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SECOND SEMIANNUAL 2015 GROUNDWATER MONITORING AND PRODUCT EXTRACTION REPORT

BRIDGEWATER APARTMENTS PHASE I PARKING GARAGE
6400 CHRISTIE AVENUE
EMERYVILLE, CALIFORNIA

Prepared for:

EMERYBAY COMMERCIAL ASSOCIATION
EMERYVILLE, CA 94608

January 2016

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Prepared for:

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

Prepared by:

STELLAR ENVIRONMENTAL SOLUTIONS, INC.
2198 SIXTH STREET
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January 8, 2016

Project No. 2007-65

STELLAR
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January 8, 2016

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: Second Semiannual 2015 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 September 2015 at the referenced site. This report is being submitted on behalf of the owner and Responsible Party, Emerybay Commercial Association. The subject site activities since the beginning of 2015 included a surfactant injection into selected wells, introduction of a high sulfate metabolic supplement into the site trench wells two product extraction events and the first and second semiannual 2015 groundwater monitoring events.

This report summarizes the 24th sampling event conducted at the site since 1988. The bulk of the residual contamination beneath the site remains concentrated around wells MW-8, MM-10, MW-12, MW-13, MW-14 and MW-15, and the plume underlying the parking garage. 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.

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.
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.

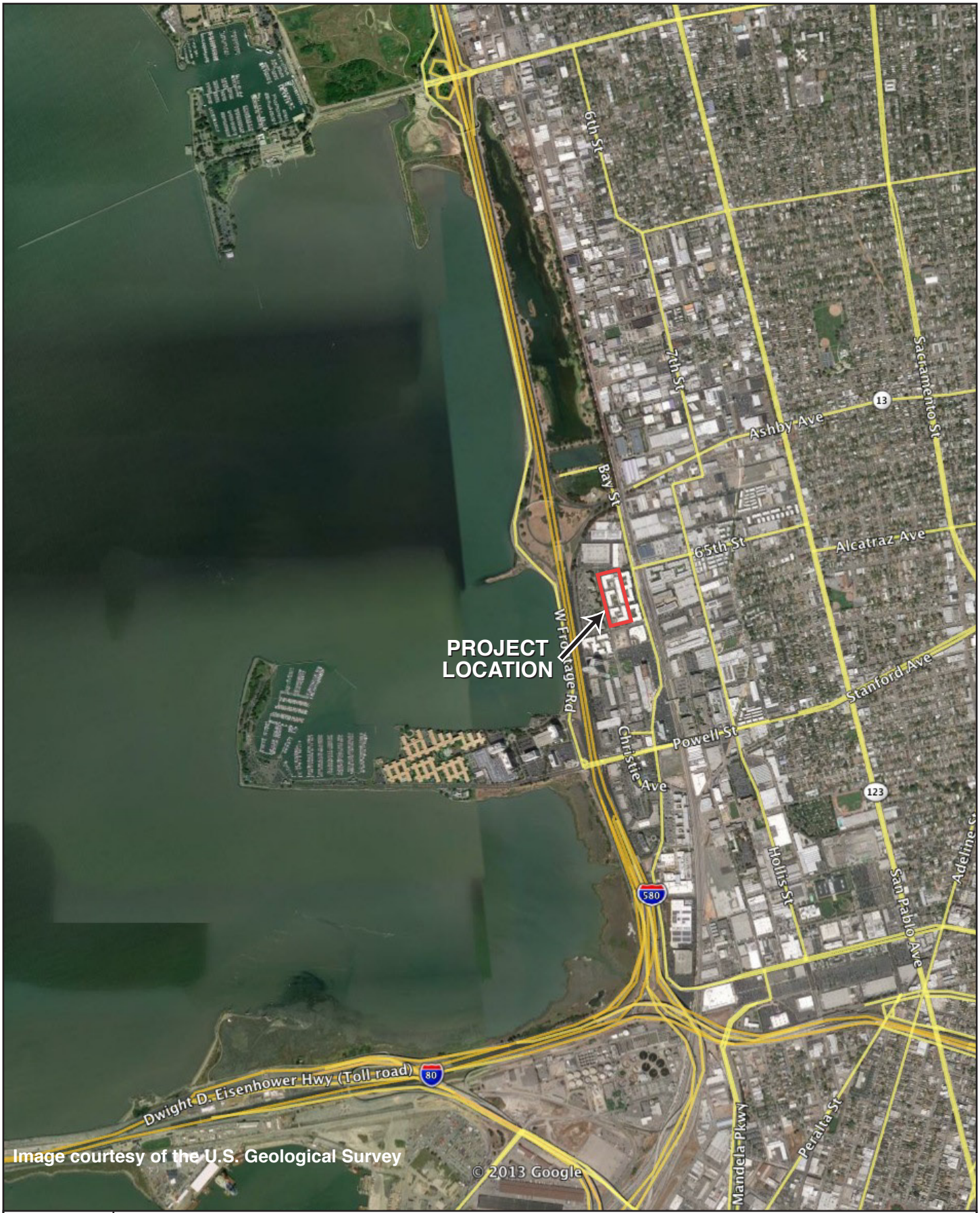
SITE AND VICINITY DESCRIPTION

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 Bridgewater 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 Street, beyond Christie Avenue and to the west by the Bay Center Offices, and to the south by 64th Street. 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.



N

SITE LOCATION ON AERIAL PHOTO

6400 Christie Ave.
Emeryville, CA

By: MJC | JUNE 2015

Figure 1

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2007-65-01

SITE PLAN AND ADJACENT LAND USE

N	6400 Christie Ave. Emeryville, CA	By: MJC	JUNE 2015
		Figure 2	

STELLAR ENVIRONMENTAL SOLUTIONS, INC
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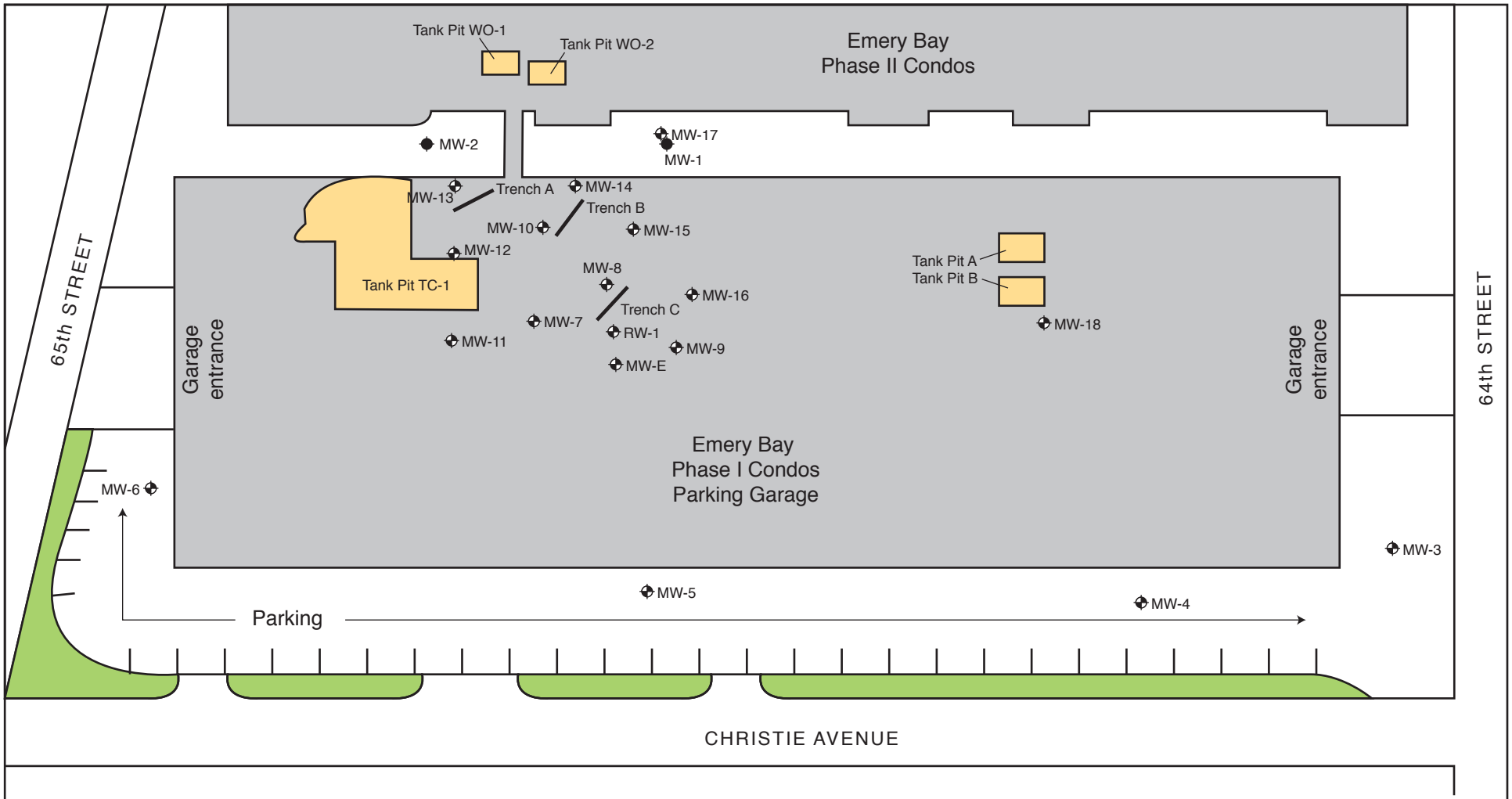
2007-65-80

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 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 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



LEGEND

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

0 60

SCALE: 1/2" = 60 FEET

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MONITORING WELL AND TRENCH LOCATIONS

6400 Christie Ave., Emeryville, CA

Figure 3

by: MJC | JUNE 2015

2007-65-02

(Stellar Environmental, 2007) 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.

In March 2014, Stellar Environmental Solutions conducted a groundwater investigation that consisted of advancing five soil borings in the areas between wells MW-3 on the southern edge of the site and MW-18 in the garage and downgradient of MW-3, with the goal to locate a suspected source of residual subsurface hydrocarbons. The reason for this additional work was based on the recent uptrend in diesel concentration noted in well MW-3 since the late 2012 initiation of construction de-watering at the 6340 Christie Avenue (ACHCSA Case # RO0000057) property across 64th Street, south of the subject property garage area.

The impact the dewatering had on the subject site was apparent in terms of both the changes to the site hydrology—with the change in the groundwater flow regime from west/northwest to having a southern component—as well as a hydrochemical impact. The hydochemical impact, as documented in the Y2013 and Y2014 site monitoring reports, was to draw the hydrocarbon plume southward, increasing the concentrations of TEHd by orders of magnitude at well MW-3 near the subject property south border, compared to the previous 5 years of monitoring that showed stable results. The TEHd concentration at MW-3 on the southern property line increased from 15,000 µg/L TEHd in April 2013 to 250,000 µg/L TEHd in September 2013. The relatively stable TEHd concentration present in well MW-18 since 2012, suggested a possible undiscovered source between these two wells that was impacting well MW-3. However, the plume appears to have stabilized since the cessation of construction dewatering at the site across 64th Street along with the product recovery efforts in the garage area. That groundwater flow direction and plume geometry has now reverted to the pre-pumping groundwater regime. The TVHg and TEHd concentrations in well MW-3 have substantially decreased since the highest concentrations of 2013, with both the September 2014 and September 2015 monitoring events.

OBJECTIVES AND SCOPE OF WORK

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

- Introduction of an electron acceptor solution (Nutrisulfate) into sump trench wells TAE, TAM, TAW, TCE, TCM and TCW on September 3, 2015. Nutrisulfate is a high sulfate metabolic supplement designed to enhance the kinetics and efficiency of microbial systems specifically related to bioremediation of BTEX, MTBE, TBA and other petroleum hydrocarbons.
- Active extraction on all groundwater monitoring wells and recovery well RW-1.

- Record water levels in site wells to determine groundwater flow direction.
- Sampling of site monitoring 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), currently overseen by Mr. Mark Detterman. 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, submitted to ACEH on April 6, 2010 (Stellar Environmental, 2010). The case has been assigned No. SLT2O05561 in the Water Board's GeoTracker system. Electronic uploads of required data/reports are submitted to both agencies. The November 2012 and March 2013 monitoring reports warned ACEH of impacts from the adjacent site dewatering at 6340 Christie Avenue and tracked the pull of the hydrocarbon plume to the southern property boundaries. The cessation of dewatering from the adjacent southern development, along with selected well purging at Bay Center, resulted in a re-equilibration of the plume back closer to its former geometry as documented in the 2014 monitoring events.

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, 2008 and 2014.

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

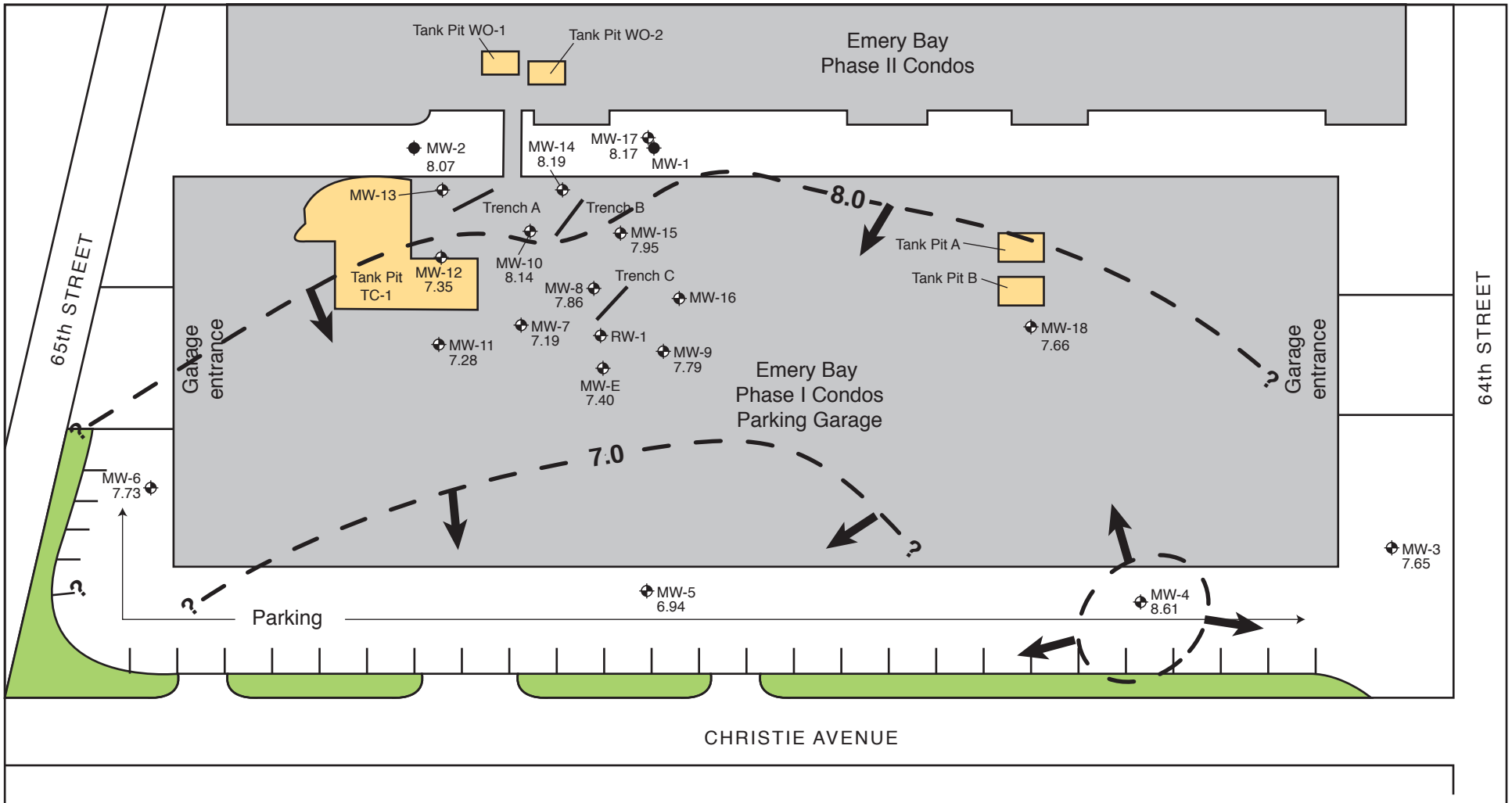
fault zone, the legislatively defined zone of restricted land use 200 feet around an active fault due to the high probability of ground rupture.

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 flow direction measured during the September 2015 monitoring event was generally towards the west. The localized, approximately southerly direction to groundwater flow in the area of MW-3 noted in the 2013 monitoring events, thought to be the result of construction dewatering that had been occurring during 2013 at the re-development site across 64th Street, appears to have dissipated for the current event, since that de-watering has been discontinued since February of 2014. According to current and historical water level data obtained from onsite monitoring wells, depth to groundwater beneath the site ranges from approximately 7.5 to 10.5 feet below ground surface (bgs). Groundwater elevations recorded during the last monitoring event in March 2015, ranged from 7.03 feet (RW-1) to 9.19 feet (MW-6) above mean sea level. For this "Fall" monitoring event of September 2015, groundwater elevations ranged from 6.94 feet (MW-5) to 9.24 feet (MW-16) above mean sea level, with the average groundwater gradient for the current monitoring event being 0.007 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
- NM = Not measured
- Historical tank pit area
- Landscaping
- 8.0 Groundwater elevation contour in feet amsl
- Extrapolated groundwater elevation contour
- Groundwater flow direction

0 60

SCALE: 1/2" = 60 FEET

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GROUNDWATER POTENTIOMETRIC SURFACE MAP — SEPT. 28, 2015

6400 Christie Ave., Emeryville, CA

Figure 4

by: MJC | DECEMBER 2015

2007-65-95

3.0 SEPTEMBER 2015 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 September 28, 2015 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

September 28, 2015
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 (September 28, 2015)
MW-3	25	5 to 20	16.65	7.22	1.78	7.65
MW-4	25	5 to 20	16.29	NP	NP	8.61
MW-5	25	5 to 20	16.72	NP	NP	6.94
MW-6	25	5 to 20	16.82	NP	NP	7.73
MW-7	20	5 to 20	17.73	NP	NP	7.19
MW-8	16	5 to 16	17.84	9.93	0.05	7.86
MW-9	20	5 to 20	17.84	NP	NP	7.79
MW-10	20	5 to 20	17.83	9.34	0.35	8.14
MW-11	20	5 to 20	17.76	NP	NP	7.28
MW-12	20	5 to 20	17.83	NP	NP	7.35
MW-13	20	5 to 20	17.66	9.57	0.02	8.07
MW-14	20	5 to 20	17.60	NP	NP	8.19
MW-15	20	5 to 20	17.80	NP	NP	7.95
MW-16	20	5 to 20	17.74	NP	NP	9.24
MW-17	20	5 to 20	18.17	NP	NP	8.17
MW-18	20	5 to 20	16.35	NP	NP	7.66
MW-E	47	7 to 40	17.47	NP	NP	7.40
RW-1	30	unknown	16.70	NM	NM	7.01
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 product

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 750 gallons of water and 0.083 gallons of product were removed/purged from wells during the active product removal on September 24 and 25, 2015; The water generated during the active product and water removal was stored in a 1,100 gallon, plastic above ground storage tank located in the fenced compound.

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, 2013), 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 – September 28, 2015
6400 Christie Avenue, Emeryville, California

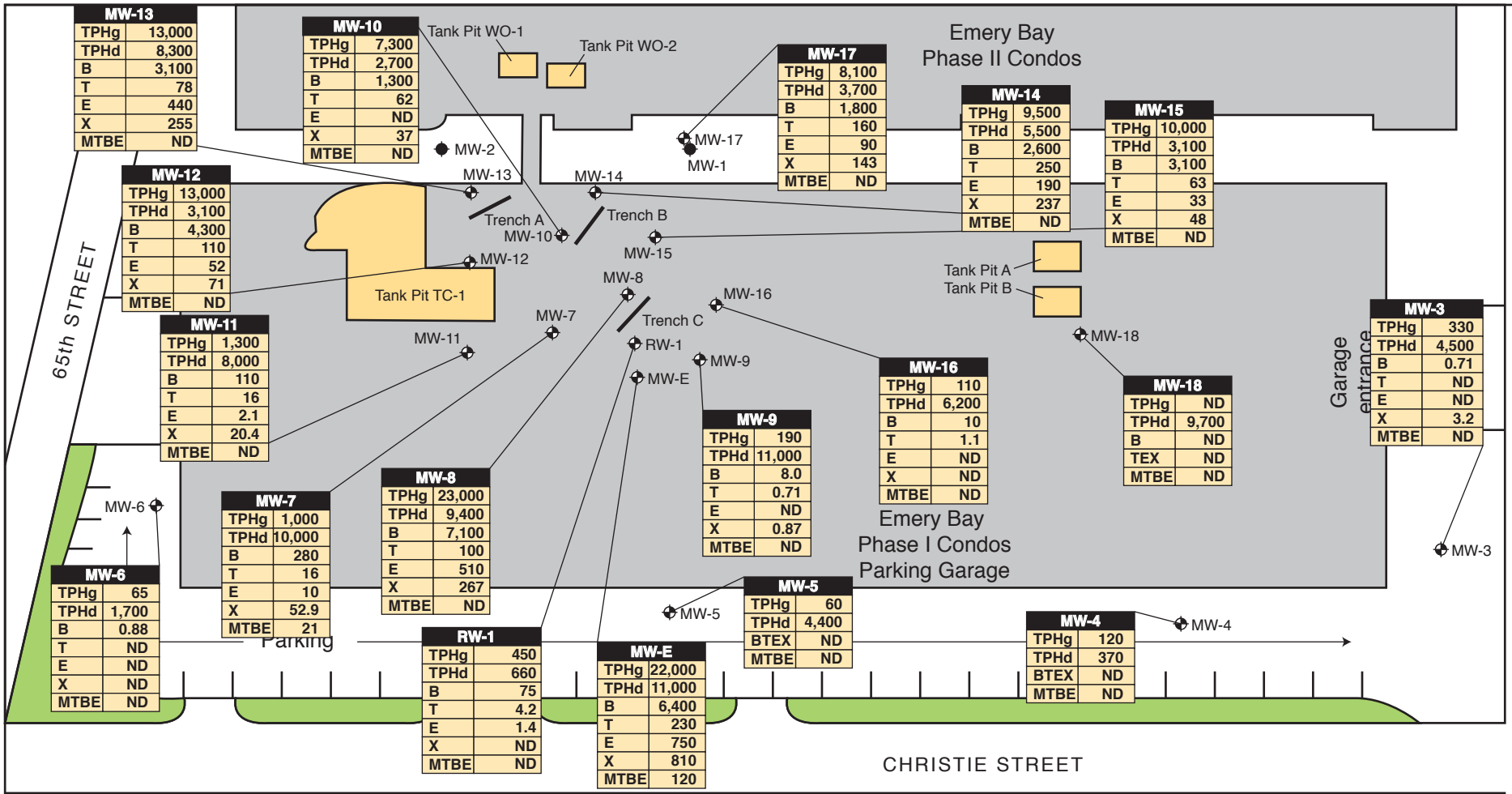
Well ID	Analytical Results						
	TPHg	TPHd	Benzene	Toluene	Ethyl-benzene	Total Xylenes	MTBE
MW-3	330	**4,500**	0.71	<0.5	<0.5	3.2	<2.0
MW-4	120	**4,400**	<0.5	<0.5	<0.5	<0.5	<2.0
MW-5	60	**4,400**	<0.5	<0.5	<0.5	<0.5	<2.0
MW-6	65	**1,700**	0.88	<0.5	<0.5	<0.5	< 2.0
MW-7	**1,000**	**10,000**	**280**	16	10	52.9	21
MW-8	**23,000**	**4,400**	**7,100**	100	**510**	**267**	<170
MW-9	190	**9,000**	8.0	0.71	<0.5	0.87	<2.0
MW-10	**7,300**	**2,700**	**1,300**	62	**<0.5**	37	<100
MW-11	**1,300**	**8,000**	**110**	16	2.1	20.4	<2.0
MW-12	**13,000**	**3,100**	**4,300**	110	**52**	71	<50
MW-13	**13,000**	**8,300**	**3,100**	78	**440**	**255**	<50
MW-14	**9,500**	**5,500**	**2,600**	**250**	**190**	**237**	<100
MW-15	**10,000**	**3,100**	**3,100**	63	33	48	<50
MW-16	110	**6,200**	10	1.1	<0.5	<0.5	<2.0
MW-17	**8,100**	**3,700**	**1,800**	**160**	**90**	143	<50
MW-18	<50	**9,700**	<0.5	<0.5	<0.5	<0.5	<2.0
MW-E	**22,000**	**11,000**	**6,400**	**230**	**750**	**80**	<120
RW-1	450	**660**	**75**	4.2	1.4	<0.5	<2.0
ESLs [(a)]	**100 / 500**	**100 / 640**	**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, 2013).

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)

0 60

SCALE: 1/2" = 60 FEET

N

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GROUNDWATER MONITORING WELL ANALYTICAL RESULTS – Q2, 2015
6400 Christie Ave., Emeryville, CA

Figure 5

by: MJC | DECEMBER 2015

2007-65-94

Distribution of Hydrocarbon Contaminants

For the current sampling event, several wells have 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) are possible due to this occurrence. In addition, the introduction of surfactant since 2013 (see Section 5) into the trench and selected monitoring wells with the aim of reducing accumulated LNAPL in those wells is likely to affect dissolved concentrations.

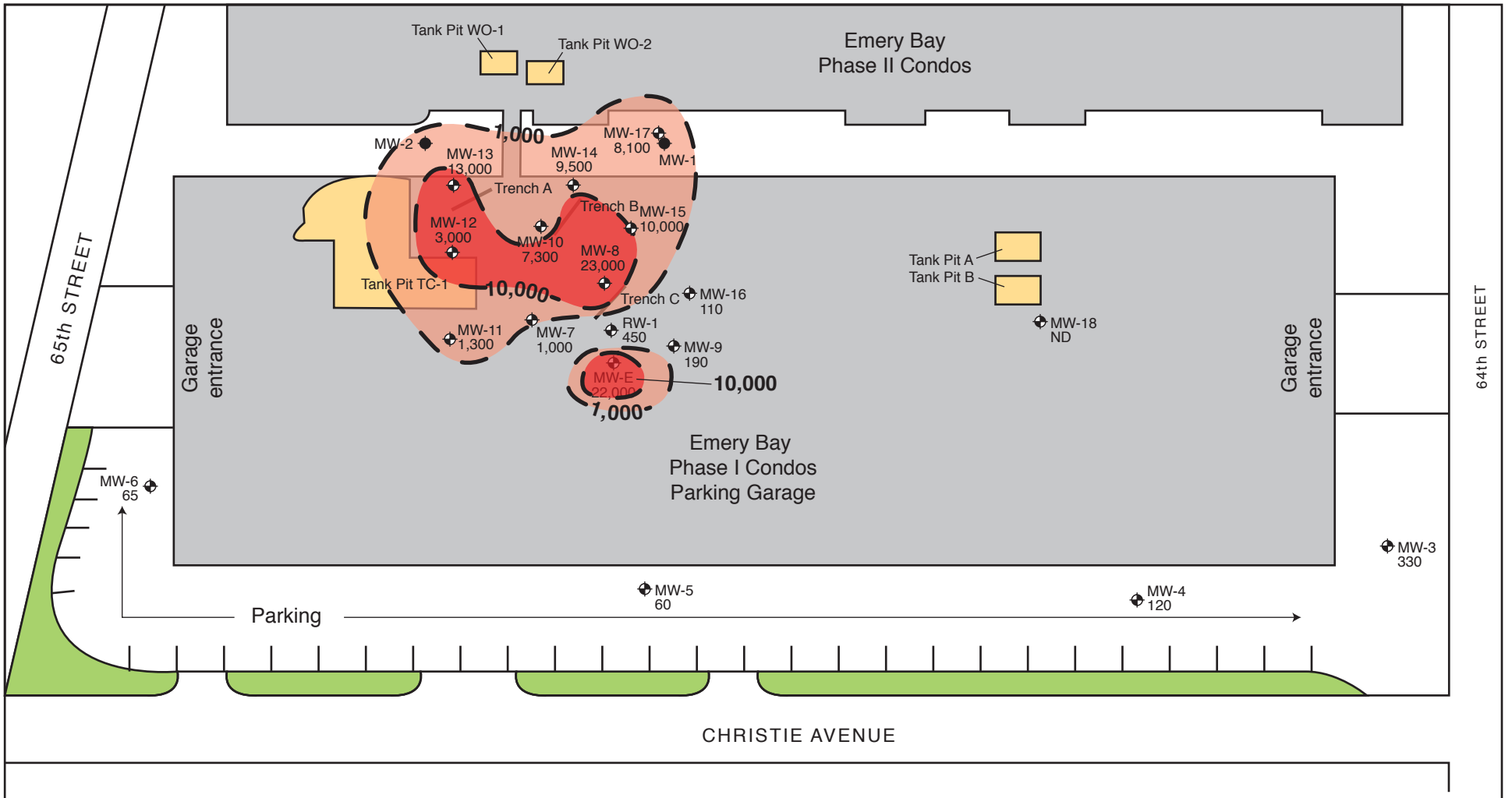
Increases in September 28, 2015 TVHg concentrations compared to the September 2014 monitoring event were observed in all wells except MW-3, MW-7, MW-11 and MW-13. This represents twelve wells exhibiting an increase in TVHg as compared to five wells for the September 2014 sampling event.

Gasoline was detected in wells MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-17 and MW-E above the ESL where groundwater is not a likely drinking water resource (500 micrograms per liter [µg/L]). Gasoline was also detected in MW-3, MW-4, MW-5, MW-6, MW-9, MW-16, MW-18 and RW-1, but at concentrations below the ESL.

Diesel was detected in all site wells above the ESL of 640 µg/L (where groundwater is not a likely drinking water resource), but showed a decrease in concentration in 12 of the 18 wells sampled as compared to 9 of 18 wells in the September 2014 sampling event.

The highest concentrations of TVHg (23,000 µg/L in MW-8) and TEHd (11,000 µg/L in MW-E) for the current event can be compared to concentrations of 16,000 µg/L TVHg in MW-13 and 21,000 µg/L TEHd observed in well MW-3 in September 2014. Concentrations of hydrocarbons in well MW-13 have decreased steadily since the September 2012 sampling event, with TVHg decreasing from 60,000 µg/L to 13,000 µg/L, and TEHd decreasing from 7,200,000 µg/L in 2012 to the current 83000 µg/L. Concentrations of hydrocarbons in well MW-8 fluctuated since the March 2012 sampling event, with TVHg increasing from 380 µg/L in 2012 to 23,000 µg/L for the current event, and TEHd decreasing from 9,800 µg/L in 2012 to the current 4,400 µg/L.

Figures 6 and 7 are isoconcentration maps of TPHg and TEHd concentrations in groundwater based on the September 28, 2015 analytical results.



LEGEND

- Monitoring well
- Monitoring well (presumed abandoned)
- Trench location
- Historical tank pit area
- Landscaping
- Gasoline concentration contour

0 60

SCALE: 1/2" = 60 FEET

N

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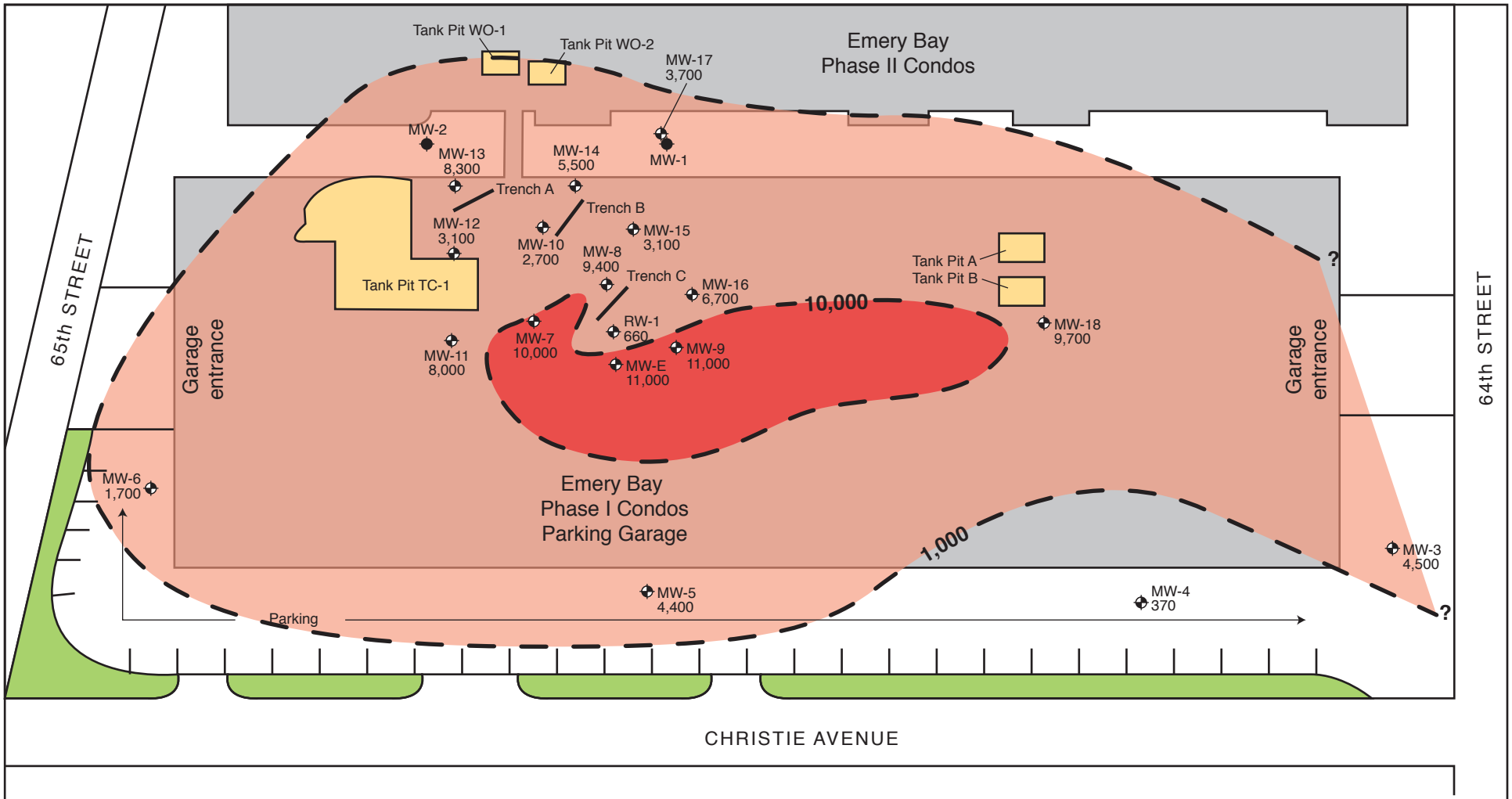
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE

6400 Christie Ave., Emeryville, CA

Figure 6

by: MJC | DECEMBER 2015

2007-65-96



LEGEND

- Monitoring well
- Monitoring well (presumed abandoned)
- Trench location
- Historical tank pit area
- Landscaping
- Diesel concentration contour

0 60

SCALE: 1/2" = 60 FEET

N

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TOTAL PETROLEUM HYDROCARBONS AS DIESEL

6400 Christie Ave., Emeryville, CA

Figure 7

by: MJC | DECEMBER 2015

2007-65-97

Since the introduction of the surfactant in wells MW-3 MW-8, MW-12, MW-13 and MW-14 and into all nine trench wells in 2014 and 2015, gasoline concentrations in site wells have increased overall, while diesel concentrations have shown decreases in overall hydrocarbon concentration. Fluctuating concentrations of TVHg and TEHd in these wells may be attributed to LNAPL recovery and introduction of surfactant since March 2013.

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, MW-E and RW-1 concentrations of benzene exceeded the ESL of 46 µg/L where groundwater is not a drinking water resource. Comparing September 2014 results to the current results showed a decrease in benzene in 3 of the 18 site wells sampled. An increase in benzene was detected in 12 of the 18 wells. Benzene was detected in wells MW-3, MW-6, MW-9, and MW-16, but at concentrations below the ESL. Perimeter wells MW-5 and MW-6, which in September 2014 contained concentrations of benzene at <0.05 µg/L and 0.79 µg/L benzene respectively, remain stable at < 0.5 µg/L and 0.88 µg/L respectively for the current event.

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

Ethylbenzene was detected above the 43 µg/L ESL in monitoring wells MW-8, MW-12, MW-13, MW-14, MW-17 and MW-E. Ethylbenzene was also detected in MW-7, MW-11, MW-15, and RW-1 but at levels below the ESL.

Total xylene concentrations in wells MW-8, MW-13, MW-14, MW-17 and MW-E were above the 100-µg/L ESL where groundwater is not a likely drinking water resource. Total xylenes were detected in MW-3, MW-9, MW-10, MW-11, MW-12, MW-15, MW-E 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-7 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 results and sample holding times were within method limits (Appendix C).

