## Chevron

Chevron Environmental Management Company 6001 Bollinger Canyon Road San Ramon, CA 94583 Tel (925) 842-0973 markhorne@chevron.com

Alameda County Health Care Services
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

## RECEIVED

By Alameda County Environmental Health 9:52 am, May 20, 2016

Re: Former Texaco Service Station No. 359766
$270023^{\text {rd }}$ Avenue
Oakland, CA
I have reviewed the attached report titled First Quarter 2016 Groundwater Monitoring and Sampling Report

I agree with the conclusions and recommendations presented in the referenced report. The information in this report is accurate to the best of my knowledge and all local Agency/Regional Board guidelines have been followed. This report was prepared by GHD Services Inc., upon whose assistance and advice I have relied.

This letter is submitted pursuant to the requirements of California Water Code Section 13267(b)(1) and the regulating implementation entitled Appendix A pertaining thereto.

I declare under penalty of perjury that the foregoing is true and correct to the best of my knowledge.

Sincerely,


Mark Horne
Project Manager

Attachment: First Quarter 2016 Groundwater Monitoring and Sampling Report

Ms. Karel Detterman<br>Alameda County Environmental Health Services<br>1131 Harbor Bay Parkway, Suite 250<br>Alameda, California 94502-6577<br>\section*{Re: First Quarter 2016 Groundwater Monitoring and Sampling Report Former Texaco Service Station 359766 2700 23 $^{\text {rd }}$ Avenue Oakland, California ACEH Case RO0003098}

Dear Ms. Detterman:

GHD Services Inc. (GHD) is submitting this First Quarter 2016 Groundwater Monitoring and Sampling Report for the site referenced above (Figure 1) on behalf of Chevron Environmental Management Company (Chevron). Groundwater monitoring and sampling was performed by Blaine Tech Services (Blaine Tech) of San Jose, California. Blaine Tech's First Quarter 2016 Groundwater Monitoring data package is included as Attachment A. Current groundwater monitoring and sampling data are presented in Table 1 and current data are shown on Figure 2. Eurofins Lancaster Laboratory Environmental, LLCs' of Lancaster, Pennsylvania Analytical Results report is included as Attachment B.

Please contact Nathan Lee (925) 849-1003 if you have any questions or require additional information.

Cordially,
GHD


Nathan Lee, PG 8486

KH/cw/8
Encl.
Figure $1 \quad$ Vicinity Map
Figure $2 \quad$ Groundwater Elevation Contour and Hydrocarbon Concentration Map

Table 1 Groundwater Monitoring and Sampling Data

Attachment A Monitoring Data Package
Attachment B Laboratory Analytical Report
cc: Mr. Mark Horne, Chevron (electronic copy) Pedro and Maria Pulildo, Property Owner

Figures


SOURCE: TOPO! MAPS


# Table 

Table 1
Groundwater Monitoring and Sampling Data Former Texaco Service Station 359766 (Ed's Liquors) 2700 23rd Avenue Oakland, California


Table 1

## Groundwater Monitoring and Sampling Data

 Former Texaco Service Station 359766 (Ed's Liquors) 2700 23rd Avenue Oakland, California|  |  |  |  |  | HYDROCARBONS |  |  | vocs |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Location | Date | тос ${ }^{\text {a }}$ | DTW | GWE |  |  |  | B | T | E | x |  |  |  | $\begin{aligned} & \text { 름 } \\ & \hline \end{aligned}$ | $\begin{array}{r} \text { ய山 } \\ \stackrel{\oplus}{山} \\ \hline \end{array}$ | $\sum_{\Sigma}^{\infty}$ | $\begin{aligned} & \mathbb{U} \\ & \dot{C} \\ & \text { N} \\ & \hline \end{aligned}$ | $\begin{array}{\|c} \text { هِ } \\ \hline \end{array}$ |  |
|  |  | ft | ft | ft-amsl | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | Mg/L | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | $\mu \mathrm{g} / \mathrm{L}$ | Hg/L | $\mu \mathrm{g} / \mathrm{L}$ |
|  | 09/29/2015 | 168.47 | 11.04 | 157.43 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
|  | 12/22/2015 | 168.47 | 10.31 | 158.16 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
|  | 03/28/2016 | 168.47 | 9.32 | 159.15 | -- | -- | -- | -- | -- | -- | -- | - | -- | -- | -- | -- | -- | -- | -- | -- |
| MW-5 | 02/26/2015 ${ }^{2}$ | 162.42 | 17.81 | 144.61 | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | -- | -- | -- | -- | -- |
|  | 03/13/2015 | 162.42 | 16.48 | 145.94 | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- | -- |
|  | 06/19/2015 | 162.42 | 10.92 | 151.50 | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | -- | -- | -- | -- | -- |
|  | 09/29/2015 | 162.42 | 12.29 | 150.13 | -- | -- | <50 | $<0.5$ | <0.5 | <0.5 | $<0.5$ | <0.5 | -- | -- | -- | -- | -- | -- | -- | -- |
|  | 12/22/2015 | 162.42 | 13.46 | 148.96 | -- | -- | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | -- | -- | -- | -- | -- | -- | -- | -- |
|  | 03/28/2016 | 162.42 | 8.22 | 154.20 | -- | -- | <100 | <1 | <1 | <1 | <1 | <1 | -- | -- | -- | -- | -- | -- | -- | -- |

