



**RECEIVED**

8:43 am, Apr 02, 2010

Alameda County  
Environmental Health

**Mike Bauer**  
Project Manager  
Marketing Business Unit

**Chevron Environmental  
Management Company**  
145 S. State College Blvd  
Brea, CA 92821  
Tel (714) 671-3200  
Fax (714) 671-3440  
mbauer@chevron.com

April 1, 2010

Mr. Jerry Wickham  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502-6577

Re: Former Signal Oil Marine Storage and Distribution Facility  
(Former Chevron Bulk Plant 20-6127)  
2301-2311 Blanding Avenue  
Alameda, California  
LOP Case RO0002466

Dear Mr. Wickham:

The purpose of this letter is to verify that as a representative for Chevron Environmental Management Company (Chevron), I reviewed, and concur with, the comments in the *First Quarter 2010 Groundwater Monitoring Report* for the referenced facility, prepared on behalf of Chevron by Conestoga-Rovers & Associates.

Please feel free to contact me at (714) 671-3207 if you have any questions.

Sincerely,

A handwritten signature in blue ink that reads "Mike Bauer".

---

Mike Bauer  
Project Manager



**CONESTOGA-ROVERS  
& ASSOCIATES**

10969 Trade Center Drive, Suite 106, Rancho Cordova, CA 95670  
Telephone: 916-889-8900 Facsimile: 916-889-8999  
[www.CRAworld.com](http://www.CRAworld.com)

April 1, 2010

Reference No. 631916

Mr. Jerry Wickham  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, California 94502--6577

Re: First Quarter 2010 Groundwater Monitoring Report  
Former Signal Oil Marine Storage and Distribution Facility  
(Chevron Bulk Plant 20-6127)  
2301-2311 Blanding Avenue  
Alameda, California  
SLIC Case RO0002466

---

Dear Mr. Wickham:

Conestoga-Rovers & Associates (CRA) is submitting this *First Quarter 2010 Groundwater Monitoring Report* on behalf of Chevron Environmental Management Company (Chevron) for the site referenced above. The current monitoring and sampling program consists of gauging and sampling groundwater from wells MW-1 through MW-5 onsite and collecting a surface water sample (CS-2) from the adjacent Alameda Canal on a quarterly basis. Site background information, summary of previous investigation, the results of the current monitoring and sampling activities, CRA's conclusions and recommendations, and anticipated future activities are discussed below.

## **SITE BACKGROUND**

### **Site Description**

The approximately 3.5-acre site is located on the northeast side of Blanding Avenue between Oak and Park Streets in Alameda, California (Figures 1 and 2). Land use in the site vicinity is primarily commercial and industrial. The Alameda Canal and a marina are located adjacent to the northeast side of the site. The site is currently occupied by three large commercial buildings, which are used for office, retail, and storage space, and identified as Park Street Landing at 2307-2337 Blanding Avenue. A summary of the site history dating back to 1897 and summary of previous environmental investigation is included as Attachment A.

### **Previous Work**

To date, 5 groundwater monitoring wells, 6 vapor wells, and 7 sub-slab vapor points have been installed at the site. Additionally, 28 soil borings have been advanced and 3 surface soil

Equal  
Employment  
Opportunity Employer





April 1, 2010

2

Reference No. 631916

samples collected at the site (Attachment A). Quarterly monitoring and sampling initiated in 2001 is ongoing. Well construction information is presented in Table 1.

### *Site Geology and Hydrogeology*

The soils encountered beneath the site generally consist of silty sand and clayey sand from just beneath grade to approximately 5 to 9 feet below grade (fbg). Fill consisting of black sand and concrete fragments has been reported in several borings at shallow depths. A 4- to 5-foot thick layer of clay with some sand underlies the silty sand and clayey sand. Below the clay is silty sand and sandy silt to the maximum explored depth of 20.5 fbg. Groundwater is encountered in site borings at approximately 14.5 to 15 fbg within the silty sand and sandy silt and subsequently rises in the borings/wells to approximately 7 to 10 fbg. Historical depth to water and groundwater elevation data is included in Gettler-Ryan's (G-R's) quarterly monitoring and sampling report (Attachment B).

## RESULTS OF FIRST QUARTER 2010 MONITORING AND SAMPLING EVENT

### *Groundwater Monitoring and Sampling*

On January 19, 2010, G-R gauged and sampled monitoring wells MW-1 through MW-5, and collected grab surface water samples from canal sampling location CS-2 (Figure 2). This was the third sampling event for newly installed wells MW-2 through MW-5. G-R's February 10, 2010 *Groundwater Monitoring and Sampling Report* is included as Attachment B.

Depth to groundwater in site wells ranged from 3.90 fbg in well MW-2 to 7.64 fbg in well MW-1. Groundwater flow direction was calculated towards the northeast at a gradient of 0.01 (Figure 1 of Attachment B).

Groundwater samples collected quarterly from the site wells are analyzed for total petroleum hydrocarbons as diesel (TPHd), total petroleum hydrocarbons as gasoline (TPHg) and benzene, toluene, ethylbenzene, and xylenes (BTEX). In addition, samples from well MW-1 and surface water sampling point CS-2 are analyzed for methyl tertiary butyl ether (MTBE). First quarter monitoring and sampling results are shown on Table A and are discussed below.





**TABLE A: GROUNDWATER ANALYTICAL DATA - FIRST QUARTER 2010**

<i>Well ID</i>	<i>TPHd µg/L</i>	<i>TPHg µg/L</i>	<i>Benzene µg/L</i>	<i>Toluene µg/L</i>	<i>Ethyl- benzene µg/L</i>	<i>Xylenes µg/L</i>	<i>MTBE µg/L</i>
MW-1	340	<50	<0.5	<0.5	<0.5	<0.5	<0.5
MW-2	<50	<50	<0.5	<0.5	<0.5	<0.5	NA
MW-3	1,800	120	2	<0.5	<0.5	<0.5	NA
MW-4	110	<50	<0.5	<0.5	<0.5	<0.5	NA
MW-5	2,600	2,200	74	4	1	5	NA
CS-2	210	<50	<0.5	<0.5	<0.5	<0.5	<0.5
<p>&lt; Indicates constituent was not detected at or above stated laboratory reporting limit</p> <p>NA Not analyzed</p>							

**Total Petroleum Hydrocarbons as Diesel**

- No TPHd was detected in well MW-2.
- TPHd was detected in wells MW-1, MW-3, MW-4, and MW-5 at concentrations ranging from 110 micrograms per liter (µg/L) in well MW-4 to 2,600 µg/L in well MW-5 (Figure 3).
- TPHd was detected at canal sampling location CS-2 at a concentration of 210 µg/L. The laboratory indicated that TPHd was detected in the method blank at 38 µg/L during analysis of the canal sample location CS-2. The result for the re-extract was 96 µg/L (the original extract result was reported because the re-extract was performed out of hold time).
- Review of the chromatograms for the samples collected from well MW-1 and CS-2 indicates a similar low level diesel pattern. Review of the chromatograms for the samples collected from wells MW-3 and MW-5 also indicates a similar diesel pattern between these two wells, but the pattern is different than the patterns from the samples collected from well MW-1 and CS-2 possibly indicating a separate source. Chromatograms are included as Attachment C.
- The TPHd concentration observed this quarter in well MW-1 is within the historical range and is consistent with seasonal fluctuations (Table 1 of Attachment B).
- TPHd concentrations in newly installed wells MW-3 through MW-5 were an order of magnitude higher than the initial sampling results, but were consistent with the fourth quarter 2009 results. This apparent increase in TPHd concentration may be due to seasonal fluctuations.

**Total Petroleum Hydrocarbons as Gasoline**

- No TPHg was detected in wells MW-1, MW-2, and MW-4, or at canal sampling location CS-2.





April 1, 2010

4

Reference No. 631916

- TPHg was detected in wells MW-3 and MW-5 at concentrations of 120 µg/L and 2,200 µg/L, respectively (Figure 4).
- TPHg concentrations in recently installed wells MW-3 and MW-5 were generally stable when compared to the initial sampling results.

#### *Benzene, Toluene, Ethylbenzene, and Xylenes*

- With the exception of 2 µg/L benzene in well MW-3, no BTEX was detected in wells MW-1, MW-2, MW-3, and MW-4, or at canal sampling location CS-2.
- Benzene was detected in well MW-5 at a concentration of 74 µg/L (Figure 5).
- Toluene, ethylbenzene, and xylenes were only detected in well MW-5 at concentrations of 4 µg/L, 1 µg/L, and 5 µg/L, respectively.

#### *Methyl Tertiary Butyl Ether*

- Consistent with past results, no MTBE was detected in samples from well MW-1 or at the canal sampling location CS-2.

### CONCLUSIONS AND RECOMMENDATIONS

Based on groundwater analytical data from recently installed wells MW-2 through MW-5, the dissolved plume is localized north of the former aboveground storage tank in the area of the former fuel pumps (Figures 3 through 5). Results of the first quarter 2010 sampling event indicate that the dissolved hydrocarbon concentrations in well MW-1 are generally stable. The lack of lighter end hydrocarbon constituents in groundwater suggests the remaining residual dissolved plume is old and has naturally degraded over time.

Although the majority of analytical results of grab samples collected from canal sampling location CS-2 indicate no impact to Alameda Canal from the site, low level TPHd was detected in the CS-2 this quarter. As stated above, review of the TPHd chromatograms associated with well MW-1 and canal sample CS-2 are similar, but differ from those associated with source area wells MW-3 and MW-5. This suggests that the TPHd detected in well MW-1 and CS-2 may be from an offsite source.

The primary constituent of concern is TPHd; however, TPHg concentrations were also observed in wells MW-3 and MW-5. CRA recommends continued quarterly monitoring and sampling of wells MW-1 through MW-5 to determine seasonal hydrocarbon concentration trends in groundwater beneath the site.

Based on current and past monitoring and sampling data at the site, CRA recommends discontinuing the sampling and analysis for MTBE in groundwater. MTBE has not historically





April 1, 2010

5

Reference No. 631916

been detected in well MW-1. CRA requests Alameda County Health Care Services Agency, Environmental Health Services (ACEH) concurrence with these recommendations for implementation during the second quarter 2010 event.

### ANTICIPATED FUTURE ACTIVITIES

#### Quarterly Groundwater Sampling

G-R will gauge and sample wells MW-1 through MW-5. The surface water sampling location CS-2 will no longer be collected per ACEH's correspondence dated February 5, 2010 (Attachment D). Upon completion of this event, CRA will prepare a summary of the site conditions and monitoring results.

#### Vapor Sampling

Vapor samples will be collected from vapor wells VP-1 through VP-6 and sub-slab vapor probes VP-7 through VP-13, and an indoor air survey will be performed to further evaluate the potential for vapor intrusion at the site. Vapor sampling is tentatively scheduled to occur during April and November 2010. Results will be documented in a summary report following each event and will include CRA's conclusions and recommendations.

#### Evaluation of Shallow Groundwater

CRA is preparing a work plan to further assess potential impacts from the site to the Alameda Canal. The work plan will be submitted to the ACEH by May 12, 2010.





**CONESTOGA-ROVERS  
& ASSOCIATES**

April 1, 2010

6

Reference No. 631916

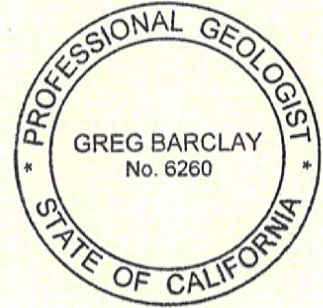
We appreciate the opportunity to work with you on this project. Please contact Mr. Brian Silva at (916) 889-8908 if you have any questions or require additional information.

Sincerely,

CONESTOGA-ROVERS & ASSOCIATES

Brian Silva

Greg Barclay, PG 6260



LA/jt/11  
Encl.

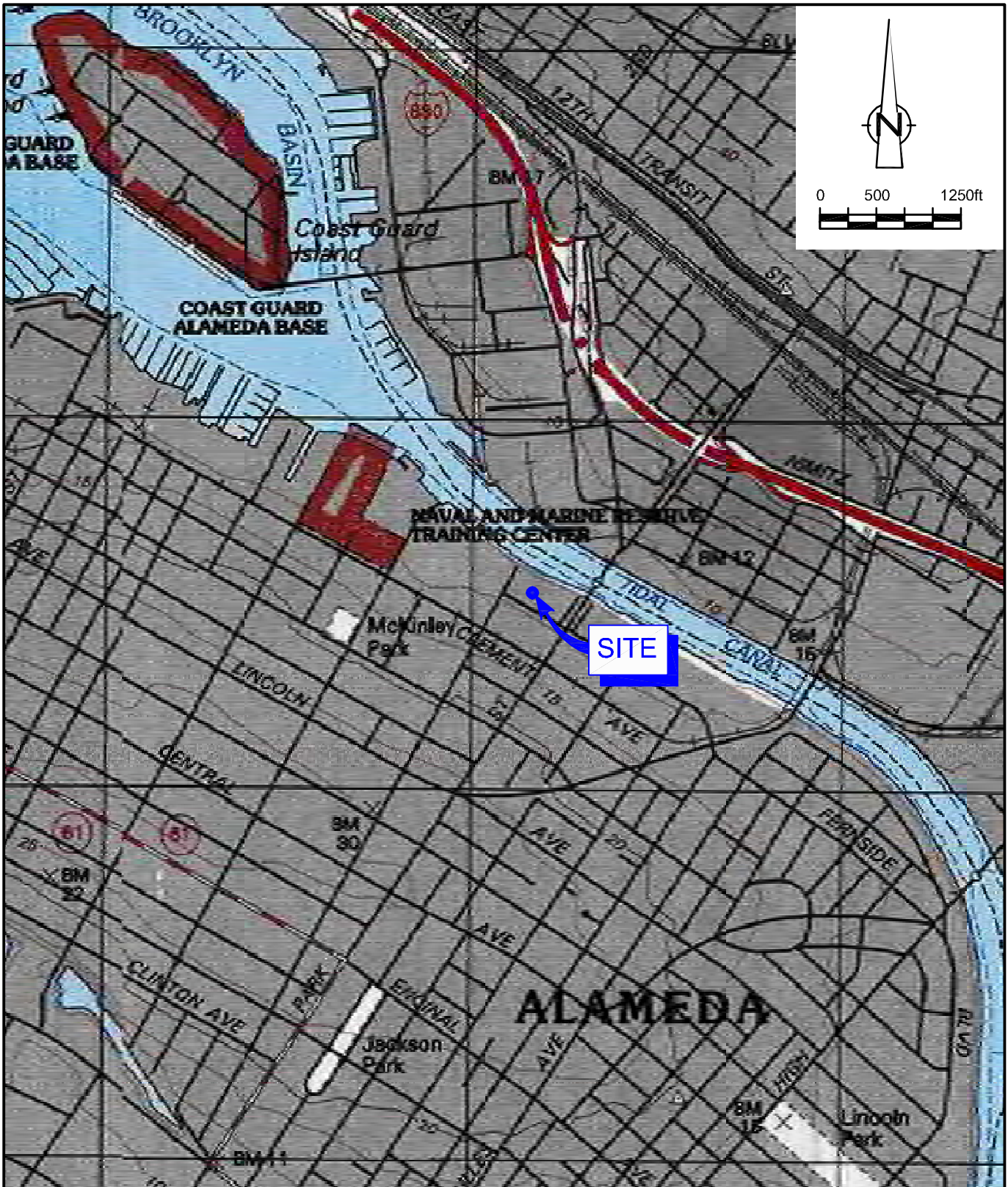
Figure 1	Vicinity Map
Figure 2	Site Plan
Figure 3	TPHd Concentrations in Groundwater - January 19, 2010
Figure 4	TPHg Concentrations in Groundwater - January 19, 2010
Figure 5	Benzene Concentrations in Groundwater - January 19, 2010
Table 1	Well Construction Specifications
Attachment A	Summary of Site History and Previous Environmental Work
Attachment B	G-R <i>Groundwater Monitoring and Sampling Report</i>
Attachment C	Chromatograms
Attachment D	Regulatory Correspondence

cc: Mike Bauer, Chevron (*electronic only*)  
Julie Beck Ball  
Peter Reinhold Beck  
Monroe Wingate  
Tom Foley, Gallagher & Miersch



## FIGURES





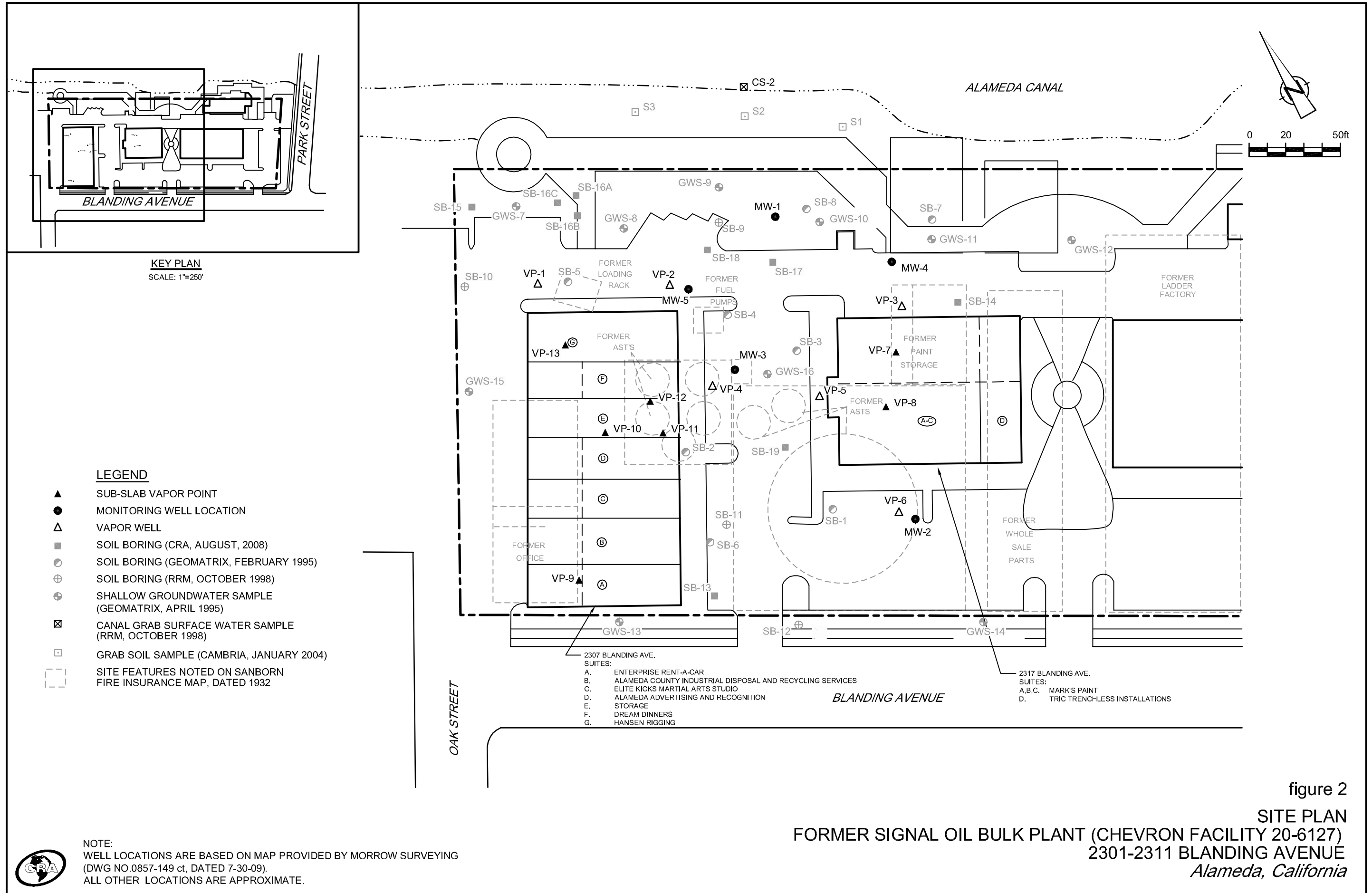
SOURCE: TOPO! MAPS.

figure 1

VICINITY MAP  
 FORMER SIGNAL OIL BULK PLANT (CHEVRON FACILITY 20-6127)  
 2301-2311 BLANDING AVENUE  
 Alameda, California







NOTE:  
WELL LOCATIONS ARE BASED ON MAP PROVIDED BY MORROW SURVEYING  
(DWG NO.0857-149 ct, DATED 7-30-09).  
ALL OTHER LOCATIONS ARE APPROXIMATE.



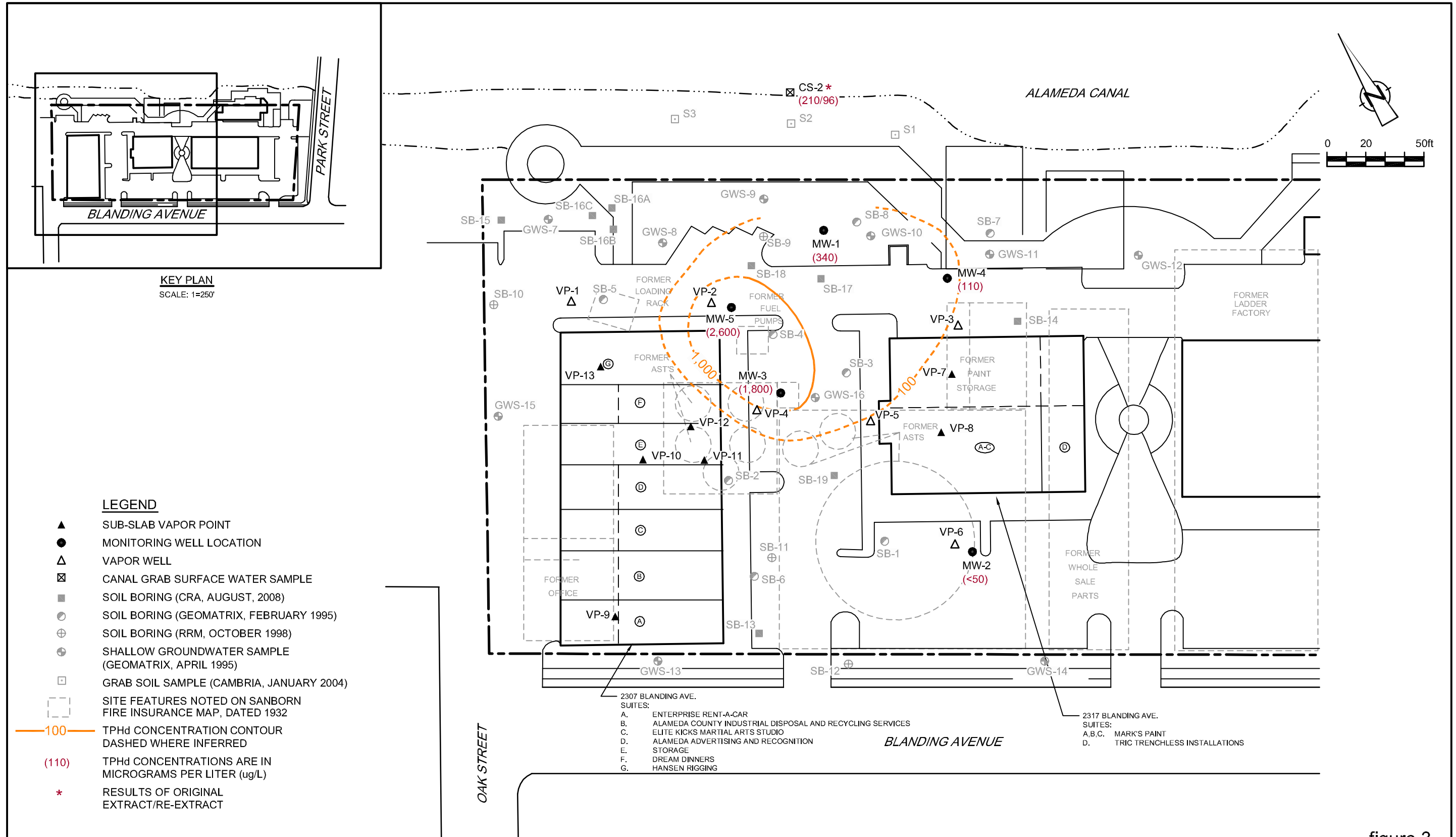
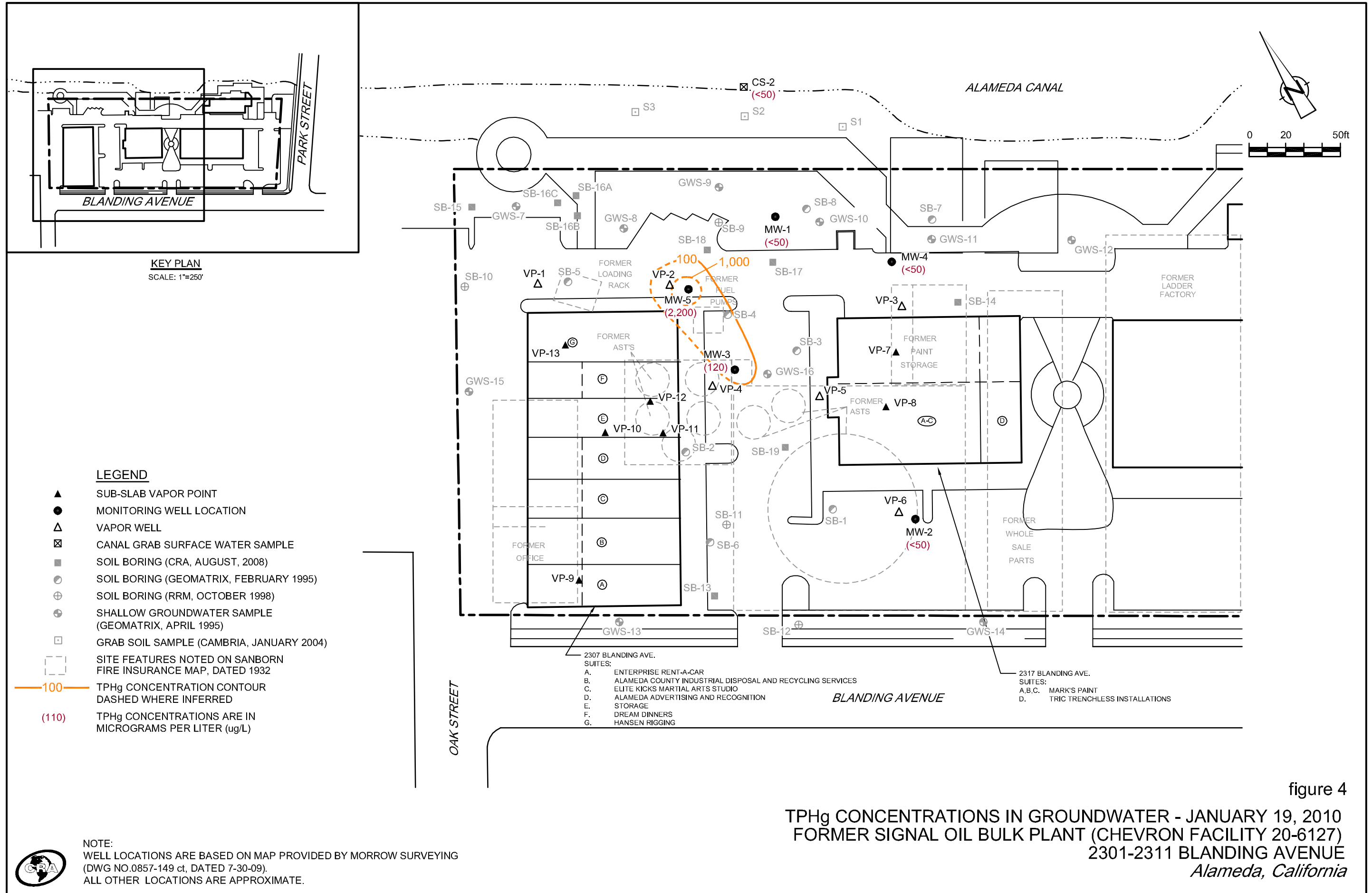


figure 3  
 TPHd CONCENTRATIONS IN GROUNDWATER - JANUARY 19, 2010  
 FORMER SIGNAL OIL BULK PLANT (CHEVRON FACILITY 20-6127)  
 2301-2311 BLANDING AVENUE  
 Alameda, California



NOTE:  
 WELL LOCATIONS ARE BASED ON MAP PROVIDED BY MORROW SURVEYING  
 (DWG NO.0857-149 ct, DATED 7-30-09).  
 ALL OTHER LOCATIONS ARE APPROXIMATE.