Figure 8
Historical Groundwater Analytical Results
Total Petroleum Hydrocarbons as Diesel (TPHd)
Downgradient Wells MW-5 and MW-6
February 1991 - September 2015

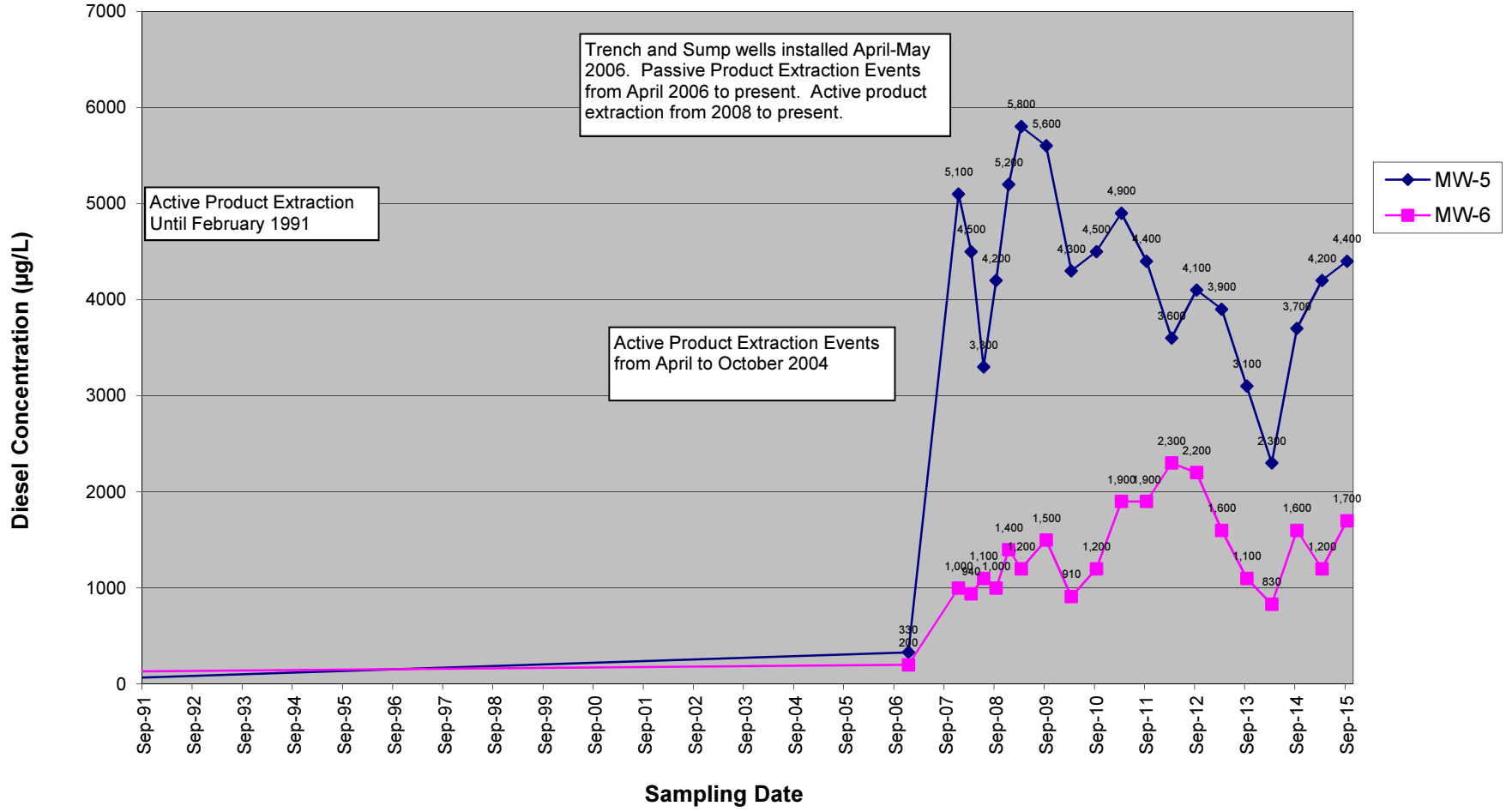


Figure 9
Historical Groundwater Analytical Results
Total Petroleum Hydrocarbons as Diesel (TPHd)
Source Wells MW-11 and MW-12
December 2006 - September 2015

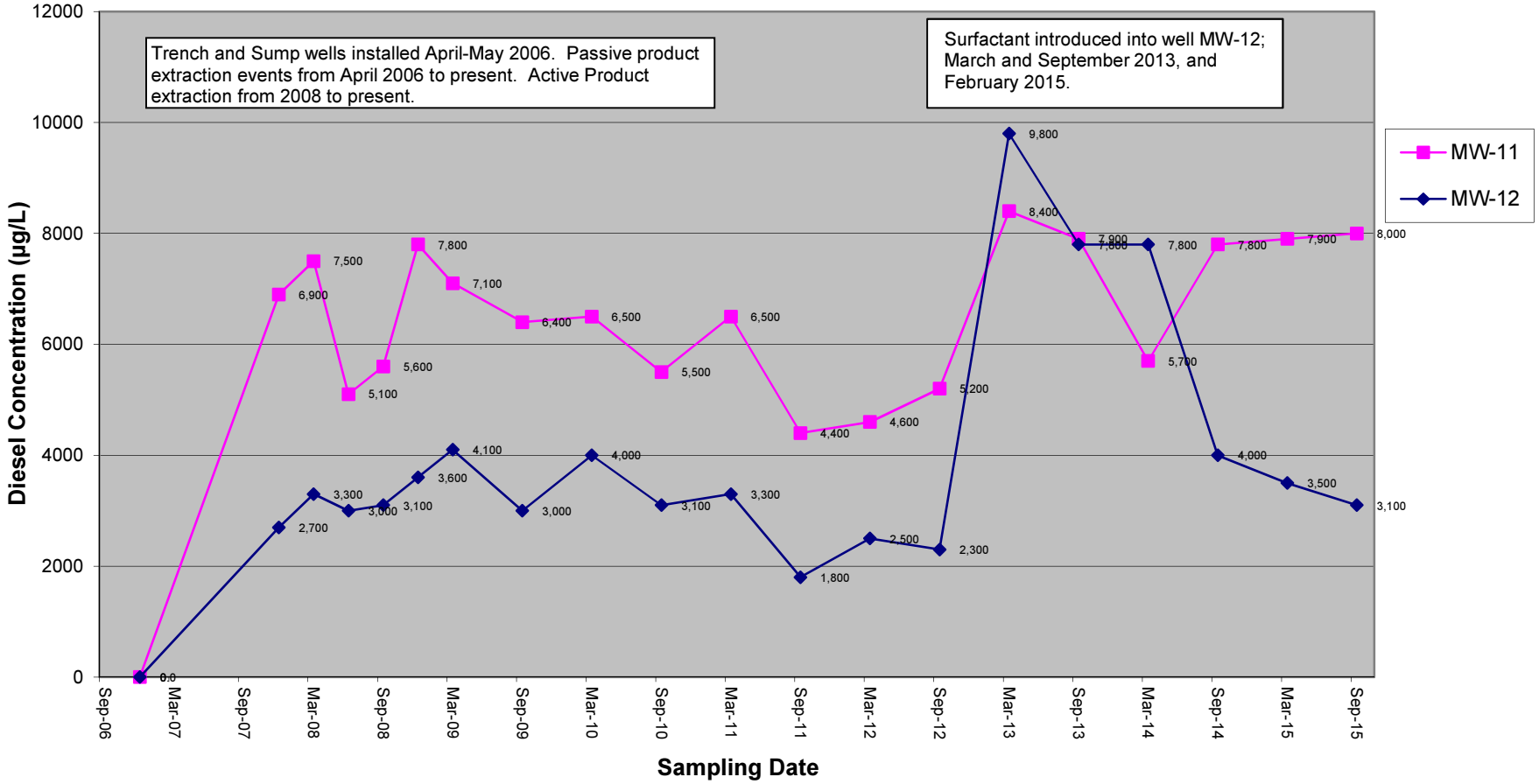
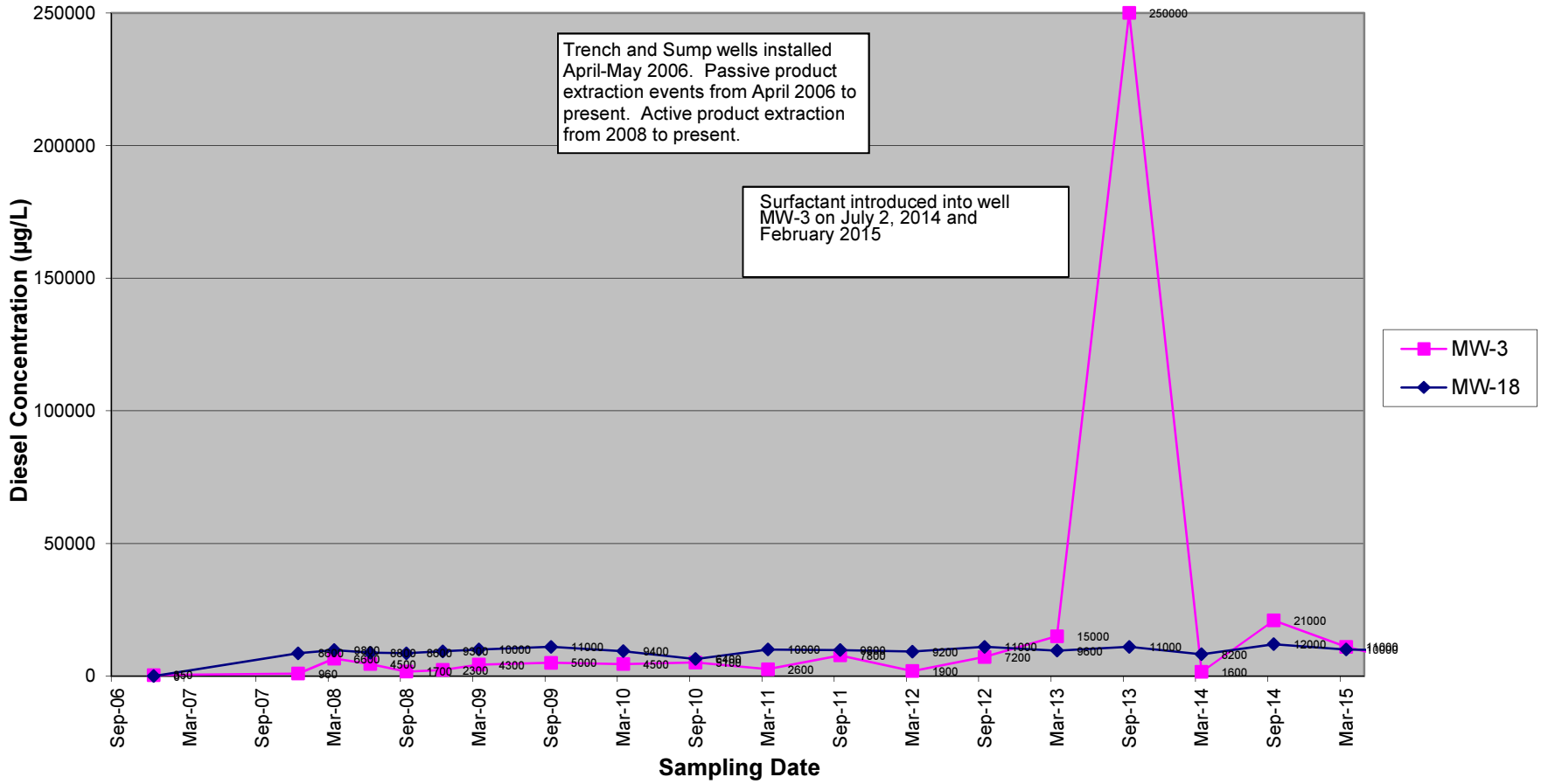


Figure 10
Historical Groundwater Analytical Results
Total Petroleum Hydrocarbons as Diesel (TPHd)
Crossgradient Wells MW-3 and MW-18
December 2006 - September 2015



5.0 FREE-PHASE HYDROCARBON PRODUCT REMEDIATION SYSTEM

This section describes the historical extraction of the free product from the Emery Bay/Bridgewater 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 September 24 and 25, 2015 (prior to the sampling event on September 28, 2015). 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 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 were then placed in each of the sumps in Trench A and in one of the sumps (TC-E) in Trench C.

Skimmers operate in principal 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. However, the skimmers were never particularly effective at capturing the petroleum product as designed, and as of the past several monitoring events, have contained nearly no free oil. Because the skimmers were no longer effective as of 2014, and because the skimmer equipment was covered with oily residue, possibly contributing to the hydrocarbon impacts to site groundwater, the skimmers were removed from the wells in trenches A (six skimmers) and C (one skimmer) on September 4, 2015.

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 and 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 previously) 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 project mixed with water was reported as free-phase product recovery.

2013-2015 SURFACTANT INJECTIONS

Many of the centrally located wells and well MW-3 contain a molasses like, degraded product that has made well purging and sampling increasingly difficult. Equipment lowered down into the well casings come back out coated with a tar like substance that is difficult or impossible to clean, and may account for low water yield in some wells due to sand pack and well screen fouling. Four of the worst wells in this regard are MW-3, MW-8, MW-10, MW-12, MW-13 and MW-14. All these wells are constructed with ¾-inch diameter PVC casing, and are screened to total depth across the same interval of 5 to 20 feet bgs, except for MW-8 which is screened from 5 to 16 feet bgs. In order to

attempt to clean the well casings and emulsify the tar thought to exist in the well pack, a surfactant was chosen as a solution.

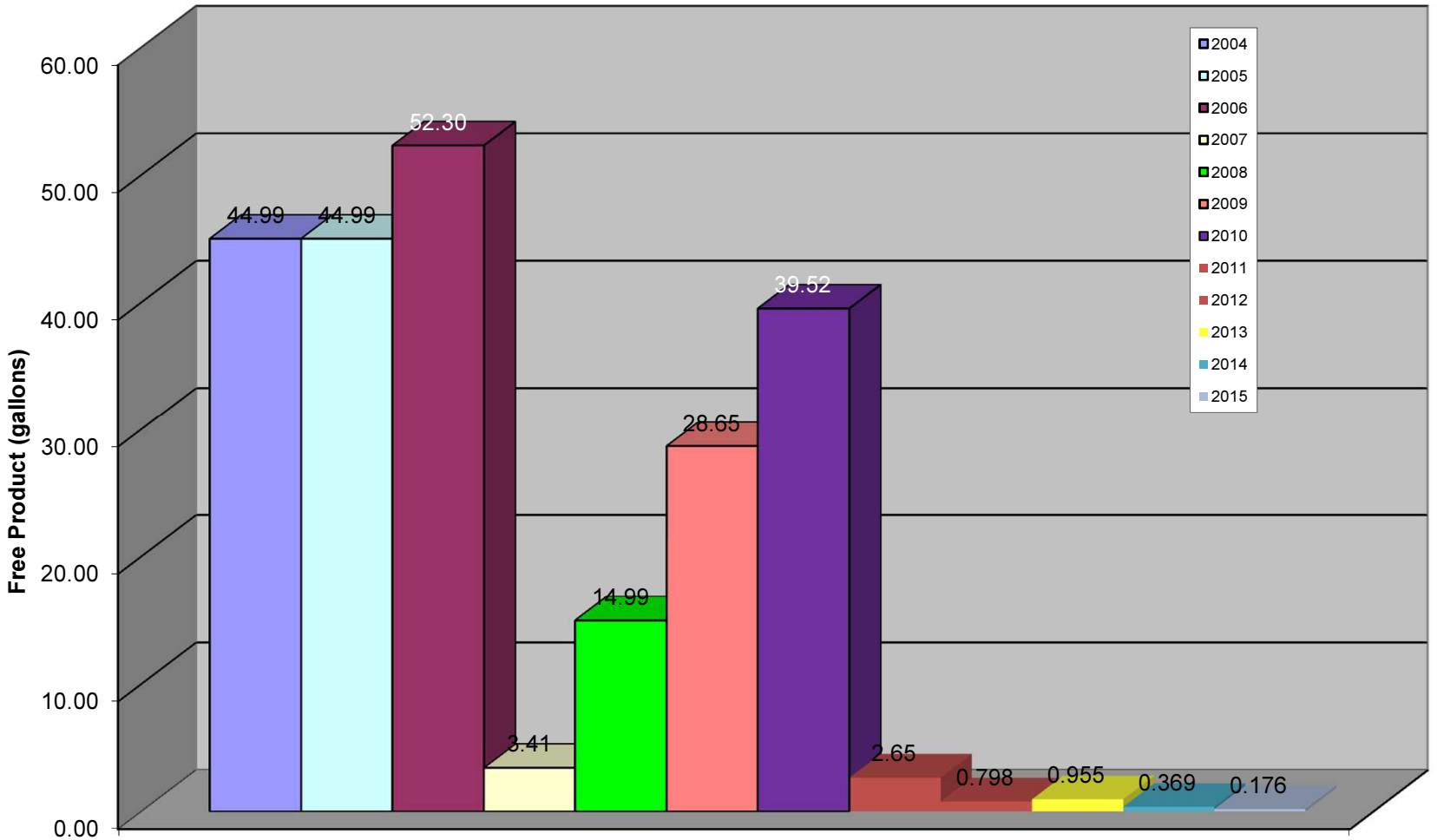
Surfactants are designed to change the interfacial tension between the water and NAPL and desorb the residual LNAPLs entrained in the soil matrix by micro-emulsifying the organic particles, and forming a micelle. In the case of weathered LNAPLs, surfactants have been used to decrease the viscosity of the material, resulting in increased and more efficient recovery. Surfactants can also be considered bioremediation enhancing and vapor suppression agents. The use of mobile multi-phase extraction that has been occurring at the site twice-yearly since 2008, allows a focused remediation effort at a targeted area of the site, and increases the effective radius of influence of the pumping. This combined approach involves the in-situ application of a surfactant mixture, under pressure, into the site subsurface. The injection is followed by high-vacuum induced multi-phase recovery from the injected wells as well as surrounding wells via a mobile vacuum truck.

In March and September 2013 wells MW-8, MW-12, MW-13 and MW-14 were injected with EnviroClean® supplied by Enviro Clean Services, LLC. EnviroClean® is described the manufacturer as a non-flammable, non-toxic, water-based, proprietary blend of non-toxic, non-ionic ethoxylated octylphenolic surfactants that has been specifically engineered as a cleanup/mitigation agent for a wide range of hydrocarbon products. EnviroClean® product information is included in Appendix F. A working solution of 4% EnviroClean® was mixed per manufacturer recommendations using clean water. Approximately 5 gallons of the solution was introduced each well using a funnel. The well casing and screen in each well were then scrubbed using a stiff bristle brush attached to an extension. After the scrubbing, approximately 15 gallons of the working EnviroClean® solution was injected under pressure into each well using a dual-diaphragm pump.

Based on the positive results of the non-hazardous surfactant injection into wells MW-8, MW-12, MW-13 and MW-14 in 2013 which resulted in reduced or eliminated oil residue, the same surfactant was introduced into well MW-3 which has historically been difficult to gauge and sample due to the thick oil in the well. On July 2, 2014, approximately 10 gallons of a 5% mixture of the surfactant was introduced into MW-3 and the well casing scrubbed. On September 4, 2014, approximately 20 gallons of the 5% surfactant mixture was introduced into each of the nine trench wells onsite after the skimmers had been removed from the wells in trenches A and C, to test the ability of the surfactant to re-dissolve the viscous hydrocarbon buildup in those wells.

Additional surfactant application occurred on February 3, 2015. Approximately 1 gallon of an 8% surfactant mixture was introduced into wells MW-8, MW-12, MW-13, MW-18 and MW-E. Each well was swabbed as described above. 2 gallons of a 10% mixture and 5 gallons of a 15% solution was introduced into wells MW-10 and NMW-3 respectively, and swabbed.

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



SEPTEMBER 2015 BIOREMEDIATION COMPOUND INJECTION

Surfactant injection efforts since 2012 have reduced free-floating product phase in the area of the trench wells and other nearby monitoring well hotspots such as MW-8, MW-10 and MW-13. Based on the very low volumes of free product being recovered from site monitoring and extraction wells, introduction of a bioremediation compound into the trench wells was conducted to reduce the hydrocarbon plume hotspot.

After reviewing the various options for in-situ bioremediation Stellar Environmental concluded that for this particular site, with the apparent concentration and type of hydrocarbons evident, the most promising remedy is to use a product designed to degrade the petroleum hydrocarbons anaerobically. The proposed remedial design accomplishes this through enhanced natural attenuation/ biodegradation and *in situ* chemical reduction uniquely induced via the use of a sulfate delivery bioremediation compound. The method relies on sulfate utilization. In fact, the vast majority of petroleum hydrocarbon sites are sulfate depleted. Sulfate is readily soluble therefore large amounts of it can quickly dissolve into groundwater. Sulfate reducing bacteria will use the petroleum hydrocarbons as a food source and the sulfate as the terminal electron acceptor. The result is the rapid bioremediation of aqueous phase petroleum hydrocarbons and gasoline additives. The product chose for the remedial injection is Nutrisulfate®. The metabolites in Nutrisulfate® greatly enhance microbial growth. Advantages include:

- Improved bioremediation kinetics
- Thinner (parallel to groundwater flow) bio-barriers
- Faster remedies
- Reduced costs

For the proposed 14,400 cubic feet treatment volume (60ft x 60ft x 4ft) one, 500 lb. drum of Nutrisulfate® was introduced into Trench Well arrays A and C on September 3, 2015. An additional 1,000 lbs. of the product is scheduled to be introduced into the Trench Well arrays A and C in early February 2016. The product loading is based on the averaging the concentrations in the six monitoring wells MW-8, MW-10, and MW-12-through MW-15 collected in Y-2014. The product is engineered for the slow release of sulfate and nutrients to stimulate the bioremediation of the hydrocarbon groundwater environment at the site. The product is designed to release over a 10-12 month period. The injected product has no harmful products or byproducts associated with it.

SEPTEMBER 2015 PRODUCT REMOVAL EVENT

Product yield from the trench recovery system has been unproductive and inconsistent, with the passive skimmer collection reservoirs not filling up completely, or filling up with water rather than product. As mentioned above, due to their ineffectiveness at collecting free product over the past several monitoring events, and due to the oily residue on the skimmers, the skimmers were removed from the wells in trenches A and C prior to the surfactant injection in early September 2014. As described above, a bioremediation product, Nutrisulfate® was introduced into trench well arrays A and C on September 4, 2015. No product recovery was conducted from Trench well arrays A and C for the current monitoring event so as to not disturb/remove the Nutrisulfate® product. Product recovery was conducted for trench well array B, recovery well RW-1 and all site monitoring wells.

Stellar Environmental conducted active product removal on site during the 2 days prior (September 24 and 25, 2015) to the groundwater sampling event (September 28) to determine the recharge rate of free product in wells. Approximately 750 gallons of groundwater yielding approximately 0.053 gallons (Table 3) of free product were removed during the current active product removal event.

Table 3
Active Product Extraction – September 24 and 25, 2015
6400 Christie Avenue, Emeryville, California

Well	Total Gallons of Product Removed	Well	Total Gallons of Product Removed
MW-3	0.015	MW-17	0
MW-4	0	MW-18	0
MW-5	0	MW-E	0
MW-6	0	RW-1	0.015
MW-7	0	TA-E	Not Pumped
MW-8	0.015	TA-M	Not Pumped
MW-9	0	TA-W	Not Pumped
MW-10	0.0078	TB-E	0
MW-11	0	TB-M	0
MW-12	0	TB-W	0
MW-13	0	TC-E	Not Pumped
MW-14	0	TC-M	Not Pumped
MW-15	0	TC-W	Not Pumped
MW-16	0		
		Second 2015 Event Total	**0.053**

Notes:

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

The removal activities for September 24 and 25, 2015 can be summarized as follows:

- Stellar Environmental removed a total of 300 gallons of water from trench wells TB-W, TB-E and TB-M with no measurable free product. No removal was attempted from trench wells TA-W, TA-E TA-M, TC-W, TC-E or TC-M due to the Nutrisulfate® product that had been introduced into those wells approximately 3-weeks before.
- Stellar Environmental removed a total of 50 gallons of groundwater from recovery well RW-1 along with an estimated 0.015 gallons (2 oz) of product.
- A total of approximately 0.0378 gallons (5 oz) of petroleum product was removed along with the 400 gallons of liquid that was pumped from all of the monitoring wells. Wells MW-3, MW-8 and MW-10 yielded the free product, with some of the remaining wells containing a trace of free product that was not measurable.
- 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.

DISCUSSION OF FREE PRODUCT REMOVAL AND LIMITATIONS

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 reportedly (PES, 2004c) removed by active pumping although antidotal evidence suggests that much of this was purge water versus free product. The majority of petroleum product is indicated to have been removed by active pumping and removal activities rather than from the trench well skimmers, the petroleum product recovery being in the form of a mixture of water and hydrocarbons. 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. Since 2011, the skimmers have contained only water and a trace of oil when checked. Approximately 14.99 gallons of product were removed by active pumping on wells during 2008, 28.65 gallons in 2009, 39.52 gallons in 2010, 2.65 gallons in 2011, 0.798 gallons in 2012, 0.955 gallons in 2013 and 0.369 gallons in 2014 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

recovery can be attributed to fluctuations in groundwater levels and to an overall reduction of free product as active pumping continues year to year.

For the current monitoring event, 9 of 15 wells in which TVHg is historically detected showed an increase of that compound as compared to September 2014. Downgradient wells MW-4, MW-5 and MW-6 which have historically not contained detectable concentrations of TVHg, contained TVHg at concentrations of 120 mg/l, 60 mg/l and 65 mg/l respectively. Six of 17 wells that have historically contained TVHd showed an increase in TEHd concentrations compared to September 2014. The observed increase of TVHg and TEHd for the current monitoring event compared to the September 2014 sampling event is likely be due to LNAPL becoming at least partially emulsified, as intended. The reduction of LNAPL by active extraction, which has since 2013 been combined with surfactant injections in selected wells, was a necessary step prior to in-situ bio-remedial efforts, the first application of which occurred on September 3, 2015. Inconsistent trends in the hydrocarbon concentrations, particularly the upward spike in gasoline and diesel concentrations observed in well since the surfactant injection in and/or near that wells may show more consistent trend lines after additional bio-remedial efforts are conducted (see Section 6). The next application of 1,000 lbs. of the Nutrisulfate® product in to Trench Well arrays A and C is scheduled for early February 2015. Based on observations made during the September 2015 field work, wells MW-3, MW-8, MW-10 and RW-1 would benefit from additional surfactant application into those wells.

In general, residual hydrocarbons left in the soil after the USTs were removed from the site in the 1980's, is likely to continue to be a source of contamination to groundwater at the site. Additional surfactant applications at the site are expected to continue to reduce the degraded product present, particularly in wells MW-3, MW-8, MW-10 and RW-1 which are currently the only wells with detectable free, degraded LNAPL product on site. The planned additional introduction of Nutrisulfate® into the trench wells as mentioned above, are expected to be useful to speed the reduction of the dissolved hydrocarbon concentrations to levels acceptable to the regulatory community and to achieve eventual regulatory closure.

The outward effect of the surfactant injection based on observations made during product removal for the current monitoring event, has been a marked reduction in the viscous hydrocarbon substance in site wells. A significant increase in water yield from wells that received surfactant has not been observed. The total measured recovery volume of product (in gallons) from the 18 wells for the two 2014 monitoring events, compared to the 2015 events, decreased from 0.369 gallons to 0.176 gallons which is likely attributable to the emulsification of LNAPL in the wells receiving the surfactant.

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 semi-annual frequency in 2009.
- The site currently contains 17 monitoring wells, 1 recovery well, and 9 product extraction trench wells. The current event is the 24th 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 flow direction calculated during this monitoring event was found to be generally to the west. Some mounding is evident in the area of MW-4 which is likely due to water accumulating from landscape irrigation leaks (MW-4 well box often full of water).
- Construction dewatering that had occurred during the 2012-2013 time period at the construction site across 64th Street that was influencing the groundwater flow direction towards that site, was discontinued in February 2014.
- Groundwater elevations during the September 28, 2015 event ranged from 6.94 feet amsl (MW-5) to 9.24 feet amsl (MW-16). The average groundwater gradient was 0.007 foot/foot.

- The injection of a (non-hazardous) surfactant into selected site monitoring wells and into the nine trench wells over five separate occasions since 2013 was used to test the ability of the surfactant to emulsify the viscous hydrocarbon buildup in the injected wells and nearby wells. Based on field observations of site wells, 11 of 27 monitoring and trench wells had detectable LNAPL prior to the first surfactant injection in March 2013 compared to 4 of 27 for the current monitoring period.
- Surfactant injections into the A and C trench well arrays and wells MW-3, MW-8, MW-10, MW-12, MW-13, MW-14 and MW-18 and MW-E have reduced or eliminated LNAPL in those wells, and may have contributed to an increase in concentrations of dissolved hydrocarbons and MBTEX in those wells and other site monitoring wells as compared to the September 2014 monitoring event.
- The elimination of viscous LNAPL from site wells has allowed introduction of the product Nutrisulfate® which encourages natural attenuation/biodegradation and *in situ* chemical reduction via a sulfate delivery bioremediation compound. The metabolites in Nutrisulfate® greatly enhance microbial growth. An initial application of 500 lbs. of Nutrisulfate® was conducted on September 3, 2015. An additional 1,000 lbs of the product is scheduled to be introduced into Trench Well arrays A and C in early February 2016.
- Current contaminants of concern include TPHg, TPHd, and BTEX. Current groundwater concentrations exceeded the ESLs for these contaminants.
- MTBE was detected in one well (MW-7) during the current monitoring event, but was not detected above the ESL of 1,800 µg/L in any of the monitoring wells.
- The highest concentrations of TVHg (23,000 µg/L in MW-8) and TEHd (11,000 µg/L in MW-E) for the current event can be compared to concentrations of 16,000 µg/L TVHg in MW-13 and 21,000 µg/L TEHd observed in well MW-3 in September 2014. Concentrations of hydrocarbons in well MW-13 have decreased steadily since the September 2012 sampling event, with TVHg decreasing from 60,000 µg/L to 13,000 µg/L, and TEHd decreasing from 7,200,000 µg/L in 2012 to the current 83000 µg/L. Concentrations of hydrocarbons in well MW-8 fluctuated since the March 2012 sampling event, with TVHg increasing from 380 µg/L in 2012 to 23,000 µg/L for the current event, and TEHd decreasing from 9,800 µg/L in 2012 to the current 4,400 µg/L.
- Increases in September 28, 2015 TVHg concentrations compared to the September 2014 monitoring event were observed in all wells except MW-3, MW-7, MW-11 and MW-13. This represents twelve wells exhibiting an increase in TVHg as compared to five wells for the September 2014 sampling event.

- Gasoline was detected in wells MW-7, MW-8, MW-10, MW-11, MW-12, MW-13, MW-14, MW-15, MW-17 and MW-E above the ESL where groundwater is not a likely drinking water resource (500 micrograms per liter [µg/L]). Gasoline was also detected in MW-3, MW-4, MW-5, MW-6, MW-9, MW-16, MW-18 and RW-1, but at concentrations below the ESL.
- Diesel was detected in all site wells above the ESL of 640 µg/L (where groundwater is not a likely drinking water resource), but showed a decrease in concentration in 12 of the 18 wells sampled as compared to 9 of 18 wells in the September 2014 sampling event.
- 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 concentrations of benzene exceeded the ESL of 46 µg/L where groundwater is not a drinking water resource. Comparing September 2014 results to the current results showed a decrease in benzene in 3 of the 18 site wells sampled. An increase in benzene was detected in 12 of the 18 wells. Benzene was detected in wells MW-3, MW-6, MW-9, and MW-16, but at concentrations below the ESL. Perimeter wells MW-5 and MW-6, which in September 2014 contained concentrations of benzene at <0.05 µg/L and 0.79 µg/L benzene respectively, remain stable at < 0.5 µg/L and 0.88 µg/L respectively for the current event.
- Toluene was detected at or above the ESL of 130 µg/L in monitoring wells MW-14, MW-17 and MW-E. Toluene was also detected in wells MW-7, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, MW-15, MW-16, and RW-1 but at levels below the ESL.
- Ethylbenzene was detected above the 43 µg/L ESL in monitoring wells MW-8, MW-12, MW-13, MW-14, MW-17 and MW-E. Ethylbenzene was also detected in MW-7, MW-11, MW-15, and RW-1 but at levels below the ESL.
- Total xylene concentrations in wells MW-8, MW-13, MW-14, MW-17 and MW-E were above the 100-µg/L ESL where groundwater is not a likely drinking water resource. Total xylenes were detected in MW-3, MW-9, MW-10, MW-11, MW-12, MW-15, MW-E but below the ESL.
- Significantly, well MW-3 has shown a decrease in TVHg and TEHd concentrations for the current monitoring event as compared to the November 2014 event, which may be a continued reflection of the cessation of the dewatering pumping that occurred at the construction site across 64th Street during 2012-2013.
- Due to the ineffectiveness of the product skimmers that were in wells in recovery trenches A and C, the skimmers were removed from the wells in September 2014. The other reason for removal of the skimmers was that they were coated with oil, and thought to be contributing to dissolved hydrocarbon groundwater contamination. No degraded LNAPL product was

recovered from the nine skimmers for the September 2014 monitoring and 0.07 gallons of residual product was removed during the March 2015 event, allowing for the introduction of the Nutrisulfate® product into the Trench Well arrays A and C in September 2105.

- Stellar Environmental conducted active product removal on the source area wells, recovery well RW-1, and select monitoring wells during the September 2015 extraction event. A total of approximately 750 gallons of groundwater that includes approximately 0.053 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.