## Abbreviations and Notes:

-- = Not analyzed
<x and ND = Not detected above the method detection limit x .
Total purgeable petroleum hydrocarbons (TPPH) by EPA Method 8260 B
Total petroleum hydrocarbons as motor oil (TPHmo), TPH as diesel (TPHd), and TPH as gasoline (TPHg) by modified EPA Method 8015B
Benzene, Toluene, Ethylbenzene, Xylenes by EPA Method 8260 B
Methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tertiary amyl methyl ether (TAME), 1,2 dichloroethane (1,2-DCA), 1,2-dibromoethane (EDB), tertiary butyl alcohol (TBA), naphthalene by EPA Method 8260B Volatile organic copmounds (VOCs) by EPA Method 8260
$\mathrm{a}=$ Top of casing elevation was surveyed by Morrow Surveying on February 24, 2015; coordinates are California State Plan Zone 3, from GPS observation using CSDS virtual survey network, coordinate datum is NAD 83 , reference geoid is GEOIDO3 and vertica datus is NAVD 88 from GPS observations. Prior to 2015 , a surve was combed by licensed surveyor Ty Hawins on December 20, 2010; based on California Coordinate System NAD 83 Z Zone III (2002.00), and elevations based on NAVD 88
$\mathrm{b}=\mathrm{n}$-butyl benzene
c $=4$-isopropyl toluene
d = Sec-butyl benzene
e = Isopropylbenzene
$\mathrm{f}=\mathrm{n}$-propyl benzene
$\mathrm{g}=2$-butanone
$\mathrm{h}=4$-methyl-2-pentanone

## Table 1

Groundwater Monitoring and Sampling Data
Former Texaco Service Station 359766 (Ed's Liquors) 2700 23rd Avenue Oakland, California

$\mathrm{i}=1,2,4$-trimethylber
i= 1,3,5-trimethylbenzene
1 = Sampled by previous consultant
2 = Well development

## Attachment A <br> Monitoring Data Package

March 29, 2016
Chevron Environmental Management Company
Mark Horne
6101 Bollinger Canyon Rd.
San Ramon, CA 94583

First Quarter 2016 Monitoring at
Former Chevron Service Station 359766
$270023^{\text {rd }}$ Avenue
Oakland, CA
Monitoring performed on March 28, 2016

## Blaine Tech Services, Inc. Groundwater Monitoring Event 160328-MK2

This submission covers the routine monitoring of groundwater wells conducted on March 28, 2016 at this location. Five monitoring well was measured for depth to groundwater (DTW). One monitoring well was 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 using low flow methodology until water temperature, pH , conductivity, dissolved oxygen and oxidation reduction potential were stabilized. Purging was accomplished using Geotech Peri Pumps. 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.

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

| SAN JOSE | SACRAMENTO | LOS ANGELES |  |  |
| :--- | :--- | :--- | :--- | :--- | :--- |
| 1680 ROGERS AVENUE | SAN JOSE, CA $95112-1105$ | $(408) 573-0555$ | FAX (408) $573-7771$ | LIC. 746684 |

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
Wellhead Inspection Form
Bill of Lading
Calibration Log
cc: GHD
Attn: Nathan Lee
2300 Clayton Rd., Suite 920
Concord, CA 94520

## 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 dewaters 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. Specific Conductance
3. Temperature

## 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 specified 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 $100-500 \mathrm{ml} / \mathrm{min}$.
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 | $\pm 1^{\circ}$ Celsius |
| :--- | :--- |
| pH | $\pm 0.1$ |
| Conductivity | $\pm 3 \%$ |

10. Sample may be collected once one system has been removed and stability readings have been achieved after the system volume has been removed.
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 detuned 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 nonphosphate 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.

