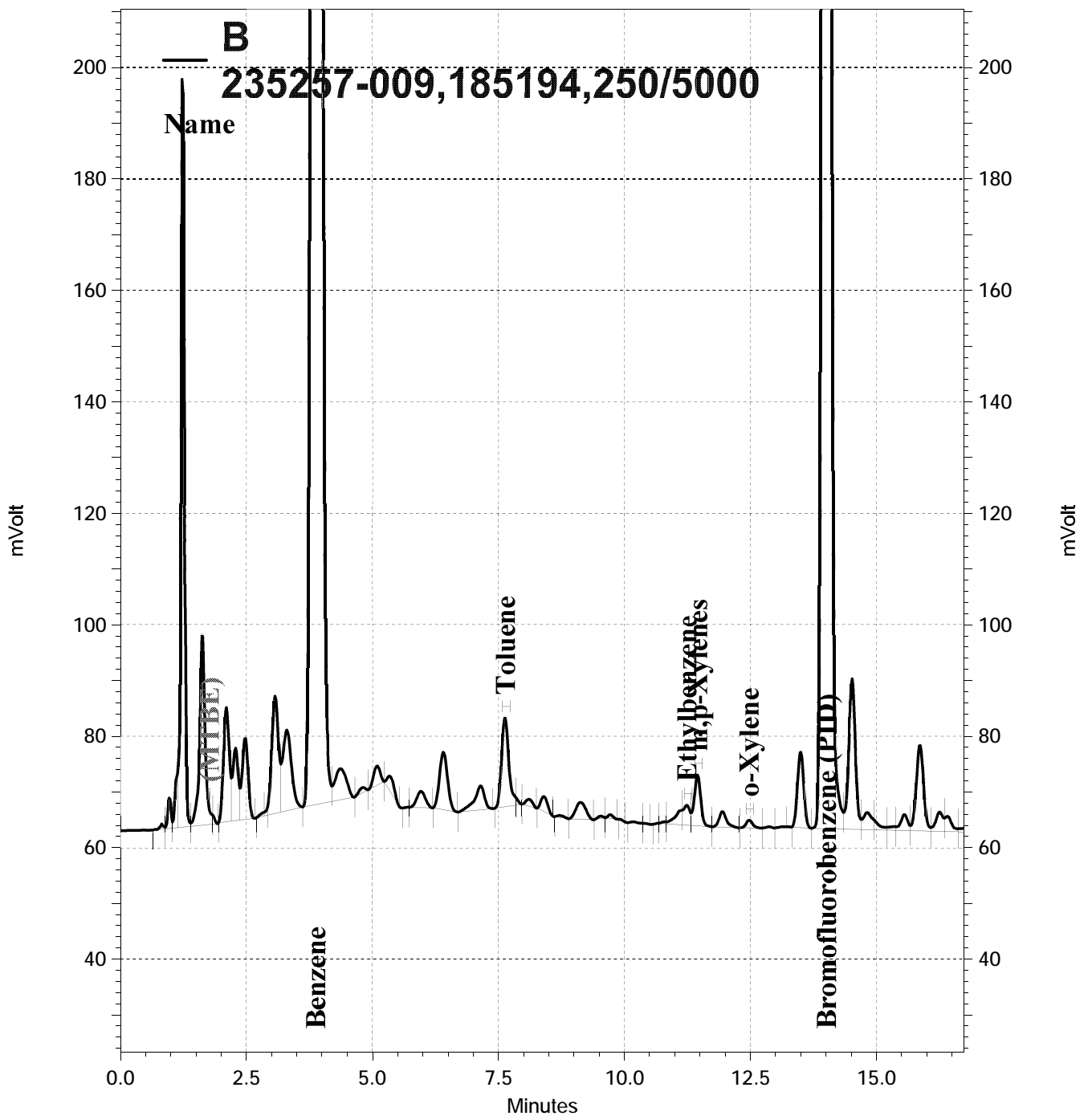
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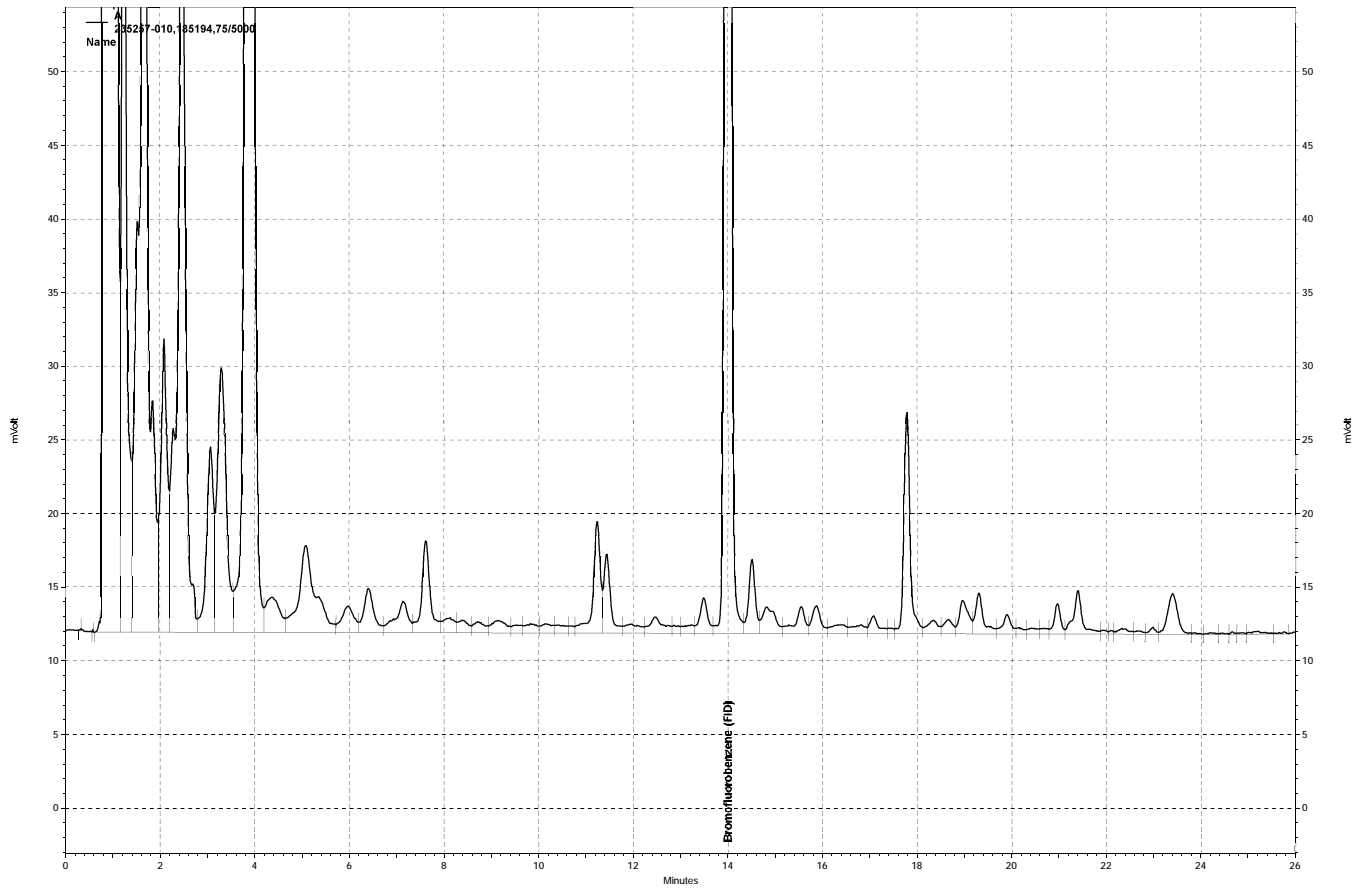
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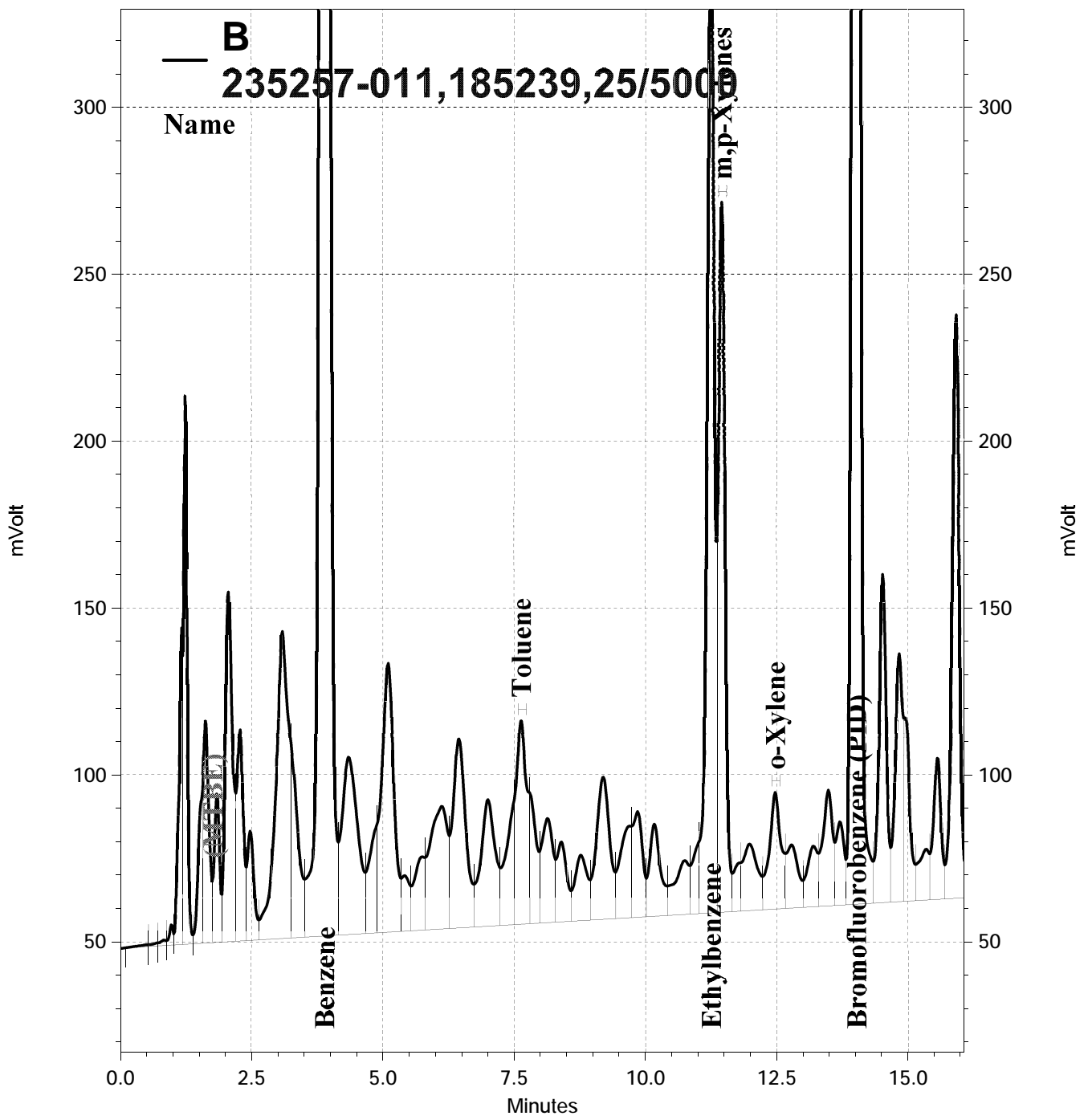
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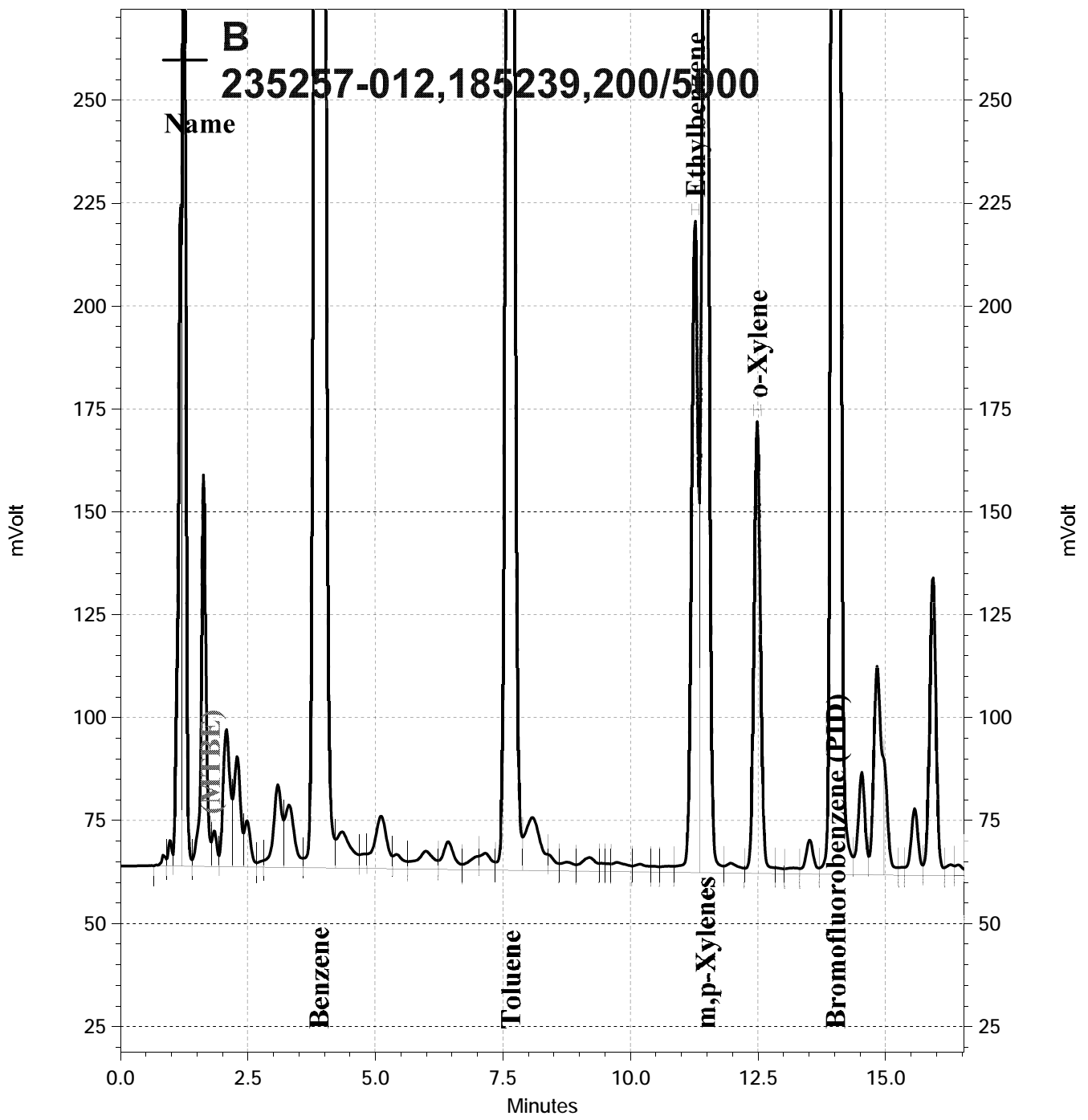
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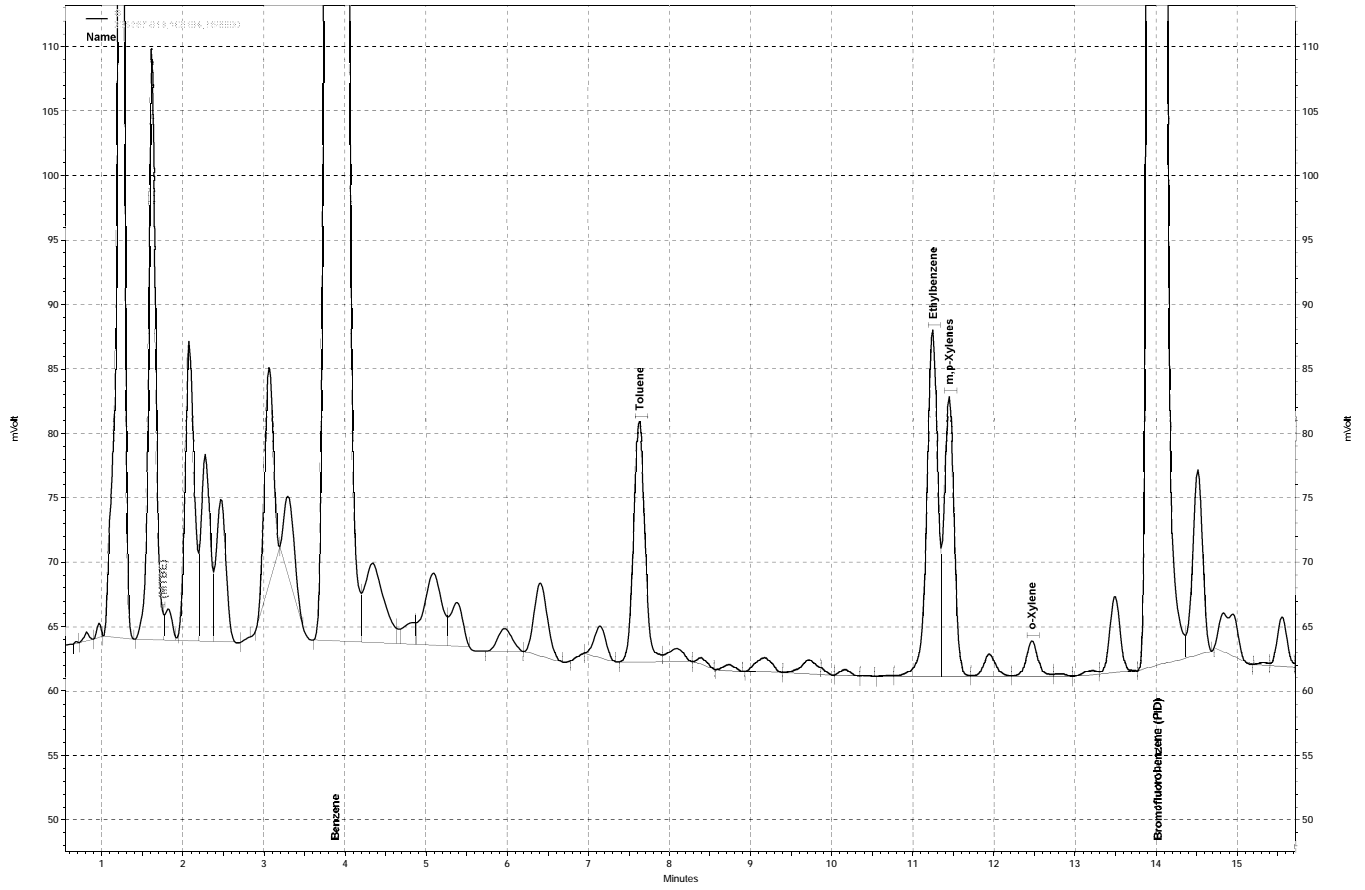
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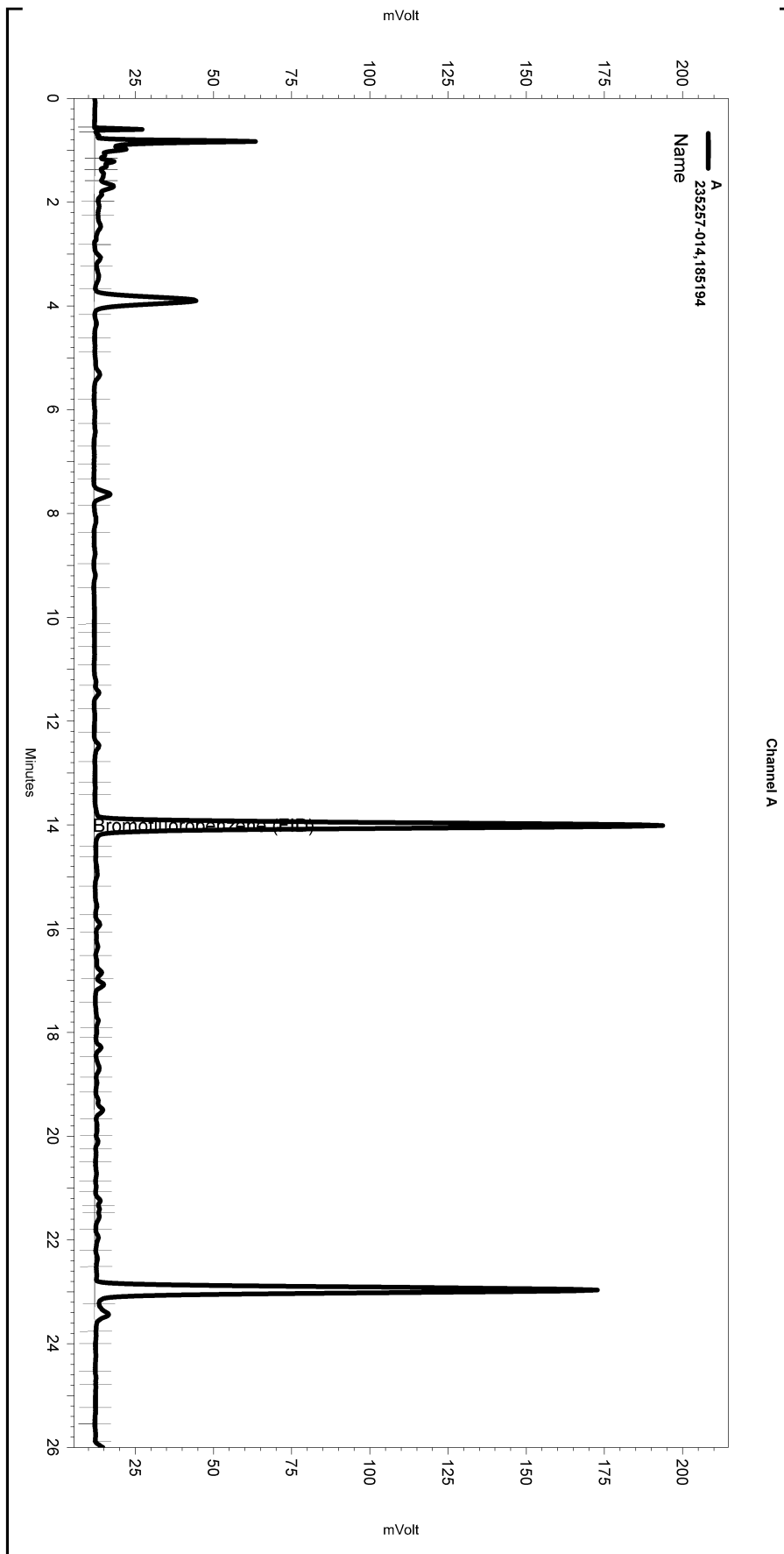
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Software Version 3.1.7
 Run Date: 4/4/2012 2:24:14 AM
 Analysis Date: 4/4/2012 9:40:18 AM
 Sample Amount: 5 Multiplier: 5
 Vial & pH or Core ID: b1.0



