

**RECEIVED**

*By Alameda County Environmental Health at 3:12 pm, Nov 01, 2013*

**Third Quarter 2013  
Semi-Annual Groundwater  
Monitoring Report**

Former Chevron-branded  
Service Station 91723  
9757 San Leandro Street  
Oakland, California



Prepared for:  
Chevron Environmental  
Management Company  
6101 Bollinger Canyon Road  
San Ramon, CA 94583

Prepared by:  
Stantec Consulting Services Inc.  
15575 Los Gatos Blvd., Building C  
Los Gatos, CA 95032

November 1, 2013



**Carryl MacLeod**  
Project Manager  
Marketing Business Unit

**Chevron Environmental  
Management Company**  
6101 Bollinger Canyon Road  
San Ramon, CA 94583  
Tel (925) 790-6506  
CMacleod@chevron.com

November 1, 2013

Mr. Mark Detterman  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250  
Alameda, CA 94502

Dear Mr. Detterman:

Attached for your review is the *Third Quarter 2013 Semi-Annual Groundwater Monitoring Report* for former Chevron-branded service station 91723, located at 9757 San Leandro Street in Oakland, California. This report was prepared by Stantec Consulting Services Inc. (Stantec), upon whose assistance and advice I have relied. I declare under penalty of perjury that the information and/or recommendations contained in the attached report are true and correct, to the best of my knowledge.

If you should have any further questions, please do not hesitate to contact me or the Stantec project manager, Travis Flora, at (408) 356-6124 ext. 238, or [travis.flora@stantec.com](mailto:travis.flora@stantec.com).

Sincerely,

A handwritten signature in cursive script that reads "Carryl MacLeod".

**Carryl MacLeod**  
Project Manager



November 1, 2013

**Attention:**     **Mr. Mark Detterman**  
Alameda County Environmental Health  
1131 Harbor Bay Parkway, Suite 250, Alameda, CA 94502

**Reference:**    **Third Quarter 2013 Semi-Annual Groundwater Monitoring Report**  
Former Chevron-branded Service Station 91723  
9757 San Leandro Street, Oakland, California

Dear Mr. Detterman:

On behalf of Chevron Environmental Management Company (Chevron), Stantec Consulting Services Inc. (Stantec) is pleased to submit the *Third Quarter 2013 Semi-Annual Groundwater Monitoring Report* for former Chevron-branded service station 91723, which was located at 9757 San Leandro Street, Oakland, Alameda County, California (the Site - shown on **Figure 1**). This report is presented in three sections: Site Background, Third Quarter 2013 Groundwater Monitoring and Sampling Program, and Conclusions and Recommendations.

#### **SITE BACKGROUND**

The Site is a former Chevron-branded service station located on the western corner at the intersection of San Leandro Street and 98<sup>th</sup> Avenue in Oakland, California. The Site is currently a large parking area staging semi-trucks for a distribution company. A former Chevron-branded service station operated at the Site from approximately 1946 to 1978. Prior to 1966, three fuel underground storage tanks (USTs) and one fuel dispenser island (first generation) located in the eastern portion of the Site were removed. Second-generation fuel structures (installed between 1966 and 1968) included three fuel USTs located in the north central portion of the Site, one waste oil UST located in the western portion of the Site, and five fuel dispenser islands (four located in the central portion of the Site and one located in the southern portion of the Site). In 1978, the service station was closed and the second-generation fuel structures were removed from the Site.

Land use near the Site consists primarily of commercial and industrial properties. The Site is bounded on the northwest and southwest by a former food processing plant, on the northeast by San Leandro Street followed by railroad tracks, and on the southeast by 98<sup>th</sup> Avenue followed by commercial businesses.

#### **THIRD QUARTER 2013 GROUNDWATER MONITORING AND SAMPLING PROGRAM**

Blaine Tech Services, Inc. (Blaine Tech) performed the Third Quarter 2013 groundwater monitoring and sampling event on September 17, 2013. Blaine Tech's standard operating procedures (SOPs) and field data sheets are included in **Attachment A**. Blaine Tech gauged depth-to-groundwater in five Site wells (MW-2, MW-5, MW-6, MW-8, and MW-9) prior to collecting groundwater samples for laboratory analysis. All five Site wells were sampled this quarter. Investigation-derived waste (IDW) generated during the Third Quarter 2013 groundwater monitoring and sampling event was transported by Clean Harbors Environmental Services to Seaport Environmental in Redwood City, California.

# THIRD QUARTER 2013 SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Former Chevron-branded Service Station 91723

November 1, 2013

Page 2 of 6

## Groundwater Elevation and Gradient

Well construction details and an assessment of whether groundwater samples were collected when groundwater elevations were measured across the well screen intervals are presented in **Table 1**. All wells are currently screened across the prevailing groundwater table, with the exception of well MW-2 where the groundwater elevation is measured above the upper screen interval, and the entire screen interval is currently submerged. Groundwater elevation data from Third Quarter 2011 to the present are included in **Table 2**. A groundwater elevation contour map (based on Third Quarter 2013 data) is shown on **Figure 2**. The direction of groundwater flow at the time of sampling was generally towards the west at an approximate hydraulic gradient ranging from 0.002 to 0.004 feet per foot (ft/ft). This is consistent with the historical direction of groundwater flow, as shown by the Rose Diagram on **Figure 3** illustrating the direction of groundwater flow from Third Quarter 2011 to the present.

## Schedule of Laboratory Analysis

Groundwater samples were collected and analyzed for the presence of total petroleum hydrocarbons as gasoline range organics (TPH-GRO), benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds), and methyl *tertiary*-butyl ether (MtBE) using United States Environmental Protection Agency (US EPA) Method 8260B (SW-846).

In addition, groundwater samples were analyzed for sulfate ( $\text{SO}_4^{2-}$ ) and nitrate ( $\text{NO}_3^-$ ) by US EPA Method 300.0, total alkalinity by SM 2320 B-1997, methane ( $\text{CH}_4$ ) by US EPA Method 8015B modified (SW-846), ferrous iron ( $\text{Fe}^{2+}$ ) by SM 3500-Fe B modified-1997, and sulfide by SM 4500-S2 D-2000 to further evaluate if Site conditions are suitable for monitored natural attenuation (MNA). Field measurements of post-purge dissolved oxygen (DO) and oxidation-reduction potential (ORP) were collected using an in-line flow-through cell.

## Groundwater Analytical Results

During Third Quarter 2013, groundwater samples were collected from five Site wells (MW-2, MW-5, MW-6, MW-8, and MW-9). Groundwater analytical results from Third Quarter 2011 to the present are included in **Table 2**. Parameters used to evaluate MNA are presented in **Table 3**. A figure showing the latest groundwater analytical data plotted on a Site map is included as **Figure 4**. A TPH-GRO isoconcentration map is shown on **Figure 5**. A benzene isoconcentration map is shown on **Figure 6**. An isoconcentration map was not developed for MtBE as concentrations in all Site wells were reported below the laboratory reporting limit (LRL) of 0.5 micrograms per liter ( $\mu\text{g/L}$ ).

Certified laboratory analysis reports and chain-of-custody documents are presented as **Attachment B**. Hydrographs based on groundwater elevations and analytical results from Third Quarter 2011 to the present are included in **Attachment C**. A summary of Third Quarter 2013 groundwater analytical results follows:

- **TPH-GRO** was detected in four Site wells this quarter, at concentrations ranging from 34  $\mu\text{g/L}$  (well MW-6) to 2,100  $\mu\text{g/L}$  (well MW-8). Concentrations are within historical limits for each respective well with the exception of well MW-5 (140  $\mu\text{g/L}$ ), which is a historical low.
- **Benzene** was detected in one Site well this quarter, at a concentration of 60  $\mu\text{g/L}$  (well MW-8), which is within historical limits for this well.

## THIRD QUARTER 2013 SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Former Chevron-branded Service Station 91723

November 1, 2013

Page 3 of 6

- **Toluene** was detected in one Site well this quarter, at a concentration of 2 µg/L (well MW-8), which is within historical limits for this well.
- **Ethylbenzene** was detected in one Site well this quarter, at a concentration of 11 µg/L (well MW-8), which is within historical limits for this well.
- **Total Xylenes** were detected in one Site well this quarter, at a concentration of 9 µg/L (well MW-8), which is within historical limits for this well.
- **MtBE** was not detected above the LRL (0.5 µg/L) in any Site well sampled this quarter.

### Monitored Natural Attenuation Analytical Results

An evaluation of MNA involves assessing a variety of physical, chemical, and biological processes that, under favorable conditions, may effectively reduce the mass, toxicity, mobility, volume, or concentration of constituents in soil or groundwater. For petroleum hydrocarbons, intrinsic biodegradation is typically the most important natural attenuation mechanism for the reduction of concentrations in groundwater. Intrinsic biodegradation involves the transfer of energy in the form of electrons by microorganisms in the subsurface. Bacteria use petroleum hydrocarbon constituents such as TPH, BTEX compounds, and MtBE as electron donors while DO, NO<sub>3</sub><sup>-</sup>, ferric iron (Fe<sup>3+</sup>), SO<sub>4</sub><sup>2-</sup>, and carbon dioxide (CO<sub>2</sub>), in order of preference, act as electron acceptors.

The geochemical parameters measured at the Site include DO; NO<sub>3</sub><sup>-</sup>; Fe<sup>2+</sup>, a metabolite of Fe<sup>3+</sup> reduction; SO<sub>4</sub><sup>2-</sup>; sulfide, a metabolite of SO<sub>4</sub><sup>2-</sup> reduction; CH<sub>4</sub>, a metabolite of CO<sub>2</sub> reduction; alkalinity; and ORP. These parameters provide lines of evidence for evaluating MNA and determining the most likely biodegradation mechanisms utilized within the plume (e.g., Fe<sup>3+</sup> reduction, SO<sub>4</sub><sup>2-</sup> reduction, etc.). MNA parameters are summarized in **Table 3**.

During Third Quarter 2013, DO levels (post-purge) in Site wells ranged between 0.38 milligrams per liter (mg/L; well MW-8) and 1.41 mg/L (well MW-9). The DO levels indicate an anaerobic environment is generally present in all Site wells; consequently, alternative electron acceptors will be used for degradation.

ORP levels (post-purge) ranged between -78 millivolts (mV; well MW-8) and 124 mV (well MW-9). Wells MW-5, MW-6, and MW-8 exhibited negative ORP values during Third Quarter 2013, indicating reducing conditions in those wells. The positive ORP values in wells MW-2 and MW-9 indicate oxidizing conditions are present in those wells.

Concentrations of NO<sub>3</sub><sup>-</sup> ranged from below the LRL of 250 µg/L (wells MW-2, MW-6, and MW-8) to 910 µg/L (well MW-9). Concentrations of SO<sub>4</sub><sup>2-</sup> ranged from 5,700 µg/L (well MW-8) to 31,200 µg/L (well MW-5). Lower NO<sub>3</sub><sup>-</sup> and SO<sub>4</sub><sup>2-</sup> concentrations were generally found in wells with higher petroleum hydrocarbon concentrations such as well MW-8 (and vice versa; e.g., well MW-9), indicating that NO<sub>3</sub><sup>-</sup> and SO<sub>4</sub><sup>2-</sup> are likely being utilized as electron acceptors for bioremediation of dissolved-phase petroleum hydrocarbons by indigenous microbes. NO<sub>3</sub><sup>-</sup> concentrations were below the LRL in wells MW-2, MW-6, and MW-8, indicating the natural supply of NO<sub>3</sub><sup>-</sup> may be nearly exhausted.

Concentrations of Fe<sup>2+</sup> ranged from below the LRL of 10 µg/L (well MW-9) to 22,300 µg/L (well MW-8). Concentrations of CH<sub>4</sub> ranged from below the LRL of 3.0 µg/L (well MW-9) to 1,700 µg/L

## THIRD QUARTER 2013 SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Former Chevron-branded Service Station 91723

November 1, 2013

Page 4 of 6

(well MW-8). Higher concentrations of metabolic by-products  $\text{Fe}^{2+}$  and  $\text{CH}_4$  were generally found in wells with higher petroleum hydrocarbon concentrations such as well MW-8 (and vice versa; e.g., well MW-9). This indicates that  $\text{Fe}^{3+}$  and  $\text{CO}_2$  reduction are likely occurring.

Concentrations of sulfide ranged from below the LRLs of 54  $\mu\text{g/L}$  and 220  $\mu\text{g/L}$  (wells MW-5, MW-8, and MW-9) to 130  $\mu\text{g/L}$  (well MW-2). Though it is difficult to draw conclusions with limited detections, this may indicate that  $\text{SO}_4^{2-}$  reduction has just begun to occur at the Site.

Total alkalinity measurements ranged from 373,000  $\mu\text{g/L}$  as calcium carbonate ( $\text{CaCO}_3$ ; well MW-5) to 506,000  $\mu\text{g/L}$  as  $\text{CaCO}_3$  (well MW-2). The enrichment of alkalinity in all Site wells suggests biodegradation is occurring.

In general, the subsurface is becoming oxygen depleted and it appears that the natural supply of  $\text{NO}_3^-$  may be nearly exhausted. Biodegradation appears to be occurring within Site wells, and Site conditions are currently becoming favorable for petroleum hydrocarbon degradation to occur via  $\text{Fe}^{3+}$  reduction. As Site conditions become more reducing, degradation rates may slow due to the lower levels of electron acceptors identified by groundwater sampling.

### CONCLUSIONS AND RECOMMENDATIONS

Concentrations of TPH-GRO and benzene were observed above California Regional Water Quality Control Board – San Francisco Bay Region Environmental Screening Levels (ESLs) for groundwater that is a current or potential source of drinking water as follows:

- TPH-GRO concentrations exceed the ESL of 100  $\mu\text{g/L}$  in wells MW-5 and MW-8; and
- The benzene concentration exceeds the ESL of 1  $\mu\text{g/L}$  in well MW-8.

Maximum concentrations of TPH-GRO and BTEX compounds were observed in well MW-8, which is located in the northern portion of the Site near the former second-generation USTs. TPH-GRO was also detected above the ESL in well MW-5, near the former first-generation dispenser island. Due to TPH-GRO and BTEX compounds below ESLs or LRLs in well MW-6 (cross-gradient of well MW-8) and the potential for two distinct source areas, dissolved TPH-GRO is currently represented as two distinct plumes, the longest of which is currently defined to below ESLs within approximately 200 feet down-gradient of the source area.

MtBE was not detected above LRLs in any Site well sampled this quarter. As MtBE has not been detected above LRLs in any Site well for at least the past five consecutive sampling events, Stantec recommends no further analysis of MtBE during future groundwater monitoring and sampling events. Evaluation of MNA parameters has been conducted during each groundwater monitoring and sampling event since First Quarter 2012. Subsurface conditions appear to be changing, so Stantec recommends continuing MNA evaluation but reducing the frequency of MNA evaluation to annual during Third Quarters. These proposed changes to the groundwater sampling program will be implemented beginning First Quarter 2014, unless Alameda County Environmental Health (ACEH) objects.

In an email dated September 18, 2013, ACEH requested a Site Conceptual Model (SCM) that identifies Site data gaps, evaluates potential conduits (utilities and wells), evaluates the Site under the Low-Threat UST Case Closure Policy (LTCP), includes a data gap work plan as needed, and details a path to closure schedule. The ACEH requested that the SCM be submitted by November 15, 2013; however, Stantec has not yet received the requested well data from the County of Alameda Public Works. Furthermore, Chevron is attempting to work directly with the

## THIRD QUARTER 2013 SEMI-ANNUAL GROUNDWATER MONITORING REPORT

Former Chevron-branded Service Station 91723

November 1, 2013


Page 5 of 6

property owner regarding potential paths forward for the Site. Efforts are ongoing and will not be resolved in time to prepare a comprehensive SCM; therefore, Stantec submitted an extension request to the ACEH on October 29, 2013, requesting an extension to submit the SCM to the ACEH by March 31, 2014.

Please feel free to contact me if you have any questions regarding the contents of this report.