NOTE:  
 WELL LOCATIONS ARE BASED ON MAP PROVIDED BY MORROW SURVEYING  
 (DWG NO.0857-149 ct, DATED 7-30-09).  
 ALL OTHER LOCATIONS ARE APPROXIMATE.



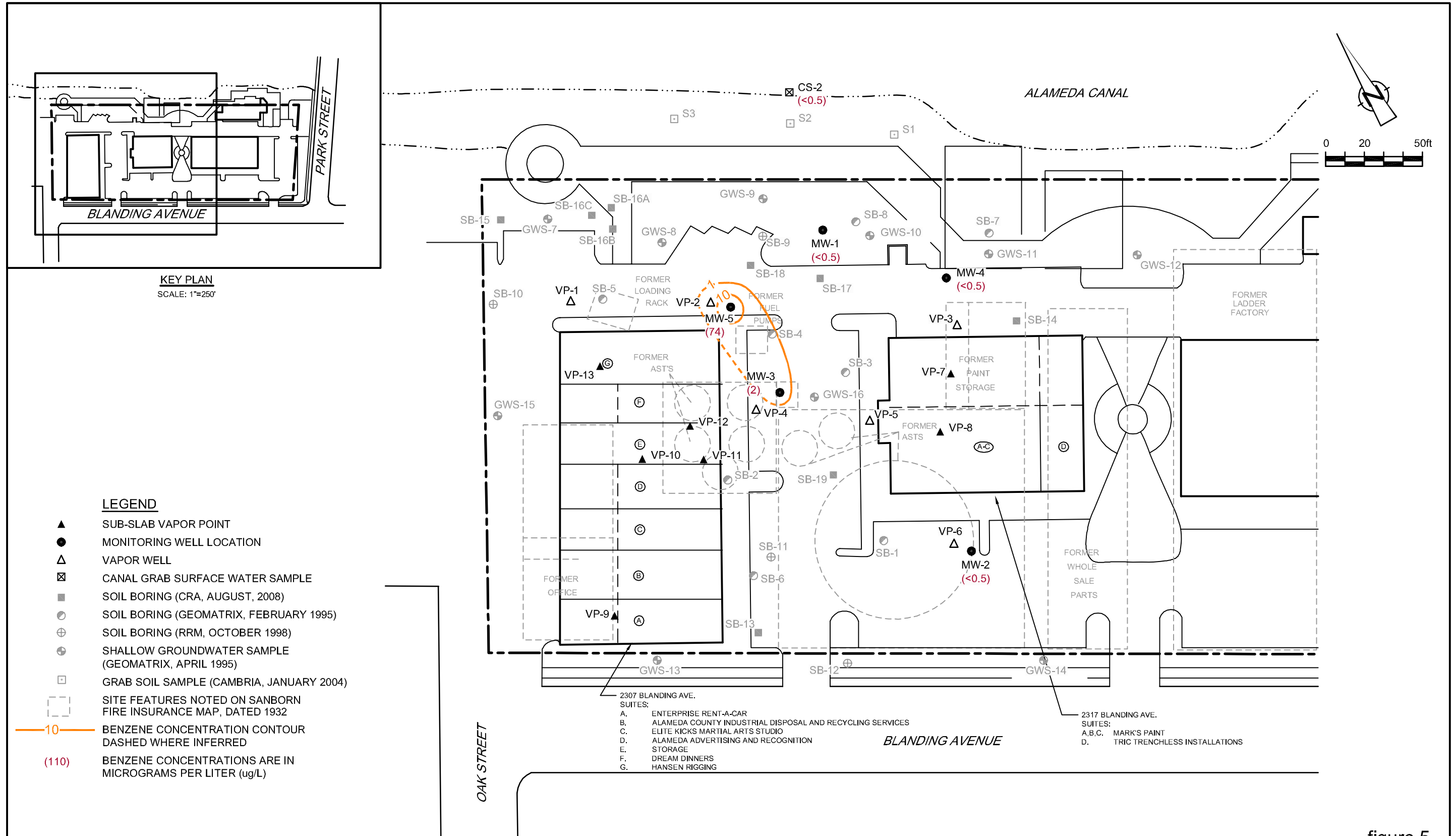


figure 5  
 BENZENE CONCENTRATIONS IN GROUNDWATER - JANUARY 19, 2010  
 FORMER SIGNAL OIL BULK PLANT (CHEVRON FACILITY 20-6127)  
 2301-2311 BLANDING AVENUE  
 Alameda, California

NOTE:  
 WELL LOCATIONS ARE BASED ON MAP PROVIDED BY MORROW SURVEYING  
 (DWG NO.0857-149 ct, DATED 7-30-09).  
 ALL OTHER LOCATIONS ARE APPROXIMATE.





## TABLE

**WELL CONSTRUCTION SPECIFICATIONS  
FORMER SIGNAL OIL MARINE STORAGE AND DISTRIBUTION FACILITY  
(CHEVRON BULK PLANT 20-6127)  
2301-2311 BLANDING AVENUE  
ALAMEDA, CALIFORNIA**

<i>Well ID</i>	<i>Date Installed</i>	<i>TOC</i>	<i>Total Depth (fbg)</i>	<i>Casing Diameter <sup>1</sup> (inches)</i>	<i>Slot Size (inches)</i>	<i>Screen Interval (fbg)</i>	<i>Filter Pack (fbg)</i>	<i>Status</i>
MW-1	8/15/1990	13.49	19.5	2	0.020	4-19	3-19.5	Active
MW-2	6/19/2009	10.63	18	2	0.020	10.5-15.5	10-16	Active
MW-3	6/19/2009	10.72	18.5	2	0.020	13.5-18.5	12.5-18.5	Active
MW-4	6/19/2009	11.40	20.5	2	0.020	15.5-20.5	14.5-20.5	Active
MW-5	6/23/2009	10.50	18	2	0.020	13-18	12-18	Active
VP-1 <sup>2</sup>	7/9/2008	NS	4.25	1	0.020	3.75-4.25	3.5-4.5	Vapor only
VP-2 <sup>2</sup>	7/9/2008	NS	4.75	1	0.020	4.25-4.75	4-5	Vapor only
VP-3 <sup>2</sup>	7/14/2008	NS	5.75	1	0.020	5.25-5.75	5-6	Vapor only
VP-4 <sup>2</sup>	7/14/2008	NS	5.75	1	0.020	5.25-5.75	5-6	Vapor only
VP-5 <sup>2</sup>	7/14/2008	NS	5.75	1	0.020	5.25-5.75	5-6	Vapor only
VP-6 <sup>2</sup>	7/9/2008	NS	5.75	1	0.020	5.25-5.75	5-6	Vapor only
VP-7 <sup>3</sup>	7/17/2009	NS	0.5	0.25	NA	NA	NA	Vapor only
VP-8 <sup>3</sup>	7/17/2009	NS	0.5	0.25	NA	NA	NA	Vapor only
VP-9 <sup>3</sup>	7/22/2009	NS	0.5	0.25	NA	NA	NA	Vapor only
VP-10 <sup>3</sup>	7/22/2009	NS	0.5	0.25	NA	NA	NA	Vapor only
VP-11 <sup>3</sup>	7/17/2009	NS	0.5	0.25	NA	NA	NA	Vapor only
VP-12 <sup>3</sup>	7/22/2009	NS	0.5	0.25	NA	NA	NA	Vapor only
VP-13 <sup>3</sup>	7/22/2009	NS	0.5	0.25	NA	NA	NA	Vapor only

**Abbreviations / Notes**

TOC = Top of casing elevation (feet above mean sea level)

<sup>1</sup> = Schedule 40 PVC casing material<sup>2</sup> = Wells VP-1 through VP-6 are vapor wells<sup>3</sup> = Wells VP-7 through VP-13 are sub-slab vapor points

fbg = Feet below grade

NA = Not applicable

NS = Not surveyed



ATTACHMENT A

SUMMARY OF SITE HISTORY AND PREVIOUS ENVIRONMENTAL WORK

## **SUMMARY OF SITE HISTORY AND PREVIOUS ENVIRONMENTAL WORK**

*Former Signal Oil Bulk Plant 20-6127  
2301-2311 Blanding Avenue, Alameda, California*

### **Site History:**

A Sanborn map dated 1897 showed the site as occupied by several residential structures and outbuildings; the southeast portion of the site was shown as occupied by a laundry facility and a blacksmith. From at least 1930 until approximately 1961, the northwestern portion of the site was occupied by a petroleum bulk plant operated by Signal Oil & Gas Company. Former bulk plant facilities consisted of one large and seven smaller gasoline aboveground storage tanks (ASTs) within concrete secondary containment, underground piping, an office building, a loading rack, and a small structure containing gasoline pumps (Figure 2). The northeast portion of the facility was shown as occupied by a structure identified as an auto garage and also used for paint storage on Sanborn maps dated between 1932 and 1950. A rail spur was shown to service the facilities on Blanding Avenue. The central portion of the site was shown as occupied by two structures identified as wholesale tires and a can warehouse. An additional larger structure was shown in the central portion of the site that was identified as vacant on the 1948 Sanborn map and as a ladder factory on the 1950 Sanborn map. Several structures appeared to be present in the southeast portion of the site in the 1939 aerial photograph. However, only one or two small sheds were shown in this area on the 1948 and 1950 Sanborn maps. In the 1958 aerial photograph, the ladder factory structure no longer appeared present and the southeast portion of the site appeared vacant and used for parking. Between 1957 and 1963, the buildings at the site were reportedly removed; it is assumed that the ASTs and piping were also removed at this time. In the 1965 aerial photograph, all the bulk plant facilities appear to have been removed and the majority of the site appears occupied by a construction materials yard with several small structures. Several additional structures also appear present in the southeast portion of the site. From 1973 to 1983, the northwestern portion of the site reportedly was used as a construction yard and for boat repair activities; and the southeastern portion was occupied by a restaurant, paved parking area, and a possible automobile sales lot. In 1987, the site was redeveloped with the current configuration.

### **1995 Soil and Groundwater Investigation:**

In February 1995, Geomatrix Consultants, Inc. (Geomatrix) advanced eight soil borings (SB-1 through SB-8) to approximately 10 feet below grade (fbg) in the northwestern portion of the site to evaluate if previous site uses had impacted soil and groundwater quality. Groundwater was not encountered in the borings. Two to three soil samples were collected at various depths from each boring for laboratory analysis. Nineteen samples were analyzed for total petroleum hydrocarbons as gasoline (TPHg) and diesel (TPHd); and benzene, toluene, ethylbenzene, and xylenes (BTEX). TPHg was detected in six of the samples at concentrations ranging from 4.0 to 2,000 milligrams per kilogram (mg/kg). TPHd was detected in the majority of the samples at concentrations ranging from 10 to 250 mg/kg. BTEX were also detected in several of the



samples (benzene up to 3.7 mg/kg). The highest concentrations of petroleum hydrocarbons generally were detected in borings SB-2 and SB-4 located in the vicinity of the former ASTs and gasoline pump, respectively, between 4 and 7 fbg. One sample from each boring (depths ranging from 0.5 to 3 fbg) was also analyzed for CAM 17 metals. The detected metals concentrations generally appeared to be within the range of natural background levels with the exception of slightly elevated arsenic in a few samples. Arsenic was detected in the samples collected at 1 fbg from borings SB-3, SB-4, and SB-6 at 68 mg/kg, 46 mg/kg, and 130 mg/kg, respectively. As a result, deeper samples collected from borings SB-3 (6.5 fbg) and SB-6 (8 fbg) were also analyzed for arsenic; arsenic was not detected in the sample collected from SB-3, but was detected at 2.5 mg/kg in the sample collected from SB-6. Based on these results, the soil impacted with arsenic appeared to be of limited vertical extent. Three soil samples (SB-4-7', SB-5-6', and SB-8-7') were also analyzed for VOCs, which were not detected. Based on the soil analytical results, a shallow groundwater survey was recommended to evaluate if groundwater had been impacted by petroleum hydrocarbons.

In April 1995, Geomatrix collected grab-groundwater samples from 10 shallow borings (GWS-7 through GWS-16) drilled to depths of 15 to 21.5 fbg at the site. Borings GWS-7 through GWS-12 were located in the northeastern portion of the site adjacent to Alameda Canal to evaluate if impacted groundwater was flowing toward the canal; based on an assumed groundwater flow direction toward the canal. Borings GWS-13 through GWS-15 were located on the southwest and northwest property boundaries in the assumed upgradient and perimeter crossgradient directions to evaluate the quality of groundwater coming onto the site. Boring GWS-16 was located to the northeast of the former ASTs and was drilled approximately 6 feet deeper than the remaining borings to evaluate deeper groundwater quality. The groundwater samples were analyzed for TPHg, BTEX, and TPHd; the samples were filtered by the laboratory to remove turbidity and a silica-gel cleanup was performed to remove non-petroleum organic matter prior to the TPHd analysis. TPHg was detected in the samples collected from borings GWS-8 through GWS-11 and GWS-16 at concentrations ranging from 70 (GWS-16) to 22,000 micrograms per liter ( $\mu\text{g/L}$ ) (GWS-9). TPHd was detected in the samples collected from borings GWS-8 through GWS-11 at concentrations ranging from 60 (GWS-8) to 1,200  $\mu\text{g/L}$  (GWS-9). Benzene was detected in the samples collected from borings GWS-8 through GWS-10 and GWS-16 at concentrations of 36  $\mu\text{g/L}$ , 6,200  $\mu\text{g/L}$ , and 880  $\mu\text{g/L}$ , respectively. Toluene, ethylbenzene, and xylenes (up to 1,200  $\mu\text{g/L}$ ) were also detected in several of the samples. The maximum concentrations were detected in boring GWS-9 located downgradient of the gasoline pump and loading rack. Petroleum hydrocarbons were not detected in the upgradient borings GWS-13 through GWS-15. The deeper sample (GWS-16) contained only low to trace hydrocarbon concentrations.

A black granular material was encountered in boring GWS-7 in the northern corner of the site from approximately 2.5 to 6 fbg. This material appeared similar to a small pile of black granular material observed on the northwestern property boundary that appeared to have originated from the adjacent property (a metal fabrication company). A sample of this material was collected and analyzed for TPHd, VOCs, semi-VOCs, and CAM 17 metals. An elevated concentration of copper (1,700 mg/kg) was detected in the sample. The detected concentration did not exceed the Total Threshold Limit Concentration (TTLC) of 2,500 mg/kg, which is the

concentration above which a waste may be considered hazardous in California. The sample was also analyzed for soluble copper using the Waste Extraction Test (WET) method; which was detected at 0.04 milligrams per liter (mg/L). The detected soluble lead concentration did not exceed the Soluble Threshold Limit Concentration (STLC) of 25 mg/L, which is also the concentration above which a waste may be considered hazardous in California. Details of this investigation were presented in the report titled *Soil Investigation and Shallow Groundwater Survey, Northwestern Portion of the Park Street Landing Site*, prepared by Geomatrix and dated September 1995.

#### **1998 RBCA Tier 1 Evaluation:**

In July 1998, RRM, Inc. (RRM) performed a Tier 1 Risk-Based Corrective Action (RBCA) assessment to evaluate the potential health risks posed by residual petroleum hydrocarbons in soil and groundwater at the site. Based on the results, RRM recommended the collection of site-specific data to complete a Tier 2 RBCA evaluation; the identification of the beneficial uses of groundwater beneath the site; an evaluation of background water quality in Alameda Canal; and to provide evidence that biodegradation was reducing hydrocarbon concentrations. Details of this investigation were presented in the report entitled *Risk-Based Corrective Action (RBCA) Tier 1 Evaluation, Park Street Landing Site*, prepared by RRM and dated July 24, 1998.

#### **1998 Soil and Groundwater Investigation:**

In October 1998, RRM performed an additional soil and groundwater investigation at the site. The purpose of the investigation was to:

1) collect site-specific data to complete a Tier 2 RBCA evaluation; 2) identify the beneficial uses of groundwater beneath the site; 3) evaluate the background water quality in Alameda Canal; and 4) evaluate whether biodegradation of petroleum hydrocarbons was occurring beneath the site. Four additional borings (SB-9 through SB-12) were advanced to depths of 15 to 18 fbg during the investigation. A total of eight soil samples were collected at various depths from the borings and analyzed for TPHg, TPHd, BTEX, and methyl tertiary butyl ether (MTBE). TPHg was detected in the soil samples collected at 5 and 13 fbg from boring SB-9 (130 and 900 mg/kg, respectively); and in the sample collected at 6 fbg from boring SB-11 (140 mg/kg). TPHd was detected in the soil samples collected at 5, 13, and 15 fbg from boring SB-9 (3,300 mg/kg, 1,300 mg/kg, and 1.2 mg/kg, respectively); in the sample collected at 5.5 fbg from boring SB-10 (130 mg/kg); and in the sample collected at 6 fbg from boring SB-11 (60 mg/kg). BTEX (up to 3.3 mg/kg) were detected in the soil samples collected from borings SB-9 and SB-11; MTBE (using EPA Method 8020) was only detected in the sample collected at 13 fbg from boring SB-9 (12 mg/kg). Following the initial TPHd analysis, two rounds of silica gel cleanup followed by TPHd analysis were performed on the soil samples from boring SB-9. The detected TPHd concentrations were reduced after each round, indicating that biodegradation was occurring, and natural organic matter was present in the subsurface.

Grab-groundwater samples were collected from each boring and analyzed for TPHg, TPHd, BTEX, and MTBE. TPHg was only detected in the samples collected from borings SB-9



(14,000 µg/L) and SB-11 (310 µg/L). TPHd was detected in the samples collected from borings SB-9 (83,000 µg/L), SB-10 (97 µg/L), and SB-11 (270 µg/L). Benzene and MTBE (using EPA Method 8020) were only detected in the sample collected from boring SB-9 (1,400 and 260 µg/L, respectively); the sample was re-analyzed for MTBE using EPA Method 8260, and MTBE was not detected. Toluene, ethylbenzene, and xylenes (up to 630 µg/L) were detected in the samples collected from borings SB-9 and SB-11. As with the soil samples, a silica-gel cleanup reduced the detected TPHd concentrations. Based on the depth to water in the borings, and the elevation of the borings, the groundwater flow direction was calculated to be northerly. Based on natural biodegradation indicator parameters in groundwater (dissolved oxygen, oxidation-reduction potential, nitrate, and sulfate), it appeared that petroleum hydrocarbons were being degraded both aerobically and anaerobically; although it appeared that anaerobic processes dominated.

Three grab-water samples (CS-1 through CS-3) were collected from Alameda Canal (Figure 2) and analyzed for TPHg, TPHd, BTEX, and MTBE; which were not detected. Water level measurements were collected from the Alameda Canal and the four temporary wells placed in borings SB-9 through SB-12 to evaluate potential tidal influence on groundwater beneath the site. The fluctuations in borings SB-10 through SB-12 were minimal indicating that groundwater was tidally influenced to a limited degree in these areas. A more significant fluctuation was observed in SB-9; suggesting that groundwater in this area was tidally influenced, and tidal fluctuations would tend to stabilize the petroleum hydrocarbon plume in this area. Two concrete sea walls separated shallow groundwater beneath the site from canal water; likely causing the limited tidal influence. Based on the site data, relevant beneficial uses, and associated water quality parameters, the most applicable beneficial use of groundwater beneath the site was determined to be freshwater replenishment to surface water.

A well survey was performed for a ½-mile radius around the site. Nine wells were identified within the search radius (one recovery well, one irrigation well, five extraction wells, and two industrial wells). All the wells were either located up-gradient of the site or across the Alameda Canal. Based on the results of the Tier 2 RBCA evaluation, soil and groundwater petroleum hydrocarbon concentrations at the site did not exceed the site-specific target levels (SSTLs). Details of this investigation were presented in the report entitled *Soil and Groundwater Investigation Results, Former Signal Oil Marine Terminal*, prepared by RRM and dated May 7, 1999.

#### **2000 Monitoring Well Installation:**

In December 2000 Gettler-Ryan Inc., under the supervision of Delta Environmental Consultants, Inc. (Delta), installed one groundwater monitoring well (MW-1) along the northeastern portion of the site adjacent to the Alameda Canal. Soil samples were collected at depths of 5, 10, and 15 fbg from the well boring and analyzed for TPHg, TPHd, BTEX, and MTBE. TPHg was only detected in the sample collected at 10 fbg (320 mg/kg). TPHd was only detected in the samples collected at 5 and 10 fbg (30 and 160 mg/kg, respectively). Low concentrations of BTEX were detected in all the samples; MTBE was not detected in any of the samples. The initial groundwater sample collected from the well contained TPHg, TPHd, and benzene at

5,210 µg/L, 1,100 µg/L, and 868 µg/L, respectively. Details of this investigation were presented in the report entitled *Monitoring Well Installation Report*, prepared by Delta and dated April 10, 2001.

#### **2004 Soil Investigation:**

In January 2004, Cambria Environmental Technology, Inc. (Cambria) collected three surface soil samples (S1, S2, and S3) from the bank above the western shore of the Alameda Canal. Sample S2 was collected directly down-slope of well MW-1 near a water seep observed on the slope above the canal. Samples S1 and S3 were collected approximately 70 feet east and 90 feet north of well MW-1, respectively, to evaluate background concentrations. The three samples were analyzed for TPHg, TPHd, BTEX, and MTBE. TPHg, BTEX, and MTBE were not detected in any of the samples. TPHd was detected in samples S1, S2, and S3 at 14 mg/kg, 220 mg/kg, and 220 mg/kg, respectively. The laboratory chromatographs indicated that the hydrocarbon pattern observed in these soil samples was not typical of diesel fuel. Therefore, it was concluded the TPHd detections may have represented either highly-degraded diesel fuel from various historical onsite and nearby operations, or residual organic material of unknown origin present in local fill material. Details of this investigation were presented in the report entitled *Soil Sampling Report*, prepared by Cambria and dated February 18, 2004.

Based on generally decreasing petroleum hydrocarbon concentrations in well MW-1 observed during quarterly monitoring, Cambria submitted a case closure request to ACEH dated January 10, 2006. In response to this request, and in a letter dated October 17, 2007, the ACEH requested the collection of additional data to substantiate the conclusion that petroleum hydrocarbons were not migrating and discharging into Alameda Canal. In addition, the potential for vapor intrusion was to be evaluated. Therefore, CRA prepared and submitted *Soil Boring and Vapor Point Installation Work Plan*, dated January 10, 2008. In a letter dated January 30, 2008, the ACEH approved the work plan, with several provisions.