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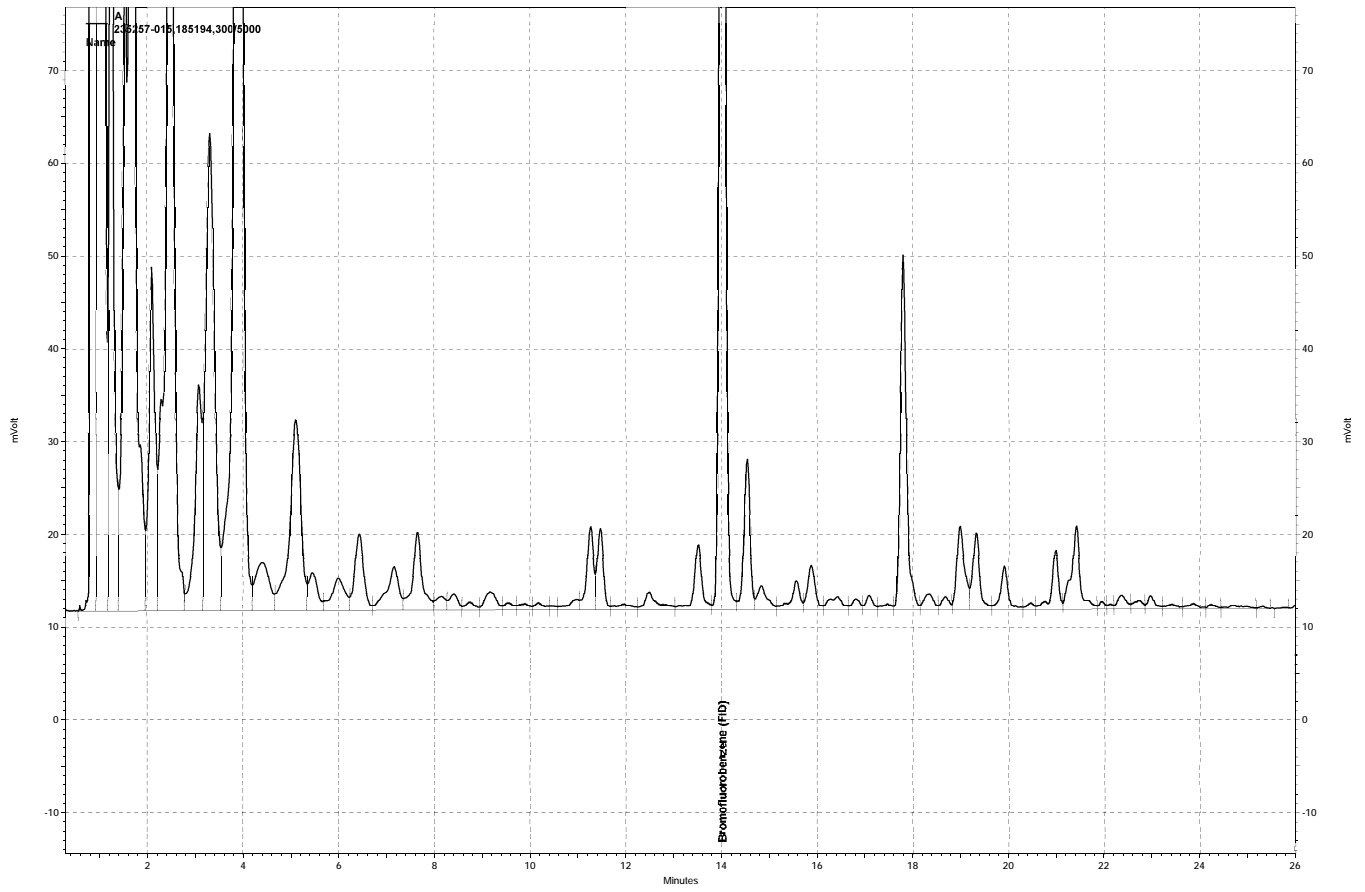
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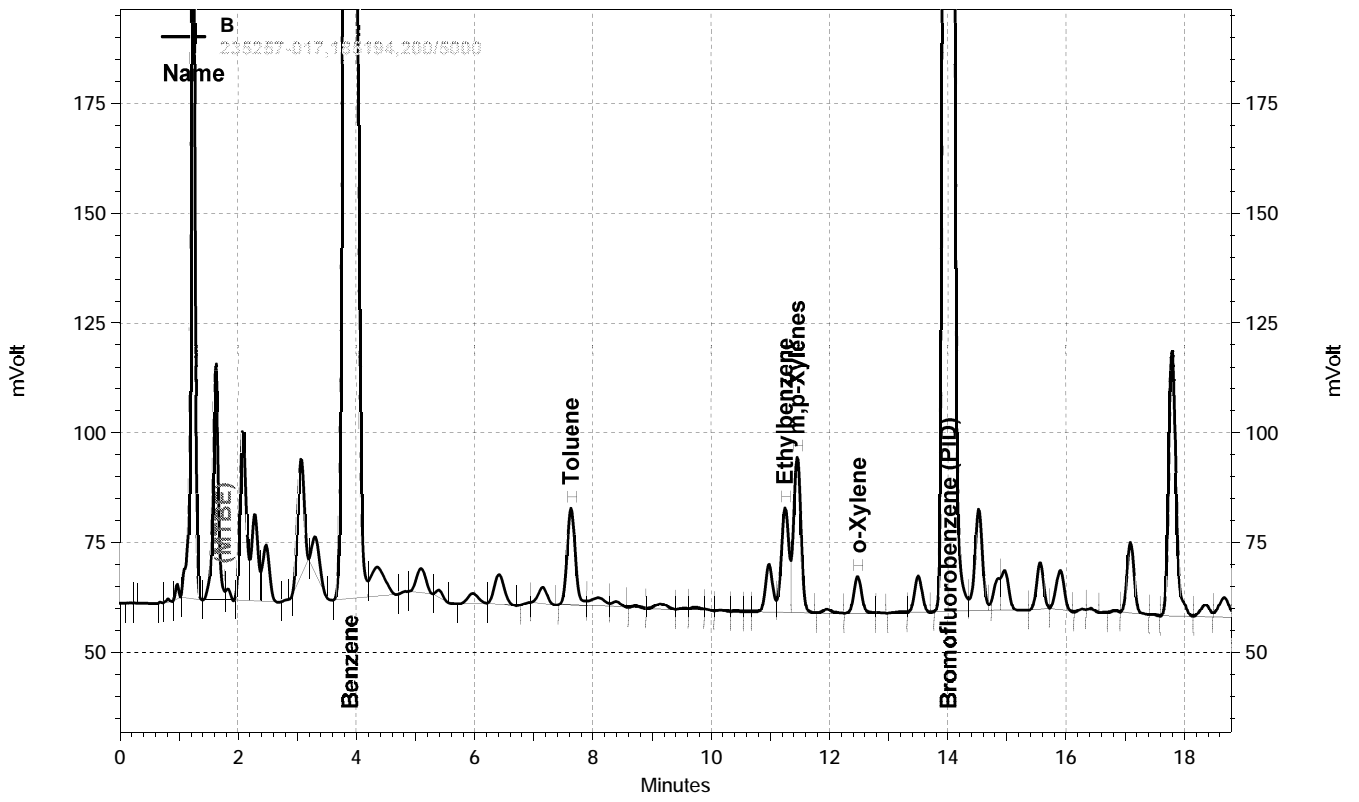
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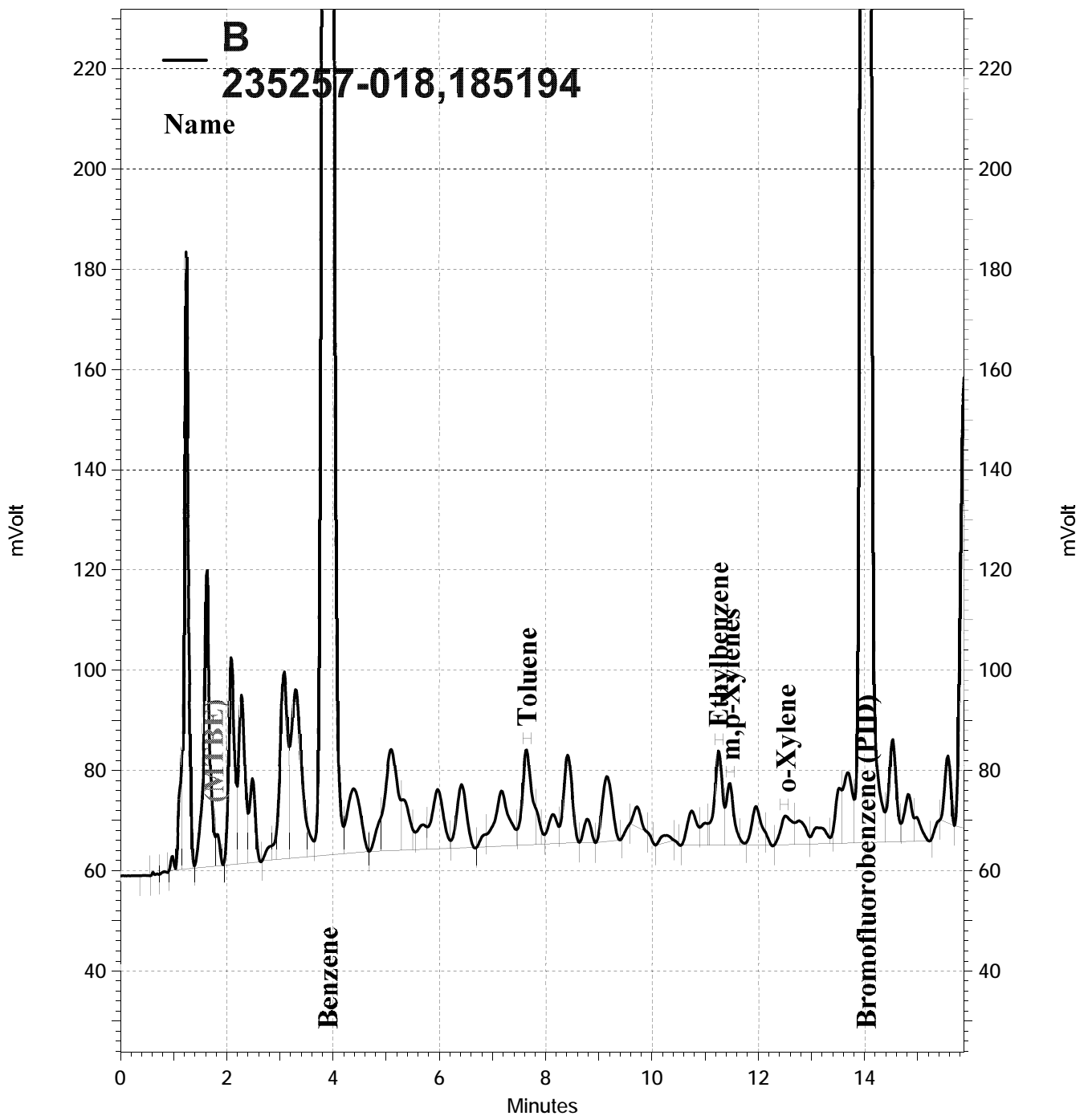
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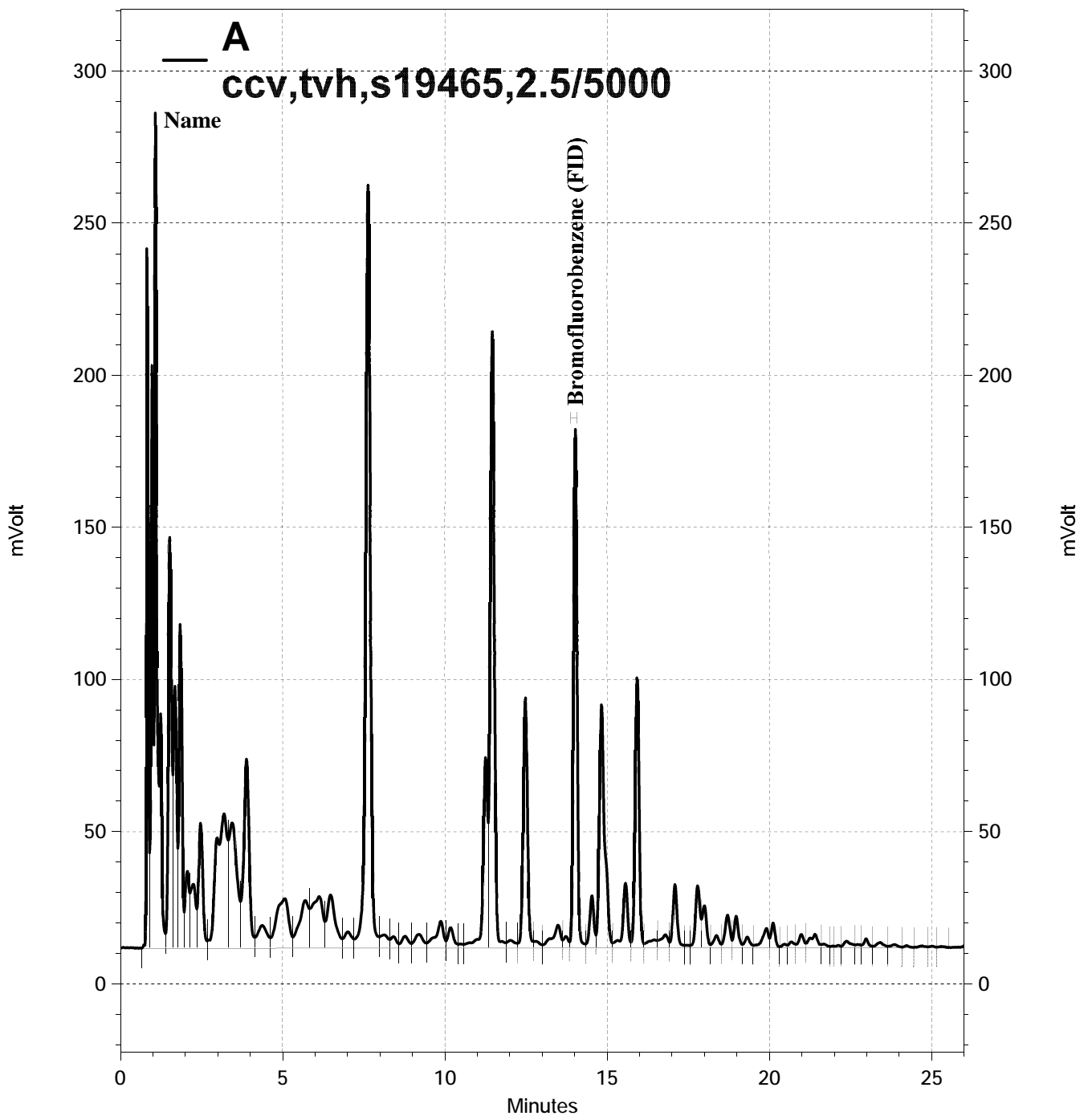
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Total Extractable Hydrocarbons			
Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/29/12
Units:	ug/L	Received:	03/30/12
Batch#:	185188	Prepared:	04/03/12