Sincerely,

**Stantec Consulting Services Inc.**



Travis L. Flora

Associate Project Manager

Phone: (408)356-6124

[Travis.Flora@stantec.com](mailto:Travis.Flora@stantec.com)

### Attachments:

Table 1 – Well Details / Screen Interval Assessment – Third Quarter 2013

Table 2 – Groundwater Monitoring Data and Analytical Results

Table 3 – Monitored Natural Attenuation Parameters

Figure 1 – Site Location Map

Figure 2 – Groundwater Elevation Contour Map – Third Quarter 2013

Figure 3 – Rose Diagram – Third Quarter 2013

Figure 4 – Site Plan Showing Groundwater Concentrations – Third Quarter 2013

Figure 5 – TPH-GRO Isoconcentration Map – Third Quarter 2013

Figure 6 – Benzene Isoconcentration Map – Third Quarter 2013

Attachment A – Blaine Tech Groundwater Monitoring Report – Third Quarter 2013

Attachment B – Certified Laboratory Analysis Reports and Chain-of-Custody Documents

Attachment C – Hydrographs

### cc:

Ms. Carryl MacLeod, Chevron Environmental Management Company, 6101 Bollinger Canyon Road, San Ramon, CA 94583 – Electronic Copy

Linda Hothem Trust c/o Mr. Jan Greben, Greben & Associates, 1332 Anacapa Street, Suite 110, Santa Barbara, CA 93101

Ms. Gene Kida, Gerber Products, 12 Vreeland Road, Florham Park, NJ 07932

**THIRD QUARTER 2013 SEMI-ANNUAL GROUNDWATER MONITORING REPORT**

Former Chevron-branded Service Station 91723

November 1, 2013

Page 6 of 6

This document entitled Third Quarter 2013 Semi-Annual Groundwater Monitoring Report was prepared by Stantec Consulting Services Inc. for the account of Chevron Environmental Management Company. The material in it reflects Stantec's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec Consulting Services Inc. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Prepared by Erin O'Malley  
(signature)

**Erin O'Malley**  
Project Engineer

Reviewed by Marisa Kaffenberger  
(signature)

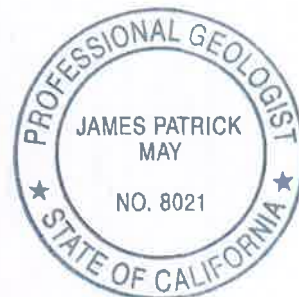
**Marisa Kaffenberger**  
Senior Engineer

Reviewed by [Signature]  
(signature)

**Travis L. Flora**  
Associate Project Manager

Reviewed by James P. May 11/01/13  
(signature)

**James P. May, P.G.**  
Senior Geologist





## **TABLES**

**Table 1**  
**Well Details / Screen Interval Assessment**  
**Third Quarter 2013**  
Former Chevron-Branded Service Station 91723  
9757 San Leandro Street, Oakland, California

Well ID	Date Installed	Well Type	Casing Diameter (inches)	Top of Casing (feet above msl)	Construction Well Depth (feet bgs)	Current Well Depth <sup>1</sup> (feet bgs)	Current Depth to Groundwater <sup>1</sup> (feet below TOC)	Screen Interval (feet bgs)	Screen Interval Assessment
MW-2	04/18/87	Monitoring	2	21.31	22.00	21.59	9.96	12-22	Depth-to-groundwater above screen interval.
MW-5	05/18/88	Monitoring	2	21.84	20.00	17.48	9.93	7-20	Depth-to-groundwater within screen interval.
MW-6	05/18/88	Monitoring	2	21.71	20.00	19.50	10.06	7-20	Depth-to-groundwater within screen interval.
MW-8	05/19/88	Monitoring	2	21.84	20.00	18.21	10.34	7-20	Depth-to-groundwater within screen interval.
MW-9	08/04/89	Monitoring	4	20.55	20.00	20.14	9.51	5.5-20	Depth-to-groundwater within screen interval.
Notes: bgs = below ground surface msl = mean sea level TOC = top of casing <sup>1</sup> = As measured prior to groundwater sampling on September 17, 2013.									

**Table 2**  
**Groundwater Monitoring Data and Analytical Results**  
Former Chevron-Branded Service Station 91723  
9757 San Leandro Street, Oakland, California

WELL ID/ DATE	TOC (ff.)	DTW (ff.)	GWE (msl)	TPH-GRO (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)	MtBE (µg/L)
<b>MW-2</b>									
09/23/11	21.31	9.78	11.53	180	<0.5	<0.5	0.6	0.6	0.6
12/29/11	21.31	9.73	11.58	100	<0.5	<0.5	0.7	0.9	<0.5
03/30/12	21.31	8.02	13.29	180	<0.5	<0.5	2	4	<0.5
06/12/12	21.31	9.58	11.73	99	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	21.31	9.81	11.50	93	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	21.31	9.52	11.79	110	<0.5	<0.5	<0.5	<0.5	<0.5
<b>09/17/13</b>	<b>21.31</b>	<b>9.96</b>	<b>11.35</b>	<b>94</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>MW-5</b>									
09/23/11	21.84	9.85	11.99	190	<0.5	<0.5	<0.5	<0.5	<0.5
12/29/11	21.84	9.91	11.93	180	<0.5	<0.5	<0.5	<0.5	<0.5
03/30/12	21.84	7.92	13.92	190	<0.5	<0.5	<0.5	<0.5	<0.5
06/12/12	21.84	9.65	12.19	260	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	21.84	9.83	12.01	230	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	21.84	9.55	12.29	200	<0.5	<0.5	<0.5	<0.5	<0.5
<b>09/17/13</b>	<b>21.84</b>	<b>9.93</b>	<b>11.91</b>	<b>140</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>MW-6</b>									
09/23/11	21.71	9.99	11.72	<22	<0.5	<0.5	<0.5	<0.5	0.7
12/29/11	21.71	9.93	11.78	<22	<0.5	<0.5	<0.5	<0.5	0.6
03/30/12	21.71	8.00	13.71	<22	<0.5	<0.5	<0.5	<0.5	<0.5
06/12/12	21.71	9.76	11.95	66	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	21.71	9.93	11.78	27	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	21.71	9.70	12.01	<22	<0.5	<0.5	<0.5	<0.5	<0.5
<b>09/17/13</b>	<b>21.71</b>	<b>10.06</b>	<b>11.65</b>	<b>34</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>MW-8</b>									
09/23/11	21.84	10.15	11.69	1,900	55	2	10	8	<0.5
12/29/11	21.84	10.10	11.74	1,300	31	1	5	5	<0.5
03/30/12	21.84	8.12	13.72	2,200	65	3	20	14	<0.5
06/12/12	21.84	9.90	11.94	2,300	49	2	14	14	<0.5
09/27/12	21.84	10.12	11.72	1,900	43	2	10	8	<0.5
03/13/13	21.84	9.86	11.98	1,400	31	1	7	5	<0.5
<b>09/17/13</b>	<b>21.84</b>	<b>10.34</b>	<b>11.50</b>	<b>2,100</b>	<b>60</b>	<b>2</b>	<b>11</b>	<b>9</b>	<b>&lt;0.5</b>

**Table 2**  
**Groundwater Monitoring Data and Analytical Results**  
Former Chevron-Branded Service Station 91723  
9757 San Leandro Street, Oakland, California

<b>WELL ID/ DATE</b>	<b>TOC (ff.)</b>	<b>DTW (ff.)</b>	<b>GWE (msl)</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-9</b>									
09/23/11	20.55	9.30	11.25	<22	<0.5	<0.5	<0.5	<0.5	<0.5
12/29/11	20.55	9.51	11.04	<22	<0.5	<0.5	<0.5	<0.5	<0.5
03/30/12	20.55	7.52	13.03	<22	<0.5	<0.5	<0.5	<0.5	<0.5
06/12/12	20.55	9.14	11.41	<22	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	20.55	9.24	11.31	<22	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	20.55	9.07	11.48	<22	<0.5	<0.5	<0.5	<0.5	<0.5
<b>09/17/13</b>	<b>20.55</b>	<b>9.51</b>	<b>11.04</b>	<b>&lt;22</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>
<b>TRIP BLANK</b>									
<b>QA</b>									
09/23/11	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
12/29/11	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
03/30/12	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
06/12/12	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
09/27/12	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
03/13/13	--	--	--	<22	<0.5	<0.5	<0.5	<0.5	<0.5
<b>09/17/13</b>	<b>--</b>	<b>--</b>	<b>--</b>	<b>&lt;22</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>	<b>&lt;0.5</b>

**Table 2**  
**Groundwater Monitoring Data and Analytical Results**  
Former Chevron-Branded Service Station 91723  
9757 San Leandro Street, Oakland, California

---

---

**EXPLANATIONS:**

Current groundwater monitoring data provided by Blaine Tech Services, Inc. Current laboratory analytical results provided by Eurofins Lancaster Laboratories.

TOC = Top of Casing  
(ft.) = Feet

DTW = Depth to Water

GWE = Groundwater Elevation

(msl) = Mean Sea Level

TPH-GRO = Total Petroleum Hydrocarbons as 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

QA = Quality Assurance/Trip Blank

**Table 3**  
**Monitored Natural Attenuation Parameters**  
Former Chevron-Branded Service Station 91723  
9757 San Leandro Street, Oakland, California

WELL ID/ DATE	METHANE (µg/L)	NITRATE (µg/L)	SULFATE (µg/L)	ALKALINITY TO pH 4.5 (µg/L as CaCO <sub>3</sub> )	ALKALINITY TO pH 8.3 (µg/L as CaCO <sub>3</sub> )	FERROUS IRON (µg/L)	SULFIDE (µg/L)	POST-PURGE DO (mg/L)	POST-PURGE ORP (mV)
<b>MW-2</b>									
03/30/12	330	320	10,600	545,000	<460	2,200	<270 <sup>1</sup>	1.08	219
06/12/12	300	290	12,900	460,000	<700	1,400	<220 <sup>1</sup>	0.86	135
09/27/12	250	710	14,200	448,000	<700	450	99	0.91	138
03/13/13	680	<250	13,000	503,000	--	700	<54	1.39	-7
<b>09/17/13</b>	<b>370</b>	<b>&lt;250</b>	<b>12,000</b>	<b>506,000</b>	<b>--</b>	<b>690</b>	<b>130</b>	<b>0.74</b>	<b>8</b>
<b>MW-5</b>									
03/30/12	110	440	30,200	370,000	<460	300	<270 <sup>1</sup>	1.11	222
06/12/12	120	890	44,800	387,000	<700	7,300	<220 <sup>1</sup>	0.87	124
09/27/12	110	980	30,200	370,000	<700	7,400	<110 <sup>1</sup>	0.98	136
03/13/13	170	570	30,600	398,000	--	2,600	<54	1.19	-34
<b>09/17/13</b>	<b>110</b>	<b>900</b>	<b>31,200</b>	<b>373,000</b>	<b>--</b>	<b>2,000</b>	<b>&lt;54</b>	<b>0.46</b>	<b>-4</b>
<b>MW-6</b>									
03/30/12	62	<250	5,600	455,000	<460	210	<54	1.12	223
06/12/12	190	<250	6,300	458,000	<700	4,700	<110 <sup>1</sup>	0.84	115
09/27/12	170	640	8,500	434,000	<700	8,800	<110 <sup>1</sup>	0.96	133
03/13/13	190	<250	4,400	473,000	--	6,200	<54	2.61	7
<b>09/17/13</b>	<b>120</b>	<b>&lt;250</b>	<b>6,300</b>	<b>444,000</b>	<b>--</b>	<b>4,600</b>	<b>98</b>	<b>0.49</b>	<b>-14</b>
<b>MW-8</b>									
03/30/12	2,100	2,300	32,200	454,000	<460	29,300	780 <sup>1</sup>	1.15	230
06/12/12	1,700	<250	9,200	441,000	<700	43,200	<220 <sup>1</sup>	0.98	47
09/27/12	1,900	420	7,900	444,000	<700	35,600	<270 <sup>1</sup>	1.21	50
03/13/13	1,800	<250	9,700	450,000	--	32,300	<540 <sup>1</sup>	1.61	-85
<b>09/17/13</b>	<b>1,700</b>	<b>&lt;250</b>	<b>5,700</b>	<b>468,000</b>	<b>--</b>	<b>22,300</b>	<b>&lt;220<sup>1</sup></b>	<b>0.38</b>	<b>-78</b>
<b>MW-9</b>									
03/30/12	<5.0	<250	7,400	381,000	<460	31	<54	1.34	179
06/12/12	<5.0	2,900	32,900	397,000	<700	340	<54	0.92	128
09/27/12	<5.0	1,700	32,200	398,000	<700	53	<54	1.10	141
03/13/13	<3.0	2,400	33,400	414,000	--	<8.0	<54	1.38	189
<b>09/17/13</b>	<b>&lt;3.0</b>	<b>910</b>	<b>29,200</b>	<b>414,000</b>	<b>--</b>	<b>&lt;10</b>	<b>&lt;54</b>	<b>1.41</b>	<b>124</b>

**Table 3**  
**Monitored Natural Attenuation Parameters**  
Former Chevron-Branded Service Station 91723  
9757 San Leandro Street, Oakland, California

---

---

**EXPLANATIONS:**

Current groundwater monitoring data provided by Blaine Tech Services, Inc. Current laboratory analytical results provided by Eurofins Lancaster Laboratories.

( $\mu\text{g/L}$ ) = Micrograms per liter

( $\mu\text{g/L as CaCO}_3$ ) = Micrograms per liter as calcium carbonate

DO = Dissolved Oxygen

( $\text{mg/L}$ ) = Milligrams per liter

ORP = Oxidation Reduction Potential

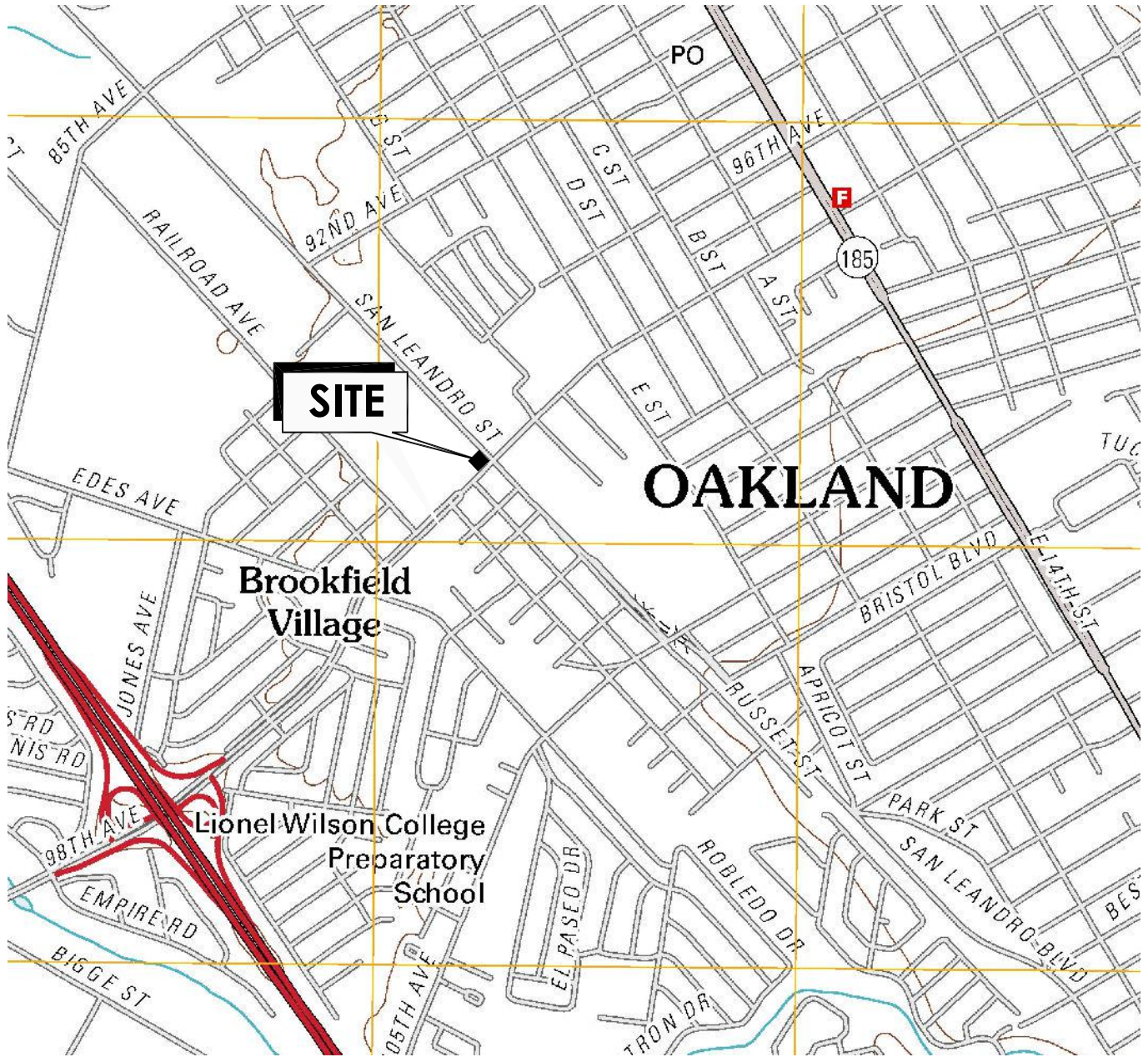
( $\text{mV}$ ) = Millivolts

-- = Not Measured/Not Analyzed

<sup>1</sup> Laboratory report indicates reporting limits were raised due to interference from the sample matrix.

