**ExxonMobil**
**Environmental Services Company**
4096 Piedmont Avenue #194
Oakland, California 94611
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**Jennifer C. Sedlachek**
Project Manager

ExxonMobil



January 17, 2013

Ms. Barbara Jakub
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Room 250
Alameda, California 94502-6577

**RE: Former Exxon RAS #70234/3450 35th Avenue, Oakland, California.**

Dear Ms. Jakub:

Attached for your review and comment is a copy of the letter report entitled ***Semi-Annual Groundwater Monitoring Report, Fourth Quarter 2012,*** dated January 17, 2013, for the above-referenced site. The report was prepared by Cardno ERI of Petaluma, California, and details activities at the subject site.

I declare, under penalty of perjury, that the information and/or recommendations contained in the attached document or report is true and correct to the best of my knowledge.

If you have any questions or comments, please contact me at 510.547.8196.

Sincerely,

Jennifer C. Sedlachek
Project Manager

Attachment: Cardno ERI's ***Semi-Annual Groundwater Monitoring Report, Fourth Quarter 2012,*** dated January 17, 2013

cc: w/ attachment
Mr. William D. Spencer, FWS Highland LLC

w/o attachment
Mr. Vince T. Battaglia, Cardno ERI

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January 17, 2013
Cardno ERI 247613.Q124

Ms. Jennifer C. Sedlachek
ExxonMobil Environmental Services
4096 Piedmont Avenue #194
Oakland, California 94611

**SUBJECT** **Semi-Annual Groundwater Monitoring Report, Fourth Quarter 2012**
Former Exxon Service Station 70234
3450 35th Avenue, Oakland, California

Alameda County RO#2515

## INTRODUCTION

At the request of ExxonMobil Environmental Services (EMES), on behalf of Exxon Mobil Corporation, Cardno ERI performed fourth quarter 2012 groundwater monitoring and sampling activities at the subject site. Relevant plates, tables, and appendices are included at the end of this report. Currently, the site is vacant.

## GROUNDWATER MONITORING AND SAMPLING SUMMARY

| | | |
|---|---|---|
| **Gauging and sampling date:** | | 10/31/12 |
| **Wells gauged and sampled:** | | MW4 through MW9 |
| **Well inaccessible:** | | RW1 |
| **Presence of NAPL:** | | Not observed |
| **Concurrently sampled:** | | ConocoPhillips, 3420 35th Avenue |
| **Data provided by:** | | Conestoga-Rovers & Associates (CRA)<br>Emeryville, California |
| **Laboratory:** | | Calscience Environmental Laboratories, Inc.<br>Garden Grove, California |
| **Analyses performed:** | EPA Method 8015B | TPHg |
| | EPA Method 8021B | BTEX |
| | EPA Method 8260B | MTBE, ETBE, TAME, TBA, EDB, 1,2-DCA, DIPE |
| **Waste disposal:** | | 53 gallons of purge and decon water delivered to Instrat, Inc., of Rio Vista, California, on 11/06/12 |

## DISCUSSION AND CONCLUSIONS

A car was parked over well RW1, making it inaccessible for gauging and sampling. Groundwater flow was towards the southwest. Groundwater monitoring and sampling data are consistent with previous site data, except BTEX constituents were reported in off-site wells MW8 and MW9 for the first time.

## LIMITATIONS

For any documents cited that were not generated by Cardno ERI, the data taken from those documents is used "as is" and is assumed to be accurate. Cardno ERI does not guarantee the accuracy of this data and makes no warranties for the referenced work performed nor the inferences or conclusions stated in these documents.

This document was prepared in accordance with generally accepted standards of environmental, geological, and engineering practices in California at the time of investigation. No soil engineering or geotechnical references are implied or should be inferred. The evaluation of the geologic conditions at the site for this investigation is made from a limited number of data points. Subsurface conditions may vary away from these data points.

Please contact Mr. Vincent T. Battaglia, Cardno ERI's project manager for this site, at vincent.battaglia@cardno.com or at (707) 766-2000 with any questions regarding this report.