RECOMMENDATIONS

- A sixth application of surfactant should be conducted in wells MW-3, MW-8, MW-10 and RW-1 in mid-January 2016. These are the only wells currently onsite that currently contain detectable free, degraded product. The timing of the surfactant application in January is recommended to allow the introduction of additional Nutrisulfate® in mid-February, about 4 to 6 weeks prior to the first 2016 semi-annual monitoring event scheduled for the end of March 2016.
- Conduct a second application of Nutrisulfate® into Trench Well arrays A and C as was first done in September 2015. The timing of this work would occur in mid-February to allow it to potentially impact the first semi-annual 2016 monitoring event. 500 lbs. (one drum) of the product would be introduced into Trench A via the three wells in that trench, and 500 lbs. would be introduced into Trench C via those wells. Trench B will not have bioremediation product introduced, acting as a control.
- Groundwater monitoring should be continued on a semiannual basis to document contaminant concentrations over time. This monitoring of site wells will allow follow-on evaluation of the Nutrisulfate® introduction and its efficacy for scaling upward to move the site toward full regulatory site closure.
- Active groundwater/dissolved product removal events should be continued to ascertain their effectiveness in reducing the plume size over time. Active product removal is currently being conducted on a semiannual basis immediately prior to the sampling event.
- 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	NA	8,600	940	250	570	NA
2	May-89	130	24,000	NA	16,000	2,100	300	1,200	NA
3	Feb-91	<10	22,000	NA	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	NA	<0.5	<0.5	<0.5	<0.5	NA
2	May-89	40	18	NA	<0.5	<0.5	<0.5	<0.5	NA
3	Feb-91	83	<10	NA	<0.3	<0.3	<0.3	<0.6	NA
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	NA	77	1,400	140	560	NA
2	May-89	110	1,800	NA	64	250	61	110	NA
3	Feb-91	NS	NS	NS	NS	NS	NS	NS	NS
4	Mar-04	3,400	440	3,900	<0.5	<0.5	1.5	<1.0	9.7
5	Dec-06	350	280	230	<0.5	<0.5	<0.5	<0.5	2.0
6	Dec-07	960	150	NA	0.54	0.54	<0.5	<0.5	<2.0
7	Mar-08	6,600	450	NA	<0.5	<0.5	1.8	2.0	4.3
8	Jun-08	4,500	440	NA	<0.5	<0.5	4.0	2.0	9.5
9	Sep-08	1,700	280	NA	<0.5	<0.5	1.0	<0.5	<2.0
10	Dec-08	2,300	240	NA	<0.5	<0.5	1.1	<0.5	<2.0
11	Mar-09	4,300	260	NA	1.3	<0.5	1.8	0.5	2.9
12	Sep-09	5,000	300	NA	2.5	<0.5	<0.5	<0.5	<2.0
13	Mar-10	4,500	230	670	1.7	<0.5	1.0	<0.5	2.7
14	Sep-10	5,100	470	NA	<0.5	0.64	<0.5	1.6	2.9
15	Mar-11	2,600	540	NA	47	28	7.6	11.8	17
16	Sep-11	7,800	290	NA	13	1.5	<0.50	2.0	9.5
17	Mar-12	1,900	430	NA	3.3	<0.5	<0.5	2.5	2.7
18	Sep-12	7,200	380	NA	18	14	6.0	25.3	<2.0
19	Mar-13	15,000	470	NA	1.3	0.68	2.1	2.1	8.6
20	Sep-13	250,000	530	NA	<0.5	<0.5	<0.5	2.4	5.6
21	Mar-14	1,600	270	NA	1.4	<0.5	<0.5	<0.5	<2.0
22	Sep-14	21,000	530	NA	0	0	0.0	0.0	0
23	Mar-15	11,000	580	NA	29	2.7	12.0	4.4	<2.0
24	Sep-15	4,500	330	NA	0.71	0	0.0	3.2	0

MW-4									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88	<10	100	NA	2.0	1.0	<0.5	2.0	NA
2	May-89	60	18	NA	1.0	<0.5	<0.5	<0.5	NA
3	Feb-91	<10	<10	NA	<0.3	<0.3	<0.3	<0.6	NA
4	Mar-04	NS	NS	NS	NS	NS	NS	NS	NS
5	Dec-06	<50	50	<200	<0.5	<0.5	<0.5	<0.5	<1.0
6	Dec-07	710	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
7	Mar-08	680	57	NA	<0.5	<0.5	<0.5	<0.5	<2.0
8	Jun-08	620	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
9	Sep-08	440	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
10	Dec-08	730	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
11	Mar-09	940	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
12	Sep-09	660	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
13	Mar-10	680	<50	380	<0.5	<0.5	<0.5	<0.5	<2.0
14	Sep-10	770	71	NA	<0.5	<0.5	<0.5	<0.5	<2.0
15	Mar-11	590	<50	NA	<0.5	<0.5	<0.5	<0.5	2.4
16	Sep-11	380	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
17	Mar-12	340	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
18	Sep-12	350	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
19	Mar-13	390	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
20	Sep-13	250	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
21	Mar-14	380	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
22	Sep-14	380	0	NA	0	0	0	0	0
23	Mar-15	NA	NA	NA	NA	NA	NA	NA	NA
24	Sep-15	370	120	NA	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	NA	<1.0	<1.0	1.0	3.0	NA
2	May-89	90	5.0	NA	1.0	<0.5	<0.5	<0.5	NA
3	Feb-91	58	<10	NA	0.6	<0.3	<0.3	<0.6	NA
4	Mar-04	NS	NS	NS	NS	NS	NS	NS	NS
5	Dec-06	330	<25	<200	0.6	<0.5	<0.5	<0.5	<1.0
6	Dec-07	5,100	1.3	NA	1.3	<0.5	<0.5	1.23	<2.0
7	Mar-08	4,500	<50	NA	0.53	<0.5	<0.5	<0.5	<2.0
8	Jun-08	3,300	<50	NA	0.64	<0.5	<0.5	<0.5	<2.0
9	Sep-08	4,200	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
10	Dec-08	5,200	<50	NA	0.61	<0.5	<0.5	<0.5	<2.0
11	Mar-09	5,800	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
12	Sep-09	5,600	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
13	Mar-10	4,300	<50	5,400	4.9	<0.5	<0.5	<0.5	<2.0
14	Sep-10	4,500	<50	NA	0.58	<0.5	<0.5	<0.5	2.0
15	Mar-11	4,900	<50	NA	1.3	<0.5	<0.5	<0.5	5.9
16	Sep-11	4,400	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
17	Mar-12	3,600	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
18	Sep-12	4,100	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
19	Mar-13	3,900	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
20	Sep-13	3,100	<50	NA	0.65	<0.5	<0.5	<0.5	<2.0
21	Mar-14	2,300	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
22	Sep-14	3,700	0	NA	0	0	0	0	0.0
23	Mar-15	4,200	0	NA	0	0	0	0	0.0
24	Sep-15	4,400	60	NA	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	<10	52	NA	1.0	<0.5	<0.5	<0.5	NA
2	May-89	140	31	NA	1.0	<0.5	<0.5	<0.5	NA
3	Feb-91	130	40	NA	0.8	<0.3	<0.3	<0.6	NA
4	Mar-04	NS	NS	NS	NS	NS	NS	NS	NS
5	Dec-06	200	43	<200	1.1	<0.5	<0.5	<0.5	<1.0
6	Dec-07	1,000	<50	NA	0.98	0.81	<0.5	0.5	<2.0
7	Mar-08	940	<50	NA	0.87	1.0	<0.5	<0.5	<2.0
8	Jun-08	1,100	56	NA	0.92	<0.5	<0.5	<0.5	2.9
9	Sep-08	1,000	<50	NA	0.91	<0.5	<0.5	<0.5	<2.0
10	Dec-08	1,400	<50	NA	1	<0.5	<0.5	<0.5	<2.0
11	Mar-09	1,200	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
12	Sep-09	1,500	<50	NA	0.79	<0.5	<0.5	<0.5	<2.0
13	Mar-10	910	<50	1,500	1.9	<0.5	<0.5	<0.5	<2.0
14	Sep-10	1,200	72	NA	1.0	<0.5	<0.5	<0.5	<2.0
15	Mar-11	1,900	<50	NA	1.3	<0.5	<0.5	<0.5	3.9
16	Sep-11	1,900	<50	NA	1.8	<0.5	<0.5	<0.5	<2.0
17	Mar-12	2,300	<50	NA	0.82	<0.5	<0.5	<0.5	<2.0
18	Sep-12	2,200	<50	NA	0.85	<0.5	<0.5	<0.5	<2.0
19	Mar-13	1,600	<50	NA	0.83	<0.5	<0.5	<0.5	<2.0
20	Sep-13	1,100	<50	NA	1.70	<0.5	<0.5	<0.5	<2.0
21	Mar-14	830	65	NA	0.81	<0.5	<0.5	<0.5	<2.0
22	Sep-14	1,600	0	NA	0.79	<0.5	<0.5	<0.5	<2.0
23	Mar-15	1,200	61	NA	0.87	0.62	<0.5	<0.5	<2.0
24	Sep-15	1,700	65	NA	0.88	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	<2.5
2	Dec-06	420	<25	470	<0.5	<0.5	<0.5	<0.5	<1.0
3	Dec-07	6,300	3,100	NA	640	28	48	231	<10
4	Mar-08	7,000	360	NA	140	5.8	11	58	<2.0
5	Jun-08	5,400	1,700	NA	480	15	28	139	<2.0
6	Sep-08	9,400	1,200	NA	330	12	21	88	<2.0
7	Dec-08	8,700	2,200	NA	640	100	43	185	<4.0
8	Mar-09	8,700	1,700	NA	510	33	47	220	<10
9	Sep-09	6,800	620	NA	310	9.5	27	117	<10
10	Mar-10	8,700	330	6,800	68	2.2	10	31.6	<2.0
11	Sep-10	10,000	1,300	NA	580	54	35	163	<20
12	Mar-11	8,100	630	NA	160	5.3	14	65	<2.0
13	Sep-11	8,000	2,900	NA	900	46	51	284	<2.0
14	Mar-12	7,900	740	NA	220	150	14	140	<2.0
15	Sep-12	10,000	1,700	NA	660	35	32	137	<2.0
16	Mar-13	8,600	3,000	NA	950	39	30	149	<33
17	Sep-13	12,000	2,100	NA	540	29	17	89	<29
18	Mar-14	8,200	1,900	NA	440	22	14	63	<29
19	Sep-14	11,000	1,200	NA	330	21	5.8	68	<29
20	Mar-15	7,700	900	NA	260	13	8.8	47.8	7.1
21	Sep-15	10,000	1,000	NA	280	16	10	52.9	21

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	<50
2	Dec-06	2,400	29,000	<380	13,000	<100	640	500	<200
3	Dec-07	5,900	30,000	NA	11,000	180	650	561	<100
4	Mar-08	21,000	47,000	NA	10,000	260	1,200	458	<2.0
5	Jun-08	7,300	27,000	NA	9,300	140	790	290	<2.0
6	Sep-08	13,000	35,000	NA	11,000	190	900	402	<100
7	Dec-08	7,600	19,000	NA	6,800	110	380	236	<50
8	Mar-09	10,000	22,000	NA	9,400	200	640	358	<50
9	Sep-09	9,200	26,000	NA	8,600	100	630	230	170
10	Mar-10	11,000	19,000	1,900	6,200	120	830	149	<2.0
11	Sep-10	7,600	7,800	NA	8,800	110	620	212	<100
12	Mar-11	8,800	19,000	NA	8,100	130	890	149	<2.0
13	Sep-11	18,000	13,000	NA	8,000	140	860	178	<2.0
14	Mar-12	9,800	380	NA	100	3	5.9	20	<2.0
15	Sep-12	24,000	73,000	NA	18,000	520	2,300	670	<2.0
16	Mar-13	38,000	39,000	NA	9,400	160	1,600	255	<50
17	Sep-13	2,100	14,000	NA	3,800	140	35	86	440
18	Mar-14	13,000	23,000	NA	6,800	96	620	200	<200
19	Sep-14	13,000	15,000	NA	4,100	65	300	100	0
20	Mar-15	20,000	36,000	NA	8,200	150	910	160	< 170
21	Sep-15	9,400	23,000	NA	7,100	100	510	267	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	<0.5	<1.0	<0.5
2	Dec-06	<50	92	<200	2.8	<0.5	<0.5	<0.5	<1.0
3	Dec-07	8,400	84	NA	4.7	1.1	<0.5	1.9	<2.0
4	Mar-08	8,600	100	NA	4.1	1.1	<0.5	<0.5	2.0
5	Jun-08	5,900	98	NA	4.9	<0.5	<0.5	<0.5	2.3
6	Sep-08	9,300	130	NA	4.6	<0.5	<0.5	<0.5	<50
7	Dec-08	7,800	95	NA	4.0	0.54	<0.5	<0.5	<2.0
8	Mar-09	9,400	130	NA	4.6	<0.5	<0.5	<0.5	<2.0
9	Sep-09	8,200	98	NA	4.0	<0.5	<0.5	<0.5	<2.0
10	Mar-10	6,500	140	4,000	5.2	<0.5	<0.5	<0.5	<2.0
11	Sep-10	6,400	170	NA	4.8	0.77	<0.5	<0.5	<2.0
12	Mar-11	11,000	150	NA	5.9	0.61	<0.5	0.5	<2.0
13	Sep-11	9,400	62	NA	4.2	<0.5	<0.5	<0.5	<2.0
14	Mar-12	9,400	140	NA	6.2	0.61	<0.5	0.51	<2.0
15	Sep-12	10,000	130	NA	7.2	<0.5	0.53	0.92	<2.0
16	Mar-13	8,500	170	NA	14.0	0.73	0.7	0.63	<2.0
17	Sep-13	11,000	130	NA	12.0	<0.5	0.92	<0.5	4.9
18	Mar-14	7,300	140	NA	9.8	2	<0.5	<0.5	<2.0
19	Sep-14	10,000	120	NA	8.6	2	0.55	0	0
20	Mar-15	9,000	310	NA	8.7	0.75	<0.5	1.25	<2.0
21	Sep-15	11,000	190	NA	8.0	0.71	0	0.87	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	<100,000	4,000	77	200	120	<50
2	Dec-06	19,000	12,000	<4,000	4,600	42	90	52	<50
3	Dec-07	4,700	13,000	NA	5,300	96	42	86	<50
4	Mar-08	280,000	10,000	NA	2,600	50	37	58.7	22
5	Jun-08	4,800	10,000	NA	3,800	62	24	61	<2.0
6	Sep-08	4,700	1,200	NA	350	11	3.4	11	<2.0
7	Dec-08	3,200	2,900	NA	550	45	15	56	<20
8	Mar-09	6,200	8,200	NA	890	46	78	130	<20
9	Sep-09	6,100	1,400	NA	1,200	35	19	31	<20
10	Mar-10	3,900	7,800	960	1,200	46	34	56	54
11	Sep-10	3,500	3,400	NA	1,500	47	18	44	<40
12	Mar-11	4,500	3,700	NA	1,200	81	25	46.4	<2.0
13	Sep-11	3,800	4,600	NA	720	49	26	52.4	<2.0
14	Mar-12	3,500	2,400	NA	240	27	10	33.6	<2.0
15	Sep-12	13,000	6,600	NA	1,800	89	130	46	<2.0
16	Mar-13	24,000	15,000	NA	1,300	66	130	94	<50
17	Sep-13	3,800	4,600	NA	900	87	29	56	<42
18	Mar-14	3,300	6,200	NA	940	43	<0.5	53	<40
19	Sep-14	42,000	7,000	NA	1,500	68	28	36	0
20	Mar-15	7,300	6,500	NA	640	53	44	22	<67
21	Sep-15	11,000	190	NA	8	1	0	0.87	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	<50	920	<200	26	4.5	1.8	5.4	<1.0
2	Dec-07	6,900	1,500	NA	320	44	53	140	<2.0
3	Mar-08	7,500	1,200	NA	120	7.6	10	24.9	3.0
4	Jun-08	5,100	2,000	NA	190	11	7.7	16.3	<2.0
5	Sep-08	5,600	2,200	NA	260	20	34	60	<2.0
6	Dec-08	7,800	2,100	NA	270	14	7.6	15.6	<2.0
7	Mar-09	7,100	1,400	NA	200	6.4	7.3	10.4	<2.0
8	Sep-09	6,400	1,900	NA	320	13	9.8	15.2	2.0
9	Mar-10	6,500	1,600	6,900	150	<0.5	3.9	12.8	2.9
10	Sep-10	5,500	1,300	NA	330	15	9.2	17.3	<2.0
11	Mar-11	6,500	3,400	NA	1300	22	9.6	19.9	<2.0
12	Sep-11	4,400	3,600	NA	1200	36	16	39.1	<2.0
13	Mar-12	4,600	5,700	NA	2100	27	12	16.7	<2.0
14	Sep-12	5,200	4,100	NA	1,500	33	<0.5	18	<2.0
15	Mar-13	8,400	1,800	NA	97	18	19	30	<2.0
16	Sep-13	7,900	1,900	NA	60	<0.5	3.6	13	27.0
17	Mar-14	5,700	2,000	NA	60	<0.5	3.8	14.2	<2.0
18	Sep-14	7,800	2,000	NA	89	0	6	14.4	0.0
19	Mar-15	7,900	1,600	NA	140	14	5.3	15.5	61.0
20	Sep-15	8,000	1,300	NA	110	16	2.1	20.4	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	<50	19,000	<200	9,100	51	<50	110	<100
2	Dec-07	2,700	17,000	NA	8,000	110	25	115	<40
3	Mar-08	3,300	33,000	NA	9,200	140	85	116	<2.0
4	Jun-08	3,000	17,000	NA	6,600	95	50	110	<2.0
5	Sep-08	3,100	14,000	NA	6,200	79	18	83	<10
6	Dec-08	3,600	19,000	NA	7,900	140	72	124	<50
7	Mar-09	4,100	14,000	NA	6,100	150	130	111	<40
8	Sep-09	3,000	1,900	NA	4,500	80	14	51	<40
9	Mar-10	4,000	15,000	1,900	6,200	110	73	101	<2.0
10	Sep-10	3,100	4,900	NA	5,900	97	47	73	<100
11	Mar-11	3,300	15,000	NA	7,900	180	200	127	<2.0
12	Sep-11	1,800	8,600	NA	2,700	85	31	63	<2.0
13	Mar-12	2,500	17,000	NA	6,300	160	180	124	<2.0
14	Sep-12	2,300	10,000	NA	4,600	160	210	85	<2.0
15	Mar-13	9,800	9,100	NA	2,600	110	170	111	<2.0
16	Sep-13	7,800	9,400	NA	2,400	130	130	125	520
17	Mar-14	7,800	10,000	NA	2,500	89	68	55	<100
18	Sep-14	4,000	6,500	NA	1,500	110	26	59.9	0
19	Mar-15	3,500	14,000	NA	3,800	120	82	73	66
20	Sep-15	3,100	13,000	NA	4,300	110	52	71	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	<400
2	Dec-07	NA	68,000	NA	19,000	650	1,700	2,440	<100
3	Mar-08	1,100,000	98,000	NA	19,000	820	2,300	3,190	<100
4	Jun-08	71,000	44,000	NA	12,000	510	1,600	1,950	<2.0
5	Sep-08	440,000	52,000	NA	<100	500	1,600	1,500	<100
6	Dec-08	1,100,000	2,700,000	NA	23,000	<250	40,000	45,000	<1,000
7	Mar-09	2,000,000	330,000	NA	25,000	1,300	6,400	8,500	<1,000
8	Sep-09	38,000	1,400,000	NA	19,000	2,500	19,000	21,300	<1,000
9	Mar-10	15,000	43,000	670	12,000	310	1,600	1,140	<2,500
10	Sep-10	3,100,000	1,700,000	NA	21,000	2,300	30,000	17,200	7,000
11	Mar-11	13,000	86,000	NA	7,900	180	200	127	<2.0
12	Sep-11	15,000	49,000	NA	16,000	380	1900	850	<2.0
13	Mar-12	1,100,000	260,000	NA	23,000	1500	5700	4100	<2.0
14	Sep-12	7,200,000	60,000	NA	22,000	580	2,100	1,700	<2.0
15	Mar-13	23,000	27,000	NA	5,600	260	1,300	1,080	<200
16	Sep-13	39,000	19,000	NA	3,400	180	760	515	<200
17	Mar-14	19,000	20,000	NA	3,700	120	710	361	<200
18	Sep-14	11,000	16,000	NA	2,400	70	460	253	0
19	Mar-15	11,000	14,000	NA	2,200	76	430	160	<100
20	Sep-15	8,300	13,000	NA	3,100	78	440	255	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	<50	8,300	<200	3,700	240	230	260	<50
2	Dec-07	2,600	6,800	NA	3,100	150	220	168	<20
3	Mar-08	4,400	18,000	NA	4,400	330	340	245	<2.0
4	Jun-08	2,600	7,700	NA	2,600	180	200	141	<2.0
5	Sep-08	2,500	4,100	NA	1,300	50	80	61	<10
6	Dec-08	2,800	2,300	NA	830	27	45	30.7	<10
7	Mar-09	3,200	13,000	NA	4,300	870	260	283	<50
8	Sep-09	2,100	550	NA	630	14	28	17	<20
9	Mar-10	3,900	6,700	3,100	2,400	400	140	185	<20
10	Sep-10	2,500	2,000	NA	1,700	44	98	89	<40
11	Mar-11	2,800	16,000	NA	6,600	1600	450	600	<2.0
12	Sep-11	5,900	20,000	NA	6,600	690	550	740	<2.0
13	Mar-12	4,400	13,000	NA	3,000	1400	340	870	<2.0
14	Sep-12	9,900	31,000	NA	4,800	2400	740	2,450	<2.0
15	Mar-13	21,000	11,000	NA	2,300	340	280	371	<50
16	Sep-13	24,000	7,200	NA	1,900	200	160	197	<83
17	Mar-14	8,200	6,900	NA	2,100	220	170	155	<110
18	Sep-14	8,500	7,100	NA	1,600	220	120	180	0
19	Mar-15	11,000	14,000	NA	2,900	390	210	222	<100
20	Sep-15	5,500	9,500	NA	2,600	250	190	237	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	<50	9,200	<200	3,700	<25	60	57	<50
2	Dec-07	3,300	8,100	NA	3,000	48	28	44.5	<20
3	Mar-08	3,000	13,000	NA	3,600	66	210	59.5	<64
4	Jun-08	2,900	15,000	NA	5,800	61	230	56.4	<2.0
5	Sep-08	3,400	18,000	NA	7,800	73	270	59.9	<10
6	Dec-08	3,000	20,000	NA	7,600	95	300	84.2	<50
7	Mar-09	3,400	17,000	NA	7,200	91	170	60	<50
8	Sep-09	2,700	2,300	NA	6,200	71	68	42	<50
9	Mar-10	3,700	14,000	910	5,900	74	170	69	<2.0
10	Sep-10	3,500	5,800	NA	8,100	95	170	71	<100
11	Mar-11	3,200	11,000	NA	5,600	88	110	66.1	<2.0
12	Sep-11	2,200	15,000	NA	6,400	100	71	77.7	<2.0
13	Mar-12	3,500	16,000	NA	7,200	110	160	177	<2.0
14	Sep-12	3,500	28,000	NA	12,000	300	380	297	<2.0
15	Mar-13	3,100	15,000	NA	6,100	170	360	266	<67
16	Sep-13	2,800	17,000	NA	4,100	92	76	144	<200
17	Mar-14	2,200	12,000	NA	3,900	75	30	54	<2.0
18	Sep-14	3,300	9,500	NA	2,600	110	22	46.7	0
19	Mar-15	8,500	16,000	NA	3,400	66	93	29	<100
20	Sep-15	3,100	10,000	NA	3,100	63	33	48	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	<50	190	<200	11.0	1.4	<0.5	<0.5	<1.0
2	Dec-07	8,500	71	NA	13	2.6	<0.5	1.46	<2.0
3	Mar-08	12,000	60	NA	11	0.73	<0.5	<0.5	<2.0
4	Jun-08	10,000	120	NA	13	2.2	<0.5	<0.5	2
5	Sep-08	8,200	64	NA	9.9	1.9	<0.5	<0.5	<2.0
6	Dec-08	8,800	60	NA	11	2.8	<0.5	0.53	<2.0
7	Mar-09	14,000	78	NA	12	2.3	<0.5	<0.5	<2.0
8	Sep-09	10,000	51	NA	9.3	1.6	<0.5	<0.5	2.2
9	Mar-10	12,000	70	4,700	12	2.1	0.56	1.35	<2.0
10	Sep-10	9,800	77	NA	12	1.9	<0.5	0.55	2
11	Mar-11	9,900	64	NA	13	1.6	<0.5	2.3	16
12	Sep-11	10,000	74	NA	17	2.3	<0.5	1.33	<2.0
13	Mar-12	8,400	66	NA	12	1.8	<0.5	1.07	<2.0
14	Sep-12	7,700	84	NA	17	1.5	0.57	0.69	<2.0
15	Mar-13	8,100	80	NA	15	1.4	<0.5	0.75	<2.0
16	Sep-13	9,800	66	NA	13	1.7	<0.5	1.38	<2.0
17	Mar-14	5,900	76	NA	11	1.2	<0.5	0.94	<2.0
18	Sep-14	10,000	110	NA	14	1.5	0	0	0
19	Mar-15	9,500	200	NA	34	2.4	2.5	1.82	<2
20	Sep-15	6,200	110	NA	10	1.1	0	0	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	<50	14,000	<200	3,400	1,100	480	<0.5	<1.0
2	Dec-07	2,900	5,000	NA	1,100	260	110	206	<10
3	Mar-08	3,100	6,800	NA	1,200	110	91	94	21
4	Jun-08	2,900	7,200	NA	1,100	45	75	66	<2.0
5	Sep-08	3,300	5,500	NA	900	63	69	69	<10
6	Dec-08	3,200	7,100	NA	1,100	530	190	390	<10
7	Mar-09	3,000	5,400	NA	770	150	87	161	<2.0
8	Sep-09	3,000	2,200	NA	120	3.1	11	1.6	<2.0
9	Mar-10	3,400	5,000	1,900	910	66	73	93	<2.0
10	Sep-10	2,800	3,500	NA	1,400	62	46	76	<40
11	Mar-11	3,900	6,100	NA	1,100	44	55	70	<2.0
12	Sep-11	2,400	4,600	NA	850	49	51	64	<2.0
13	Mar-12	2,200	5,800	NA	1,500	57	58	67	<2.0
14	Sep-12	1,400	4,800	NA	1,300	45	100	41	<2.0
15	Mar-13	2,900	7,200	NA	1,200	89	220	110	<25
16	Sep-13	2,100	8,000	NA	1,400	150	220	122	<67
17	Mar-14	2,600	8,600	NA	1,800	150	320	118	<67
18	Sep-14	3,000	7,900	NA	1,500	160	130	91	0
19	Mar-15	3,200	9,800	NA	1,600	220	120	136	57
20	Sep-15	3,700	8,100	NA	1,800	160	90	143	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	<50	120	<200	22	6.2	3.2	6.2	<2.0
2	Dec-07	8,600	<50	NA	0.98	<0.5	<0.5	<0.5	<2.0
3	Mar-08	9,800	<50	NA	0.52	<0.5	<0.5	<0.5	2.0
4	Jun-08	8,800	<50	NA	<0.5	<0.5	<0.5	<0.5	3.1
5	Sep-08	8,600	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
6	Dec-08	9,300	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
7	Mar-09	10,000	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
8	Sep-09	11,000	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
9	Mar-10	9,400	<50	2,700	<0.5	<0.5	<0.5	<0.5	<2.0
10	Sep-10	6,400	1,800	NA	2200	45	64.0	78.0	<50
11	Mar-11	10,000	68	NA	5.5	1.1	<0.5	1.3	17
12	Sep-11	9,800	<50	NA	0.58	<0.5	<0.5	<0.5	<2.0
13	Mar-12	9,200	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
14	Sep-12	11,000	160	NA	5.1	<0.5	5.7	0.6	<2.0
15	Mar-13	9,600	<50	NA	<0.5	<0.5	<0.5	<0.5	<2.0
16	Sep-13	11,000	<50	NA	0.52	<0.5	<0.5	<0.5	<2.0
17	Mar-14	8,200	<50	NA	0.52	<0.5	<0.5	<0.5	<2.0
18	Sep-14	12,000	0	NA	0	0	0.0	0.0	0
19	Mar-15	10,000	69	NA	6	<0.5	<0.5	<0.5	0
20	Sep-15	9,700	0	NA	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	NA	3,200	690	97	330	NA
2	May-89	NS	NS	NS	NS	NS	NS	NS	NS
3	Feb-91	NS	NS	NS	NS	NS	NS	NS	NS
4	Mar-04	470	810	<500	340	6.1	2.2	7.7	<1.0
5	Dec-06	280	1,900	<200	910	<10	10	<10	<20
6	Dec-07	6,900	7,000	NA	3,300	50	51	80	<20
7	Mar-08	6,300	2,700	NA	780	17	20	20.9	12
8	Jun-08	5,200	7,400	NA	2,900	43	85	50	<2.0
9	Sep-08	7,800	11,000	NA	3,800	170	130	257	<50
10	Dec-08	9,400	9,100	NA	3,400	110	180	182	<50
11	Mar-09	5,600	850	NA	270	7.5	13	17.5	<2.0
12	Sep-09	6,200	540	NA	1,200	22	37	37.2	<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	NA	2,200	45	64	78	<50
15	Mar-11	5,900	4,400	NA	2,600	46	64	90	<50
16	Sep-11	7,600	3,600	NA	4,500	150	340	402	<2.0
17	Mar-12	5,800	6,500	NA	2,600	50	52	84	<2.0
18	Sep-12	8,300	7,800	NA	5,500	190	430	431	<2.0
19	Mar-13	7,700	21,000	NA	5,900	210	850	970	<50
20	Sep-13	9,400	15,000	NA	3,800	120	470	351	200
21	Mar-14	5,600	9,500	NA	3,200	110	240	178	<140
22	Sep-14	7,800	6,800	NA	1,800	55	86	87	0
23	Mar-15	12,000	6,800	NA	2,200	70	140	131	<67
24	Sep-15	11,000	22,000	NA	6,400	230	750	810	120

RW-1									
Sampling Event No.	Date Sampled	TEH-d	TVH-g	TEH-mo	Benzene	Toluene	Ethylbenzene	Total Xylenes	MTBE
1	Dec-88	NS	NS	NS	NS	NS	NS	NS	NS
2	May-89	NS	NS	NS	NS	NS	NS	NS	NS
3	Feb-91	NS	NS	NS	NS	NS	NS	NS	NS
4	Mar-04	NS	NS	NS	NS	NS	NS	NS	NS
5	Dec-06	<50	640	<200	100	1.3	2	1.6	<1.0
6	Dec-07	2,100	770	NA	110	<0.5	3.8	1.96	<2.0
7	Mar-08	11,000	890	NA	100	4.2	4.4	2.0	<2.0
8	Jun-08	1,500	1,200	NA	290	4.8	10	4.8	<2.0
9	Sep-08	1,900	1,400	NA	280	9.8	10	6.7	<2.0
10	Dec-08	54,000	1,100,000	NA	500	<250	3,200	530	<1,000
11	Mar-09	2,800	950	NA	180	3.6	13	3	<2.0
12	Sep-09	770	350	NA	120	3.1	11	2	<2.0
13	Mar-10	810	200	<300	<0.5	<0.5	<0.5	<0.5	<2.0
14	Sep-10	980	860	NA	170	4.0	5.6	2.8	8.0
15	Mar-11	810	310	NA	15	4.4	2.5	3.9	8.8
16	Sep-11	440	230	NA	28	2.7	1.7	1.5	<2.0
17	Mar-12	1,900	502	NA	70	2.0	2.2	2.1	<2.0
18	Sep-12	890	790	NA	150	9.6	5.5	12.0	<2.0
19	Mar-13	2,800	280	NA	2.7	1.7	2.5	1.9	<2.0
20	Sep-13	1,500	420	NA	10.2	6.0	<0.5	5.7	8.2
21	Mar-14	4,700	410	NA	1.3	1.0	2.4	3.4	2.8
22	Sep-14	1,000	440	NA	41	0.9	1.5	2.2	2.8
23	Mar-15	2,300	710	NA	100	3.8	6.6	131.0	<2
24	Sep-15	660	450	NA	75	4.2	1.4	0.0	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 # 150928-DS1 Date 9-28-15 Client Stellar env

Site Bay Center Apartments, Emeryville, CA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or TOC	Notes
MW-3	1106	2	-	7.22	1.78	-	9.00	-		
MW-4	0945	2					7.68	24.86		
MW-5	0951	2					9.78	24.82		
MW-6	0958	2					9.09	23.32		
MW-7	1010	~~3/8~~ 3/4"					10.54	19.80		
MW-8	1046	3/4"	sheen/ odor	9.93	0.05	-	9.98	-		
MW-9	1013	3/4"	-	-	-	-	10.05	19.70		
MW-10	1051	3/4"	sheen/ odor	9.34	0.35		9.69	-		
MW-11	1018	3/4"	-	-	-	-	10.48	19.70		
MW-12	1026	3/4"	-	-	-	-	9.65	18.98		
MW-13	1054	3/4"	sheen/ odor	9.57	0.02	-	9.59	-		
MW-14	1058	3/4"					9.41	19.50		
MW-15	1102	3/4"					9.85	18.85		
MW-16	1031 ~~MW-134~~	3/4"	-	-	-	-	~~9.85~~ 8.50 (PS)	~~18.85~~ 19.10 (PS)		
MW-17	1006	3/4"	-	-	-	-	10.00	19.50		
MW-18	1035	3/4"	-	-	-	-	8.69	19.57		
MW-E	1041	2					10.07	47.90		

WELL GAUGING DATA

Project # 150928-DS1 Date 9-28-15 Client Stellar env.

Site Bay Center Apartments, Emeryville, CA

Well ID	Time	Well Size (in.)	Sheen / Odor	Depth to Immiscible Liquid (ft.)	Thickness of Immiscible Liquid (ft.)	Volume of Immiscibles Removed (ml)	Depth to water (ft.)	Depth to well bottom (ft.)	Survey Point: TOB or (TOC)	Notes
RW-1	1111	10	ODOR	very thick	—	—	9.69	—	↓	SPH too thick to gauge Accurately.

WELLHEAD INSPECTION CHECKLIST

Client Stellar environmental Date 9-28-15

Site Address Bay Center Apartments

Job Number 150926-DS1 Technician DS

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-3					NL			
MW-4					↓			
MW-5								
MW-6								
MW-7								
MW-8								
DOW-9								
MW-10								
MW-11								
MW-12								
MW-13								
MW-14								
MW-15								
MW-16								
MW-17								
MW-18					↓			

NOTES:

WELLHEAD INSPECTION CHECKLIST

Client Stellar environmental Date 9-28-15

Site Address Bay Center Apartments

Job Number 150928-DS1 Technician DS

Well ID	Well Inspected - No Corrective Action Required	Water Bailed From Wellbox	Wellbox Components Cleaned	Cap Replaced	Lock Replaced	Other Action Taken (explain below)	Well Not Inspected (explain below)	Repair Order Submitted
MW-E	✓							
RW-1	✓							

NOTES:

TEST EQUIPMENT CALIBRATION LOG

PROJECT NAME				PROJECT NUMBER			
EQUIPMENT NAME	EQUIPMENT NUMBER	DATE/TIME OF TEST	STANDARDS USED	EQUIPMENT READING	CALIBRATED TO: OR WITHIN 10%:	TEMP.	INITIALS
Ultrameter	BTS	0630 9-28-15	10.7, 4 3900	10,7.1,4.3 3900	OK	20°C	
Ultrameter	BTS	0640 9/28/15	10.0,7.4 3900 record	10.1,7.1,4.0 3901	OK	20°C	

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: PS	Date: 9/29/15
Well I.D.: MW- 3	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): ~~7.22~~ 7.21	Depth to Water (DTW): 9.00
Depth to Free Product: 7.22	Thickness of Free Product (feet): 1.78
Referenced to: (PVC) 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; (Peristaltic); Extraction Pump; Other_____

Sampling Method: Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: New Tubing

_____(Gals.) X _____ = _____ 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1247	*start purge*			@ 500 mL/min		
	* DTW: 9.081					
1250	* end purge/samples collected					

Did well dewater? Yes (No) Gallons actually evacuated: 1½ gallon

Sampling Date: 9/29/15 Sampling Time: 1255 Depth to Water: 9.12

Sample I.D.: MW- 3 Laboratory: Curtis & Tompkins

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: AC	Date: 9/28/15
Well I.D.: MW- 4	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 24.86	Depth to Water (DTW): 7.68
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]: 11.12	

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

Sampling Method: Bailer; (Disposable Bailer); Extraction Port; Dedicated Tubing; Other: ____

1 Case Volume		Specified Volumes		Calculated Volume
2.75	(Gals.) X	3	=	8.75 Gals.

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

12.18

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1229	68.5	7.30	1704	97	2.75	
1234	68.4	6.91	1669	107	5.50	
1239	68.2	6.94	1661	64	8.25	

Did well dewater? Yes (No) Gallons actually evacuated: 8.25

Sampling Date: 9/28/15 Sampling Time: 1249 Depth to Water: ~~7.70~~ 7.70

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

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: AC	Date: 9 / 28 / 15
Well I.D.: MW- 05	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 24.82	Depth to Water (DTW): 9.74
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]: 12.76	

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

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

2.4 (Gals.) X	3	= 7.2 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	radius² * 0.163

15.08

Time	Temp (°F/or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1310	67.8	7.67	2296	817	2.4	
1315	66.4	7.86	2266	860	4.8	
1320	66.2	7.94	2248	>1000	7.2	

Did well dewater? Yes (No) Gallons actually evacuated: 7.2

Sampling Date: 9 / 28 / 15 Sampling Time: 1340 Depth to Water: 12.62

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

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: AC	Date: 9/28/15
Well I.D.: MW- 6	Well Diameter: (2) 3 4 6 8 ____
Total Well Depth (TD): 23.32	Depth to Water (DTW): 9.09
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]: 11.94	

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

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

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

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

14.23

Time	Temp (°F or °C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1355	65.8	11.07	1544	142	2.3	
1400	66.1	11.18	1558	113	4.6	
1405	66.0	11.22	1576	99	6.9	

Did well dewater? Yes (No) Gallons actually evacuated: 6.9

Sampling Date: 9/28/15 Sampling Time: 1415 Depth to Water: 9.20

Sample I.D.: MW- 6 Laboratory: Curtis & Tompkins

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/28/15
Well I.D.: MW- 7	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): 19.80	Depth to Water (DTW): 10.54
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]: 12.39	

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: NewTubing)

0.18 (Gals.) X 3 = 0.54 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1320	58.3	8.61	11.65 mS	717	0.20	ODOR
1323	57.5	8.56	11.14 mS	408	0.40	ODOR
1326	56.7	8.66	12.09 mS	392	0.60	ODOR

Did well dewater? Yes (No) Gallons actually evacuated: 0.60

Sampling Date: 9/28/15 Sampling Time: 1331 Depth to Water: 12.17

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

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/29/15
Well I.D.: MW- 8	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): —	Depth to Water (DTW): 9.98
Depth to Free Product: 9.93	Thickness of Free Product (feet): 0.05
Referenced to: (PVC) Grade	D.O. Meter (if req'd): YSI (HACH)
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: N/A	

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

_____(Gals.) X _____ = _____ 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
(5) 1031	55.5	7.98	2023	27		
1034						
1031	* Start Purge * Probe does not fit with tubing					
1034						
1037	* Well purged for 6 minutes / sample collected					

Did well dewater? Yes (No) Gallons actually evacuated: ~~N/A~~ 0.3

Sampling Date: 9/29/15 Sampling Time: 1042 Depth to Water: 10.63

Sample I.D.: MW- 8 Laboratory: Curtis & Tompkins

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/28/15
Well I.D.: MW-9	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): 19.70	Depth to Water (DTW): 10.05
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]: 11.98	

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)

0.21 (Gals.) X 3 = 0.63 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1411	56.8	9.64	2791	38	0.25	odor, light tan
1414	56.7	9.67	2630	18	0.50	odor, light tan
1417	56.6	9.73	2593	116	0.75	odor

Did well dewater? Yes (No) Gallons actually evacuated: 0.75

Sampling Date: 9/28/15 Sampling Time: 1421 Depth to Water: 11.92

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

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/29/15
Well I.D.: MW-10	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): —	Depth to Water (DTW): 9.69
Depth to Free Product: 9.34	Thickness of Free Product (feet): 0.35
Referenced to: (PVC) 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; (Peristaltic); Extraction Pump; Other_____

Sampling Method: Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: New Tubing

_____(Gals.) X _____ = _____ 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1053	* started purge *					
1056	* probe too big to take DTW with tubing in well.					
1059	* purge ended @ 6 minutes and well sampled *					

Did well dewater? Yes (No) Gallons actually evacuated: ~~N/A~~ PS 0.3

Sampling Date: 9/29/15 Sampling Time: 1105 Depth to Water: 10.41

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

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/28/15
Well I.D.: MW- 11	Well Diameter: 2 3 4 6 8 3/4"
Total Well Depth (TD): 19.70	Depth to Water (DTW): 10.48
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]: 12.32	

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)

0.20 (Gals.) X	3	=	0.60 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1452	55.8	8.57	2230	65	0.20	ODOR
1457	55.6	8.15	2203	27	0.40	ODOR
1501	55.5	8.07	2190	15	0.60	ODOR

Did well dewater? Yes (No) Gallons actually evacuated: 0.60

Sampling Date: 9/28/15 Sampling Time: 1506 Depth to Water: 12.18

Sample I.D.: MW- 11 Laboratory: Curtis & Tompkins

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/28/15
Well I.D.: MW- 12	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): 18.98	Depth to Water (DTW): 9.65
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]: 11.52	

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

0.20 (Gals.) X	3	=	0.60 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	radius² * 0.163

9.33

Time	Temp (°F or °C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1520	55.0	7.93	1526	15	0.20	
1524	54.7	7.85	1445	25	0.40	
1528	54.6	7.79	1427	16	0.60	

Did well dewater? Yes (No) Gallons actually evacuated: 0.60

Sampling Date: 9/28/15 Sampling Time: 1538 Depth to Water: 11.38

Sample I.D.: MW- 12 Laboratory: (Curtis & Tompkins)

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/29/15
Well I.D.: MW-13	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): —	Depth to Water (DTW): 9.59
Depth to Free Product: 9.57	Thickness of Free Product (feet): 0.02
Referenced to: (PVC) 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; (Peristaltic); Extraction Pump; Other_____

Sampling Method: Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: New Tubing

_____(Gals.) X _____ = _____ 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or (µS))	Turbidity (NTUs)	Gals. Removed	Observations
1115	* Began Purge*					
1118	* unable to take DTW: probe does not fit with tubing in well.					
1121	* Purge ended @ 6 min			/ sample collected. *		

Did well dewater? Yes (No) Gallons actually evacuated: 0.4

Sampling Date: 9/29/15 Sampling Time: 1126 Depth to Water: 10.57

Sample I.D.: MW-13 Laboratory: Curtis & Tompkins

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/29/15
Well I.D.: MW- 14	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): 19.50	Depth to Water (DTW): 9.41
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]: 11.42	

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

0.22 (Gals.) X 3 = 0.66 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1148	54.4	8.26	1363	27	0.25	clear
1155	55.1	8.20	1158	21	0.50	clear
(DUP) 1202	54.9	8.13	1115	16	0.75	clear

Did well dewater? Yes (No) Gallons actually evacuated: 0.75

Sampling Date: 9/29/15 Sampling Time: 1207 Depth to Water: 11.37

Sample I.D.: MW- 14 Laboratory: Curtis & Tompkins

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/29/15
Well I.D.: MW-15	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): 18.85	Depth to Water (DTW): 9.85
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]: 10.80	

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

0.19 (Gals.) X 3 = 0.57 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
~~1216~~ 1218	54.8	7.81	1195	80	0.20	ODOR
1223	55.3	7.66	1220	51	0.40	ODOR
1229	55.2	7.49	1232	31	0.60	ODOR

Did well dewater? Yes (No) Gallons actually evacuated: 0.60

Sampling Date: 9/29/15 Sampling Time: 1235 Depth to Water: 10.61

Sample I.D.: MW-15 Laboratory: Curtis & Tompkins

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/28/15
Well I.D.: MW-17	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): 19.90	Depth to Water (DTW): 10.00
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]: 11.90	

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)

0.165
0.38 (Gals.) X 3 = 0.5 Gals.
1 Case Volume | Specified Volumes | Calculated Volume

Well Diameter	Multiplier	Well Diameter	Multiplier
1"	0.04	4"	0.65
2"	0.16	6"	1.47
3"	0.37	Other	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1240	61.3	8.51	1123	205	0.17	odor
1243	61.1	8.10	1006	73	0.34	odor
1246	61.6	7.97	984.7	29	0.51	odor

Did well dewater? Yes (No) Gallons actually evacuated: 0.51

Sampling Date: 9/28/15 Sampling Time: 1251 Depth to Water: 11.23

Sample I.D.: MW-17 Laboratory: Curtis & Tompkins

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/29/15
Well I.D.: MW-16	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): 19.10	Depth to Water (DTW): 8.50
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]: 10.62	

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)

0.23 (Gals.) X 3 = 0.69 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0817	57.4	10.00	3440	51	0.25	odor / brown
0821	56.8	10.13	3201	27	0.50	odor / brown
0825	56.8	10.22	3190	16	0.75	odor / brown

Did well dewater? Yes (No) Gallons actually evacuated: 0.75

Sampling Date: 9/29/15 Sampling Time: 0830 Depth to Water: 10.18

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

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9 / 29 / 15
Well I.D.: MW- 18	Well Diameter: 2 3 4 6 8 (3/4")
Total Well Depth (TD): 19.57	Depth to Water (DTW): 8.69
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]: 10.86	

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.