## **FIGURES**





CALIFORNIA



SCALE IN MILES



SCALE IN FEET

REFERENCE: USGS 7.5 QUADRANGLE;  
SAN LEANDRO, CALIFORNIA; 2012



15575 Los Gatos Blvd, Building C  
Los Gatos, CA 95032

Phone: (408) 356-6124 Fax: (408) 356-6138

FOR:  
FORMER CHEVRON-BRANDED  
SERVICE STATION 91723  
9757 SAN LEANDRO STREET  
OAKLAND, CALIFORNIA

JOB NUMBER:  
211602332

DRAWN BY:  
JRO

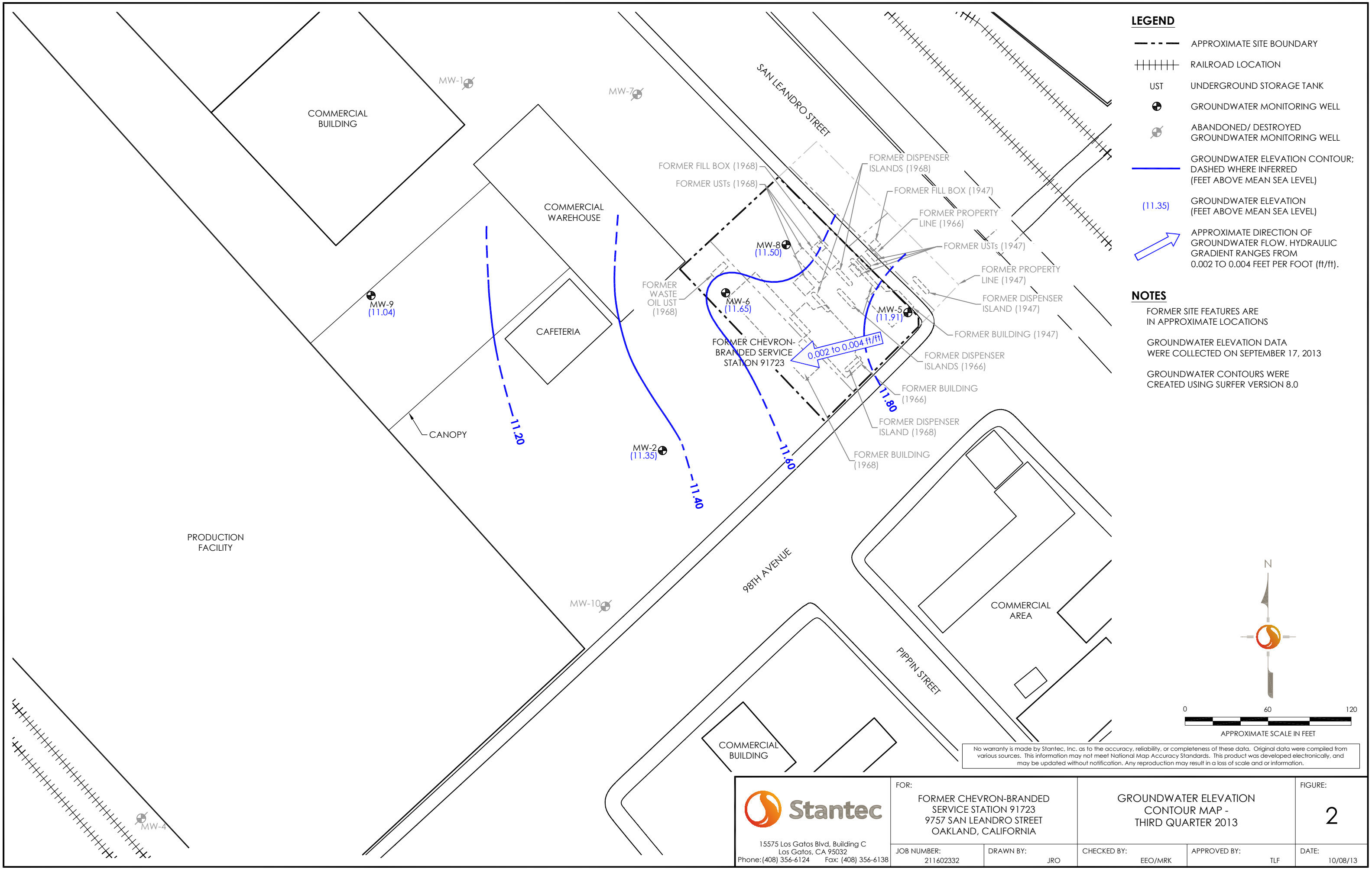
CHECKED BY:  
EEO/MRK

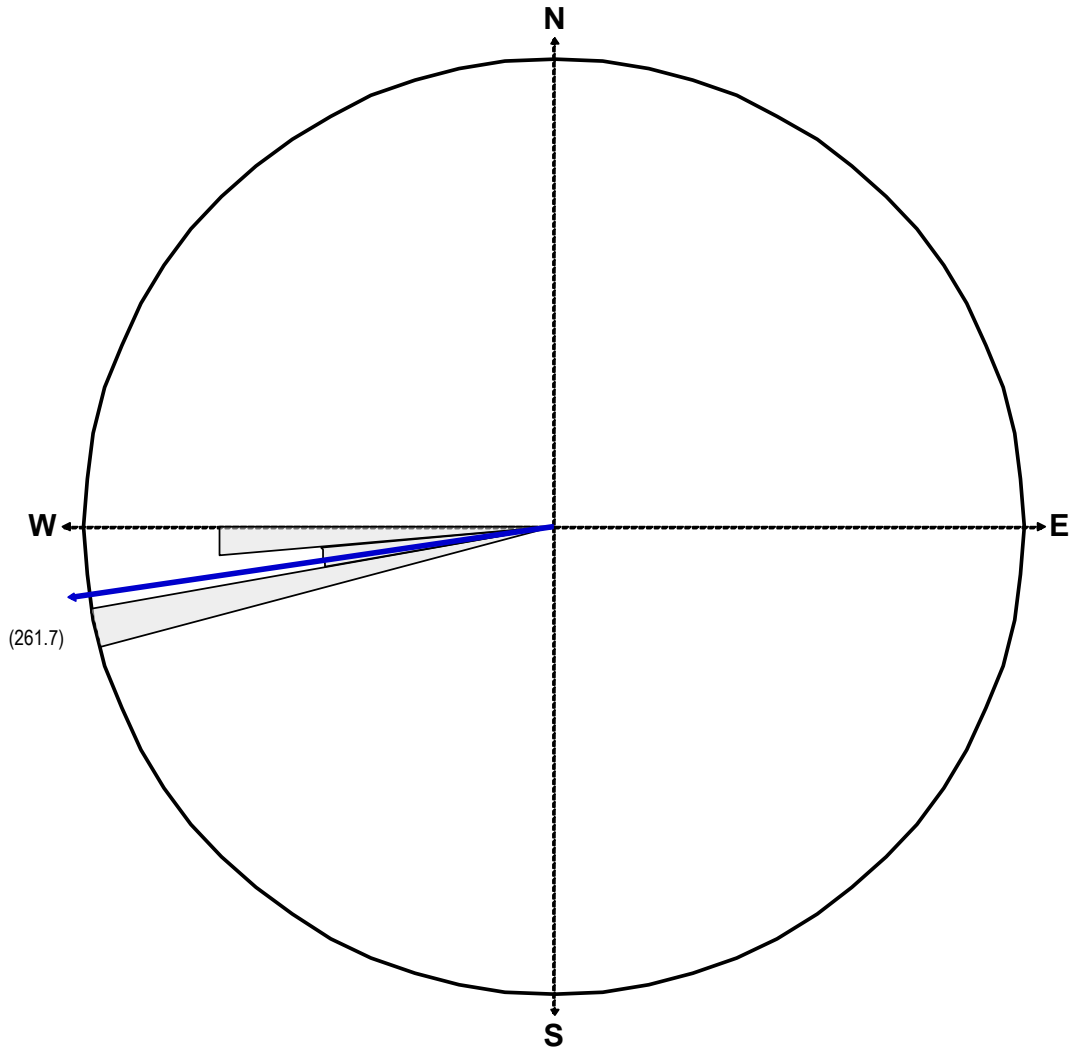
APPROVED BY:  
TLF

FIGURE:

1

DATE:  
10/08/13






EQUAL AREA PLOT

Number of Points      7  
 Class Size              5  
 Vector Mean            261.71  
 Vector Magnitude    6.97  
 Consistency Ratio    1.00

NOTE: ROSE DIAGRAM IS BASED ON THE DIRECTION OF GROUNDWATER FLOW BEGINNING THIRD QUARTER 2011.

 15575 Los Gatos Blvd, Building C Los Gatos, CA 95032 Phone: (408) 356-6124 Fax: (408) 356-6138	FOR: FORMER CHEVRON-BRANDED SERVICE STATION 91723 9757 SAN LEANDRO STREET OAKLAND, CALIFORNIA	ROSE DIAGRAM - THIRD QUARTER 2013		FIGURE:  <b>3</b>
	JOB NUMBER: 211602332	DRAWN BY: JRO	CHECKED BY: EEO/MRK	APPROVED BY: TLF



**LEGEND**

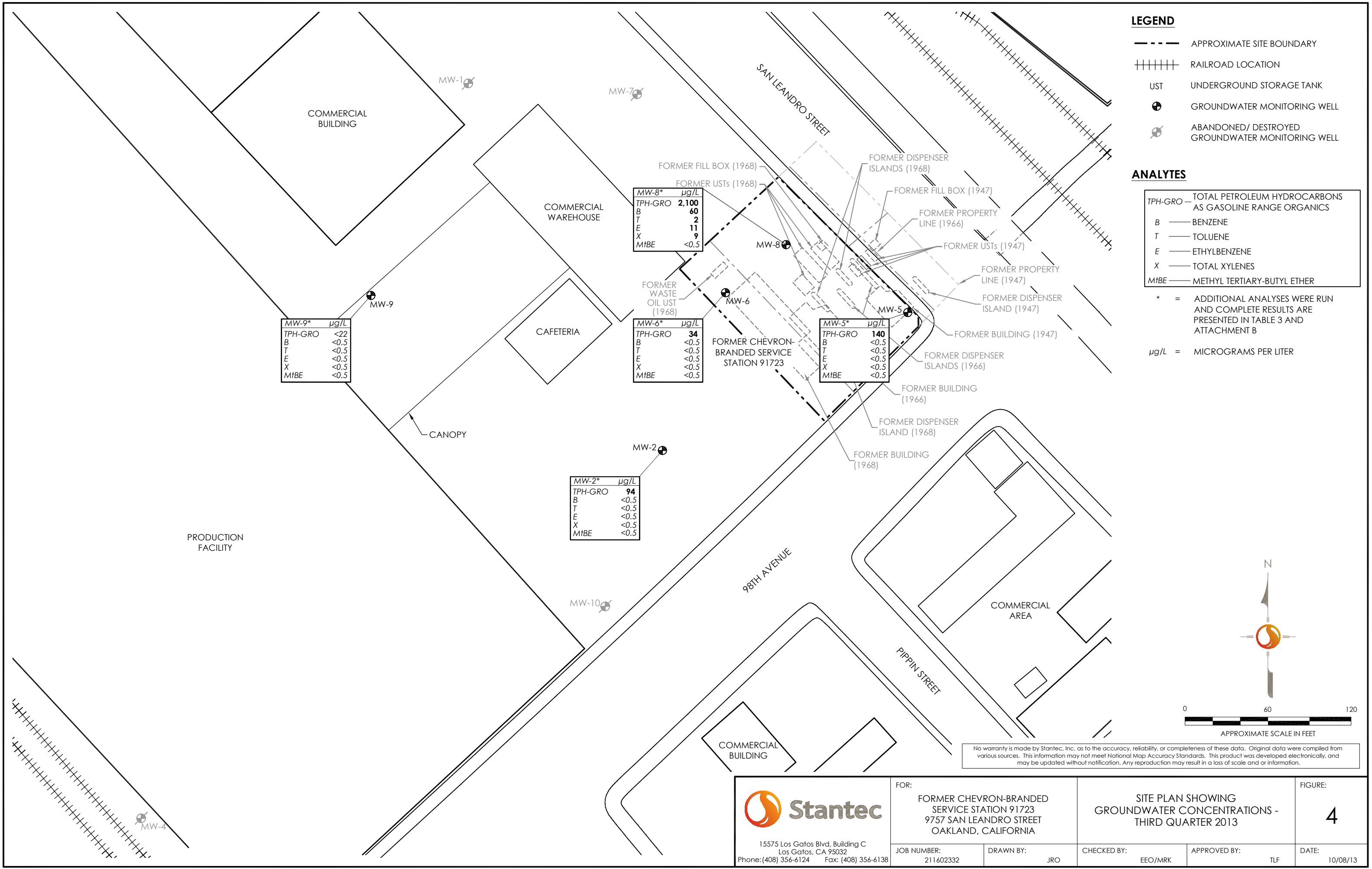
- APPROXIMATE SITE BOUNDARY
- RAILROAD LOCATION
- UST UNDERGROUND STORAGE TANK
- GROUNDWATER MONITORING WELL
- ABANDONED/ DESTROYED GROUNDWATER MONITORING WELL

**ANALYTES**

- TPH-GRO — TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS
- B — BENZENE
- T — TOLUENE
- E — ETHYLBENZENE
- X — TOTAL XYLENES
- MtBE — METHYL TERTIARY-BUTYL ETHER

\* = ADDITIONAL ANALYSES WERE RUN AND COMPLETE RESULTS ARE PRESENTED IN TABLE 3 AND ATTACHMENT B

µg/L = MICROGRAMS PER LITER



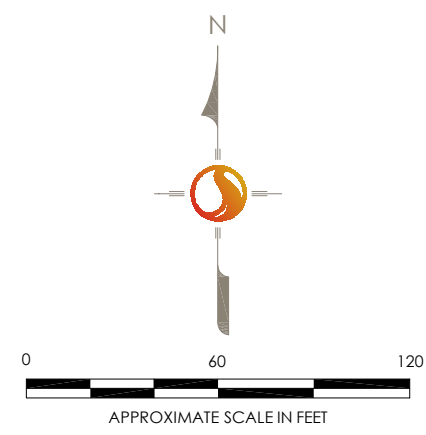
MW-9*	µg/L
TPH-GRO	<22
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MtBE	<0.5

MW-8*	µg/L
TPH-GRO	2,100
B	60
T	2
E	11
X	9
MtBE	<0.5

MW-6*	µg/L
TPH-GRO	34
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MtBE	<0.5

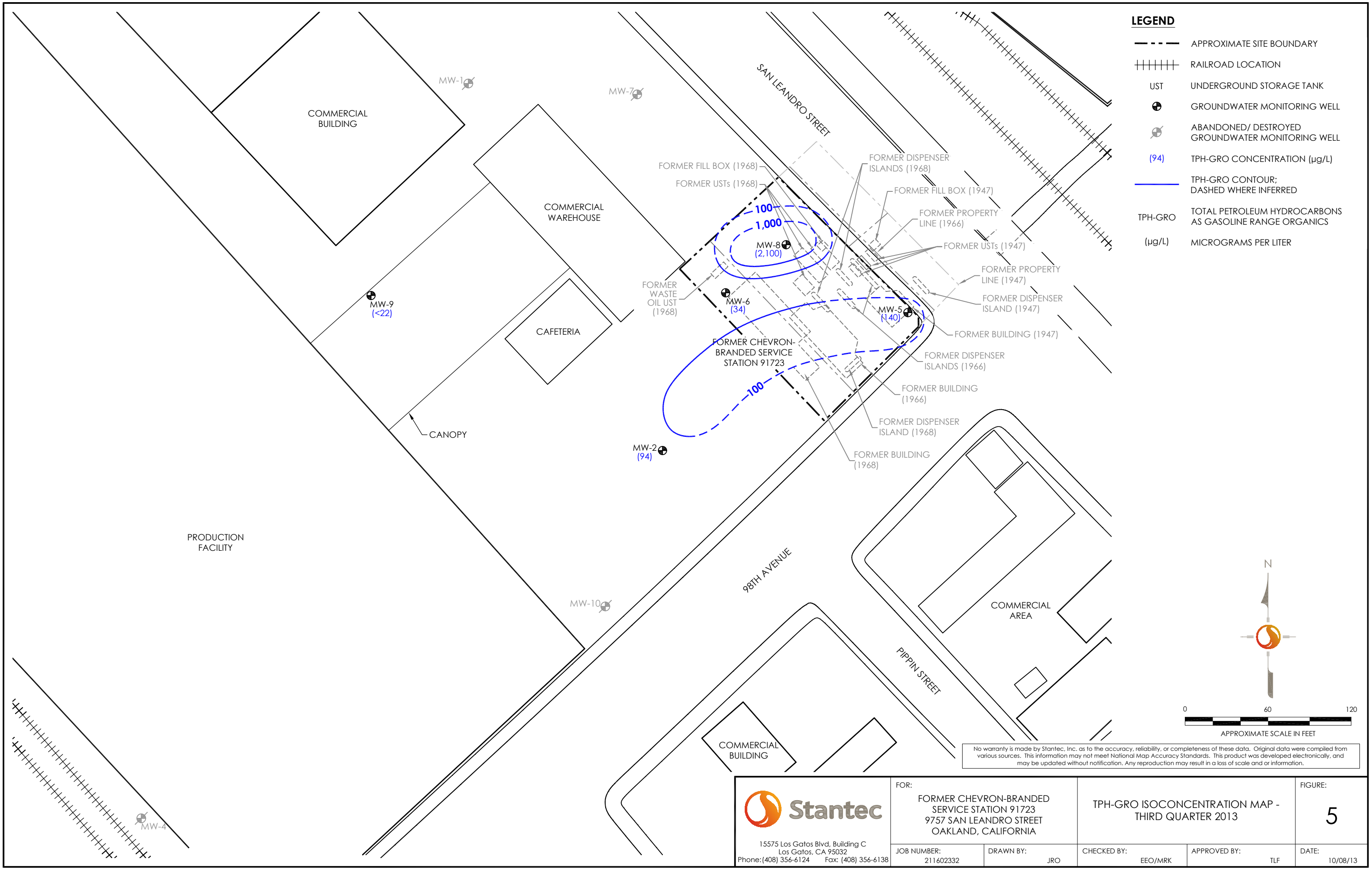
MW-5*	µg/L
TPH-GRO	140
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MtBE	<0.5

MW-2*	µg/L
TPH-GRO	94
B	<0.5
T	<0.5
E	<0.5
X	<0.5
MtBE	<0.5

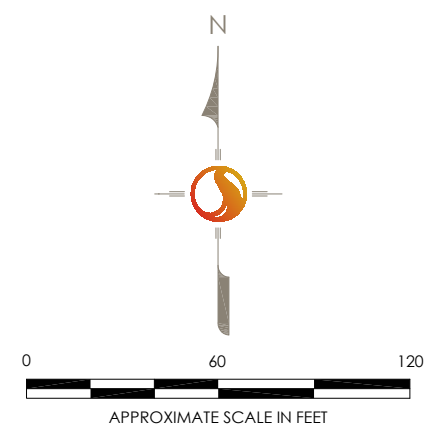


No warranty is made by Stantec, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and or information.