WELL GAUGING DATA
Project \# $\qquad$ $160328-\mathrm{mkz}$ Date $-28-16$ Client $\qquad$ Chevron

Site 270023 A Ane oakland


LOW FLOW WELL MONITORING DATA SHEET


Purge Method:
Sampling Method: Dedicated Tubing
Flow Rate: $200 \mathrm{me} / \mathrm{m}$

Keristaltic Pump
New Tubing
Pump Depth: $18^{7}$

Bladder Pump
Other $\qquad$


BLAINE TECH SERVICES INC

## $\varphi S \alpha \gamma 16-\psi 4$

Chevron Environmental Management Company



NOTES:

## 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 GROUNDWATER 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) 5730555). 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



TEST EQUIPMENT CALIBRATION LOG

| PROJECT NAME C/wum 35776 |  |  |  | PROJECT NUMBER $160328-m / 2$ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| EQUIPMENT NAME | EQUIPMENT NUMBER | $\begin{aligned} & \text { DATE/TIME } \\ & \text { OF TEST } \end{aligned}$ | STANDARDS USED | $\begin{aligned} & \text { EQUIPMENT } \\ & \text { READING } \end{aligned}$ | CALIBRATED TO: <br> OR WITHIN 10\%: | TEMP. ${ }^{\circ} \mathrm{C}$ | IINITIALS |
| Ye | 1320102949 | $\begin{array}{r} 3-25-16 \\ 1008 \end{array}$ | $\int \begin{aligned} & 944 f^{\circ} \\ & \operatorname{lin}(30 \end{aligned}$ | $4,7,10$ <br> 3呺 | $\sqrt{ }$ | $17.3^{\circ}$ | $1 h_{k}$ |
| $\sqrt{L}$ |  |  |  | $\begin{aligned} & 2+16 \\ & 76.7 \% \end{aligned}$ |  |  | MK |
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## Attachment B Laboratory Analytical Report

ANALYTICAL RESULTS

Prepared by:<br>Eurofins Lancaster Laboratories Environmental 2425 New Holland Pike Lancaster, PA 17601<br>Prepared for:<br>Chevron<br>6001 Bollinger Canyon Rd L4310<br>San Ramon CA 94583

Report Date: April 07, 2016
Project: 359766
Submittal Date: 03/29/2016
Group Number: 1644932
PO Number: 0015201727
Release Number: HORNE
State of Sample Origin: CA

| Client Sample Description |  |
| :--- | :--- |
| QA-T-160328 NA Water | 8307236 |
| MW-5-W-160328 NA Water | 8307237 |

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

Regulatory agencies do not accredit laboratories for all methods, analyses, and matrices. Our scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

| Electronic Copy To | CRA | Attn: Nathan Lee |
| :--- | :--- | :--- |
| Electronic Copy To | Chevron | Attn: Anna Avina |
| Electronic Copy To | Blaine Tech Services, Inc. | Attn: Dustin Becker |
| Electronic Copy To | Chevron | Attn: Report Contact |

Respectfully Submitted,


Amek Carter
Specialist
(717) 556-7252

## eurofins

| Sample Description: QA-T-160328 NA Water | LL Sample \# WW 8307236 |  |
| :--- | :--- | :--- |
|  | Facility\# 359766 BTST | LL Group |
|  | 2700 23rd Ave-Oakland T10000004218 | 1644932 |

Project Name: 359766

| Collected: $03 / 28 / 2016$ | $12: 30$ | Chevron |
| :--- | :--- | :--- |
| Submitted: $03 / 29 / 2016 ~ 09: 30$ | 6001 Bollinger Canyon Rd L4310 |  |