0.23 (Gals.) X	3	=	0.69 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0841	55.2	7.83	6792	>1000	0.25	Black, odor
0846	55.2	7.56	6796	>1000	0.50	Black/dark
0852	55.0	7.46	6852	>1000	0.75	Black/dark

Did well dewater? Yes (No) Gallons actually evacuated: 0.75

Sampling Date: 9 /29/ 15 Sampling Time: 0857 Depth to Water: 10.31

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

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/29/15
Well I.D.: MW- E	Well Diameter: (2) 3 4 6 8 ___
Total Well Depth (TD): ~~48~~ 47.90	Depth to Water (DTW): ~~47.98~~ 10.07
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]: 17.63	

Purge Method: Bailer; Disposable Bailer; Positive Air Displacement; Electric Submersible; Waterra; Peristaltic; Extraction Pump; (Other) Check Ball and tubing

Sampling Method: Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; (Other): New Tubing

6.05 (Gals.) X 3 = 18.15 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
0938 ~~0946~~	54.9	8.32	2733	1000	6.1	dark, cloudy
0946	55.0	8.17	2827	1000	12.2	dark, cloudy
0958	55.2	8.29	2833	885	18.3	dark, cloudy

Did well dewater? Yes (No) Gallons actually evacuated: 18.3

Sampling Date: 9/ /15 Sampling Time: 1005 Depth to Water: 17.15

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

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

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

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

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

WELL MONITORING DATA SHEET

Project #: 150928-DS1	Client: Stellar Environmental Solutions @ Bay Center Apts
Sampler: DS	Date: 9/29/15
Well I.D.: ~~MW-~~ RW-1	Well Diameter: 2 3 4 6 8 (10)
Total Well Depth (TD):	Depth to Water (DTW): 9.69
Depth to Free Product: very thick, unable to Record.	Thickness of Free Product (feet): Very thick, unable to determine
Referenced to: (PVC) 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; (Peristaltic); Extraction Pump; Other_____

Sampling Method: Bailer; Disposable Bailer; Extraction Port; Dedicated Tubing; Other: New tubing

_____(Gals.) X _____ = _____ 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	radius² * 0.163

Time	Temp (°F or °C)	pH	Cond. (mS or µS)	Turbidity (NTUs)	Gals. Removed	Observations
1312	* Start	Purge				
1318	* End	purge / Sample collected				

Did well dewater? Yes (No) Gallons actually evacuated: 500 mL

Sampling Date: 9/29/15 Sampling Time: 1325 Depth to Water: 9.71

Sample I.D.: ~~MW-~~ RW-1 Laboratory: Curtis & Tompkins

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

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

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

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

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 270284
ANALYTICAL REPORT

Stellar Environmental Solutions	Project : 2007-65
2198 6th Street	Location : Bay Center Apts
Berkeley, CA 94710	Level : II

Sample ID	Lab ID
MW-7	270284-001
MW-9	270284-002
MW-11	270284-003
MW-12	270284-004
MW-4	270284-005
MW-5	270284-006
MW-6	270284-007
MW-17	270284-008
RW-1	270284-009
MW-3	270284-010
MW-15	270284-011
MW-14	270284-012
MW-13	270284-013
MW-10	270284-014
MW-8	270284-015
MW-E	270284-016
MW-18	270284-017
MW-16	270284-018

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: Tracy Babjar Date: 10/07/2015

Tracy Babjar
Project Manager
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(510) 204-2226

CA ELAP# 2896, NELAP# 4044-001

Curtis & Tompkins, Ltd.

CASE NARRATIVE

Laboratory number:	**270284**
Client:	**Stellar Environmental Solutions**
Project:	**2007-65**
Location:	**Bay Center Apts**
Request Date:	**09/29/15**
Samples Received:	**09/29/15**

This data package contains sample and QC results for eighteen water samples, requested for the above referenced project on 09/29/15. The samples were received cold and intact.

TPH-Purgeables and/or BTXE by GC (EPA 8015B and EPA 8021B):
Low recoveries were observed for gasoline C7-C12 in the MS/MSD of MW-7 (lab # 270284-001); the LCS was within limits, and the associated RPD was within limits. Many samples were diluted due to client history of high non-target or organic acid interference. MW-7 (lab # 270284-001) had pH greater than 2. No other analytical problems were encountered.

TPH-Extractables by GC (EPA 8015B):
No analytical problems were encountered.

Chain of Custody Record

Lab job no. 270284
Date 9-28-15
Page 1 of 2

Laboratory CURTIS & TOMPKINS
Address 2323 FIFTH ST. BERKELEY, CA
Project Owner
Site Address 6400 CHRISTIE AVE. BERKELEY, CA
Project Name BAY CENTER APARTMENT
Project Number 2007-65

Method of Shipment HAND DELIVERY or LAB COURIER
Shipment No.
Airbill No.
Cooler No.
Project Manager R. MAKDISI
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: (Signature)

	Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	TEH-D (8015M)	PAH's (8270 SIM)	BTEX + MTBE (8260)	TPH-G, M/BTEX	Remarks
1	MW-7	19'	9-28-15	1331	W	2Ambers/3VOAs		HCl		5	X			X	
2	MW-9	19'		1421	W					5	X			X	
3	MW-11	19'		1500	W					5	X			X	
4	MW-12	18.9'		1538	W					5	X			X	
5	MW-4	24'		1249	W					5	X			X	
6	MW-5	24'		1340	W					5	X			X	
7	MW-6	23'		1415	W					5	X			X	
8	MW-17	19'		1251	W					5	X			X	
9	RW-1	15'	9/29/15	1325	W	2Amber, 3VOA's		HCl		5	X			X	
10	MW-3	18'		1255	W					5	X			X	
11	MW-15	18'		1235	W					5	X			X	
12	MW-14	19'		1207	W					5	X			X	

Relinquished by:	Date	Received by:	Date	Relinquished by:	Date	Received by:	Date
Signature	9-28-15	Signature	9/29/15	Signature		Signature	
Printed Darren Suto	Time 1415	Printed Pat Gonzalez	Time 1415	Printed	Time	Printed	Time
Company STS		Company C&T		Company		Company	

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

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

2000-00-01

★ Stellar Environmental Solutions

2198 Sixth Street #201, Berkeley, CA 94710

Chain of Custody Record

Lab job no. 270284
Date 9-29-15
Page 1 of 2

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

Method of Shipment HAND DELIVERY or LAB COURIER
Shipment No.
Airbill No.
Cooler No.
Project Manager R. MAKDISI
Telephone No. (510) 644-3123
Fax No. (510) 644-3859
Samplers: (Signature)

Project Owner
Site Address 6400 CHRISTIE AVE.
BERKELEY, CA
Project Name BAY CENTER APARTMENT
Project Number 2007-65

	Field Sample Number	Location/ Depth	Date	Time	Sample Type	Type/Size of Container	Preservation: Cooler	Preservation: Chemical	Filtered	No. of Containers	TEH-D (8015M)	TPH-G, M/BTEX	Remarks
13	MW-13	18'	9/29/15	1126	W	3 Amber, 3 VOAs		HCl		5	X	X	
14	MW-10	18'		1105	W					5	X	X	
15	MW-8	18'		1042	W					5	X	X	
16	MW-6	18'		1005	W					5	X	X	
17	MW-18	19'		0857	W					5	X	X	
18	MW-16	19'		0830	W					5	X	X	

Relinquished by:	Date	Received by:	Date	Relinquished by:	Date	Received by:	Date
Signature	9/29/15	Signature	9/29/15	Signature		Signature	
Printed		Printed		Printed		Printed	
Company	BTS	Company	C&T	Company		Company	
	Time 1415		Time 1615		Time		Time

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

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

2000-00-01

COOLER RECEIPT CHECKLIST

Curtis & Tompkins, Ltd.

Login # 270284 Date Received 9/29/15 Number of coolers 2
Client STEWAR Project 2007-05

Date Opened 9/29/15 By (print) [signature] (sign) [signature]
Date Logged in 9/29 By (print) TLB (sign) ~~(sign)~~

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

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

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

Type of ice used: ☒ Wet ☐ Blue/Gel ☐ None Temp(°C) 2.2°C, 2.4°

☐ 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
20.) Bubbles present in 1/3 VOA for samples 1, 13, 15, 16

Rev 10, 9/12

Curtis & Tompkins, Ltd.

Detections Summary for 270284

Results for any subcontracted analyses are not included in this summary.

Client : Stellar Environmental Solutions
Project : 2007-65
Location : Bay Center Apts

Client Sample ID : MW-7 Laboratory Sample ID : 270284-001

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	1,000		50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
MTBE	21	C	2.0	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Benzene	280		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Toluene	16		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Ethylbenzene	10		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
m,p-Xylenes	43		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
o-Xylene	9.9	C	0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Diesel C10-C24	10,000	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-9 Laboratory Sample ID : 270284-002

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	190		50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Benzene	8.0		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Toluene	0.71		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
o-Xylene	0.87	C	0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Diesel C10-C24	11,000	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-11 Laboratory Sample ID : 270284-003

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	1,300		50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Benzene	110		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Toluene	16	C	0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Ethylbenzene	2.1		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
m,p-Xylenes	14	C	0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
o-Xylene	6.4	C	0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Diesel C10-C24	8,000	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-12 Laboratory Sample ID : 270284-004

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	13,000		1,300	ug/L	As Recd	25.00	EPA 8015B	EPA 5030B
Benzene	4,300		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Toluene	110		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Ethylbenzene	52		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
m,p-Xylenes	53		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
o-Xylene	18	C	13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Diesel C10-C24	3,100	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-4 Laboratory Sample ID : 270284-005

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	120	Y	50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	370	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-5 Laboratory Sample ID : 270284-006

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	60	Y	50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Diesel C10-C24	4,400	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-6 Laboratory Sample ID : 270284-007

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	65	Y	50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Benzene	0.88		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Diesel C10-C24	1,700	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-17 Laboratory Sample ID : 270284-008

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	8,100		1,300	ug/L	As Recd	25.00	EPA 8015B	EPA 5030B
Benzene	1,800		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Toluene	160		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Ethylbenzene	90		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
m,p-Xylenes	90		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
o-Xylene	53	C	13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Diesel C10-C24	3,700	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Curtis & Tompkins, Ltd.

Client Sample ID : RW-1 Laboratory Sample ID : 270284-009

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	450		50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Benzene	75		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Toluene	4.2	C	0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Ethylbenzene	1.4		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Diesel C10-C24	660	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-3 Laboratory Sample ID : 270284-010

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	330	Y	50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
MTBE	2.9		2.0	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Benzene	0.71		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
m,p-Xylenes	3.2	C	0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Diesel C10-C24	4,500	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-15 Laboratory Sample ID : 270284-011

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	10,000		1,300	ug/L	As Recd	25.00	EPA 8015B	EPA 5030B
Benzene	3,100		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Toluene	63		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Ethylbenzene	33		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
m,p-Xylenes	34		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
o-Xylene	14	C	13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Diesel C10-C24	3,100	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-14 Laboratory Sample ID : 270284-012

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	9,500		2,500	ug/L	As Recd	50.00	EPA 8015B	EPA 5030B
Benzene	2,600		25	ug/L	As Recd	50.00	EPA 8021B	EPA 5030B
Toluene	250		25	ug/L	As Recd	50.00	EPA 8021B	EPA 5030B
Ethylbenzene	190		25	ug/L	As Recd	50.00	EPA 8021B	EPA 5030B
m,p-Xylenes	170		25	ug/L	As Recd	50.00	EPA 8021B	EPA 5030B
o-Xylene	67		25	ug/L	As Recd	50.00	EPA 8021B	EPA 5030B
Diesel C10-C24	5,500	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Curtis & Tompkins, Ltd.

Client Sample ID : MW-13 Laboratory Sample ID : 270284-013

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	13,000		1,300	ug/L	As Recd	25.00	EPA 8015B	EPA 5030B
Benzene	3,100		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Toluene	78		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Ethylbenzene	440		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
m,p-Xylenes	210		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
o-Xylene	45		13	ug/L	As Recd	25.00	EPA 8021B	EPA 5030B
Diesel C10-C24	8,300	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-10 Laboratory Sample ID : 270284-014

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	7,300		2,500	ug/L	As Recd	50.00	EPA 8015B	EPA 5030B
Benzene	1,300		25	ug/L	As Recd	50.00	EPA 8021B	EPA 5030B
Toluene	62		25	ug/L	As Recd	50.00	EPA 8021B	EPA 5030B
m,p-Xylenes	37		25	ug/L	As Recd	50.00	EPA 8021B	EPA 5030B
Diesel C10-C24	2,700	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-8 Laboratory Sample ID : 270284-015

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	23,000		4,200	ug/L	As Recd	83.33	EPA 8015B	EPA 5030B
Benzene	7,100		42	ug/L	As Recd	83.33	EPA 8021B	EPA 5030B
Toluene	100		42	ug/L	As Recd	83.33	EPA 8021B	EPA 5030B
Ethylbenzene	510		42	ug/L	As Recd	83.33	EPA 8021B	EPA 5030B
m,p-Xylenes	210		42	ug/L	As Recd	83.33	EPA 8021B	EPA 5030B
o-Xylene	57		42	ug/L	As Recd	83.33	EPA 8021B	EPA 5030B
Diesel C10-C24	9,400	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-E Laboratory Sample ID : 270284-016

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	22,000		1,700	ug/L	As Recd	33.33	EPA 8015B	EPA 5030B
MTBE	120		67	ug/L	As Recd	33.33	EPA 8021B	EPA 5030B
Benzene	6,400		17	ug/L	As Recd	33.33	EPA 8021B	EPA 5030B
Toluene	230		17	ug/L	As Recd	33.33	EPA 8021B	EPA 5030B
Ethylbenzene	750		17	ug/L	As Recd	33.33	EPA 8021B	EPA 5030B
m,p-Xylenes	660		17	ug/L	As Recd	33.33	EPA 8021B	EPA 5030B
o-Xylene	150	C	17	ug/L	As Recd	33.33	EPA 8021B	EPA 5030B
Diesel C10-C24	11,000	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Client Sample ID : MW-18 Laboratory Sample ID : 270284-017

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Diesel C10-C24	9,700	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

Curtis & Tompkins, Ltd.

Client Sample ID : MW-16 Laboratory Sample ID : 270284-018

Analyte	Result	Flags	RL	Units	Basis	IDF	Method	Prep Method
Gasoline C7-C12	110	Y	50	ug/L	As Recd	1.000	EPA 8015B	EPA 5030B
Benzene	10		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Toluene	1.1		0.50	ug/L	As Recd	1.000	EPA 8021B	EPA 5030B
Diesel C10-C24	6,200	Y	49	ug/L	As Recd	1.000	EPA 8015B	EPA 3520C

C = Presence confirmed, but RPD between columns exceeds 40%
Y = Sample exhibits chromatographic pattern which does not resemble standard

Curtis & Tompkins, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Field ID:	MW-7	Batch#:	227806
Type:	SAMPLE	Sampled:	09/28/15
Lab ID:	270284-001	Analyzed:	10/02/15
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	1,000	50	EPA 8015B
MTBE	21 C	2.0	EPA 8021B
Benzene	280	0.50	EPA 8021B
Toluene	16	0.50	EPA 8021B
Ethylbenzene	10	0.50	EPA 8021B
m,p-Xylenes	43	0.50	EPA 8021B
o-Xylene	9.9 C	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	93	80-132	EPA 8015B
Bromofluorobenzene (PID)	96	71-141	EPA 8021B

Field ID:	MW-9	Batch#:	227806
Type:	SAMPLE	Sampled:	09/28/15
Lab ID:	270284-002	Analyzed:	10/02/15
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	190	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	8.0	0.50	EPA 8021B
Toluene	0.71	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	0.87 C	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	96	80-132	EPA 8015B
Bromofluorobenzene (PID)	98	71-141	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, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Field ID:	MW-11	Batch#:	227806
Type:	SAMPLE	Sampled:	09/28/15
Lab ID:	270284-003	Analyzed:	10/02/15
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	1,300	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	110	0.50	EPA 8021B
Toluene	16 C	0.50	EPA 8021B
Ethylbenzene	2.1	0.50	EPA 8021B
m,p-Xylenes	14 C	0.50	EPA 8021B
o-Xylene	6.4 C	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	99	80-132	EPA 8015B
Bromofluorobenzene (PID)	104	71-141	EPA 8021B

Field ID:	MW-12	Batch#:	227806
Type:	SAMPLE	Sampled:	09/28/15
Lab ID:	270284-004	Analyzed:	10/02/15
Diln Fac:	25.00		

Analyte	Result	RL	Analysis
Gasoline C7-C12	13,000	1,300	EPA 8015B
MTBE	ND	50	EPA 8021B
Benzene	4,300	13	EPA 8021B
Toluene	110	13	EPA 8021B
Ethylbenzene	52	13	EPA 8021B
m,p-Xylenes	53	13	EPA 8021B
o-Xylene	18 C	13	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	116	80-132	EPA 8015B
Bromofluorobenzene (PID)	121	71-141	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, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Field ID:	MW-4	Batch#:	227806
Type:	SAMPLE	Sampled:	09/28/15
Lab ID:	270284-005	Analyzed:	10/02/15
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	120 Y	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	119	80-132	EPA 8015B
Bromofluorobenzene (PID)	121	71-141	EPA 8021B

Field ID:	MW-5	Batch#:	227806
Type:	SAMPLE	Sampled:	09/28/15
Lab ID:	270284-006	Analyzed:	10/02/15
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	60 Y	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	ND	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	ND	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	106	80-132	EPA 8015B
Bromofluorobenzene (PID)	109	71-141	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, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Field ID:	MW-6	Batch#:	227806
Type:	SAMPLE	Sampled:	09/28/15
Lab ID:	270284-007	Analyzed:	10/02/15
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	65 Y	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	0.88	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)	101	80-132	EPA 8015B
Bromofluorobenzene (PID)	106	71-141	EPA 8021B

Field ID:	MW-17	Batch#:	227806
Type:	SAMPLE	Sampled:	09/28/15
Lab ID:	270284-008	Analyzed:	10/02/15
Diln Fac:	25.00		

Analyte	Result	RL	Analysis
Gasoline C7-C12	8,100	1,300	EPA 8015B
MTBE	ND	50	EPA 8021B
Benzene	1,800	13	EPA 8021B
Toluene	160	13	EPA 8021B
Ethylbenzene	90	13	EPA 8021B
m,p-Xylenes	90	13	EPA 8021B
o-Xylene	53 C	13	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	114	80-132	EPA 8015B
Bromofluorobenzene (PID)	121	71-141	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, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Field ID:	RW-1	Batch#:	227806
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-009	Analyzed:	10/02/15
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	450	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	75	0.50	EPA 8021B
Toluene	4.2 C	0.50	EPA 8021B
Ethylbenzene	1.4	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)	121	80-132	EPA 8015B
Bromofluorobenzene (PID)	126	71-141	EPA 8021B

Field ID:	MW-3	Batch#:	227806
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-010	Analyzed:	10/02/15
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	330 Y	50	EPA 8015B
MTBE	2.9	2.0	EPA 8021B
Benzene	0.71	0.50	EPA 8021B
Toluene	ND	0.50	EPA 8021B
Ethylbenzene	ND	0.50	EPA 8021B
m,p-Xylenes	3.2 C	0.50	EPA 8021B
o-Xylene	ND	0.50	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	118	80-132	EPA 8015B
Bromofluorobenzene (PID)	123	71-141	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, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Field ID:	MW-15	Batch#:	227806
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-011	Analyzed:	10/02/15
Diln Fac:	25.00		

Analyte	Result	RL	Analysis
Gasoline C7-C12	10,000	1,300	EPA 8015B
MTBE	ND	50	EPA 8021B
Benzene	3,100	13	EPA 8021B
Toluene	63	13	EPA 8021B
Ethylbenzene	33	13	EPA 8021B
m,p-Xylenes	34	13	EPA 8021B
o-Xylene	14 C	13	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	110	80-132	EPA 8015B
Bromofluorobenzene (PID)	120	71-141	EPA 8021B

Field ID:	MW-14	Batch#:	227893
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-012	Analyzed:	10/05/15
Diln Fac:	50.00		

Analyte	Result	RL	Analysis
Gasoline C7-C12	9,500	2,500	EPA 8015B
MTBE	ND	100	EPA 8021B
Benzene	2,600	25	EPA 8021B
Toluene	250	25	EPA 8021B
Ethylbenzene	190	25	EPA 8021B
m,p-Xylenes	170	25	EPA 8021B
o-Xylene	67	25	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	116	80-132	EPA 8015B
Bromofluorobenzene (PID)	106	71-141	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, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Field ID:	MW-13	Batch#:	227806
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-013	Analyzed:	10/02/15
Diln Fac:	25.00		

Analyte	Result	RL	Analysis
Gasoline C7-C12	13,000	1,300	EPA 8015B
MTBE	ND	50	EPA 8021B
Benzene	3,100	13	EPA 8021B
Toluene	78	13	EPA 8021B
Ethylbenzene	440	13	EPA 8021B
m,p-Xylenes	210	13	EPA 8021B
o-Xylene	45	13	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	114	80-132	EPA 8015B
Bromofluorobenzene (PID)	119	71-141	EPA 8021B

Field ID:	MW-10	Batch#:	227806
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-014	Analyzed:	10/02/15
Diln Fac:	50.00		

Analyte	Result	RL	Analysis
Gasoline C7-C12	7,300	2,500	EPA 8015B
MTBE	ND	100	EPA 8021B
Benzene	1,300	25	EPA 8021B
Toluene	62	25	EPA 8021B
Ethylbenzene	ND	25	EPA 8021B
m,p-Xylenes	37	25	EPA 8021B
o-Xylene	ND	25	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	114	80-132	EPA 8015B
Bromofluorobenzene (PID)	119	71-141	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, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Field ID:	MW-8	Batch#:	227806
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-015	Analyzed:	10/02/15
Diln Fac:	83.33		

Analyte	Result	RL	Analysis
Gasoline C7-C12	23,000	4,200	EPA 8015B
MTBE	ND	170	EPA 8021B
Benzene	7,100	42	EPA 8021B
Toluene	100	42	EPA 8021B
Ethylbenzene	510	42	EPA 8021B
m,p-Xylenes	210	42	EPA 8021B
o-Xylene	57	42	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	109	80-132	EPA 8015B
Bromofluorobenzene (PID)	120	71-141	EPA 8021B

Field ID:	MW-E	Batch#:	227806
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-016	Analyzed:	10/02/15
Diln Fac:	33.33		

Analyte	Result	RL	Analysis
Gasoline C7-C12	22,000	1,700	EPA 8015B
MTBE	120	67	EPA 8021B
Benzene	6,400	17	EPA 8021B
Toluene	230	17	EPA 8021B
Ethylbenzene	750	17	EPA 8021B
m,p-Xylenes	660	17	EPA 8021B
o-Xylene	150 C	17	EPA 8021B

Surrogate	%REC	Limits	Analysis
Bromofluorobenzene (FID)	116	80-132	EPA 8015B
Bromofluorobenzene (PID)	123	71-141	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, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Field ID:	MW-18	Batch#:	227893
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-017	Analyzed:	10/05/15
Diln Fac:	1.000		

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)	88	80-132	EPA 8015B
Bromofluorobenzene (PID)	81	71-141	EPA 8021B

Field ID:	MW-16	Batch#:	227806
Type:	SAMPLE	Sampled:	09/29/15
Lab ID:	270284-018	Analyzed:	10/02/15
Diln Fac:	1.000		

Analyte	Result	RL	Analysis
Gasoline C7-C12	110 Y	50	EPA 8015B
MTBE	ND	2.0	EPA 8021B
Benzene	10	0.50	EPA 8021B
Toluene	1.1	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)	102	80-132	EPA 8015B
Bromofluorobenzene (PID)	103	71-141	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, Ltd.

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65		
Matrix:	Water	Received:	09/29/15
Units:	ug/L		

Type:	BLANK	Batch#:	227806
Lab ID:	QC806178	Analyzed:	10/01/15
Diln Fac:	1.000		

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)	111	80-132	EPA 8015B
Bromofluorobenzene (PID)	103	71-141	EPA 8021B

Type:	BLANK	Batch#:	227893
Lab ID:	QC806515	Analyzed:	10/05/15
Diln Fac:	1.000		

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)	106	80-132	EPA 8015B
Bromofluorobenzene (PID)	101	71-141	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 #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC806177	Batch#:	227806
Matrix:	Water	Analyzed:	10/01/15
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	972.0	97	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	115	80-132

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Field ID:	MW-7	Batch#:	227806
MSS Lab ID:	270284-001	Sampled:	09/28/15
Matrix:	Water	Received:	09/29/15
Units:	ug/L	Analyzed:	10/02/15
Diln Fac:	1.000		

Type: MS Lab ID: QC806179

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,014	2,000	2,329	66 *	76-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	94	80-132

Type: MSD Lab ID: QC806180

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	2,433	71 *	76-120	4	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	101	80-132

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

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8021B
Matrix:	Water	Diln Fac:	1.000
Units:	ug/L	Batch#:	227806

Type: BS Analyzed: 10/01/15
Lab ID: QC806181

Analyte	Spiked	Result	%REC	Limits
MTBE	10.00	11.53	115	74-137
Benzene	10.00	10.58	106	80-120
Toluene	10.00	10.76	108	80-120
Ethylbenzene	10.00	10.81	108	80-120
m,p-Xylenes	10.00	11.28	113	80-120
o-Xylene	10.00	11.04	110	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	105	71-141

Type: BSD Analyzed: 10/02/15
Lab ID: QC806182

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	30.00	33.57	112	74-137	3	37
Benzene	30.00	33.39	111	80-120	5	20
Toluene	30.00	32.85	109	80-120	2	20
Ethylbenzene	30.00	33.85	113	80-120	4	20
m,p-Xylenes	30.00	31.93	106	80-120	6	20
o-Xylene	30.00	32.79	109	80-120	1	20

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	119	71-141

RPD= Relative Percent Difference

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Type:	LCS	Diln Fac:	1.000
Lab ID:	QC806514	Batch#:	227893
Matrix:	Water	Analyzed:	10/05/15
Units:	ug/L		

Analyte	Spiked	Result	%REC	Limits
Gasoline C7-C12	1,000	992.4	99	80-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	113	80-132

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8015B
Field ID:	ZZZZZZZZZZ	Batch#:	227893
MSS Lab ID:	270367-001	Sampled:	10/02/15
Matrix:	Water	Received:	10/02/15
Units:	ug/L	Analyzed:	10/05/15
Diln Fac:	1.000		

Type: MS Lab ID: QC806516

Analyte	MSS Result	Spiked	Result	%REC	Limits
Gasoline C7-C12	14.06	2,000	1,691	84	76-120

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	114	80-132

Type: MSD Lab ID: QC806517

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Gasoline C7-C12	2,000	1,786	89	76-120	5	20

Surrogate	%REC	Limits
Bromofluorobenzene (FID)	122	80-132

RPD= Relative Percent Difference

Curtis & Tompkins, Ltd.

Batch QC Report

Curtis & Tompkins Laboratories Analytical Report

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 5030B
Project#:	2007-65	Analysis:	EPA 8021B
Matrix:	Water	Batch#:	227893
Units:	ug/L	Analyzed:	10/05/15
Diln Fac:	1.000		

Type: BS Lab ID: QC806518

Analyte	Spiked	Result	%REC	Limits
MTBE	10.00	10.11	101	74-137
Benzene	10.00	9.868	99	80-120
Toluene	10.00	10.16	102	80-120
Ethylbenzene	10.00	10.66	107	80-120
m,p-Xylenes	10.00	10.92	109	80-120
o-Xylene	10.00	10.71	107	80-120

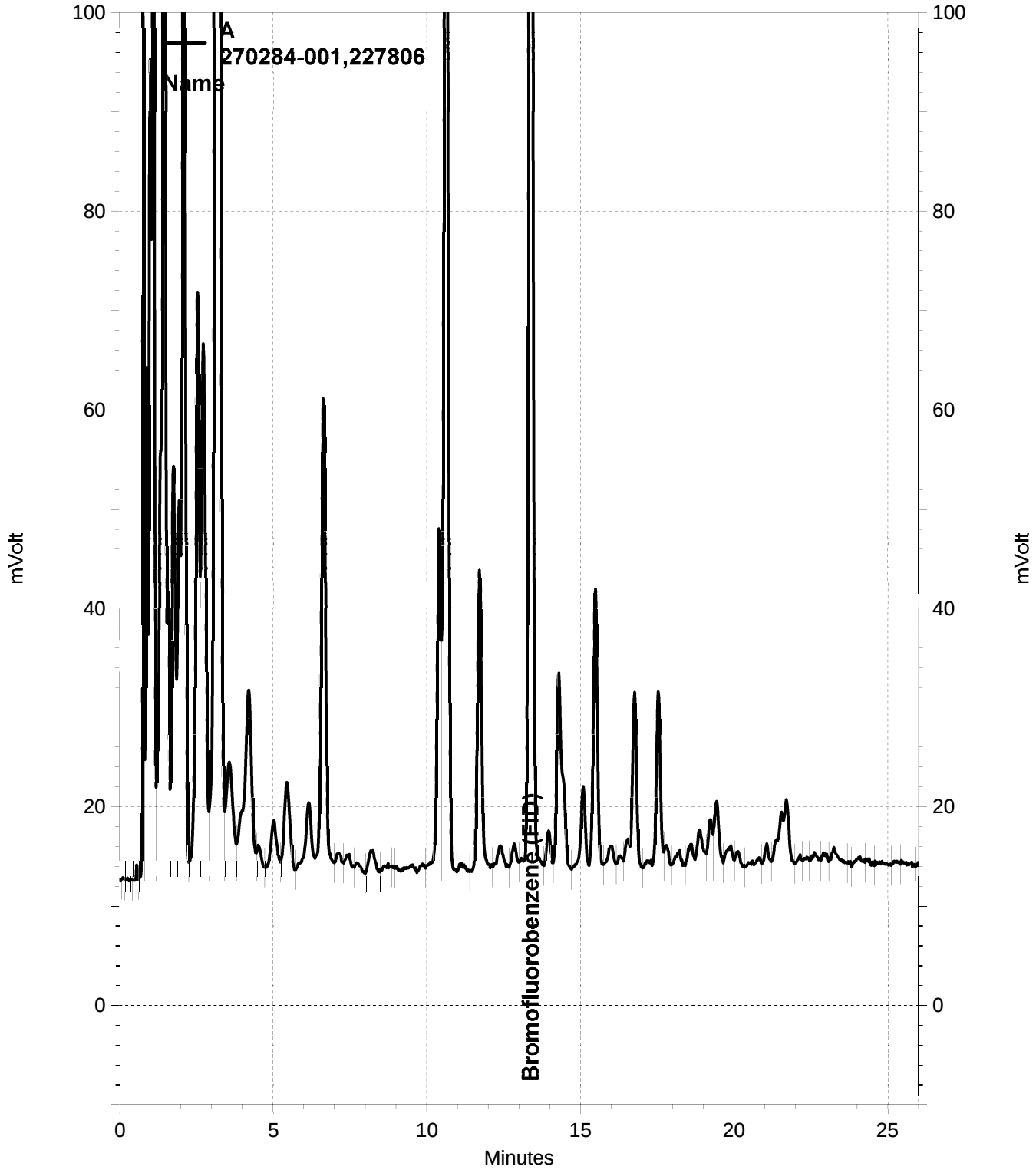
Surrogate	%REC	Limits
Bromofluorobenzene (PID)	103	71-141

Type: BSD Lab ID: QC806541

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
MTBE	20.00	19.00	95	74-137	6	37
Benzene	20.00	19.02	95	80-120	4	20
Toluene	20.00	19.15	96	80-120	6	20
Ethylbenzene	20.00	19.00	95	80-120	11	20
m,p-Xylenes	20.00	20.08	100	80-120	8	20
o-Xylene	20.00	19.69	98	80-120	8	20