Sincerely,

SCANNED IMAGE

SCANNED IMAGE

PROFESSIONAL GEOLOGIST
HEIDI L. DIEFFENBACH-CARLE
No. 6793
EXP. 03/31/2014
STATE OF CALIFORNIA

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Enclosures:

Acronym List

| | |
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| Plate 3 | Groundwater Elevation Map |
| Table 1A | Cumulative Groundwater Monitoring and Sampling Data |
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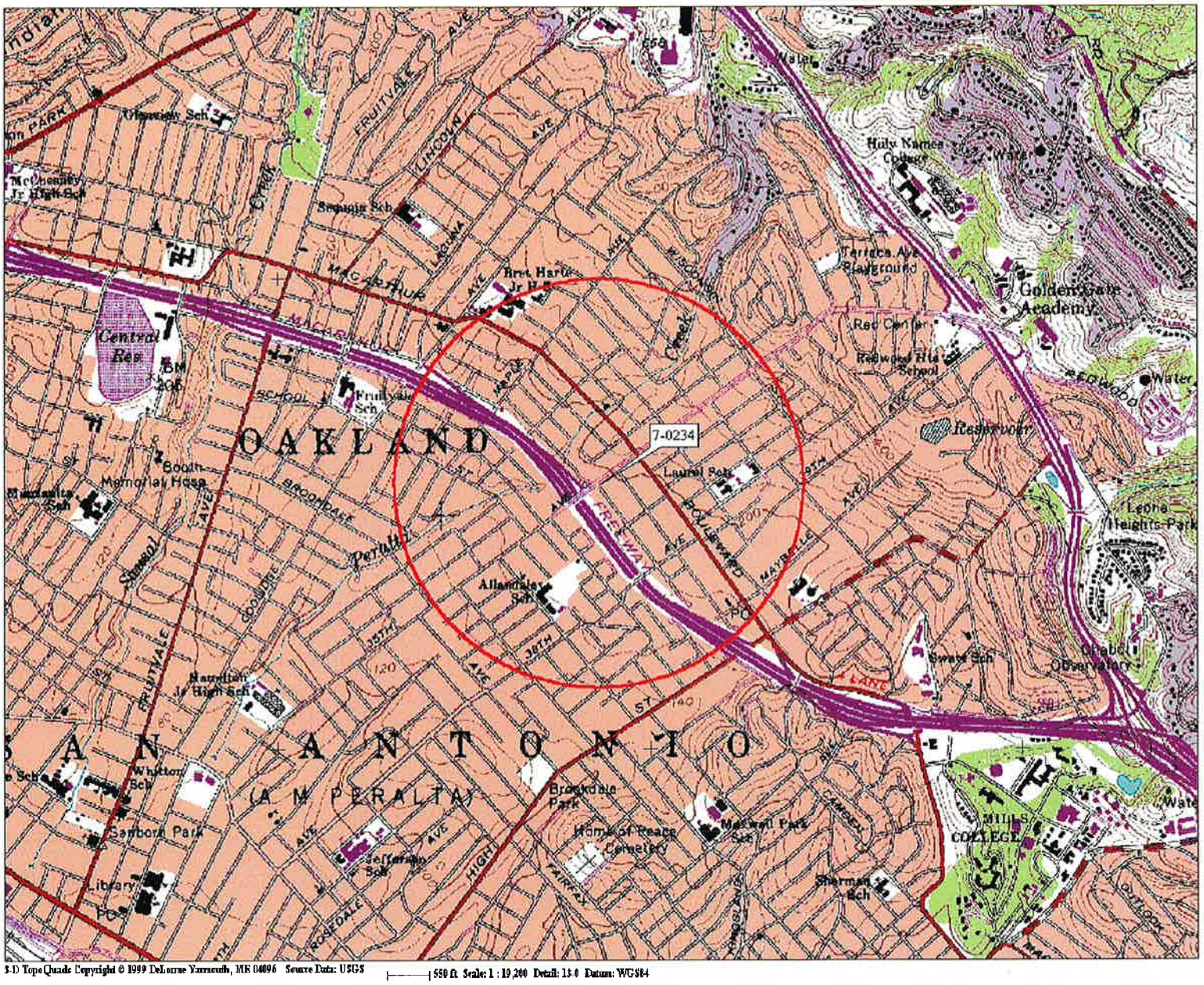
| Appendix B | Groundwater Monitoring Data, ConocoPhillips, 3420 35th Avenue |
| Appendix C | Laboratory Analytical Report and Chain-of-Custody Record |
| Appendix D | Waste Disposal Documentation |
| Appendix E | Field Data Sheets |

cc: Ms. Barbara Jakub, P.G., Alameda County Health Care Services Agency, Department of Environmental Health, 1131 Harbor Bay Parkway, Suite 250, Alameda, California, 94502-6577