<p>15575 Los Gatos Blvd, Building C Los Gatos, CA 95032 Phone: (408) 356-6124 Fax: (408) 356-6138</p>	FOR:	FORMER CHEVRON-BRANDED SERVICE STATION 91723 9757 SAN LEANDRO STREET OAKLAND, CALIFORNIA		SITE PLAN SHOWING GROUNDWATER CONCENTRATIONS - THIRD QUARTER 2013		FIGURE:	4		
	JOB NUMBER:	211602332	DRAWN BY:	JRO	CHECKED BY:	EEO/MRK	APPROVED BY:	TLF	DATE:



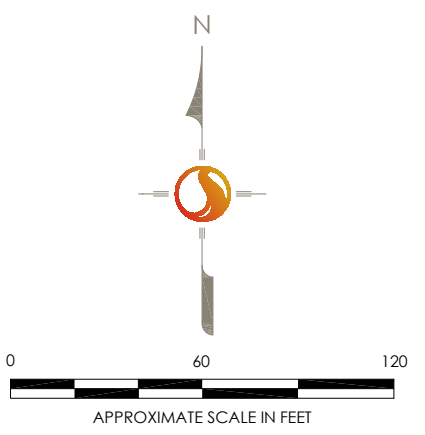
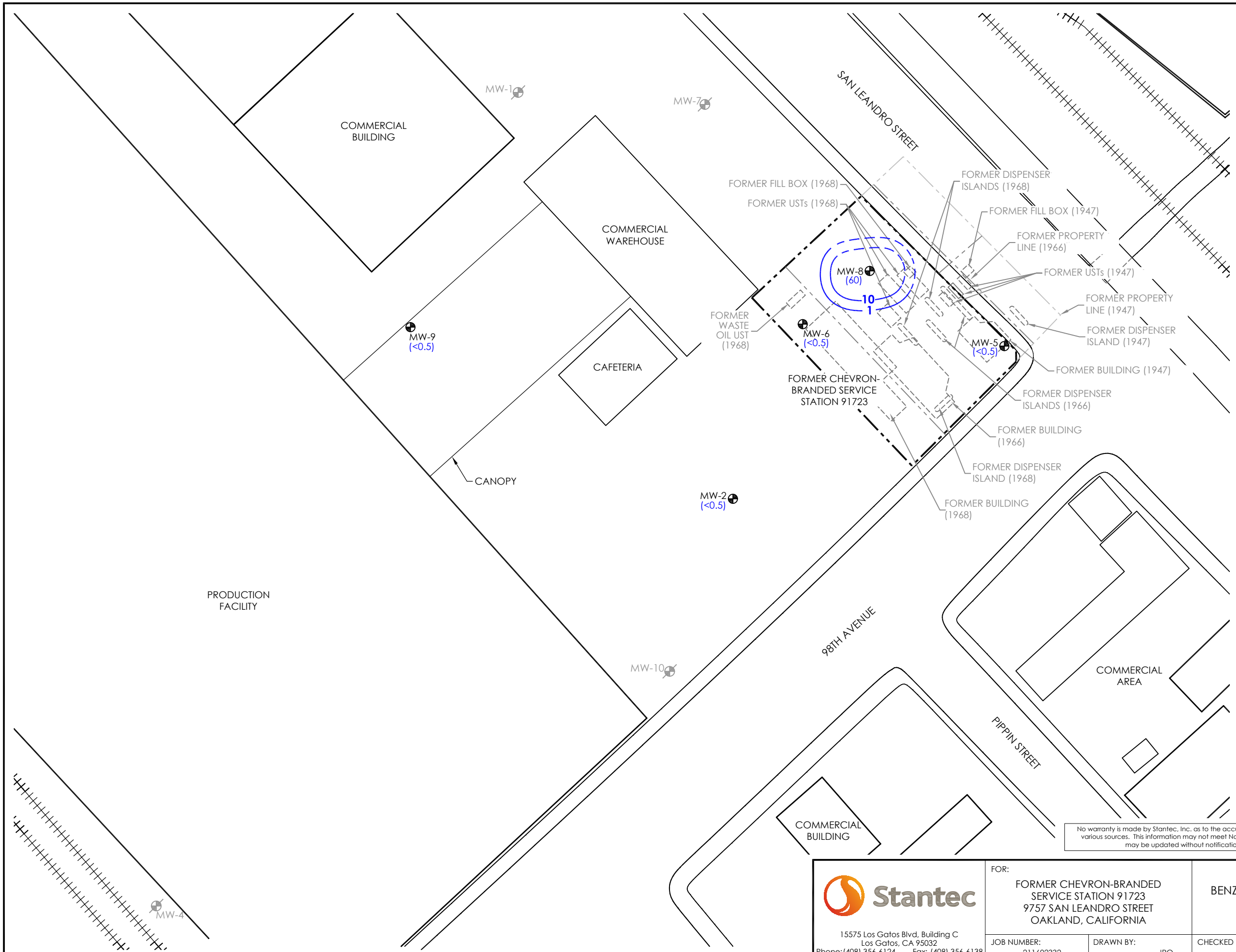
- LEGEND**
- APPROXIMATE SITE BOUNDARY
  - ++++ RAILROAD LOCATION
  - UST
  - ⊕ GROUNDWATER MONITORING WELL
  - ⊖ ABANDONED/ DESTROYED GROUNDWATER MONITORING WELL
  - (94) TPH-GRO CONCENTRATION (µg/L)
  - TPH-GRO CONTOUR; DASHED WHERE INFERRED
  - TPH-GRO TOTAL PETROLEUM HYDROCARBONS AS GASOLINE RANGE ORGANICS (µg/L)




No warranty is made by Stantec, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and/or information.

 15575 Los Gatos Blvd, Building C Los Gatos, CA 95032 Phone: (408) 356-6124 Fax: (408) 356-6138	FOR: FORMER CHEVRON-BRANDED SERVICE STATION 91723 9757 SAN LEANDRO STREET OAKLAND, CALIFORNIA		TPH-GRO ISOCONCENTRATION MAP - THIRD QUARTER 2013		FIGURE: <b>5</b>
	JOB NUMBER: 211602332	DRAWN BY: JRO	CHECKED BY: EEO/MRK	APPROVED BY: TLF	DATE: 10/08/13

- LEGEND**
- APPROXIMATE SITE BOUNDARY
  - ++++ RAILROAD LOCATION
  - UST UNDERGROUND STORAGE TANK
  - ⊕ GROUNDWATER MONITORING WELL
  - ⊕ ABANDONED/ DESTROYED GROUNDWATER MONITORING WELL
  - (60) BENZENE CONCENTRATION (µg/L)
  - BENZENE CONTOUR; DASHED WHERE INFERRED
  - (µg/L) MICROGRAMS PER LITER



No warranty is made by Stantec, Inc. as to the accuracy, reliability, or completeness of these data. Original data were compiled from various sources. This information may not meet National Map Accuracy Standards. This product was developed electronically, and may be updated without notification. Any reproduction may result in a loss of scale and/or information.

 15575 Los Gatos Blvd, Building C Los Gatos, CA 95032 Phone: (408) 356-6124 Fax: (408) 356-6138	FOR: FORMER CHEVRON-BRANDED SERVICE STATION 91723 9757 SAN LEANDRO STREET OAKLAND, CALIFORNIA		BENZENE ISOCONCENTRATION MAP - THIRD QUARTER 2013		FIGURE: <b>6</b>
	JOB NUMBER: 211602332	DRAWN BY: JRO	CHECKED BY: EEO/MRK	APPROVED BY: TLF	DATE: 10/08/13

**ATTACHMENT A**  
**Blaine Tech Groundwater Monitoring Report –**  
**Third Quarter 2013**



September 18, 2013

Chevron Environmental Management Company  
Caryl MacLeod  
6111 Bollinger Canyon Rd.  
San Ramon, CA 94583

Third Quarter 2013 Monitoring at  
Chevron Service Station 91723  
9757 San Leandro St.  
Oakland, CA

Monitoring performed on September 17, 2013

---

**Blaine Tech Services, Inc. Groundwater Monitoring Event 130917-DB2**

This submission covers the routine monitoring of groundwater wells conducted on September 17, 2013 at this location. Five monitoring wells were measured for depth to groundwater (DTW). Five monitoring wells were sampled. All sampling activities were performed in accordance with local, state and federal guidelines.

Water levels measurements were collected using an electronic slope indicator. All sampled wells were purged of three case volumes, depending on well recovery, or until water temperature, pH and conductivity stabilized. Purging was accomplished using electric submersible pumps, positive air displacement pumps, or stainless steel, Teflon, or disposable bailers. Subsequent sample collection and sample handling was performed in accordance with EPA protocols. Alternately, where applicable, wells were sampled utilizing no-purge methodology. All reused equipment was decontaminated in an integrated stainless steel sink with de-ionized water supplied Hotsy pressure washer and Liquinox or equivalent.

Third Quarter Groundwater Monitoring at Chevron 91723, 9757 San Leandro St., Oakland, CA

SAN JOSE

SACRAMENTO

LOS ANGELES

SAN DIEGO

1680 ROGERS AVENUE

SAN JOSE, CA 95112-1105

(408) 573-0555

FAX (408) 573-7771

LIC. 746684

[www.blainetech.com](http://www.blainetech.com)



Samples were delivered under chain-of-custody to Lancaster Laboratories of Lancaster, Pennsylvania, for analysis. Monitoring well purgewater and equipment rinsate water was collected and transported under bill-of-lading to Blaine Tech of San Jose, California.

Enclosed documentation from this event includes copies of the Well Gauging Sheet, Well Monitoring Data Sheets, and Chain-of-Custody.

Blaine Tech Services, Inc.'s activities at this site consisted of objective data and sample collection only. No interpretation of analytical results, defining of hydrogeologic conditions or formulation of recommendations was performed.

Please call if you have any questions.

Sincerely,



Dustin Becker  
Blaine Tech Services, Inc.  
Senior Project Manager

attachments: SOP  
Well Gauging Sheet  
Individual Well Monitoring Data Sheets  
Chain of Custody  
Wellhead Inspection Form  
Bill of Lading  
Calibration Log

cc: Stantec  
Attn: Travis Flora  
15575 Los Gatos Blvd Building C  
Los Gatos, CA 95032

Third Quarter Groundwater Monitoring at Chevron 91723, 9757 San Leandro St., Oakland, CA

SAN JOSE

SACRAMENTO

LOS ANGELES

SAN DIEGO

1680 ROGERS AVENUE

SAN JOSE, CA 95112-1105

(408) 573-0555

FAX (408) 573-7771

LIC. 746684

www.blainetech.com

# BLAINE TECH SERVICES, INC. METHODS AND PROCEDURES FOR THE ROUTINE MONITORING OF GROUNDWATER WELLS AT CHEVRON SITES

Blaine Tech Services, Inc. performs environmental sampling and documentation as an independent third party. We specialize in groundwater monitoring assignments and intentionally limit the scope of our services to those centered on the generation of objective information.

To avoid conflicts of interest, Blaine Tech Services, Inc. personnel do not evaluate or interpret the information we collect. As a state licensed contractor (C-57 well drilling –water – 746684) performing strictly technical services, we do not make any professional recommendations and perform no consulting of any kind.

---

## **SAMPLING PROCEDURES OVERVIEW**

### **SAFETY**

All groundwater monitoring assignments performed for Chevron comply with Chevron's safety guidelines, 29 CFR 1910.120 and SB-198 Injury and Illness Prevention Program (IIPP). All Field Technicians receive the full 40-hour 29CFR 1910.120 OSHA SARA HAZWOPER course, medical clearance and on-the-job training prior to commencing any work on any Chevron site.

### **INSPECTION AND GAUGING**

Wells are inspected prior to evacuation and sampling. The condition of the wellhead is checked and noted according to a wellhead inspection checklist.

Standard measurements include the depth to water (DTW) and the total well depth (TD) obtained with industry standard electronic water level indicators that are graduated in increments of hundredths of a foot.

The water in each well is inspected for the presence of immiscibles. When free product is suspected, its presence is confirmed using an electronic interface probe (e.g. GeoTech). No samples are collected from a well containing product.

### **TRADITIONAL PURGING & SAMPLING**

#### **Evacuation**

Depth to water measurements are collected by our personnel prior to purging and minimum purge volumes are calculated anew for each well based on the height of the water column and the diameter of the well. Expected purge volumes are never less than three case volumes and are set at no less than four case volumes in some jurisdictions.

Well purging devices are selected on the basis of the well diameter and the total volume to be evacuated. In most cases the well will be purged using an electric submersible pump (i.e. Grundfos) suspended near (but not touching) the bottom of the well.

## **Parameter Stabilization**

Well purging completion standards include minimum purge volumes, but additionally require stabilization of specific groundwater parameters prior to sample collection. Typical groundwater parameters used to measure stability are electrical conductivity, pH, and temperature. Instrument readings are obtained at regular intervals during the evacuation process (no less than once per case volume).

Stabilization standards for routine quarterly monitoring of fuel sites include the following: Temperature is considered to have stabilized when successive readings do not fluctuate more than +/- 1 degree Celsius. Electrical conductivity is considered stable when successive readings are within 10%. pH is considered to be stable when successive readings remain constant or vary no more than 0.2 of a pH unit.

## **Sample Collection**

All samples are collected using disposable bailers.

## **Sample Containers**

Sample material is decanted directly from the sampling bailer into sample containers provided by the laboratory that will analyze the samples. The transfer of sample material from the bailer to the sample container conforms to specifications contained in the USEPA T.E.G.D. The type of sample container, material of construction, method of closure and filling requirements are specific to the intended analysis. Chemicals needed to preserve the sample material are commonly placed inside the sample containers by the laboratory or glassware vendor prior to delivery of the bottle to our personnel. The laboratory sets the number of replicate containers.

## **Dewatered Wells**

Normal evacuation removes no less than three case volumes of water from the well. However, less water may be removed in cases where the well dewateres and does not immediately recharge.

## **Measuring Recharge**

Upon completion of well purging, a depth to water measurement is collected and notated to ensure that the well has recharged to within 80% of its static, pre-purge level prior to sampling.

Wells that do not immediately show 80% recharge or dewatered wells will be allowed approximately 2 hours to recharge prior to sampling or will be sampled at site departure. All wells requiring off-site traffic control in the public right-of-way, the 80% recharge rule may be disregarded in the interests of Health and Safety. The sample may be collected as soon as there is sufficient water. The water level at time of sampling will be noted.

## **Dissolved Oxygen Measurements**

Dissolved Oxygen readings are taken pre- and/or post-purge using YSI meters (e.g. YSI Model 550) or HACH field test kits.

The YSI meters are able to collect accurate in-situ readings. The probe allows downhole measurements to be taken from wells with diameters as small as two inches. The probe and reel is decontaminated between wells as described above. The meter is calibrated

as per the instructions in the operating manual. The probe is lowered into the water column and the reading is allowed to stabilize prior to collection.

### **Oxidation Reduction Potential Measurements (ORP)**

All readings are obtained with either Corning or Myron-L meters (e.g. Corning ORP-65 or a Myron-L Ultrameter). The meter is cleaned between wells as described above. The meter is calibrated at the start of each day according to the instruction manual.