Surrogate	%REC	Limits
Bromofluorobenzene (PID)	104	71-141

RPD= Relative Percent Difference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mVolt
Bromofluorobenzene (FID)
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Minutes
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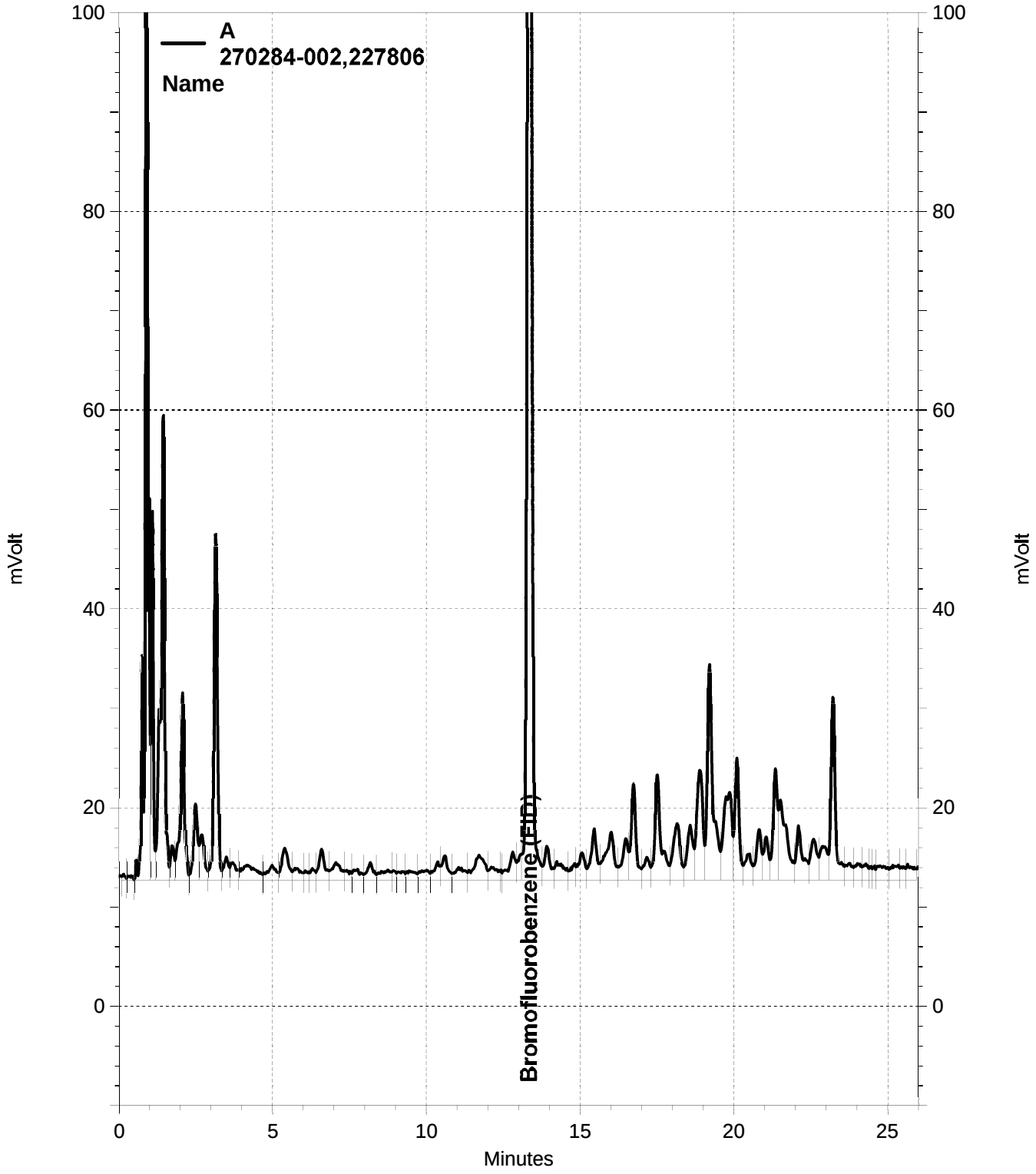
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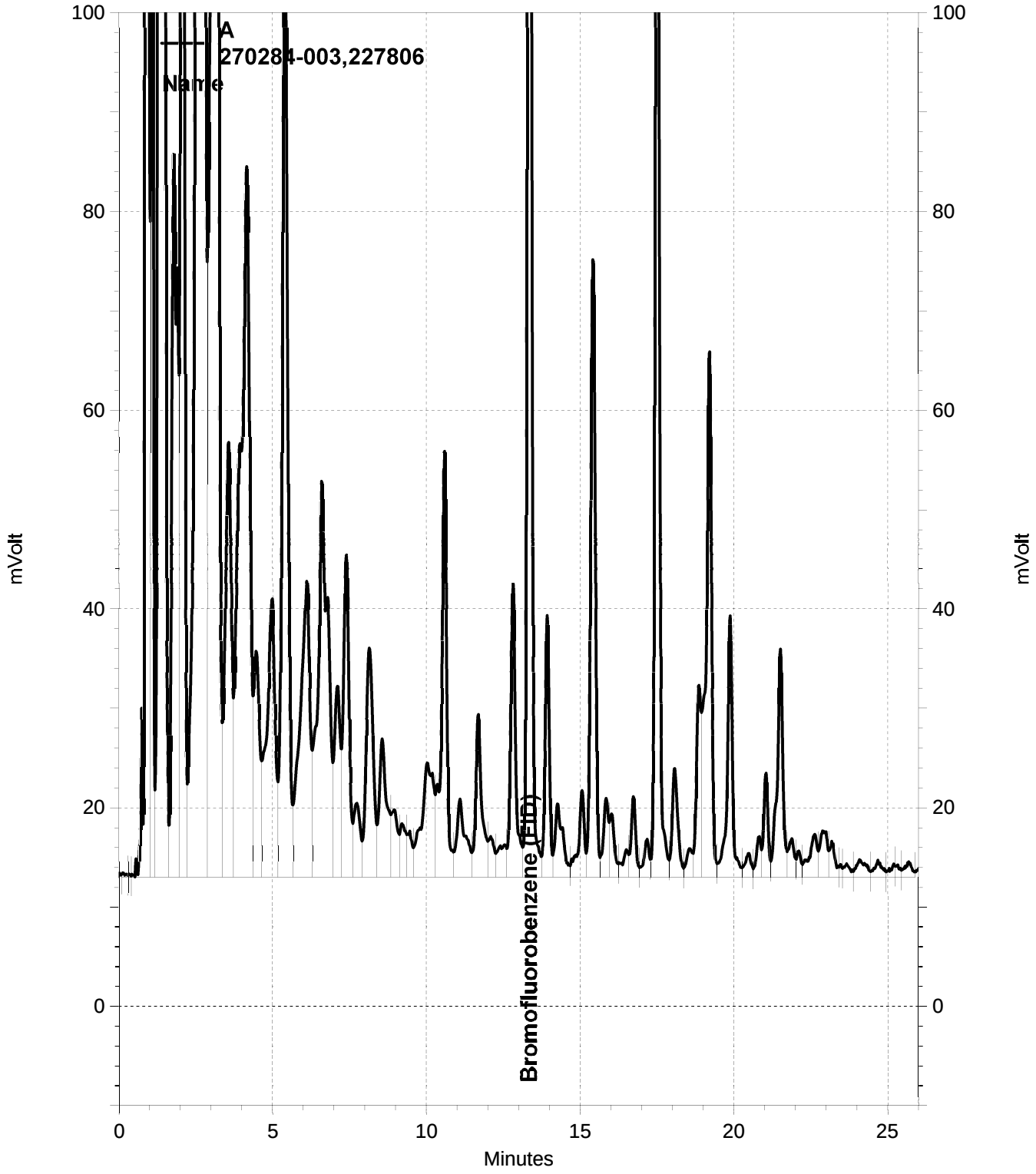

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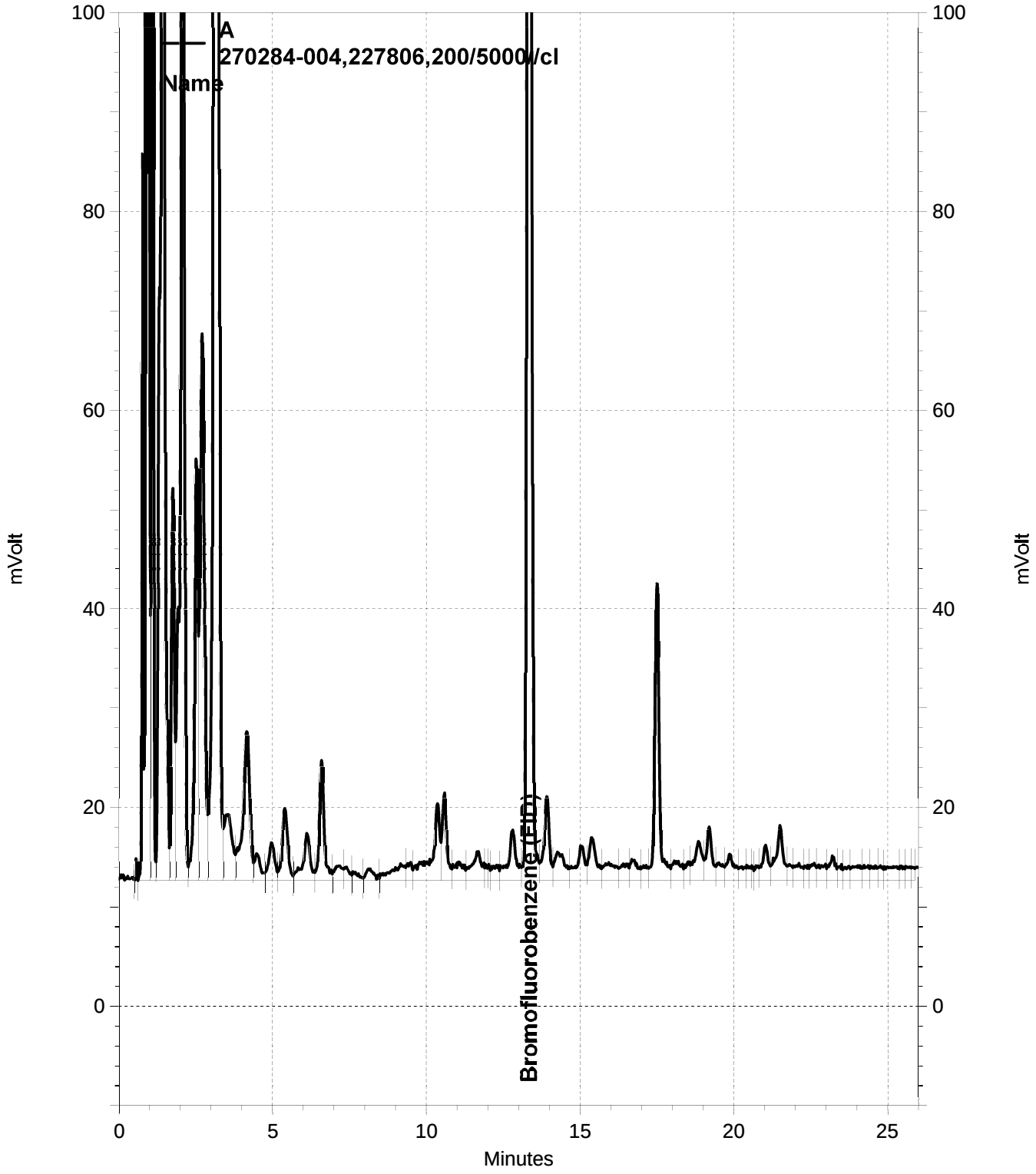
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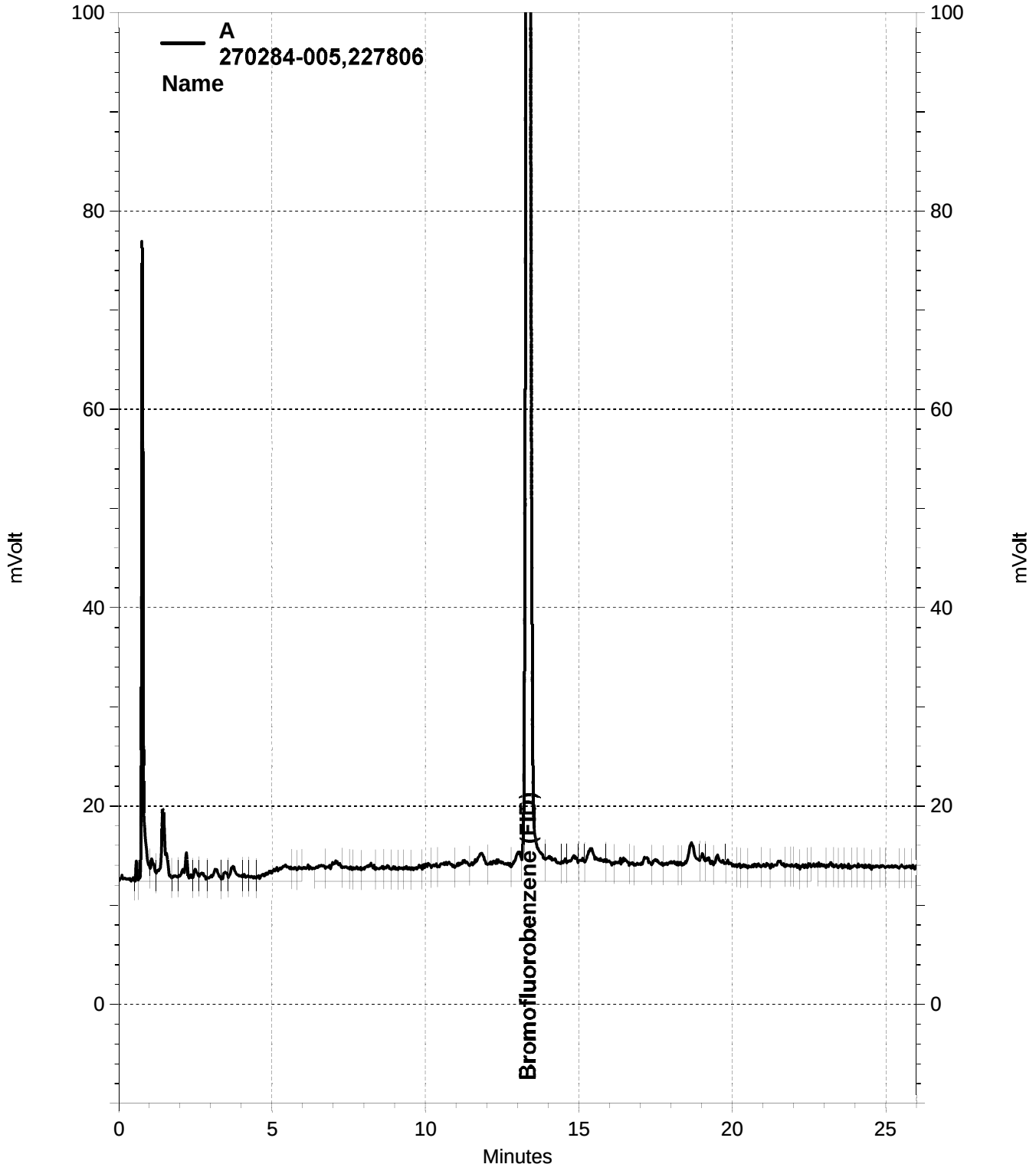
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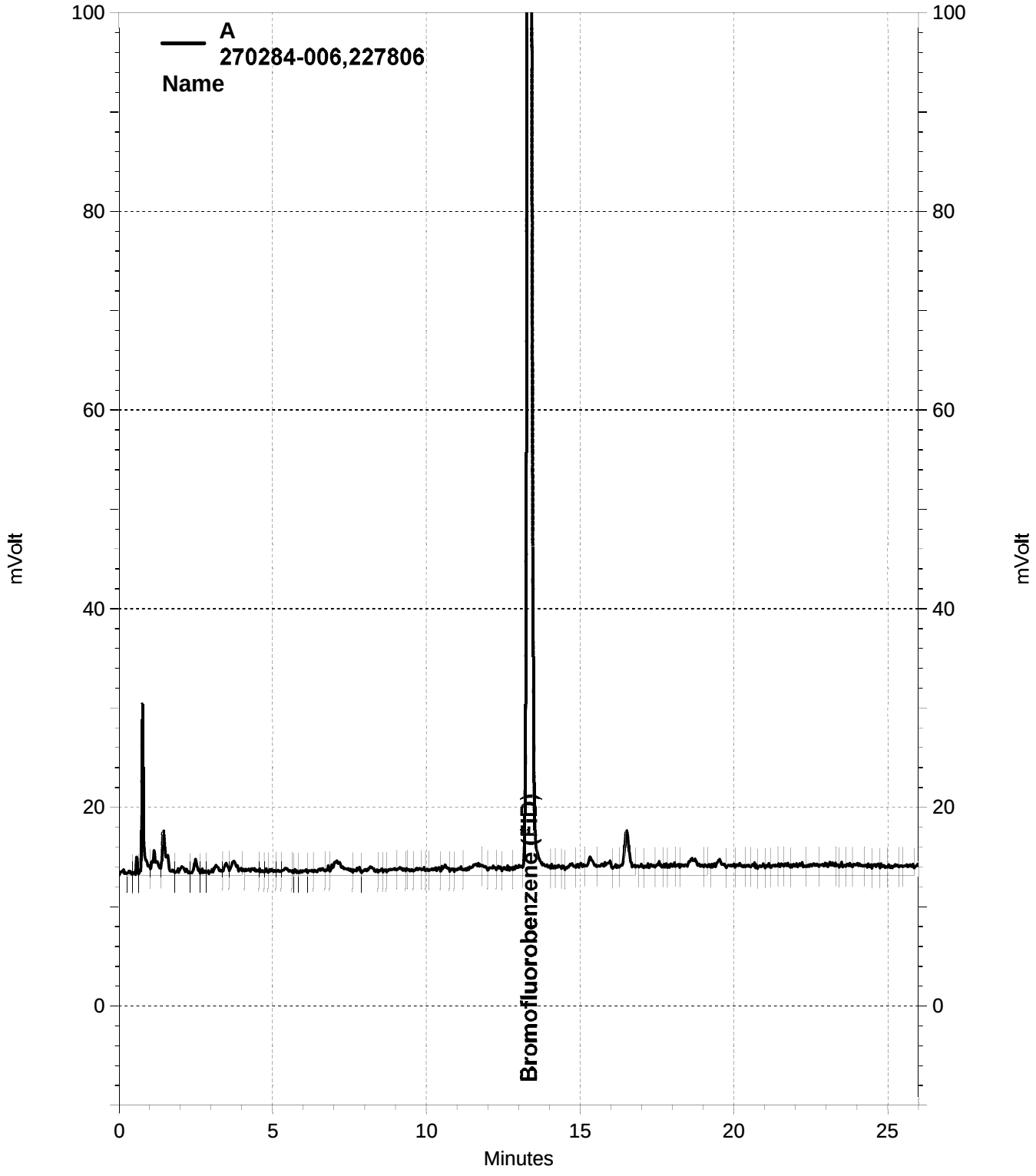
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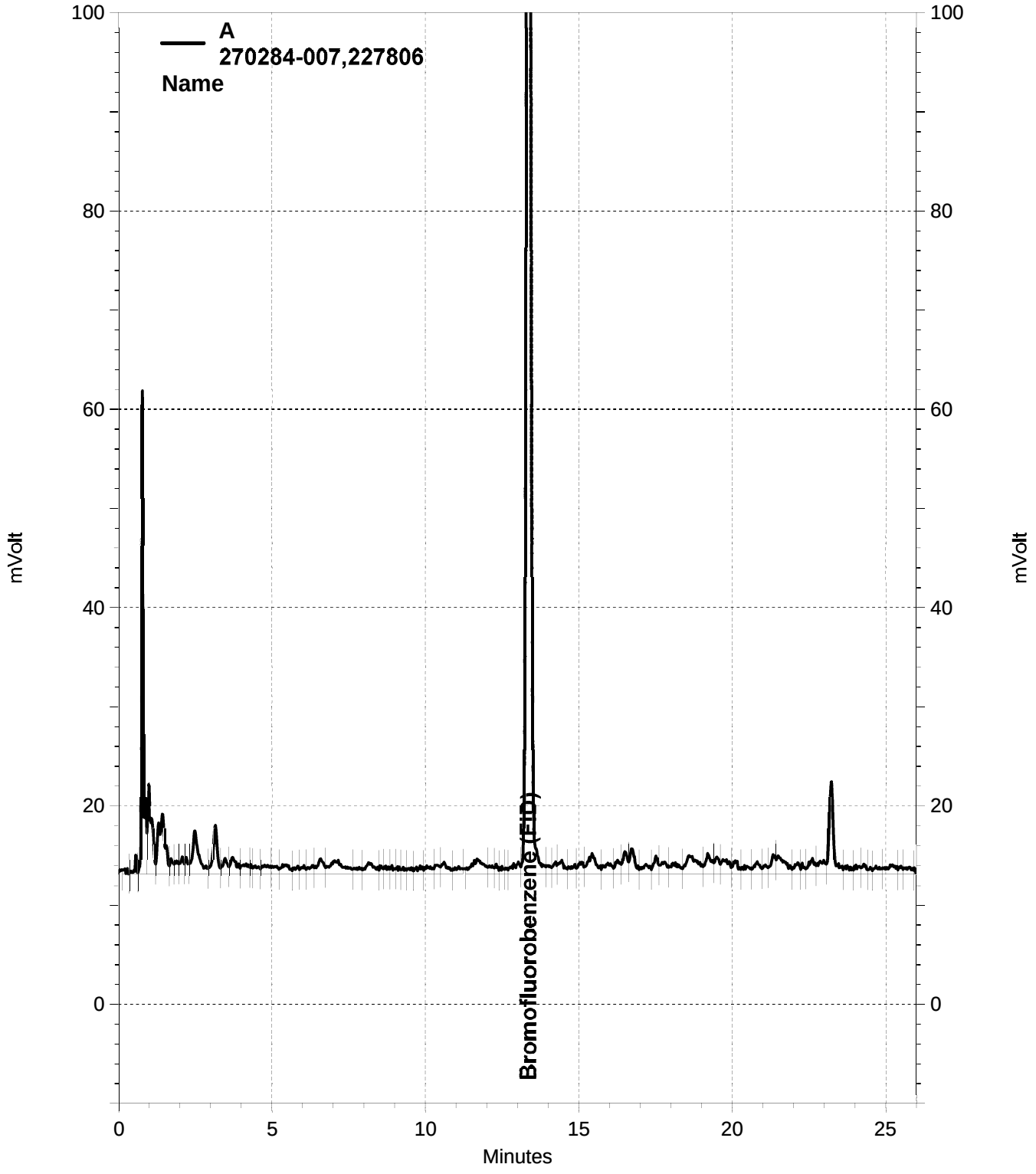
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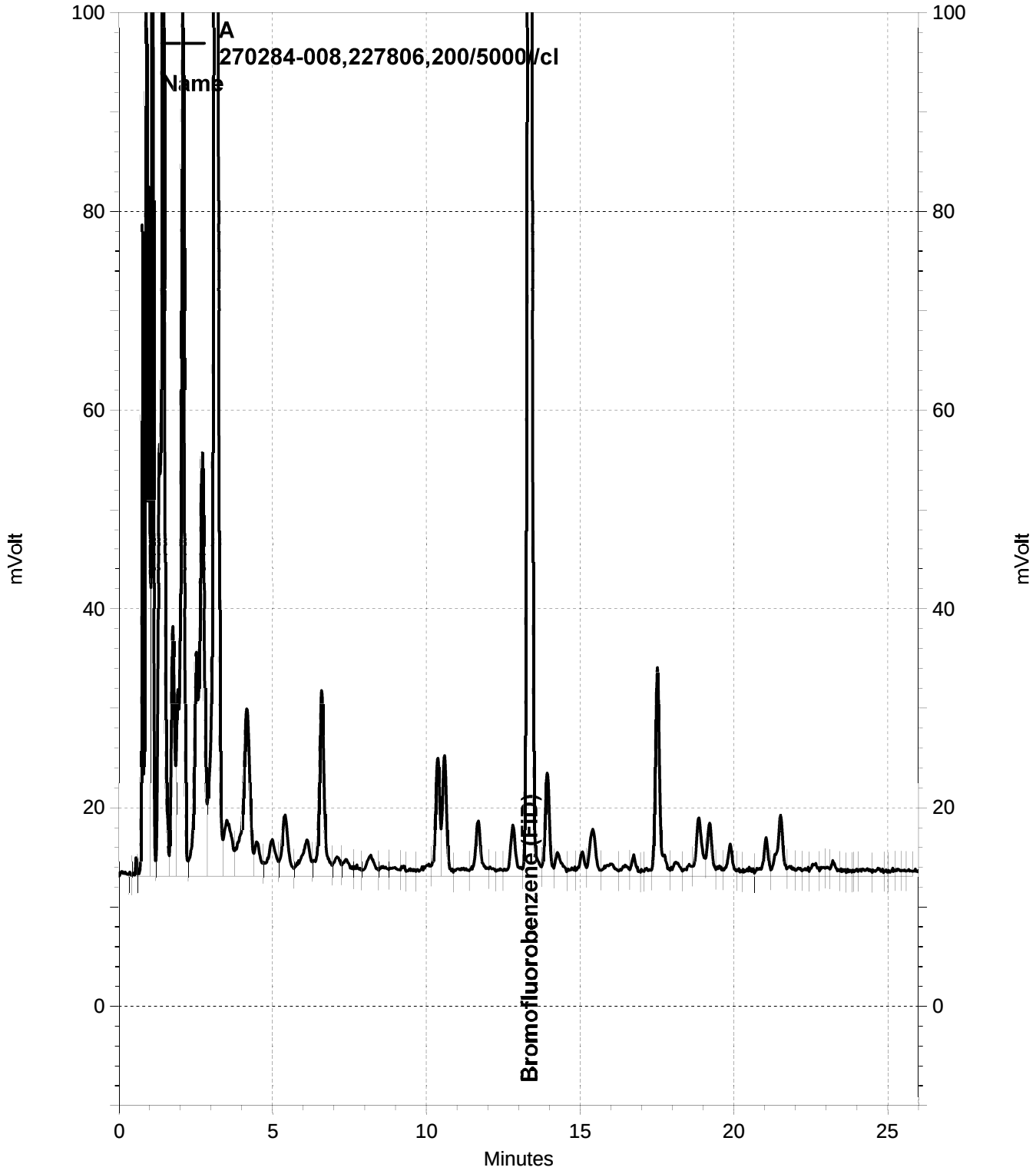

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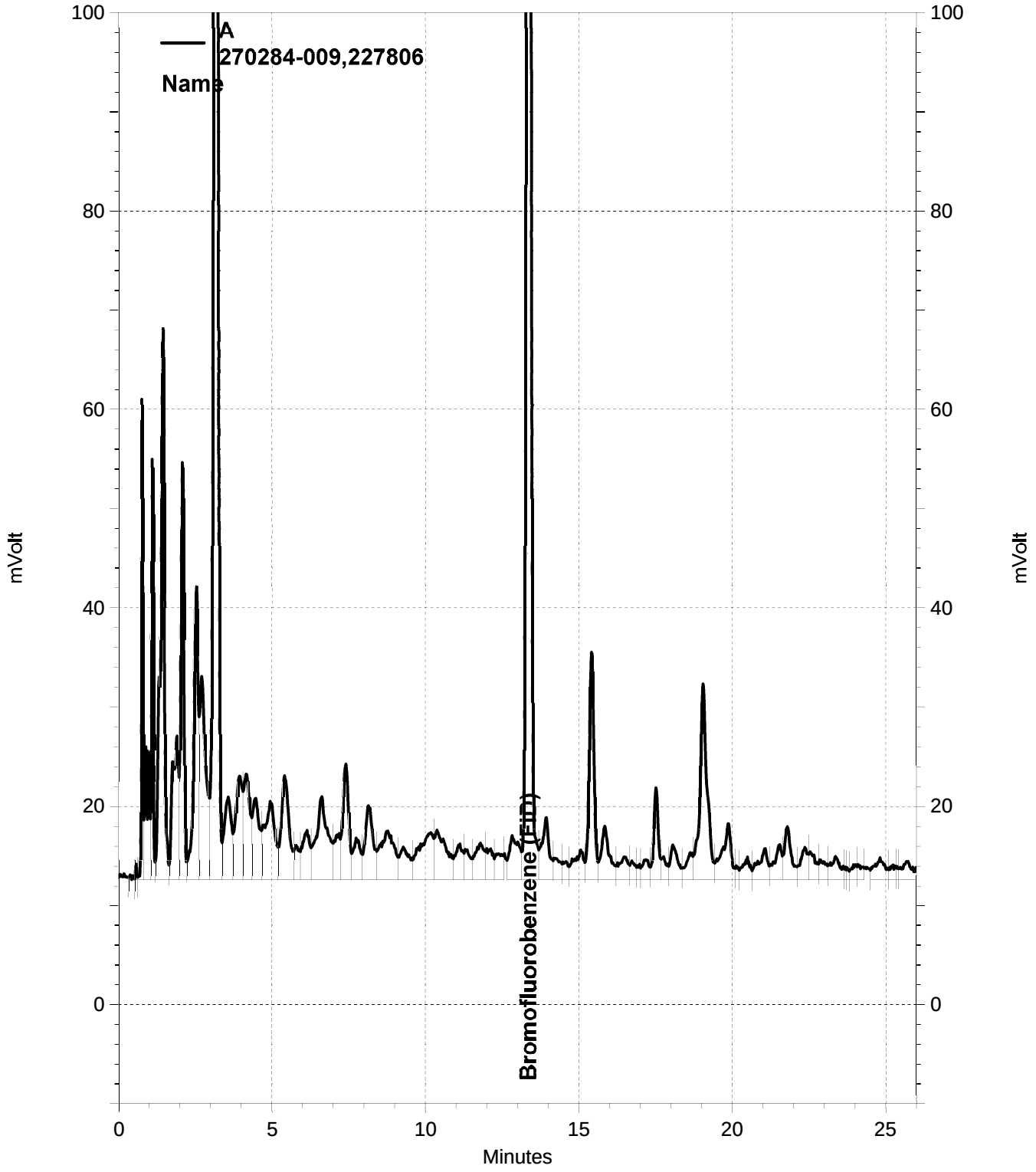
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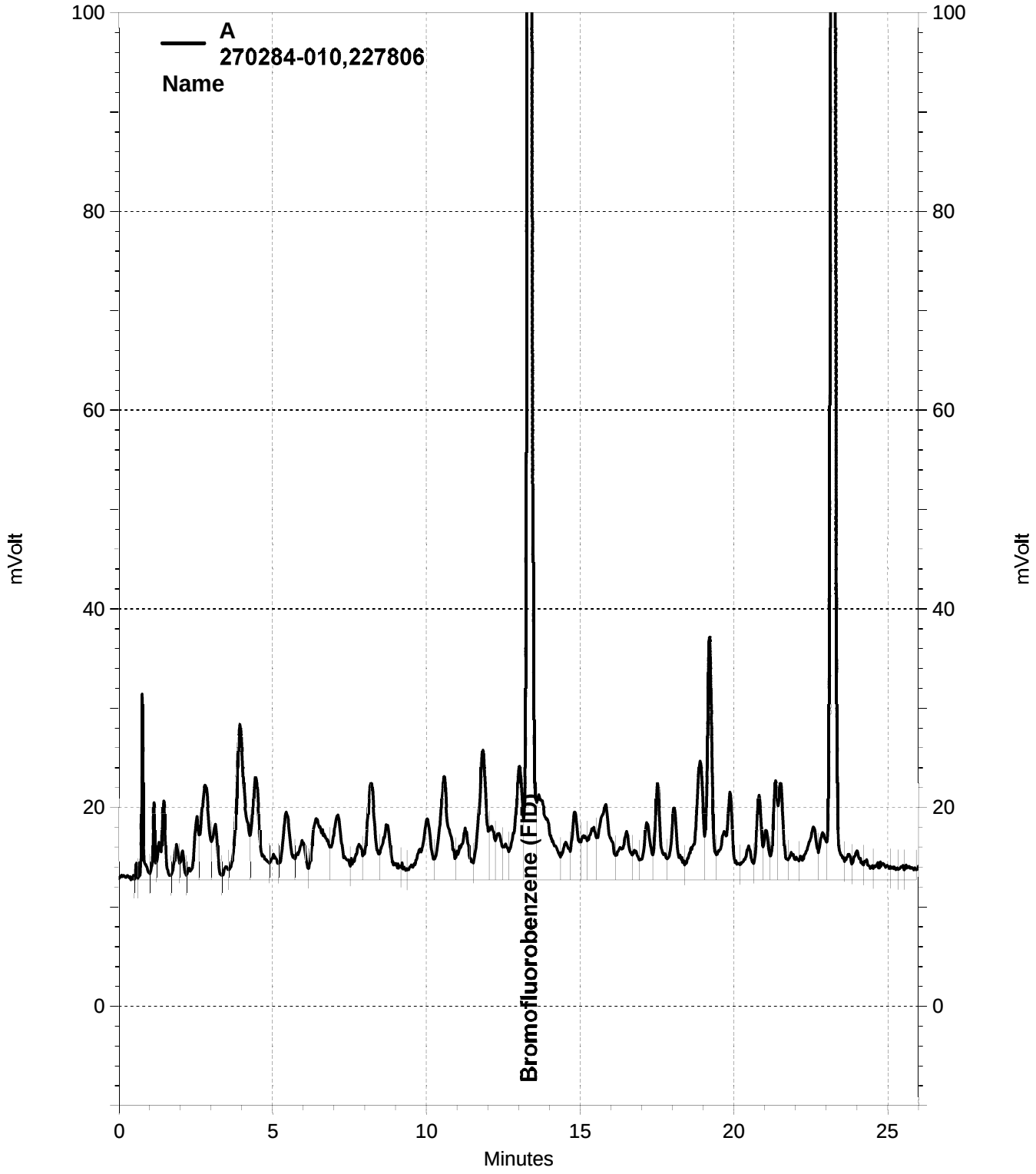
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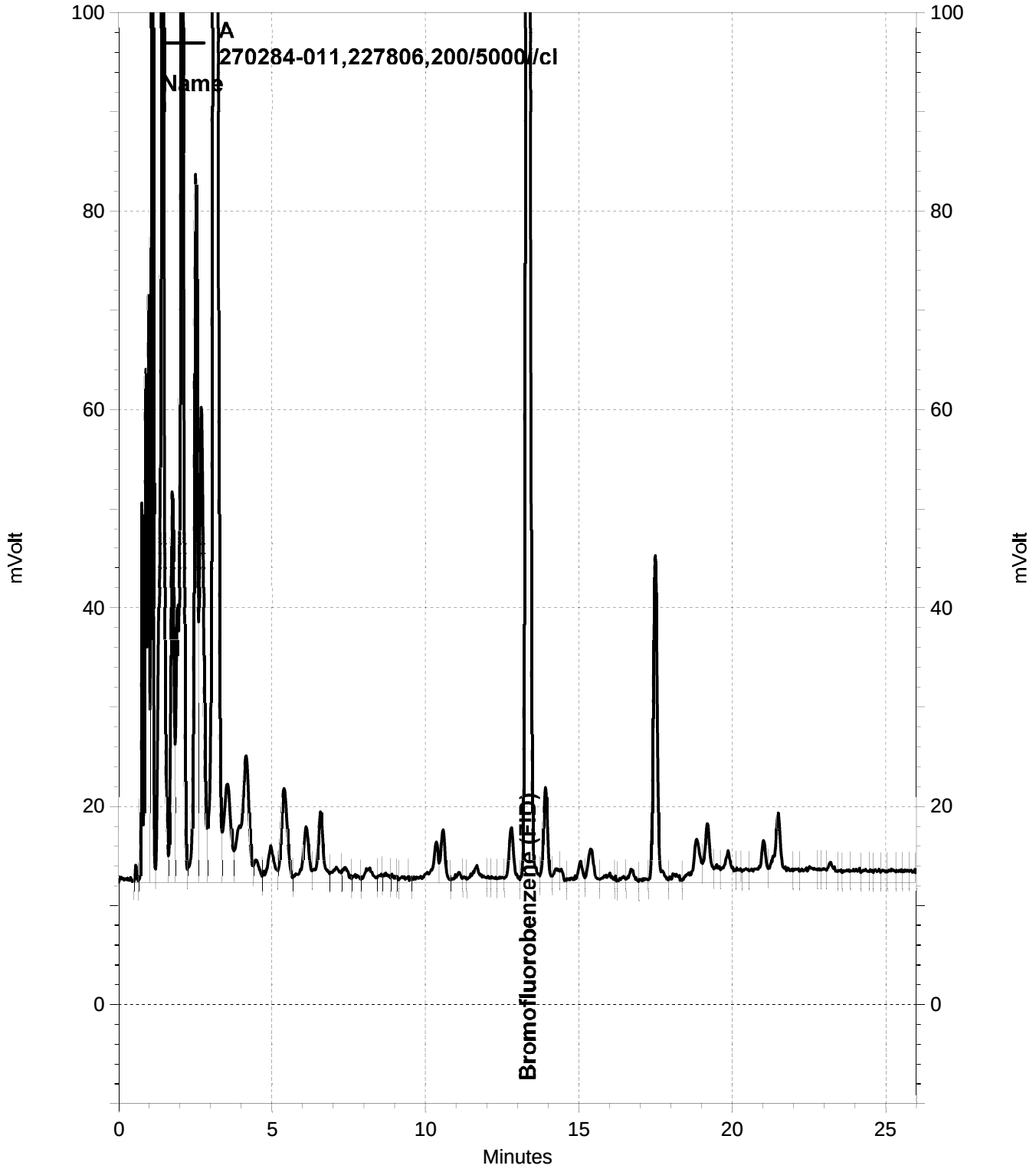

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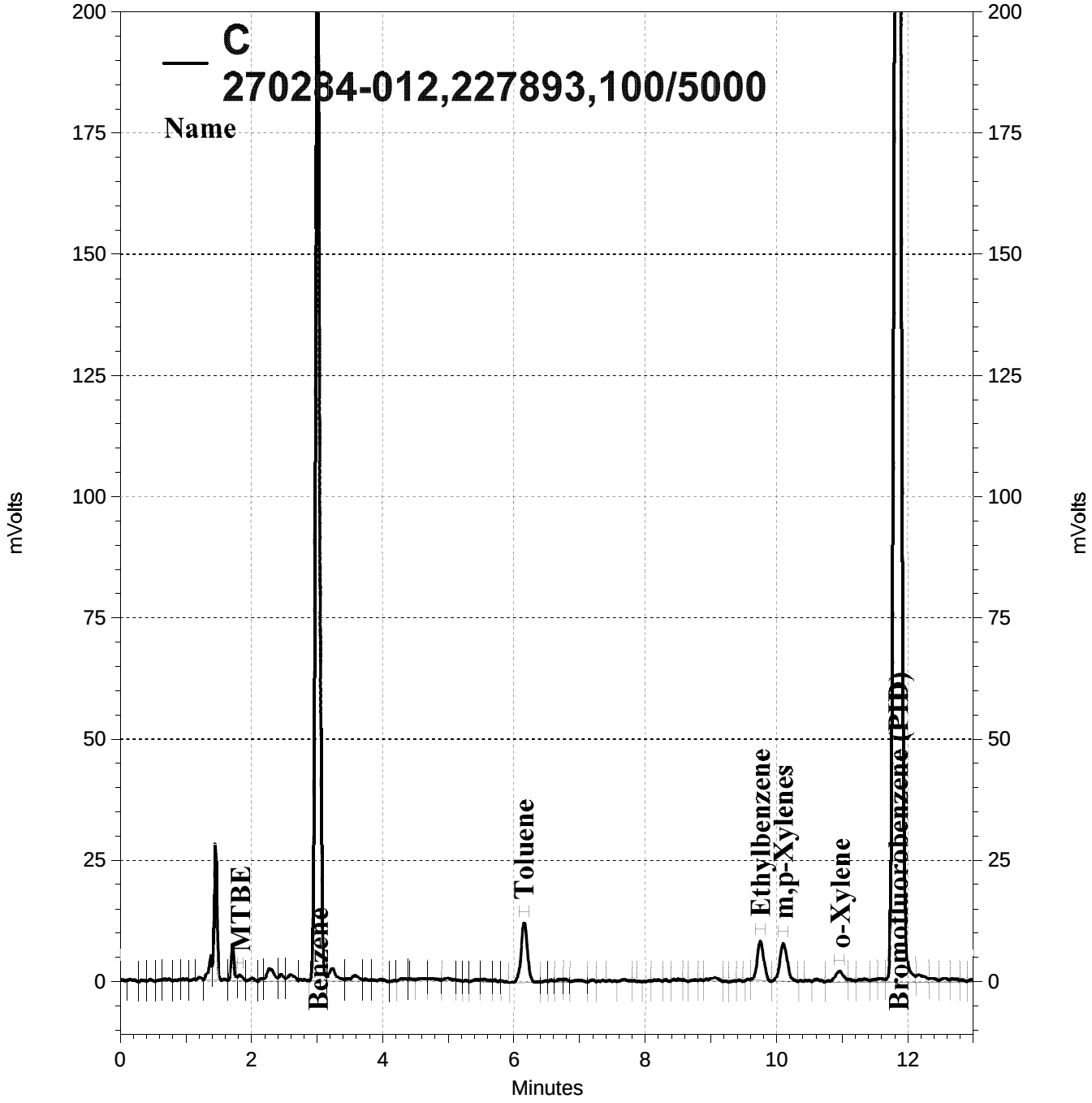