Mr. William D. Spencer, FWS Highland LLC, 99 South Hill Drive, Brisbane, California, 94005

## ACRONYM LIST

| | |
|---|---|
| µg/L | Micrograms per liter |
| µs | Microsiemens |
| 1,2-DCA | 1,2-dichloroethane |
| acfm | Actual cubic feet per minute |
| AS | Air sparge |
| bgs | Below ground surface |
| BTEX | Benzene, toluene, ethylbenzene, and total xylenes |
| CEQA | California Environmental Quality Act |
| cfm | Cubic feet per minute |
| COC | Chain of Custody |
| CPT | Cone Penetration (Penetrometer) Test |
| DIPE | Di-isopropyl ether |
| DO | Dissolved oxygen |
| DOT | Department of Transportation |
| DPE | Dual-phase extraction |
| DTW | Depth to water |
| EDB | 1,2-dibromoethane |
| EPA | Environmental Protection Agency |
| ESL | Environmental screening level |
| ETBE | Ethyl tertiary butyl ether |
| FID | Flame-ionization detector |
| fpm | Feet per minute |
| GAC | Granular activated carbon |
| gpd | Gallons per day |
| gpm | Gallons per minute |
| GWPTS | Groundwater pump and treat system |
| HVOC | Halogenated volatile organic compound |
| J | Estimated value between MDL and PQL (RL) |
| LEL | Lower explosive limit |
| LPC | Liquid-phase carbon |
| LRP | Liquid-ring pump |
| LUFT | Leaking underground fuel tank |
| LUST | Leaking underground storage tank |
| MCL | Maximum contaminant level |
| MDL | Method detection limit |
| mg/kg | Milligrams per kilogram |
| mg/L | Milligrams per liter |
| $mg/m^3$ | Milligrams per cubic meter |
| MPE | Multi-phase extraction |
| MRL | Method reporting limit |
| msl | Mean sea level |
| MTBE | Methyl tertiary butyl ether |
| MTCA | Model Toxics Control Act |
| NAI | Natural attenuation indicators |
| NAPL | Non-aqueous phase liquid |
| NEPA | National Environmental Policy Act |
| NGVD | National Geodetic Vertical Datum |
| NPDES | National Pollutant Discharge Elimination System |
| O&M | Operations and Maintenance |
| ORP | Oxidation-reduction potential |
| OSHA | Occupational Safety and Health Administration |
| OVA | Organic vapor analyzer |
| P&ID | Process & Instrumentation Diagram |
| PAH | Polycyclic aromatic hydrocarbon |
| PCB | Polychlorinated biphenyl |
| PCE | Tetrachloroethene or perchloroethylene |
| PID | Photo-ionization detector |
| PLC | Programmable logic control |
| POTW | Publicly owned treatment works |
| ppmv | Parts per million by volume |
| PQL | Practical quantitation limit |
| psi | Pounds per square inch |
| PVC | Polyvinyl chloride |
| QA/QC | Quality assurance/quality control |
| RBSL | Risk-based screening levels |
| RCRA | Resource Conservation and Recovery Act |
| RL | Reporting limit |
| scfm | Standard cubic feet per minute |
| SSTL | Site-specific target level |
| STLC | Soluble threshold limit concentration |
| SVE | Soil vapor extraction |
| SVOC | Semivolatile organic compound |
| TAME | Tertiary amyl methyl ether |
| TBA | Tertiary butyl alcohol |
| TCE | Trichloroethene |
| TOC | Top of well casing elevation; datum is msl |
| TOG | Total oil and grease |
| TPHd | Total petroleum hydrocarbons as diesel |
| TPHg | Total petroleum hydrocarbons as gasoline |
| TPHmo | Total petroleum hydrocarbons as motor oil |
| TPHs | Total petroleum hydrocarbons as stoddard solvent |
| TRPH | Total recoverable petroleum hydrocarbons |
| UCL | Upper confidence level |
| USCS | Unified Soil Classification System |
| USGS | United States Geologic Survey |
| UST | Underground storage tank |
| VCP | Voluntary Cleanup Program |
| VOC | Volatile organic compound |
| VPC | Vapor-phase carbon |