#### **2008 Site Investigation:**

In July 2008, CRA advanced six soil borings (SB-13 through SB-15 and SB-17 through SB-19) to a maximum depth of 16 fbg, and installed and sampled six permanent soil vapor wells (VP-1 through VP-6) to depths of 4.5 to 6 fbg. Soil boring SB-16 was cleared to 3 fbg but could not be completed due to refusal encountered at three locations (16A, B, and C). Soil boring SB-16 was cleared to 3 fbg but could not be completed due to refusal encountered at three locations (16A, B, and C).

Soil analytical data indicated that the majority of TPHd and TPHg concentrations in soil are generally located in the area of and downgradient of the former ASTs. The highest concentrations were detected in boring VP-4 at 5 fbg. Relatively low concentrations of TPHd and TPHg were detected in the perimeter borings. Low concentrations of petroleum-related VOCs were also detected in the majority of the soil samples. The BTEX and VOC concentrations generally did not exceed the ESLs, with the exception of a few samples. Concentrations generally appeared to attenuate or were significantly reduced at 10 fbg.

Generally, concentrations of metals were consistent with background levels and only exceeded the ESLs in a few of the samples. Metals in shallow soil across the northwest portion of the site do not appear to be a result of former bulk plant operations. The metals do not appear to have impacted groundwater as only barium was detected in well MW-1.

The highest concentrations of hydrocarbons in groundwater were generally located downgradient of the former ASTs. TPHd, TPHg, and benzene were detected in downgradient boring SB-18 at 19,000 µg/L, 3,800 µg/L, and 590 µg/L, respectively; but only at 1,600 µg/L, 650 µg/L, and 3 µg/L, respectively, in boring SB-19 adjacent to the former large AST. Only relatively low concentrations of TPHd (up to 750 µg/L) were detected in perimeter borings SB-13, SB-14, and SB-15; and as evidenced by the work performed by RRM, some or most of the detected TPHd may be due to natural organic matter. The extent of the impacted groundwater is well-defined by borings GWS-7, GWS-12 through GWS-15, SB-10 (following silica gel cleanup), and SB-12. Chlorinated solvents were not detected in any of the soil samples collected, and generally were not detected in the groundwater samples with the exception of low concentrations of TCE, cis-1,2-DCE, and vinyl chloride in the sample collected from boring SB-15 in the northeast corner of the site.

The highest hydrocarbon concentrations in soil gas were detected in vapor wells VP-4, VP-5, and VP-6 located in the area of the former ASTs. Significantly lower concentrations were detected in vapor wells VP-1 and VP-2 located downgradient of VP-4. Chlorinated solvents were not detected in the soil vapor samples. Additional details of this investigation are presented in CRA's report entitled *Site Investigation Report*, dated October 2008.

#### **2009 Monitoring Well Installation and Sub-Slab Vapor Sampling:**

In June 2009, CRA installed monitoring wells MW-2 through MW-5 to total depths of 16 to 20.5 fbg in order to further evaluate groundwater quality beneath the site. The new monitoring wells were installed within the former ASTs (MW-3), and north (MW-5), south (MW-2), and east (MW-4) of the former ASTs. Soil analytical data indicated that the majority of TPHd and TPHg concentrations in soil are located north to south through the former ASTs and generally decreases with depth. The highest TPHd concentration detected was from well boring MW-3 at 4 fbg at a concentration of 610 mg/kg. The highest TPHg concentration detected was from well boring MW-2 at 4.5 fbg at 1,100 mg/kg. No petroleum hydrocarbons were detected in perimeter well boring MW-4. No grab-groundwater samples were collected.

CRA also installed sub-slab vapor points beneath the two western buildings at the site in order to further evaluate potential vapor intrusion beneath the buildings. Two sub-slab vapor points (VP-7 and VP-8) were installed inside 2317 Blanding Avenue and five sub-slab vapor points (VP-9 through VP-13) were installed inside 2307 Blanding Avenue. The highest hydrocarbon concentrations in soil gas were detected in vapor points VP-9 and VP-13, located west-southwest of the former ASTs. Lower concentrations were detected in vapor points VP-8, and VP-10 through VP-12. All detected concentrations were below the shallow soil gas ESL of 29,000 micrograms per cubic meter (µg/m<sup>3</sup>). Target chlorinated solvents were not detected in



the soil vapor samples. Additional details of this investigation are presented in CRA's *Well Installation and Sub-Slab Vapor Sampling Report*, dated September 8, 2009.

**2009 Vapor Sampling:**

In October 2009, CRA re-install and re-sample sub-slab vapor points VP-9 through VP-13 due to ambient air leaks detected during the initial sampling and to further evaluate the elevated soil vapor concentrations detected in vapor wells VP-1 through VP-6. The results of the re-sampling of the vapor wells VP-1 through VP-5 located outside of the buildings were consistent with previous results for vapor wells VP-3 through VP-5. However, results of the re-sampling of vapor wells VP-1 and VP-2 indicated no TPHg or benzene vapor concentrations at each of these locations, which is not consistent with the initial sample results from August 2008. Additional details of this investigation are presented in CRA's *Vapor Sampling Report*, dated December 2, 2009.

ATTACHMENT B

*G-R GROUNDWATER MONITORING AND SAMPLING REPORT*



**TRANSMITTAL**

February 18, 2010  
G-R #386498

**TO:** Mr. Brian Silva  
Conestoga-Rovers & Associates  
10969 Trade Center Drive, Suite 107  
Rancho Cordova, California 95670

**CC:** Mr. Mike Bauer  
Chevron EMC  
145 S. State College Blvd.,  
Room 4089  
Brea, California 92821  
**(VIA PDF)**

**FROM:** Deanna L. Harding  
Project Coordinator  
Gettler-Ryan Inc.  
6747 Sierra Court, Suite J  
Dublin, California 94568

**RE:** **Chevron #206127**  
**2301-2337 Blanding Avenue**  
**Alameda, California**  
**(Former Signal Oil Marine Terminal)**

WE HAVE ENCLOSED THE FOLLOWING:

COPIES	DATED	DESCRIPTION
1	February 10, 2010	Groundwater Monitoring and Sampling Report First Quarter Event of January 19, 2010

**COMMENTS:**

Pursuant to your request, we are providing you with a copy of the above referenced report for **your use and distribution to the following (via PDF):**

Mr. Steven Plunkett, Alameda County Health Care Services, Dept. of Environmental Health,  
1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502-6577  
**(Distributed by Conestoga-Rovers & Associates via PDF)**

Enclosures

trans/206127-SHF



## WELL CONDITION STATUS SHEET

Client/Facility #: Chevron #206127  
 Site Address: 2301 - 2337 Blanding Avenue  
 City: Alameda, CA

Job # 386498  
 Event Date: 1-19-10  
 Sampler: JA

WELL ID	Vault Frame Condition	Gasket/O-Ring (M)missing	BOLTS (M) Missing (R) Replaced	Bolt Flanges B= Broken S= Stripped R=Retap	APRON Condition C=Cracked B=Broken G=Gone	Grout Seal (Deficient) inches from TOC	Casing (Condition prevents tight cap seal)	REPLACE LOCK Y/N	REPLACE CAP Y/N	WELL VAULT Manufacture/Size/ # of Bolts	Pictures Taken Yes / No
MW-1	O.K	O.K	O.K	O.K	O.K	O.K	O.K	N	N	12" EMCO/2	NO
MW-2	↓	↓	↓	↓	↓	↓	↓	↓	↓	"	↓
MW-3	↓	↓	↓	↓	↓	↓	↓	↓	↓	"	↓
MW-4	↓	↓	↓	↓	↓	↓	↓	↓	↓	"	↓
MW-5	↓	↓	↓	↓	↓	↓	↓	↓	↓	"	↓

Comments \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



February 10, 2010  
G-R Job #386498

Mr. Mike Bauer  
Chevron Environmental Management Company  
145 S. State College Blvd., Room 4089  
Brea, CA 92821

**First Quarter Event of January 19, 2010**  
Groundwater Monitoring & Sampling Report  
Chevron #206127 (Former Signal Oil Marine Terminal)  
2301-2337 Blanding Avenue  
Alameda, California

Dear Mr. Bauer:


This report documents the most recent groundwater monitoring and sampling events performed by Gettler-Ryan Inc. (G-R) at the referenced site. All field work was conducted in accordance with G-R Standard Operating Procedure - Groundwater Sampling (attached).

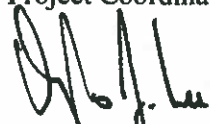
Static groundwater level was measured and the well was checked for the presence of separate-phase hydrocarbons. Static water level data, groundwater elevation, and separate-phase hydrocarbon thickness (if any) are presented in the attached Table 1. A Potentiometric Map is included as Figure 1.

Groundwater samples were collected from the monitoring well and submitted to a state certified laboratory for analyses. The field data sheet for this event is attached. Analytical results are presented in the table(s) listed below. The chain of custody document and the laboratory analytical reports are also attached. All groundwater and decontamination water generated during sampling activities was removed from the site, per the Standard Operating Procedure.

Please call if you have any questions or comments regarding this report. Thank you.

Sincerely,

  
Deanna L. Harding  
Project Coordinator

  
Douglas J. Lee

Senior Geologist, P.G. No. 6882

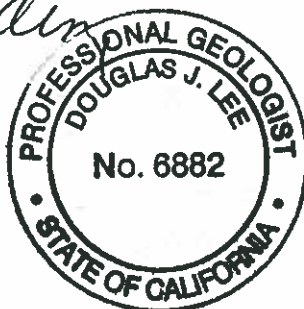
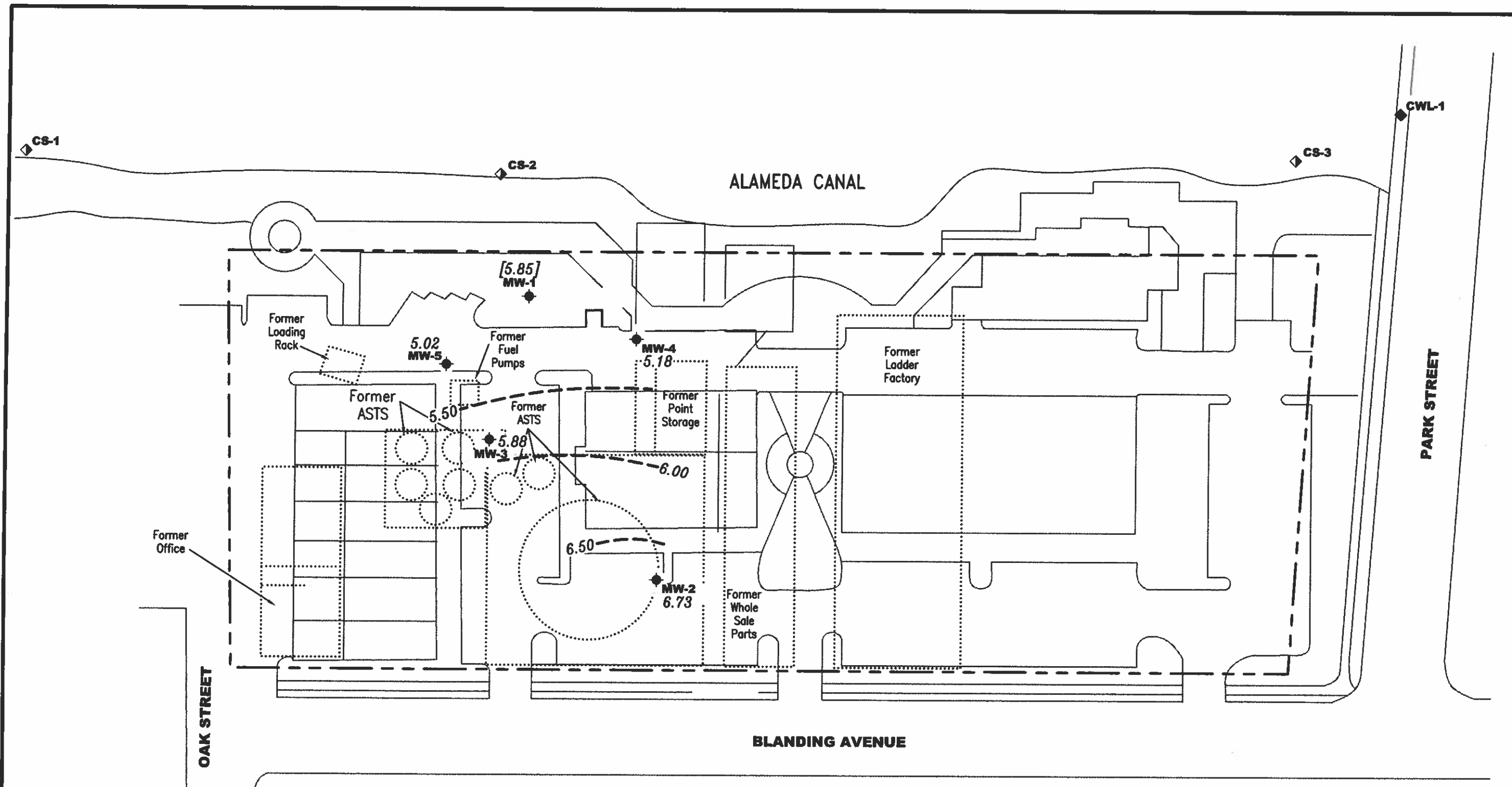
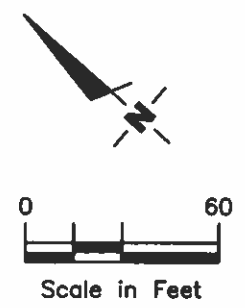
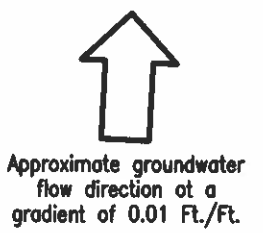


Figure 1: Potentiometric Map  
Table 1: Groundwater Monitoring Data and Analytical Results  
Table 2: Groundwater Analytical Results - Metals  
Attachments: Standard Operating Procedure - Groundwater Sampling  
Field Data Sheets  
Chain of Custody Document and Laboratory Analytical Reports



**EXPLANATION**

- ◆ Groundwater monitoring well
- ◇ Canal grab surface water sample
- 99.99 Groundwater elevation in feet referenced to Mean Sea Level
- - - 99.99 - - - Groundwater elevation contour, dashed where inferred
- [99.99] Not used in contouring - screened at different interval



Source: Figure modified from drawing provided by Conestoga-Rovers & Associates, Figure 1, Site Plan, Dated: 8/20/09

**POTENTIOMETRIC MAP**  
 Chevron #206127 (Former Signal Oil Marine Terminal)  
 2301-2337 Blanding Avenue  
 Alameda, California

**GETTLER - RYAN INC.**  
 6747 Sierra Court, Suite J  
 Dublin, CA 94568  
 (925) 551-7555

PROJECT NUMBER: 386498  
 DATE: January 19, 2010  
 REVISED DATE:



**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
**Chevron #206127 (Former Signal Oil Marine Terminal)**  
**2301-2337 Blanding Avenue**  
**Alameda, California**

WELL ID/ DATE	TOC* (%)	DTW (ft.)	GWE (msl)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
<b>MW-1</b>										
01/23/01 <sup>1</sup>	—	7.16	—	1,100 <sup>2,3</sup>	5,210 <sup>4</sup>	868	<50.0	<50.0	<50.0	<250
04/09/01	10.62	8.12	2.50	1,200 <sup>6</sup>	3,000 <sup>5</sup>	920	<20	<20	<20	<100
07/30/01	10.62	9.15	1.47	550 <sup>3,8</sup>	2,000 <sup>7</sup>	730	13	<5.0	<5.0	<25
10/08/01	10.62	7.86	2.76	2,200 <sup>9</sup>	1,200	120	2.4	5.9	6.4	<2.5
01/13/02	10.62	7.02	3.60	3,300 <sup>1</sup>	930	320	0.78	0.87	3.8	<2.5
04/08/02	10.62	9.60	1.02	1,200 <sup>3</sup>	960	50	1.4	2.6	9.0	<2.5
07/31/02	10.62	9.27	1.35	2,800 <sup>3</sup>	930	64	1.4	1.9	11	<5.0
10/15/02	10.62	8.00	2.62	1,000 <sup>3</sup>	620	25	0.78	1.4	4.3	<2.5
01/14/03	10.62	7.05	3.57	960 <sup>3</sup>	1,600	20	1.3	1.3	<1.5	<2.5
04/15/03	10.62	8.02	2.60	920 <sup>3</sup>	870	56	1	1.4	3.1	<2.5
07/16/03 <sup>10</sup>	10.62	10.08	0.54	1,400 <sup>3</sup>	780	85	1	0.8	0.7	<0.5
10/18/03 <sup>10</sup>	10.62	8.51	2.11	1,200 <sup>3</sup>	640	42	0.8	<0.5	0.5	<0.5
01/22/04 <sup>10</sup>	10.62	8.95	1.67	1,500 <sup>3</sup>	440	18	<0.5	<0.5	<0.5	<0.5
04/23/04 <sup>10</sup>	10.62	8.95	1.67	2,200 <sup>3</sup>	410	10	<0.5	<0.5	<0.5	<0.5
07/23/04 <sup>10</sup>	10.62	9.21	1.41	1,800 <sup>3</sup>	400	6	<0.5	<0.5	<0.5	<0.5
10/22/04 <sup>10</sup>	10.62	8.36	2.26	2,200 <sup>3</sup>	150	2	<0.5	<0.5	<0.5	<0.5
01/28/05 <sup>10</sup>	10.62	7.09	3.53	1,200 <sup>3</sup>	55	8	<0.5	<0.5	<0.5	<0.5
04/26/05 <sup>10</sup>	10.62	7.84	2.78	480 <sup>3</sup>	<50	5	<0.5	<0.5	<0.5	<0.5
07/15/05 <sup>10</sup>	10.62	8.12	2.50	610 <sup>3,11</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/14/05 <sup>10</sup>	10.62	8.07	2.55	920 <sup>3,12</sup>	<50	10	<0.5	<0.5	<0.5	<0.5
01/12/06 <sup>10</sup>	10.62	6.98	3.64	960 <sup>1,12</sup>	<50	6	<0.5	<0.5	<0.5	<0.5
04/13/06 <sup>10</sup>	10.62	7.04	3.58	1,200 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/13/06 <sup>10</sup>	10.62	7.13	3.49	1,200 <sup>3</sup>	92	14	<0.5	<0.5	<0.5	<0.5
10/17/06 <sup>10</sup>	10.62	7.64	2.98	990 <sup>3</sup>	<50	3	<0.5	<0.5	<0.5	<0.5
01/16/07 <sup>10</sup>	10.62	7.09	3.53	840 <sup>3</sup>	83	4	<0.5	<0.5	<0.5	<0.5
04/17/07 <sup>10</sup>	10.62	7.11	3.51	1,200 <sup>3</sup>	57	<0.5	<0.5	<0.5	<0.5	<0.5
07/17/07 <sup>10</sup>	10.62	7.41	3.21	1,100 <sup>3</sup>	120	8	<0.5	<0.5	<0.5	<0.5
10/16/07 <sup>10</sup>	10.62	7.55	3.07	750 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/16/08 <sup>10</sup>	10.62	6.98	3.64	1,700 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/16/08 <sup>10</sup>	10.62	7.36	3.26	1,100 <sup>3</sup>	62	<0.5	<0.5	<0.5	<0.5	<0.5
07/16/08 <sup>10</sup>	10.62	7.89	2.73	580 <sup>3</sup>	93	3	<0.5	<0.5	<0.5	<0.5
10/15/08 <sup>10</sup>	10.62	7.46	3.16	740 <sup>3</sup>	56	0.7	<0.5	<0.5	0.8	<0.5

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
 Chevron #206127 (Former Signal Oil Marine Terminal)  
 2301-2337 Blanding Avenue  
 Alameda, California

<b>WELL ID/ DATE</b>	<b>TOC* (ft.)</b>	<b>DTW (ft.)</b>	<b>GWE (msl)</b>	<b>TPH-DRO (µg/L)</b>	<b>TPH-GRO (µg/L)</b>	<b>B (µg/L)</b>	<b>T (µg/L)</b>	<b>E (µg/L)</b>	<b>X (µg/L)</b>	<b>MTBE (µg/L)</b>
<b>MW-1 (cont)</b>										
01/21/09 <sup>10</sup>	10.62	7.19	3.43	390 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/15/09 <sup>10</sup>	10.62	6.93	3.69	1,400 <sup>3</sup>	80	0.7	<0.5	<0.5	<0.5	<0.5
07/03/09 <sup>10</sup>	13.49	8.08	5.41	1,300 <sup>3</sup>	51	<0.5	<0.5	<0.5	<0.5	<0.5
10/01/09 <sup>10</sup>	13.49	9.52	3.97	1,500 <sup>3</sup>	86	<0.5	<0.5	<0.5	<0.5	<0.5
01/19/10 <sup>10</sup>	13.49	7.64	5.85	340 <sup>3,15</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
<b>MW-2</b>										
06/30/09 <sup>1</sup>	10.63	3.80	6.83	--	--	--	--	--	--	--
07/03/09 <sup>14</sup>	10.63	3.91	6.72	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	--
10/01/09 <sup>14</sup>	10.63	4.11	6.52	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	--
01/19/10 <sup>14</sup>	10.63	3.90	6.73	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	--
<b>MW-3</b>										
06/30/09 <sup>1</sup>	10.72	4.61	6.11	--	--	--	--	--	--	--
07/03/09 <sup>14</sup>	10.72	4.57	6.15	170 <sup>3</sup>	310	1	<0.5	2	<0.5	--
10/01/09 <sup>14</sup>	10.72	5.22	5.50	1,000 <sup>3</sup>	52	<0.5	<0.5	<0.5	<0.5	--
01/19/10 <sup>14</sup>	10.72	4.84	5.88	1,800 <sup>3</sup>	120	2	<0.5	<0.5	<0.5	--
<b>MW-4</b>										
06/30/09 <sup>1</sup>	11.40	6.02	5.38	--	--	--	--	--	--	--
07/03/09 <sup>14</sup>	11.40	5.85	5.55	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	--
10/01/09 <sup>14</sup>	11.40	6.95	4.45	370 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	--
01/19/10 <sup>14</sup>	11.40	6.22	5.18	110 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	--

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
Chevron #206127 (Former Signal Oil Marine Terminal)  
2301-2337 Blanding Avenue  
Alameda, California

WELL ID/ DATE	TOC* (%)	DTW (ft)	GWE (msl)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
<b>MW-5</b>										
06/30/09 <sup>1</sup>	10.50	5.20	5.30	--	--	--	--	--	--	--
07/03/09 <sup>14</sup>	10.50	5.17	5.33	110 <sup>3</sup>	930	33	2	0.6	3	--
10/01/09 <sup>14</sup>	10.50	5.66	4.84	2,500 <sup>3</sup>	1,800	57	3	0.9	5	--
01/19/10 <sup>14</sup>	10.50	5.48	5.02	2,600 <sup>3</sup>	2,200	74	4	1	5	--
<b>CS-2</b>										
07/30/01	--	--	--	140 <sup>3,5</sup>	<50	<0.50	<0.50	<0.50	<0.50	<2.5
10/08/01	--	--	--	53 <sup>9</sup>	<50	<0.50	<0.50	<0.50	<1.5	<2.5
01/13/02	--	--	--	<50 <sup>3</sup>	<50	<0.50	<0.50	<0.50	<1.5	<2.5
04/08/02	--	--	--	77 <sup>3</sup>	<50	<0.50	<0.50	<0.50	<1.5	<2.5
07/31/02	--	--	--	<50 <sup>3</sup>	<50	<0.50	<0.50	<0.50	<1.5	<2.5
10/15/02	--	--	--	<50 <sup>3</sup>	<50	<0.50	<0.50	<0.50	<1.5	<2.5
01/14/03	--	--	--	<50 <sup>3</sup>	<50	<0.50	<0.50	<0.50	<1.5	<2.5
04/15/03	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<1.5	<2.5
07/16/03 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	0.7	<0.5	0.6	<0.5
10/18/03 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/22/04 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/23/04 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/23/04 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/22/04 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/28/05 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/26/05 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/15/05 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/14/05 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/12/06 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/13/06 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/13/06 <sup>10</sup>	--	--	--	140 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/17/06 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/16/07 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/17/07 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/17/07 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5



**Table I**  
**Groundwater Monitoring Data and Analytical Results**  
**Chevron #206127 (Former Signal Oil Marine Terminal)**  
**2301-2337 Blanding Avenue**  
**Alameda, California**

WELL ID/ DATE	TOC* (fL)	DTW (ft)	GWE (msl)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
<b>CS-2 (cont)</b>										
10/16/07 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/16/08 <sup>10</sup>	--	--	--	85 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/16/08 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/16/08 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/15/08 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/21/09 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/15/09 <sup>10</sup>	--	--	--	86 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/03/09 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/01/09 <sup>10</sup>	--	--	--	<50 <sup>3</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/19/10 <sup>10</sup>	--	--	--	210 <sup>3,16</sup>	<50	<0.5	<0.5	<0.5	<0.5	<0.5
<b>TRIP BLANK</b>										
<b>TB-LB</b>										
01/23/01	--	--	--	--	<50.0	<0.500	<0.500	<0.500	<0.500	<2.50
04/09/01	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
07/30/01	--	--	--	--	<50	<0.50	<0.50	<0.50	<0.50	<2.5
<b>QA</b>										
10/08/01	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
01/13/02	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
04/08/02	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
07/31/02	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
10/15/02	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
01/14/03	--	--	--	--	<50	<0.50	<0.50	<0.50	<1.5	<2.5
04/15/03	--	--	--	--	<50	<0.5	<0.5	<0.5	<1.5	<2.5
07/16/03 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/18/03 <sup>30</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/22/04 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/23/04 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/23/04 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/22/04 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/28/05 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
**Chevron #206127 (Former Signal Oil Marine Terminal)**  
**2301-2337 Blanding Avenue**  
**Alameda, California**

WELL ID/ DATE	TOC* (fL)	DTW (fL)	GWE (msl)	TPH-DRO (µg/L)	TPH-GRO (µg/L)	B (µg/L)	F (µg/L)	E (µg/L)	X (µg/L)	MTBE (µg/L)
QA (cont)										
04/26/05 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/15/05 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/14/05 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/12/06 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/13/06 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/13/06 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/17/06 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/16/07 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/17/07 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/17/07 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/16/07 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/16/08 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
04/16/08 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/16/08 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/15/08 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/21/09 <sup>10</sup>	--	--	--	--	<50 <sup>13</sup>	<0.5	<0.5	<0.5	<0.5	<0.5
04/15/09 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
07/03/09 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
10/01/09 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5
01/19/10 <sup>10</sup>	--	--	--	--	<50	<0.5	<0.5	<0.5	<0.5	<0.5

**Table 1**  
**Groundwater Monitoring Data and Analytical Results**  
**Chevron #206127 (Former Signal Oil Marine Terminal)**  
**2301-2337 Blanding Avenue**  
**Alameda, California**

**EXPLANATIONS:**

TOC = Top of Casing

(ft.) = Feet

DTW = Depth to Water

GWE = Groundwater Elevation

(msl) = Mean sea level

TPH = Total Petroleum Hydrocarbons

DRO = Diesel Range Organics

GRO = Gasoline Range Organics

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylenes

MTBE = Methyl Tertiary Butyl Ether

(µg/L) = Micrograms per liter

-- = Not Measured/Not Analyzed

CS-2 = Creek Sample

QA = Quality Assurance/Trip Blank

\* TOC elevations for all wells were surveyed on July 30, 2009, by Morrow Surveying. Vertical Datum is NAVD 88 from GPS observations. TOC elevations were surveyed on January 25, 2001, by Virgil Chavez Land Surveying. The benchmark used for the survey was a City of Alameda benchmark being a cut square at the centerline return, south corner of Oak and Blanding, (Benchmark Elevation = 8.236 feet, NGVD 29).