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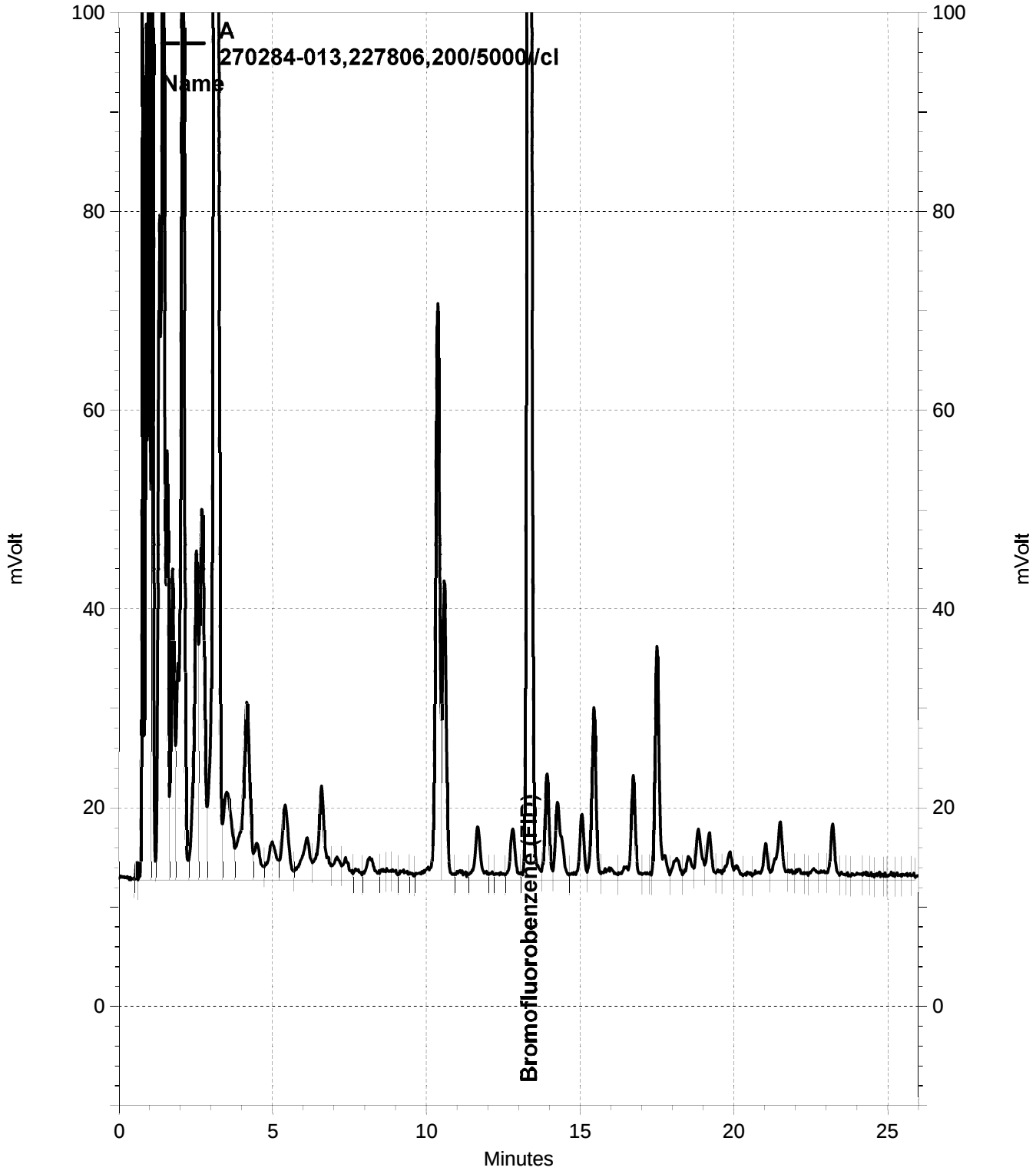
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Minutes
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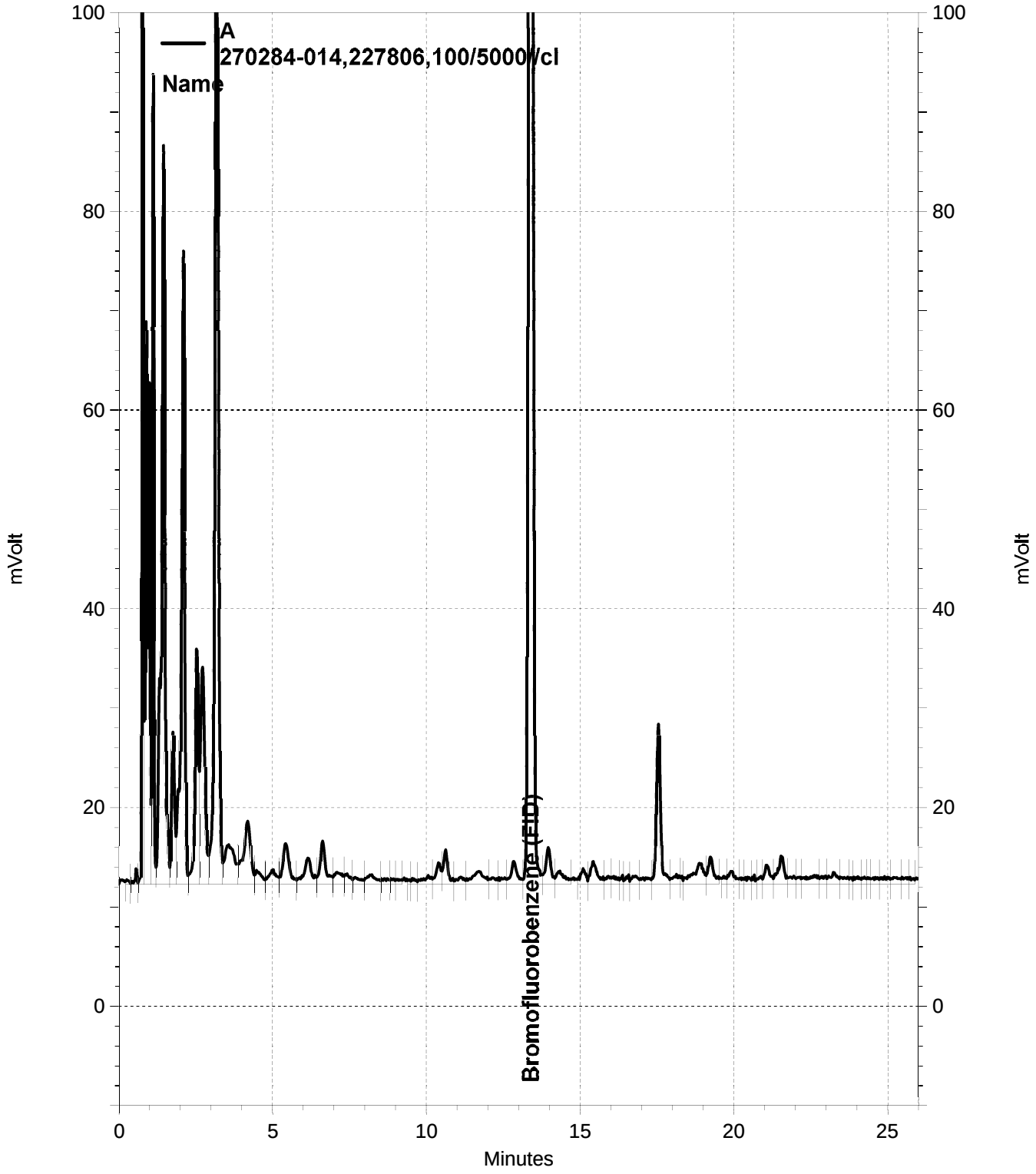

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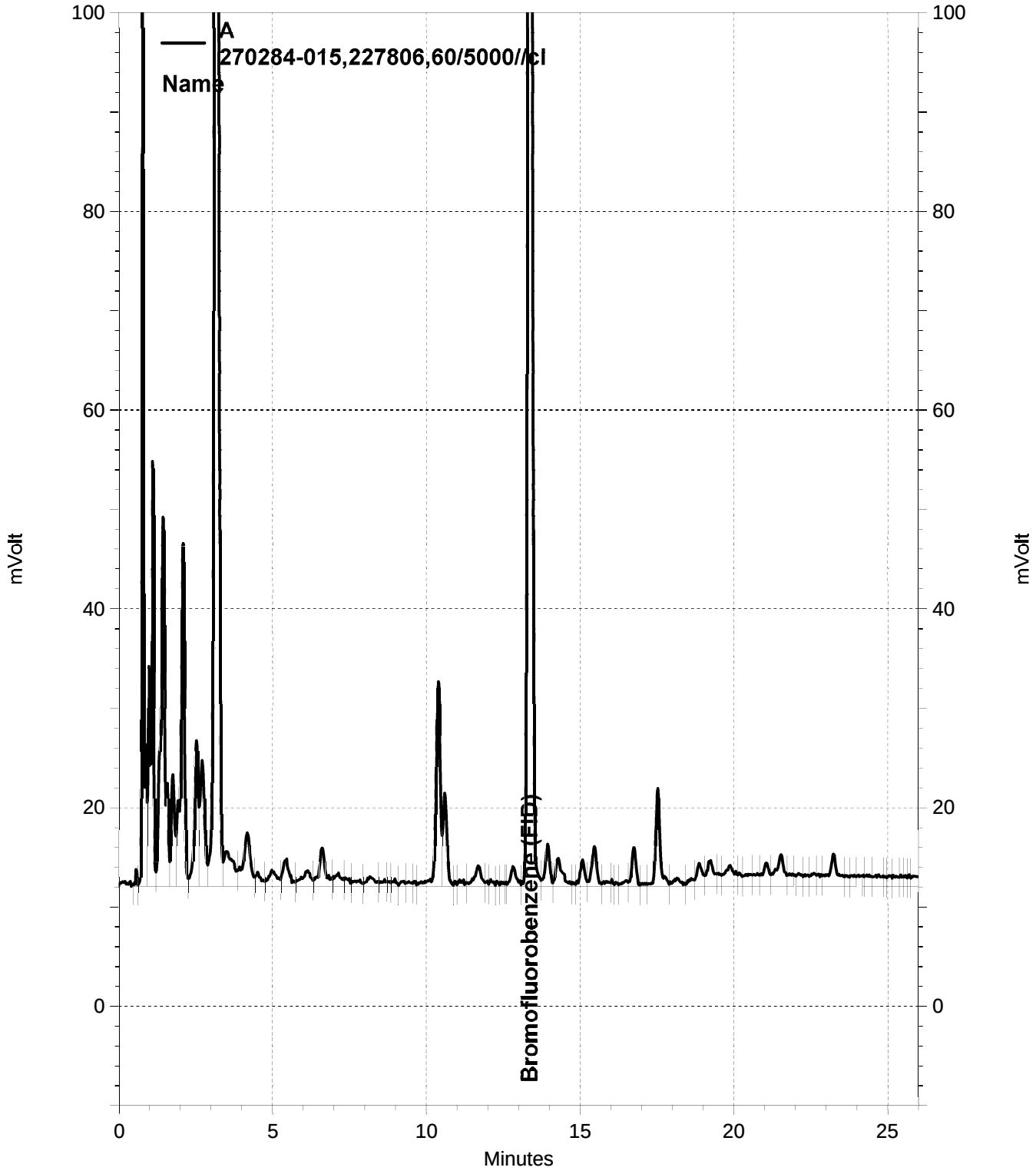
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mVolt
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10
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20
25
Minutes
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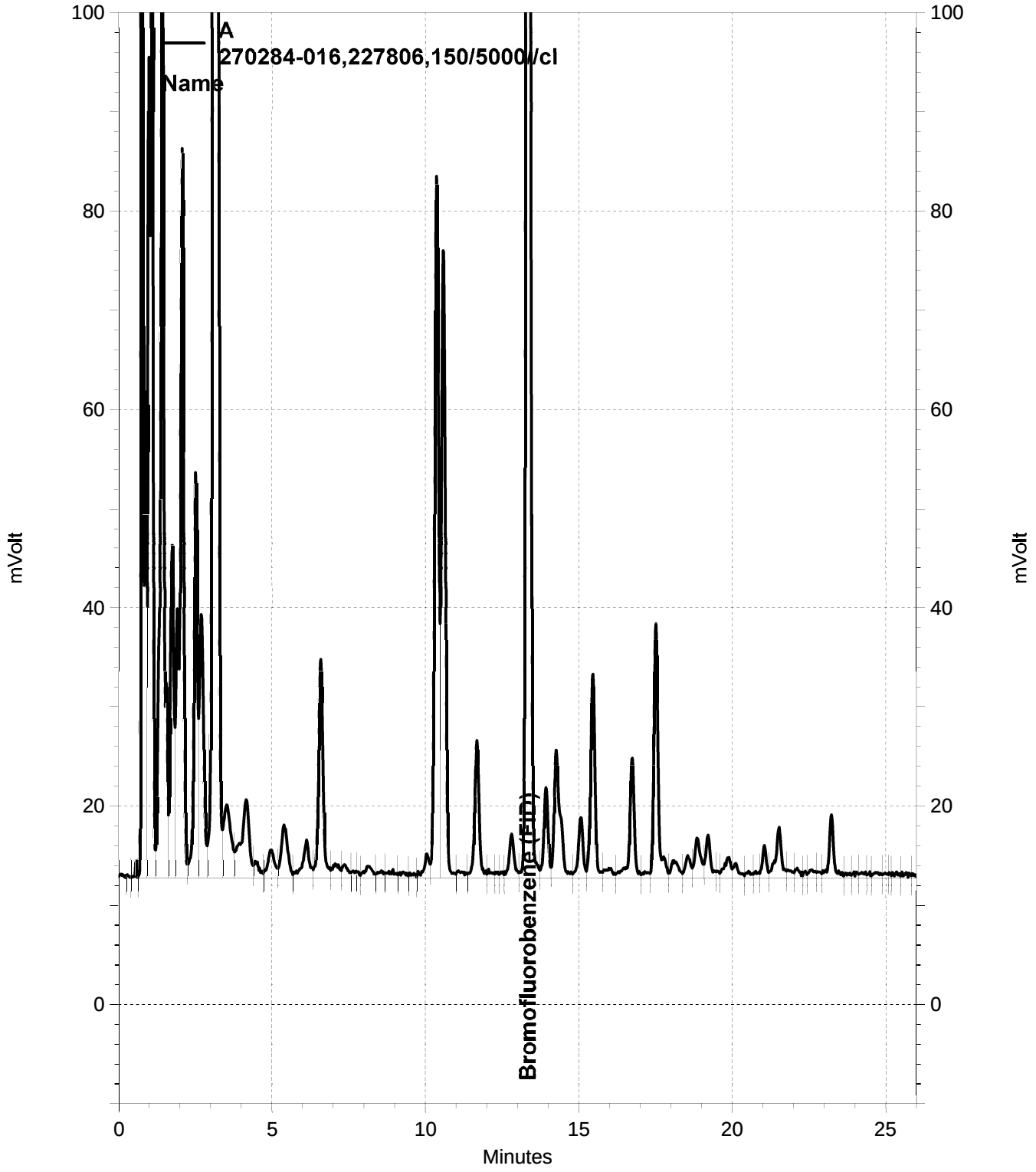
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Minutes
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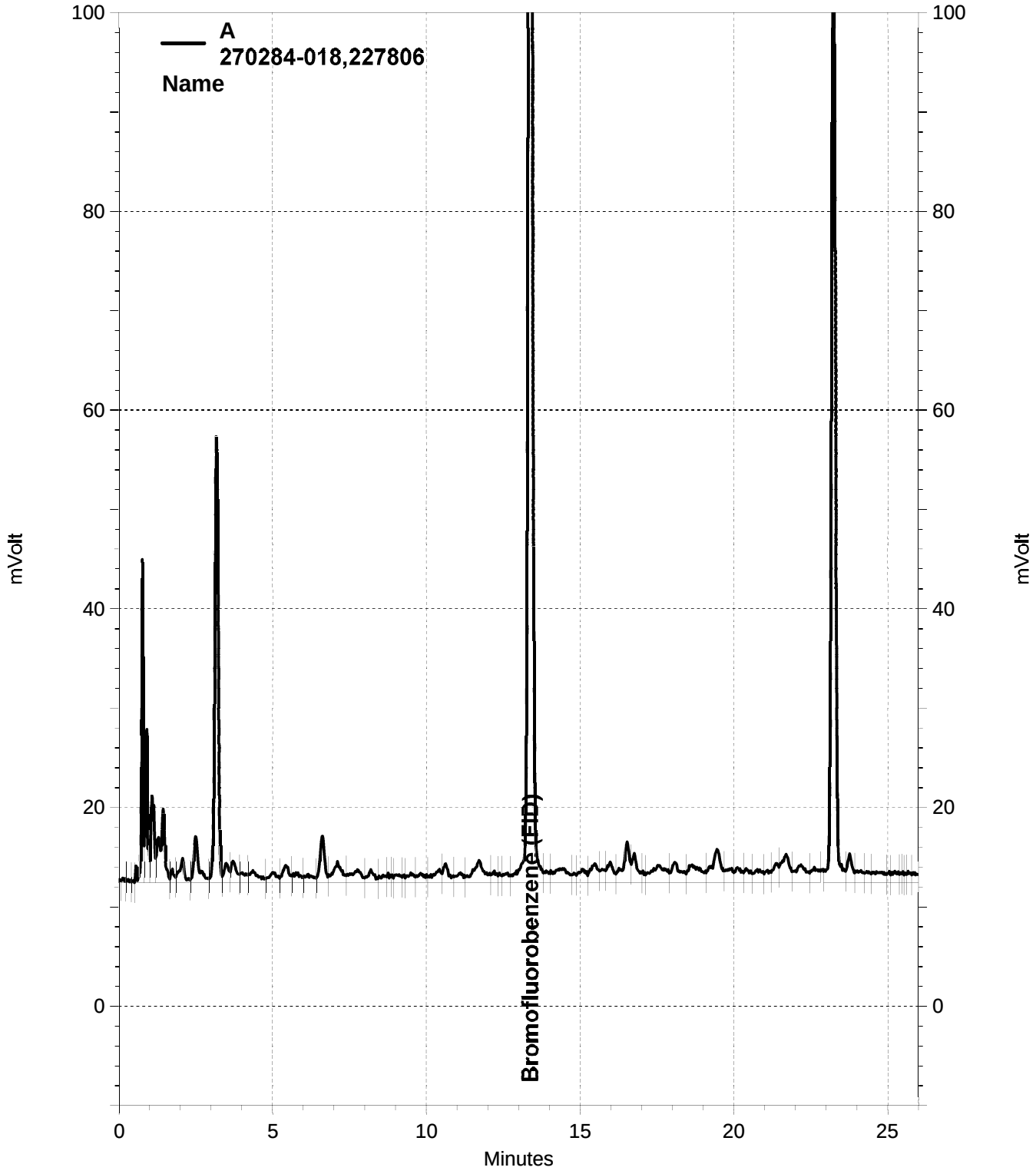
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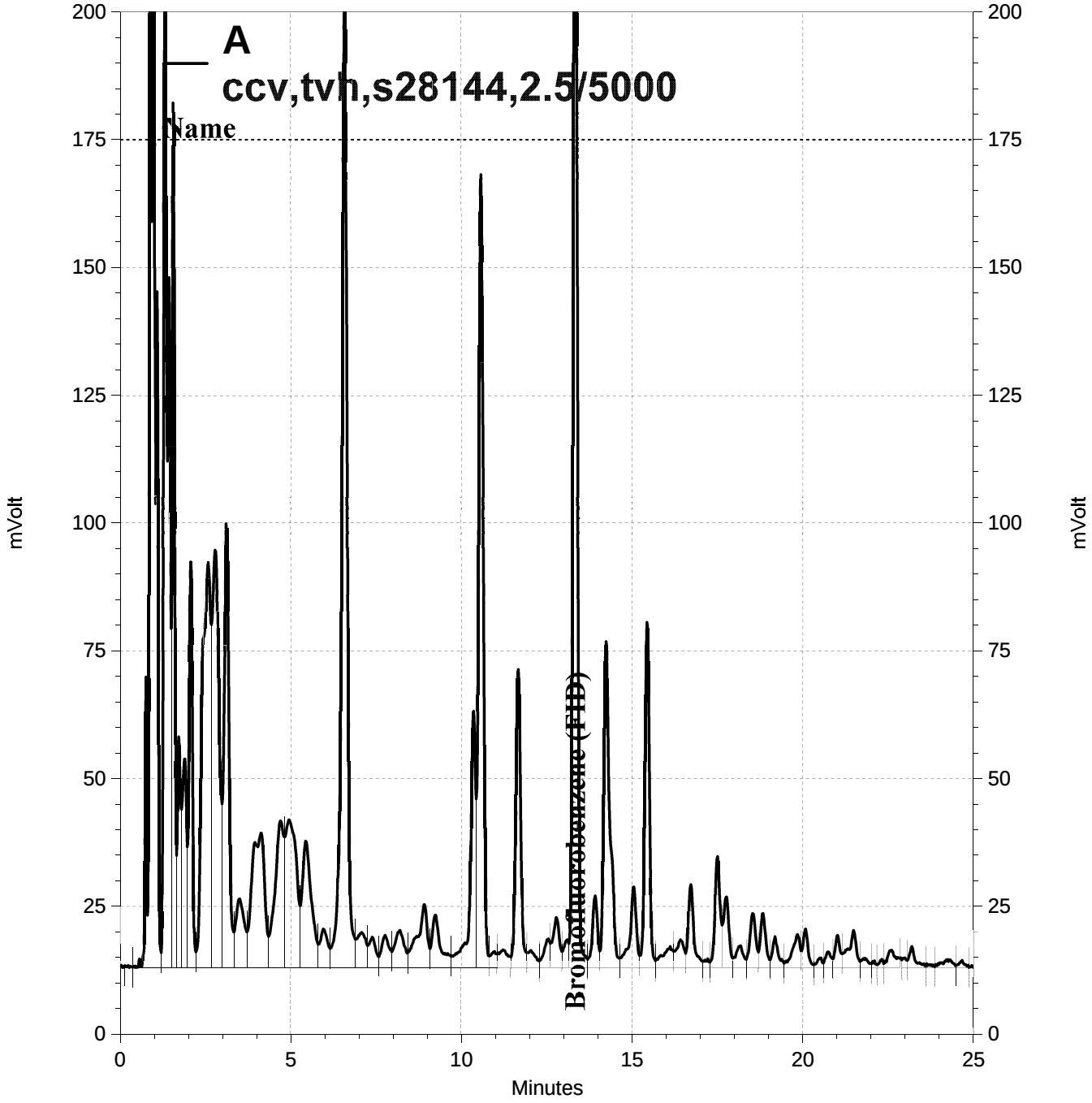
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mVolt
Minutes
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125
150
175
200
\\Lims\gdrive\ezchrom\Projects\GC05\Data\274-003, A

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Received:	09/29/15
Units:	ug/L	Prepared:	10/02/15
Diln Fac:	1.000	Analyzed:	10/05/15
Batch#:	227851		

Field ID: MW-7 Lab ID: 270284-001
Type: SAMPLE Sampled: 09/28/15

Analyte	Result	RL
Diesel C10-C24	10,000 Y	49

Surrogate	%REC	Limits
o-Terphenyl	95	67-136

Field ID: MW-9 Lab ID: 270284-002
Type: SAMPLE Sampled: 09/28/15

Analyte	Result	RL
Diesel C10-C24	11,000 Y	49

Surrogate	%REC	Limits
o-Terphenyl	106	67-136

Field ID: MW-11 Lab ID: 270284-003
Type: SAMPLE Sampled: 09/28/15

Analyte	Result	RL
Diesel C10-C24	8,000 Y	49

Surrogate	%REC	Limits
o-Terphenyl	93	67-136

Field ID: MW-12 Lab ID: 270284-004
Type: SAMPLE Sampled: 09/28/15

Analyte	Result	RL
Diesel C10-C24	3,100 Y	49

Surrogate	%REC	Limits
o-Terphenyl	89	67-136

Field ID: MW-4 Lab ID: 270284-005
Type: SAMPLE Sampled: 09/28/15

Analyte	Result	RL
Diesel C10-C24	370 Y	49

Surrogate	%REC	Limits
o-Terphenyl	93	67-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Received:	09/29/15
Units:	ug/L	Prepared:	10/02/15
Diln Fac:	1.000	Analyzed:	10/05/15
Batch#:	227851		

Field ID: MW-5 Lab ID: 270284-006
Type: SAMPLE Sampled: 09/28/15

Analyte	Result	RL
Diesel C10-C24	4,400 Y	49

Surrogate	%REC	Limits
o-Terphenyl	92	67-136

Field ID: MW-6 Lab ID: 270284-007
Type: SAMPLE Sampled: 09/28/15

Analyte	Result	RL
Diesel C10-C24	1,700 Y	49

Surrogate	%REC	Limits
o-Terphenyl	97	67-136

Field ID: MW-17 Lab ID: 270284-008
Type: SAMPLE Sampled: 09/28/15

Analyte	Result	RL
Diesel C10-C24	3,700 Y	49

Surrogate	%REC	Limits
o-Terphenyl	98	67-136

Field ID: RW-1 Lab ID: 270284-009
Type: SAMPLE Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	660 Y	49

Surrogate	%REC	Limits
o-Terphenyl	85	67-136

Field ID: MW-3 Lab ID: 270284-010
Type: SAMPLE Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	4,500 Y	49

Surrogate	%REC	Limits
o-Terphenyl	95	67-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Received:	09/29/15
Units:	ug/L	Prepared:	10/02/15
Diln Fac:	1.000	Analyzed:	10/05/15
Batch#:	227851		

Field ID: MW-15 Lab ID: 270284-011
Type: SAMPLE Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	3,100 Y	49

Surrogate	%REC	Limits
o-Terphenyl	84	67-136

Field ID: MW-14 Lab ID: 270284-012
Type: SAMPLE Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	5,500 Y	49

Surrogate	%REC	Limits
o-Terphenyl	94	67-136

Field ID: MW-13 Lab ID: 270284-013
Type: SAMPLE Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	8,300 Y	49

Surrogate	%REC	Limits
o-Terphenyl	92	67-136

Field ID: MW-10 Lab ID: 270284-014
Type: SAMPLE Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	2,700 Y	49

Surrogate	%REC	Limits
o-Terphenyl	84	67-136

Field ID: MW-8 Lab ID: 270284-015
Type: SAMPLE Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	9,400 Y	49

Surrogate	%REC	Limits
o-Terphenyl	110	67-136

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

Curtis & Tompkins, Ltd.

Total Extractable Hydrocarbons

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Received:	09/29/15
Units:	ug/L	Prepared:	10/02/15
Diln Fac:	1.000	Analyzed:	10/05/15
Batch#:	227851		

Field ID: MW-E
Type: SAMPLE
Lab ID: 270284-016
Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	11,000 Y	49

Surrogate	%REC	Limits
o-Terphenyl	99	67-136

Field ID: MW-18
Type: SAMPLE
Lab ID: 270284-017
Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	9,700 Y	49

Surrogate	%REC	Limits
o-Terphenyl	87	67-136

Field ID: MW-16
Type: SAMPLE
Lab ID: 270284-018
Sampled: 09/29/15

Analyte	Result	RL
Diesel C10-C24	6,200 Y	49

Surrogate	%REC	Limits
o-Terphenyl	79	67-136

Type: BLANK
Lab ID: QC806344

Analyte	Result	RL
Diesel C10-C24	ND	50

Surrogate	%REC	Limits
o-Terphenyl	98	67-136

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

Curtis & Tompkins, Ltd.

Batch QC Report

Total Extractable Hydrocarbons

Lab #:	270284	Location:	Bay Center Apts
Client:	Stellar Environmental Solutions	Prep:	EPA 3520C
Project#:	2007-65	Analysis:	EPA 8015B
Matrix:	Water	Batch#:	227851
Units:	ug/L	Prepared:	10/02/15
Diln Fac:	1.000	Analyzed:	10/05/15

Type: BS Cleanup Method: EPA 3630C
Lab ID: QC806350

Analyte	Spiked	Result	%REC	Limits
Diesel C10-C24	2,500	2,150	86	60-121

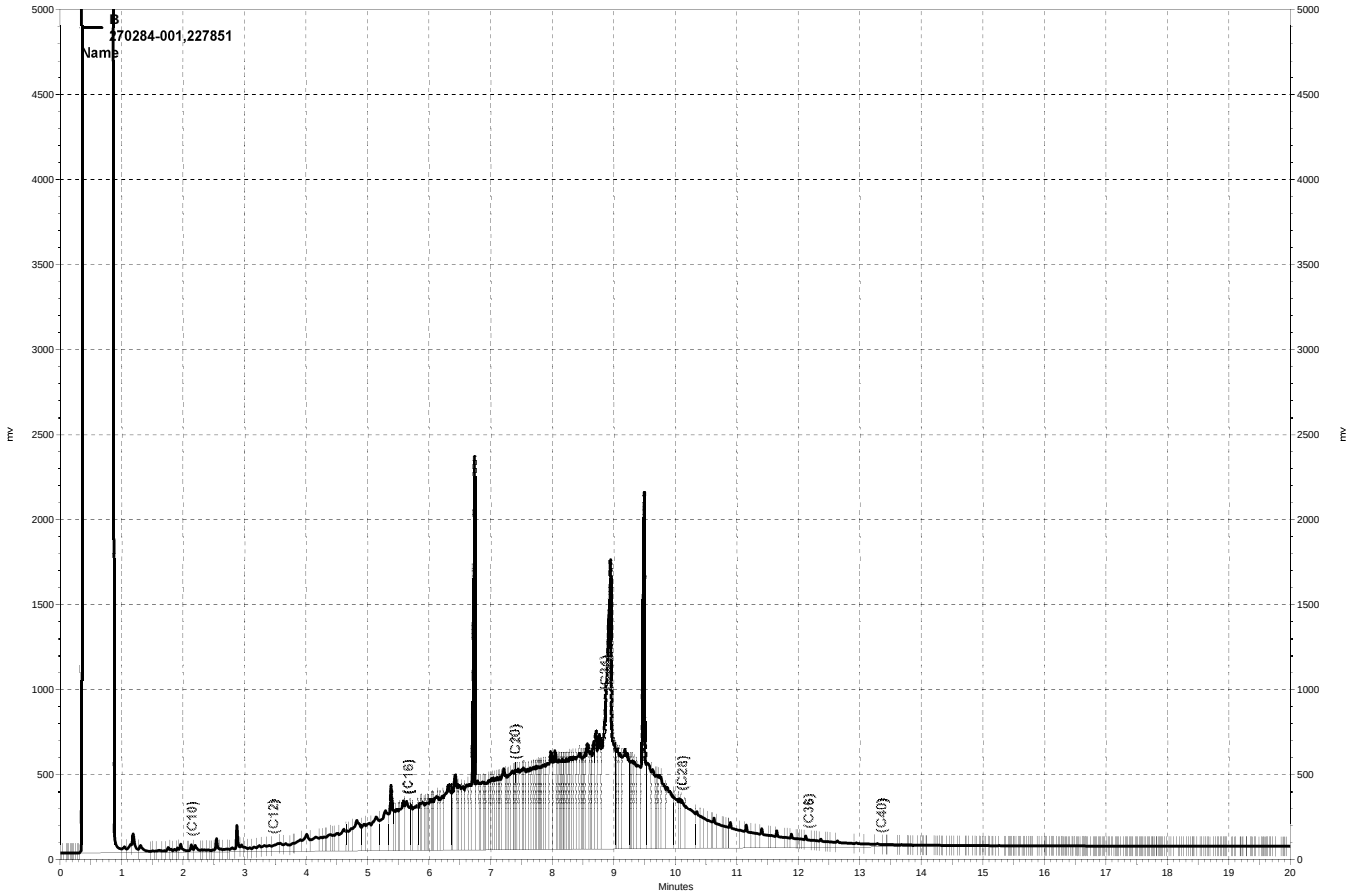
Surrogate	%REC	Limits
o-Terphenyl	96	67-136

Type: BSD Cleanup Method: EPA 3630C
Lab ID: QC806351

Analyte	Spiked	Result	%REC	Limits	RPD	Lim
Diesel C10-C24	2,500	1,985	79	60-121	8	32

Surrogate	%REC	Limits
o-Terphenyl	92	67-136

RPD= Relative Percent Difference



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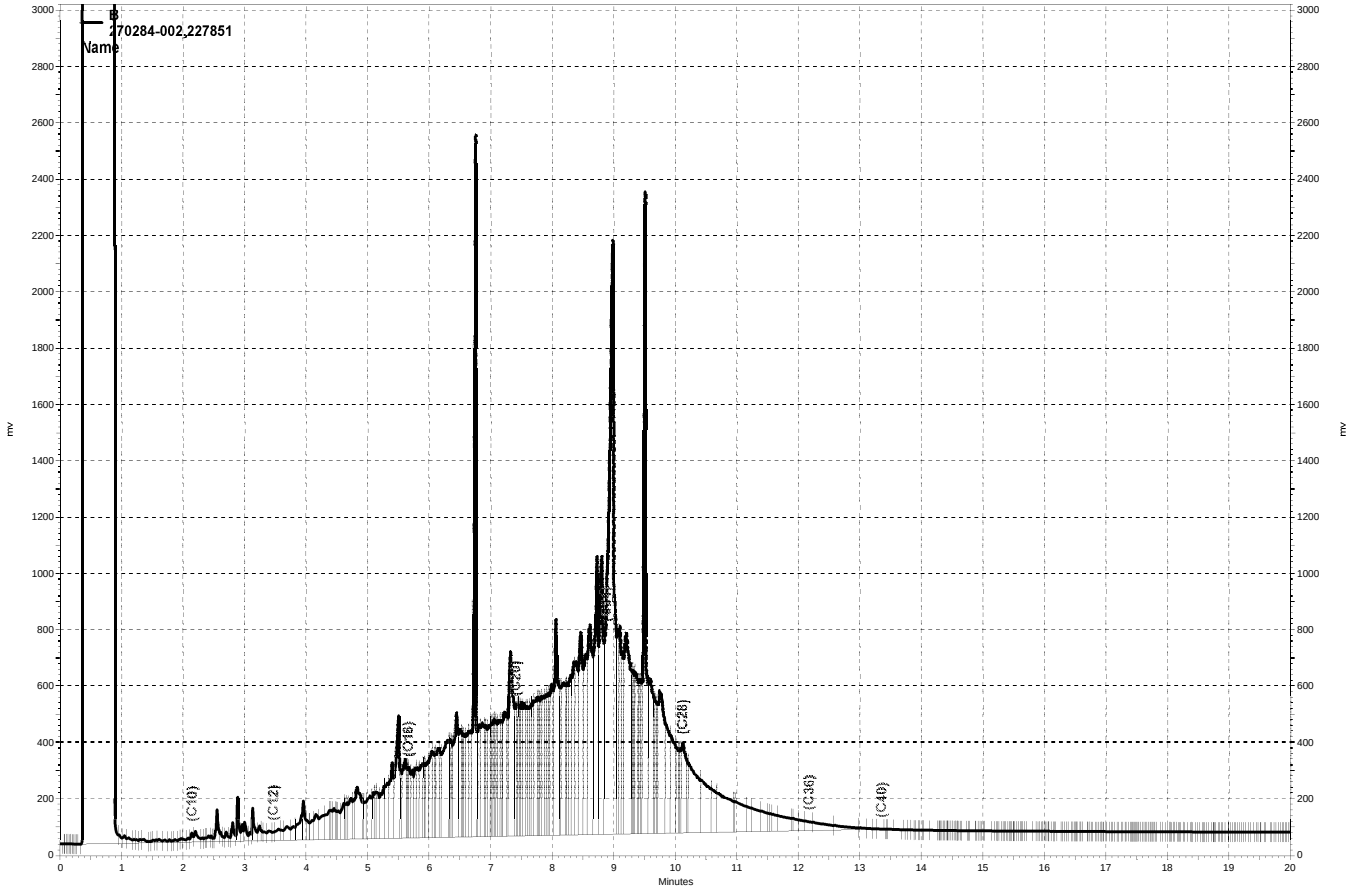