2476TOPO

## EXPLANATION

1/2-mile radius circle

N

## APPROXIMATE SCALE

0 0.5 1 mile

SOURCE:
Modified from a map provided by DeLorme 3-D TopoQuads

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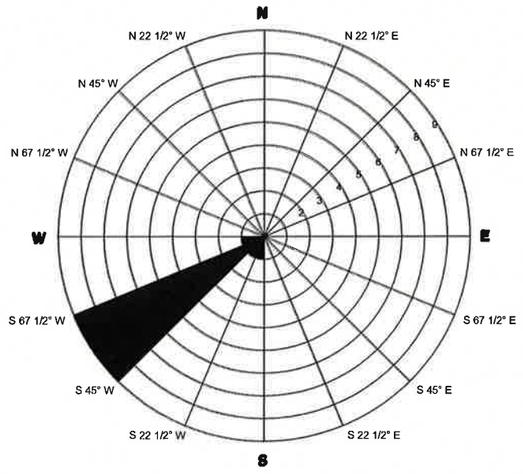
# SITE VICINITY MAP

FORMER EXXON SERVICE STATION 70234
3450 35th Avenue
Oakland, California

**PROJECT NO.** 2476

**PLATE** 1

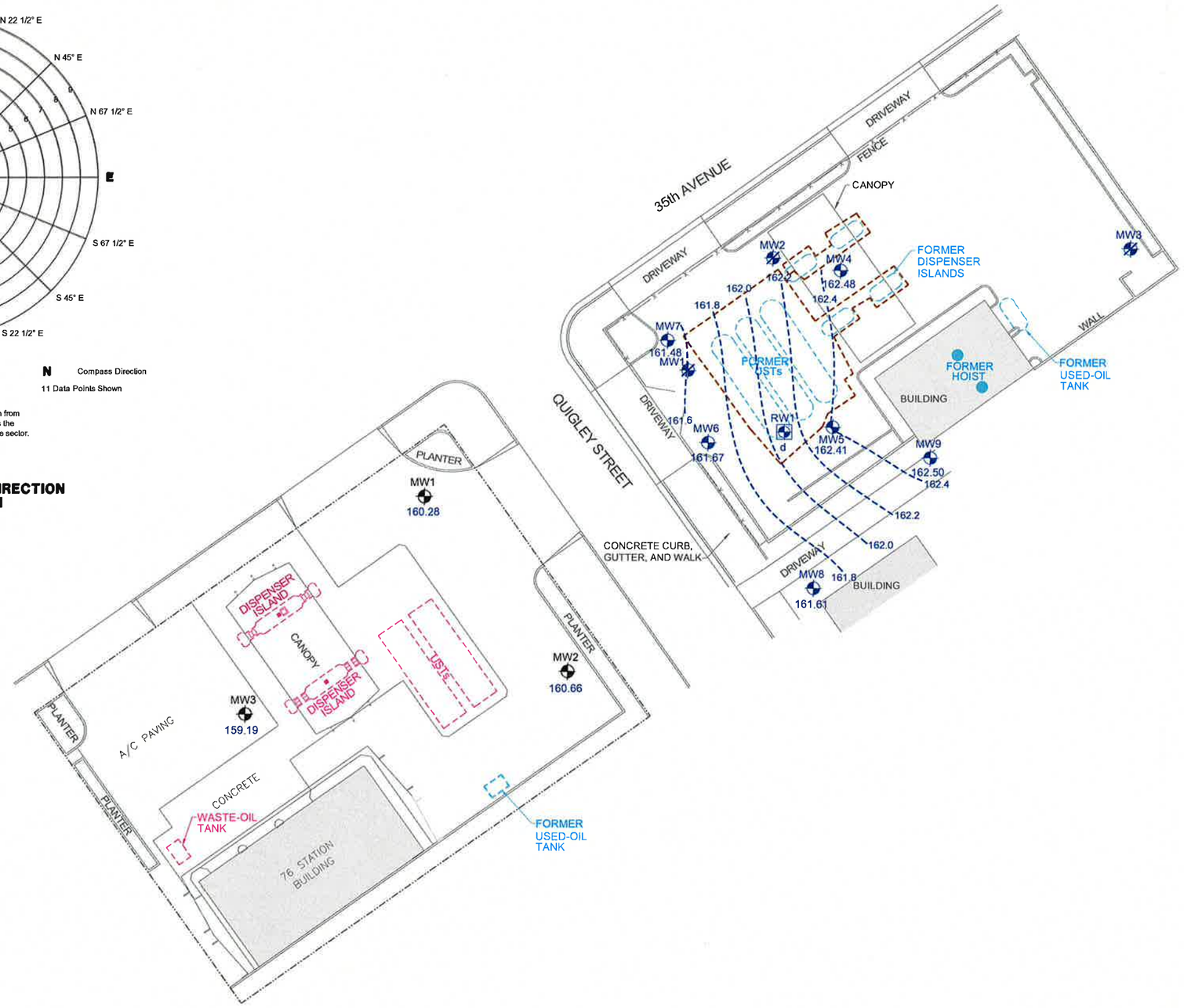



**N** Compass Direction

11 Data Points Shown

Rose diagram developed by evaluating the groundwater gradient direction from the quarterly monitoring data. Each circle on the rose diagram represents the number of monitoring events that the gradient plotted in that 22 1/2 degree sector. March 30, 2009 to October 31, 2012

## GROUNDWATER FLOW DIRECTION ROSE DIAGRAM




APPROXIMATE SCALE

0 40 80 Feet

FN 2476 12 4QTR QM

SOURCE: Modified from maps provided by MORROW SURVEING AND TRC

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## GROUNDWATER ELEVATION MAP
## October 23 and 31, 2012

FORMER
EXXON SERVICE STATION 70234
3450 35th Avenue
Oakland, California

EXPLANATION

- MW9 — Groundwater Monitoring Well
- 162.50 — Groundwater elevation in feet; datum is mean sea level
- MW1 — Destroyed Groundwater Monitoring Well
- MW3 — Groundwater Monitoring Well By Others
- RW1 — Recovery Groundwater Monitoring Well
- d — Well inaccessible for sampling.
- Excavated Area