<sup>1</sup> Well development performed.

<sup>2</sup> Laboratory report indicates unidentified hydrocarbons <C16.

<sup>3</sup> Analyzed with silica gel cleanup.

<sup>4</sup> Laboratory report indicates weathered gasoline C6-C12.

<sup>5</sup> Laboratory report indicates discrete peaks.

<sup>6</sup> Laboratory report indicates diesel C9-C24 + unidentified hydrocarbons <C16.

<sup>7</sup> Laboratory report indicates gasoline C6-C12.

<sup>8</sup> Laboratory report indicates unidentified hydrocarbons C9-C24.

<sup>9</sup> Analysis performed without silica gel cleanup although was requested on the Chain of Custody.

<sup>10</sup> BTEX and MTBE by EPA Method 8260.

<sup>11</sup> Laboratory report indicates the observed sample pattern is not typical of #2 fuel/diesel. It elutes in the DRO range later than #2 fuel.

<sup>12</sup> Laboratory report indicates the observed sample pattern includes #2 fuel/diesel and an additional pattern which elutes later in the DRO range.

<sup>13</sup> Laboratory report indicates the original analysis was performed on an instrument where the ending calibration standard failed the method criteria. The sample was originally analyzed approximately 60 minutes after the LCS/LCSD. The LCS/LCSD showed good GRO recovery and the surrogate recovery for this sample was 85%. The sample was reanalyzed from a vial with headspace since only 1 vial was submitted. The results for the original and the reanalysis were similar. The reanalysis was reported.

<sup>14</sup> BTEX by EPA Method 8260.

<sup>15</sup> Laboratory report indicates DRO was detected in the method blank at a concentration of 38 µg/L. Results from the reextraction are within limits. The hold time had expired prior to the reextraction therefore, all results are reported from the original extract. Similar results were obtained in both extracts.

<sup>16</sup> Laboratory report indicates DRO was detected in the method blank at a concentration of 38 µg/L. Results from the reextraction are within limits. The hold time had expired prior to the reextraction therefore, all results are reported from the original extract. The DRO result for the reextract is 96 µg/L.

**Table 2**  
**Groundwater Analytical Results - Metals**  
 Chevron #206127 (Former Signal Oil Marine Terminal)  
 2301-2337 Blanding Avenue  
 Alameda, California

WELL ID/ DATE	Antimony (µg/L)	Arsenic (µg/L)	Barium (µg/L)	Beryllium (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Cobalt (µg/L)	Copper (µg/L)	Lead (µg/L)	Molybdenum (µg/L)	Nickel (µg/L)	Selenium (µg/L)	Silver (µg/L)	Thallium (µg/L)	Vanadium (µg/L)	Zinc (µg/L)	Mercury (µg/L)
<b>MW-2</b> 07/03/09	<9.7	<7.2	28.1	<1.4	<2.0	14.6	<2.1	<2.7	<6.9	<4.9	10.6	<8.9	<2.3	<14.0	12.6	11.6	<0.056
<b>MW-3</b> 07/03/09	<9.7	<7.2	143	<1.4	<2.0	8.5	<2.1	3.3	<6.9	<4.9	7.8	<8.9	<2.3	<14.0	13.8	18.8	<0.056
<b>MW-4</b> 07/03/09	<9.7	<7.2	83.5	<1.4	<2.0	10.0	<2.1	<2.7	<6.9	<4.9	4.5	<8.9	<2.3	<14.0	6.3	15.8	<0.056
<b>MW-5</b> 07/03/09	<9.7	32.7	148	<1.4	<2.0	<3.4	<2.1	3.1	<6.9	<4.9	3.6	<8.9	<2.3	<14.0	<2.5	19.2	<0.056

**EXPLANATIONS**

(µg/L) = Micrograms per liter

**ANALYTICAL METHODS:**

Metals analyzed by EPA Method SW-846 6010B  
 Mercury analyzed by Method SW-7470A



## STANDARD OPERATING PROCEDURE - GROUNDWATER SAMPLING

Gettler-Ryan Inc. (GR) field personnel adhere to the following procedures for the collection and handling of groundwater samples prior to analysis by the analytical laboratory. All work is performed in accordance with the GR Health & Safety Plan and all client-specific programs. The scope of work and type of analysis to be performed is determined prior to commencing field work.

Prior to sampling, the presence or absence of free-phase hydrocarbons is determined using an interface probe. Product thickness, if present, is measured to the nearest 0.01 foot and is noted in the field notes. In addition, all depth to water level measurements are collected with a static water level indicator and are also recorded in the field notes, prior to purging and sampling any wells.

After water levels are collected and prior to sampling, if purging is to occur, each well is purged a minimum of three well casing volumes of water using pre-cleaned pumps (stack, peristaltic or Grundfos), or disposable bailers. Temperature, pH and electrical conductivity are measured a minimum of three times during the purging (additional parameters such as dissolved oxygen, oxidation reduction potential, turbidity may also be measured, depending on specific scope of work.). Purging continues until these parameters stabilize.

Groundwater samples are collected using disposable bailers. The water samples are transferred from the bailer into appropriate containers. Pre-preserved containers, supplied by analytical laboratories, are used. When pre-preserved containers are not available, the laboratory is instructed to preserve the sample as appropriate. Duplicate samples are collected for the laboratory to use in maintaining quality assurance/quality control standards, as directed by the scope of work. The samples are labeled to include the job number, sample identification, collection date and time, analysis, preservation (if any), and the sample collector's initials. The water samples are placed in a cooler, maintained at 4°C for transport to the laboratory. Once collected in the field, all samples are maintained under chain of custody until delivered to the laboratory.

The chain of custody document includes the job number, type of preservation, if any, analysis requested, sample identification, date and time collected, and the sample collector's name. The chain of custody is signed and dated (including time of transfer) by each person who receives or surrenders the samples, beginning with the field personnel and ending with the laboratory personnel.

A laboratory supplied trip blank accompanies each sampling set. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.

A laboratory supplied trip blank accompanies each sampling set. For sampling sets greater than 20 samples, 5% trip blanks are included. The trip blank is analyzed for some or all of the same compounds as the groundwater samples.



# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #206127 Job Number: 386498  
 Site Address: 2301-2337 Blanding Avenue Event Date: 1-19-10 (inclusive)  
 City: Alameda, CA Sampler: Joc

Well ID: MW-1  
 Well Diameter: 2 in.  
 Total Depth: 17.17 ft.  
 Depth to Water: 7.64 ft.

Date Monitored: 1-19-10

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.36
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 9.54 xVF 0.17 = 1.62 x3 case volume = Estimated Purge Volume: 5 gal.

### Purge Equipment:

Disposable Bailer   
 Stainless Steel Bailer   
 Stack Pump \_\_\_\_\_  
 Suction Pump \_\_\_\_\_  
 Grundfos \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

### Sampling Equipment:

Disposable Bailer   
 Pressure Bailer \_\_\_\_\_  
 Discrete Bailer \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started: \_\_\_\_\_ (2400 hrs)  
 Time Completed: \_\_\_\_\_ (2400 hrs)  
 Depth to Product: \_\_\_\_\_ ft  
 Depth to Water: \_\_\_\_\_ ft  
 Hydrocarbon Thickness: \_\_\_\_\_ ft  
 Visual Confirmation/Description: \_\_\_\_\_  
 Skimmer / Absorbent Sock (circle one)  
 Amt Removed from Skimmer: \_\_\_\_\_ gal  
 Amt Removed from Well: \_\_\_\_\_ gal  
 Water Removed: \_\_\_\_\_  
 Product Transferred to: \_\_\_\_\_

Start Time (purge): 1005 Weather Conditions: Heavy rain  
 Sample Time/Date: 1035/1-19-10 Water Color: clear Odor: BTN faint  
 Approx. Flow Rate: \_\_\_\_\_ gpm. Sediment Description: \_\_\_\_\_  
 Did well de-water? \_\_\_\_\_ If yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: 8.19

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (C / F)	D.O. (mg/L)	ORP (mV)
<u>1013</u>	<u>1.5</u>	<u>6.83</u>	<u>1967</u>	<u>18.5</u>		
<u>1020</u>	<u>3.5</u>	<u>6.67</u>	<u>2014</u>	<u>18.6</u>		
<u>1025</u>	<u>5</u>	<u>6.84</u>	<u>2035</u>	<u>18.1</u>		

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-1</u>	<u>6</u> x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)
	<del>x voa vial</del>	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX(8260)
	<u>2</u> x 500ml ambers	YES	NP	LANCASTER	TPH-DRO w/sg

COMMENTS: Removed roots from well.

Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_



# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #206127 Job Number: 386498  
 Site Address: 2301-2337 Blanding Avenue Event Date: 1-19-10 (inclusive)  
 City: Alameda, CA Sampler: Joe

Well ID: MW-2  
 Well Diameter: 2 in.  
 Total Depth: 15.61 ft.  
 Depth to Water: 3.90 ft.

Date Monitored: 1-19-10

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 6.24  
 $11.71 \times VF 0.17 = 1.99$  x3 case volume = Estimated Purge Volume: 6 gal.

Purge Equipment:  
 Disposable Bailer   
 Stainless Steel Bailer \_\_\_\_\_  
 Stack Pump \_\_\_\_\_  
 Suction Pump \_\_\_\_\_  
 Grundfos \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Sampling Equipment:  
 Disposable Bailer \_\_\_\_\_  
 Pressure Bailer   
 Discrete Bailer \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started: \_\_\_\_\_ (2400 hrs)  
 Time Completed: \_\_\_\_\_ (2400 hrs)  
 Depth to Product: \_\_\_\_\_ ft  
 Depth to Water: \_\_\_\_\_ ft  
 Hydrocarbon Thickness: \_\_\_\_\_ ft  
 Visual Confirmation/Description: \_\_\_\_\_  
 Skimmer / Absorbent Sock (circle one)  
 Amt Removed from Skimmer: \_\_\_\_\_ gal  
 Amt Removed from Well: \_\_\_\_\_ gal  
 Water Removed: \_\_\_\_\_  
 Product Transferred to: \_\_\_\_\_

Start Time (purge): 0730 Weather Conditions: Heavy rain  
 Sample Time/Date: 0805 1-19-10 Water Color: clear Odor: Y10  
 Approx. Flow Rate: \_\_\_\_\_ gpm. Sediment Description: \_\_\_\_\_  
 Did well de-water? \_\_\_\_\_ If yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: 4.16

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - µS)	Temperature (°F)	D.O. (mg/L)	ORP (mV)
<u>0740</u>	<u>2</u>	<u>7.18</u>	<u>1808</u>	<u>18.7</u>		
<u>0748</u>	<u>4</u>	<u>7.26</u>	<u>1765</u>	<u>18.6</u>		
<u>0752</u>	<u>6</u>	<u>7.34</u>	<u>1783</u>	<u>18.5</u>		

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-2</u>	<u>2</u> x vial	<u>YES</u>	<u>HCL</u>	<u>LANCASTER</u>	<u>TPH-GRO(8015)/BTEX+MTBE(8260)</u>
	<u>6</u> x vial	<u>YES</u>	<u>HCL</u>	<u>LANCASTER</u>	<u>TPH-GRO(8015)/BTEX(8260)</u>
	<u>2</u> x 500ml ambers	<u>YES</u>	<u>NP</u>	<u>LANCASTER</u>	<u>TPH-DRO w/sg</u>

COMMENTS: \_\_\_\_\_

Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_



# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #206127  
 Site Address: 2301-2337 Blanding Avenue  
 City: Alameda, CA

Job Number: 386498  
 Event Date: 1-19-10 (inclusive)  
 Sampler: Joc

Well ID: MW-3  
 Well Diameter: 2 in.  
 Total Depth: 17.89 ft.  
 Depth to Water: 4.84 ft.

Date Monitored: 1-19-10

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.45  
 $13.05 \times VF 0.17 = 2.22 \times 3 \text{ case volume} = \text{Estimated Purge Volume: } 47 \text{ gal.}$

### Purge Equipment:

Disposable Bailer \_\_\_\_\_  
 Stainless Steel Bailer  \_\_\_\_\_  
 Stack Pump \_\_\_\_\_  
 Suction Pump \_\_\_\_\_  
 Grundfos \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

### Sampling Equipment:

Disposable Bailer  \_\_\_\_\_  
 Pressure Bailer \_\_\_\_\_  
 Discrete Bailer \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started: \_\_\_\_\_ (2400 hrs)  
 Time Completed: \_\_\_\_\_ (2400 hrs)  
 Depth to Product: \_\_\_\_\_ ft  
 Depth to Water: \_\_\_\_\_ ft  
 Hydrocarbon Thickness: \_\_\_\_\_ ft  
 Visual Confirmation/Description: \_\_\_\_\_  
 Skimmer / Absorbent Sock (circle one)  
 Amt Removed from Skimmer: \_\_\_\_\_ gal  
 Amt Removed from Well: \_\_\_\_\_ gal  
 Water Removed: \_\_\_\_\_  
 Product Transferred to: \_\_\_\_\_

Start Time (purge): 0815  
 Sample Time/Date: 0845 1-19-10  
 Approx. Flow Rate: \_\_\_\_\_ gpm.  
 Did well de-water? \_\_\_\_\_ If yes, Time: \_\_\_\_\_

Weather Conditions: Heavy rain  
 Water Color: clear Odor: LN faint  
 Sediment Description: \_\_\_\_\_  
 Volume: \_\_\_\_\_ gal. DTW @ Sampling: 5.33

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (umhos/cm - DS)	Temperature (C/F)	D.O. (mg/L)	ORP (mV)
<u>0826</u>	<u>2.5</u>	<u>6.75</u>	<u>1837</u>	<u>17.9</u>	_____	_____
<u>0830</u>	<u>5.5</u>	<u>6.85</u>	<u>1830</u>	<u>17.8</u>	_____	_____
<u>0835</u>	<u>9</u>	<u>6.84</u>	<u>1893</u>	<u>18.4</u>	_____	_____

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-4</u>	<u>1</u> x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTX+MTBE(8260)
	<u>6</u> x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTX(8260)
	<u>2</u> x 500ml ambers	YES	NP	LANCASTER	TPH-DRO w/sg

COMMENTS: \_\_\_\_\_

Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_





# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #206127 Job Number: 386498  
 Site Address: 2301-2337 Blanding Avenue Event Date: 1-19-10 (inclusive)  
 City: Alameda, CA Sampler: Joe

Well ID: MW-4  
 Well Diameter: 2 in.  
 Total Depth: 20.22 ft.  
 Depth to Water: 6.22 ft.

Date Monitored: 1-19-10

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 14.00 xVF 0.17 = 2.38 x3 case volume = Estimated Purge Volume: 7.5 gal.

### Purge Equipment:

Disposable Bailer   
 Stainless Steel Bailer \_\_\_\_\_  
 Stack Pump \_\_\_\_\_  
 Suction Pump \_\_\_\_\_  
 Grundfos \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

### Sampling Equipment:

Disposable Bailer   
 Pressure Bailer \_\_\_\_\_  
 Discrete Bailer \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started: \_\_\_\_\_ (2400 hrs)  
 Time Completed: \_\_\_\_\_ (2400 hrs)  
 Depth to Product: \_\_\_\_\_ ft  
 Depth to Water: \_\_\_\_\_ ft  
 Hydrocarbon Thickness: \_\_\_\_\_ ft  
 Visual Confirmation/Description: \_\_\_\_\_  
 Skimmer / Absorbent Sock (circle one)  
 Amt Removed from Skimmer: \_\_\_\_\_ gal  
 Amt Removed from Well: \_\_\_\_\_ gal  
 Water Removed: \_\_\_\_\_  
 Product Transferred to: \_\_\_\_\_

Start Time (purge): 0855 Weather Conditions: Heavy rain  
 Sample Time/Date: 0922/1-19-10 Water Color: clear Odor: Y (N)  
 Approx. Flow Rate: \_\_\_\_\_ gpm. Sediment Description: \_\_\_\_\_  
 Did well de-water? \_\_\_\_\_ If yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: 7.16

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm) (µS)	Temperature (C) / (F)	D.O. (mg/L)	ORP (mV)
<u>0905</u>	<u>2.5</u>	<u>7.48</u>	<u>1964</u>	<u>18.8</u>	_____	_____
<u>0910</u>	<u>5</u>	<u>7.32</u>	<u>1976</u>	<u>18.2</u>	_____	_____
<u>0916</u>	<u>7.5</u>	<u>7.25</u>	<u>1980</u>	<u>18.5</u>	_____	_____

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-4</u>	<u>6</u> x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8200)
	<u>2</u> x 500ml ambers	YES	NP	LANCASTER	TPH-GRO(8015)/BTEX(8260)
					TPH-DRO w/sg

### COMMENTS:

Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_



# GETTLER-RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #206127  
 Site Address: 2301-2337 Blanding Avenue  
 City: Alameda, CA

Job Number: 386498  
 Event Date: 1-19-10 (inclusive)  
 Sampler: Jac

Well ID: MW-5  
 Well Diameter: 2 in.  
 Total Depth: 17.92 ft.  
 Depth to Water: 5.48 ft.

Date Monitored: 1-19-10

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: 7.96  
 $12.44 \times VF 0.17 = 2.11$  x3 case volume = Estimated Purge Volume: 6.5 gal.

**Purge Equipment:**  
 Disposable Bailer   
 Stainless Steel Bailer   
 Stack Pump \_\_\_\_\_  
 Suction Pump \_\_\_\_\_  
 Grundfos \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

**Sampling Equipment:**  
 Disposable Bailer   
 Pressure Bailer \_\_\_\_\_  
 Discrete Bailer \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started: \_\_\_\_\_ (2400 hrs)  
 Time Completed: \_\_\_\_\_ (2400 hrs)  
 Depth to Product: \_\_\_\_\_ ft  
 Depth to Water: \_\_\_\_\_ ft  
 Hydrocarbon Thickness: \_\_\_\_\_ ft  
 Visual Confirmation/Description: \_\_\_\_\_  
 Skimmer / Absorbant Sock (circle one)  
 Amt Removed from Skimmer: \_\_\_\_\_ gal  
 Amt Removed from Well: \_\_\_\_\_ gal  
 Water Removed: \_\_\_\_\_  
 Product Transferred to: \_\_\_\_\_

Start Time (purge): 0930  
 Sample Time/Date: 1000 1-19-10  
 Approx. Flow Rate: \_\_\_\_\_ gpm.  
 Did well de-water? \_\_\_\_\_ If yes, Time: \_\_\_\_\_

Weather Conditions: Heavy rain  
 Water Color: Clear Odor: (P) N noticed considerable  
 Sediment Description: \_\_\_\_\_  
 Volume: \_\_\_\_\_ gal. DTW @ Sampling: 6.09

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm - 15)	Temperature (°F)	D.O. (mg/L)	ORP (mV)
<u>0940</u>	<u>2</u>	<u>6.93</u>	<u>2102</u>	<u>18.4</u>		
<u>0945</u>	<u>4</u>	<u>6.83</u>	<u>2076</u>	<u>18.0</u>		
<u>0952</u>	<u>6.5</u>	<u>6.87</u>	<u>2068</u>	<u>18.2</u>		

### LABORATORY INFORMATION

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>MW-5</u>	<u>6</u> x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTEX+MTBE(8260)
	<u>2</u> x 500ml ambers	YES	NP	LANCASTER	TPH-GRO(8015)/BTEX(8260)
					TPH-DRO w/sg

COMMENTS: Removed very fine roots from well!

Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_



# GETTLER - RYAN INC.

## WELL MONITORING/SAMPLING FIELD DATA SHEET

Client/Facility#: Chevron #206127 Job Number: 386498  
 Site Address: 2301-2337 Blanding Avenue Event Date: 1-19-10 (inclusive)  
 City: Alameda, CA Sampler: Jac

Well ID: CS-2  
 Well Diameter: 2 in.  
 Total Depth: / ft.  
 Depth to Water: / ft.

Date Monitored: /

Volume	3/4"= 0.02	1"= 0.04	2"= 0.17	3"= 0.38
Factor (VF)	4"= 0.66	5"= 1.02	6"= 1.50	12"= 5.80

Check if water column is less than 0.50 ft.

Depth to Water w/ 80% Recharge [(Height of Water Column x 0.20) + DTW]: /  
 xVF = / x3 case volume = Estimated Purge Volume: / gal.