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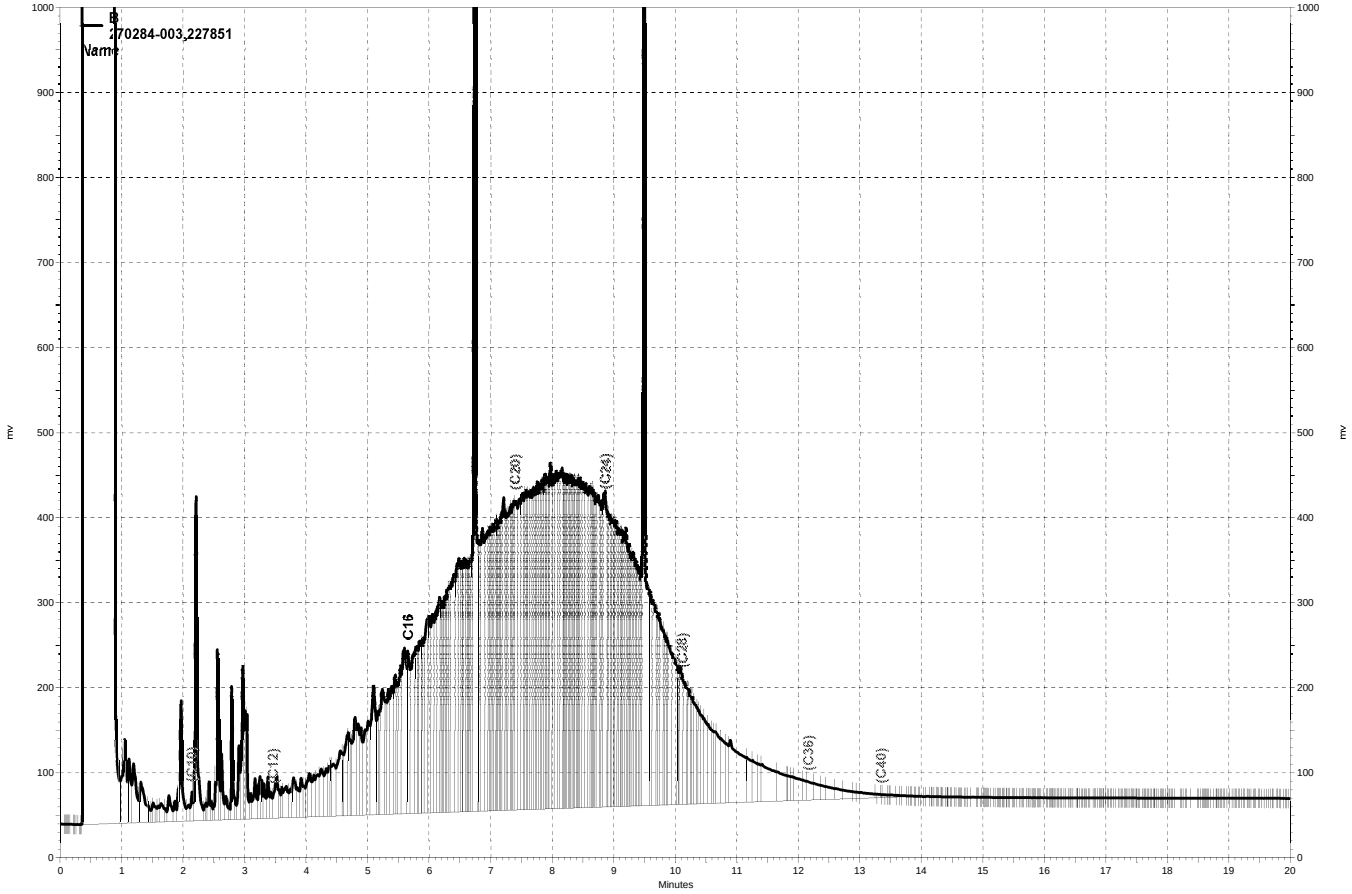

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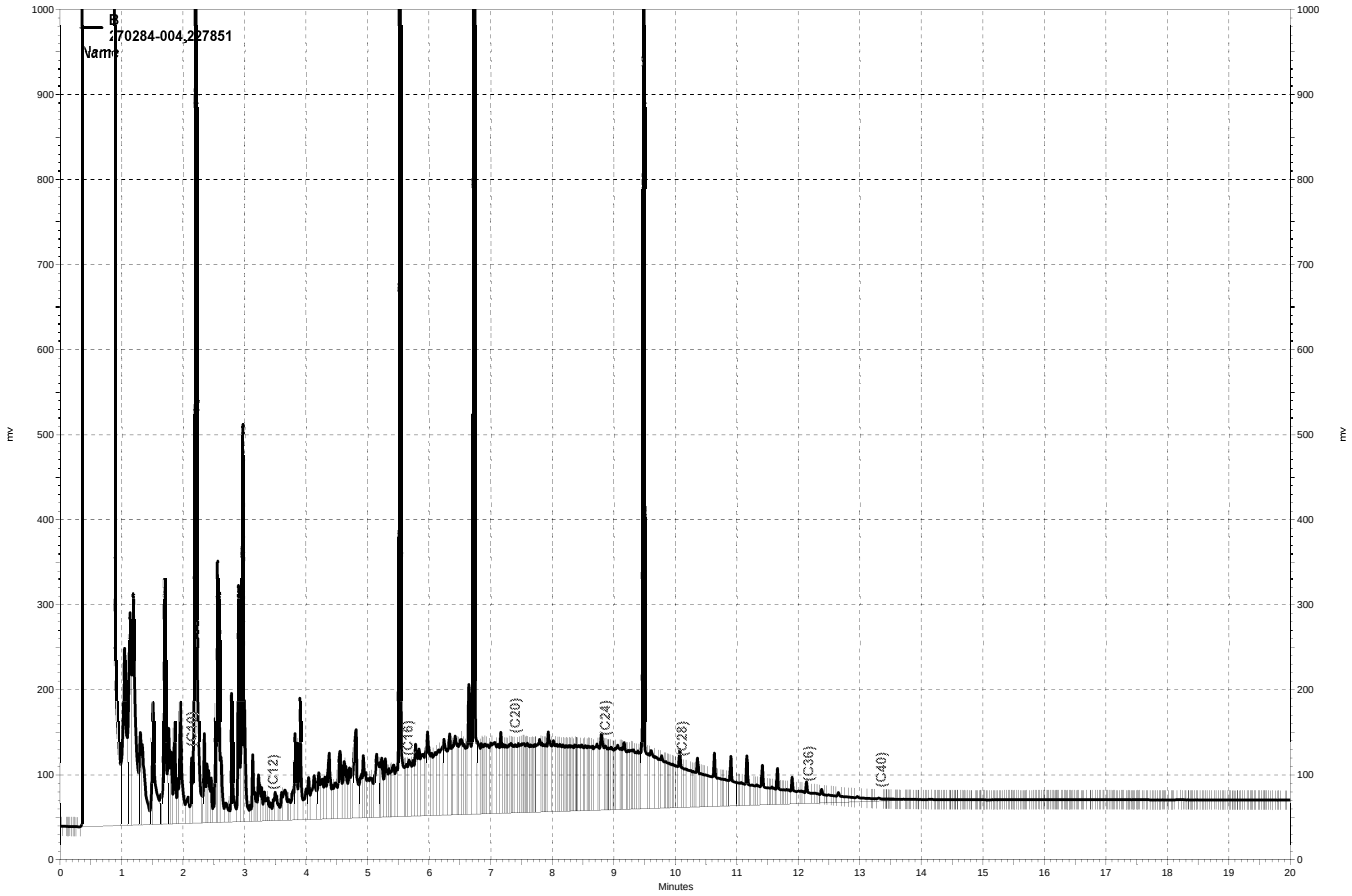

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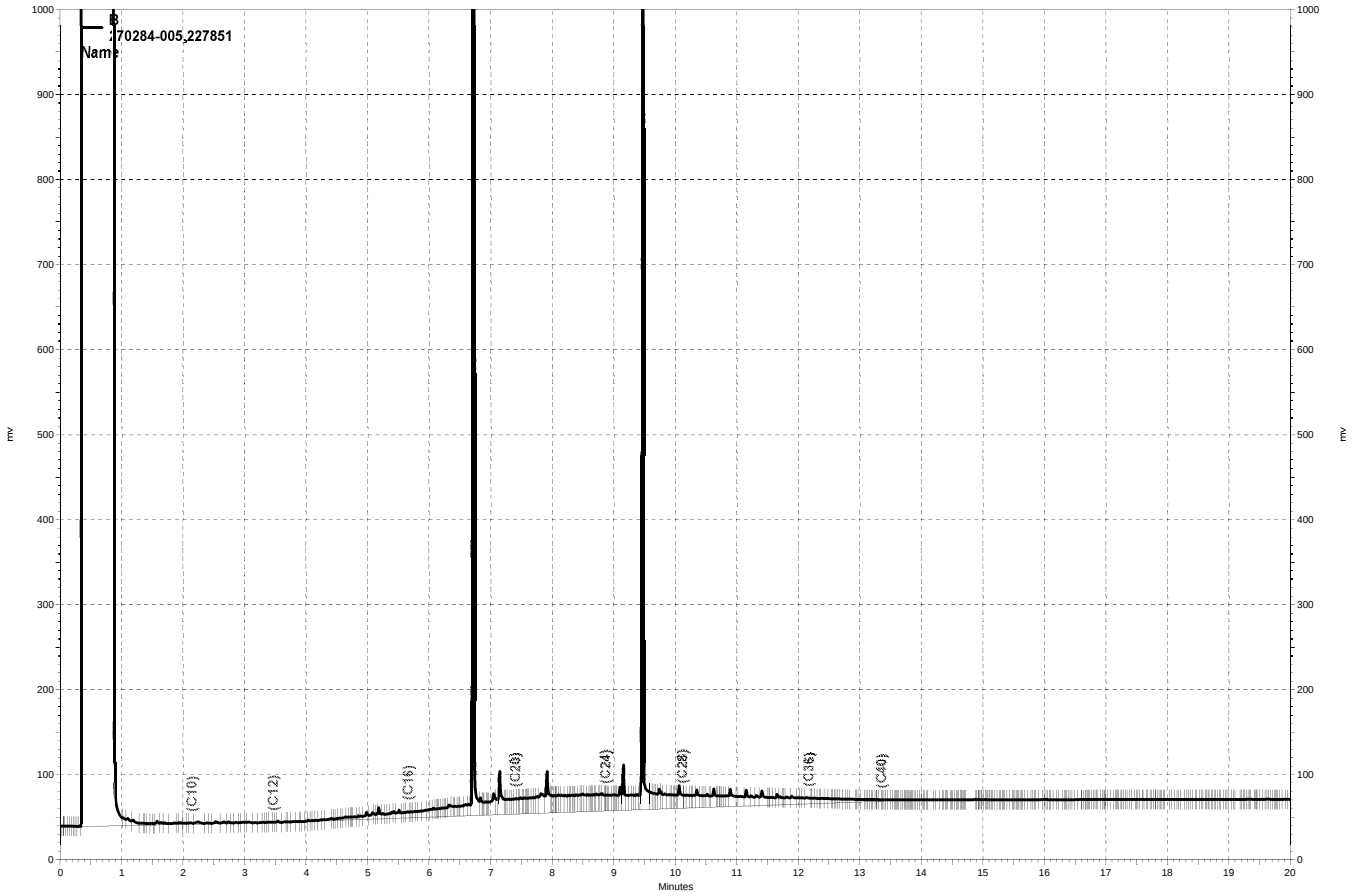

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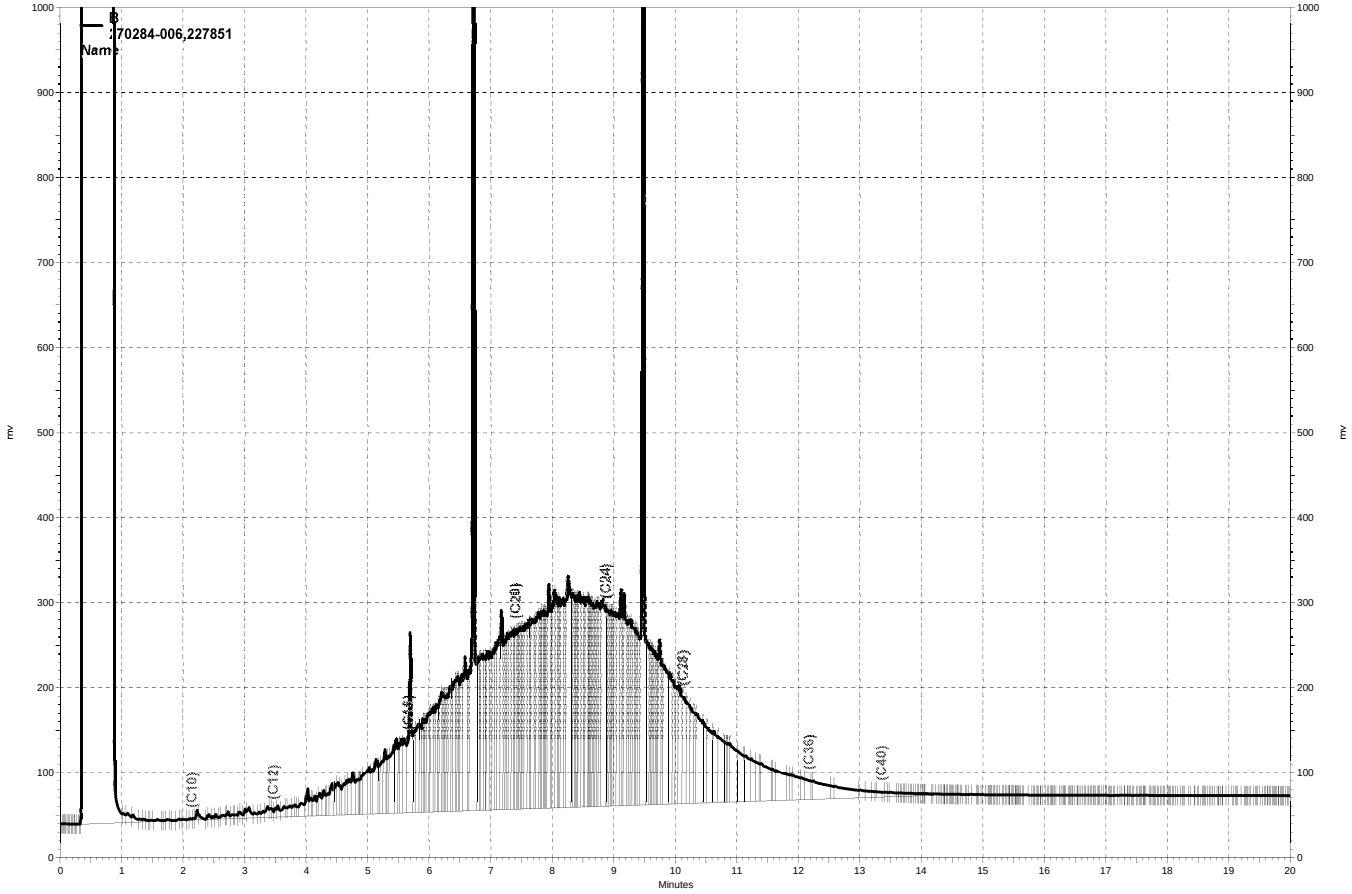

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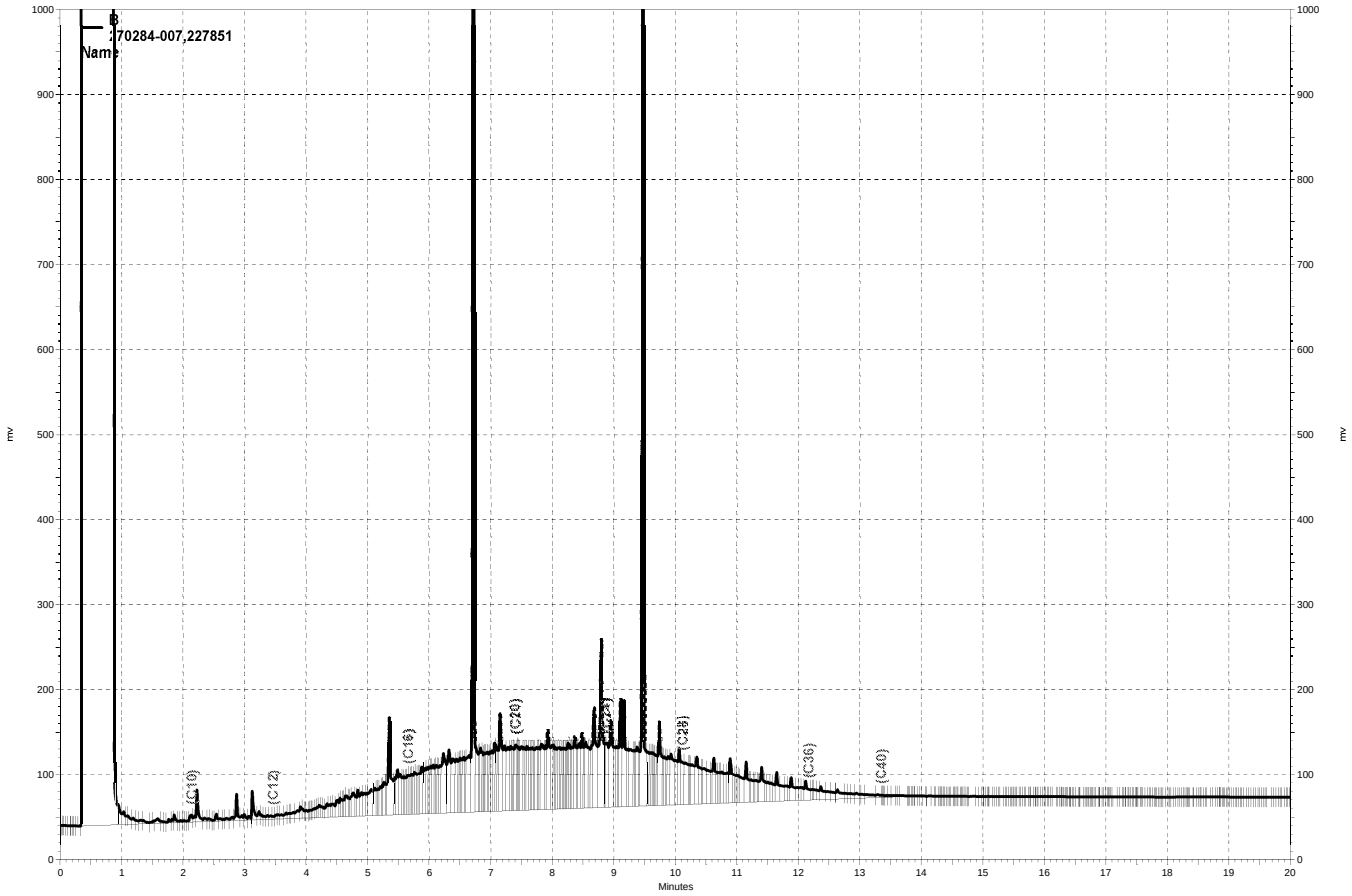

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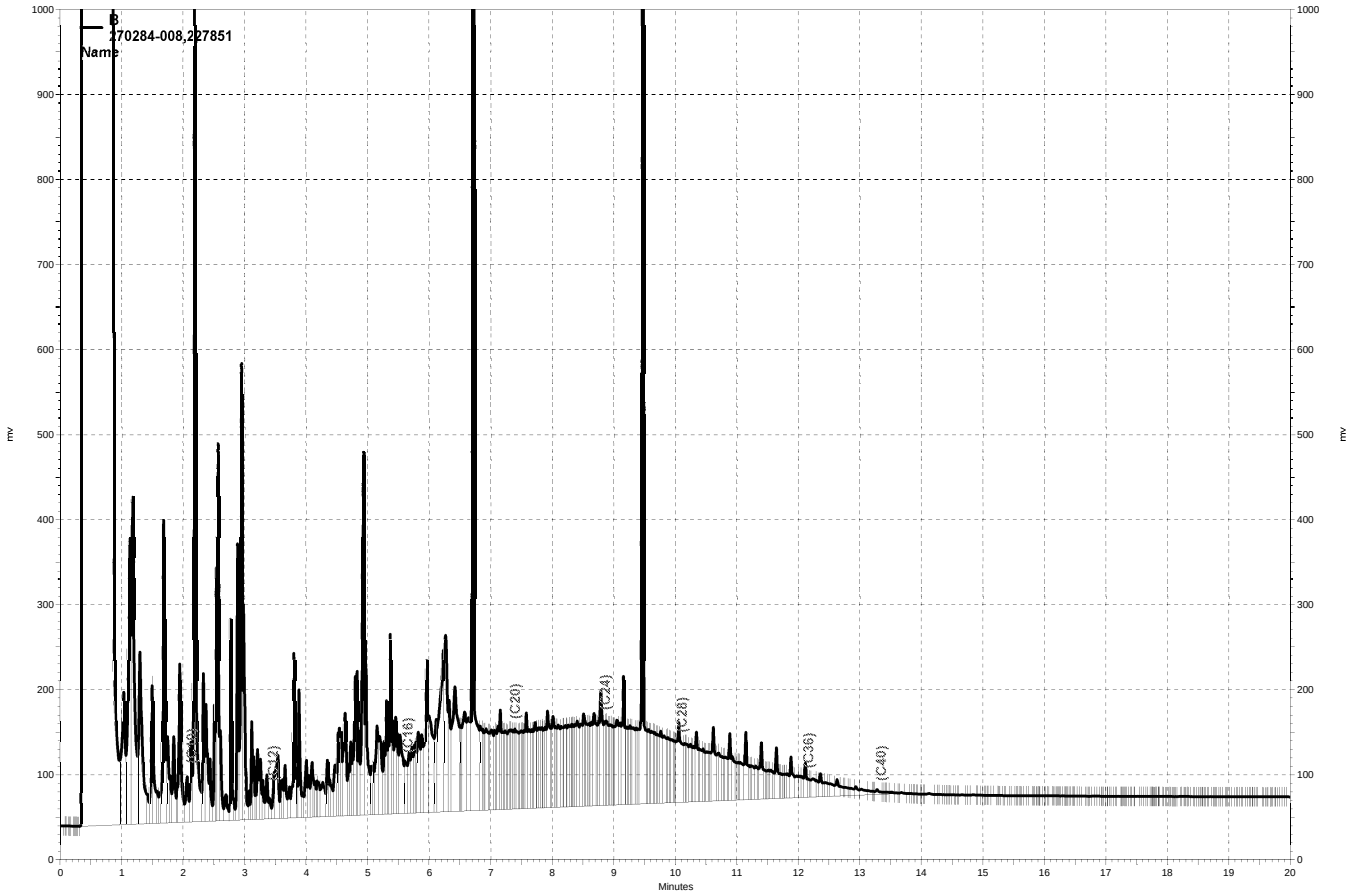

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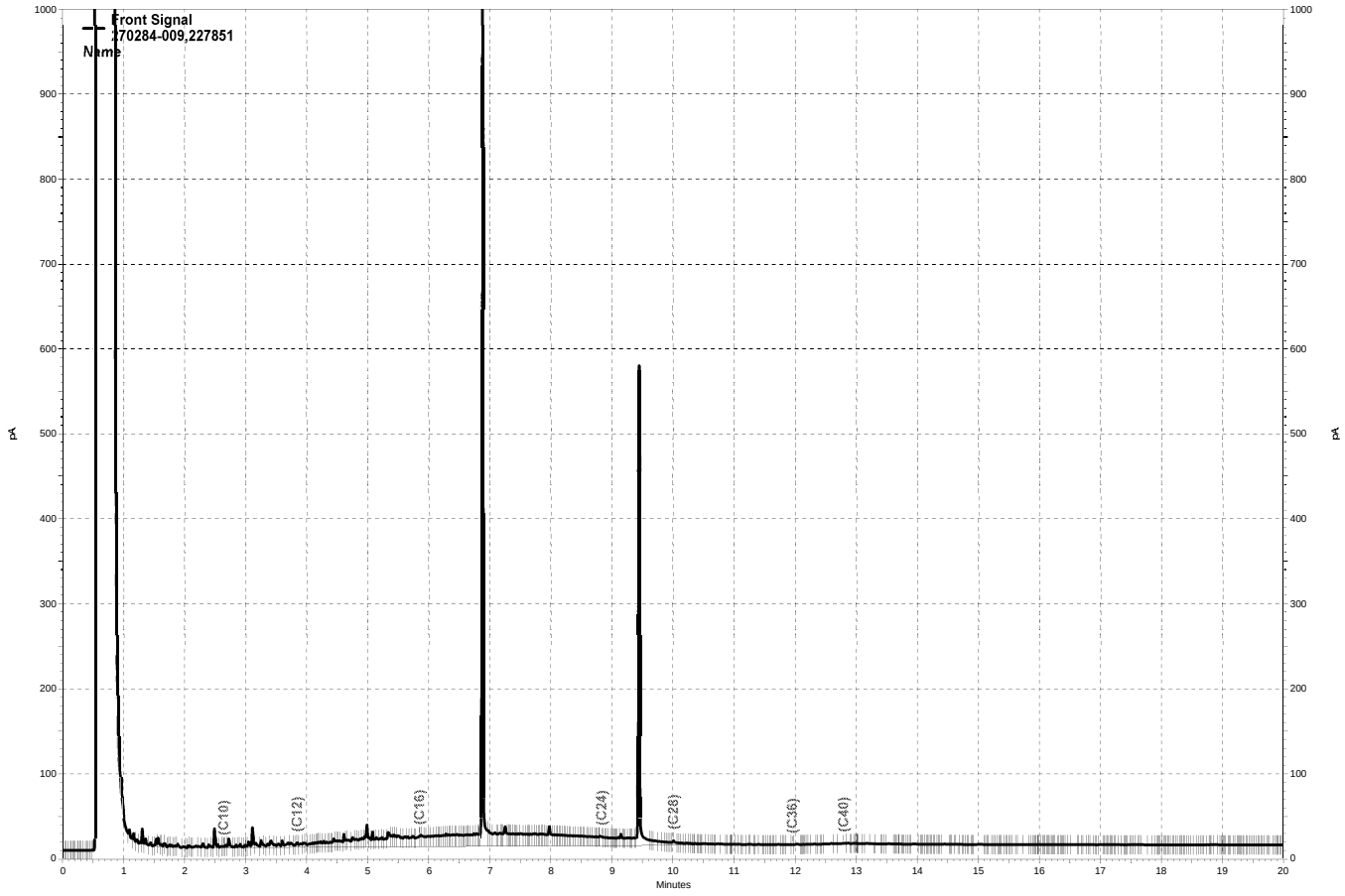

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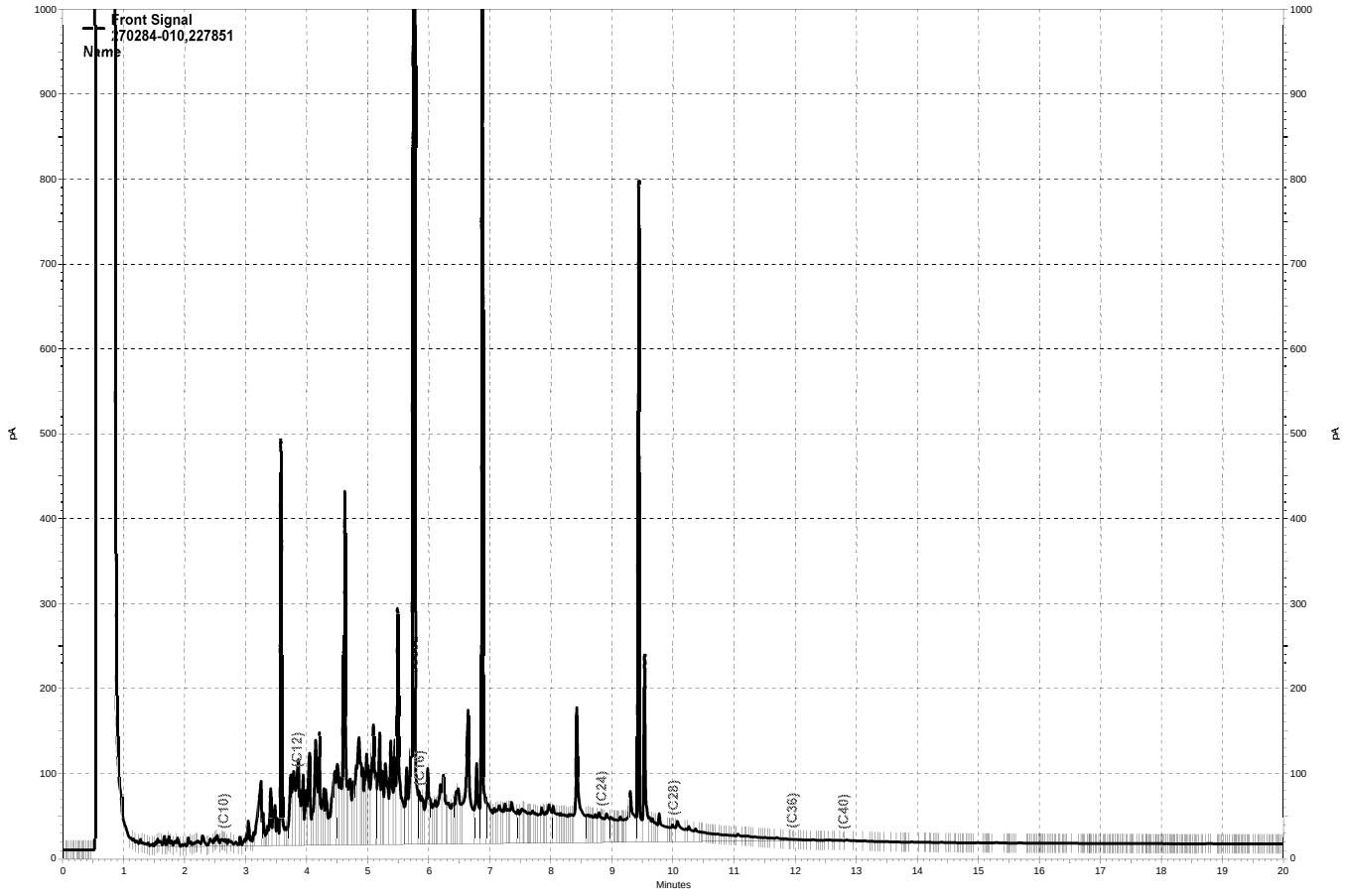

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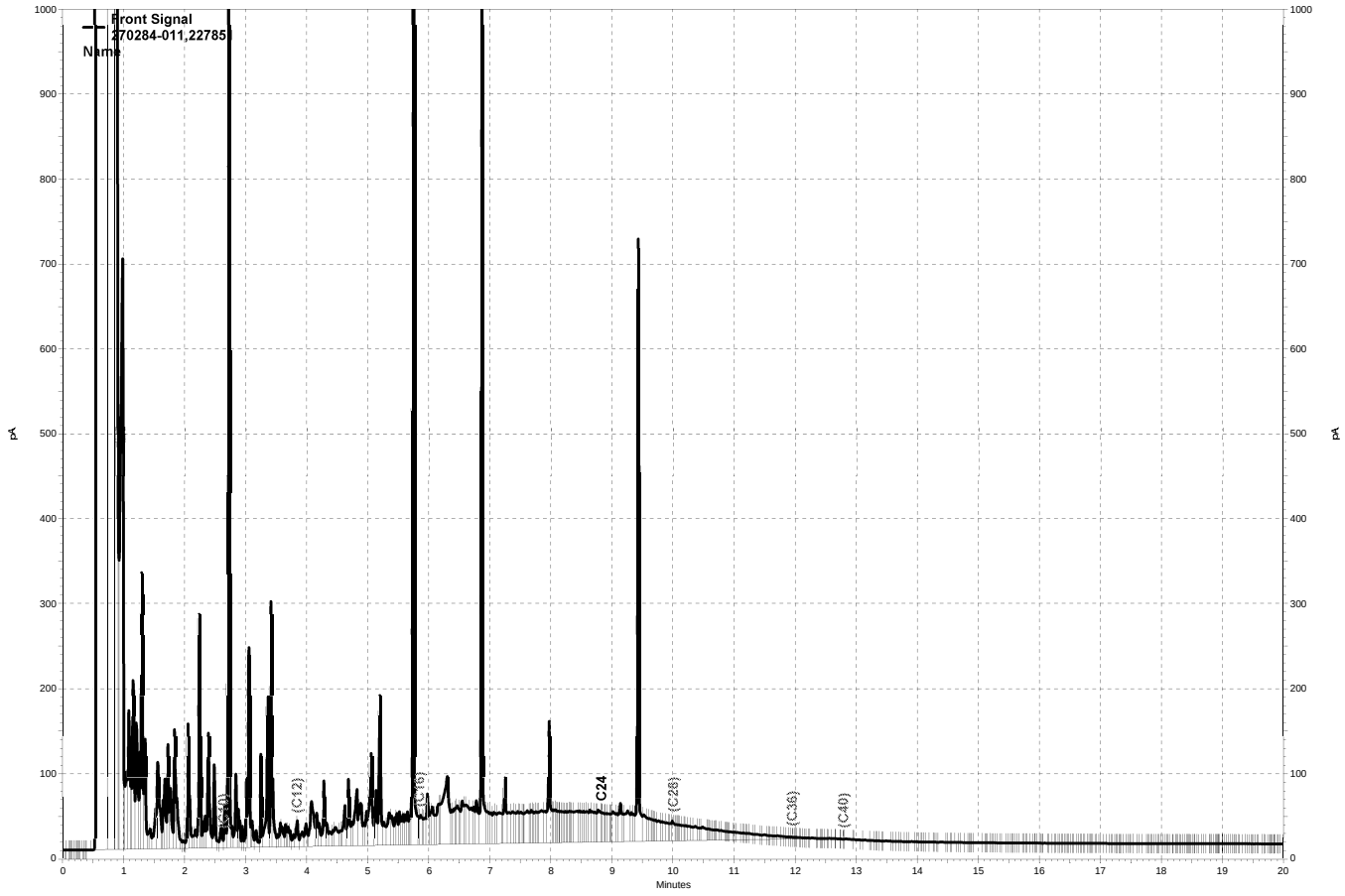

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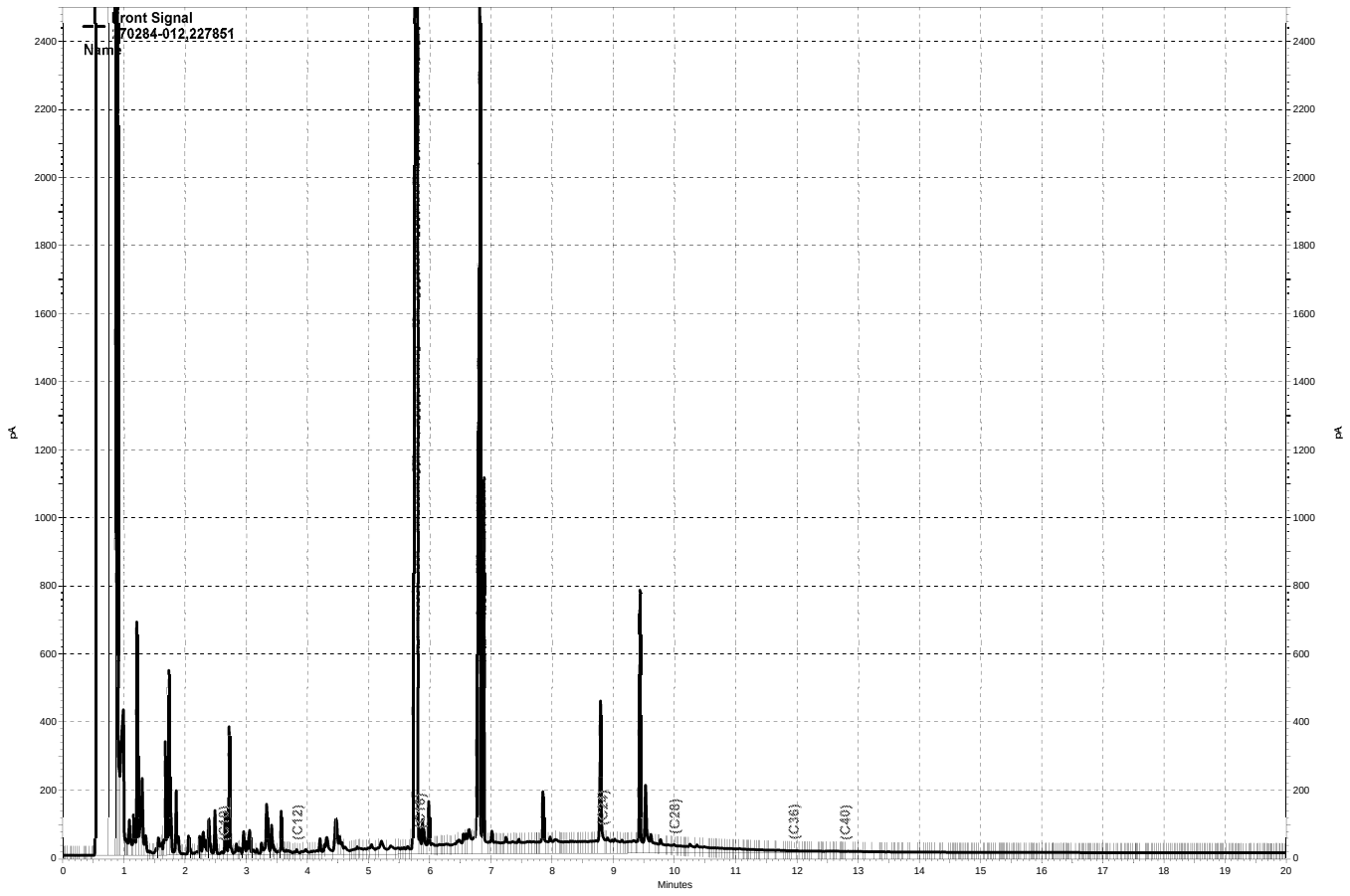