Reported: 04/07/2016 20:50
230QA

| $\begin{aligned} & \text { CAT } \\ & \text { No. } \end{aligned}$ | Analysis Name |  | CAS Number | Result | Method <br> Detection Limit* | Limit of Quantitation | Dilution <br> Factor |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GC/MS | Volatiles S | SW-846 | 8260 B | ug/l | ug/l | ug/l |  |
| 10945 | Benzene |  | 71-43-2 | N.D. | 0.5 | 1 | 1 |
| 10945 | Ethylbenzene |  | 100-41-4 | N.D. | 0.5 | 1 | 1 |
| 10945 | Methyl Tertiary Butyl | 1 Ether | 1634-04-4 | N.D. | 0.5 | 1 | 1 |
| 10945 | Toluene |  | 108-88-3 | N.D. | 0.5 | 1 | 1 |
| 10945 | Xylene (Total) |  | 1330-20-7 | N.D. | 0.5 | 1 | 1 |
| GC Vol | atiles S | SW-846 | 8015B | ug/l | ug/l | ug/l |  |
| 01728 | TPH-GRO N. CA water | C6-C12 | n.a. | N.D. | 50 | 100 | 1 |

General Sample Comments
CA ELAP Lab Certification No. 2792
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 | Analysis Name | Method |  | Trial\# | Batch\# | Analysis |  | Analyst | Dilution |
| No. |  |  |  |  |  | Date and Ti |  |  | Factor |
| 10945 | BTEX/MTBE | SW-846 | 8260B | 1 | D160913AA | 03/31/2016 | 22:17 | Hu Yang | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 | 5030B | 1 | D160913AA | 03/31/2016 | 22:17 | Hu Yang | 1 |
| 01728 | TPH-GRO N. CA water C6-C12 | SW-846 | 8015B | 1 | 16092A20A | 04/01/2016 | 18:57 | Marie D Beamenderfer | 1 |
| 01146 | GC VOA Water Prep | SW-846 | 5030 B | 1 | 16092A20A | 04/01/2016 | 18:57 | Marie D Beamenderfer | 1 |

*=This limit was used in the evaluation of the final result

## eurofins

| Sample Description: | MW-5-W-160328 NA Water | LL Sample \# WW 8307237 |
| :--- | :--- | :--- |
|  | Facility\# 359766 BTST | LL Group |
|  | 2700 23rd Ave-Oakland T10000004218 | 1644932 |

Project Name: 359766

| Collected: $03 / 28 / 201611: 11$ | by MK | Chevron |
| :--- | :--- | :--- |
| Submitted: $03 / 29 / 201609.30$ | 6001 Bollinger Canyon Rd L4310 |  |

Submitted: 03/29/2016 09:30 San Ramon CA 94583

| $\begin{aligned} & \text { CAT } \\ & \text { No. } \end{aligned}$ | Analysis Name |  | CAS Number | Result | Method <br> Detection Limit* | Limit of Quantitation | Dilution <br> Factor |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| GC/MS | Volatiles | SW-846 | 8260 B | ug/l | ug/l | ug/l |  |
| 10945 | Benzene |  | 71-43-2 | N.D. | 0.5 | 1 | 1 |
| 10945 | Ethylbenzene |  | 100-41-4 | N.D. | 0.5 | 1 | 1 |
| 10945 | Methyl Tertiary Butyl | 1 Ether | 1634-04-4 | N.D. | 0.5 | 1 | 1 |
| 10945 | Toluene |  | 108-88-3 | N.D. | 0.5 | 1 | 1 |
| 10945 | Xylene (Total) |  | 1330-20-7 | N.D. | 0.5 | 1 | 1 |
| GC Vol | atiles | SW-846 | 8015B | ug/l | ug/l | ug/l |  |
| 01728 | TPH-GRO N. CA water | C6-C12 | n.a. | N.D. | 50 | 100 | 1 |

General Sample Comments
CA ELAP Lab Certification No. 2792
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 | Analysis Name | Method |  | Trial\# | Batch\# | Analysis |  | Analyst | Dilution |
| No. |  |  |  |  |  | Date and T |  |  |  |
| 10945 | BTEX/MTBE | SW-846 | 8260B | 1 | D160913AA | 04/01/2016 | 03:13 | Hu Yang | 1 |
| 01163 | GC/MS VOA Water Prep | SW-846 | 5030B | 1 | D160913AA | 04/01/2016 | 03:13 | Hu Yang | 1 |
| 01728 | TPH-GRO N. CA water C6-C12 | SW-846 | 8015B | 1 | 16092A20A | 04/02/2016 | 01:26 | Marie D Beamenderfer | 1 |
| 01146 | GC VOA Water Prep | SW-846 | 5030B | 1 | 16092A20A | 04/02/2016 | 01:26 | Marie D Beamenderfer | 1 |

*=This limit was used in the evaluation of the final result

# Quality Control Summary 

```
Client Name: Chevron Group Number: 1644932
Reported: 04/07/2016 20:50
```

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.