Field ID: MW-3 Diln Fac: 1.000
 Type: SAMPLE Analyzed: 04/04/12
 Lab ID: 235257-001

Analyte	Result	RL
Diesel C10-C24	1,900	50

Surrogate	%REC	Limits
o-Terphenyl	111	61-129

Field ID: MW-4 Diln Fac: 1.000
 Type: SAMPLE Analyzed: 04/04/12
 Lab ID: 235257-002

Analyte	Result	RL
Diesel C10-C24	340	50

Surrogate	%REC	Limits
o-Terphenyl	105	61-129

Field ID: MW-5 Diln Fac: 1.000
 Type: SAMPLE Analyzed: 04/04/12
 Lab ID: 235257-003

Analyte	Result	RL
Diesel C10-C24	3,600	50

Surrogate	%REC	Limits
o-Terphenyl	105	61-129

Field ID: MW-6 Diln Fac: 1.000
 Type: SAMPLE Analyzed: 04/04/12
 Lab ID: 235257-004

Analyte	Result	RL
Diesel C10-C24	2,300	50

Surrogate	%REC	Limits
o-Terphenyl	112	61-129

DO= Diluted Out
 ND= Not Detected
 RL= Reporting Limit

Total Extractable Hydrocarbons			
Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/29/12
Units:	ug/L	Received:	03/30/12
Batch#:	185188	Prepared:	04/03/12

Field ID:	MW-7	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	04/04/12
Lab ID:	235257-005		

Analyte	Result	RL
Diesel C10-C24	7,900	50

Surrogate	%REC	Limits
o-Terphenyl	87	61-129

Field ID:	MW-8	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	04/04/12
Lab ID:	235257-006		

Analyte	Result	RL
Diesel C10-C24	9,800	50

Surrogate	%REC	Limits
o-Terphenyl	113	61-129

Field ID:	MW-9	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	04/04/12
Lab ID:	235257-007		

Analyte	Result	RL
Diesel C10-C24	9,400	50

Surrogate	%REC	Limits
o-Terphenyl	103	61-129

Field ID:	MW-10	Diln Fac:	1.000
Type:	SAMPLE	Analyzed:	04/04/12
Lab ID:	235257-008		

Analyte	Result	RL
Diesel C10-C24	3,500	50

Surrogate	%REC	Limits
o-Terphenyl	102	61-129

DO= Diluted Out
 ND= Not Detected
 RL= Reporting Limit
 Page 2 of 5

Total Extractable Hydrocarbons			
Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/29/12
Units:	ug/L	Received:	03/30/12
Batch#:	185188	Prepared:	04/03/12

Field ID: MW-11 Diln Fac: 1.000
 Type: SAMPLE Analyzed: 04/05/12
 Lab ID: 235257-009

Analyte	Result	RL
Diesel C10-C24	4,600	50
Surrogate	%REC	Limits
o-Terphenyl	119	61-129

Field ID: MW-12 Diln Fac: 1.000
 Type: SAMPLE Analyzed: 04/05/12
 Lab ID: 235257-010

Analyte	Result	RL
Diesel C10-C24	2,500	50
Surrogate	%REC	Limits
o-Terphenyl	103	61-129

Field ID: MW-13 Diln Fac: 100.0
 Type: SAMPLE Analyzed: 04/04/12
 Lab ID: 235257-011

Analyte	Result	RL
Diesel C10-C24	1,100,000	25,000
Surrogate	%REC	Limits
o-Terphenyl	DO	61-129

Field ID: MW-14 Diln Fac: 1.000
 Type: SAMPLE Analyzed: 04/05/12
 Lab ID: 235257-012

Analyte	Result	RL
Diesel C10-C24	4,400	50
Surrogate	%REC	Limits
o-Terphenyl	112	61-129

DO= Diluted Out
 ND= Not Detected
 RL= Reporting Limit

Total Extractable Hydrocarbons

Lab #: 235257	Location: Bay Center Apartment
Client: Stellar Environmental Solutions	Prep: EPA 3520C
Project#: 2007-65	Analysis: EPA 8015B
Matrix: Water	Sampled: 03/29/12
Units: ug/L	Received: 03/30/12
Batch#: 185188	Prepared: 04/03/12

Field ID: MW-15	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 04/05/12
Lab ID: 235257-013	

Analyte	Result	RL
Diesel C10-C24	3,500	50

Surrogate	%REC	Limits
o-Terphenyl	113	61-129

Field ID: MW-16	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 04/05/12
Lab ID: 235257-014	

Analyte	Result	RL
Diesel C10-C24	8,400	50

Surrogate	%REC	Limits
o-Terphenyl	96	61-129

Field ID: MW-17	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 04/05/12
Lab ID: 235257-015	

Analyte	Result	RL
Diesel C10-C24	2,200	50

Surrogate	%REC	Limits
o-Terphenyl	109	61-129

Field ID: MW-18	Diln Fac: 1.000
Type: SAMPLE	Analyzed: 04/05/12
Lab ID: 235257-016	

Analyte	Result	RL
Diesel C10-C24	9,200	50

Surrogate	%REC	Limits
o-Terphenyl	106	61-129

DO= Diluted Out
 ND= Not Detected
 RL= Reporting Limit
 Page 4 of 5

Total Extractable Hydrocarbons			
Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Sampled:	03/29/12
Units:	ug/L	Received:	03/30/12
Batch#:	185188	Prepared:	04/03/12

Field ID: MW-E Diln Fac: 1.000
 Type: SAMPLE Analyzed: 04/05/12
 Lab ID: 235257-017

Analyte	Result	RL
Diesel C10-C24	5,800	50
Surrogate	%REC	Limits
o-Terphenyl	110	61-129

Field ID: RW-1 Diln Fac: 1.000
 Type: SAMPLE Analyzed: 04/05/12
 Lab ID: 235257-018

Analyte	Result	RL
Diesel C10-C24	1,900	50
Surrogate	%REC	Limits
o-Terphenyl	110	61-129

Type: BLANK Diln Fac: 1.000
 Lab ID: QC634194 Analyzed: 04/04/12

Analyte	Result	RL
Diesel C10-C24	ND	50
Surrogate	%REC	Limits
o-Terphenyl	105	61-129

Batch QC Report

Total Extractable Hydrocarbons			
Lab #:	235257	Location:	Bay Center Apartment
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	185188
Units:	ug/L	Prepared:	04/03/12
Diln Fac:	1.000	Analyzed:	04/04/12

Type: BS Cleanup Method: EPA 3630C
 Lab ID: QC634195

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	1,882	75	59-120

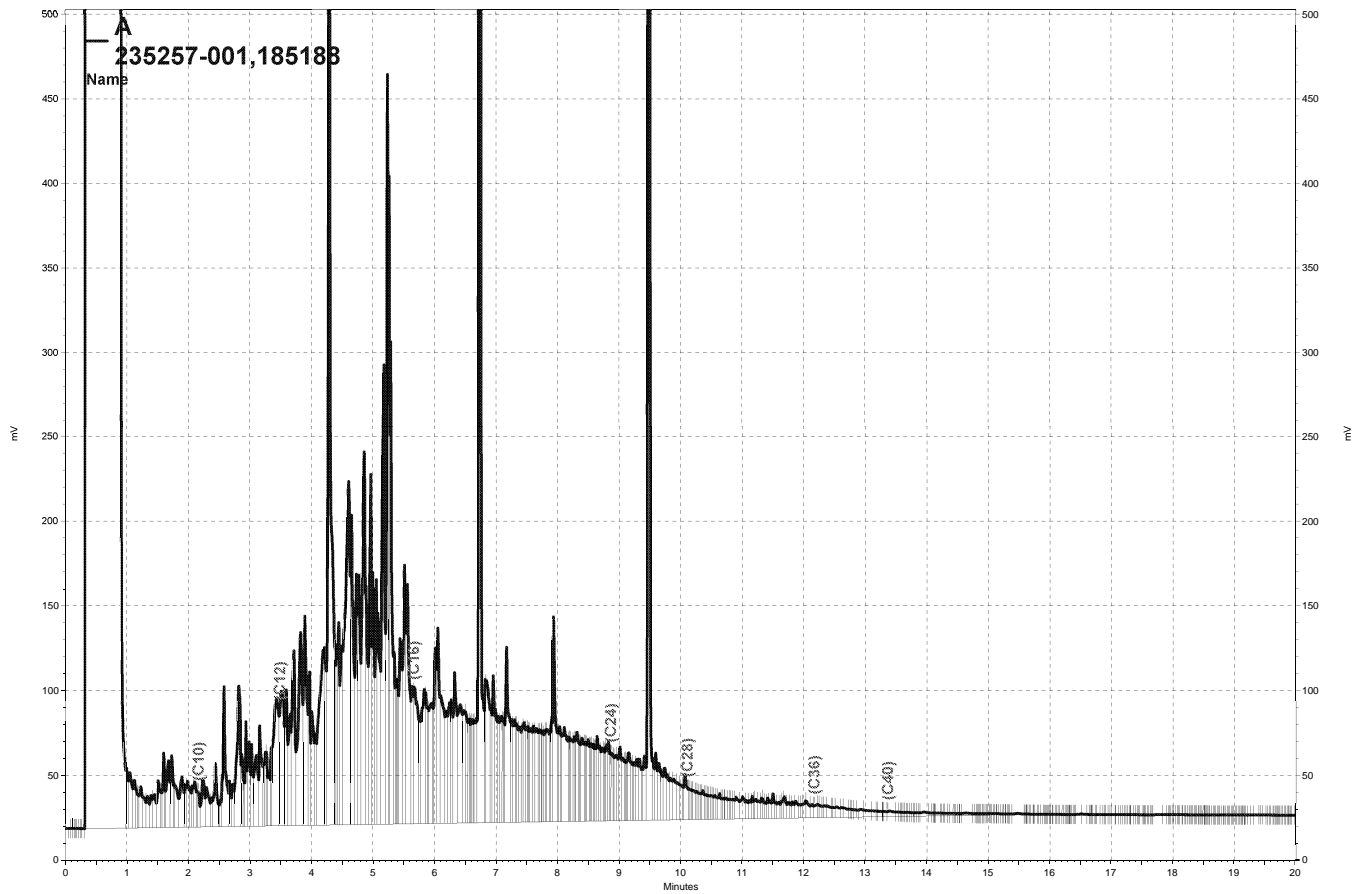
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o-Terphenyl	101	61-129

Type: BSD Cleanup Method: EPA 3630C
 Lab ID: QC634196

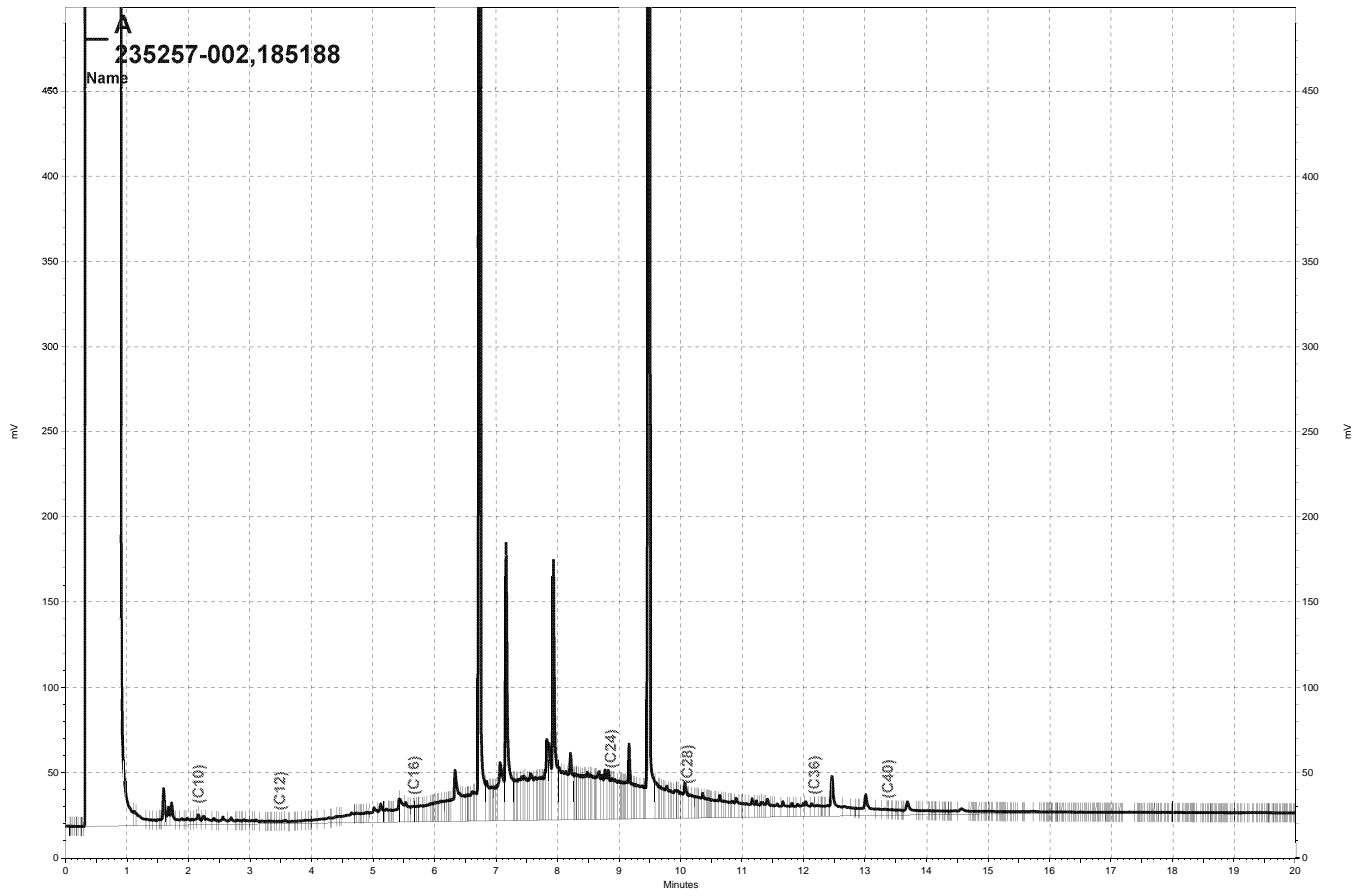
Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	2,116	85	59-120	12	52