- 162.4 ----- Line of Equal Groundwater Elevation; datum is mean sea level

NOTE: Monitoring wells by others were gauged and sampled on 10/23/12 and, therefore; were not included in groundwater contouring.

**PROJECT NO.** 2476

**PLATE** 3

L:\EXXONMOBIL\ExxonMobil Projects\022476 (70234) Oakland\2476 AutoCad\QM\2012\12 4QTR QM.dwg, mary.jones

Analyte Concentrations in ug/L
Sampled October 23 and 31, 2012

| | |
|---|---|
| Total Petroleum Hydrocarbons as gasoline | |
| Benzene | |
| Methyl Tertiary Butyl Ether | |

| | |
|---|---|
| < | Less Than the Stated Laboratory Reporting Limit |
| ug/L | Micrograms per Liter |
| NS | Not Sampled |
| b | Hydrocarbon pattern does not match the requested fuel. |
| d | Well inaccessible for sampling. |


APPROXIMATE SCALE

0 40 80 Feet

FN 2476 12 4QTR QM

SOURCE: Modified from maps provided by MORROW SURVEING AND TRC

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**SELECT ANALYTICAL RESULTS**
**October 23 and 31, 2012**

FORMER
EXXON SERVICE STATION 70234
3450 35th Avenue
Oakland, California

EXPLANATION

MW9 Groundwater Monitoring Well

MW1 Destroyed Groundwater Monitoring Well

MW3 Groundwater Monitoring Well By Others

RW1 Recovery Groundwater Monitoring Well

Excavated Area

**PROJECT NO.** 2476

**PLATE** 2

L:\EXXONMOBIL\ExxonMobil Projects\022476 (70234) Oakland\2476 AutoCad\QM\2012\12 4QTR QM.dwg, mary.jones