## Method Blank

Analysis Name

Batch number: D160913AA
Benzene
Ethylbenzene
Methyl Tertiary Butyl Ether
Toluene
Xylene (Total)
Batch number: 16092A20A
TPH-GRO N. CA water C6-C12

| Result | MDL** | LOQ |
| :--- | :---: | :--- |
| ug/l | ug/l | ug/l |
| Sample number (s) : | $8307236-8307237$ |  |
| N.D. | 0.5 | 1 |
| N.D. | 0.5 | 1 |
| N.D. | 0.5 | 1 |
| N.D. | 0.5 | 1 |
| N.D. | 0.5 | 1 |
| Sample number (s): | $8307236-8307237$ |  |
| N.D. | 50 | 100 |

## LCS / LCSD

| Analysis Name | LCS Spike Added ug/l | LCS Conc ug/l | LCSD Spike Added ug/l | LCSD Conc ug/l | $\begin{aligned} & \text { LCS } \\ & \text { \%REC } \end{aligned}$ | $\begin{aligned} & \text { LCSD } \\ & \text { \%REC } \end{aligned}$ | $\begin{aligned} & \text { LCS/LCSD } \\ & \text { Limits } \end{aligned}$ | RPD | $\begin{aligned} & \text { RPD } \\ & \text { Max } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Batch number: D160913AA | Sample numb | s) : 830 | 6-8307237 |  |  |  |  |  |  |
| Benzene | 20 | 17.5 |  |  | 88 |  | 78-120 |  |  |
| Ethylbenzene | 20 | 18.01 |  |  | 90 |  | 78-120 |  |  |
| Methyl Tertiary Butyl Ether | 20 | 16.48 |  |  | 82 |  | 75-120 |  |  |
| Toluene | 20 | 18.6 |  |  | 93 |  | 80-120 |  |  |
| Xylene (Total) | 60 | 53.52 |  |  | 89 |  | 80-120 |  |  |
|  | ug/l | ug/l | ug/l | ug/l |  |  |  |  |  |
| Batch number: 16092A20A | Sample numb | s) : 830 | 6-8307237 |  |  |  |  |  |  |
| TPH-GRO N. CA water C6-C12 | 1100 | 1040.08 | 1100 | 1048.84 | 95 | 95 | 77-120 | 1 | 30 |

MS/MSD
Unspiked (UNSPK) = the sample used in conjunction with the matrix spike

| Analysis Name | Unspiked Conc ug/l | MS Spike Added ug/l |  |  | Spike Added ug/l | MSD Conc ug/l | $\begin{gathered} \text { MS } \\ \text { \%Rec } \end{gathered}$ | $\begin{aligned} & \text { MSD } \\ & \text { \%Rec } \end{aligned}$ | $\begin{aligned} & \text { MS/MSD } \\ & \text { Limits } \end{aligned}$ | RPD | $\begin{aligned} & \text { RPD } \\ & \text { Max } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Batch number: D160913AA | Sample num | $r(s): 830$ | 36-8307 |  | UNSPK: | P307206 |  |  |  |  |  |
| Benzene | N.D. | 20 | 19.04 |  | 20 | 19.9 | 95 | 99 | 78-120 | 4 | 30 |
| Ethylbenzene | N.D. | 20 | 19.38 |  | 20 | 20.02 | 97 | 100 | 78-120 | 3 | 30 |
| Methyl Tertiary Butyl Ether | N.D. | 20 | 17.21 |  | 20 | 17.79 | 86 | 89 | 75-120 | 3 | 30 |
| Toluene | N.D. | 20 | 19.98 |  | 20 | 20.57 | 100 | 103 | 80-120 | 3 | 30 |
| Xylene (Total) | N.D. | 60 | 58.66 |  | 60 | 59.96 | 98 | 100 | 80-120 | 2 | 30 |

## *- Outside of specification

**-This limit was used in the evaluation of the final result for the blank
(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.

P\#\#\#\#\#\# is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.