Surrogate	%REC	Limits
o-Terphenyl	113	61-129

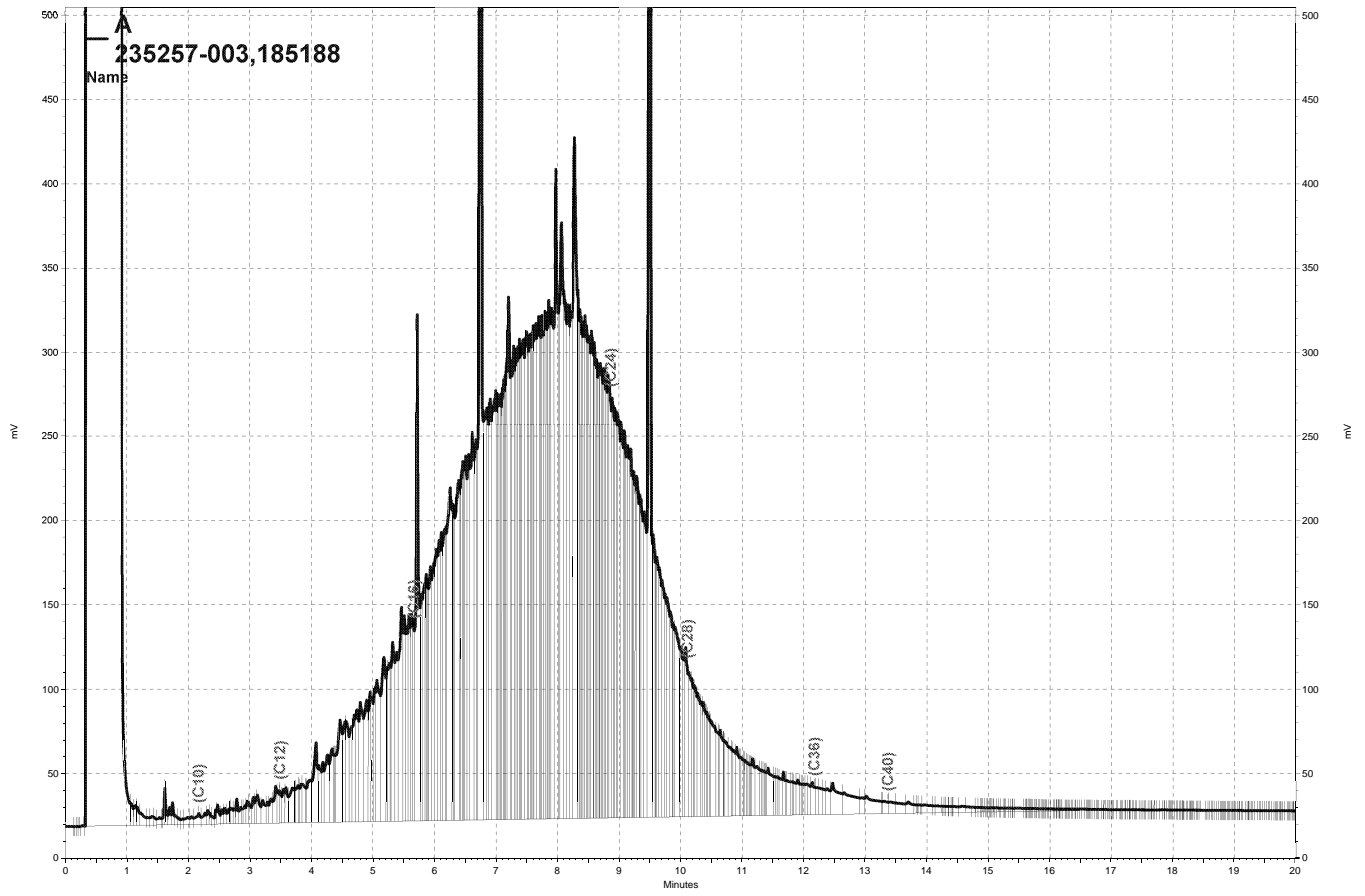
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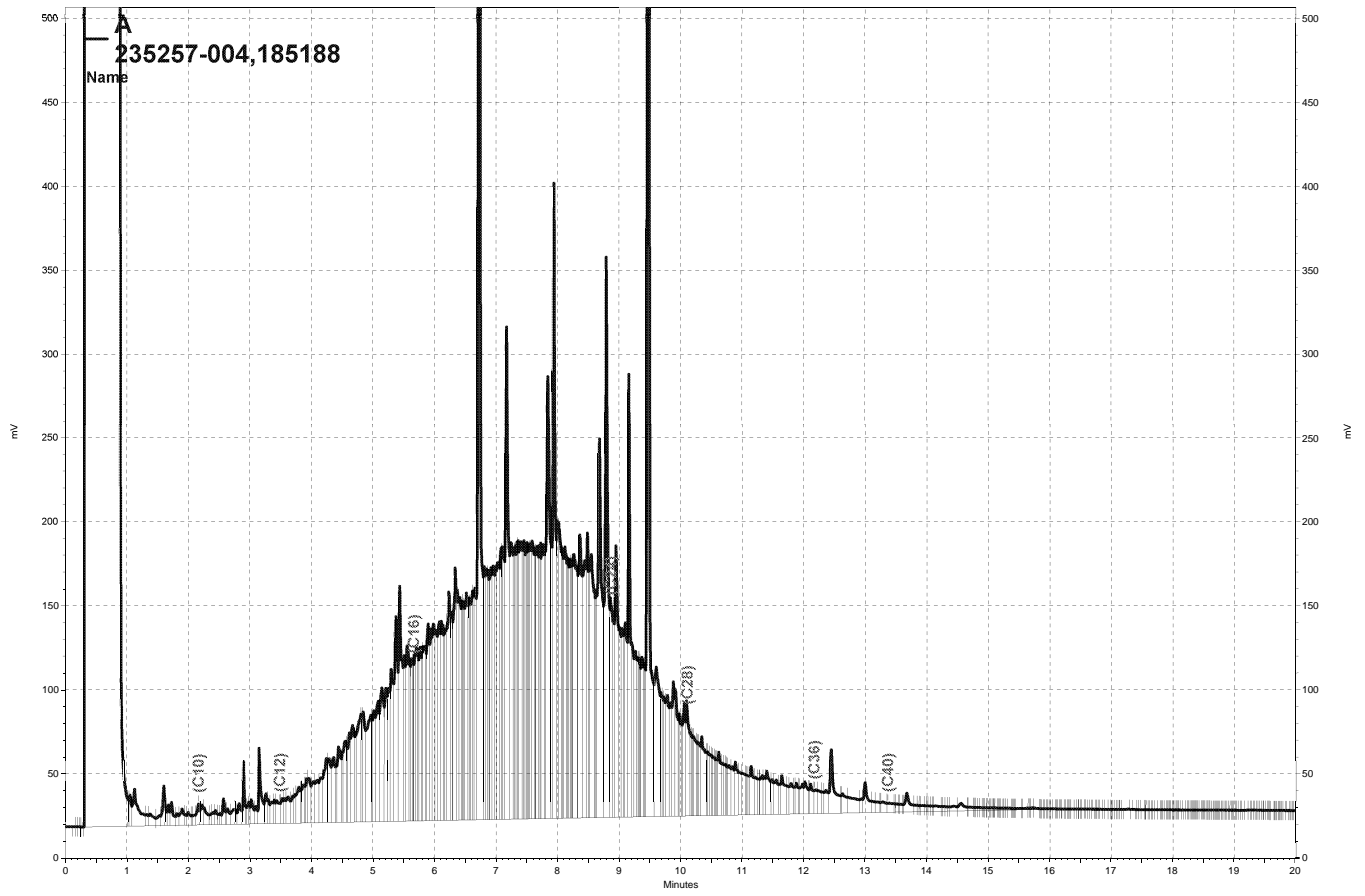
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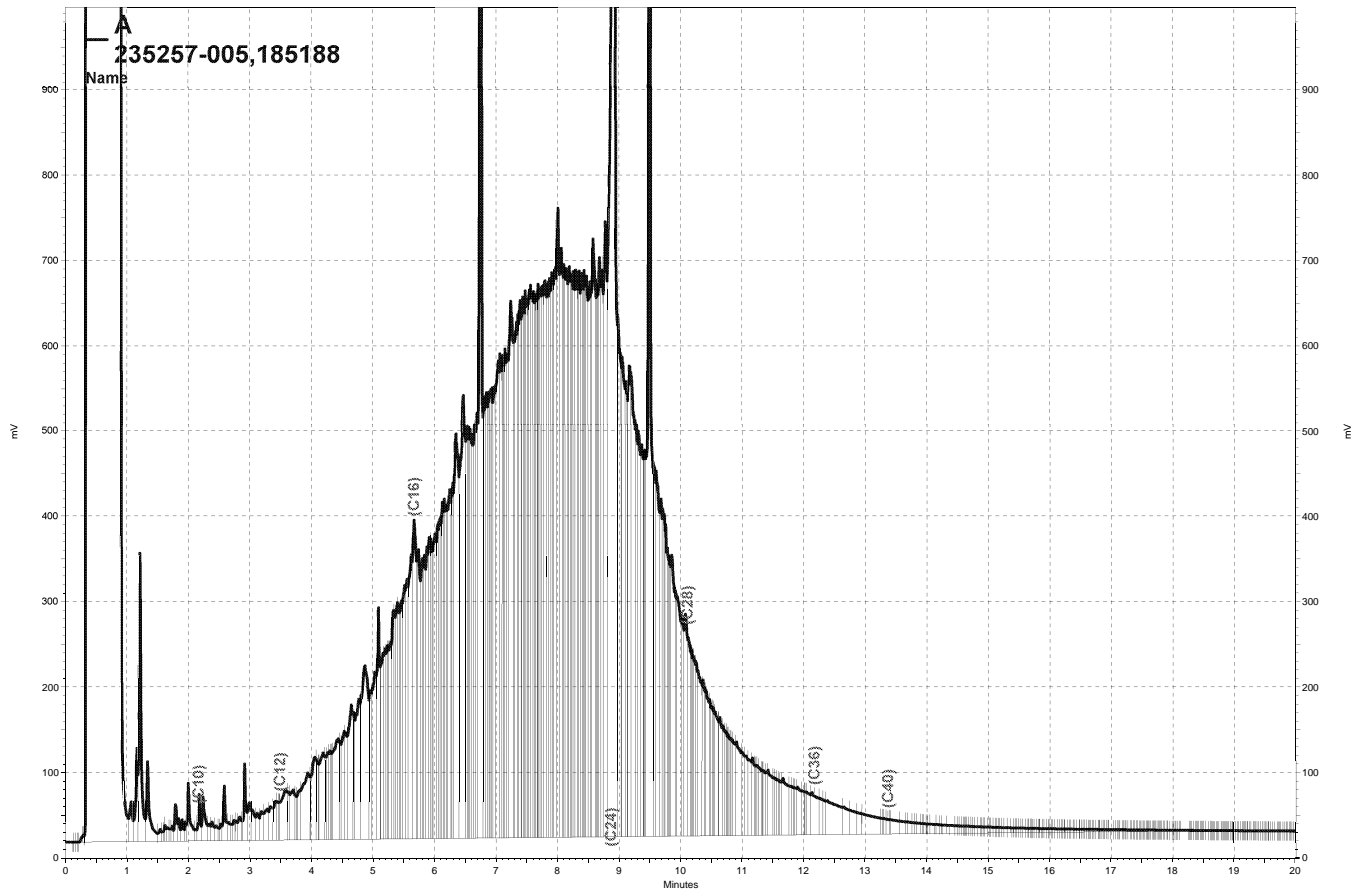
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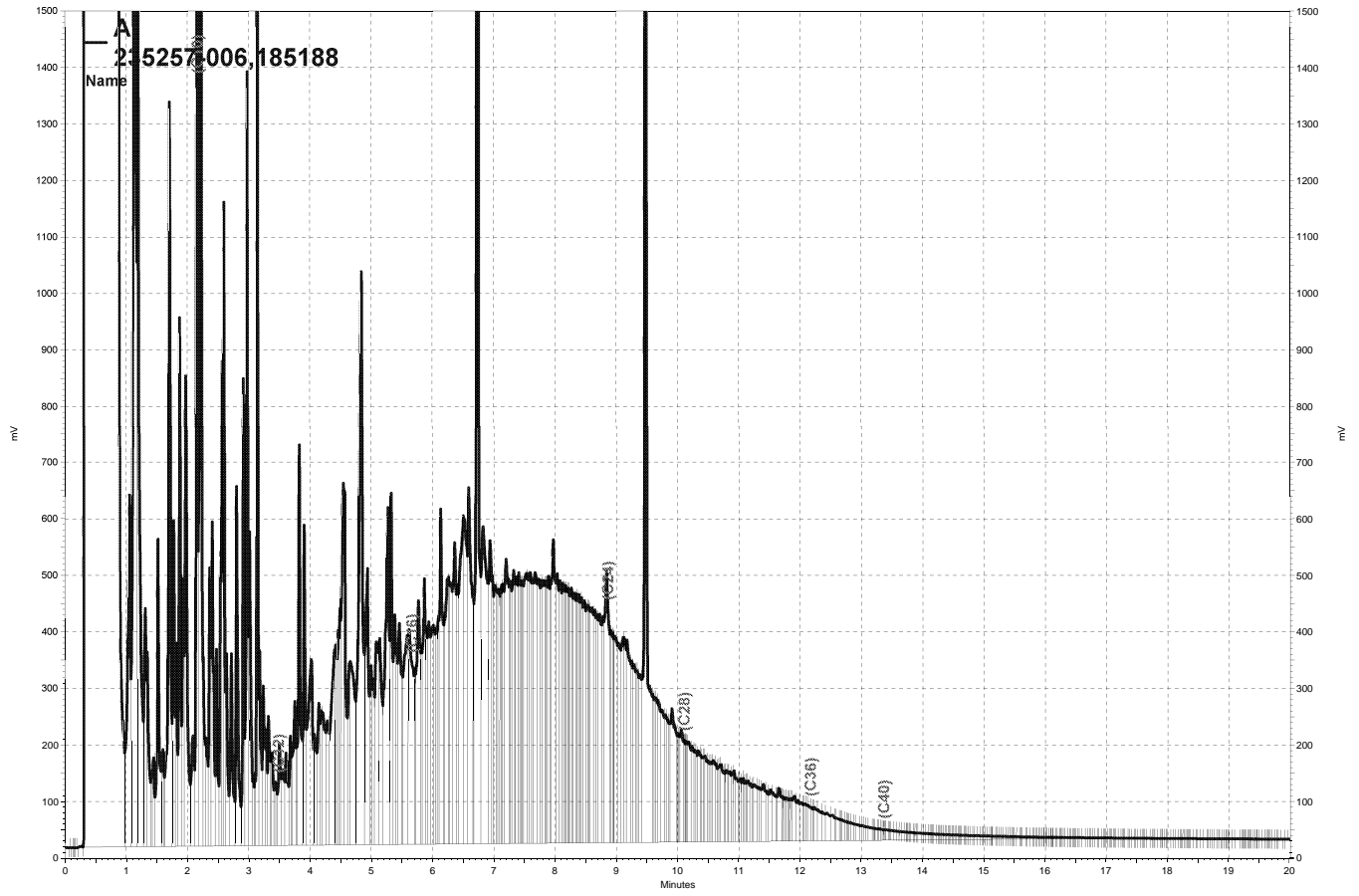
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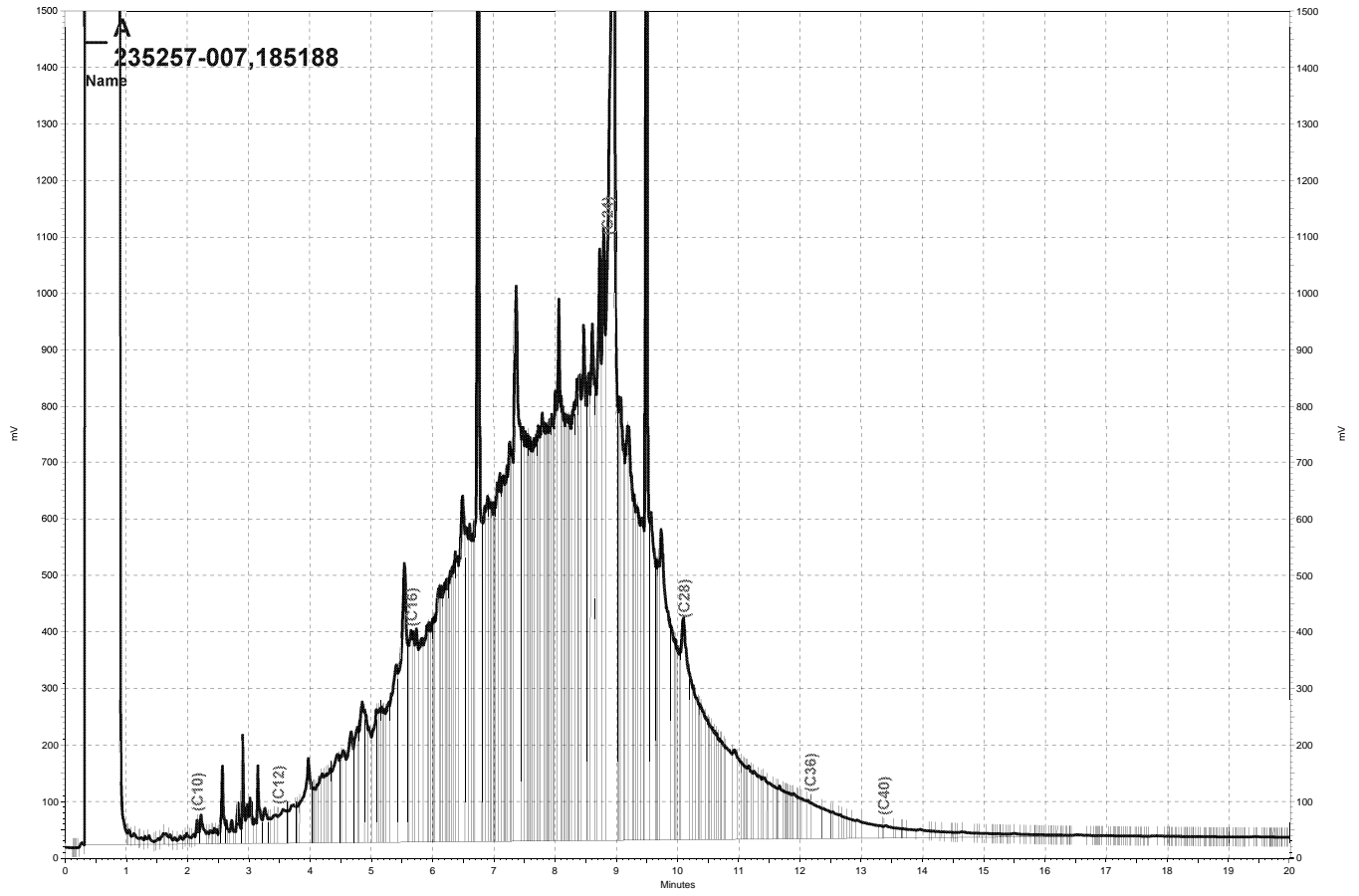
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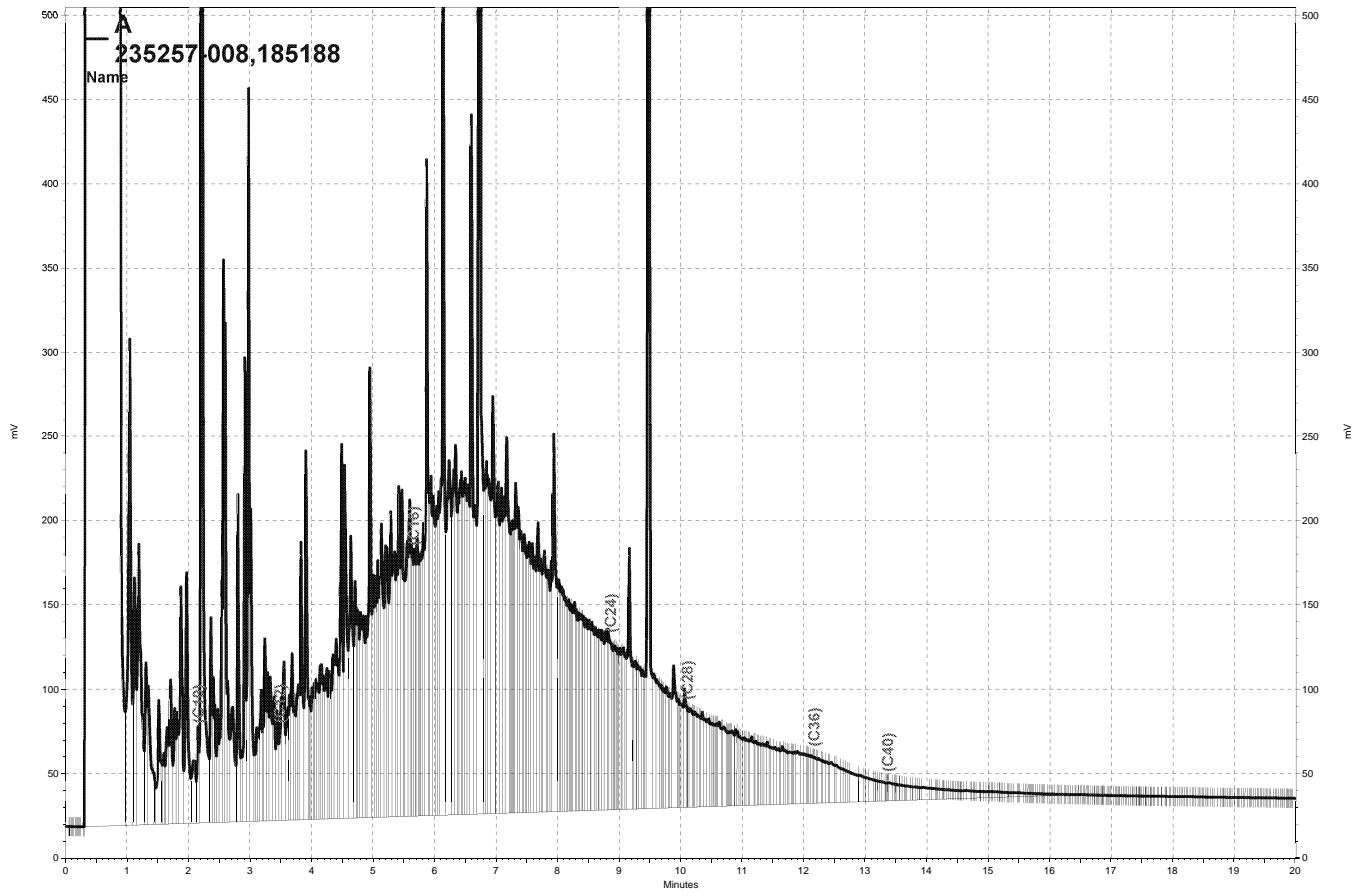