## **LOW FLOW SAMPLING USING SAMPLE-PRO BLADDER PUMP**

### **Calibration**

Calibrate YSI Flow Cell as per manufacturer's specifications. Thoroughly rinse probe and cup between parameters. Calibration order as follows:

1. pH (use 3-point calibration of 7, 4, 10)
2. Oxygen Reduction Potential (ORP)
3. Specific Conductance
4. Dissolved Oxygen (DO) (calibrate simulating 100% oxygen saturation)

### **Purging & Sampling Collection**

1. Insert new bladder into Sample-Pro pump housing.
2. Remove dedicated PE tubing from the well or start with new PE tubing cut to the required length.
3. Attach the PE tubing to the Sample-Pro Bladder Pump.
4. Gently lower the Sample-Pro Bladder Pump, and PE tubing into the well, placing the Sample-Pro Bladder Pump intake at the center of the screened interval. Take care to minimize disturbance to the water column.
5. Direct effluent line into YSI 556 Flow Cell.
6. Set Sample-Pro Bladder Pump speed at 100 - 500 ml/min.
7. Collect water quality parameter measurements for temperature, pH, conductivity, turbidity, DO and ORP every 3-5 minutes.
8. Monitor drawdown during purging with electronic water level meter. Record water level with each parameter measurement. **MAXIMUM DRAWDOWN IS 0.33 FEET.**
9. Collect parameter measurements until stability is achieved. Stability is defined as three consecutive measurements where:

Temp	± 1 ° Celsius
pH	± 0.1
Conductivity	± 3%
Turbidity	± 10% NTU
DO	± 0.3 mg/l
ORP	± 10 Mv

10. Sample may be collected once stability is achieved and at least one system volume of water removed from the well.
11. Disconnect effluent line from YSI 556 Flow Cell.
12. Sample through effluent line while maintaining constant flow rate.
13. Remove Sample-Pro Bladder Pump, and PE tubing from well.
14. Detach and reinstall dedicated PE tubing in well.

## **PURGEWATER CONTAINMENT**

All non-hazardous purgewater evacuated from each groundwater monitoring well is captured and contained in on-board storage tanks on the Sampling Vehicle and/or special water hauling trailers. Effluent from the decontamination of reusable apparatus (sounders, electric pumps and hoses etc.), consisting of groundwater combined with deionized water and non-phosphate soap, is also captured and pumped into effluent tanks.

Non-hazardous purgewater is transported under standard Bill of Lading or Non-Hazardous Waste Manifest to a Blaine Tech Services, Inc. facility before being transported to a Chevron approved disposal facility

## **TRIP BLANKS**

Trip Blanks, if requested, are taken to the site and kept inside the sample cooler for the duration of the event. They are turned over to the laboratory for analysis with the samples from that site.

## **DUPLICATES**

Duplicates, if requested, may be collected at a site.

## **SAMPLE STORAGE**

All sample containers are promptly placed in food grade ice chests for storage in the field and transport (direct or via our facility) to the designated analytical laboratory. These ice chests contain quantities of restaurant grade ice as a refrigerant material. The samples are maintained in either an ice chest or a refrigerator until relinquished into the custody of the laboratory or laboratory courier.

## **DOCUMENTATION CONVENTIONS**

A label must be affixed to all sample containers. In most cases these labels are generated by our office personnel and are partially preprinted. Labels can also be hand written by our field personnel. The site is identified with the store number and site address, as is the particular groundwater well from which the sample is drawn (e.g. MW-1, MW-2, S-1 etc.). The time and date of sample collection along with the initials of the person who collects the sample are handwritten onto the label. Field documentation is contemporaneous.

## **DECONTAMINATION**

All equipment is brought to the site in clean and serviceable condition and is cleaned after use in each well and before subsequent use in any other well. Equipment such as hose reels, pumps and bailers is decontaminated before leaving the site.

The primary decontamination device is a commercial steam cleaner. The steam cleaner is de-tuned to function as a hot pressure washer that is then operated with high quality deionized water that is produced at our facility and stored onboard our sampling vehicle. Cleaning is

facilitated by the use of proprietary fixtures and devices included in the patented workstation (U.S. Patent 5,535,775) that is incorporated in each sampling vehicle.

Any sensitive equipment or parts (i.e. Dissolved Oxygen sensor membrane, water level indicator, etc.) that cannot be washed using the high pressure water, will be sprayed with a non-phosphate soap and deionized water solution and rinsed with deionized water.

## **FERROUS IRON MEASUREMENTS**

All field measurements are collected at time of sampling with a HACH test kit.



## CHEVRON WELL MONITORING DATA SHEET

Project #: 130917-DBZ	Station #: 9-1723
Sampler: <u>DB</u>	Date: 9/7/13
Weather: Sunny	Ambient Air Temperature: 80°F
Well I.D.: MW-2	Well Diameter: (2) 3 4 6 8
Total Well Depth: 21.59	Depth to Water: 9.96
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 12.28	

Purge Method:

- Bailer
- Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other \_\_\_\_\_

Sampling Method:

- Bailer
- Disposable Bailer
- Extraction Port
- Dedicated Tubing

Other: \_\_\_\_\_

1.9	(Gals.) X	3	=	5.7	Gals.
I Case Volume		Specified Volumes		Calculated Volume	

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

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
1236	68.6	7.0	953.8	231	2	
1239	68.2	6.9	953.6	>1000	4	
1242	68.5	6.9	951.3	>1000	6	

Did well dewater? Yes  No  Gallons actually evacuated: 6

Sampling Date: 9/7/13 Sampling Time: 1251 Depth to Water: 9.99

Sample I.D.: MW-2 Laboratory: Lancaster Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE OXYS Other:

Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE OXYS Other:

D.O. (if req'd):	Pre-purge:	mg/L	Post-purge:	0.74	mg/L
------------------	------------	------	-------------	------	------

O.R.P. (if req'd):	Pre-purge:	mV	Post-purge:	8	mV
--------------------	------------	----	-------------	---	----



## CHEVRON WELL MONITORING DATA SHEET

Project #: 130917-DBZ	Station #: 9-1723
Sampler: DB	Date: 9/17/03
Weather: Clear	Ambient Air Temperature: 80°F
Well I.D.: MW-5	Well Diameter: (2) 3 4 6 8 _____
Total Well Depth: 17.48	Depth to Water: 9.93
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: (PVC) Grade	D.O. Meter (if req'd): (YSI) HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.44	

Purge Method:

- Bailer
- (Disposable Bailer)
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other \_\_\_\_\_

Sampling Method:

- (Bailer)
- (Disposable Bailer)
- Extraction Port
- Dedicated Tubing
- Other: \_\_\_\_\_

1.2	(Gals.) X	3	=	3.6	Gals.
I Case Volume		Specified Volumes		Calculated Volume	

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

Time	Temp (°F)	pH	Cond. (mS or (μS))	Turbidity (NTUs)	Gals. Removed	Observations
1340	69.3	7.1	811.8	>1000	1.5	
1342	69.9	7.0	809.7	>1000	3	
1344	69.8	7.0	809.5	>1000	4	

Did well dewater? Yes  No  Gallons actually evacuated: 4

Sampling Date: 9/17/03 Sampling Time: 1351 Depth to Water: 10.04

Sample I.D.: MW-5 Laboratory: (Lancaster) Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE OXYS Other:

Duplicate I.D.: Analyzed for: TPH-G BTEX MTBE OXYS Other:

D.O. (if req'd): Pre-purge: \_\_\_\_\_ mg/L Post-purge: (0.46) mg/L

O.R.P. (if req'd): Pre-purge: \_\_\_\_\_ mV Post-purge: (-4) mV

## CHEVRON WELL MONITORING DATA SHEET

Project #: 130917-DBZ	Station #: 9-1723
Sampler:	Date: 9/17/13
Weather: Clear	Ambient Air Temperature: 80°F
Well I.D.: MW-6	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth: 19.50	Depth to Water: 10.06
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.94	

Purge Method: Bailer      Sampling Method: Bailer

<p><input type="checkbox"/> Bailer</p> <p><input checked="" type="checkbox"/> <u>Disposable Bailer</u></p> <p><input type="checkbox"/> Positive Air Displacement</p> <p><input type="checkbox"/> Electric Submersible</p>	<p><input type="checkbox"/> Waterra</p> <p><input type="checkbox"/> Peristaltic</p> <p><input type="checkbox"/> Extraction Pump</p> <p><input type="checkbox"/> Other _____</p>
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Other: \_\_\_\_\_

1.6 (Gals.) X 3 = 4.8 Gals.  
 1 Case Volume      Specified Volumes      Calculated Volume

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

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u> )	Turbidity (NTUs)	Gals. Removed	Observations
1308	69.0	7.0	870.2	>1000	2	
1311	69.8	6.8	865.0	>1000	3.5	
1314	69.7	6.8	864.8	>1000	5	

Did well dewater?    Yes    No    Gallons actually evacuated: 5

Sampling Date: 9/17/13    Sampling Time: 1321    Depth to Water: 10.12

Sample I.D.: MW-6    Laboratory: Lancaster Other \_\_\_\_\_

Analyzed for: TPH-G    BTEX    MTBE    OXYS    Other: \_\_\_\_\_

Duplicate I.D.: \_\_\_\_\_    Analyzed for: TPH-G    BTEX    MTBE    OXYS    Other: \_\_\_\_\_

D.O. (if req'd):	Pre-purge:	mg/L	<u>Post-purge:</u>	0.49	mg/L
O.R.P. (if req'd):	Pre-purge:	mV	<u>Post-purge:</u>	-14	mV

# CHEVRON WELL MONITORING DATA SHEET

Project #: 130917-DBZ	Station #: 9-1723
Sampler:	Date: 9/17/13
Weather: Clear	Ambient Air Temperature: 80°F
Well I.D.: MW-8	Well Diameter: <u>2</u> 3 4 6 8
Total Well Depth: 18.21	Depth to Water: 10.34
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVE</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.91	

Purge Method:

- Bailer
- Disposable Bailer
- Positive Air Displacement
- Electric Submersible
- Waterra
- Peristaltic
- Extraction Pump
- Other \_\_\_\_\_

Sampling Method:

- Bailer
- Disposable Bailer
- Extraction Port
- Dedicated Tubing
- Other: \_\_\_\_\_

1.3 (Gals.) X 3 = 3.9 Gals.  
 I Case Volume                  Specified Volumes                  Calculated Volume

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

Time	Temp (°F)	pH	Cond. (mS or $\mu$ S)	Turbidity (NTUs)	Gals. Removed	Observations
1409	70.1	7.0	874.1	>1000	1.5	
1412	69.9	6.9	879.5	>1000	3	
1414	69.8	6.9	884.0	>1000	4	

Did well dewater?    Yes    No    Gallons actually evacuated: 4

Sampling Date: 9/17/13    Sampling Time: 1420    Depth to Water: 10.34

Sample I.D.: MW-8    Laboratory: Lancaster Other \_\_\_\_\_

Analyzed for: TPH-G    BTEX    MTBE    OXYS    Other:

Duplicate I.D.:                  Analyzed for: TPH-G    BTEX    MTBE    OXYS    Other:

D.O. (if req'd):                  Pre-purge: \_\_\_\_\_ mg/L    Post-purge: 0.38 mg/L

O.R.P. (if req'd):                  Pre-purge: \_\_\_\_\_ mV    Post-purge: -78 mV

## CHEVRON WELL MONITORING DATA SHEET

Project #: 130917-DBZ	Station #: 9-1723
Sampler: <del>SS</del>	Date: 9/17/13
Weather: Clear	Ambient Air Temperature: 74° F
Well I.D.: MW-9	Well Diameter: 2 3 <u>4</u> 6 8
Total Well Depth: 20.14	Depth to Water: 9.51
Depth to Free Product:	Thickness of Free Product (feet):
Referenced to: <u>PVC</u> Grade	D.O. Meter (if req'd): <u>YSI</u> HACH
DTW with 80% Recharge [(Height of Water Column x 0.20) + DTW]: 11.63	

Purge Method:  Bailer  Waterra  Peristaltic  Extraction Pump  Other \_\_\_\_\_

Sampling Method:  Bailer  Disposable Bailer  Extraction Port  Dedicated Tubing  Other: \_\_\_\_\_

Electric Submersible

$7.0$  (Gals.) X  $3$  =  $21.0$  Gals.  
 I Case Volume      Specified Volumes      Calculated Volume

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

Time	Temp (°F)	pH	Cond. (mS or <u>µS</u> )	Turbidity (NTUs)	Gals. Removed	Observations
1159	66.4	<del>6.6</del> <sup>7.6</sup>	853.8	144	7	
1201	65.5	7.1	860.3	54	14	
1203	64.9	7.0	868.6	33	21	

Did well dewater? Yes  No  Gallons actually evacuated: 21

Sampling Date: 9/17/13      Sampling Time: 1211      Depth to Water: 10.04

Sample I.D.: MW-9      Laboratory: Lancaster Other \_\_\_\_\_

Analyzed for: TPH-G BTEX MTBE OXYS Other:

Duplicate I.D.:      Analyzed for: TPH-G BTEX MTBE OXYS Other:

D.O. (if req'd): Pre-purge: \_\_\_\_\_ mg/L      Post-purge: 1.41 mg/L

O.R.P. (if req'd): Pre-purge: \_\_\_\_\_ mV      Post-purge: 124 mV

CHAIN OF CUSTODY FORM

Chevron Environmental Management Company ■ 6111 Bollinger Canyon Rd. ■ San Ramon, CA 94583

COC 1 of 1

Chevron Site Number: 91723 Chevron Site Global ID: T0600101789 Chevron Site Address: 9757 San Leandro St., Oakland, CA Chevron PM: CARRYL MACLEOD Chevron PM Phone No.: (925)790-6506 <input checked="" type="checkbox"/> Retail and Terminal Business Unit (RTBU) Job <input checked="" type="checkbox"/> Construction/Retail Job				Chevron Consultant: STANTEC Address: 15575 Los Gatos Blvd., Bldg. C Los Gatos, CA Consultant Contact: Travis Flora Consultant Phone No. 408-356-6124 Consultant Project No. 130917-DB2 Sampling Company: Blaine Tech Services Sampled By (Print): <u>Dustin Becker</u> Sampler Signature: <u>[Signature]</u>				ANALYSES REQUIRED														
Charge Code: NWRWB 00SITE NUMBER-0-WBS (WBS ELEMENTS: SITE ASSESSMENT: A1L REMEDIATION IMPLEMENTATION: R5L SITE MONITORING: OML OPERATION MAINTENANCE & MONITORING: M1L THIS IS A LEGAL DOCUMENT. ALL FIELDS MUST BE FILLED OUT CORRECTLY AND COMPLETELY.				Lancaster Laboratories <input checked="" type="checkbox"/> Lancaster, PA Lab Contact: Jill Parker 2426 New Holland Pike, Lancaster, PA 17601 Phone No: (717)656-2300		Other Lab _____ _____ _____ _____ _____		Temp. Blank Check Time Temp. 1100 20C 1350 20C 1430 20C _____ _____		EPA 8260B/GC/MS TPH LGI <input checked="" type="checkbox"/> BTEX <input checked="" type="checkbox"/> MTBE <input checked="" type="checkbox"/> OXYGENATES <input type="checkbox"/> HVOC <input type="checkbox"/>	EPA 8015B GRO <input type="checkbox"/> DRO <input type="checkbox"/> ORO <input type="checkbox"/> HC SCREEN <input type="checkbox"/>	EPA 8021B BTEX <input type="checkbox"/> MTBE <input type="checkbox"/>	EPA 6010 Ca, Fe, K, Mg, Mn, Na	EPA 6010/7000 TITLE 22 METALS <input type="checkbox"/> TLIC <input type="checkbox"/> STLC <input type="checkbox"/>	EPA 150.1 PH <input type="checkbox"/>	EPA 310.1 ALKALINITY <input checked="" type="checkbox"/>	EPA 413.1 OIL & GREASE <input type="checkbox"/>	EPA 418.1 TRPH <input type="checkbox"/>	EPA 8260-SPECIFIC CONDUCTIVITY <input checked="" type="checkbox"/> Sulfate Nitrate	EPA 413.1 OIL & GREASE <input type="checkbox"/>	EPA 8260-ELEMENTS: Ferrous Iron / Sulfide EPA 8015-TRPH-E-13 Methylene	Preservation Codes H = HCL T = Thiosulfate N = HNO <sub>3</sub> B = NaOH S = H <sub>2</sub> SO <sub>4</sub> O = Other
SAMPLE ID				Sample Time	# of Containers	Container Type	EPA 8260B/GC/MS TPH LGI <input checked="" type="checkbox"/> BTEX <input checked="" type="checkbox"/> MTBE <input checked="" type="checkbox"/> OXYGENATES <input type="checkbox"/> HVOC <input type="checkbox"/>	EPA 8015B GRO <input type="checkbox"/> DRO <input type="checkbox"/> ORO <input type="checkbox"/> HC SCREEN <input type="checkbox"/>	EPA 8021B BTEX <input type="checkbox"/> MTBE <input type="checkbox"/>	EPA 6010 Ca, Fe, K, Mg, Mn, Na	EPA 6010/7000 TITLE 22 METALS <input type="checkbox"/> TLIC <input type="checkbox"/> STLC <input type="checkbox"/>	EPA 150.1 PH <input type="checkbox"/>	EPA 310.1 ALKALINITY <input checked="" type="checkbox"/>	EPA 413.1 OIL & GREASE <input type="checkbox"/>	EPA 418.1 TRPH <input type="checkbox"/>	EPA 8260-SPECIFIC CONDUCTIVITY <input checked="" type="checkbox"/> Sulfate Nitrate	EPA 413.1 OIL & GREASE <input type="checkbox"/>	EPA 8260-ELEMENTS: Ferrous Iron / Sulfide EPA 8015-TRPH-E-13 Methylene	Notes/Comments			
Field Point Name	Matrix	Top Depth	Date (yymmdd)																			
MW-2	N6		130917	1251	13	MIXED	X					X	X	X	X							
MW-5	↓		↓	1351	↓	↓	X					X	X	X	X							
MW-6	↓		↓	1321	↓	↓	X					X	X	X	X							
MW-8	↓		↓	1420	↓	↓	X					X	X	X	X							
MW-7	↓		↓	1420 <sub>10</sub> 1211	↓	↓	X					X	X	X	X							
QA	T		↓	1100	2	VOAS	X															
Relinquished By: <u>[Signature]</u> Company: <u>BR</u> Date/Time: <u>9/17/13 1435</u>				Relinquished To: <u>[Signature]</u> Company: <u>CE</u> Date/Time: <u>9/17/13 1435</u>		Turnaround Time: Standard <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Other <input type="checkbox"/>		Sample Integrity: (Check by lab on arrival)														
Relinquished By: _____ Company: _____ Date/Time: _____				Relinquished To: _____ Company: _____ Date/Time: _____		Intact: _____ On Ice: _____ Temp: _____		COC # _____														
Relinquished By: _____ Company: _____ Date/Time: _____				Relinquished To: _____ Company: _____ Date/Time: _____																		