**Purge Equipment:**

Disposable Bailer \_\_\_\_\_  
 Stainless Steel Bailer \_\_\_\_\_  
 Stack Pump \_\_\_\_\_  
 Suction Pump \_\_\_\_\_  
 Grundfos \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

**Sampling Equipment:**

Disposable Bailer /  
 Pressure Bailer \_\_\_\_\_  
 Discrete Bailer \_\_\_\_\_  
 Peristaltic Pump \_\_\_\_\_  
 QED Bladder Pump \_\_\_\_\_  
 Other: \_\_\_\_\_

Time Started:	_____ (2400 hrs)
Time Completed:	_____ (2400 hrs)
Depth to Product:	_____ ft
Depth to Water:	_____ ft
Hydrocarbon Thickness:	_____ ft
Visual Confirmation/Description:	_____
Skimmer / Absorbant Sock (circle one)	_____
Amt Removed from Skimmer:	_____ gal
Amt Removed from Well:	_____ gal
Water Removed:	_____ gal
Product Transferred to:	_____

Start Time (purge): \_\_\_\_\_ Weather Conditions: Heavy rain  
 Sample Time/Date: 1055 1-19-10 Water Color: clear Odor: Y (N)  
 Approx. Flow Rate: \_\_\_\_\_ gpm. Sediment Description: \_\_\_\_\_  
 Did well de-water? \_\_\_\_\_ If yes, Time: \_\_\_\_\_ Volume: \_\_\_\_\_ gal. DTW @ Sampling: \_\_\_\_\_

Time (2400 hr.)	Volume (gal.)	pH	Conductivity (µmhos/cm)	Temperature (°C / F)	D.O. (mg/L)	ORP (mV)
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

**LABORATORY INFORMATION**

SAMPLE ID	(#) CONTAINER	REFRIG.	PRESERV. TYPE	LABORATORY	ANALYSES
<u>CS-2</u>	<u>6</u> x voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTX+MTBE(8260)
	<u>x</u> voa vial	YES	HCL	LANCASTER	TPH-GRO(8015)/BTX(8260)
	<u>2</u> x 500ml ambers	YES	NP	LANCASTER	TPH-DRO w/sg

COMMENTS: Creek sample

Add/Replaced Lock: \_\_\_\_\_ Add/Replaced Plug: \_\_\_\_\_ Add/Replaced Bolt: \_\_\_\_\_

# Chevron California Region Analysis Request/Chain of Custody



01910-02

For Lancaster Laboratories use only  
 Acct #: 10904 Sample # 5887580-86 Group #: 019545

Grp# 1179275

Facility #: SS#206127-OML G-R#386498 Global ID#T06019744728 Site Address: 2301-2337 BLANDING AVENUE, ALAMEDA, CA Chevron PM: MB Lead Consultant: CRASB Consultant/Office: G-R, Inc., 6747 Sierra Court, Suite J, Dublin, CA 94568 Consultant Prj. Mgr.: Deanna L. Harding (deanna@grinc.com) Consultant Phone: #925-551-7555 Fax #: 925-551-7899 Sampler: <u>JOE ASEMIAN</u>			Matrix <input type="checkbox"/> Potable <input type="checkbox"/> NPDES <input type="checkbox"/> Soil <input type="checkbox"/> Water <input type="checkbox"/> Oil <input type="checkbox"/> Air		Analyses Requested Preservation Codes H H BTEX + MTBE 8260 <input checked="" type="checkbox"/> 8021 <input type="checkbox"/> TPH 8015 MOD GRO <input checked="" type="checkbox"/> TPH 8015 MOD DRO <input checked="" type="checkbox"/> Silica Gel Cleanup 8260 full scan Oxygenates Total Lead Method Dissolved Lead Method BTEX (8260)										Preservative Codes H = HCl T = Thiosulfate N = HNO <sub>3</sub> B = NaOH S = H <sub>2</sub> SO <sub>4</sub> O = Other <input type="checkbox"/> J value reporting needed <input checked="" type="checkbox"/> Must meet lowest detection limits possible for 8260 compounds 8021 MTBE Confirmation <input type="checkbox"/> Confirm highest hit by 8260 <input type="checkbox"/> Confirm all hits by 8260 <input type="checkbox"/> Run ___ oxy's on highest hit <input type="checkbox"/> Run ___ oxy's on all hits			
Sample Identification	Date Collected	Time Collected	Grab	Composite	Soil	Water	Oil	Air	Total Number of Containers	BTEX + MTBE 8260	TPH 8015 MOD GRO	TPH 8015 MOD DRO	8260 full scan	Oxygenates	Total Lead Method	Dissolved Lead Method	BTEX (8260)	Comments / Remarks
QA			<input checked="" type="checkbox"/>			<input checked="" type="checkbox"/>			2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
MW-1	1-19-10	1035							2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
MW-2		0805							2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
MW-3		0845							2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
MW-4		0922							2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
MW-5		1000							2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						
CS-2		1055	<input checked="" type="checkbox"/>						2	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>						

**Turnaround Time Requested (TAT) (please circle)**

STD. TAT 24 hour      72 hour      48 hour  
 4 day                      5 day

**Data Package Options (please circle if required)**

QC Summary      Type I - Full      **EDF/EDD**  
 Type VI (Raw Data)       Coeff Deliverable not needed  
 WIP (RWQCB)  
 Disk

Relinquished by: <u>[Signature]</u>	Date: 1-19-10	Time: 12:40	Received by: <u>[Signature]</u>	Date: 19 JAN 10	Time: 12:00
Relinquished by: <u>[Signature]</u>	Date: 1/19/10	Time: 16:00	Received by: <u>[Signature]</u>	Date:	Time:
Relinquished by: _____	Date:	Time:	Received by: _____	Date:	Time:
Relinquished by Commercial Carrier: UPS <u>FedEx</u> Other: _____	Temperature Upon Receipt: 61-1.6 °C		Received by: <u>[Signature]</u>	Date: 1/20/10	Time: 10:15
Custody Seals Intact? <u>Yes</u> No					



## ANALYTICAL RESULTS

Prepared for:

Chevron  
6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

925-842-8582

Prepared by:

Lancaster Laboratories  
2425 New Holland Pike  
Lancaster, PA 17605-2425

February 05, 2010

Project: 206127

RECEIVED

FEB 08 2010

GETTLER-RYAN INC.  
GENERAL CONTRACTORS

Samples arrived at the laboratory on Wednesday, January 20, 2010. The PO# for this group is 0015057656 and the release number is BAUER. The group number for this submittal is 1179275.

Client Sample Description

QA-T-100119 NA Water  
MW-1-W-100119 Grab Water  
MW-2-W-100119 Grab Water  
MW-3-W-100119 Grab Water  
MW-4-W-100119 Grab Water  
MW-5-W-100119 Grab Water  
CS-2-W-100119 Grab Water

Lancaster Labs (LLI) #

5887580  
5887581  
5887582  
5887583  
5887584  
5887585  
5887586

The specific methodologies used in obtaining the enclosed analytical results are indicated on the Laboratory Sample Analysis Record.

ELECTRONIC COPY TO CRA c/o Gettler-Ryan

Attn: Cheryl Hansen



## ***Analysis Report***

2425 New Holland Pkwy, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2881 • [www.lancasterlabs.com](http://www.lancasterlabs.com)

Questions? Contact your Client Services Representative  
Jill M Parker at (717) 656-2300

Respectfully Submitted,

A handwritten signature in black ink, appearing to read "Robin C. Runkle".

**Robin C. Runkle**  
**Senior Specialist**



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

Sample Description: QA-T-100119 NA Water  
Facility# 206127 Job# 386498 GRD  
2301-2337 Blanding-Alameda T06019744728 QA

LLI Sample # WW 5887580  
LLI Group # 1179275  
CA

Project Name: 206127

Collected: 01/19/2010

Account Number: 10904

Submitted: 01/20/2010 10:15  
Reported: 02/05/2010 at 18:04  
Discard: 03/08/2010

Chevron  
6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

BAQA-

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>			<b>ug/l</b>	<b>ug/l</b>	
06054	Benzene	71-43-2	N.D.	0.5	1
06054	Ethylbenzene	100-41-4	N.D.	0.5	1
06054	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06054	Toluene	108-88-3	N.D.	0.5	1
06054	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Volatiles</b>			<b>ug/l</b>	<b>ug/l</b>	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	P100272AA	01/27/2010 20:31	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P100272AA	01/27/2010 20:31	Sara E Johnson	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10021A20A	01/21/2010 15:22	Matthew S Woods	1
01146	GC VOA Water Prep	SW-846 5030B	1	10021A20A	01/21/2010 15:22	Matthew S Woods	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Sample Description: MW-1-W-100119 Grab Water  
Facility# 206127 Job# 386498 GRD  
2301-2337 Blanding-Alameda T06019744728 MW-1

LLI Sample # WW 5887581  
LLI Group # 1179275  
CA

Project Name: 206127

Collected: 01/19/2010 10:35 by JA

Account Number: 10904

Submitted: 01/20/2010 10:15  
Reported: 02/05/2010 at 18:04  
Discard: 03/08/2010

Chevron  
6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

BAMW1

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
GC/MS	Volatiles	SW-846 8260B	ug/l	ug/l	
06054	Benzene	71-43-2	N.D.	0.5	1
06054	Ethylbenzene	100-41-4	N.D.	0.5	1
06054	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06054	Toluene	108-88-3	N.D.	0.5	1
06054	Xylene (Total)	1330-20-7	N.D.	0.5	1
GC	Volatiles	SW-846 8015B	ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
GC	Extractable TPH	SW-846 8015B	ug/l	ug/l	
w/Si Gel					
06610	TPH-DRO CA C10-C28 w/ Si Gel	n.a.	340	50	1

DRO was detected in the method blank at a concentration of 38 ug/l. Results from the reextraction are within the limits. The hold time had expired prior to the reextraction therefore, all results are reported from the original extract. Similar results were obtained in both extracts.

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	P100272AA	01/27/2010 20:53	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P100272AA	01/27/2010 20:53	Sara E Johnson	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10021A20A	01/21/2010 16:49	Matthew S Woods	1
01146	GC VOA Water Prep	SW-846 5030B	1	10021A20A	01/21/2010 16:49	Matthew S Woods	1
06610	TPH-DRO CA C10-C28 w/ Si Gel	SW-846 8015B	1	100220010A	01/27/2010 10:46	Melissa McDermott	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	100220010A	01/23/2010 11:00	Olivia I Santiago	1





# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2881 • www.lancasterlabs.com

Sample Description: MW-2-W-100119 Grab Water  
Facility# 206127 Job# 386498 GRD  
2301-2337 Blanding-Alameda T06019744728 MW-2

LLI Sample # WW 5887582  
LLI Group # 1179275  
CA

Project Name: 206127

Collected: 01/19/2010 08:05 by JA

Account Number: 10904

Submitted: 01/20/2010 10:15

Chevron

Reported: 02/05/2010 at 18:04

6001 Bollinger Canyon Rd L4310

Discard: 03/08/2010

San Ramon CA 94583

BAMW2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>					
	SW-846 8260B		ug/l	ug/l	
06053	Benzene	71-43-2	N.D.	0.5	1
06053	Ethylbenzene	100-41-4	N.D.	0.5	1
06053	Toluene	108-88-3	N.D.	0.5	1
06053	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Volatiles</b>					
	SW-846 8015B		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
<b>GC Extractable TPH w/Si Gel</b>					
	SW-846 8015B		ug/l	ug/l	
06610	TPH-DRO CA C10-C28 w/ Si Gel	n.a.	N.D.	50	1

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06053	BTEX by 8260B	SW-846 8260B	1	P100272AA	01/27/2010 21:39	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P100272AA	01/27/2010 21:39	Sara E Johnson	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10021A20A	01/21/2010 17:11	Matthew S Woods	1
01146	GC VOA Water Prep	SW-846 5030B	1	10021A20A	01/21/2010 17:11	Matthew S Woods	1
06610	TPH-DRO CA C10-C28 w/ Si Gel	SW-846 8015B	2	100260005A	01/27/2010 15:53	Melissa McDermott	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	2	100260005A	01/26/2010 21:45	Elaine F Stoltzfus	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2681 • www.lancasterlabs.com

Page 1 of 1

**Sample Description:** MW-3-W-100119 Grab Water  
Facility# 206127 Job# 386498 GRD  
2301-2337 Blanding-Alameda T06019744728 MW-3

LLI Sample # WW 5887583  
LLI Group # 1179275  
CA

**Project Name:** 206127

Collected: 01/19/2010 08:45 by JA

Account Number: 10904

Submitted: 01/20/2010 10:15

Chevron

Reported: 02/05/2010 at 18:04

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Discard: 03/08/2010

BAMW3

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>					
06053	Benzene	71-43-2	2	0.5	1
06053	Ethylbenzene	100-41-4	N.D.	0.5	1
06053	Toluene	108-88-3	N.D.	0.5	1
06053	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Volatiles</b>					
01728	TPH-GRO N. CA water C6-C12	n.a.	120	50	1
<b>GC Extractable TPH w/Si Gel</b>					
06610	TPH-DRO CA C10-C28 w/ Si Gel	n.a.	1,800	50	1

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06053	BTEX by 8260B	SW-846 8260B	1	P100272AA	01/27/2010 22:01	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P100272AA	01/27/2010 22:01	Sara E Johnson	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10021A20A	01/21/2010 17:33	Matthew S Woods	1
01146	GC VOA Water Prep	SW-846 5030B	1	10021A20A	01/21/2010 17:33	Matthew S Woods	1
06610	TPH-DRO CA C10-C28 w/ Si Gel	SW-846 8015B	1	100220010A	01/27/2010 11:52	Melissa McDermott	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	100220010A	01/23/2010 11:00	Olivia I Santiago	1

**Sample Description:** MW-4-W-100119 Grab Water  
 Facility# 206127 Job# 386498 GRD  
 2301-2337 Blanding-Alameda T06019744728 MW-4

LLI Sample # WW 5887584  
 LLI Group # 1179275  
 CA

Project Name: 206127

Collected: 01/19/2010 09:22 by JA

Account Number: 10904

Submitted: 01/20/2010 10:15

Chevron

Reported: 02/05/2010 at 18:04

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Discard: 03/08/2010

BAMW4

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>					
	SW-846 8260B		ug/l	ug/l	
06053	Benzene	71-43-2	N.D.	0.5	1
06053	Ethylbenzene	100-41-4	N.D.	0.5	1
06053	Toluene	108-88-3	N.D.	0.5	1
06053	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Volatiles</b>					
	SW-846 8015B		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
<b>GC Extractable TPH w/Si Gel</b>					
	SW-846 8015B		ug/l	ug/l	
06610	TPH-DRO CA C10-C28 w/ Si Gel	n.a.	110	50	1

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06053	BTEX by 8260B	SW-846 8260B	1	P100272AA	01/27/2010 22:24	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P100272AA	01/27/2010 22:24	Sara E Johnson	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10021A20A	01/21/2010 17:54	Matthew S Woods	1
01146	GC VOA Water Prep	SW-846 5030B	1	10021A20A	01/21/2010 17:54	Matthew S Woods	1
06610	TPH-DRO CA C10-C28 w/ Si Gel	SW-846 8015B	2	100260005A	01/27/2010 16:15	Melissa McDermott	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	2	100260005A	01/26/2010 21:45	Elaine F Stoltzfus	1



# Analysis Report

2425 New Holland Pike, PO Box 12425, Lancaster, PA 17605-2425 • 717-656-2300 Fax: 717-656-2881 • www.lancasterlabs.com

**Sample Description:** MW-5-W-100119 Grab Water  
Facility# 206127 Job# 386498 GRD  
2301-2337 Blanding-Alameda T06019744728 MW-5

LLI Sample # WW 5887585  
LLI Group # 1179275  
CA

**Project Name:** 206127

Collected: 01/19/2010 10:00 by JA

Account Number: 10904

Submitted: 01/20/2010 10:15

Chevron

Reported: 02/05/2010 at 18:04

6001 Bollinger Canyon Rd L4310  
San Ramon CA 94583

Discard: 03/08/2010

BAMW5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>					
	SW-846 8260B		ug/l	ug/l	
06053	Benzene	71-43-2	74	0.5	1
06053	Ethylbenzene	100-41-4	1	0.5	1
06053	Toluene	108-88-3	4	0.5	1
06053	Xylene (Total)	1330-20-7	5	0.5	1
<b>GC Volatiles</b>					
	SW-846 8015B		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	2,200	50	1
<b>GC Extractable TPH w/Si Gel</b>					
	SW-846 8015B		ug/l	ug/l	
06610	TPH-DRO CA C10-C28 w/ Si Gel	n.a.	2,600	50	1

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06053	BTEX by 8260B	SW-846 8260B	1	P100272AA	01/27/2010 22:47	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P100272AA	01/27/2010 22:47	Sara E Johnson	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10021A20A	01/21/2010 18:16	Matthew S Woods	1
01146	GC VOA Water Prep	SW-846 5030B	1	10021A20A	01/21/2010 18:16	Matthew S Woods	1
06610	TPH-DRO CA C10-C28 w/ Si Gel	SW-846 8015B	1	100220010A	01/25/2010 13:02	Melissa McDermott	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	100220010A	01/23/2010 11:00	Olivia I Santiago	1

**Sample Description:** CS-2-W-100119 Grab Water  
 Facility# 206127 Job# 386498 GRD  
 2301-2337 Blanding-Alameda T06019744728 CS-2

LLI Sample # WW 5887586  
 LLI Group # 1179275  
 CA

**Project Name:** 206127

Collected: 01/19/2010 10:55 by JA

Account Number: 10904

Submitted: 01/20/2010 10:15

Chevron

Reported: 02/05/2010 at 18:04

6001 Bollinger Canyon Rd L4310

Discard: 03/08/2010

San Ramon CA 94583

BACS2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>					
	SW-846 8260B		ug/l	ug/l	
06054	Benzene	71-43-2	N.D.	0.5	1
06054	Ethylbenzene	100-41-4	N.D.	0.5	1
06054	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
06054	Toluene	108-88-3	N.D.	0.5	1
06054	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Volatiles</b>					
	SW-846 8015B		ug/l	ug/l	
01728	TPH-GRO N. CA water C6-C12	n.a.	N.D.	50	1
<b>GC Extractable TPH</b>					
	SW-846 8015B		ug/l	ug/l	
<b>w/Si Gel</b>					
06610	TPH-DRO CA C10-C28 w/ Si Gel	n.a.	210	50	1
DRO was detected in the method blank at a concentration of 38 ug/l. Results from the reextraction are within the limits. The hold time had expired prior to the reextraction therefore, all results are reported from the original extract. The DRO result for the reextract is 96 ug/l.					

### General Sample Comments

State of California Lab Certification No. 2501

All QC is compliant unless otherwise noted. Please refer to the Quality Control Summary for overall QC performance data and associated samples.

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
06054	BTEX+MTBE by 8260B	SW-846 8260B	1	P100272AA	01/27/2010 23:10	Sara E Johnson	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	P100272AA	01/27/2010 23:10	Sara E Johnson	1
01728	TPH-GRO N. CA water C6-C12	SW-846 8015B	1	10021A20A	01/21/2010 18:38	Matthew S Woods	1
01146	GC VOA Water Prep	SW-846 5030B	1	10021A20A	01/21/2010 18:38	Matthew S Woods	1
06610	TPH-DRO CA C10-C28 w/ Si Gel	SW-846 8015B	1	100220010A	01/27/2010 11:30	Melissa McDermott	1
02376	Extraction - Fuel/TPH (Waters)	SW-846 3510C	1	100220010A	01/23/2010 11:00	Olivia I Santiago	1



## Quality Control Summary

 Client Name: Chevron  
 Reported: 02/05/10 at 06:04 PM

Group Number: 1179275

Matrix QC may not be reported if site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD was performed, unless otherwise specified in the method.

### Laboratory Compliance Quality Control

Analysis Name	Blank Result	Blank MDL	Report Units	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Max
Batch number: P100272AA	Sample number(s): 5887580-5887586							
Benzene	N.D.	0.5	ug/l	103	105	79-120	3	30
Ethylbenzene	N.D.	0.5	ug/l	97	98	79-120	1	30
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	108	108	76-120	0	30
Toluene	N.D.	0.5	ug/l	101	103	79-120	2	30
Xylene (Total)	N.D.	0.5	ug/l	99	101	80-120	2	30
Batch number: 10021A20A	Sample number(s): 5887580-5887586							
TPH-GRO N. CA water C6-C12	N.D.	50.	ug/l	109	109	75-135	0	30
Batch number: 100220010A	Sample number(s): 5887581,5887583,5887585-5887586							
TPH-DRO CA C10-C28 w/ Si Gel	38	32.	ug/l	90	90	52-126	0	20
Batch number: 100260005A	Sample number(s): 5887582,5887584							
TPH-DRO CA C10-C28 w/ Si Gel	N.D.	32.	ug/l	90	88	52-126	3	20

### Sample Matrix Quality Control

Unspiked (UNSPK) = the sample used in conjunction with the matrix spike  
 Background (BKG) = the sample used in conjunction with the duplicate

Analysis Name	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD MAX	BKG Conc	DUP Conc	DUP RPD	Dup RPD Max
Batch number: P100272AA	Sample number(s): 5887580-5887586 UNSPK: 5887581								
Benzene	113		80-126						
Ethylbenzene	105		71-134						
Methyl Tertiary Butyl Ether	112		72-126						
Toluene	111		80-125						
Xylene (Total)	107		79-125						
Batch number: 10021A20A	Sample number(s): 5887580-5887586 UNSPK: 5887586								
TPH-GRO N. CA water C6-C12	127		63-154						

### Surrogate Quality Control

Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report.

 Analysis Name: BTEX by 8260B  
 Batch number: P100272AA

Dibromofluoromethane

1,2-Dichloroethane-d4

Toluene-d8

4-Bromofluorobenzene

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: Chevron  
Reported: 02/05/10 at 06:04 PM

Group Number: 1179275

### Surrogate Quality Control

5887580	90	90	90	86
5887581	91	89	91	86
5887582	90	89	91	86
5887583	91	89	91	88
5887584	91	90	91	87
5887585	91	89	90	89
5887586	90	88	90	87
Blank	90	89	91	87
LCS	90	91	89	87
LCSD	90	91	91	87
MS	91	93	90	88
Limits:	80-116	77-113	80-113	78-113

Analysis Name: TPH-GRO N. CA water C6-C12  
Batch number: 10021A20A  
Trifluorotoluene-F

5887580	91
5887581	87
5887582	97
5887583	94
5887584	90
5887585	171*
5887586	82
Blank	94
LCS	104
LCSD	117
MS	112

Limits: 63-135

Analysis Name: TPH-DRO CA C10-C28 w/ Si Gel  
Batch number: 100220010A  
Orthoterphenyl

5887581	103
5887583	104
5887585	101
5887586	104
Blank	113
LCS	122
LCSD	123

Limits: 59-131

Analysis Name: TPH-DRO CA C10-C28 w/ Si Gel  
Batch number: 100260005A  
Orthoterphenyl

5887582	95
5887584	94
Blank	100
LCS	115
LCSD	109

Limits: 59-131

#### \*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Quality Control Summary

Client Name: Chevron  
Reported: 02/05/10 at 06:04 PM

Group Number: 1179275

**Surrogate Quality Control**

\*- Outside of specification

- (1) The result for one or both determinations was less than five times the LOQ.
- (2) The unspiked result was more than four times the spike added.

## Lancaster Laboratories Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

<b>N.D.</b>	none detected	<b>BMQL</b>	Below Minimum Quantitation Level
<b>TNTC</b>	Too Numerous To Count	<b>MPN</b>	Most Probable Number
<b>IU</b>	International Units	<b>CP Units</b>	cobalt-chloroplatinate units
<b>umhos/cm</b>	micromhos/cm	<b>NTU</b>	nephelometric turbidity units
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>Cal</b>	(diet) calories	<b>lb.</b>	pound(s)
<b>meq</b>	milliequivalents	<b>kg</b>	kilogram(s)
<b>g</b>	gram(s)	<b>mg</b>	milligram(s)
<b>ug</b>	microgram(s)	<b>l</b>	liter(s)
<b>ml</b>	milliliter(s)	<b>ul</b>	microliter(s)
<b>m3</b>	cubic meter(s)	<b>fib &gt;5 um/ml</b>	fibers greater than 5 microns in length per ml
<b>&lt;</b>	less than – The number following the sign is the <u>limit of quantitation</u> , the smallest amount of analyte which can be reliably determined using this specific test.		
<b>&gt;</b>	greater than		
<b>ppm</b>	parts per million – One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.		
<b>ppb</b>	parts per billion		
<b>Dry weight basis</b>	Results printed under this heading have been adjusted for moisture content. This increases the analyte weight concentration to approximate the value present in a similar sample without moisture.		

### U.S. EPA data qualifiers:

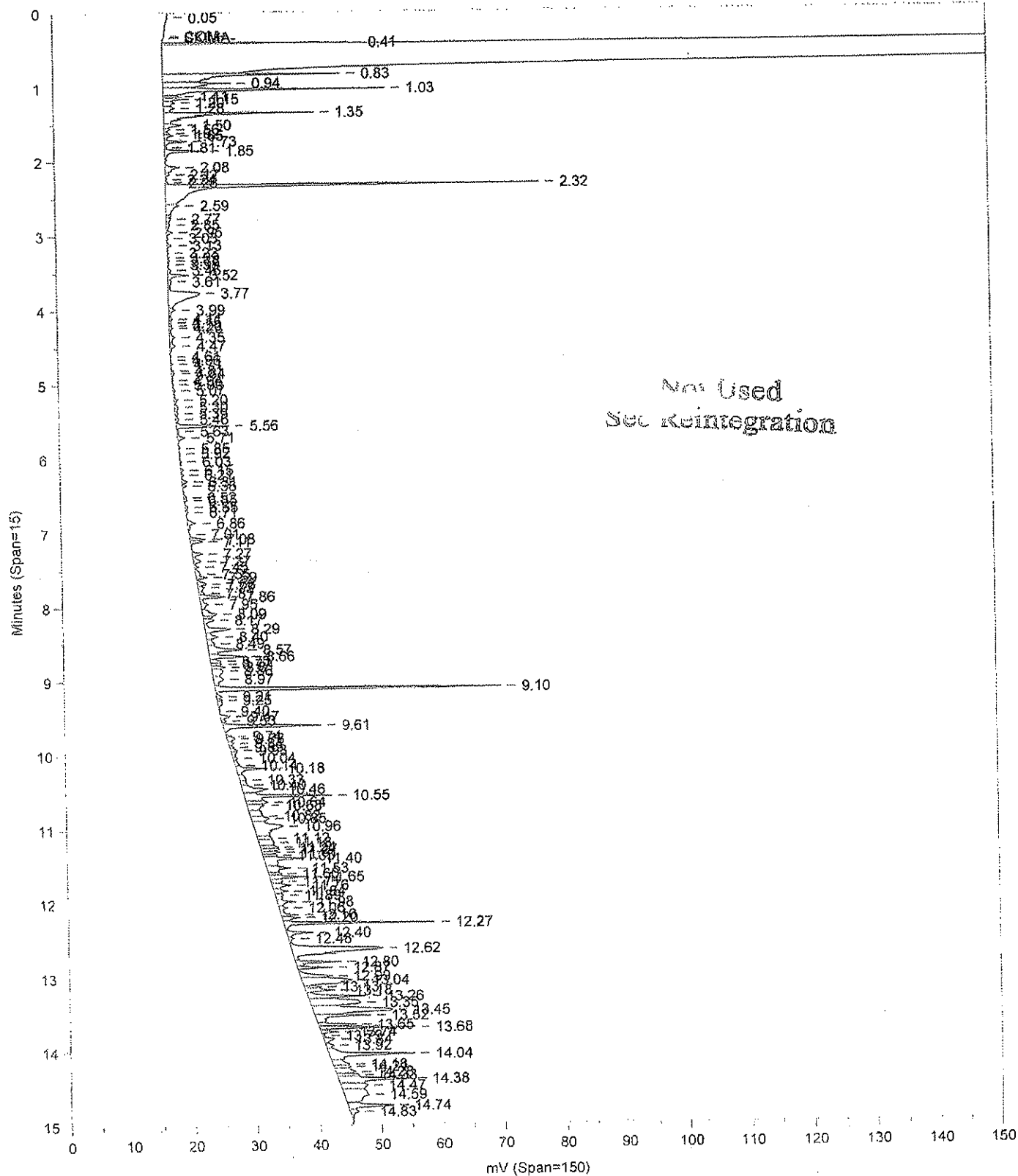
Organic Qualifiers	Inorganic Qualifiers
<b>A</b> TIC is a possible aldol-condensation product	<b>B</b> Value is <CRDL, but ≥IDL
<b>B</b> Analyte was also detected in the blank	<b>E</b> Estimated due to interference
<b>C</b> Pesticide result confirmed by GC/MS	<b>M</b> Duplicate injection precision not met
<b>D</b> Compound quantitated on a diluted sample	<b>N</b> Spike amount not within control limits
<b>E</b> Concentration exceeds the calibration range of the instrument	<b>S</b> Method of standard additions (MSA) used for calculation
<b>J</b> Estimated value	<b>U</b> Compound was not detected
<b>N</b> Presumptive evidence of a compound (TICs only)	<b>W</b> Post digestion spike out of control limits
<b>P</b> Concentration difference between primary and confirmation columns >25%	<b>*</b> Duplicate analysis not within control limits
<b>U</b> Compound was not detected	<b>+</b> Correlation coefficient for MSA <0.995
<b>X,Y,Z</b> Defined in case narrative	

Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAC unless otherwise noted under the individual analysis.