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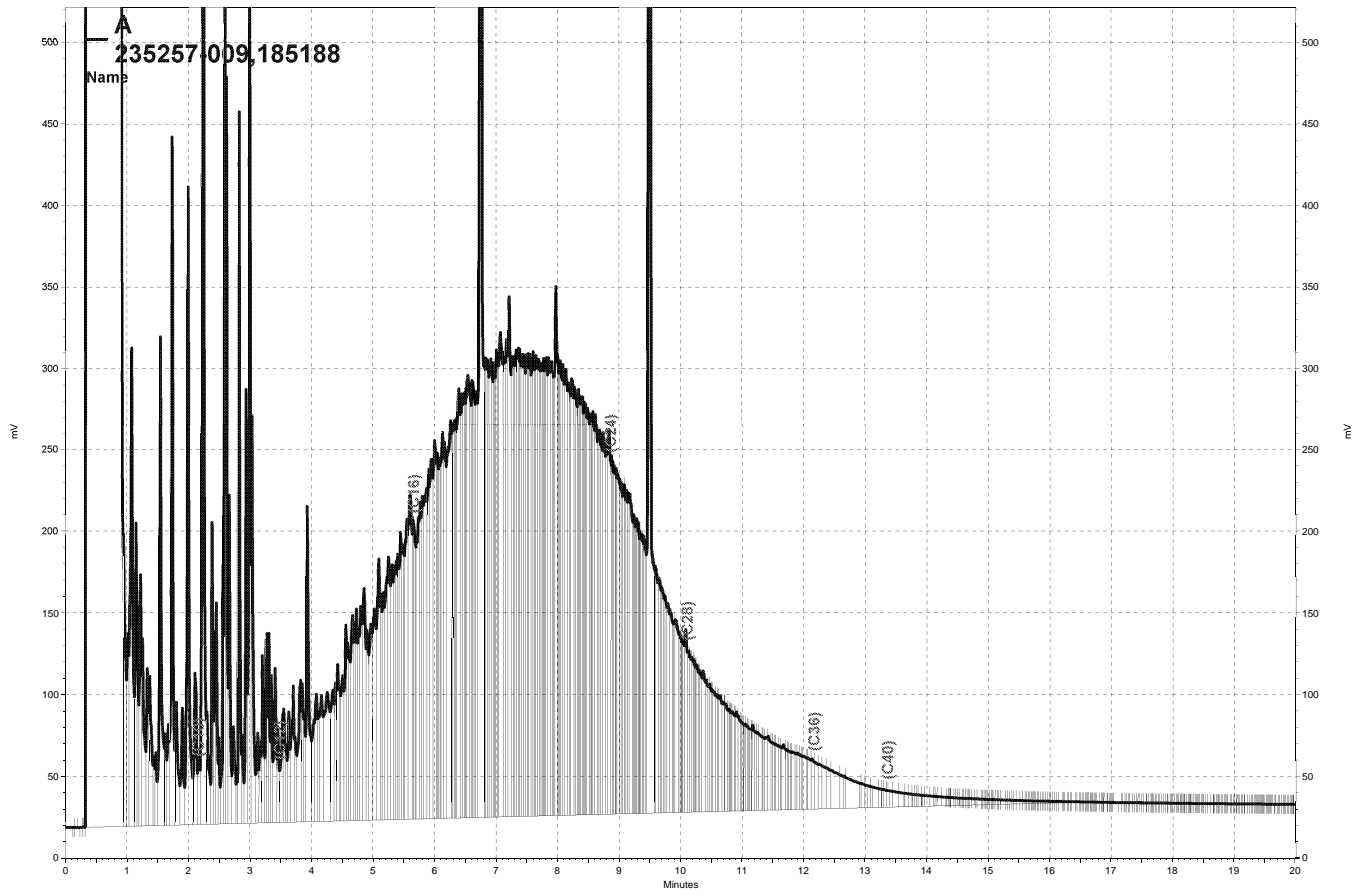
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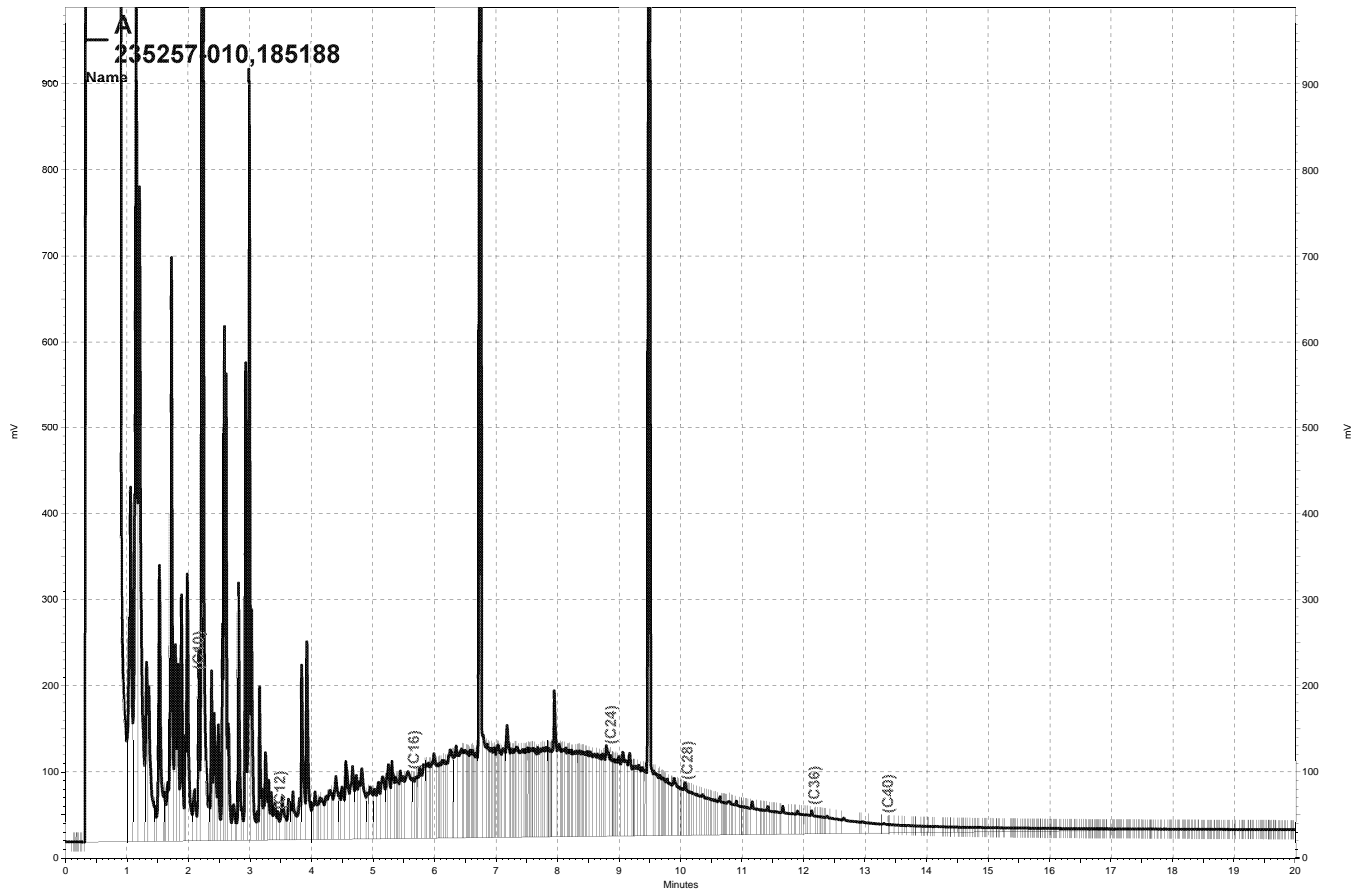
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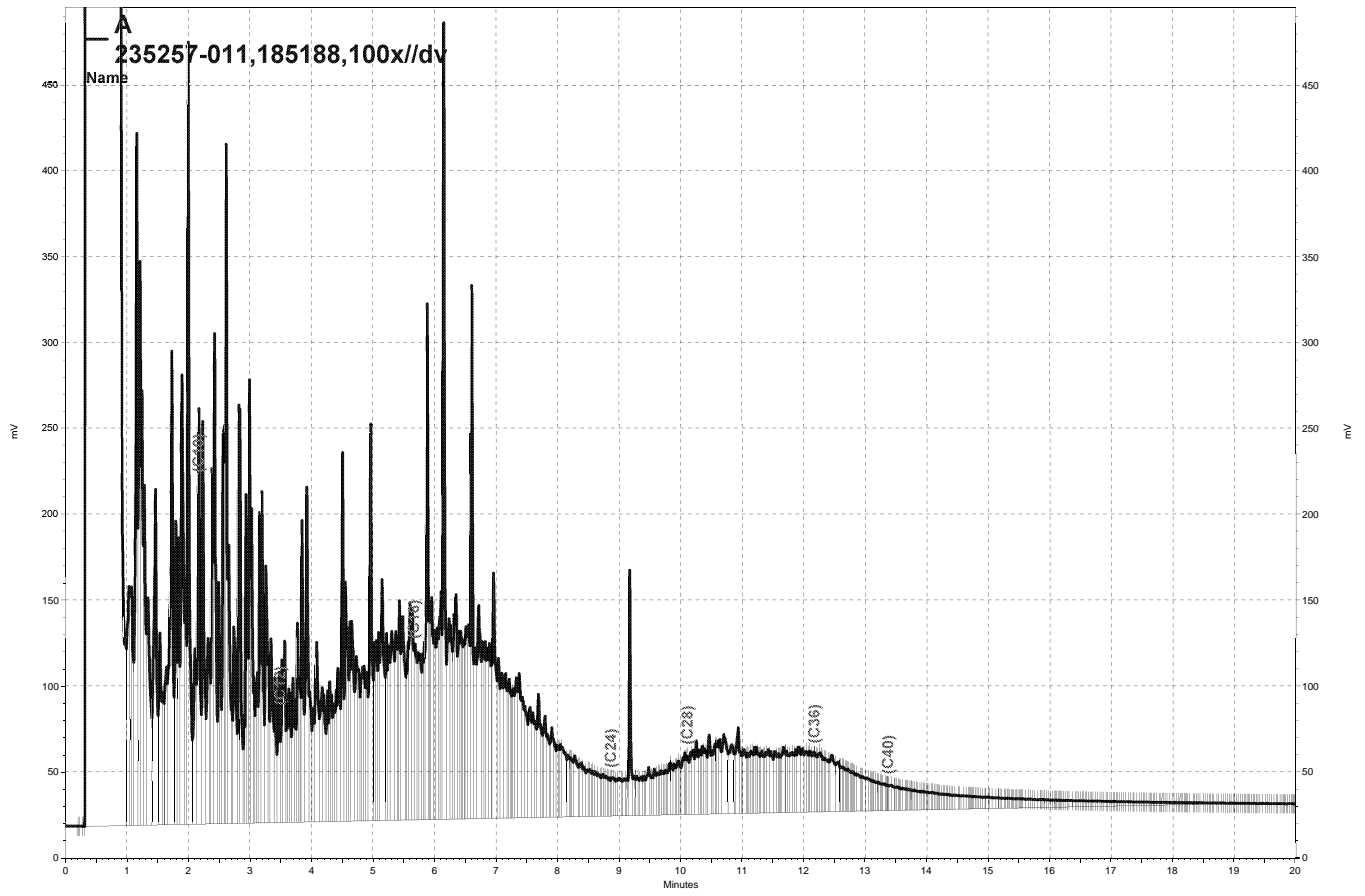
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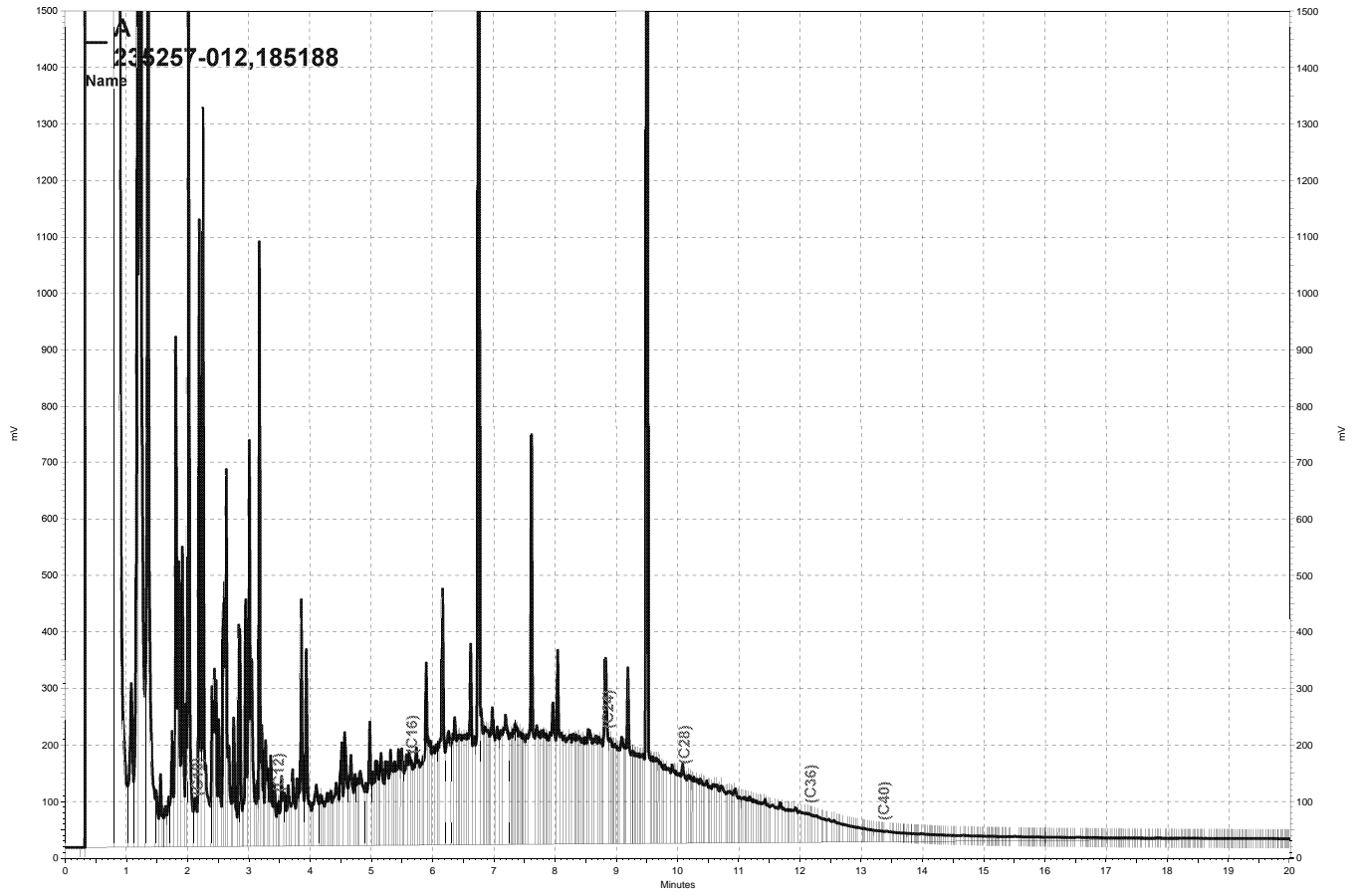
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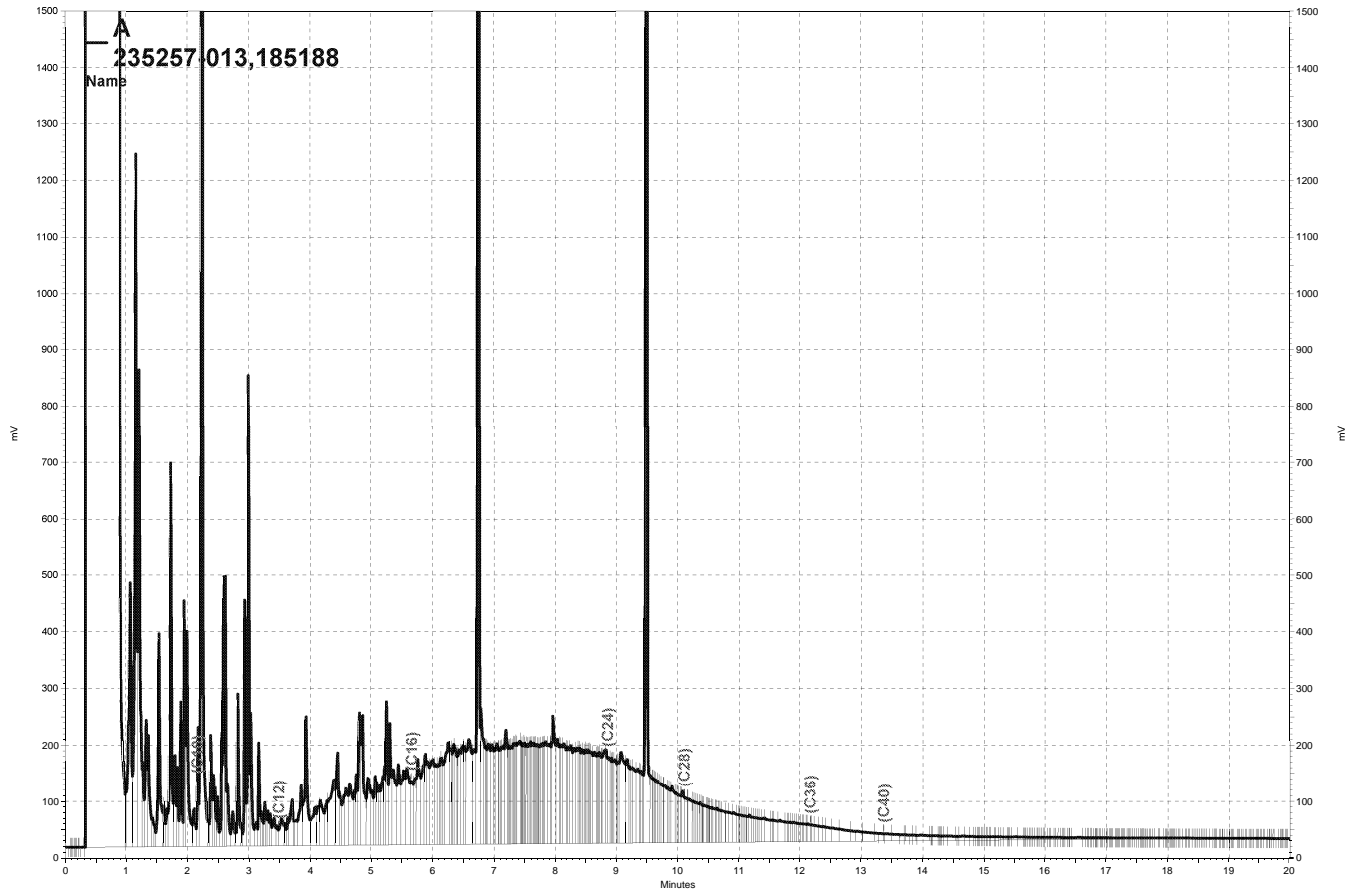
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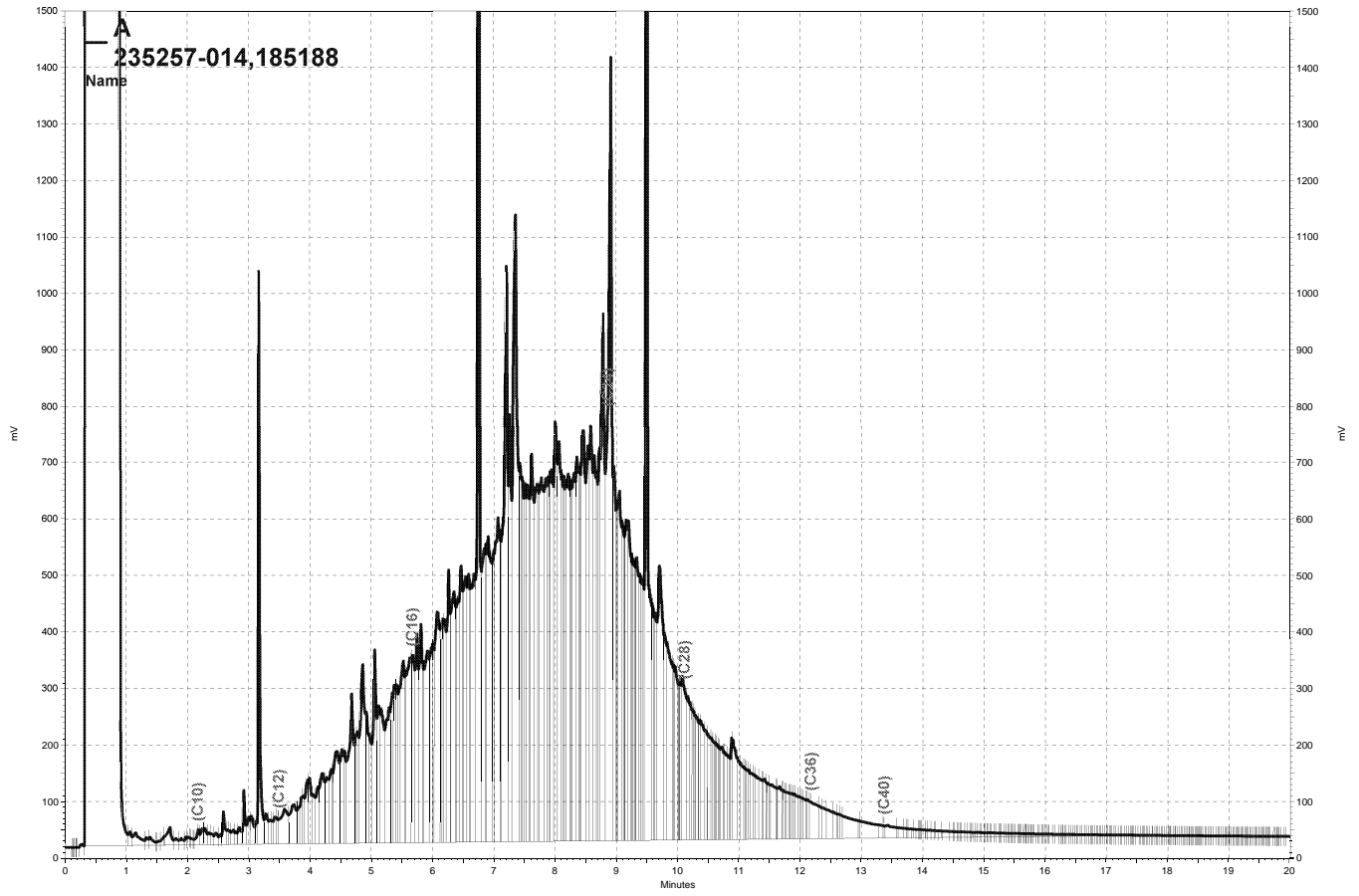