SOURCE RECORD **BILL OF LADING**  
 FOR PURGEWATER RECOVERED FROM  
 GROUNDWATER WELLS AT CHEVRON FACILITIES IN  
 THE STATE OF CALIFORNIA. THE PURGE- WATER  
 WHICH HAS BEEN RECOVERED FROM GROUND-  
 WATER WELLS IS COLLECTED BY THE CONTRACTOR  
 AND HAULED TO THEIR FACILITY IN SAN JOSE,  
 CALIFORNIA FOR TEMPORARILY HOLDING PENDING  
 TRANSPORT BY OTHERS TO FINAL DESTINATION.

The contractor performing this work is BLAINE TECH SERVICES, INC. (BLAINE TECH), 1680 Rogers Ave. San Jose CA (408) 573-0555). BLAINE TECH. is authorized by Chevron Environmental Management Company (CHEVRON EMC) to recover, collect, apportion into loads, and haul the purgewater that is drawn from wells at the CHEVRON EMC facility indicated below and to deliver that purgewater to BLAINE TECH for temporarily holding. Transport routing of the purgewater may be direct from one CHEVRON EMC facility to BLAINE TECH; from one CHEVRON EMC facility to BLAINE TECH via another CHEVRON EMC facility; or any combination thereof. The well purgewater is and remains the property of CHEVRON EMC.

This **Source Record BILL OF LADING** was initiated to cover the recovery of Non-Hazardous Well Purgewater from wells at the Chevron facility described below:

9-1723	Caryn MacLeod		
CHEVRON #	Chevron Engineer		
9757	San Leandro St.	Oakland	CA
street number	street name	city	state

WELL I.D.	GALS.	WELL I.D.	GALS.
MW-2	1 6		
MW-5	1 4		
MW-6	1 5		
MW-8	1 4		
MW-9	1 21		
	1		1
	1		1
	1		1
added equip.		any other	
rinse water	1 1	adjustments	1
<b>TOTAL GALS.</b>	<u>41</u>	loaded onto	
<b>RECOVERED</b>		BTS vehicle #	<u>86</u>
BTS event #	time	date	
130917-082	1445	9/17/13	
Transporter signature 			
*****			
<b>REC'D AT</b>	time	date	
BTS SAN JOSE	1545	9/17/13	
Unloaded/received by			
signature 			





**ATTACHMENT B**  
**Certified Laboratory Analysis Reports and Chain-**  
**of-Custody Documents**

## ANALYTICAL RESULTS

Prepared by:

Eurofins Lancaster Laboratories Environmental  
2425 New Holland Pike  
Lancaster, PA 17601

Prepared for:

ChevronTexaco  
L4310  
6001 Bollinger Canyon Rd.  
San Ramon CA 94583

September 27, 2013

Project: 91723

Submittal Date: 09/18/2013  
Group Number: 1419650  
PO Number: 0015118372  
Release Number: SHRILL HOPKINS  
State of Sample Origin: CA

Client Sample Description

MW-2-W-130917 NA Groundwater  
MW-5-W-130917 NA Groundwater  
MW-6-W-130917 NA Groundwater  
MW-8-W-130917 NA Groundwater  
MW-9-W-130917 NA Groundwater  
QA-T-130917 NA Water

Lancaster Labs (LL) #

7201844  
7201845  
7201846  
7201847  
7201848  
7201849

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

ELECTRONIC COPY TO Stantec  
ELECTRONIC COPY TO Stantec  
ELECTRONIC COPY TO Stantec  
ELECTRONIC COPY TO Stantec

Attn: Laura Viesselman  
Attn: Erin O'Malley  
Attn: Marisa Kaffenberger  
Attn: Travis Flora

Respectfully Submitted,



Natalie R. Luciano  
Senior Specialist

(717) 556-7258

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-2-W-130917 NA Groundwater  
Facility# 91723 BTST  
9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201844  
LL Group # 1419650  
Account # 10869

Project Name: 91723

Collected: 09/17/2013 12:51 by DB ChevronTexaco  
L4310  
Submitted: 09/18/2013 10:00 6001 Bollinger Canyon Rd.  
Reported: 09/27/2013 15:25 San Ramon CA 94583

SLOM2

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>					
10945	Benzene	71-43-2	N.D.	0.5	1
10945	C6-C12-TPH-GRO	n.a.	94	22	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Miscellaneous SW-846 8015B modified</b>					
07105	Methane	74-82-8	370	3.0	1
<b>Wet Chemistry EPA 300.0</b>					
00368	Nitrate Nitrogen	14797-55-8	N.D.	250	5
00228	Sulfate	14808-79-8	12,000	1,500	5
<b>SM 2320 B-1997</b>					
12150	Total Alkalinity	n.a.	506,000	700	1
<b>SM 3500-Fe B modified-1997</b>					
08344	Ferrous Iron	n.a.	690	10	1
<b>SM 4500-S2 D-2000</b>					
00230	Sulfide	18496-25-8	130	54	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
10945	GRO/BTEX/MTBE 8260 Water	SW-846 8260B	1	F132652AA	09/22/2013 17:29	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F132652AA	09/22/2013 17:29	Daniel H Heller	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	132670001A	09/24/2013 10:00	Elizabeth J Marin	1
00368	Nitrate Nitrogen	EPA 300.0	1	13261347901A	09/18/2013 21:21	Sandra J Miller	5
00228	Sulfate	EPA 300.0	1	13261347901A	09/18/2013 21:21	Sandra J Miller	5
12150	Total Alkalinity	SM 2320 B-1997	1	13262005103A	09/19/2013 21:15	Michele L Graham	1
08344	Ferrous Iron	SM 3500-Fe B modified-1997	1	13261834401A	09/18/2013 20:20	Daniel S Smith	1

Sample Description: MW-2-W-130917 NA Groundwater  
Facility# 91723 BTST  
9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201844  
LL Group # 1419650  
Account # 10869

Project Name: 91723

Collected: 09/17/2013 12:51 by DB

ChevronTexaco

L4310

Submitted: 09/18/2013 10:00

6001 Bollinger Canyon Rd.

Reported: 09/27/2013 15:25

San Ramon CA 94583

SLOM2

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00230	Sulfide	SM 4500-S2 D-2000	1	13263023001A	09/20/2013 09:19	Michele L Graham	1

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

**Sample Description:** MW-5-W-130917 NA Groundwater  
Facility# 91723 BTST  
9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201845  
LL Group # 1419650  
Account # 10869

**Project Name:** 91723

Collected: 09/17/2013 13:51 by DB ChevronTexaco  
L4310  
Submitted: 09/18/2013 10:00 6001 Bollinger Canyon Rd.  
Reported: 09/27/2013 15:25 San Ramon CA 94583

SLOM5

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles</b>			<b>SW-846 8260B</b>	<b>ug/l</b>	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	C6-C12-TPH-GRO	n.a.	140	22	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Miscellaneous</b>			<b>SW-846 8015B modified</b>	<b>ug/l</b>	
07105	Methane	74-82-8	110	3.0	1
<b>Wet Chemistry</b>			<b>EPA 300.0</b>	<b>ug/l</b>	
00368	Nitrate Nitrogen	14797-55-8	900	250	5
00228	Sulfate	14808-79-8	31,200	1,500	5
			<b>SM 2320 B-1997</b>	<b>ug/l as CaCO3</b>	
12150	Total Alkalinity	n.a.	373,000	700	1
			<b>SM 3500-Fe B modified-1997</b>	<b>ug/l</b>	
08344	Ferrous Iron	n.a.	2,000	50	5
			<b>SM 4500-S2 D-2000</b>	<b>ug/l</b>	
00230	Sulfide	18496-25-8	N.D.	54	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
10945	GRO/BTEX/MTBE 8260 Water	SW-846 8260B	1	F132652AA	09/22/2013 18:34	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F132652AA	09/22/2013 18:34	Daniel H Heller	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	132670001A	09/24/2013 10:55	Elizabeth J Marin	1
00368	Nitrate Nitrogen	EPA 300.0	1	13261347901A	09/18/2013 21:37	Sandra J Miller	5
00228	Sulfate	EPA 300.0	1	13261347901A	09/18/2013 21:37	Sandra J Miller	5
12150	Total Alkalinity	SM 2320 B-1997	1	13262005103A	09/19/2013 21:21	Michele L Graham	1
08344	Ferrous Iron	SM 3500-Fe B modified-1997	1	13261834401A	09/18/2013 20:20	Daniel S Smith	5

Sample Description: MW-5-W-130917 NA Groundwater  
Facility# 91723 BTST  
9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201845  
LL Group # 1419650  
Account # 10869

Project Name: 91723

Collected: 09/17/2013 13:51 by DB

ChevronTexaco

L4310

Submitted: 09/18/2013 10:00

6001 Bollinger Canyon Rd.

Reported: 09/27/2013 15:25

San Ramon CA 94583

SLOM5

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00230	Sulfide	SM 4500-S2 D-2000	1	13263023001A	09/20/2013 09:19	Michele L Graham	1

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-6-W-130917 NA Groundwater  
Facility# 91723 BTST  
9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201846  
LL Group # 1419650  
Account # 10869

Project Name: 91723

Collected: 09/17/2013 13:21 by DB ChevronTexaco  
L4310  
Submitted: 09/18/2013 10:00 6001 Bollinger Canyon Rd.  
Reported: 09/27/2013 15:25 San Ramon CA 94583

SLOM6

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>					
10945	Benzene	71-43-2	N.D.	0.5	1
10945	C6-C12-TPH-GRO	n.a.	34	22	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Miscellaneous SW-846 8015B modified</b>					
07105	Methane	74-82-8	120	3.0	1
<b>Wet Chemistry EPA 300.0</b>					
00368	Nitrate Nitrogen	14797-55-8	N.D.	250	5
00228	Sulfate	14808-79-8	6,300	1,500	5
<b>SM 2320 B-1997</b>					
12150	Total Alkalinity	n.a.	444,000	700	1
<b>SM 3500-Fe B modified-1997</b>					
08344	Ferrous Iron	n.a.	4,600	100	10
<b>SM 4500-S2 D-2000</b>					
00230	Sulfide	18496-25-8	98	54	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
10945	GRO/BTEX/MTBE 8260 Water	SW-846 8260B	1	F132652AA	09/22/2013 18:56	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F132652AA	09/22/2013 18:56	Daniel H Heller	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	132670001A	09/24/2013 11:14	Elizabeth J Marin	1
00368	Nitrate Nitrogen	EPA 300.0	1	13261347901A	09/18/2013 21:53	Sandra J Miller	5
00228	Sulfate	EPA 300.0	1	13261347901A	09/18/2013 21:53	Sandra J Miller	5
12150	Total Alkalinity	SM 2320 B-1997	1	13262005103B	09/19/2013 21:27	Michele L Graham	1
08344	Ferrous Iron	SM 3500-Fe B modified-1997	1	13261834401A	09/18/2013 20:20	Daniel S Smith	10



Sample Description: MW-6-W-130917 NA Groundwater  
 Facility# 91723 BTST  
 9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201846  
 LL Group # 1419650  
 Account # 10869

Project Name: 91723

Collected: 09/17/2013 13:21 by DB ChevronTexaco  
 L4310  
 Submitted: 09/18/2013 10:00 6001 Bollinger Canyon Rd.  
 Reported: 09/27/2013 15:25 San Ramon CA 94583

SLOM6

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00230	Sulfide	SM 4500-S2 D-2000	1	13267023001A	09/24/2013 10:35	Susan E Hibner	1

Sample Description: MW-8-W-130917 NA Groundwater  
Facility# 91723 BTST  
9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201847  
LL Group # 1419650  
Account # 10869

Project Name: 91723

Collected: 09/17/2013 14:20 by DB ChevronTexaco  
L4310  
Submitted: 09/18/2013 10:00 6001 Bollinger Canyon Rd.  
Reported: 09/27/2013 15:25 San Ramon CA 94583

SLOM8

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>			ug/l	ug/l	
10945	Benzene	71-43-2	60	0.5	1
10945	C6-C12-TPH-GRO	n.a.	2,100	22	1
10945	Ethylbenzene	100-41-4	11	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	2	0.5	1
10945	Xylene (Total)	1330-20-7	9	0.5	1
<b>GC Miscellaneous SW-846 8015B modified</b>			ug/l	ug/l	
07105	Methane	74-82-8	1,700	30	10
<b>Wet Chemistry EPA 300.0</b>			ug/l	ug/l	
00368	Nitrate Nitrogen	14797-55-8	N.D.	250	5
00228	Sulfate	14808-79-8	5,700	1,500	5
<b>SM 2320 B-1997</b>			ug/l as CaCO3	ug/l as CaCO3	
12150	Total Alkalinity	n.a.	468,000	700	1
<b>SM 3500-Fe B modified-1997</b>			ug/l	ug/l	
08344	Ferrous Iron	n.a.	22,300	1,000	100
<b>SM 4500-S2 D-2000</b>			ug/l	ug/l	
00230	Sulfide	18496-25-8	N.D.	220	4
Reporting limits were raised due to interference from the sample matrix.					