# Quality Control Summary 

```
Client Name: Chevron Group Number: 1644932
Reported: 04/07/2016 20:50
```


## Surrogate Quality Control

| Surrogate recoveries which are outside of the QC window are confirmed unless attributed to dilution or otherwise noted on the Analysis Report. |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
| Analysis Name: BTEX/MTBE <br> Batch number: D160913AA |  |  |  |  |
|  |  |  |  |  |
|  | Dibromofluoromethane | 1,2-Dichloroethane-d4 | Toluene-d8 | 4-Bromofluorobenzene |
| 8307236 | 95 | 99 | 106 | 94 |
| 8307237 | 98 | 100 | 105 | 93 |
| Blank | 93 | 97 | 103 | 93 |
| LCS | 92 | 96 | 106 | 102 |
| MS | 91 | 100 | 105 | 101 |
| MSD | 92 | 100 | 105 | 100 |
| Limits: | 80-116 | 77-113 | 80-113 | 78-113 |

Analysis Name: TPH-GRO N. CA water C6-C12
Batch number: 16092A20A

|  | Trifluorotoluene-F |
| :--- | :--- |
| 8307236 | 92 |
| 8307237 | 90 |
| Blank | 91 |
| LCS | 103 |
| LCSD | 98 |
| Limits: | $63-135$ |

[^0]${ }^{* *}$-This limit was used in the evaluation of the final result for the blank
(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.

P\#\#\#\#\#\# is indicative of a Background or Unspiked sample that is batch matrix QC and was not performed using a sample from this submission group.


Client: CA Office

## Blaine Tech

## Delivery and Receipt Information

| Delivery Method: | $\underline{\text { BASC }}$ |  | Arrival Timestamp: | $\underline{03 / 29 / 2016} 9: 30$ |
| :--- | :--- | :--- | :--- | :--- |
| Number of Packages: | $\underline{6}$ |  | Number of Projects: | $\underline{5}$ |
| State/Province of Origin: | $\underline{C A}$ |  |  |  |

## Arrival Condition Summary

| Shipping Container Sealed: | Yes | Sample IDs on COC match Containers: | Yes |
| :--- | :--- | :--- | :--- |
| Custody Seal Present: | Yes | Sample Date/Times match COC: | Yes |
| Custody Seal Intact: | Yes | VOA Vial Headspace $\geq 6 \mathrm{~mm}:$ | No |
| Samples Chilled: | Yes | Total Trip Blank Qty: | 2 |
| Paperwork Enclosed: | Yes | Trip Blank Type: | HCL |
| Samples Intact: | Yes | Air Quality Samples Present: | No |
| Missing Samples: | No |  |  |
| Extra Samples: | No |  |  |
| Discrepancy in Container Qty on COC: | No |  |  |

Unpacked by Timothy Cubberley (6520) at 11:19 on 03/29/2016

## Samples Chilled Details: Blaine Tech

Thermometer Types: $\quad D T=$ Digital (Temp. Bottle) $\quad I R=$ Infrared (Surface Temp) $\quad$ All Temperatures in ${ }^{\circ} \mathrm{C}$.

| Cooler\# | Thermometer ID | Corrected Temp | Therm. Type | Ice Type | Ice Present? | Ice Container | Elevated Temp? |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1 | DT131 | 1.0 | DT | Wet | $Y$ | Bagged | N |
| 2 | DT131 | 1.8 | DT | Wet | $Y$ | Bagged | N |
| 3 | DT131 | 0.7 | DT | Wet | $Y$ | Bagged | N |
| 4 | DT131 | 0.9 | DT | Wet | Y | Bagged | N |
| 5 | DT131 | 0.2 | DT | Wet | $Y$ | Bagged | N |
| 6 | DT131 | 0.7 | DT | Wet | Y | Bagged | N |

## Explanation of Symbols and Abbreviations

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


## Laboratory Data Qualifiers:

B - Analyte detected in the blank
C - Result confirmed by reanalysis
E - Concentration exceeds the calibration range
J (or G, I, X) - estimated value $\geq$ the Method Detection Limit (MDL or DL) and $<$ the Limit of Quantitation (LOQ or RL)
$P$ - Concentration difference between the primary and confirmation column $>40 \%$. The lower result is reported.
$U$ - Analyte was not detected at the value indicated
V - Concentration difference between the primary and confirmation column $>100 \%$. The reporting limit is raised due to this disparity and evident interference...

Additional Organic and Inorganic CLP qualifiers may be used with Form 1 reports as defined by the CLP methods. Qualifiers specific to Dioxin/Furans and PCB Congeners are detailed on the individual Analysis Report.

Analytical test results meet all requirements of the associated regulatory program (i.e., NELAC (TNI), DoD, and ISO 17025) 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.
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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.

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[^0]:    *- Outside of specification