**TABLE 1A**
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| Well ID | Sampling Date | Depth (feet) | TOC Elev. (feet) | DTW (feet) | GW Elev. (feet) | NAPL (feet) | TPHg (µg/L) | MTBE (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) | Total Pb (µg/L) | Organic Pb (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Monitoring Well Samples** | | | | | | | | | | | | | | |
| MW1 | 07/15/92 | --- | --- | Well installed. | | | | | | | | | | |
| MW1 | 07/17/92 | --- | 192.00 | 33.02 | 158.98 | No | 67 | --- | 6.6 | 6.9 | 2.0 | 4.5 | 17 | --- |
| MW1 | 10/22/92 | --- | 192.00 | 34.07 | 157.93 | No | <50 | --- | 2.9 | <0.5 | <0.5 | <0.5 | 16 | --- |
| MW1 | 02/04/93 | --- | 192.00 | 29.43 | 162.57 | No | <50 | --- | 0.8 | <0.5 | <0.5 | <0.5 | 4 | --- |
| MW1 | 05/03/93 | --- | 192.00 | 29.72 | 162.28 | No | 71 | --- | 2.8 | 7.2 | 2.2 | 22 | 40 | --- |
| MW1 | 07/30/93 | --- | 192.00 | 32.95 | 159.05 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 5 | --- |
| MW1 | 10/19/93 | --- | 192.00 | 34.34 | 157.66 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 12 | --- |
| MW1 | 02/23/94 | --- | 192.00 | 31.72 | 160.28 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 4 | --- |
| MW1 | 06/06/94 | --- | 192.00 | 31.77 | 160.23 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3 | --- |
| MW1 | 08/18/94 | --- | 192.00 | 33.76 | 158.24 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 130 | --- |
| MW1 | 11/15/94 | --- | 192.00 | 34.08 | 157.92 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3.0 | <100 |
| MW1 | 02/06/95 | --- | 192.00 | 28.50 | 163.50 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| MW1 | 05/10/95 | --- | 192.00 | 29.30 | 162.70 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| MW1 | 09/20/99 | --- | 192.00 | 33.30 | 158.70 | No | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <75 | <50 |
| MW1 | Well destroyed in June 2000. | | | | | | | | | | | | | |
| MW2 | 07/15/92 | --- | --- | Well installed. | | | | | | | | | | |
| MW2 | 07/17/92 | --- | 194.85 | 34.65 | 160.20 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3 | --- |
| MW2 | 10/22/92 | --- | 194.85 | 35.64 | 159.21 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | -- | --- |
| MW2 | 02/04/93 | --- | 194.85 | 31.13 | 163.72 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3 | --- |
| MW2 | 05/03/93 | --- | 194.85 | 31.08 | 163.77 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 3 | --- |
| MW2 | 07/30/93 | --- | 194.85 | 34.34 | 160.51 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 14 | --- |
| MW2 | 10/19/93 | --- | 194.85 | 36.00 | 158.85 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3 | --- |
| MW2 | 02/23/94 | --- | 194.85 | 33.92 | 160.93 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3 | --- |
| MW2 | 06/06/94 | --- | 194.85 | 33.50 | 161.35 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3 | --- |
| MW2 | 08/18/94 | --- | 194.85 | 35.38 | 159.47 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3.0 | --- |
| MW2 | 11/15/94 | --- | 194.85 | 35.93 | 158.92 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3.0 | <100 |
| MW2 | 02/06/95 | --- | 194.85 | 30.38 | 164.47 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| MW2 | 05/10/95 | --- | 194.85 | 30.77 | 164.08 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| MW2 | 09/20/99 | --- | 194.85 | 35.15 | 159.70 | No | <50 | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 | <75 | <0.5 |
| MW2 | Well destroyed in June 2000. | | | | | | | | | | | | | |
| MW3 | 07/15/92 | --- | --- | Well installed. | | | | | | | | | | |
| MW3 | 07/17/92 | --- | 196.90 | 37.24 | 159.66 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 50 | --- |
| MW3 | 10/22/92 | --- | 196.90 | 35.95 | 160.95 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 9 | --- |
| MW3 | 02/04/93 | --- | 196.90 | 29.85 | 167.05 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3 | --- |
| MW3 | 05/03/93 | --- | 196.90 | 29.87 | 167.03 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 3 | --- |