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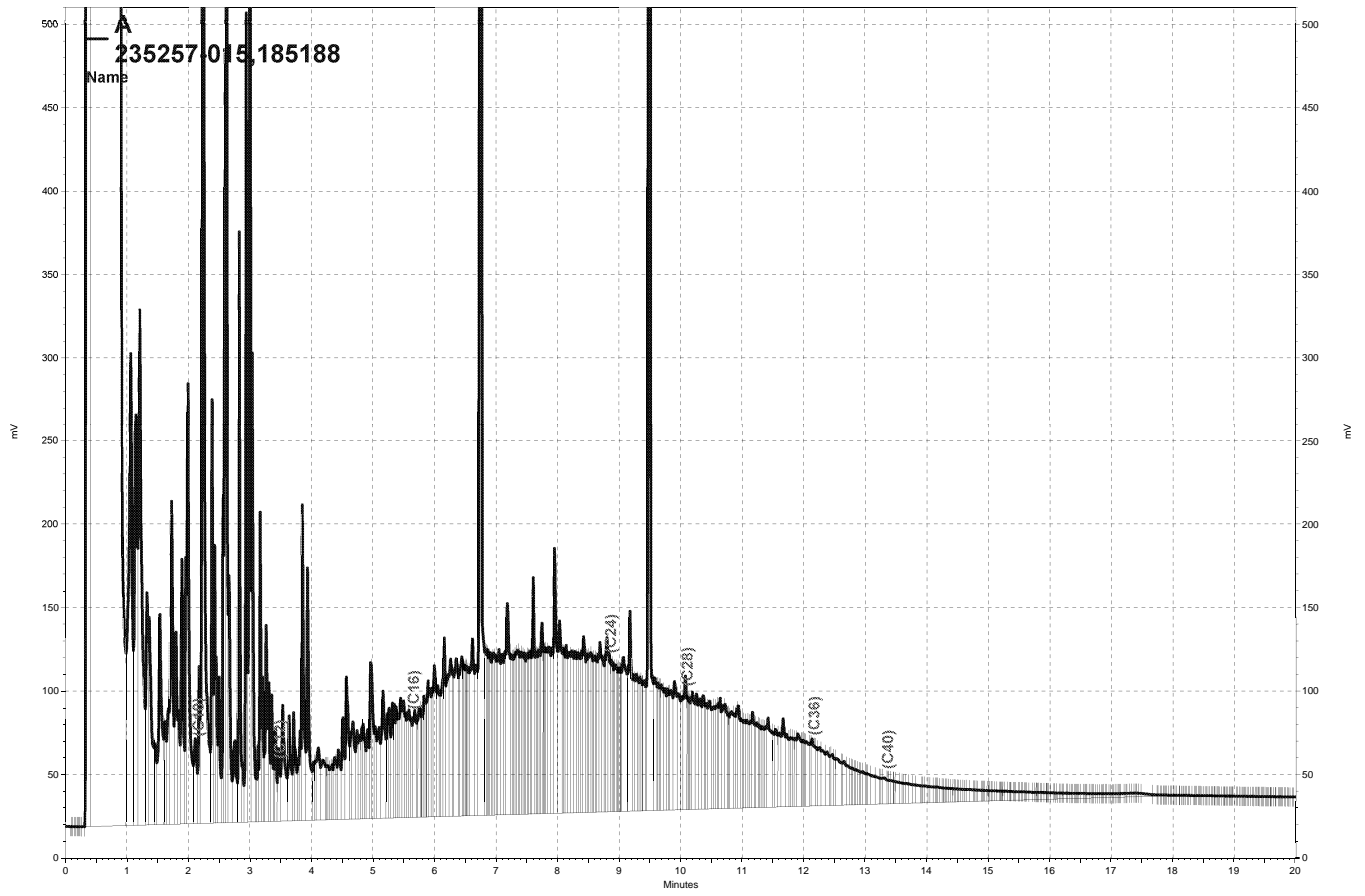
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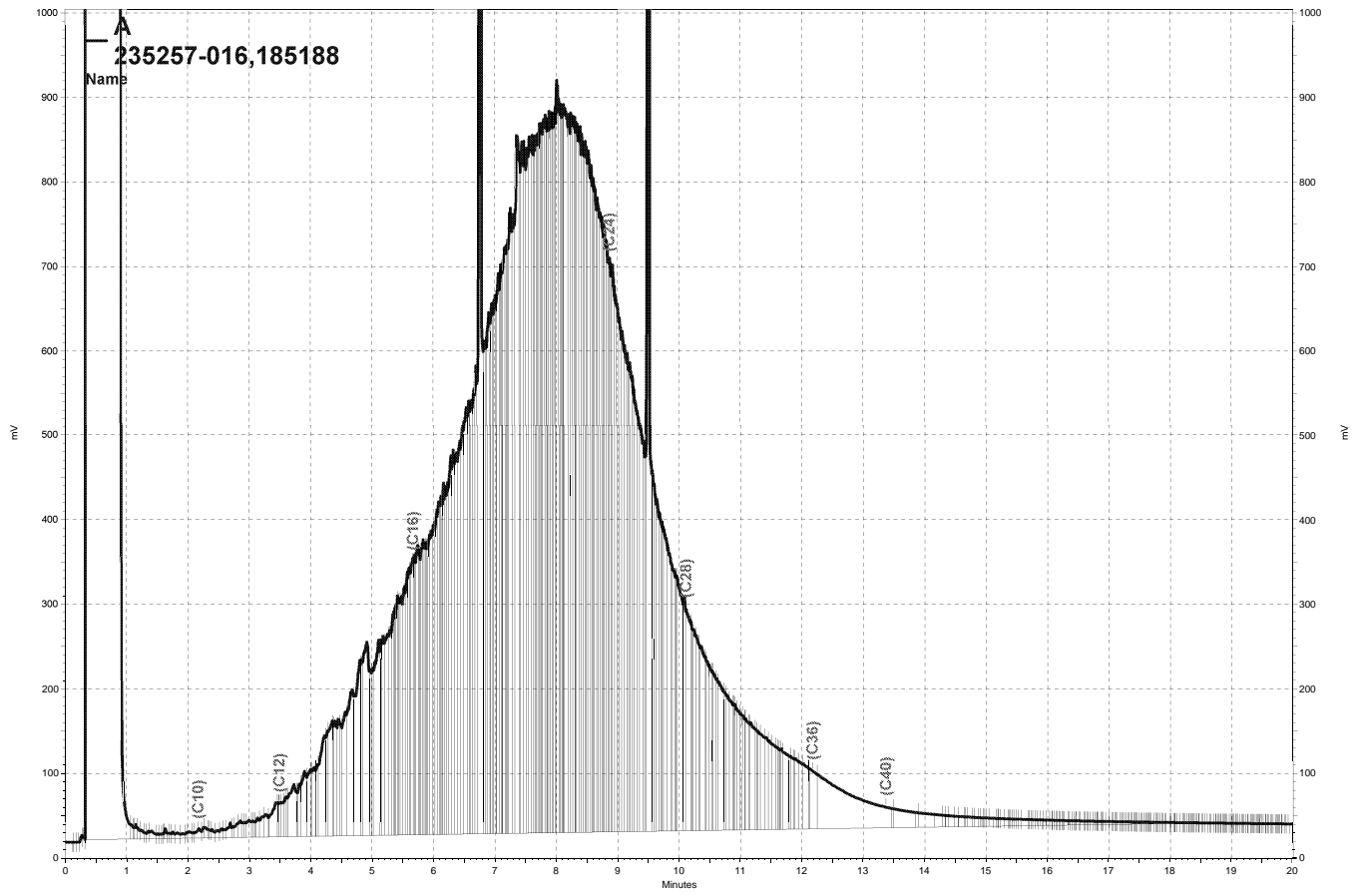
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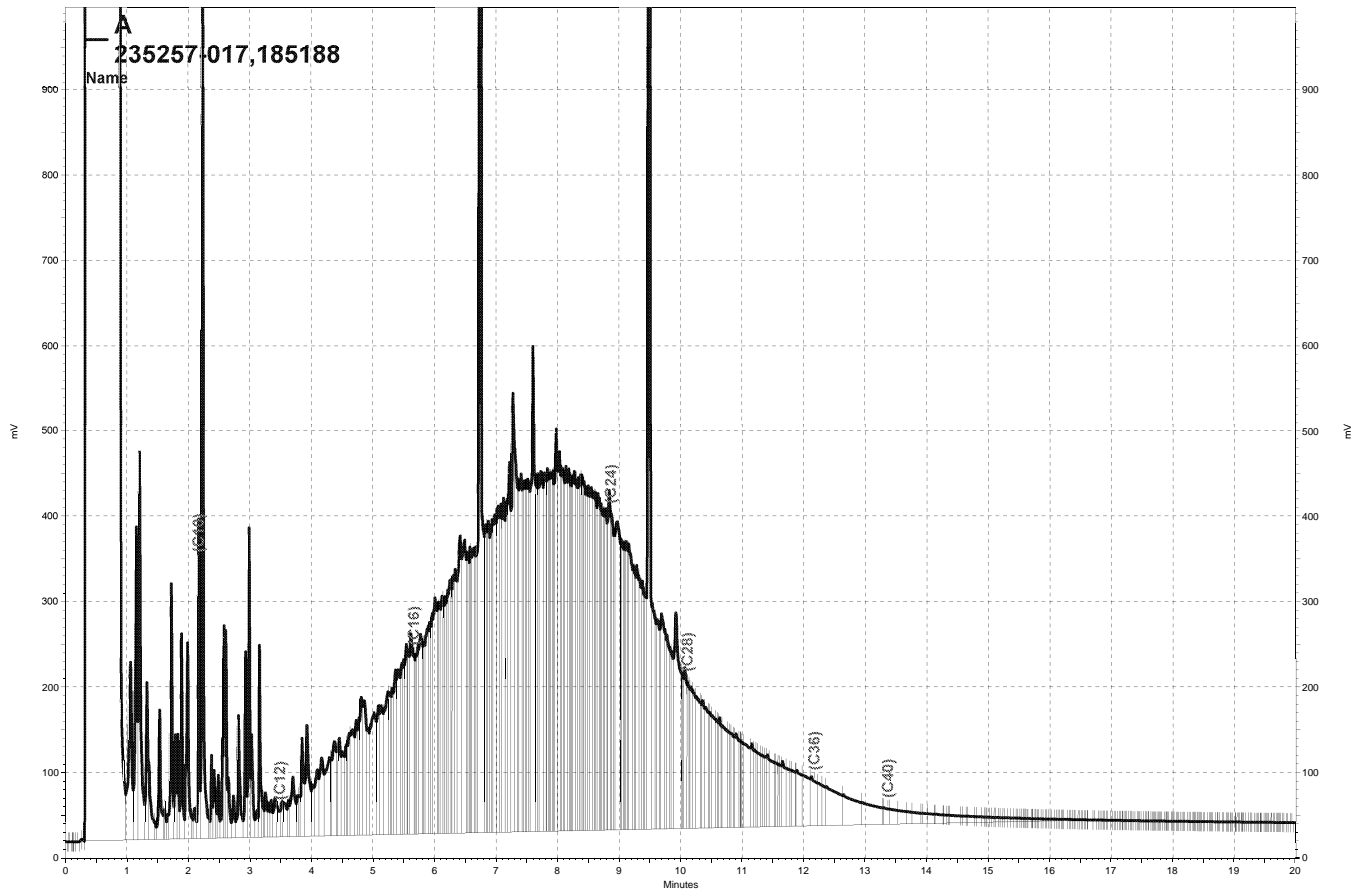
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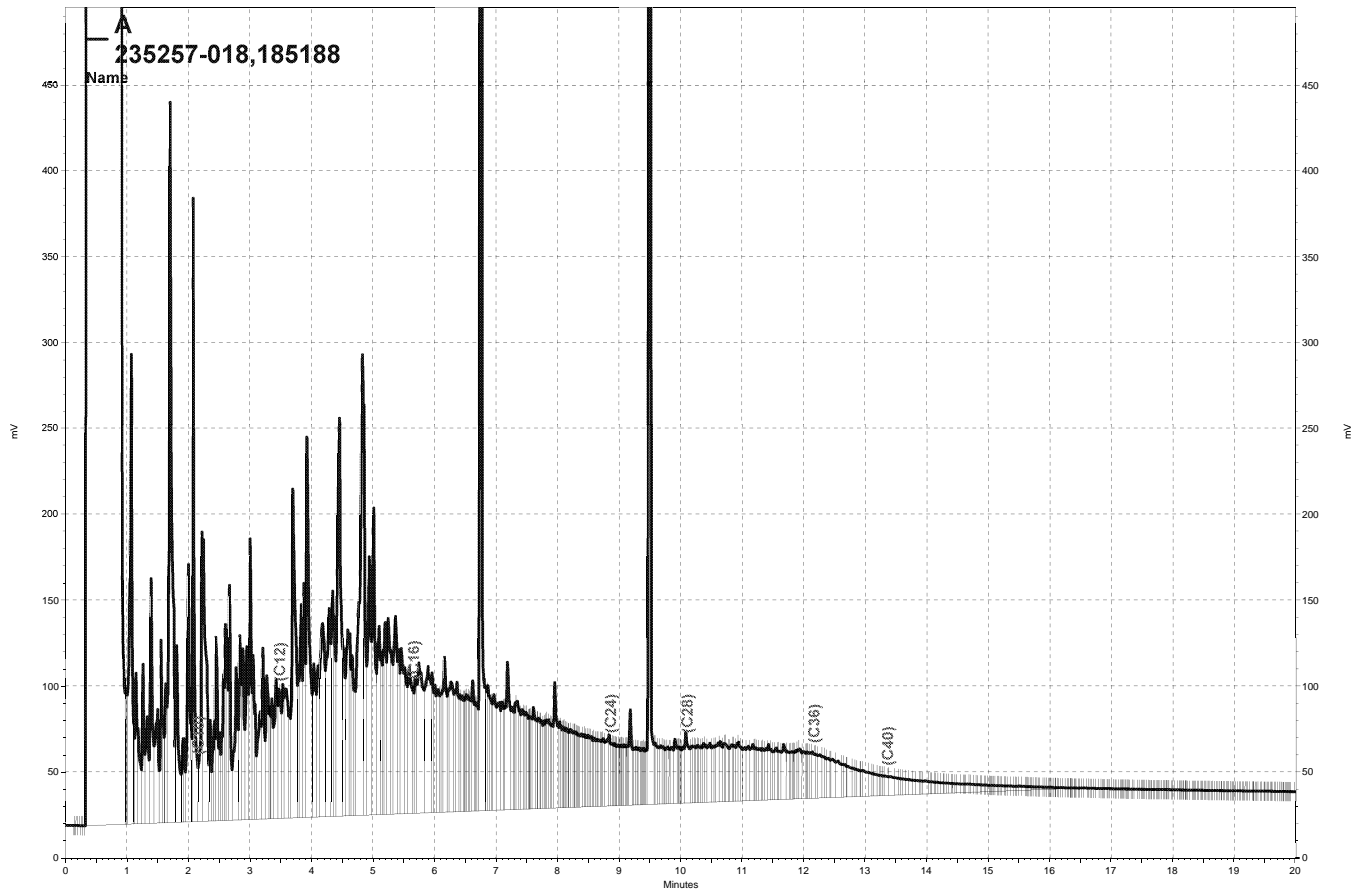
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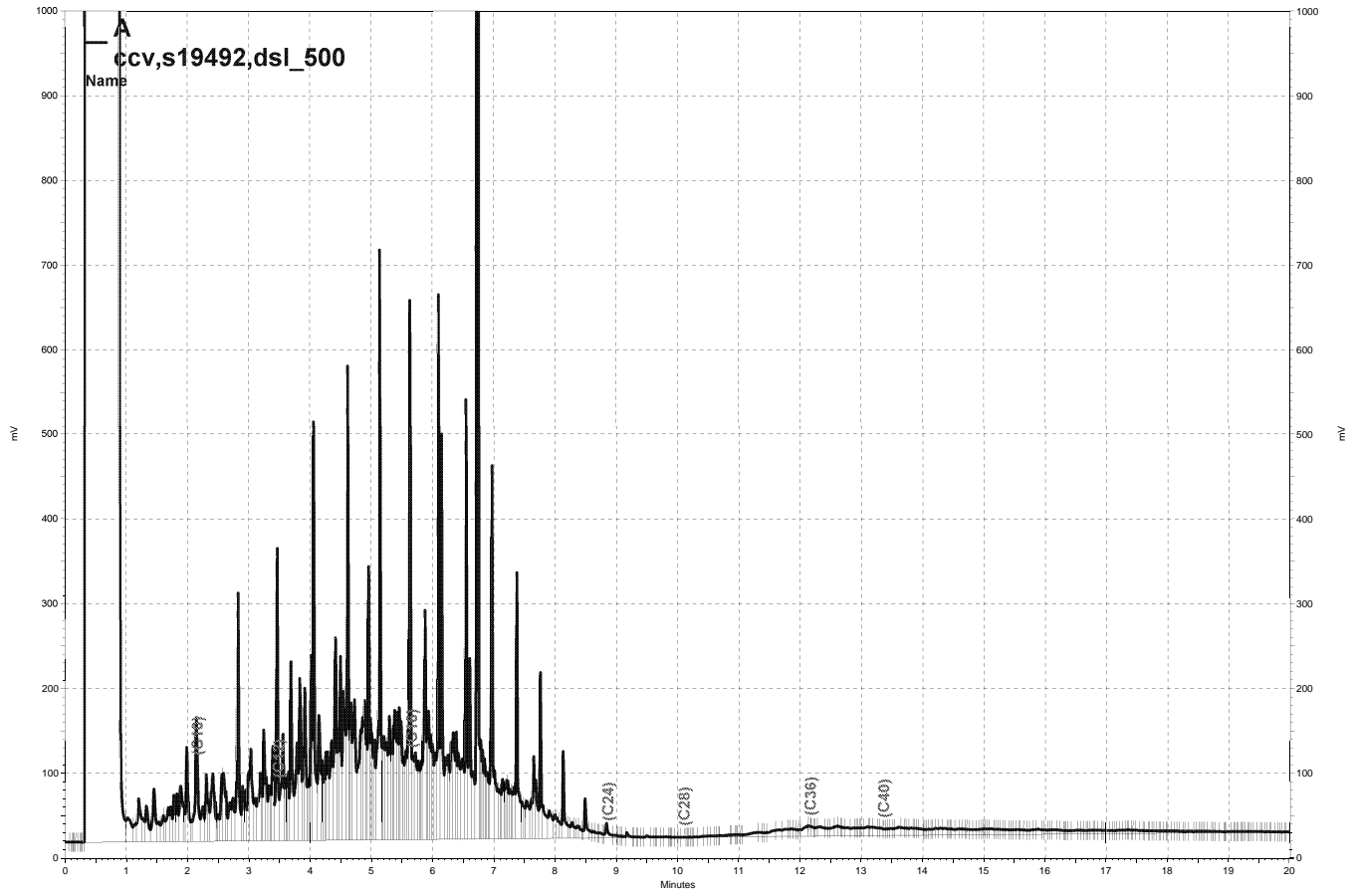
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APPENDIX D