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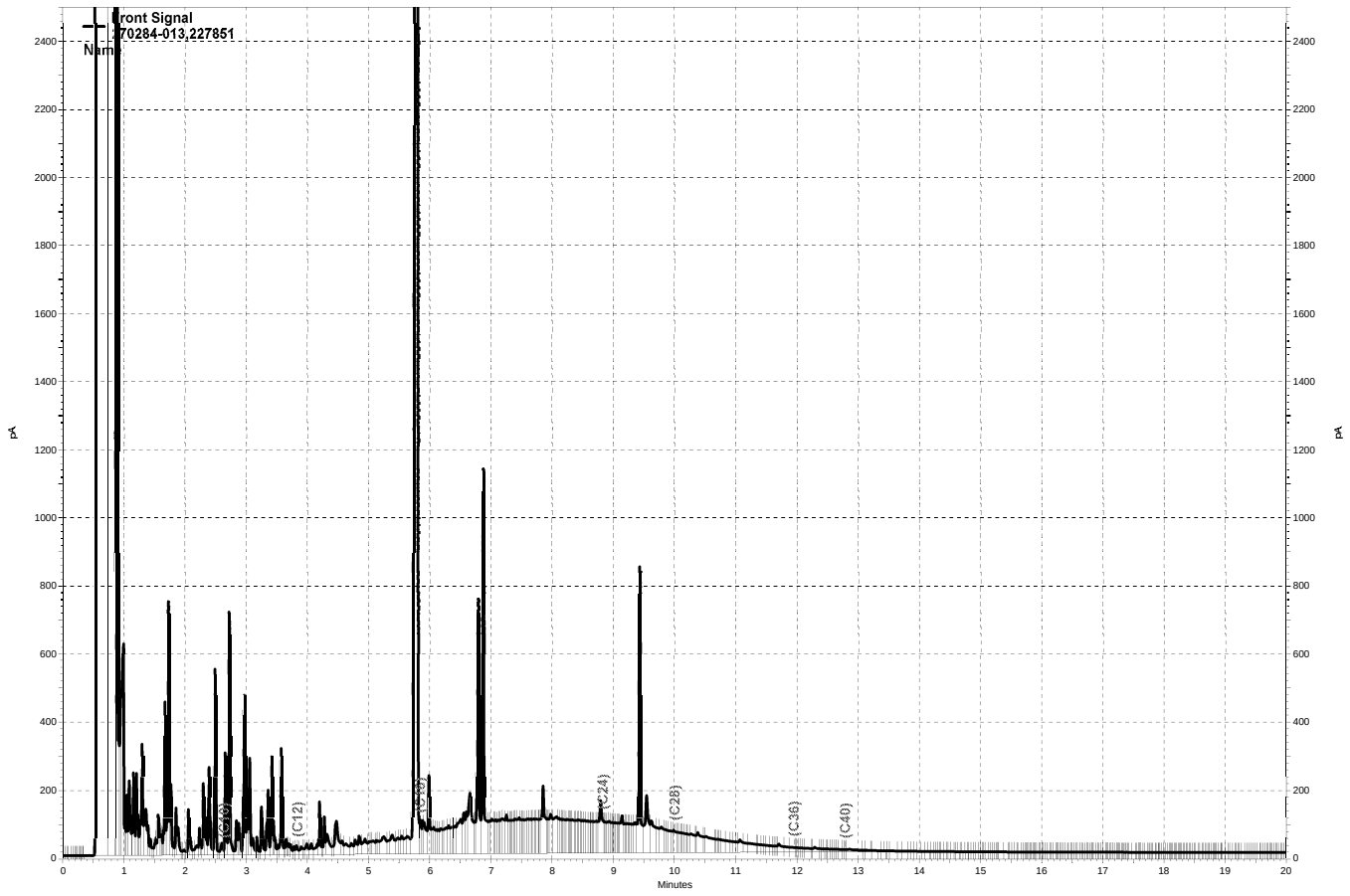

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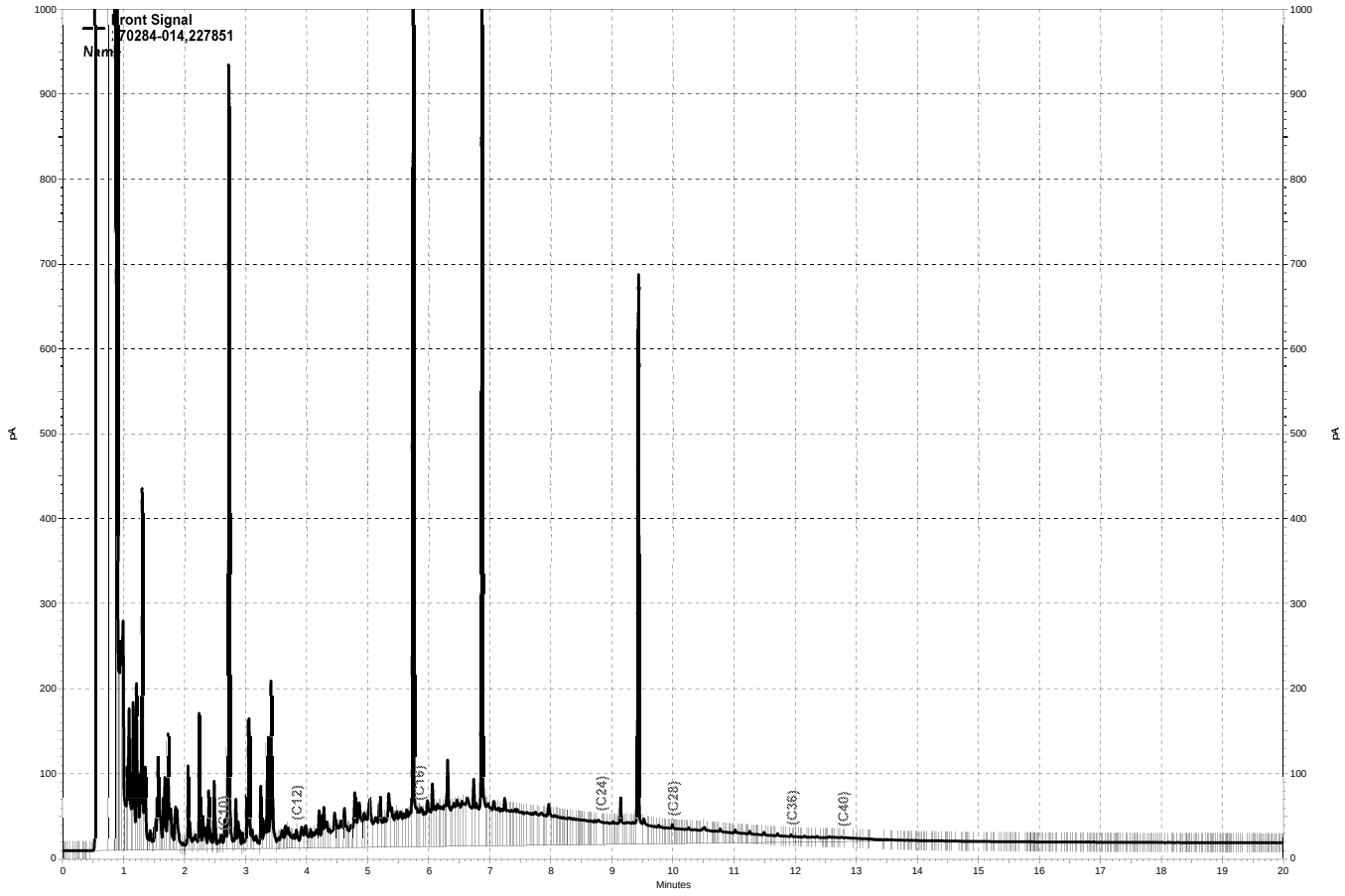

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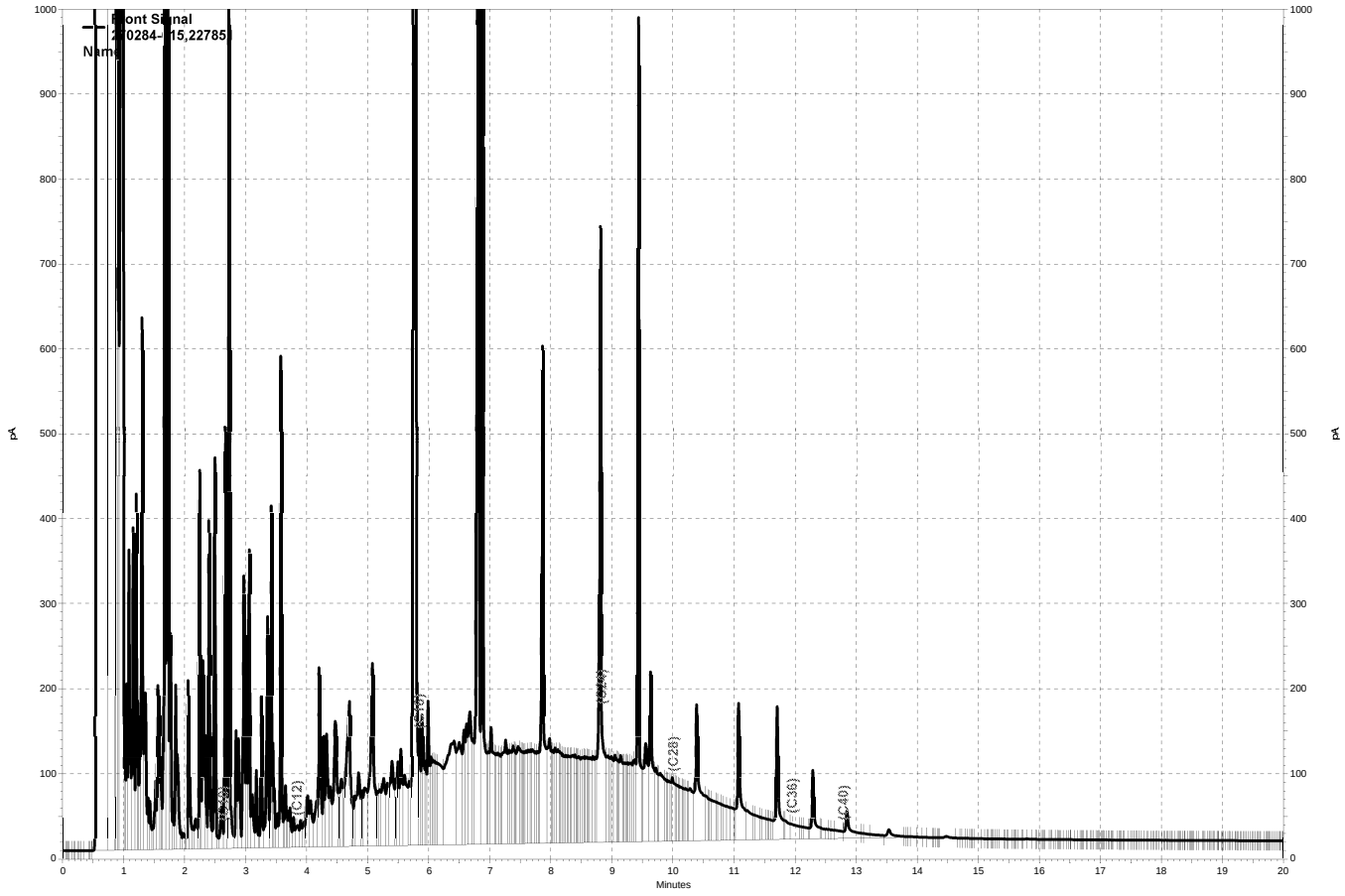

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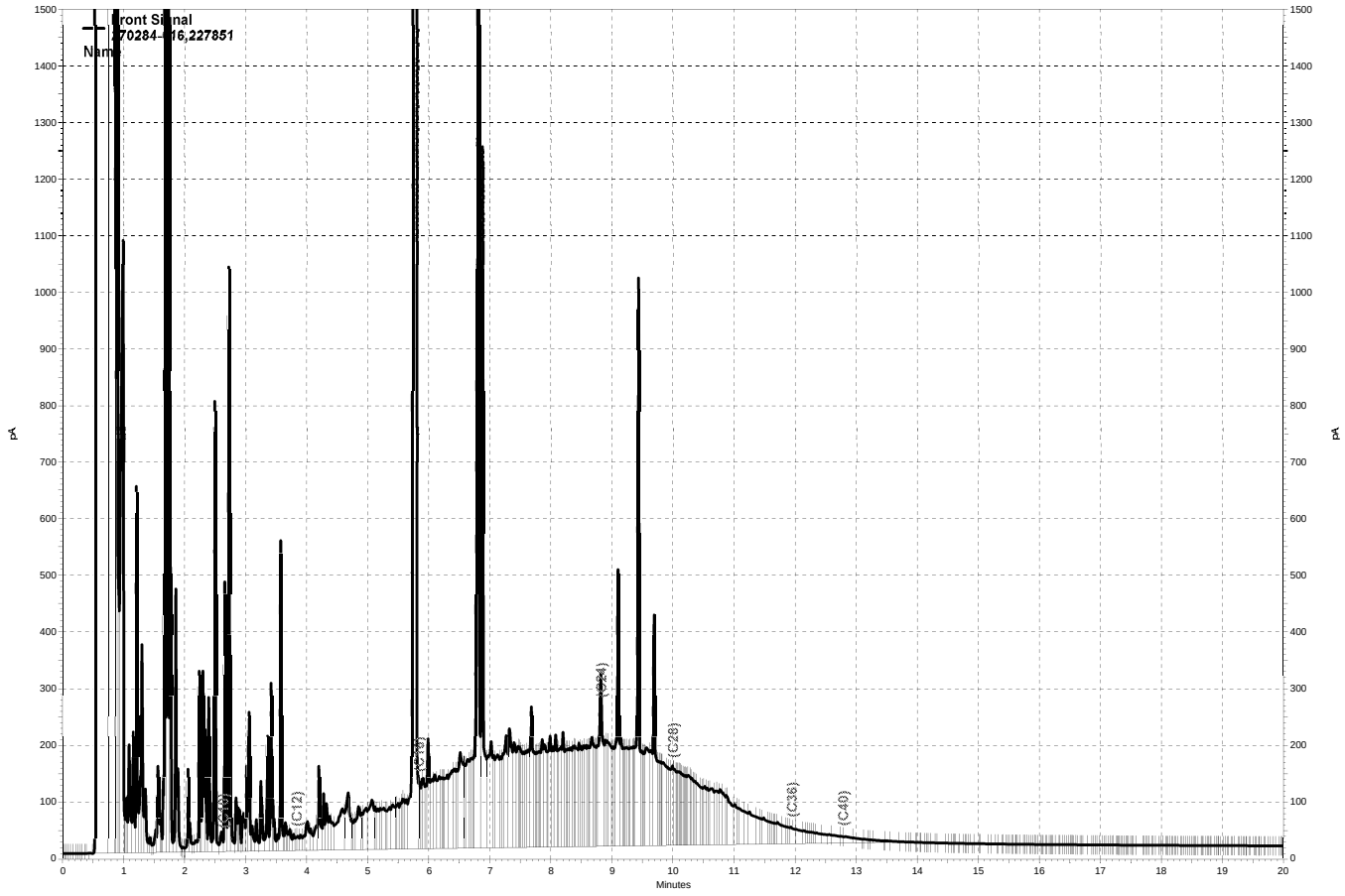

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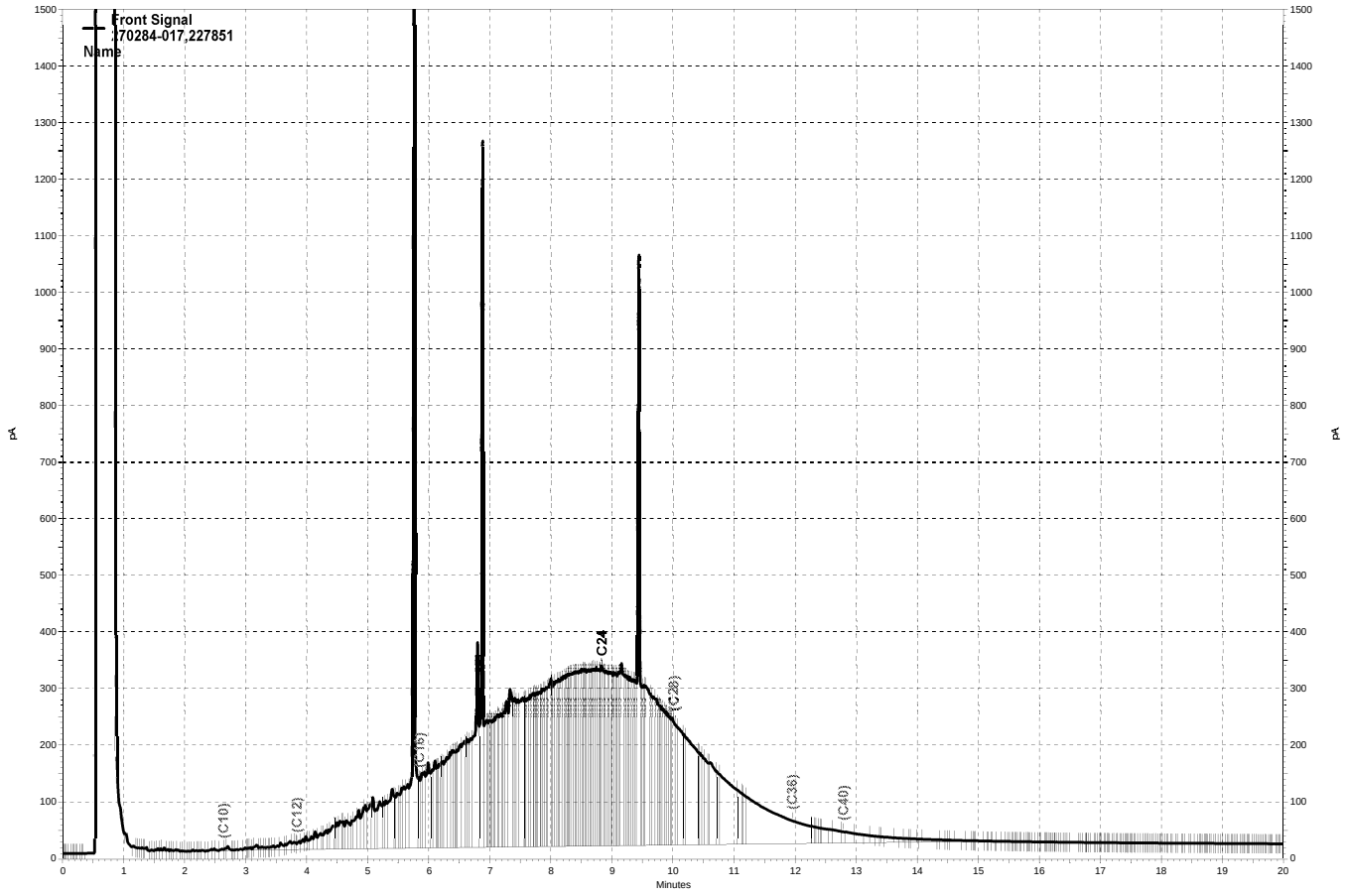

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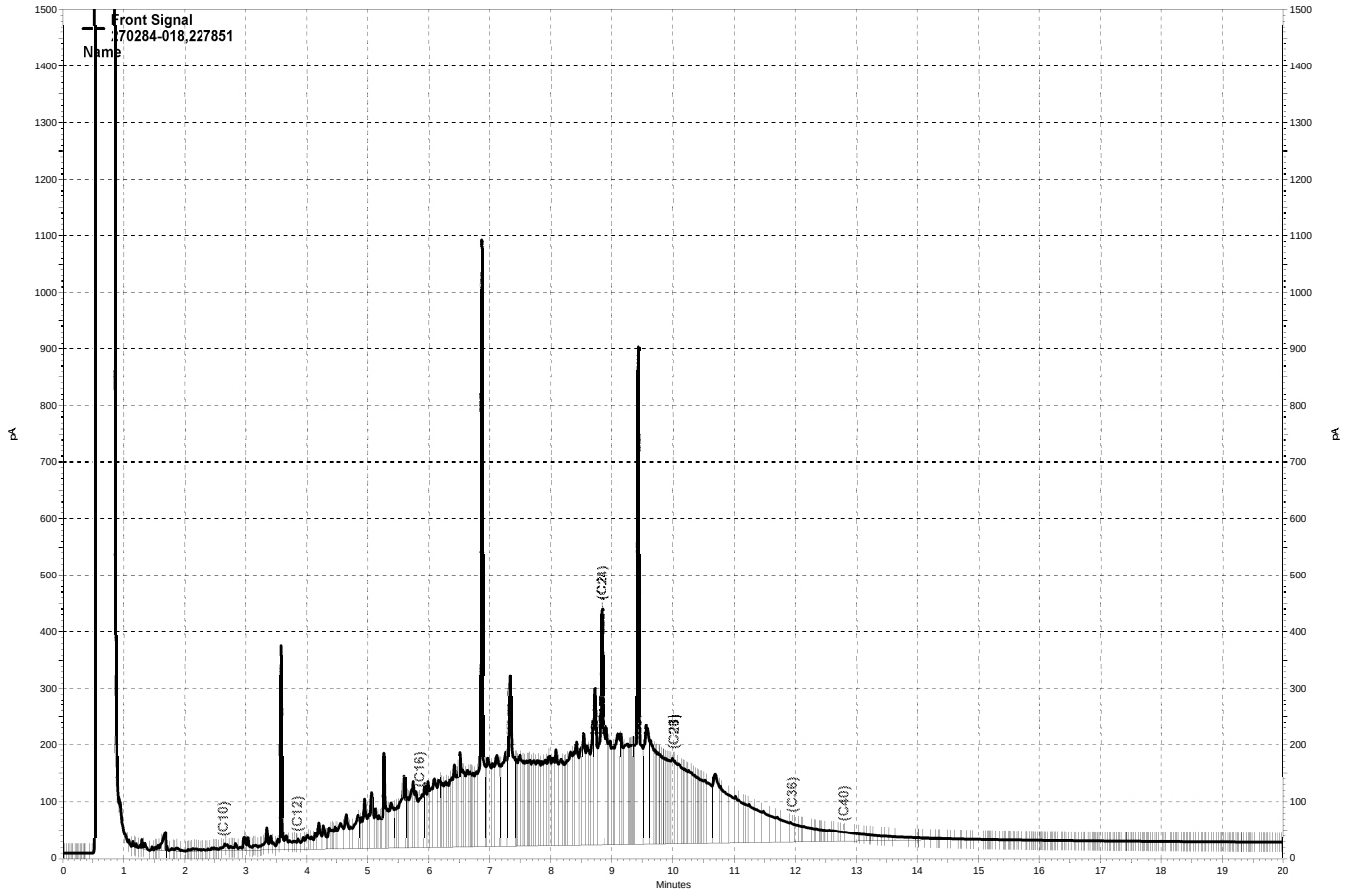

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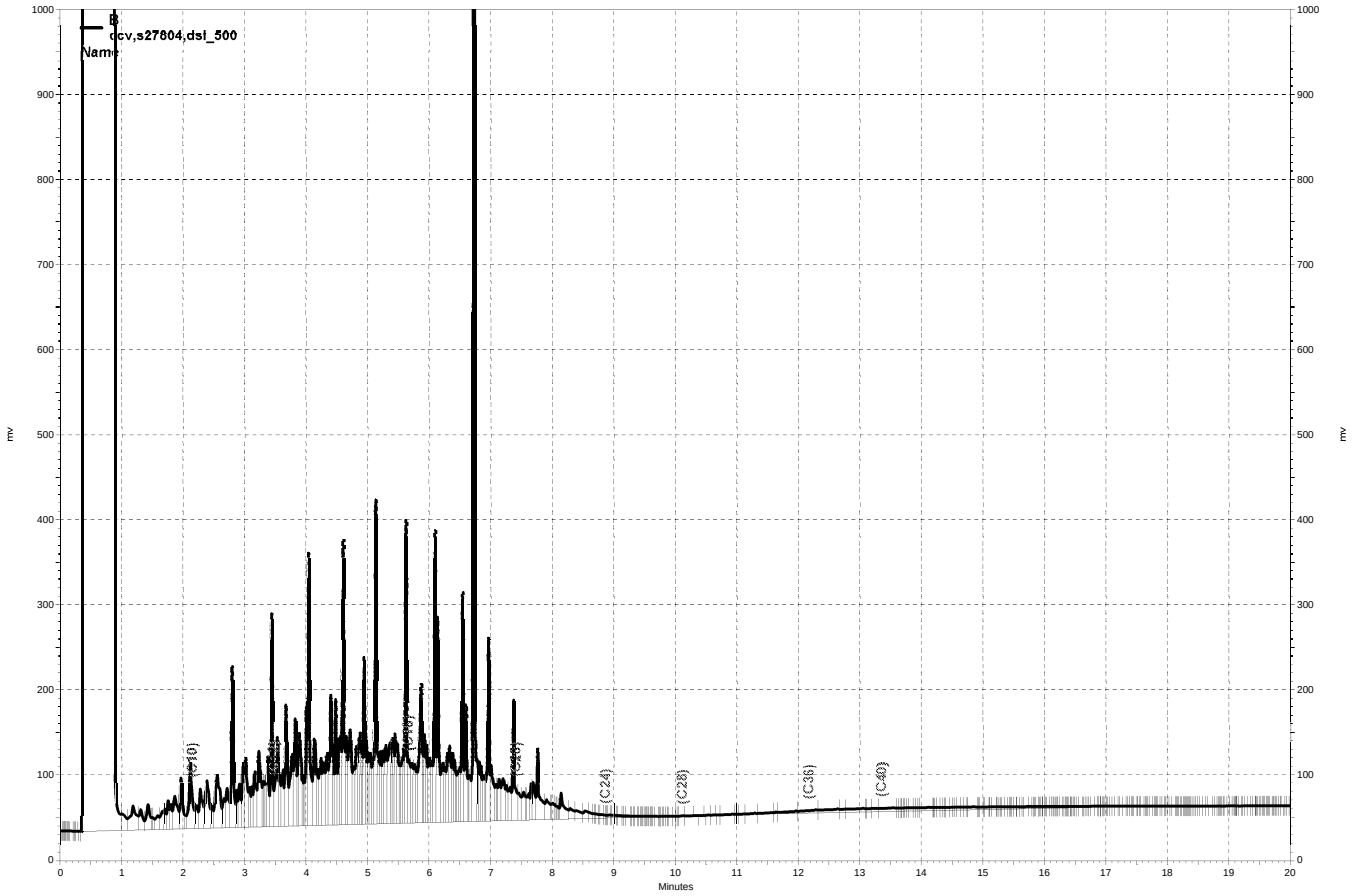

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APPENDIX D

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
18	Sep-12	16.65	10.77	NM	5.88
19	Mar-13	16.65	11.27	NM	5.38
20	Sep-13	16.65	11.50	NM	5.15
21	Mar-14	16.65	9.64	9.61	7.01
22	Sep-14	16.65	NM	10.85	NM
23	Mar-15	16.65	9.40	9.35	7.25
24	Sep-15	16.65	9.00	7.22	7.65

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
18	Sep-12	16.29	7.82	NP	8.45
19	Mar-13	16.29	9.15	NP	7.14
20	Sep-13	16.29	8.00	NP	8.29
21	Mar-14	16.29	7.72	NP	8.57
22	Sep-14	16.29	8.23	NP	8.06
23	Mar-15	16.29	8.42	NP	7.87
24	Sep-15	16.29	7.68	NP	8.61

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[a]	9.29	NP	5.27
3	Feb-91	14.56	10.04	NP	4.52
4	Mar-04	17.11[b]	9.10	NP	8.01
5	Dec-06	NA	NA	NA	NA
6	Dec-07	16.72[c]	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
18	Sep-12	16.72	9.70	NP	7.02
19	Mar-13	16.72	10.63	NP	6.09
20	Sep-13	16.72	10.20	NP	6.52
21	Mar-14	16.72	9.68	NP	7.04
22	Sep-14	16.72	9.73	NP	6.99
23	Mar-15	16.72	9.59	NP	7.13
24	Sep-15	16.72	9.78	NP	6.94

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[a]	7.58	NP	7.09
3	Feb-91	14.67	7.05	NP	7.62
4	Mar-04	17.22[b]	6.51	NP	10.71
5	Dec-06	NA	NA	NA	NA
6	Dec-07	16.82[c]	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
18	Sep-12	16.82	7.51	NP	9.31
19	Mar-13	16.82	7.60	NP	9.22
20	Sep-13	16.82	5.65	NP	11.17
21	Mar-14	16.82	6.33	NP	10.49
22	Sep-14	16.82	8.13	NP	8.69
23	Mar-15	16.82	7.63	NP	9.19
24	Sep-15	16.82	9.09	NP	7.73

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[c]	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
15	Sep-12	17.73	10.50	NP	7.23
16	Mar-13	17.73	11.30	NP	6.43
17	Sep-13	17.73	5.50	NP	12.23
18	Mar-14	17.73	10.82	NP	6.91
19	Sep-14	17.73	10.61`	NP	7.02
20	Mar-15	17.73	10.57	NP	7.16
21	Sep-15	17.73	10.54	NP	7.19

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
15	Sep-12	17.84	9.25	8.46	8.59
16	Mar-13	17.84	9.95	9.59	7.89
17	Sep-13	17.84	10.32	10.28	7.52
18	Mar-14	17.84	10.22	10.28	7.62
19	Sep-14	17.84	9.91	9.85	7.93
20	Mar-15	17.84	9.71	9.47	8.13
21	Sep-15	17.84	9.88	9.93	7.96

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
15	Sep-12	17.84	9.54	NP	8.30
16	Mar-13	17.84	10.08	NP	7.76
17	Sep-13	17.84	10.13	NP	7.71
18	Mar-14	17.84	10.01	NP	7.83
19	Mar-15	17.84	9.98	NP	7.86
20	Sep-15	17.84	10.05	NP	7.79

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
15	Sep-12	17.83	7.48	7.40	10.35
16	Mar-13	17.83	10.30	9.33	7.53
17	Sep-13	17.83	10.02	9.65	7.81
18	Mar-14	17.83	9.92	9.65	7.91
19	Sep-14	17.83	9.74	9.36	8.09
20	Mar-15	17.83	9.19	9.16	8.64
21	Sep-15	17.83	9.69	9.34	8.14

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
14	Sep-12	17.76	10.24	NP	7.52
15	Mar-13	17.76	10.62	NP	7.14
16	Sep-13	17.76	10.21	NP	7.55
17	Mar-14	17.76	10.33	NP	7.43
18	Sep-14	17.76	10.40	NP	7.36
19	Mar-15	17.76	10.40	NP	7.36
20	Sep-15	17.76	10.48	NP	7.28

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
14	Sep-12	17.83	7.44	NP	10.39
15	Mar-13	17.83	9.39	NP	8.44
16	Sep-13	17.83	9.72	NP	8.11
17	Mar-14	17.83	9.55	NP	8.26
18	Sep-14	17.83	9.46	NP	8.37
19	Mar-15	17.83	9.18	NP	8.65
20	Sep-15	17.83	10.48	NP	7.35

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[e]	9.72	7.75
9	Mar-10	17.66	9.22[e]	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
14	Sep-12	17.66	9.54	9.23	8.12
15	Mar-13	17.66	9.36	9.35	8.30
16	Sep-13	17.66	9.48	9.45	8.18
17	Mar-14	17.66	9.58	9.45	8.08
18	Sep-14	17.66	8.89	8.87	8.77
19	Mar-15	17.66	9.13	9.12	8.53
20	Sep-15	17.66	9.59	9.57	8.07

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
14	Sep-12	17.60	7.22	7.20	10.38
15	Mar-13	17.60	9.18	9.17	8.42
16	Sep-13	17.60	9.49	9.47	8.11
17	Mar-14	17.60	9.48	9.47	8.12
18	Sep-14	17.60	9.16	NP	8.44
19	Mar-15	17.60	8.93	NP	8.67
20	Sep-15	17.60	8.41	NP	8.19

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[f]	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
14	Sep-12	17.80	8.03	NP	9.77
15	Mar-13	17.80	9.45	NP	8.35
16	Sep-13	17.80	10.01	NP	7.79
17	Mar-14	17.80	10.18	NP	7.62
18	Sep-14	17.80	9.74	NP	8.06
19	Mar-15	17.80	9.34	NP	8.46
20	Sep-15	17.80	9.85	NP	7.95

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
14	Sep-12	17.74	9.15	NP	8.59
15	Mar-13	17.74	9.60	NP	8.14
16	Sep-13	17.74	10.03	NP	7.71
17	Mar-14	17.74	9.81	NP	7.93
18	Sep-14	17.74	9.80	NP	7.94
19	Mar-15	17.74	9.56	NP	8.18
20	Sep-15	17.74	8.50	NP	9.24

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
14	Sep-12	18.17	7.77	NP	10.40
15	Mar-13	18.17	9.17	NP	9.00
16	Sep-13	18.17	10.00	NP	8.17
17	Mar-14	18.17	10.00	NP	8.17
18	Sep-14	18.17	9.72	NP	8.45
19	Mar-15	18.17	9.51	NP	8.86
20	Sep-15	18.17	10.00	NP	8.17

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	Sep-11	16.35	8.90	NP	7.45
13	Mar-12	16.35	8.56	NP	7.79
14	Sep-12	16.35	8.59	NP	7.76
15	Mar-13	16.35	9.92	NP	6.43
16	Sep-13	16.35	9.81	NP	6.54
17	Mar-14	16.35	9.19	NP	7.16
18	Sep-14	16.35	9.56	NP	6.79
19	Mar-15	16.35	8.51	NP	6.84
20	Sep-15	16.35	8.69	NP	7.66

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
18	Sep-12	17.47	9.95	NP	7.52
19	Mar-13	17.47	10.41	NP	7.06
20	Sep-13	17.47	10.21	NP	7.26
21	Mar-14	17.47	10.15	NP	7.32
22	Sep-14	17.47	9.98	NP	7.49
23	Mar-15	17.47	10.15	NP	7.32
24	Sep-15	17.47	10.07	NP	7.40

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[d]	18.32	9.15	9.11	9.17
6	Dec-07	16.70[c]	9.53 [e]	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[c]	NM[c]	NM[c]
10	Dec-08	16.70	NM	NM	NM
11	Mar-09	16.70	9.06 [e]	9.06	7.64
12	Sep-09	16.70	9.45 [e]	9.45	7.25
13	Mar-10	16.70	8.93 [e]	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
18	Sep-12	16.70	NM	9.69	NM
19	Mar-13	16.70	NM	9.99	NM
20	Sep-13	16.70	11.60	9.99	5.10
21	Mar-14	16.70	9.13	9.99	7.57
22	Sep-14	16.70	11.10	11.09	5.60
23	Mar-15	16.70	9.67	11.09	7.03
24	Sep-15	16.70	9.69	11.09	7.01

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/Could Not Measure

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

[a] Wells resurveyed in May 1989

[b] New elevation recorded by PES. Date of survey unclear.

[c] Wells resurveyed by PES in April 2007

[d] no water level data available for the December 2006 sampling event

[e] Thickness of product interfered with determining oil/water interface.

[f] Depth to groundwater = depth to free product as difference could not be determined

APPENDIX E

Historical Product Extraction Data Table

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

	Well or Trench Location																										
Extraction Date	**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**	**Total Extracted**
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																												**14.99**
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	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
Sep-12	--	--	--	--	--	0.03	--	0.023	--	--	0.08	--	--	--	--	--	0.015	0.06	0.045	0.08	0.09	--	--	--	--	--	--	0.423
2012 Total																												**0.798**
Mar-13	0.06	--	--	--	--	0.08	--	0.015	--	--	0.08	--	--	--	--	--	0.01	0.06	0.05	0.12	0.07	--	--	--	0.03	0.03	0.03	0.635
Sep-13	0.06	--	--	--	--	0.02	--	0.05	--	--	--	--	--	--	--	--	0.02	0.06	0.02	0.02	0.02	--	--	--	0.01	0.02	0.02	0.320
2013 Total																												**0.955**
Mar-14	0.08	--	--	--	--	--	--	0.023	--	--	--	--	--	0.015	--	--	0.01	0.09	0.03	0.03	0.015	--	--	--	0.015	0.015	0.015	0.338
Sep-14	--	--	--	--	--	--	--	0.031	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	0.031
2014 Total																												**0.369**
Mar-15	--	--	--	--	--	--	--	0.031	--	--	--	--	--	--	--	--	0.0078	0.0078	0.031	0.0228	0.0228	--	--	--	--	--	--	0.123
Sep-15	0.015	--	--	--	--	0.015	--	0.0078	--	--	--	--	--	--	--	--	--	0.015	--	--	--	--	--	--	--	--	--	0.053
2015 Total																												**0.176**
Total Extracted	**1.74**	**0.20**	**0.45**	**0.52**	**0.04**	**3.75**	**0.03**	**4.61**	**0.33**	**2.83**	**1.81**	**0.66**	**2.70**	**0.28**	**2.03**	**0.07**	**0.26**	**76.84**	**22.03**	**25.96**	**28.80**	**2.55**	**3.08**	**2.37**	**4.83**	**3.08**	**3.08**	**194.93**

Note: All free product quantities presented in gallons

Product extraction events conducted before November 2007 were completed by PES Environmental

46 gallons removed from trench wells by PES between April 2006 and March 2007

About 30 of that was re gallons removed from trench wells by PES between April 2006 and March 2008

The majori gallons removed from trench wells by PES between April 2006 and March 2009

Depth to w gallons removed from trench wells by PES between April 2006 and March 2010