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

**WARRANTY AND LIMITS OF LIABILITY** – In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL LANCASTER LABORATORIES BE LIABLE FOR INDIRECT, SPECIAL, CONSEQUENTIAL, OR INCIDENTAL DAMAGES INCLUDING, BUT NOT LIMITED TO, DAMAGES FOR LOSS OF PROFIT OR GOODWILL REGARDLESS OF (A) THE NEGLIGENCE (EITHER SOLE OR CONCURRENT) OF LANCASTER LABORATORIES AND (B) WHETHER LANCASTER LABORATORIES HAS BEEN INFORMED OF THE POSSIBILITY OF SUCH DAMAGES. We accept no legal responsibility for the purposes for which the client uses the test results. No purchase order or other order for work shall be accepted by Lancaster Laboratories which includes any conditions that vary from the Standard Terms and Conditions of Lancaster Laboratories and we hereby object to any conflicting terms contained in any acceptance or order submitted by client.

ATTACHMENT C  
CHROMATOGRAMS



Instrument ID:CP28--A8642A  
Volume Inj. per Column: 1  
Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
Sample Amount: 478

Injected on: 1/27/2010 10:46:58 AM  
GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
Dilution Factor: 1



TPH/DRO by 8015B, Modified

Sample ID: 5887581S    ABBAMW1    T 100220010A    06610  
Instrument ID: CP28--A8642A  
Volume Inj. per Column: 1  
Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
Sample Amount: 478  
Analyst: 0856

Injected on: 1/27/2010 10:46:58 AM  
GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
Dilution Factor: 1

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
18	2.075	C10	.0007	7952	.036	2374
96	9.103	o-TP Surrogate	.0066	78582	.026	46874
137	12.196	C28	.0006	6443	.021	3038

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
1	1.940	12.300	3.781	100.000	863216.1	50.797

Total slice amount= 3.781                      Total slice area= 863216.1  
Total slice amount %= 100.0                    Total slice area %= 50.8

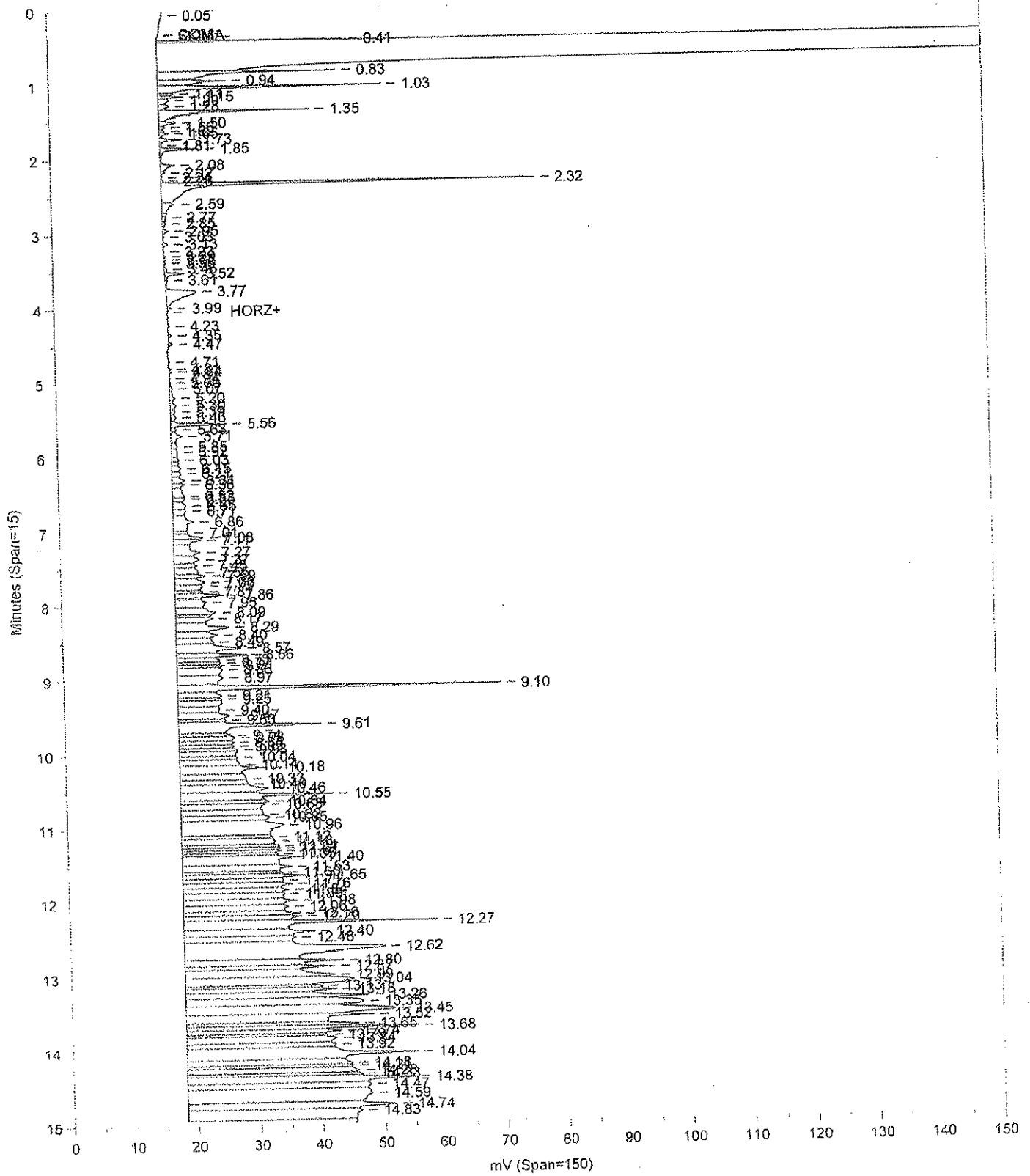
\*\*\*\*\* RESULTS TABLE \*\*\*\*\*

DRO AREA = 863216.1  
PRELIMINARY DRO AMOUNT = 8.547731E-02 PPM

FILES:

Area File: C:\CPWIN\DATA\1\U027.09A  
Method File: C:\CPWIN\DATA\1\FUELU.MET  
Calibration File: C:\CPWIN\DATA\1\CALU022A.CAL  
Format File: C:\CPWIN\DATA\1\FUELU.FMT  
Area file created on: 1/27/2010 11:02:04 AM  
File reported on: 1/27/2010 at 11:02:04 AM

Not Used  
See Reintegration



Instrument ID: CP28-A8642A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
 Sample Amount: 478

Injected on: 1/27/2010 10:46:58 AM  
 GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
 Dilution Factor: 1

TPH/DRO by 8015B, Modified

Sample ID: 5887581S ABBAMW1 T 100220010A 06610  
Instrument ID: CP28--A8642A  
Volume Inj. per Column: 1  
Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
Sample Amount: 478  
Analyst: 0856

Injected on: 1/27/2010 10:46:58 AM  
GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
Dilution Factor: 1

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
18	2.075	C10	.0007	7952	.036	2374
92	9.103	o-TP Surrogate	.0096	114148	.026	52802
133	12.196	C28	.006	65416	.021	19074

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
1	1.940	12.300	7.781	100.000	3552269.0	45.912

Total slice amount= 7.781  
Total slice amount %= 100.0

Total slice area= 3552269.0  
Total slice area %= 45.9

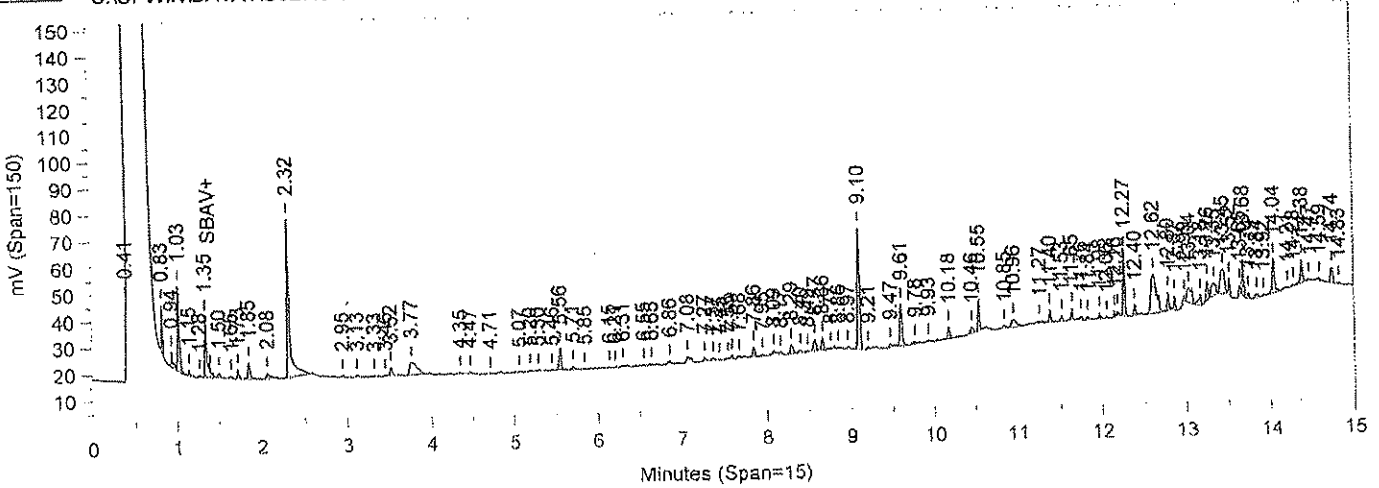
\*\*\*\*\* RESULTS TABLE \*\*\*\*\*

DRO AREA = 3552269  
PRELIMINARY DRO AMOUNT = 0.3517525 PPM

FILES:

Area File: C:\CPWIN\DATA\U027.09A  
Method File: !C:\CPWIN\DATA\FUELU.MET  
Calibration File: !C:\CPWIN\DATA\CALU022A.CAL  
Format File: C:\CPWIN\DATA\FUELU.FMT  
Area file created on: 1/28/2010 7:53:56 AM  
File reported on: 1/28/2010 at 7:53:56 AM

M = Manually Integrated  
Analyst: Wau 1/28/10  
Approved by: Wau  
Circle Reason 1 2 3 4  
1 = Missed Peak  
2 = Improper Baseline  
3 = RT Update  
4 = Other



Sample Name: 5887581S ABBAMW1 T 100220010A 06610A

Instrument ID: CP28--A8642A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
 Sample Amount: 478  
 Analyst: 0856

Injected on: 1/27/2010 10:46:58 AM  
 GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
 Dilution Factor: 1

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
12	2.075	C10	.0005	5477	.036	2085
55	9.103	o-TP Surrogate	.0064	76594	.026	46543
75	12.196	C28	.0003	2845	.021	2063

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
-------	------------	-----------	--------------	----------	------------	--------

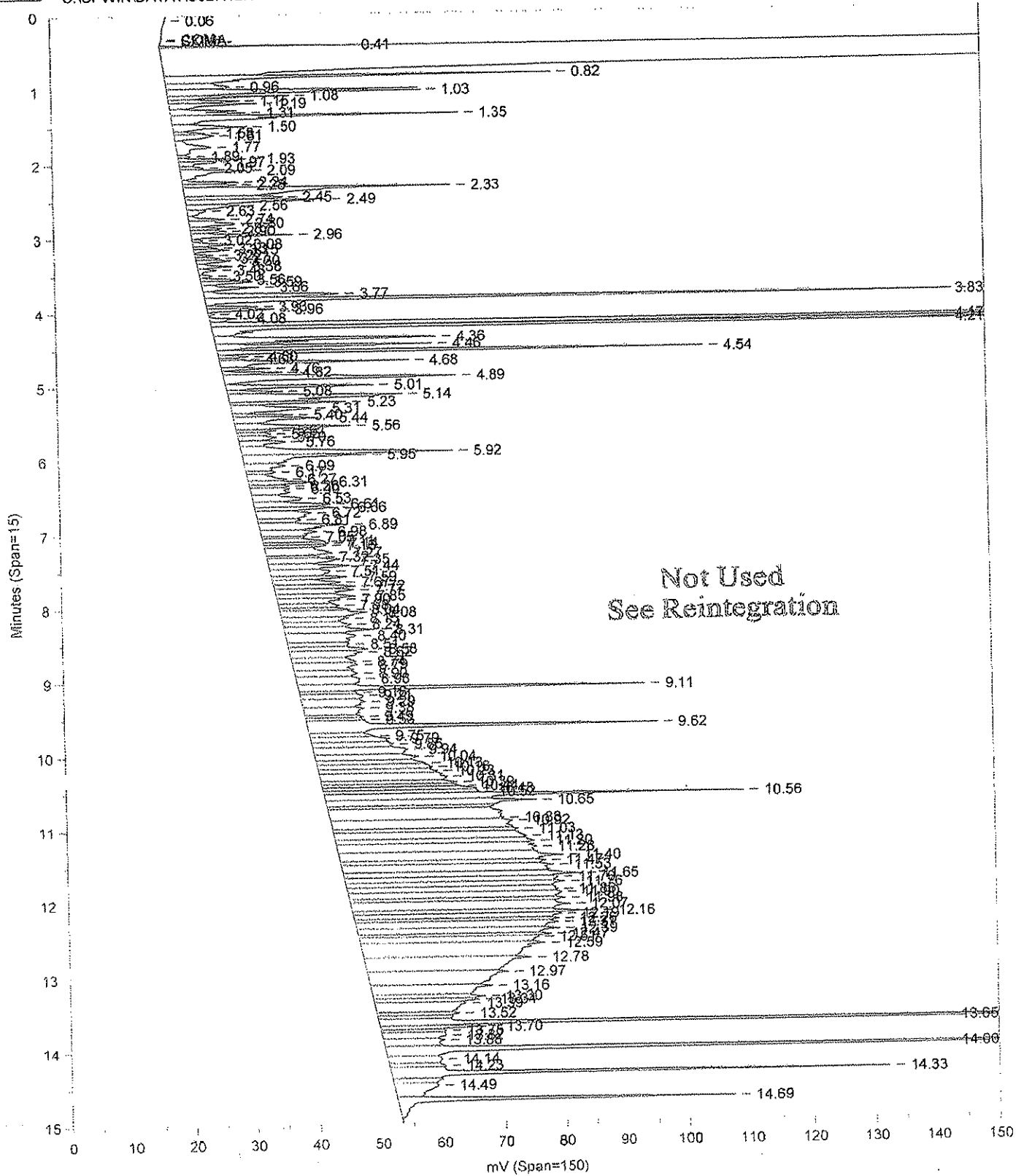
Total slice amount = 0.000  
 Total slice amount % = 0.0  
 Total slice area = 0.0  
 Total slice area % = 0.0

O-TERPHENYL % RECOVERY = 25.63442 %  
 O-TERPHENYL SURR. % D = -69.2387

O-TERPHENYL % RECOVERY = 102.5377 %  
 O-TERPHENYL SURR. % D = -69.2387

FILES:

Area File: C:\CPWIN\DATA1\U027.09A  
 Method File: C:\CPWIN\DATA1\REPLOU.MET  
 Calibration File: C:\CPWIN\DATA1\CALU022A.CAL  
 Format File: C:\CPWIN\DATA1\REPLOU.FMT  
 Area file created on: 1/27/2010 11:02:14 AM  
 File reported on: 1/27/2010 at 11:02:14 AM



Instrument ID: CP28--A8642A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
 Sample Amount: 482

Injected on: 1/27/2010 11:52:34 AM  
 GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
 Dilution Factor: 1

TPH/DRO by 8015B, Modified

Sample ID: 5887583S    ABBAMW3    T 100220010A    06610  
Instrument ID: CP28--A8642A  
Volume Inj. per Column: 1  
Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
Sample Amount: 482  
Analyst: 0856

Injected on: 1/27/2010 11:52:34 AM  
GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
Dilution Factor: 1

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
18	2.048	C10	.0007	8252	.027	3905
118	9.106	o-TP Surrogate	.0106	127614	.026	56091
158	12.195	C28	.0109	120375	.031	33772

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
1	1.940	12.300	10.732	100.000	9063052.0	71.219

Total slice amount= 10.732  
Total slice amount %= 100.0

Total slice area= 9063052.0  
Total slice area %= 71.2

\*\*\*\*\* RESULTS TABLE \*\*\*\*\*

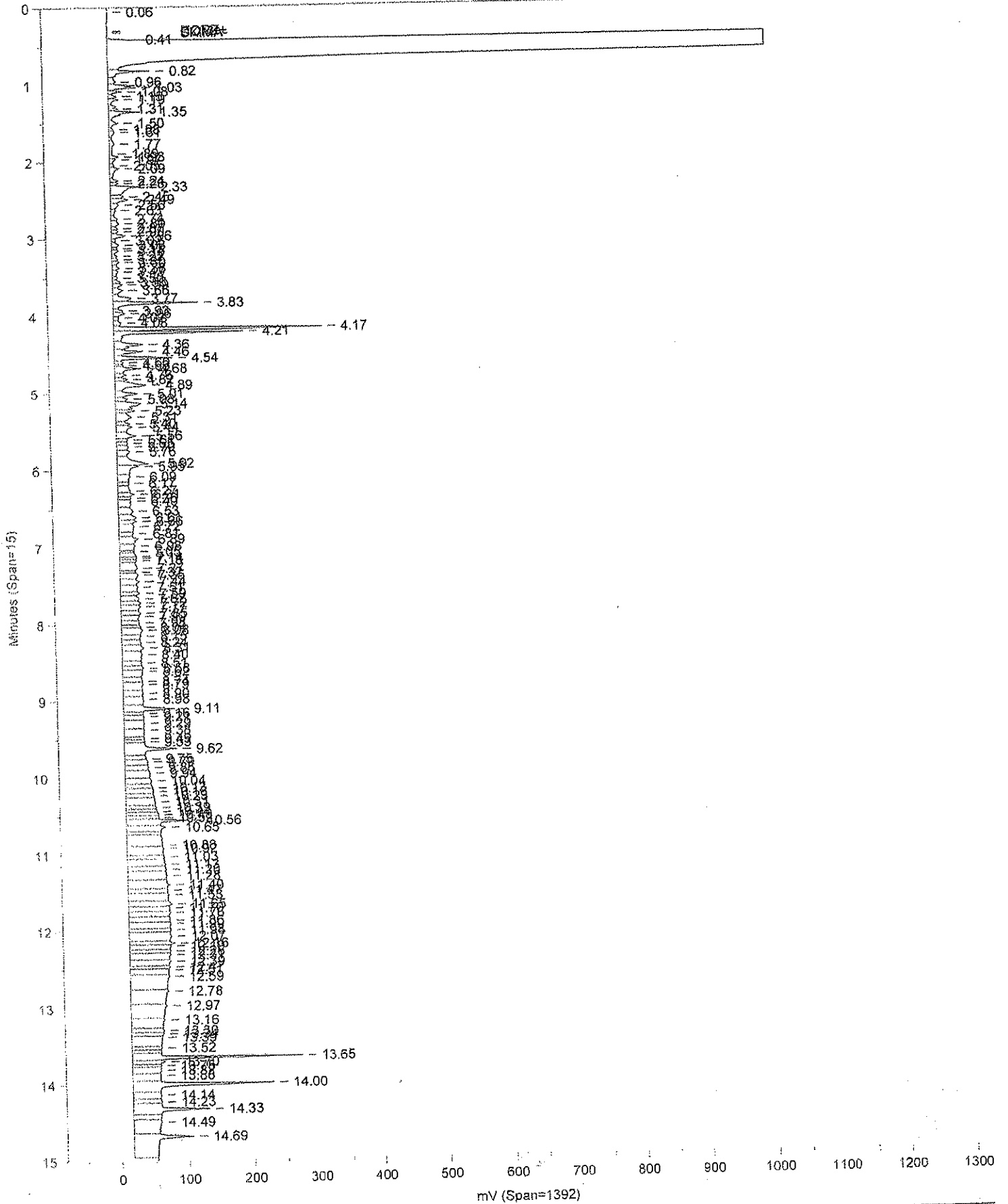
DRO AREA = 9063052  
PRELIMINARY DRO AMOUNT = 0.8899933 PPM

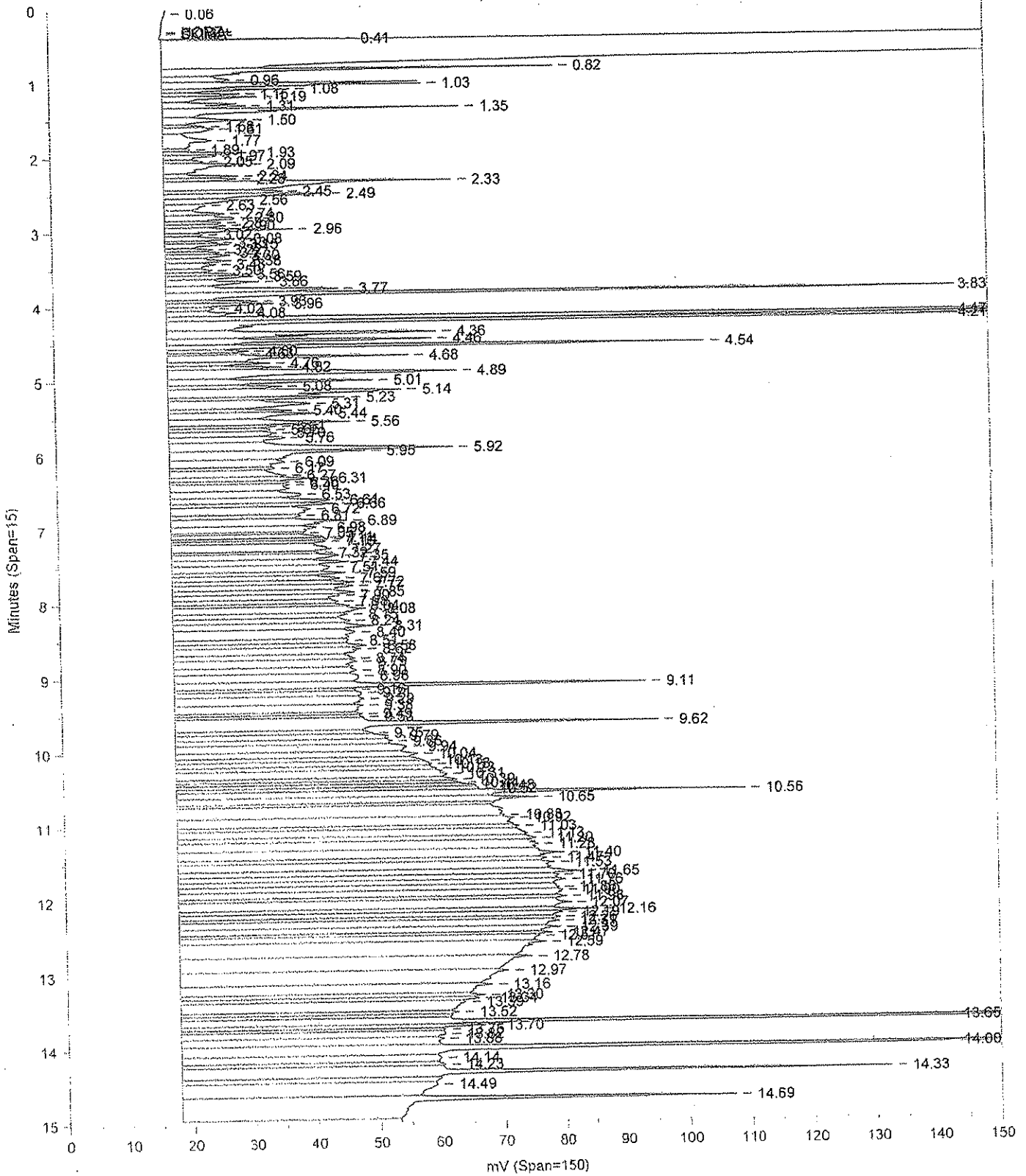
FILES:

Area File: C:\CPWIN\DATA\U027.12A  
Method File: C:\CPWIN\DATA\FUELU.MET  
Calibration File: C:\CPWIN\DATA\CALU022A.CAL  
Format File: C:\CPWIN\DATA\FUELU.FMT  
Area file created on: 1/27/2010 12:07:40 PM  
File reported on: 1/27/2010 at 12:07:41 PM

Not Used  
See Reintegration







Instrument ID:CP28--A8642A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
 Sample Amount: 482

Injected on: 1/27/2010 11:52:34 AM  
 GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
 Dilution Factor: 1

TPH/DRO by 8015B, Modified

Sample ID: 5887583S ABBAMW3 T 100220010A 06610  
Instrument ID: CP28--A8642A  
Volume Inj. per Column: 1  
Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
Sample Amount: 482  
Analyst: 0856

Injected on: 1/27/2010 11:52:34 AM  
GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
Dilution Factor: 1

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
18	2.048	C10	.0014	15253	.027	6550
118	9.106	o-TP Surrogate	.0201	240885	.026	76101
158	12.195	C28	.0202	223439	.031	61844

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
1	1.940	12.300	20.079	100.000	18243660.0	67.865

Total slice amount= 20.079  
Total slice amount %= 100.0  
Total slice area= 18243660.0  
Total slice area %= 67.9

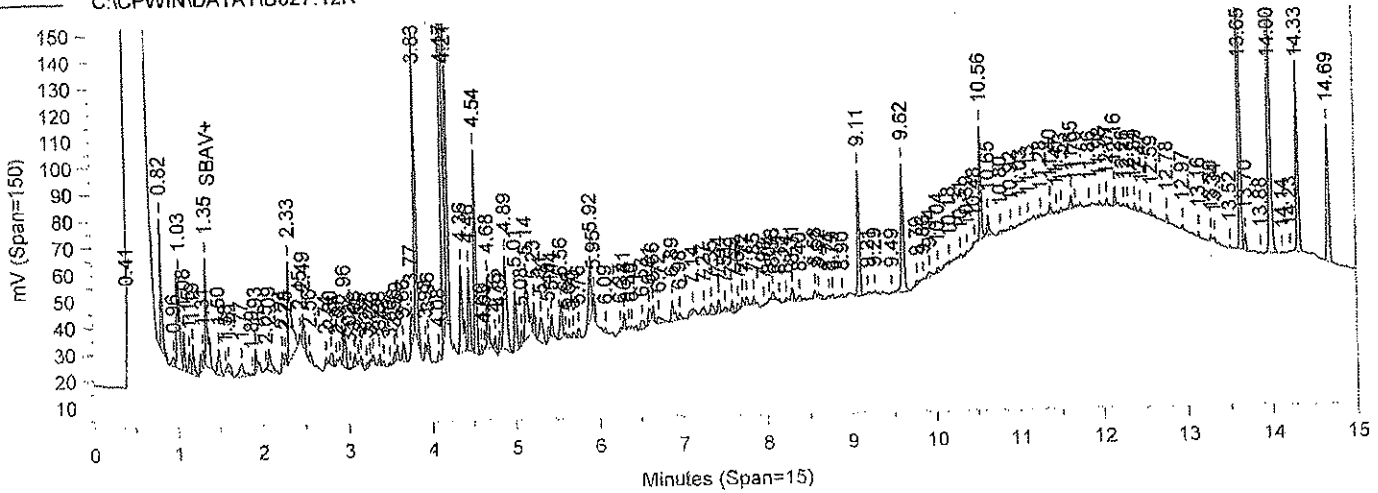
\*\*\*\*\* RESULTS TABLE \*\*\*\*\*

DRO AREA = 1.824366E+07  
PRELIMINARY DRO AMOUNT = 1.79153 PPM

FILES:

Area File: C:\CPWIN\DATA\U027.12A  
Method File: IC:\CPWIN\DATA\FUEL.MET  
Calibration File: IC:\CPWIN\DATA\CALU022A.CAL  
Format File: C:\CPWIN\DATA\FUEL.FMT  
Area file created on: 1/28/2010 7:55:08 AM  
File reported on: 1/28/2010 at 7:55:07 AM

M = Manually Integrated  
Analyst: Mouk 1/28/10  
Approved by: [Signature]  
Circle Reason 1 (2) 3 4  
1 = Missed Peak  
2 = Improper Baseline  
3 = RT Update  
4 = Other



Sample Name: 5887583S ABBAMW3 T 100220010A 06610A

Instrument ID: CP28--A8642A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
 Sample Amount: 482  
 Analyst: 0856

Injected on: 1/27/2010 11:52:34 AM  
 GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
 Dilution Factor: 1

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
16	2.048	C10	.0002	1726	.026	1235
105	9.106	o-TP Surrogate	.0065	77937	.026	47348
133	12.159	C28	.0007	7575	.018	7093

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
-------	------------	-----------	--------------	----------	------------	--------

Total slice amount= 0.000  
 Total slice amount %= 0.0

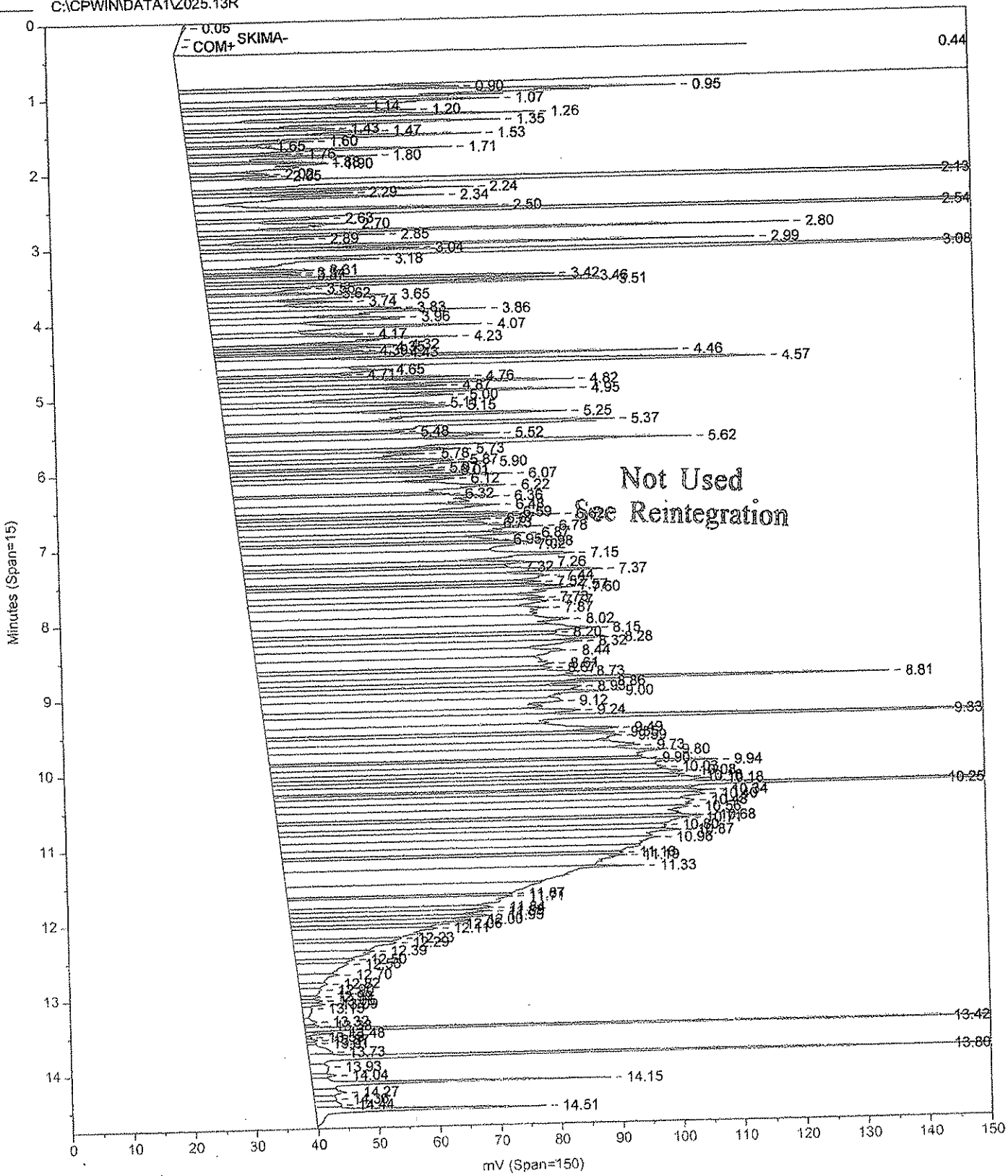
Total slice area= 0.0  
 Total slice area %= 0.0

O-TERPHENYL % RECOVERY = 26.08403 %  
 O-TERPHENYL SURR. % D = -68.69917

O-TERPHENYL % RECOVERY = 104.3361 %  
 O-TERPHENYL SURR. % D = -68.69917

FILES:

Area File: C:\CPWIN\DATA1\U027.12A  
 Method File: C:\CPWIN\DATA1\REPLOTU.MET  
 Calibration File: C:\CPWIN\DATA1\CALU022A.CAL  
 Format File: C:\CPWIN\DATA1\REPLOTU.FMT  
 Area file created on: 1/27/2010 12:07:50 PM  
 File reported on: 1/27/2010 at 12:07:51 PM



Instrument ID: CP20--Z9428A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1MIN; 40C/MIN TO 150; 8C/MIN TO 180; 40C/1MIN TO 310; 80  
 Sample Amount: 475

Injected on: 1/25/2010 1:02:36 PM  
 GC Column: ZB-5 30M x .32mm x .25 um; INJ 300C; FID 320C  
 Dilution Factor: 1

TPH/DRO by 8015B, Modified

Sample ID: 5887585      AABAMW5      T      100220010A      06610  
Instrument ID: CP20--Z9428A      Injected on: 1/25/2010 1:02:36 PM  
Volume Inj. per Column: 1      GC Column: ZB-5 30M x .32mm x .25 um; INJ 300C; FID 320C  
Oven Parameters: 60C 1MIN; 40C/MIN TO 150; 8C/MIN TO 180; 40C/1MIN TO 310; 80  
Sample Amount: 475      Dilution Factor: 1  
Analyst: 0856

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
18	1.879	C10	.0035	34609	.02	20702
114	8.809	o-Terphenyl	.0227	298972	.025	103456
148	11.892	C28	.0089	110900	.035	33187

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
1	1.750	11.990	16.682	100.000	25832560.0	51.865

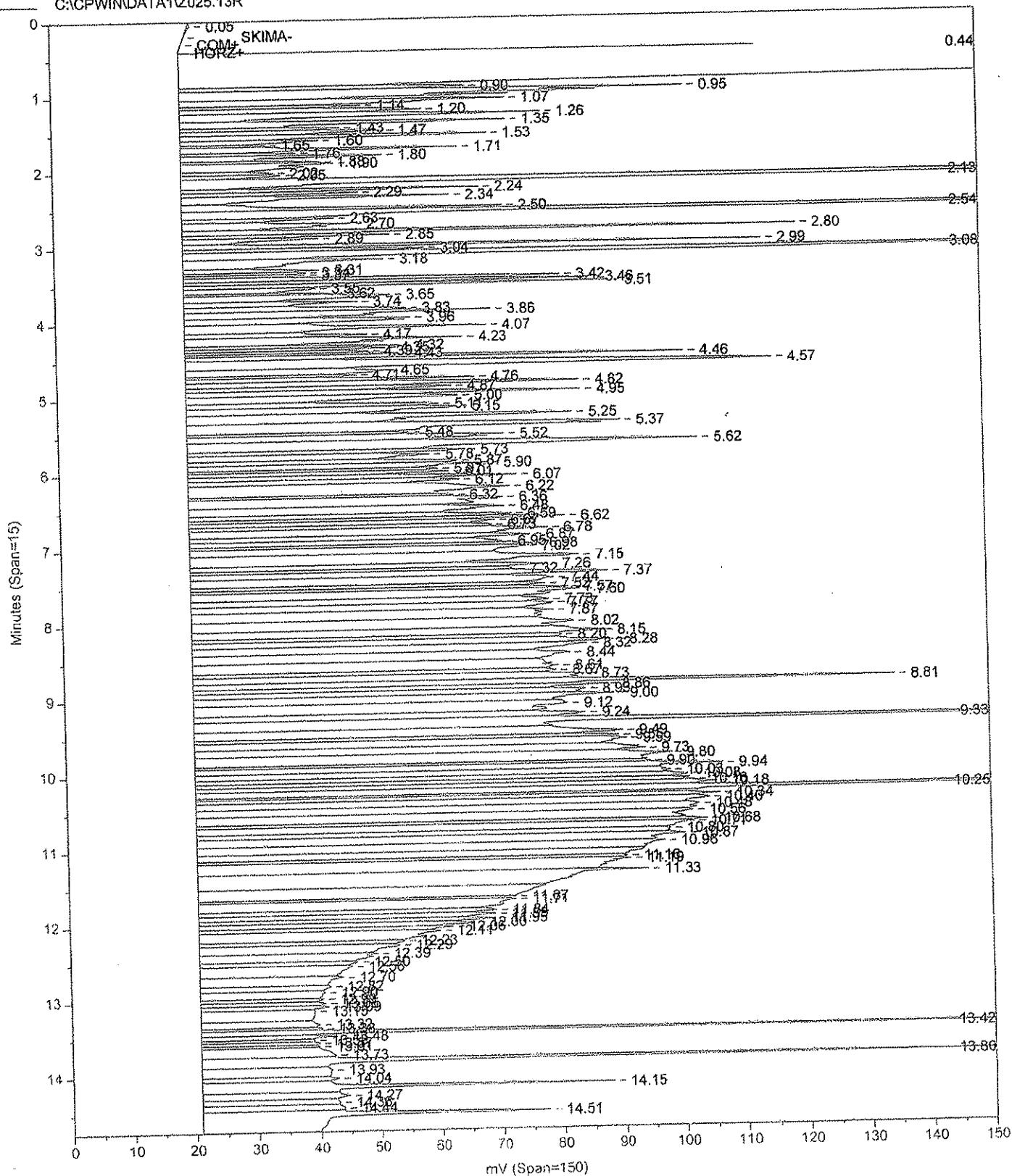
Total slice amount= 16.682      Total slice area= 25832560.0  
Total slice amount %= 100.0      Total slice area %= 51.9

\*\*\*\*\* RESULTS TABLE \*\*\*\*\*

DRO AREA = 2.583256E+07  
PRELIMINARY DRO AMOUNT = 2.153664 PPM

FILES:  
Area File: C:\CPWIN\DATA\Z025.13A  
Method File: C:\CPWIN\DATA\FUELZ.MET  
Calibration File: C:\CPWIN\DATA\CALZ019A.CAL  
Format File: C:\CPWIN\DATA\FUELZ.FMT  
Area file created on: 1/25/2010 1:17:26 PM  
File reported on: 1/25/2010 at 1:17:25 PM

Not Used  
See Reintegration



Instrument ID: CP20--Z9428A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1MIN; 40C/MIN TO 150; 8C/MIN TO 180; 40C/1MIN TO 310; 80  
 Sample Amount: 475  
 Injected on: 1/25/2010 1:02:36 PM  
 GC Column: ZB-5 30M x .32mm x .25 um; INJ 300C; FID 320C  
 Dilution Factor: 1



TPH/DRO by 8015B, Modified

Sample ID: 5887585 AABAMW5 T 100220010A 06610  
Instrument ID: CP20--Z9428A Injected on: 1/25/2010 1:02:36 PM  
Volume Inj. per Column: 1 GC Column: ZB-5 30M x .32mm x .25 um; INJ 300C; FID 320C  
Oven Parameters: 60C 1MIN; 40C/MIN TO 150; 8C/MIN TO 180; 40C/1MIN TO 310; 80  
Sample Amount: 475 Dilution Factor: 1  
Analyst: 0856

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
18	1.879	C10	.0039	38370	.02	22597
114	8.809	o-Terphenyl	.0263	347294	.025	114604
148	11.892	C28	.0134	166874	.035	48449

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
1	1.750	11.990	20.743	100.000	30862760.0	53.431

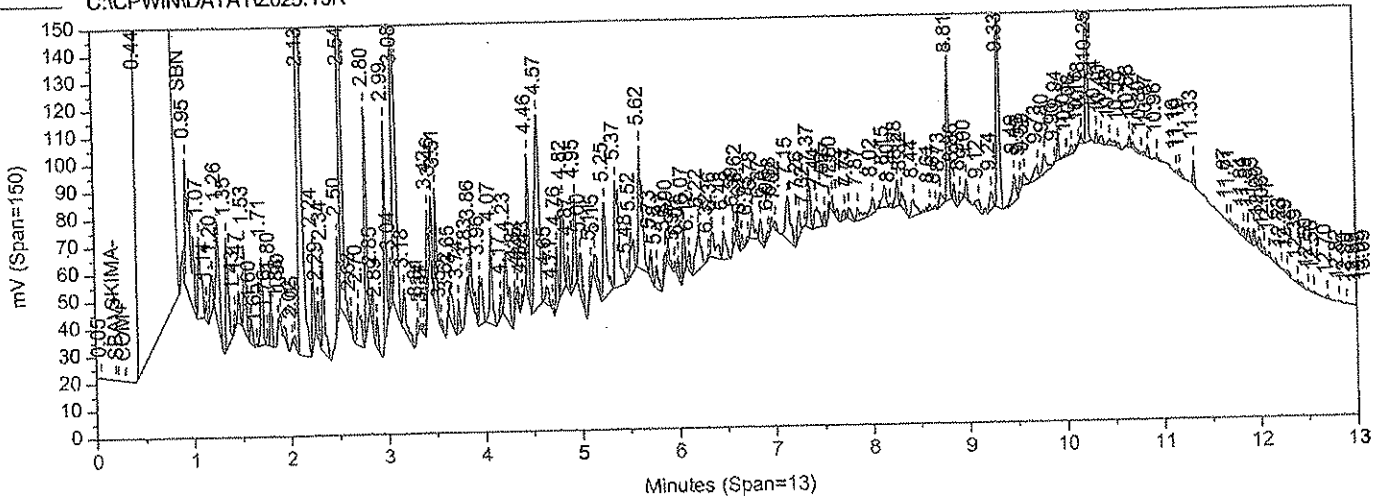
Total slice amount= 20.743 Total slice area= 30862760.0  
Total slice amount %= 100.0 Total slice area %= 53.4

\*\*\*\*\* RESULTS TABLE \*\*\*\*\*

DRO AREA = 3.086276E+07  
PRELIMINARY DRO AMOUNT = 2.573032 PPM

FILES:  
Area File: C:\CPWIN\DATA\1\Z025.13A  
Method File: !C:\CPWIN\DATA\1\FUELZ.MET  
Calibration File: !C:\CPWIN\DATA\1\CALZ019A.CAL  
Format File: C:\CPWIN\DATA\1\FUELZ.FMT  
Area file created on: 1/26/2010 9:04:54 AM  
File reported on: 1/26/2010 at 9:04:54 AM

M = Manually Integrated  
Analyst [Signature] 1/26/10  
Approved by [Signature]  
Circle Reason 1 (2) 3 4  
1 = Missed Peak  
2 = Improper Baseline  
3 = RT Update  
4 = Other \_\_\_\_\_



Sample Name:5887585 AABAMW5 T 100220010A 06610A

Instrument ID:CP20--Z9428A Injected on: 1/25/2010 1:02:36 PM  
 Volume Inj. per Column: 1 GC Column: ZB-5 30M x .32mm x .25 um; INJ 300C; FID 320C  
 Oven Parameters: 60C/1MIN; 40C/MIN TO 150; 8C/MIN TO 180; 40C/1MIN TO 310; 80  
 Sample Amount: 475 Dilution Factor: 1  
 Analyst: 0856

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
17	1.879	C10	.0005	4440	.019	2124
113	8.809	o-Terphenyl	.0064	84076	.025	53903
147	11.892	C28	.0008	9333	.035	5397

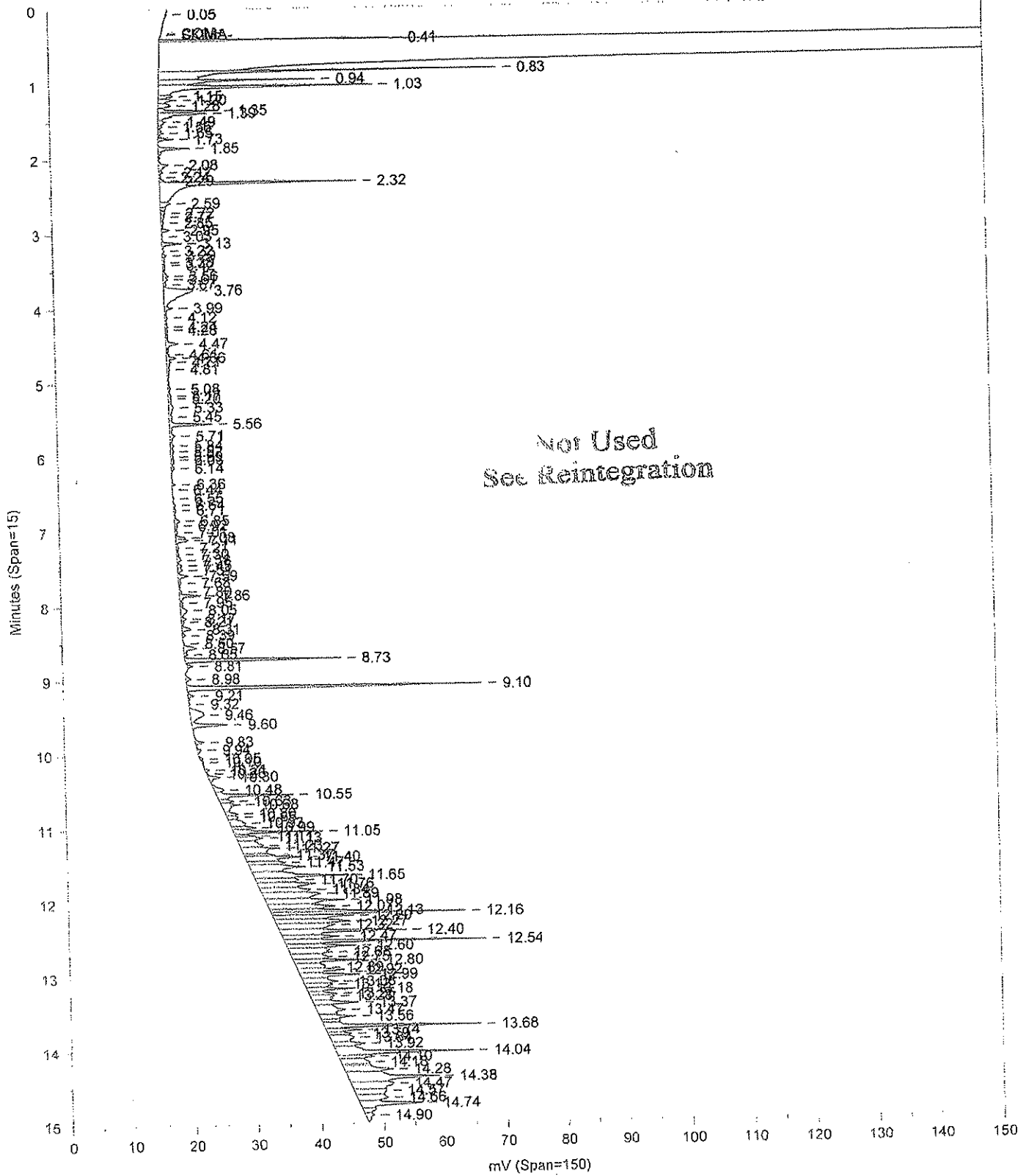
Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
-------	------------	-----------	--------------	----------	------------	--------

Total slice amount= 0.000 Total slice area= 0.0  
 Total slice amount %= 0.0 Total slice area %= 0.0

O-TERPHENYL % RECOVERY = 100.9279 %  
 O-TERPHENYL SS %D FOR CHECKS = -69.72163 %

O-TERPHENYL % RECOVERY = 25.23198 %  
 O-TERPHENYL SURR. % D = -69.72163 %

FILES:  
 Area File: C:\CPWINDATA1\Z025.13A  
 Method File: C:\CPWINDATA1\REPL0TZ.MET  
 Calibration File: C:\CPWINDATA1\CALZ019A.CAL  
 Format File: C:\CPWINDATA1\REPL0TZ.FMT  
 Area file created on: 1/25/2010 1:17:36 PM  
 File reported on: 1/25/2010 at 1:17:36 PM



Instrument ID:CP28--A8642A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
 Sample Amount: 477

Injected on: 1/27/2010 11:30:48 AM  
 GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
 Dilution Factor: 1

TPH/DRO by 8015B, Modified

Sample ID: 5887586S    ABBACS2    T    100220010A    06610  
Instrument ID: CP28--A8642A  
Volume Inj. per Column: 1  
Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
Sample Amount: 477  
Analyst: 0856