Historical Groundwater Elevation Data

TABLE B
Historical Monitoring, Extraction, and Trench Well Elevations
6400 Christie Avenue, Emeryville, California

MW-1					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
1	Dec-88	14.39	9.60	NP	4.79
2	May-89	14.31 ^(a)	8.73	NP	5.58
3	Feb-91	14.31	9.18	NP	5.13
Monitoring well abandoned - date unclear					

MW-2					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
1	Dec-88	14.36	9.64	NP	4.72
2	May-89	14.28 ^(a)	8.78	NP	5.50
3	Feb-91	14.28	9.61	NP	4.67
Monitoring well abandoned - date unclear					

MW-3					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
1	Dec-88	14.53	8.93	trace	5.60
2	May-89	14.43 ^(a)	8.69	NP	5.74
3	Feb-91	14.43	8.31	NP	6.12
4	Mar-04	16.96 ^(b)	9.47	NP	7.49
5	Dec-06	NA	NA	NA	NA
6	Dec-07	16.65 ^(c)	7.76 ^(e)	7.76	8.89
7	Mar-08	16.65	8.72	8.70	7.93
8	Jun-08	16.65	8.56	NP	8.09
9	Sep-08	16.65	9.27	7.95	7.38
10	Dec-08	16.65	8.36	7.49	8.29
11	Mar-09	16.65	7.94	NP	8.71
12	Sep-09	16.65	8.58	NP	8.07
13	Mar-10	16.65	8.08 ^(e)	8.08	8.57
14	Sep-10	16.65	8.68 ^(e)	8.68	7.97
15	Mar-11	16.65	10.40	NM	6.25
16	Sep-11	16.65	10.84	10.83	6.17
17	Mar-12	16.65	8.21	NM	8.44

MW-4					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
1	Dec-88	14.21	8.29	NP	5.92
2	May-89	14.12 ^(a)	7.75	NP	6.37
3	Feb-91	14.12	8.04	NP	6.08
4	Mar-04	16.74 ^(b)	6.90	NP	7.49
5	Dec-06	NA	NA	NA	NA
6	Dec-07	16.29 ^(c)	6.61	NP	9.68
7	Mar-08	16.29	7.24	NP	9.05
8	Jun-08	16.29	6.94	NP	9.35
9	Sep-08	16.29	6.85	NP	6.85
10	Dec-08	16.29	7.42	NP	8.87
11	Mar-09	16.29	6.90	NP	9.39
12	Sep-09	16.29	7.40	NP	8.89
13	Mar-10	16.29	7.08	NP	9.21
14	Sep-10	16.29	7.08	NP	9.21
15	Mar-11	16.29	7.02	NP	9.27
16	Sep-11	16.29	7.83	NP	8.46
17	Mar-12	16.29	7.01	NP	9.28

MW-5					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
1	Dec-88	14.65	10.23	NP	4.42
2	May-89	14.56 ⁽⁹⁾	9.29	NP	5.27
3	Feb-91	14.56	10.04	NP	4.52
4	Mar-04	17.11 ⁽⁹⁾	9.10	NP	8.01
5	Dec-06	NA	NA	NA	NA
6	Dec-07	16.72 ⁽⁹⁾	9.66	NA	7.06
7	Mar-08	16.72	9.72	NP	7.00
8	Jun-08	16.72	9.72	NP	7.00
9	Sep-08	16.72	8.56	NP	8.16
10	Dec-08	16.72	9.75	NP	6.97
11	Mar-09	16.72	9.31	NP	7.41
12	Sep-09	16.72	9.79	NP	6.93
13	Mar-10	16.72	9.48	NP	7.24
14	Sep-10	16.72	9.90	NP	6.82
15	Mar-11	16.72	9.29	NP	7.43
16	Sep-11	16.72	9.77	NP	6.95
17	Mar-12	16.72	9.19	NP	7.53

MW-6					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
1	Dec-88	14.75	8.10	NP	6.65
2	May-89	14.67 ⁽⁹⁾	7.58	NP	7.09
3	Feb-91	14.67	7.05	NP	7.62
4	Mar-04	17.22 ⁽⁹⁾	6.51	NP	10.71
5	Dec-06	NA	NA	NA	NA
6	Dec-07	16.82 ⁽⁹⁾	6.61	NP	10.21
7	Mar-08	16.82	7.02	NP	9.80
8	Jun-08	16.82	7.55	NP	9.27
9	Sep-08	16.82	6.06	NP	10.76
10	Dec-08	16.82	6.91	NP	9.91
11	Mar-09	16.82	6.45	NP	10.37
12	Sep-09	16.82	8.05	NP	8.77
13	Mar-10	16.82	6.66	NP	10.16
14	Sep-10	16.82	7.98	NP	8.84
15	Mar-11	16.82	5.91	NP	10.91
16	Sep-11	16.82	7.66	NP	9.16
17	Mar-12	16.82	5.65	NP	11.17

MW-7					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed March 2004					
1	Mar-04	18.09	9.93	NP	8.16
2	Dec-06	NA	NA	NA	NA
3	Dec-07	17.73 ⁽⁹⁾	10.30	NP	7.43
4	Mar-08	17.73	10.51	NP	7.22
5	Jun-08	17.73	10.50	NP	7.23
6	Sep-08	17.73	10.37	NP	7.36
7	Dec-08	17.73	10.60	NP	7.13
8	Mar-09	17.73	10.13	NP	7.60
9	Sep-09	17.73	10.61	NP	7.12
10	Mar-10	17.73	10.02	NP	7.71
11	Sep-10	17.73	10.59	NP	7.14
12	Mar-11	17.73	10.14	NP	7.59
13	Sep-11	17.73	10.58	NP	7.15
14	Mar-12	17.73	10.12	NP	7.61

MW-8					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed March 2004					
1	Mar-04	18.25	9.32	8.15	8.93
2	Nov-06 ^(d)	16.96	10.59	NP	6.37
3	Dec-07	17.84 ^(c)	9.42	NP	8.42
4	Mar-08	17.84	10.50	9.18	7.34
5	Jun-08	17.84	9.68	9.10	8.16
6	Sep-08	17.84	9.63	8.89	8.21
7	Dec-08	17.84	9.58	8.89	8.26
8	Mar-09	17.84	9.62	8.89	8.22
9	Sep-09	17.84	8.55 ^(e)	8.55	9.29
10	Mar-10	17.84	9.02 ^(e)	9.02	8.82
11	Sep-10	17.84	9.75	9.89	7.95
12	Mar-11	17.84	8.89	8.99	8.85
13	Sep-11	17.84	9.87	9.55	7.97
14	Mar-12	17.84	9.29	9.01	8.55

MW-9					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed March 2004					
1	Mar-04	18.27	9.38	NP	8.89
2	Dec-06	NA	NA	NA	NA
3	Dec-07	17.84 ^(c)	9.54	NP	8.30
4	Mar-08	17.84	9.77	NP	8.07
5	Jun-08	17.84	9.68	NP	9.27
6	Sep-08	17.84	9.30	NP	8.54
7	Dec-08	17.84	9.83	NP	8.01
8	Mar-09	17.84	9.37	NP	8.47
9	Sep-09	17.84	9.70	NP	8.14
10	Mar-10	17.84	9.46	NP	8.38
11	Sep-10	17.84	9.75	NP	8.09
12	Mar-11	17.84	9.52	NP	8.32
13	Sep-11	17.84	9.80	NP	8.04
14	Mar-12	17.84	9.54	NP	8.30

MW-10					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed March 2004					
1	Mar-04	18.21	9.87	8.24	8.34
2	Dec-06	18.21	9.30	8.86	8.91
3	Dec-07	17.83 ^(c)	8.98 ^(e)	8.98	8.85
4	Mar-08	17.83	9.28	8.98	8.55
5	Jun-08	17.83	8.86	8.78	7.23
6	Sep-08	17.83	8.95	8.84	8.88
7	Dec-08	17.83	8.97	8.74	8.86
8	Mar-09	17.83	9.25	8.54	9.25
9	Sep-09	17.83	8.63	8.52	9.20
10	Mar-10	17.83	10.30	8.58	7.53
11	Sep-10	17.83	8.76	8.82	9.01
12	Mar-11	17.83	8.15	8.14	9.68
13	Sep-11	17.83	8.83	8.78	9.00
14	Mar-12	17.83	7.89	7.75	9.94

MW-11					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed May 2004					
1	Nov-06 ^(d)	17.76 ^(c)	10.33	NP	7.43
2	Dec-07	17.76	10.27	NP	7.49
3	Mar-08	17.76	10.34	NP	7.42
4	Jun-08	17.76	10.20	NP	8.16
5	Sep-08	17.76	10.03	NP	7.73
6	Dec-08	17.76	10.34	NP	7.42
7	Mar-09	17.76	10.20	NP	7.56
8	Sep-10	17.76	10.25	NP	7.51
9	Mar-10	17.76	10.23	NP	7.53
10	Sep-10	17.76	10.24	NP	7.52
11	Mar-11	17.76	10.10	NP	7.66
12	Sep-11	17.76	10.30	NP	7.46
13	Mar-12	17.76	10.18	NP	7.58

MW-12					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed between 2004-2006					
1	Nov-06 ^(d)	17.83 ^(c)	9.37	NP	8.46
2	Dec-07	17.83	9.15	NP	8.68
3	Mar-08	17.83	9.11	NP	8.72
4	Jun-08	17.83	8.86	NP	8.97
5	Sep-08	17.83	8.76	NP	9.07
6	Dec-08	17.83	8.98	NP	8.85
7	Mar-09	17.83	8.50	NP	9.33
8	Sep-09	17.83	8.95	NP	8.88
9	Mar-10	17.83	8.66	NP	9.17
10	Sep-10	17.83	8.89	NP	8.94
11	Mar-11	17.83	8.18	NP	9.65
12	Sep-11	17.83	8.80	NP	9.03
13	Mar-12	17.83	7.79	NP	10.04

MW-13					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed between 2004-2006					
1	Dec-06	17.66 ^(c)	9.81	9.44	7.85
2	Dec-07	17.66	9.95	9.39	7.71
3	Mar-08	17.66	10.02	9.54	7.64
4	Jun-08	17.66	9.86	9.45	7.80
5	Sep-08	17.66	10.34	9.54	7.32
6	Dec-08	17.66	10.54	9.65	7.12
7	Mar-09	17.66	9.26	9.14	8.40
8	Sep-09	17.66	9.91 ^(c)	9.72	7.75
9	Mar-10	17.66	9.22 ^(c)	9.22	8.44
10	Sep-10	17.66	9.40	10.18	7.48
11	Mar-11	17.66	9.90	NM	NM
12	Sep-11	17.66	10.41	9.64	7.25
13	Mar-12	17.66	10.09	9.02	7.57

MW-14					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed between 2004-2006					
1	Nov-06 ^(d)	17.60 ^(c)	9.11	9.11(sheen)	8.49
2	Dec-07	17.60	8.86	8.84	8.74
3	Mar-08	17.60	8.91	8.88	8.69
4	Jun-08	17.60	8.66	8.62	8.94
5	Sep-08	17.60	8.64	NP	8.96
6	Dec-08	17.60	8.70	NP	8.90
7	Mar-09	17.60	9.25	NP	9.25
8	Sep-09	17.60	8.80	NP	8.80
9	Mar-10	17.60	8.42	NP	9.18
10	Sep-10	17.60	8.56	8.62	8.98
11	Mar-11	17.60	7.93	7.92	9.67
12	Sep-11	17.60	8.60	8.55	9.00
13	Mar-12	17.60	7.71	7.61	9.89

MW-15					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed between 2004-2006					
1	Dec-06	17.80 ^(c)	9.15	NP	8.65
2	Dec-07	17.80	9.30	NP	8.50
3	Mar-08	17.80	9.20	9.18	8.60
4	Jun-08	17.80	9.60	9.63	8.20
5	Sep-08	17.80	8.84	8.84 ^(d)	8.96
6	Dec-08	17.80	9.19	8.36	8.61
7	Mar-09	17.80	8.70	NP	9.10
8	Sep-09	17.80	9.40 ^(e)	9.22	8.08
9	Mar-10	17.80	8.81 ^(e)	8.81	8.99
10	Sep-10	17.80	9.42	9.45	8.35
11	Mar-11	17.80	8.50	NM	9.30
12	Sep-11	17.80	9.32	NP	8.48
13	Mar-12	17.80	8.55	NP	9.25