### 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
10945	GRO/BTEX/MTBE 8260 Water	SW-846 8260B	1	F132652AA	09/22/2013 19:18	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F132652AA	09/22/2013 19:18	Daniel H Heller	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	132680002A	09/26/2013 17:18	Elizabeth J Marin	10
00368	Nitrate Nitrogen	EPA 300.0	1	13261347901A	09/18/2013 22:09	Sandra J Miller	5
00228	Sulfate	EPA 300.0	1	13261347901A	09/18/2013 22:09	Sandra J Miller	5
12150	Total Alkalinity	SM 2320 B-1997	1	13262005103A	09/19/2013 21:39	Michele L Graham	1

Sample Description: MW-8-W-130917 NA Groundwater  
 Facility# 91723 BTST  
 9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201847  
 LL Group # 1419650  
 Account # 10869

Project Name: 91723

Collected: 09/17/2013 14:20 by DB ChevronTexaco  
 L4310  
 Submitted: 09/18/2013 10:00 6001 Bollinger Canyon Rd.  
 Reported: 09/27/2013 15:25 San Ramon CA 94583

SLOM8

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
08344	Ferrous Iron	SM 3500-Fe B modified-1997	1	13261834401A	09/18/2013 20:20	Daniel S Smith	100
00230	Sulfide	SM 4500-S2 D-2000	1	13267023001A	09/24/2013 10:35	Susan E Hibner	4

2425 New Holland Pike, Lancaster, PA 17601 • 717-656-2300 • Fax: 717-656-2681 • www.LancasterLabs.com

Sample Description: MW-9-W-130917 NA Groundwater  
Facility# 91723 BTST  
9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201848  
LL Group # 1419650  
Account # 10869

Project Name: 91723

Collected: 09/17/2013 12:11 by DB ChevronTexaco  
L4310  
Submitted: 09/18/2013 10:00 6001 Bollinger Canyon Rd.  
Reported: 09/27/2013 15:25 San Ramon CA 94583

SLOM7

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>					
10945	Benzene	71-43-2	N.D.	0.5	1
10945	C6-C12-TPH-GRO	n.a.	N.D.	22	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	1
<b>GC Miscellaneous SW-846 8015B modified</b>					
07105	Methane	74-82-8	N.D.	3.0	1
<b>Wet Chemistry EPA 300.0</b>					
00368	Nitrate Nitrogen	14797-55-8	910	250	5
00228	Sulfate	14808-79-8	29,200	1,500	5
<b>SM 2320 B-1997</b>					
12150	Total Alkalinity	n.a.	414,000	700	1
<b>SM 3500-Fe B modified-1997</b>					
08344	Ferrous Iron	n.a.	N.D.	10	1
<b>SM 4500-S2 D-2000</b>					
00230	Sulfide	18496-25-8	N.D.	54	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
10945	GRO/BTEX/MTBE 8260 Water	SW-846 8260B	1	F132652AA	09/22/2013 19:40	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F132652AA	09/22/2013 19:40	Daniel H Heller	1
07105	Volatile Headspace Hydrocarbon	SW-846 8015B modified	1	132680002A	09/25/2013 11:33	Elizabeth J Marin	1
00368	Nitrate Nitrogen	EPA 300.0	1	13261347901A	09/18/2013 22:58	Sandra J Miller	5
00228	Sulfate	EPA 300.0	1	13261347901A	09/18/2013 22:58	Sandra J Miller	5
12150	Total Alkalinity	SM 2320 B-1997	1	13262005104A	09/19/2013 22:40	Michele L Graham	1
08344	Ferrous Iron	SM 3500-Fe B modified-1997	1	13261834401A	09/18/2013 20:20	Daniel S Smith	1

Sample Description: MW-9-W-130917 NA Groundwater  
Facility# 91723 BTST  
9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201848  
LL Group # 1419650  
Account # 10869

Project Name: 91723

Collected: 09/17/2013 12:11 by DB

ChevronTexaco

L4310

Submitted: 09/18/2013 10:00

6001 Bollinger Canyon Rd.

Reported: 09/27/2013 15:25

San Ramon CA 94583

SLOM7

### Laboratory Sample Analysis Record

CAT No.	Analysis Name	Method	Trial#	Batch#	Analysis Date and Time	Analyst	Dilution Factor
00230	Sulfide	SM 4500-S2 D-2000	1	13267023001A	09/24/2013 10:35	Susan E Hibner	1

Sample Description: QA-T-130917 NA Water  
Facility# 91723 BTST  
9757 San Leandro-Oakland T0600101789

LL Sample # WW 7201849  
LL Group # 1419650  
Account # 10869

Project Name: 91723

Collected: 09/17/2013 11:00

ChevronTexaco

Submitted: 09/18/2013 10:00

L4310

Reported: 09/27/2013 15:25

6001 Bollinger Canyon Rd.  
San Ramon CA 94583

SLOQA

CAT No.	Analysis Name	CAS Number	As Received Result	As Received Method Detection Limit	Dilution Factor
<b>GC/MS Volatiles SW-846 8260B</b>			<b>ug/l</b>	<b>ug/l</b>	
10945	Benzene	71-43-2	N.D.	0.5	1
10945	C6-C12-TPH-GRO	n.a.	N.D.	22	1
10945	Ethylbenzene	100-41-4	N.D.	0.5	1
10945	Methyl Tertiary Butyl Ether	1634-04-4	N.D.	0.5	1
10945	Toluene	108-88-3	N.D.	0.5	1
10945	Xylene (Total)	1330-20-7	N.D.	0.5	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
10945	GRO/BTEX/MTBE 8260 Water	SW-846 8260B	1	F132652AA	09/22/2013 17:07	Daniel H Heller	1
01163	GC/MS VOA Water Prep	SW-846 5030B	1	F132652AA	09/22/2013 17:07	Daniel H Heller	1

## Quality Control Summary

Client Name: ChevronTexaco  
Reported: 09/27/13 at 03:25 PM

Group Number: 1419650

Matrix QC may not be reported if insufficient sample or 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.

All Inorganic Initial Calibration and Continuing Calibration Blanks met acceptable method criteria unless otherwise noted on the Analysis Report.

### Laboratory Compliance Quality Control

<u>Analysis Name</u>	<u>Blank Result</u>	<u>Blank MDL</u>	<u>Report Units</u>	<u>LCS %REC</u>	<u>LCSD %REC</u>	<u>LCS/LCSD Limits</u>	<u>RPD</u>	<u>RPD Max</u>
Batch number: F132652AA	Sample number(s): 7201844-7201849							
Benzene	N.D.	0.5	ug/l	90		78-120		
C6-C12-TPH-GRO	N.D.	22.	ug/l	119	125	80-160	5	30
Ethylbenzene	N.D.	0.5	ug/l	90		79-120		
Methyl Tertiary Butyl Ether	N.D.	0.5	ug/l	97		75-120		
Toluene	N.D.	0.5	ug/l	92		80-120		
Xylene (Total)	N.D.	0.5	ug/l	92		80-120		
Batch number: 132670001A	Sample number(s): 7201844-7201846							
Methane	N.D.	3.0	ug/l	103		80-120		
Batch number: 132680002A	Sample number(s): 7201847-7201848							
Methane	N.D.	3.0	ug/l	108		80-120		
Batch number: 13261347901A	Sample number(s): 7201844-7201848							
Nitrate Nitrogen	N.D.	50.	ug/l	104		90-110		
Sulfate	N.D.	300.	ug/l	105		90-110		
Batch number: 13261834401A	Sample number(s): 7201844-7201848							
Ferrous Iron	N.D.	10.	ug/l	100		93-105		
Batch number: 13262005103A	Sample number(s): 7201844-7201845,7201847							
Total Alkalinity	N.D.	700.	ug/l as CaCO3	99		90-110		
Batch number: 13262005103B	Sample number(s): 7201846							
Total Alkalinity	N.D.	700.	ug/l as CaCO3	99		90-110		
Batch number: 13262005104A	Sample number(s): 7201848							
Total Alkalinity	N.D.	700.	ug/l as CaCO3	99		90-110		
Batch number: 13263023001A	Sample number(s): 7201844-7201845							
Sulfide	N.D.	54.	ug/l	94		90-110		
Batch number: 13267023001A	Sample number(s): 7201846-7201848							
Sulfide	N.D.	54.	ug/l	97		90-110		

### Sample Matrix 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.

## Quality Control Summary

Client Name: ChevronTexaco Group Number: 1419650

Reported: 09/27/13 at 03:25 PM

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

<u>Analysis Name</u>	<u>MS</u> <u>%REC</u>	<u>MSD</u> <u>%REC</u>	<u>MS/MSD</u> <u>Limits</u>	<u>RPD</u> <u>RPD</u>	<u>RPD</u> <u>MAX</u>	<u>BKG</u> <u>Conc</u>	<u>DUP</u> <u>Conc</u>	<u>DUP</u> <u>RPD</u>	<u>Dup RPD</u> <u>Max</u>
Batch number: F132652AA	Sample number(s): 7201844-7201849 UNSPK: 7201844								
Benzene	92	93	72-134	1	30				
Ethylbenzene	95	97	71-134	2	30				
Methyl Tertiary Butyl Ether	98	95	72-126	3	30				
Toluene	94	97	80-125	3	30				
Xylene (Total)	95	98	79-125	3	30				
Batch number: 132670001A	Sample number(s): 7201844-7201846 UNSPK: 7201844								
Methane	76 (2)	291 (2)	35-157	27*	20				
Batch number: 132680002A	Sample number(s): 7201847-7201848 UNSPK: 7201847								
Methane	-1297 (2)	-1338 (2)	35-157	3	20				
Batch number: 13261347901A	Sample number(s): 7201844-7201848 UNSPK: P201799 BKG: P201799								
Nitrate Nitrogen	109		90-110			N.D.	N.D.	0 (1)	20
Sulfate	108		90-110			11,200	11,300	1 (1)	20
Batch number: 13261834401A	Sample number(s): 7201844-7201848 UNSPK: P198638 BKG: P198638								
Ferrous Iron	112	101	81-112	7*	6	49,200	51,000	4 (1)	5
Batch number: 13262005103A	Sample number(s): 7201844-7201845, 7201847 UNSPK: P200352 BKG: P200352								
Total Alkalinity	97		10-159			25,600	26,100	2	5
Batch number: 13262005103B	Sample number(s): 7201846 UNSPK: P200352 BKG: 7201846								
Total Alkalinity	97		10-159			444,000	440,000	1	5
Batch number: 13262005104A	Sample number(s): 7201848 UNSPK: P202720 BKG: P202720								
Total Alkalinity	77	73	10-159	2	5	150,000	148,000	1	5
Batch number: 13263023001A	Sample number(s): 7201844-7201845 UNSPK: P201281 BKG: P201281								
Sulfide	65	68	42-131	4	16	N.D.	N.D.	0 (1)	5
Batch number: 13267023001A	Sample number(s): 7201846-7201848 UNSPK: P202720 BKG: P202720								
Sulfide	91	86	42-131	5	16	N.D.	N.D.	0 (1)	5

## 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: UST VOCs + GRO by 8260B-Water

Batch number: F132652AA

	Dibromofluoromethane	1,2-Dichloroethane-d4	Toluene-d8	4-Bromofluorobenzene
7201844	99	102	100	93
7201845	97	95	101	95
7201846	98	97	100	92
7201847	98	96	101	102

\*- 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: ChevronTexaco  
Reported: 09/27/13 at 03:25 PM

Group Number: 1419650

### Surrogate Quality Control

7201848	98	97	100	92
7201849	101	95	101	92
Blank	100	95	101	93
LCS	97	98	100	96
LCSD	97	94	100	95
MS	97	98	100	98
MSD	97	96	102	97

Limits: 80-116                      77-113                      80-113                      78-113

Analysis Name: Volatile Headspace Hydrocarbon  
Batch number: 132670001A  
Propene

7201844	45
7201845	48
7201846	72
Blank	95
LCS	94
MS	45
MSD	62

Limits: 42-131

Analysis Name: Volatile Headspace Hydrocarbon  
Batch number: 132680002A  
Propene

7201847	89
7201848	54
Blank	99
LCS	97
MS	49
MSD	52

Limits: 42-131

\*- 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.

AMENDED

CHAIN OF CUSTODY FORM

Chevron Environmental Management Company ■ 6111 Bollinger Canyon Rd. ■ San Ramon, CA 94583

COC 1 of 1

Chevron Site Number: <u>91723</u> Chevron Site Global ID: <u>T0600101789</u> Chevron Site Address: <u>9757 San Leandro St., Oakland, CA</u> Chevron PM: <u>CARRYL MACLEOD</u> Chevron PM Phone No.: <u>(925)790-6506</u> <input checked="" type="checkbox"/> Retail and Terminal Business Unit (RTBU) Job <input checked="" type="checkbox"/> Construction/Retail Job				Chevron Consultant: <u>STANTEC</u> Address: <u>15575 Los Gatos Blvd., Bldg. C Los Gatos, CA</u> Consultant Contact: <u>Travis Flora</u> Consultant Phone No. <u>408-356-6124</u> Consultant Project No. <u>130917-082</u> Sampling Company: <u>Blaine Tech Services</u> Sampled By (Print): <u>Dustin Becker</u> Sampler Signature: <u>[Signature]</u>				<b>ANALYSES REQUIRED</b>										Preservation Codes H = HCL T = Thiosulfate N = HNO <sub>3</sub> B = NaOH S = H <sub>2</sub> SO <sub>4</sub> O = Other Acct # <u>10869</u> Op # <u>1419650</u> Sample # <u>7201844-49</u>													
Charge Code: <u>NWRTB 00SITE NUMBER-0- WBS</u> <b>(WBS ELEMENTS:</b> SITE ASSESSMENT: A1L REMEDIATION IMPLEMENTATION: R5L SITE MONITORING: OML OPERATION MAINTENANCE & MONITORING: M1L THIS IS A LEGAL DOCUMENT. ALL FIELDS MUST BE FILLED OUT CORRECTLY AND COMPLETELY.				<b>Lancaster Laboratories</b> <input checked="" type="checkbox"/> Lancaster, PA Lab Contact: <u>Jill Parker</u> 2425 New Holland Pike, Lancaster, PA 17601 Phone No: (717)656-2300		Other Lab Temp. Blank Check Time Temp. <u>1100 20C</u> <u>1350 20C</u> <u>1430 20C</u>		<input type="checkbox"/> HVOX <input type="checkbox"/> HC SCREEN <input type="checkbox"/> DRO <input type="checkbox"/> ORO <input type="checkbox"/> MTBE <input type="checkbox"/> GRO <input type="checkbox"/> BTEX <input type="checkbox"/> Ca, Fe, K, Mg, Mn, Na <input type="checkbox"/> TITILE 22 METALS <input type="checkbox"/> STL <input type="checkbox"/> ALKALINITY <input checked="" type="checkbox"/> Sulfate/Nitrate <input type="checkbox"/> EPA 413.1 OIL & GREASE <input type="checkbox"/> EPA 418.1 TRPH <input type="checkbox"/> EPA 8260 <input type="checkbox"/> EPA 8015 <input type="checkbox"/> Ferrous Iron / Sulfide <input type="checkbox"/> Methane										Special Instructions Must meet lowest detection limits possible for 8260 Compounds													
<b>SAMPLE ID</b>				<b>Sample Time</b>		<b># of Containers</b>		<b>Container Type</b>		<b>ANALYSES REQUIRED</b>										<b>Notes/Comments</b>											
Field Point Name	Matrix	Top Depth	Date (yymmdd)	Sample Time	# of Containers	Container Type	EPA 8260B/GC/MS	TPH-G	BTEX	MTBE	OXYGENATES	HVOX	HC SCREEN	DRO	ORO	MTBE	Ca, Fe, K, Mg, Mn, Na	TITILE 22 METALS	STL	ALKALINITY	Sulfate/Nitrate	EPA 413.1 OIL & GREASE	EPA 418.1 TRPH	EPA 8260	EPA 8015	Ferrous Iron / Sulfide	Methane				
MW-2	W6		130917	1251	13	MIXED	X														X	X	X	X							
MW-5	↓		↓	1351	↓	↓	X														X	X	X	X							
MW-6	↓		↓	1321	↓	↓	X														X	X	X	X							
MW-8	↓		↓	1420	↓	↓	X														X	X	X	X							
MW-7 *	↓		↓	1420-1211	↓	↓	X														X	X	X	X							
QA	T		↓	1100	2	VOAS	X																								
Relinquished By				Company		Date/Time		Relinquished To				Company		Date/Time		Turnaround Time:															
[Signature]				BTS		9/17/13 1435		[Signature]				LFI		9/17/13 1435		Standard <input checked="" type="checkbox"/> 24 Hours <input type="checkbox"/> 48 hours <input type="checkbox"/> 72 Hours <input type="checkbox"/> Other <input type="checkbox"/>															
Relinquished By				Company		Date/Time		Relinquished To				Company		Date/Time		Sample Integrity: (Check by lab on arrival)															
Relinquished By				Company		Date/Time		Relinquished To				Company		Date/Time		Intact: _____ On Ice: _____ Temp: _____ COC # _____															

MW-9 per D Becker  
Jmp 9/19/13



# Explanation of Symbols and Abbreviations

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

<b>RL</b>	Reporting Limit	<b>BMQL</b>	Below Minimum Quantitation Level
<b>N.D.</b>	none detected	<b>MPN</b>	Most Probable Number
<b>TNTC</b>	Too Numerous To Count	<b>CP Units</b>	cobalt-chloroplatinate units
<b>IU</b>	International Units	<b>NTU</b>	nephelometric turbidity units
<b>umhos/cm</b>	micromhos/cm	<b>ng</b>	nanogram(s)
<b>C</b>	degrees Celsius	<b>F</b>	degrees Fahrenheit
<b>meq</b>	milliequivalents	<b>lb.</b>	pound(s)
<b>g</b>	gram(s)	<b>kg</b>	kilogram(s)
<b>µg</b>	microgram(s)	<b>mg</b>	milligram(s)
<b>mL</b>	milliliter(s)	<b>L</b>	liter(s)
<b>m<sup>3</sup></b>	cubic meter(s)	<b>µL</b>	microliter(s)
		<b>pg/L</b>	picogram/liter

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

**ppm** 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 per liter of gas.

**ppb** parts per billion

**Dry weight basis** 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. All other results are reported on an as-received basis.

*Data Qualifiers:*

**C** – result confirmed by reanalysis.

**J** - estimated value – The result is  $\geq$  the Method Detection Limit (MDL) and  $<$  the Limit of Quantitation (LOQ).

*U.S. EPA CLP Data Qualifiers:*

**Organic Qualifiers**

**Inorganic Qualifiers**

<b>A</b>	TIC is a possible aldol-condensation product	<b>B</b>	Value is $<$ CRDL, but $\geq$ 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 sample 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>N</b>	Presumptive evidence of a compound (TICs only)	<b>U</b>	Compound was not detected
<b>P</b>	Concentration difference between primary and confirmation columns $>$ 25%	<b>W</b>	Post digestion spike out of control limits
<b>U</b>	Compound was not detected	<b>*</b>	Duplicate analysis not within control limits
<b>X,Y,Z</b>	Defined in case narrative	<b>+</b>	Correlation coefficient for MSA $<$ 0.995

**Analytical test results meet all requirements of NELAC unless otherwise noted under the individual analysis.**

Measurement uncertainty values, as applicable, are available upon request.