Injected on: 1/27/2010 11:30:48 AM  
GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
Dilution Factor: 1

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
16	2.077	C10	.0005	5403	.037	1608
88	9.102	o-TP Surrogate	.0066	78560	.025	48492
126	12.195	C28	.003	33211	.021	12913

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
1	1.940	12.300	4.837	100.000	1076666.0	48.167

Total slice amount= 4.837  
Total slice amount %= 100.0

Total slice area= 1076666.0  
Total slice area %= 48.2

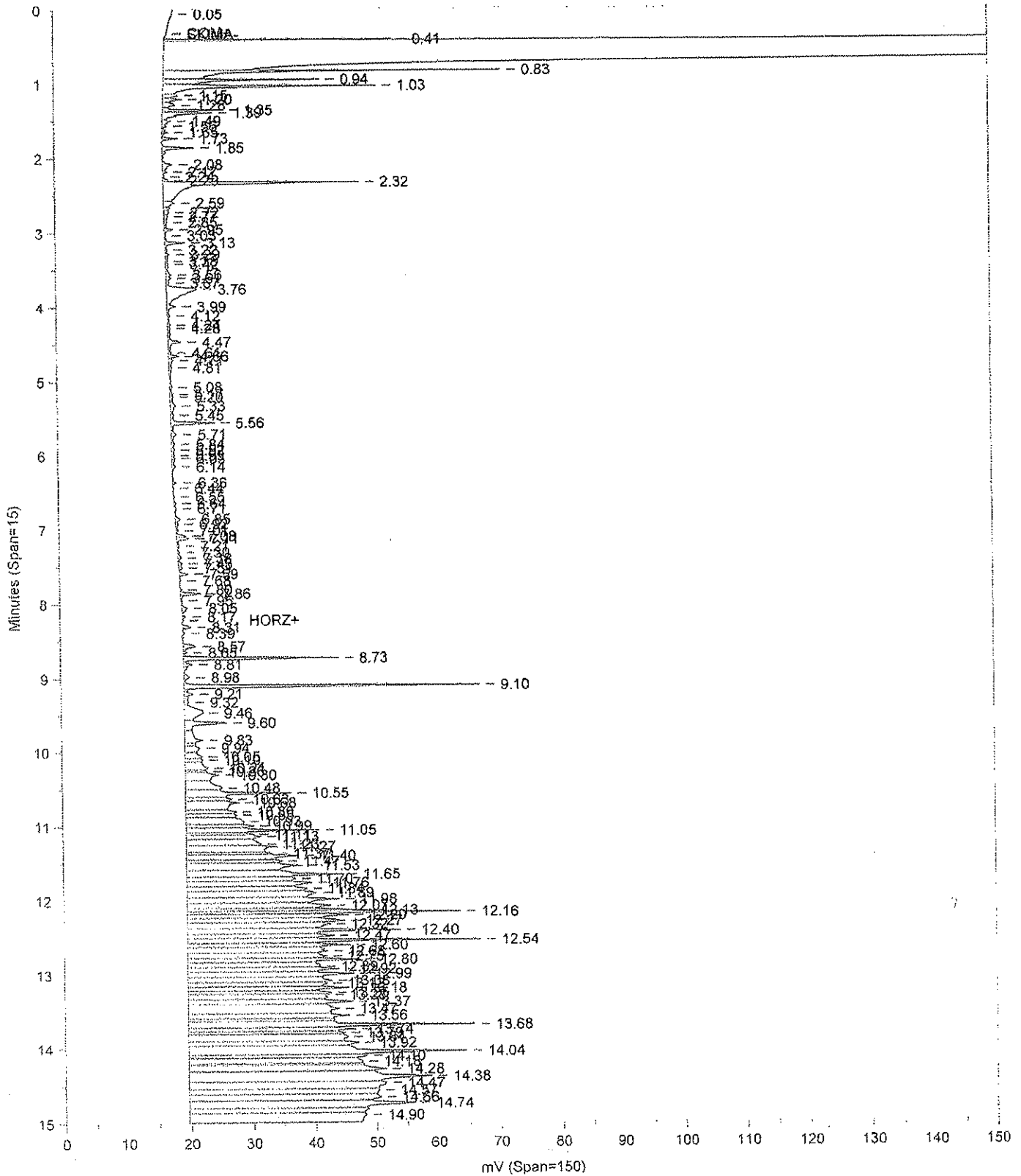
\*\*\*\*\* RESULTS TABLE \*\*\*\*\*

DRO AREA = 1076666  
PRELIMINARY DRO AMOUNT = 0.1068371 PPM

FILES:  
Area File: C:\CPWIN\DATA1\U027.11A  
Method File: C:\CPWIN\DATA1\FUELU.MET  
Calibration File: C:\CPWIN\DATA1\CALU022A.CAL  
Format File: C:\CPWIN\DATA1\FUELU.FMT  
Area file created on: 1/27/2010 11:45:54 AM  
File reported on: 1/27/2010 at 11:45:54 AM

Not Used  
Reintegration

C:\CPWIN\DATA1\U027.11R



Instrument ID: CP28--A8642A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
 Sample Amount: 477

Injected on: 1/27/2010 11:30:48 AM  
 GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
 Dilution Factor: 1

TPH/DRO by 8015B, Modified

Sample ID: 5887586S ABBACS2 T 100220010A 06610  
Instrument ID: CP28--A8642A  
Volume Inj. per Column: 1  
Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
Sample Amount: 477  
Analyst: 0856

Injected on: 1/27/2010 11:30:48 AM  
GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
Dilution Factor: 1

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
16	2.077	C10	.0005	5403	.037	1608
86	9.102	o-TP Surrogate	.0068	80408	.025	48765
124	12.195	C28	.0071	77641	.021	26183

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
1	1.940	12.300	6.849	100.000	2184551.0	33.452

Total slice amount= 6.849  
Total slice amount %= 100.0

Total slice area= 2184551.0  
Total slice area %= 33.5

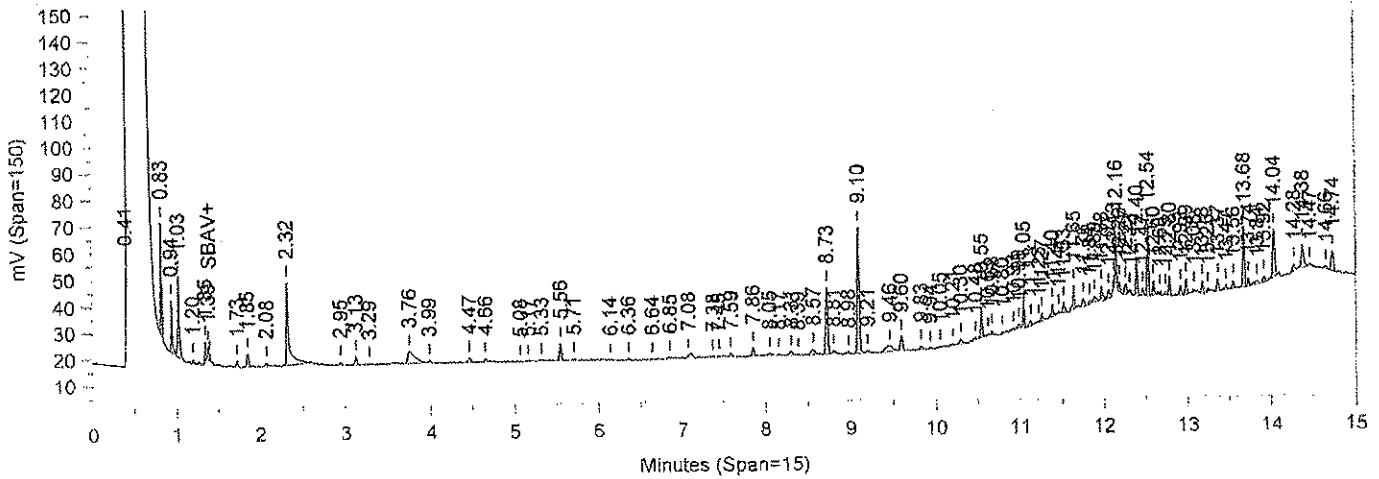
\*\*\*\*\* RESULTS TABLE \*\*\*\*\*

DRO AREA = 2184551  
PRELIMINARY DRO AMOUNT = 0.2167719 PPM

FILES:

Area File: C:\CPWIN\DATA\U027.11A  
Method File: !C:\CPWIN\DATA\FUELU.MET  
Calibration File: !C:\CPWIN\DATA\CALU022A.CAL  
Format File: C:\CPWIN\DATA\FUELU.FMT  
Area file created on: 1/28/2010 7:54:44 AM  
File reported on: 1/28/2010 at 7:54:43 AM

M = Manually Integrated  
Analyst MAN/KO 1/28/10  
Approved by MCL  
Circle Reason 1 2 3 4  
1 = Missed Peak  
2 = Improper Baseline  
3 = RT Update  
4 = Other \_\_\_\_\_



Sample Name: 5887586S ABBACS2 T 100220010A 06610A

Instrument ID: CP28--A8642A  
 Volume Inj. per Column: 1  
 Oven Parameters: 60C 1 MIN; 15C/MIN TO 190C; 36C/MIN TO 340C; HOLD 2 MIN  
 Sample Amount: 477  
 Analyst: 0856

Injected on: 1/27/2010 11:30:48 AM  
 GC Column: ZB-5 30M x .32mm x 0.25um; INJ 300C; FID 320C  
 Dilution Factor: 1

Peak #	Ret Time (min)	Peak Name	Amount PPM	Peak Area	Peak Width (min)	Peak Height
10	2.077	C10	.0004	3867	.037	1431
41	9.102	o-TP Surrogate	.0066	77834	.025	48374
72	12.195	C28	.0004	3955	.021	3699

Slice	Start Time	Stop Time	Slice Amount	Amount %	Slice Area	Area %
-------	------------	-----------	--------------	----------	------------	--------

Total slice amount = 0.000  
 Total slice amount % = 0.0  
 Total slice area = 0.0  
 Total slice area % = 0.0

O-TERPHENYL % RECOVERY = 26.04941 %  
 O-TERPHENYL SURR. % D = -68.74071

O-TERPHENYL % RECOVERY = 104.1976 %  
 O-TERPHENYL SURR. % D = -68.74071

FILES:

Area File: C:\CPWINDATA\U027.11A  
 Method File: C:\CPWINDATA\REPLOU.MET  
 Calibration File: C:\CPWINDATA\CALU022A.CAL  
 Format File: C:\CPWINDATA\REPLOU.FMT  
 Area file created on: 1/27/2010 11:46:04 AM  
 File reported on: 1/27/2010 at 11:46:04 AM



ATTACHMENT D

REGULATORY CORRESPONDENCE



ENVIRONMENTAL HEALTH SERVICES  
ENVIRONMENTAL PROTECTION  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502-6577  
(510) 567-6700  
FAX (510) 337-9335

February 5, 2010

Mr. Mike Bauer  
Chevron Environmental Management Company  
145 S. State College Blvd.  
Brea, CA 92821

Ms. Julie Beck Ball  
Mr. Peter Reinhold Beck  
2720 Broderick Street  
San Francisco, CA 94123

Subject: SLIC Case No. RO0002466 and Geotracker Global ID T06019744728, Park Street Landing 2301-2337 Blanding Avenue, Alameda, CA 94501 – Site Investigation Review

Dear Mr. Bauer and Ms. Ball:

Alameda County Environmental Health (ACEH) staff has reviewed the Spills, Leaks, Investigations, and Cleanups (SLIC) case file for the above referenced site including the recently submitted documents entitled, "*Soil Vapor Sampling Report*," dated December 2, 2009 and "*Fourth Quarter 2009 Groundwater Monitoring Report*," dated November 20, 2009. Both reports were prepared on Chevron's behalf by Conestoga-Rovers & Associates.

The "*Soil Vapor Sampling Report*," presents results from sub-slab vapor probe installation and vapor sampling conducted on October 22, 2009. Sub-slab vapor probes VP-9 through VP-13 were re-installed due to ambient air leaks detected during the initial sampling of the probes on July 24, 2009. Total petroleum hydrocarbons as gasoline (TPHg) and benzene were detected in sub-slab soil vapor samples at concentrations up to 2,100 and 16 micrograms per cubic meter ( $\mu\text{g}/\text{m}^3$ ), respectively. Based on the sub-slab vapor sampling results obtained, we request additional investigation as discussed in the technical comments below. We request that you address the following technical comments and submit the reports requested below.

#### **TECHNICAL COMMENTS**

1. **Sub-Slab Sampling Methods.** Subslab vapor samples VP-9 through VP-13 were collected without purging. We request that future subslab vapor samples be collected following the guidance in the document prepared by the U.S. Environmental Protection Agency entitled, "*Draft Standard Operating Procedures (SOP) for Installation of Sub-Slab Vapor Probes and Sampling Using EPA Method TO-15 to Support Vapor Intrusion Investigations*," which recommends purging two liters from subslab vapor probes using two dedicated 1-liter Tedlar bags. This guidance document was included as Appendix E to the March 11, 2009 Work Plan for the sub-slab vapor probe installation and sampling but apparently was not applied during sub-slab sampling at the site.



2. **Comparison of Sub-slab Vapor Sampling Results to ESLs.** The "*Soil Vapor Sampling Report*," dated December 2, 2009 cites a comparison of the sub-slab sampling results to Environmental Screening Levels (ESLs) in concluding that there appears to be no human health risk due to vapor intrusion to indoor air. We do not concur with this method for evaluating the results. The ESLs cited are for soil vapor samples that are typically collected at a depth of 5 feet and incorporate an attenuation factor for soil based on the distance between the slab of the building and the soil vapor sample. Since, sub-slab samples are collected immediately below the slab, screening levels that incorporate an attenuation factor for a vertical interval of soil are clearly not applicable. The Department of Toxic Substances Control provides a default attenuation factor of 0.01 (Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air, DTSC December 15, 2004) for subslab samples to account for attenuation by the building slab. Therefore, the appropriate approach is to apply an attenuation factor of 0.01 to the subslab sample results and compare the data to indoor air goals. As an example, applying an attenuation factor of 0.01 to the subslab sample results for VP-10 results in an estimated indoor air concentration for TPHg of  $21 \mu\text{g}/\text{m}^3$  ( $2,100 \mu\text{g}/\text{m}^3 \times 0.01$ ) which exceeds the indoor air goal of  $14 \mu\text{g}/\text{m}^3$  for noncarcinogenic risk. For benzene, applying an attenuation factor of 0.01 to the subslab sample results for VP-10 results in an estimated indoor air concentration of  $0.16 \mu\text{g}/\text{m}^3$  ( $16 \mu\text{g}/\text{m}^3 \times 0.01$ ) which exceeds the indoor air goal of  $0.14 \mu\text{g}/\text{m}^3$  for carcinogenic risk. Although these results do not necessarily indicate that a significant risk of vapor intrusion exists at the site, the results clearly indicate that further investigation is needed. At a minimum, we request that you sample the existing sub-slab and soil vapor probes on a quarterly basis. These data will be used to evaluate temporal variability and the need for further sub-slab and indoor air sampling at the site. We do not concur with the proposal to destroy subslab vapor probes VP-7 through VP-13. Please present the results of quarterly vapor monitoring in the quarterly monitoring reports requested. You may also propose additional investigation of the potential for vapor intrusion that includes actions in addition to quarterly vapor sampling.
3. **Temporal Variability of Soil Vapor Sampling Results.** In some cases, there appears to be significant variability in the analytical results between the 7/24/2009 and 10/22/2009 sampling events. The variability of the sampling results must be considered in evaluating whether there is a potential for vapor intrusion and further supports the need for additional investigation.
4. **Groundwater Monitoring Conclusions.** We concur with the proposal to continue quarterly groundwater monitoring. Please present the results from quarterly groundwater monitoring in the reports requested below. However, it is not clear that the collection of surface water samples at CS-2 provides meaningful information to help assess whether petroleum hydrocarbons from the site discharge to the Alameda Canal. Therefore, sampling of CS-2 may be suspended at this time.
5. **Evaluation of Shallow Groundwater.** In correspondence dated October 17, 2007, we questioned the representativeness of the groundwater monitoring data for well MW-1 and requested additional sampling of shallow groundwater in the area of well MW-1. Two shallow groundwater samples were proposed in the area of well MW-1 (SB-17 and SB-18). TPHg, TPHd, and benzene were detected in the grab groundwater sample from boring SB-18 at concentrations of 3,800, 19,000, and 590  $\mu\text{g}/\text{L}$ . The concentrations detected in the grab groundwater sample from SB-18 are significantly higher than the concentrations detected in groundwater from MW-1. This further indicates that the data collected from well MW-1 may not accurately reflect shallow groundwater quality at the site and also indicates



Mr. Mike Bauer  
Ms. Julie Beck Ball  
RO0002466  
February 5, 2010  
Page 3

that fuel hydrocarbons are likely discharging to the Alameda Canal. Unfortunately, a groundwater sample was not collected from boring SB-17. The March 11, 2009 "Work Plan for Additional Investigation," proposed the installation of five monitoring wells. One of the proposed wells was downgradient from well MW-1 and would have provided additional data to assess the representativeness of MW-1 results and to help assess potential discharges to the Alameda Canal. The proposed well could not be installed due to subsurface obstructions at approximately 3 to 4 feet bgs. As a result, the evaluation of shallow groundwater and the potential for discharges to Alameda Canal remains incomplete. We request that you make additional attempts to install the proposed well downgradient from MW-1 or propose additional investigation to address this data gap. Please submit a Well Installation Report for the proposed well downgradient from MW-1 or a Work Plan for additional investigation activities to assess potential discharges to Alameda Canal no later than May 12, 2010.

#### **TECHNICAL REPORT REQUEST**

Please submit technical reports to Alameda County Environmental Health (Attention: Jerry Wickham), according to the following schedule:

- **30 days after end of each quarter** – Quarterly Soil Vapor and Groundwater Monitoring Report
- **May 12, 2010** – Well Installation Report or Work Plan to Assess Potential Discharges to Alameda Canal

These reports are being requested pursuant to California Health and Safety Code Section 25296.10. 23 CCR Sections 2652 through 2654, and 2721 through 2728 outline the responsibilities of a responsible party in response to an unauthorized release from a petroleum UST system, and require your compliance with this request.

#### **ELECTRONIC SUBMITTAL OF REPORTS**

ACEH's Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of reports in electronic form. The electronic copy replaces paper copies and is expected to be used for all public information requests, regulatory review, and compliance/enforcement activities. Instructions for submission of electronic documents to the Alameda County Environmental Cleanup Oversight Program FTP site are provided on the attached "Electronic Report Upload Instructions." Submission of reports to the Alameda County FTP site is an addition to existing requirements for electronic submittal of information to the State Water Resources Control Board (SWRCB) Geotracker website. In September 2004, the SWRCB adopted regulations that require electronic submittal of information for all groundwater cleanup programs. For several years, responsible parties for cleanup of leaks from underground storage tanks (USTs) have been required to submit groundwater analytical data, surveyed locations of monitoring wells, and other data to the Geotracker database over the Internet. Beginning July 1, 2005, these same reporting requirements were added to Spills, Leaks, Investigations, and Cleanup (SLIC) sites. Beginning July 1, 2005, electronic submittal of a complete copy of all reports for all sites is required in Geotracker (in PDF format). Please visit the SWRCB website for more information on these requirements ([http://www.swrcb.ca.gov/ust/cleanup/electronic\\_reporting](http://www.swrcb.ca.gov/ust/cleanup/electronic_reporting)).

Mr. Mike Bauer  
Ms. Julie Beck Ball  
RO0002466  
February 5, 2010  
Page 4

#### PERJURY STATEMENT

All work plans, technical reports, or technical documents submitted to ACEH must be accompanied by a cover letter from the responsible party that states, at a minimum, the following: "I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge." This letter must be signed by an officer or legally authorized representative of your company. Please include a cover letter satisfying these requirements with all future reports and technical documents submitted for this fuel leak case.

#### PROFESSIONAL CERTIFICATION & CONCLUSIONS/RECOMMENDATIONS

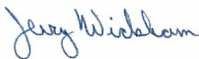
The California Business and Professions Code (Sections 6735, 6835, and 7835.1) requires that work plans and technical or implementation reports containing geologic or engineering evaluations and/or judgments be performed under the direction of an appropriately registered or certified professional. For your submittal to be considered a valid technical report, you are to present site specific data, data interpretations, and recommendations prepared by an appropriately licensed professional and include the professional registration stamp, signature, and statement of professional certification. Please ensure all that all technical reports submitted for this fuel leak case meet this requirement.

#### AGENCY OVERSIGHT

If it appears as though significant delays are occurring or reports are not submitted as requested, we will consider referring your case to the Regional Board or other appropriate agency, including the County District Attorney, for possible enforcement actions. California Health and Safety Code, Section 25299.76 authorizes enforcement including administrative action or monetary penalties of up to \$10,000 per day for each day of violation.

If you have any questions, please call me at (510) 567-6791 or send me an electronic mail message at [jerry.wickham@acgov.org](mailto:jerry.wickham@acgov.org).

Sincerely,



Digitally signed by Jerry Wickham  
DN: cn=Jerry Wickham, o, ou,  
email=jerry.wickham@acgov.org, c=US  
Date: 2010.02.08 15:51:10 -08'00'

Jerry Wickham, California PG 3766, CEG 1177, and CHG 297  
Senior Hazardous Materials Specialist

Enclosure: ACEH Electronic Report Upload (ftp) Instructions

Mr. Mike Bauer  
Ms. Julie Beck Ball  
RO0002466  
February 5, 2010  
Page 5

cc: Mr. Brian Silva, Conestoga-Rovers & Associates, 10969 Trade Center Drive, Suite 107, Rancho Cordova, CA 95670 (Sent via E-mail to: [bsilva@croworld.com](mailto:bsilva@croworld.com))

Donna Drogos, ACEH (Sent via E-mail to: [donna.drogos@acgov.org](mailto:donna.drogos@acgov.org))  
Jerry Wickham, ACEH  
Geotracker, File



<b>Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC)</b>	<b>ISSUE DATE:</b> July 5, 2005
	<b>REVISION DATE:</b> March 27, 2009
	<b>PREVIOUS REVISIONS:</b> December 16, 2005, October 31, 2005
<b>SECTION:</b> Miscellaneous Administrative Topics & Procedures	<b>SUBJECT:</b> Electronic Report Upload (ftp) Instructions

The Alameda County Environmental Cleanup Oversight Programs (LOP and SLIC) require submission of all reports in electronic form to the county's ftp site. Paper copies of reports will no longer be accepted. The electronic copy replaces the paper copy and will be used for all public information requests, regulatory review, and compliance/enforcement activities.

#### REQUIREMENTS

- Entire report including cover letter must be submitted to the ftp site as a **single portable document format (PDF) with no password protection**. (Please do not submit reports as attachments to electronic mail.)
- It is **preferable** that reports be converted to PDF format from their original format, (e.g., Microsoft Word) rather than scanned.
- Signature pages and perjury statements **must** be included and have either original or electronic signature.
- **Do not password protect the document**. Once indexed and inserted into the correct electronic case file, the document will be secured in compliance with the County's current security standards and a password. **Documents with password protection will not be accepted.**
- Each page in the PDF document should be rotated in the direction that will make it easiest to read on a computer monitor.
- Reports must be named and saved using the following naming convention:  
RO#\_Report Name\_Year-Month-Date (e.g., RO#5555\_WorkPlan\_2005-06-14)

#### Additional Recommendations

- A separate copy of the tables in the document should be submitted by e-mail to your Caseworker in **Excel** format. These are for use by assigned Caseworker only.

#### Submission Instructions

- 1) Obtain User Name and Password:
  - a) Contact the Alameda County Environmental Health Department to obtain a User Name and Password to upload files to the ftp site.
    - i) Send an e-mail to [dehloptoxic@acgov.org](mailto:dehloptoxic@acgov.org)
    - Or
    - ii) Send a fax on company letterhead to (510) 337-9335, to the attention of My Le Huynh.
  - b) In the subject line of your request, be sure to include "**ftp PASSWORD REQUEST**" and in the body of your request, include the **Contact Information, Site Addresses, and the Case Numbers (RO# available in Geotracker) you will be posting for.**
- 2) Upload Files to the ftp Site
  - a) Using Internet Explorer (IE4+), go to <ftp://alcoftp1.acgov.org>
    - (i) Note: Netscape and Firefox browsers will not open the FTP site.
  - b) Click on File, then on Login As.
  - c) Enter your User Name and Password. (Note: Both are Case Sensitive.)
  - d) Open "My Computer" on your computer and navigate to the file(s) you wish to upload to the ftp site.
  - e) With both "My Computer" and the ftp site open in separate windows, drag and drop the file(s) from "My Computer" to the ftp window.
- 3) Send E-mail Notifications to the Environmental Cleanup Oversight Programs
  - a) Send email to [dehloptoxic@acgov.org](mailto:dehloptoxic@acgov.org) notify us that you have placed a report on our ftp site.
  - b) Copy your Caseworker on the e-mail. Your Caseworker's e-mail address is the entire first name then a period and entire last name @acgov.org. (e.g., firstname.lastname@acgov.org)
  - c) The subject line of the e-mail must start with the RO# followed by **Report Upload**. (e.g., Subject: RO1234 Report Upload) If site is a new case without an RO# use the street address instead.
  - d) If your document meets the above requirements and you follow the submission instructions, you will receive a notification by email indicating that your document was successfully uploaded to the ftp site.