MW-16					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed between 2004-2006					
1	Dec-06	NA	NA	NA	NA
2	Dec-07	17.74 ^(c)	9.36	NP	8.38
3	Mar-08	17.74	9.88	NP	7.86
4	Jun-08	17.74	9.25	NP	7.80
5	Sep-08	17.74	9.07	NP	8.67
6	Dec-08	17.74	9.45	NP	8.29
7	Mar-09	17.74	8.88	NP	8.86
8	Sep-09	17.74	9.51	NP	8.23
9	Mar-10	17.74	8.92	NP	8.82
10	Sep-10	17.74	9.40	NP	8.34
11	Mar-11	17.74	9.16	NP	8.57
12	Sep-11	17.74	9.56	NP	8.18
13	Mar-12	17.74	9.38	NP	8.36

MW-17					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed between 2004-2006					
1	Dec-06	NA	NA	NA	NA
2	Dec-07	18.17 ^(c)	9.40	9.32	8.77
3	Mar-08	18.17	9.34	9.18	8.83
4	Jun-08	18.17	8.98	8.97	9.19
5	Sep-08	18.17	9.21	7.92	8.96
6	Dec-08	18.17	9.25	9.11	8.92
7	Mar-09	18.17	8.89	NP	9.28
8	Sep-09	18.17	9.31	NP	8.86
9	Mar-10	18.17	8.93	NP	9.24
10	Sep-10	18.17	9.15	NP	9.02
11	Mar-11	18.17	8.52	8.50	9.65
12	Sep-11	18.17	9.15	NP	9.02
13	Mar-12	18.17	8.17	NP	10.00

MW-18					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
Installed between 2004-2006					
1	Dec-06	NA	NA	NA	NA
2	Dec-07	16.35 ^(c)	8.30	NP	8.05
3	Mar-04	16.35	8.34	NP	8.01
4	Jun-08	16.35	8.34	NP	8.20
5	Sep-08	16.35	8.48	NP	7.87
6	Dec-08	16.35	8.61	NP	7.74
7	Mar-09	16.35	7.75	NP	8.60
8	Sep-09	16.35	8.50	NP	7.85
9	Mar-10	16.35	7.97	NP	8.38
10	Sep-10	16.35	8.28	NP	8.07
11	Mar-11	16.35	8.63	NP	7.72
12	Mar-11	16.35	8.90	NP	7.45
13	Mar-12	16.35	8.56	NP	7.79

MW-E					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
1	Dec-88	NM	NM	NM	NM
2	May-89	15.32	10.39	NP	4.93
3	Feb-91	NM	NM	NM	NM
4	Mar-04	17.80	9.92	NP	7.88
5	Nov-06 ^(d)	17.80	10.22	NP	7.58
6	Dec-07	17.47 ^(c)	10.03	NP	7.44
7	Mar-08	17.47	10.21	NP	7.26
8	Jun-08	17.47	10.20	NP	7.27
9	Sep-08	17.47	9.55	NP	7.92
10	Dec-08	17.47	10.32	NP	7.15
11	Mar-09	17.47	9.79	NP	7.68
12	Sep-09	17.47	10.22	NP	7.25
13	Mar-10	17.47	9.82	NP	7.65
14	Sep-10	17.47	10.11	NP	7.36
15	Mar-11	17.47	9.10	NP	8.37
16	Sep-11	17.47	8.41	NP	9.06
17	Mar-12	17.47	9.86	NP	7.61

RW-1					
Sampling Event No.	Date	TOC Elevation	DTW	DTP	GW Elevation
1	Dec-88	NM	NM	NM	NM
2	May-89	14.54	10.17	10.14	4.37
3	Feb-91	14.54	11.46	10.85	3.57
4	Mar-04	18.32	7.20	5.62	11.12
5	Nov-06 ⁽⁴⁾	18.32	9.15	9.11	9.17
6	Dec-07	16.70 ⁽³⁾	9.53 ⁽²⁾	9.53	7.17
7	Mar-08	16.70	8.99	8.92	7.71
8	Jun-08	16.70	8.95	8.87	7.75
9	Sep-08	16.70	NM ⁽¹⁾	NM ⁽¹⁾	NM ⁽¹⁾
10	Dec-08	16.70	NM	NM	NM
11	Mar-09	16.70	9.06 ⁽²⁾	9.06	7.64
12	Sep-09	16.70	9.45 ⁽²⁾	9.45	7.25
13	Mar-10	16.70	8.93 ⁽²⁾	8.93	7.77
14	Sep-10	16.70	9.50	9.65	7.05
15	Mar-11	16.70	9.05	9.04	7.65
16	Sep-11	16.70	9.75	9.74	6.95
17	Mar-12	16.70	9.33	NP	7.35

Notes:

The 1988, 1989, and 1991 water elevations were measured by Groundwater Technology, Inc.

The 2004 and 2006 water elevations were measured by PES Environmental.

NS = Not sampled

NP = No product

NM = Not measured

NA = data not available from the previous consultant for this event

TOC Elevation = Top of Casing Elevation

DTW = Depth to water from the top of the casing

DTP = Depth to product from the top of the casing

GW Elevation - Groundwater elevation as compared to mean sea level

⁽¹⁾ Wells resurveyed in May 1989

⁽²⁾ New elevation recorded by PES. Date of survey unclear.

⁽³⁾ Wells resurveyed by PES in April 2007

⁽⁴⁾ no water level data available for the December 2006 sampling event

⁽⁵⁾ Thickness of product interfered with determining oil/water interface.

⁽⁶⁾ Depth to groundwater = depth to free product as difference could not be determined

APPENDIX E

Historical Product Extraction Data Table

Table D
Historical Trench and Monitoring Well Product Recovery
6400 Christie Avenue, Emeryville, CA

Extraction Date	Well or Trench Location																							Total Extracted					
	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	MW-10	MW-11	MW-12	MW-13	MW-14	MW-15	MW-16	MW-17	MW-18	MW-E	RW-1	TA-E	TA-M	TA-W	TB-E	TB-M		TB-W	TC-E	TC-M	TC-W	
Apr-04	---	---	---	---	---	1.00	---	1.00	---	---	---	---	---	---	---	---	---	19.75	---	---	---	---	---	---	---	---	---	---	21.75
May-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	22.5	---	---	---	---	---	---	---	---	---	22.50	
Sep-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.74	---	---	---	---	---	---	---	---	---	0.74	
Oct-04	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	5.22	---	---	---	---	---	---	---	---	---	0.00	
2004 Total	44.99																												
Jan-05	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.00	
Apr-06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.3	---	---	---	---	---	---	3.30	
Jun-06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	8.9	9.2	10.3	---	---	---	---	---	---	28.40	
Jul-06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	3.6	5	5.3	---	---	---	---	---	---	13.90	
Aug-06	---	---	---	---	---	0.8	---	0.8	---	---	1	0.2	0.2	---	---	---	---	---	0.2	0.2	0.4	---	---	---	---	---	---	3.80	
Sep-06	---	---	---	---	---	---	---	0.8	---	---	0.2	0.3	---	---	---	---	---	---	0.6	---	0.6	---	---	---	---	---	---	2.50	
Nov-06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	---	---	---	---	---	---	---	---	0.20	
Dec-06	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	---	---	---	---	---	---	---	---	0.20	
2006 Total	52.30																												
Jan-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	---	---	---	---	---	---	---	---	0.20	
Feb-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	---	---	---	---	---	---	---	---	0.20	
Mar-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.2	---	---	---	---	---	---	---	---	0.20	
Nov-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.81	0.68	---	---	---	---	0.63	---	2.12	
Dec-07	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.01	0.61	0.07	---	---	---	---	0.002	---	0.69	
2007 Total	3.41																												
Feb-08	0.03	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.45	0.08	0.06	0.18	0.04	0.06	0.06	0.08	0.05	0.05	1.14	
Feb-08	---	---	0.05	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.45	0.15	0.15	0.30	---	---	---	---	---	---	1.10	
Mar-08	---	---	---	0.02	0.002	0.02	0.001	0.04	0.02	0.03	0.004	0.01	0.02	0.01	0.01	0.003	0.012	0.3	0.09	0.06	0.09	---	---	---	0.06	---	0.80		
Mar-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.002	0.008	---	---	---	---	---	---	0.01	
May-08	0.09	---	---	---	---	---	---	0.075	---	0.075	0.019	0.009	---	---	0.13	---	---	1.397	0.866	1.466	1.431	---	---	---	---	---	5.56		
Jun-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.15	0.11	0.57	---	---	---	---	---	0.83		
Aug-08	0.12	---	---	---	---	---	---	0.048	---	0.024	0.009	---	---	---	---	---	---	0.75	0.9	1.6	0.7	0.3	0.3	---	0.15	---	4.90		
Sep-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.03	0.09	0.048	---	---	---	---	---	0.17		
Nov-08	0.078	---	---	---	---	0.009	---	---	---	0.06	0.009	---	---	0.003	0.06	---	---	0.6	0.1	0.03	---	0.06	0.06	0.06	0.06	0.09	0.09	1.37	
Dec-08	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.0003	0.08	---	---	---	---	0.03	---	0.11		
2008 Total	128.85																												
Mar-09	0.279	---	---	---	---	0.378	---	0.369	---	0.261	0.007	0.023	0.117	---	0.342	---	0.023	1.800	0.750	0.950	1.010	0.153	0.153	0.153	0.653	0.153	0.153	7.73	
Jun-09	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.5	---	---	---	---	---	---	---	---	0.50	
Sep-09	0.286	---	---	---	0.022	0.418	---	0.176	0.308	0.176	0.088	0.007	0.176	0.088	0.176	0.022	0.066	7.15	1.4	1.1	1.2	1.1	1.1	1.1	1.1	1.1	19.46		
Dec-09	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0	0.9	0.06	---	---	---	0	---	---	0.96	
2009 Total	28.65																												
Mar-10	0.14	---	---	---	0.01	0.18	0.02	0.60	---	0.60	0.03	0.10	0.69	0.04	0.30	0.02	---	8.00	1.30	1.00	1.00	0.50	1.00	0.50	1.00	1.00	1.00	19.03	
Jun-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.75	---	---	---	---	---	---	---	0.75	
Sep-10	0.3	0.2	0.4	0.5	0.01	0.5	0.01	0.5	---	1.6	0.02	0.01	1.5	0.02	1.0	0.02	0.1	6.9	1.00	1.00	1.00	0.3	0.3	0.4	1.00	0.5	0.5	19.59	
Dec-10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.10	0.00	0.05	---	---	---	0.00	---	---	0.15	
2010 Total	39.52																												
Mar-11	---	---	---	---	---	0.002	---	0.002	---	---	---	0.002	---	---	0.003	---	---	0.002	0.06	0.06	0.02	---	---	---	0	---	---	0.15	
Sep-11	0.2	---	---	---	---	0.3	---	---	---	---	0.2	---	---	0.1	---	---	---	0.5	---	0.45	0.25	0.1	0.1	0.1	---	0.1	0.1	2.50	
2011 Total	2.65																												
Mar-12	0.015	---	---	---	---	0.015	---	---	---	---	0.06	---	---	---	0.01	---	---	0.06	0.13	0.03	0.015	---	0.01	---	---	0.015	0.015	0.375	
2012 Total	0.38																												
Total Extracted	1.54	0.20	0.45	0.52	0.04	3.62	0.03	4.41	0.33	2.83	1.65	0.66	2.70	0.26	2.03	0.07	0.20	76.57	21.92	25.71	28.58	2.55	3.08	2.37	4.77	3.01	0.00	190.09	

Note:
All free product quantities presented in gallons
Product extraction events conducted before November 2007 were completed by PES Environmental

APPENDIX F

Groundwater Disposal Documentation

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator ID Number CAL000374146	2. Page 1 of 1	3. Emergency Response Phone 800-424-8300	4. Manifest Tracking Number 008643493 JJK		
5. Generator's Name and Mailing Address 3170 SMITH ST STE 201 BERKELEY CA 94710 510-542000			Generator's Site Address (if different than mailing address) 6400 CHRISTIE ST EMERVILLE CA 94609				
6. Transporter 1 Company Name Evergreen Environmental Services			U.S. EPA ID Number CAD982413262				
7. Transporter 2 Company Name			U.S. EPA ID Number				
8. Designated Facility Name and Site Address EVERGREEN OIL, INC. 6880 SMITH AVENUE NEWARK CA 94560 510-795-4400			U.S. EPA ID Number CAD980887418				
Facility's Phone:							
9a. HM	9b. U.S. DOT Description (including Proper Shipping Name, Hazard Class, ID Number, and Packing Group (if any))	10. Containers		11. Total Quantity	12. Unit Wt./Vol.	13. Waste Codes	
	1. NON-RCRA HAZARDOUS WASTE, LIQUID (OIL/WATER)	No. 001	Type TT	1100	G	223	
	2.						
	3.						
	4.						
14. Special Handling Instructions and Additional Information PROFILE # 76B19 Invoice # DOT ERG# 171 WEAR PROTECTIVE CLOTHING Sales Order # W0075241							
15. GENERATOR'S/OFFEROR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name, and are classified, packaged, marked and labeled/placarded, and are in all respects in proper condition for transport according to applicable international and national governmental regulations. If export shipment and I am the Primary Exporter, I certify that the contents of this consignment conform to the terms of the attached EPA Acknowledgment of Consent. I certify that the waste minimization statement identified in 40 CFR 262.27(a) (if I am a large quantity generator) or (b) (if I am a small quantity generator) is true. BCA							
Generator's/Offor's Printed/Typed Name Bay Center Apartments			Signature <i>[Signature]</i>		Month 06	Day 05	Year 12
16. International Shipments <input type="checkbox"/> Import to U.S. <input type="checkbox"/> Export from U.S. Port of entry/exit: _____ Date leaving U.S.: _____							
17. Transporter Acknowledgment of Receipt of Materials							
Transporter 1 Printed/Typed Name CRIG-TRACO			Signature <i>[Signature]</i>		Month 06	Day 05	Year 12
Transporter 2 Printed/Typed Name			Signature		Month	Day	Year
18. Discrepancy							
18a. Discrepancy Indication Space <input type="checkbox"/> Quantity <input type="checkbox"/> Type <input type="checkbox"/> Residue <input type="checkbox"/> Partial Rejection <input type="checkbox"/> Full Rejection							
Manifest Reference Number:							
18b. Alternate Facility (or Generator)			U.S. EPA ID Number				
Facility's Phone:							
18c. Signature of Alternate Facility (or Generator)					Month	Day	Year
19. Hazardous Waste Report Management Method Codes (i.e., codes for hazardous waste treatment, disposal, and recycling systems)							
1.	2.	3.	4.				
20. Designated Facility Owner or Operator: Certification of receipt of hazardous materials covered by the manifest except as noted in Item 18a							
Printed/Typed Name			Signature		Month	Day	Year

GENERATOR

TRANSPORTER INT'L

DESIGNATED FACILITY



Evergreen Environmental Services

dedicated to the protection of the environment

To schedule a pickup, call

800-596-9455

or 510-795-4400

6880 Smith Ave., Newark, CA EPA# CAD982413262
16540 S. San Pedro St., Carson, CA EPA# CAD982413262

Send Payment to:

Evergreen Oil Inc
Dept. of LA 23234
Pasadena, CA 91185-3234

Work Order Bill of Lading

WOC75291

SES007

Customer

Pickup Location:
**BAY CENTER APARTMENTS
6400 CHRISTIE ST**

EMERYVILLE CA 94608

Bill To:
**STELLAR ENVIRONMENTAL SOLUTIONS
2188 SIXTH ST STE 201**

BERKELEY CA 94710

Contact: **HENRY PIETROPAOLI (510) 594-2050 Ext. 0000**

NOTE

CUST NO.		EPA NO.		TERMS		PURCHASE ORDER NUMBER			TERRITORY
SE9007		CAL000374146		Net 30					130
REQ. DATE		BOE NO.		Billgroup	OIL ROUTE	PROFILE	PROFILE	PRINTED BY	
5/1/2012					5			cathy	
Quantity		Item Description			Manifest No.		Unit Price	Amount	
Req.	Pickup								
00.00	1100	NON-PCRA HAZARDOUS WASTE, LIQUID			0086043493JX		\$0.00 Contract	C	
2.00	2	HOURLY LABOR/TRANSPORTATION					\$0.00 Contract	C	
		NEEDS NEW PROFILE CHANGED TO BULK 76819. WASH OUT						C	
OILYWATER ***CALL 30 MINUTES AHEAD FOR STEVE BITTMAN TO MEET YOU*** 510-644-3123 OR 510-612-8751									

TSDF

- Evergreen Oil, Inc. 6880 Smith Ave. Newark, CA 94560 CAD980887418
- Evergreen Oil, Inc. - Davis Road 30B Davis, CA 95616 CAD982446874
- Evergreen Oil, Inc. - Fresno 4139 N. Valentine Fresno, CA 93722 CAD982446882
- Evergreen Env. Svc. 16604 San Pedro Carson, CA 90746 CAD981696420
- Evergreen Oil, Inc. - Santa Maria 745 A West Betteravia Santa Maria, CA 93454 CAD982446858
- SA Recycling 33210 Western Union City, CA 94587 CAL000344530

Consolidated Manifest

DRIVER CHECKLIST

- Time In 7:15 Time Out 7:45
- Tank/Drum Properly Labeled
- Accumulation Start Date Marked
- House Keeping - Tank/Drum Clean
- Other Services Checked: Oil Filters/Drums Antifreeze
- Called in other services needed: Oil Filters/Drums Antifreeze

Source: Collection Station Government
 Marine Agricultural Industrial

Retain Sample # 3

IMPORTANT NOTICE REGARDING THE DISPOSITION OF YOUR OIL.

Per California Health and Safety Code Section 25250.9, Evergreen hereby advises customer that customer's shipment of used oil may be transported to a facility that is required to comply with federal regulations applicable to management of used oil, but that is not required to comply with the more stringent requirements applicable to hazardous waste management facilities. California facilities that handle or process used oil are required to meet those more stringent requirements, and some out-of-state facilities that process used oil also meet those requirements. These include more stringent leak detection and prevention requirements, engineering certifications of tank integrity, and financial assurances for closure and accidental releases. It is lawful to send used oil to out-of-state facilities that comply only with federal used oil management standards and not these more stringent requirements. This notification is for information purposes only.

Generator certifies that it has established a program to reduce the volume or quantity & toxicity of the hazardous waste to the degree determined by generator to be economically practicable.

I hereby certify that I have read and have the authority to bind the above listed generator to the terms on the reverse side of this form.

Driver Signature: [Signature] Print Name: CHRISTIAN Route #: 2203 Date: 6-5-12 Generator's Signature: [Signature] Print Name: Steve Bittman for Bay Center Arts Date: _____