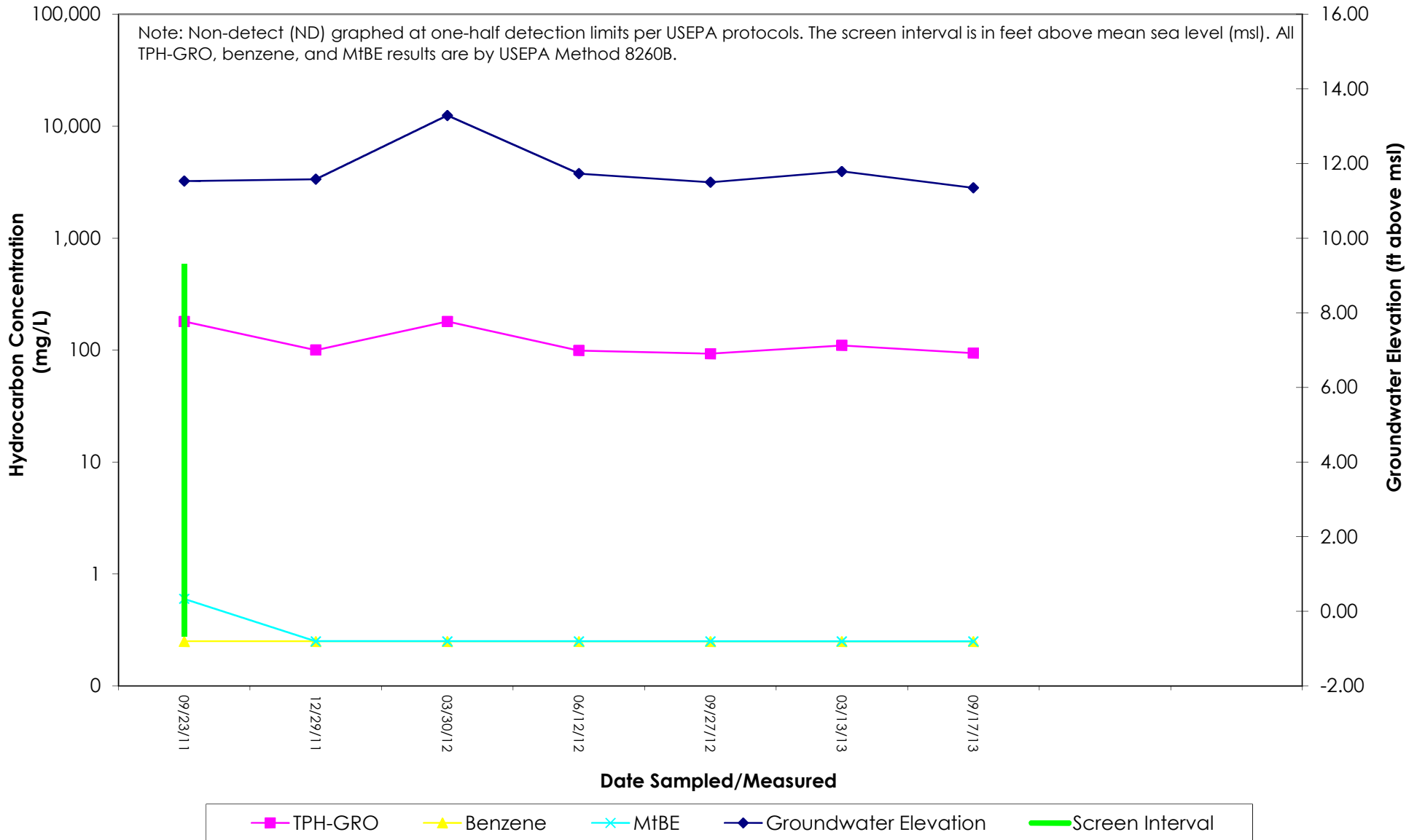
Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have 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.

Times are local to the area of activity. Parameters listed in the 40 CFR part 136 Table II as “analyze immediately” are not performed within 15 minutes.

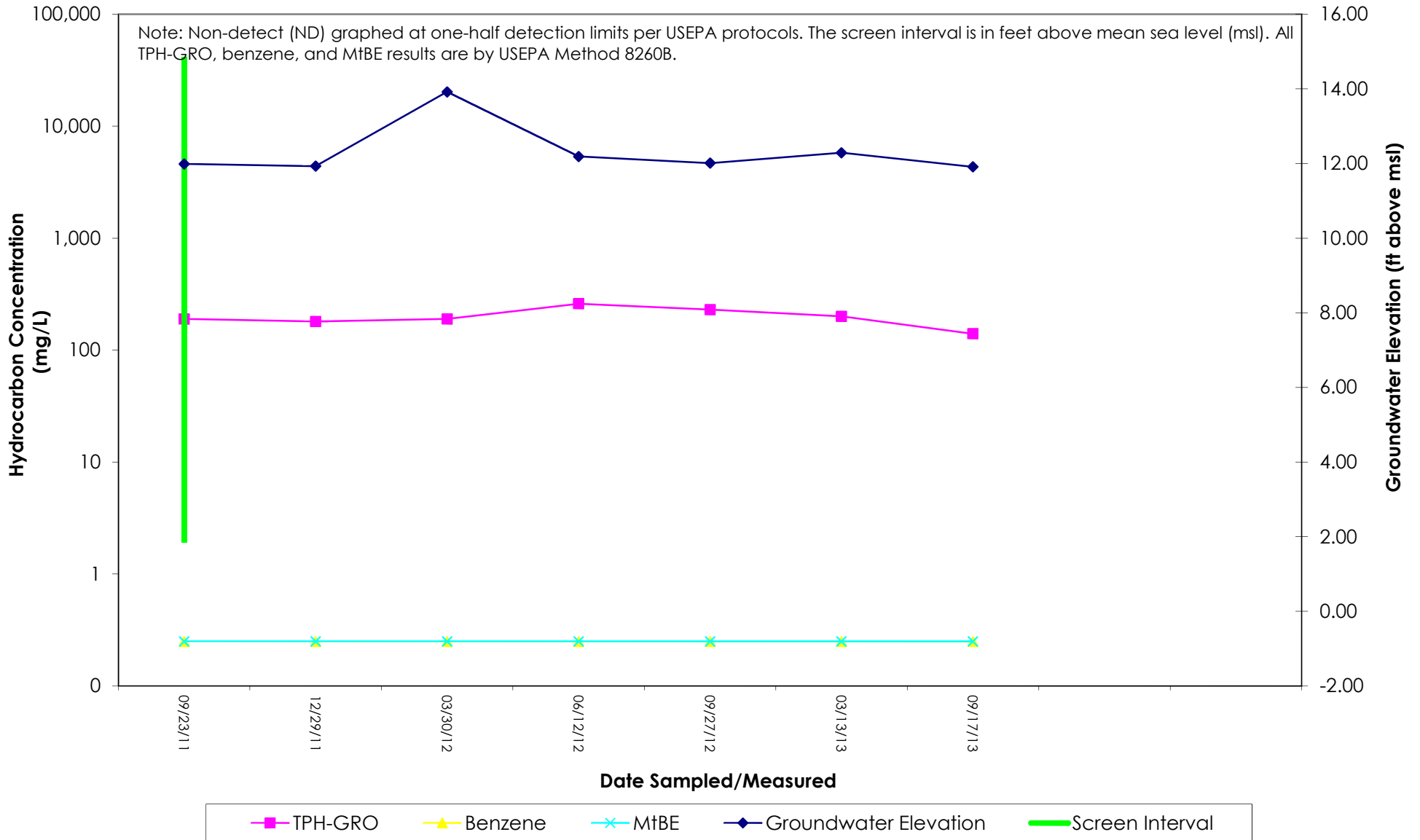
**WARRANTY AND LIMITS OF LIABILITY** - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. THE FOREGOING EXPRESS WARRANTY IS EXCLUSIVE AND IS GIVEN IN LIEU OF ALL OTHER WARRANTIES, EXPRESSED OR IMPLIED. WE DISCLAIM ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING A WARRANTY OF FITNESS FOR PARTICULAR PURPOSE AND WARRANTY OF MERCHANTABILITY. IN NO EVENT SHALL EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL, LLC 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 EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL AND (B) WHETHER EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL 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 Eurofins Lancaster Laboratories Environmental which includes any conditions that vary from the Standard Terms and Conditions, and Eurofins Lancaster Laboratories Environmental hereby objects to any conflicting terms contained in any acceptance or order submitted by client.

**ATTACHMENT C**  
**Hydrographs**

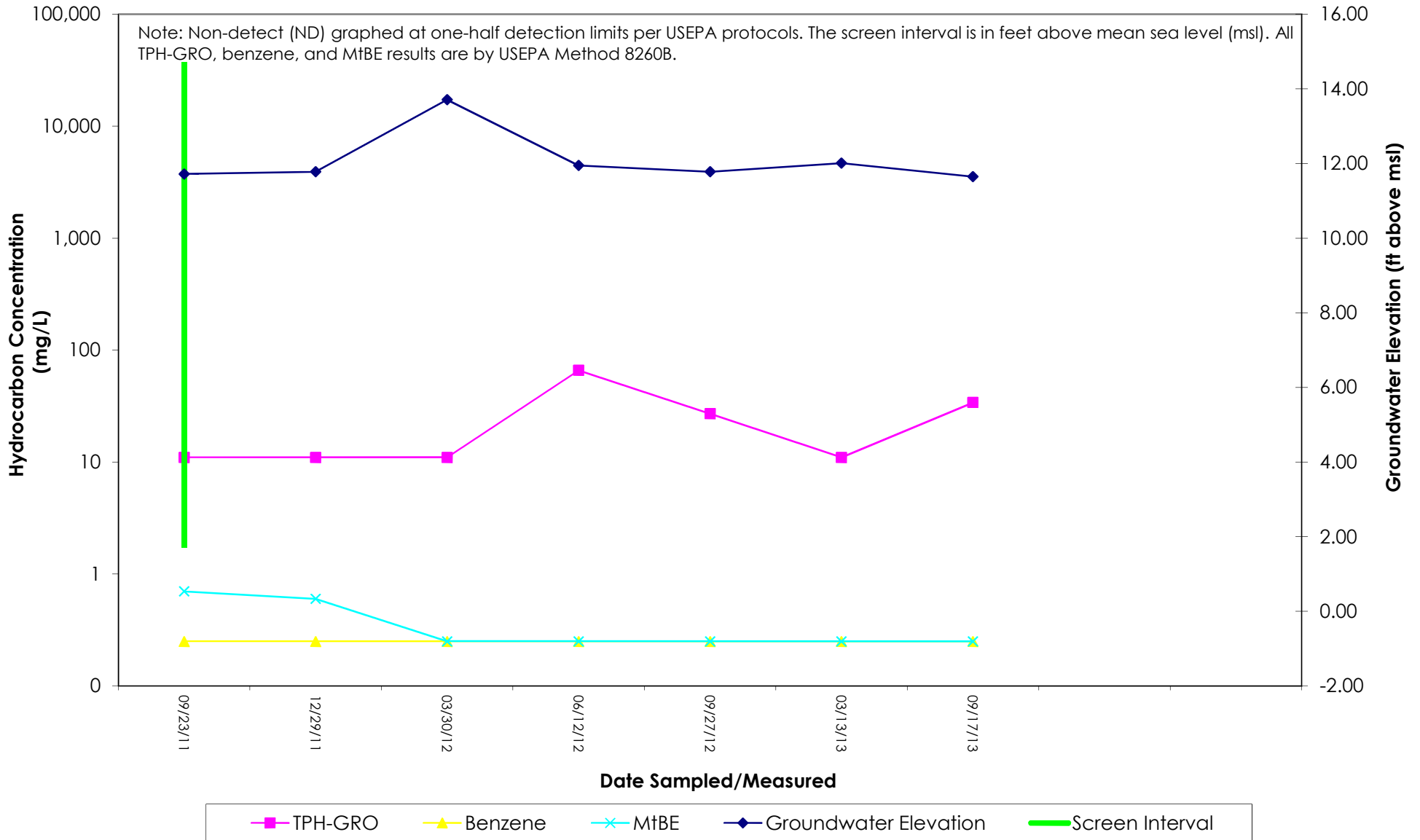
**MW-2 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time**  
 Former Chevron-branded Service Station 91723  
 9757 San Leandro Street  
 Oakland, California



**MW-5 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time**  
 Former Chevron-branded Service Station 91723  
 9757 San Leandro Street  
 Oakland, California

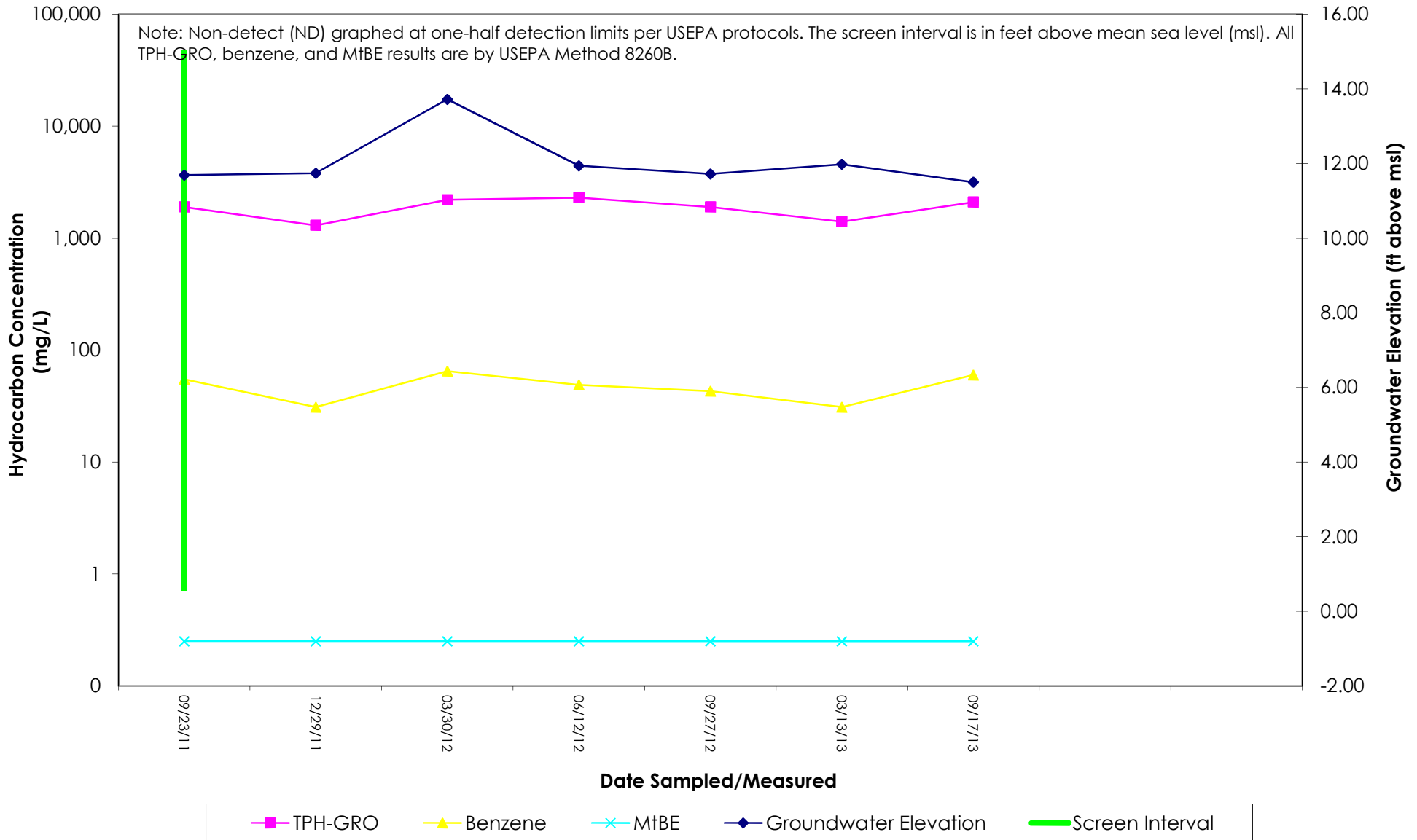


**MW-6 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time**  
 Former Chevron-branded Service Station 91723  
 9757 San Leandro Street  
 Oakland, California





**MW-8 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time**  
 Former Chevron-branded Service Station 91723  
 9757 San Leandro Street  
 Oakland, California



## MW-9 TPH-GRO, Benzene, & MtBE Concentrations and Groundwater Elevations vs. Time

Former Chevron-branded Service Station 91723

9757 San Leandro Street

Oakland, California