**TABLE 1A**
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| Well ID | Sampling Date | Depth (feet) | TOC Elev. (feet) | DTW (feet) | GW Elev. (feet) | NAPL (feet) | TPHg (µg/L) | MTBE (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) | Total Pb (µg/L) | Organic Pb (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW3 | 07/30/93 | --- | 196.90 | 33.85 | 163.05 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 22 | --- |
| MW3 | 10/19/93 | --- | 196.90 | 35.89 | 161.01 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 12 | --- |
| MW3 | 02/23/94 | --- | 196.90 | 32.88 | 164.02 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | 25 | --- |
| MW3 | 06/06/94 | --- | 196.90 | 32.40 | 164.50 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3 | --- |
| MW3 | 08/18/94 | --- | 196.90 | 35.07 | 161.83 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3.0 | --- |
| MW3 | 11/15/94 | --- | 196.90 | 35.97 | 160.93 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | <3.0 | <100 |
| MW3 | 02/06/95 | --- | 196.90 | 28.39 | 168.51 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| MW3 | 05/10/95 | --- | 196.90 | 28.90 | 168.00 | No | <50 | --- | <0.5 | <0.5 | <0.5 | <0.5 | --- | --- |
| MW3 | 09/20/99 | --- | 196.90 | 34.68 | 162.22 | No | 75.0 | 1.87 | <0.5 | 11.5 | 1.8 | 18.0 | <75 | <0.5 |
| MW3 | Well destroyed in June 2000. | | | | | | | | | | | | | |
| MW4 | 03/02/09 | --- | --- | Well installed. | | | | | | | | | | |
| MW4 | 03/30/09 | --- | 197.62 | 30.94 | 166.68 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW4 | 04/02/09 | --- | 197.62 | Well surveyed. | | | | | | | | | | |
| MW4 | 05/28/09 | --- | 197.62 | 32.00 | 165.62 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW4 | 08/31/09 | --- | 197.62 | 35.43 | 162.19 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW4 | 12/11/09 | --- | 197.62 | 35.01 | 162.61 | No | <50 | <0.50 | <0.50 | 0.83 | <0.50 | 1.1 | --- | --- |
| MW4 | 05/07/10 | --- | 197.62 | 29.11 | 168.51 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW4 | 11/01/10 | --- | 197.62 | 34.95 | 162.67 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW4 | 05/27/11 d | --- | 197.62 | 30.65 | 166.97 | No | --- | --- | --- | --- | --- | --- | --- | --- |
| MW4 | 11/23/11 | --- | 197.62 | 33.49 | 164.13 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW4 | 05/24/12 | --- | 197.62 | 30.02 | 167.60 | No | 58 | <0.50 | 0.84 | 4.4 | 0.64c | 3.5 | --- | --- |
| **MW4** | **10/31/12** | **---** | **197.62** | **35.14** | **162.48** | **No** | **110** | **<0.50** | **5.3** | **45** | **4.2** | **21** | **---** | **---** |
| MW5 | 03/06/09 | --- | --- | Well installed. | | | | | | | | | | |
| MW5 | 03/30/09 | --- | 196.35 | 30.05 | 166.30 | No | 4,200 | 1,900 | 540 | 140 | <12 | 310 | --- | --- |
| MW5 | 04/02/09 | --- | 196.35 | Well surveyed. | | | | | | | | | | |
| MW5 | 05/28/09 | --- | 196.35 | 31.45 | 164.90 | No | 5,300 | 3,600 | 890 | 150 | <25 | 140 | --- | --- |
| MW5 | 08/31/09 | --- | 196.35 | 34.70 | 161.65 | No | 5,800 | 3,500 | 550 | <100 | <100 | <100 | --- | --- |
| MW5 | 12/11/09 | --- | 196.35 | 34.52 | 161.83 | No | 4,000b | 3,800 | 230 | <100 | <100 | <100 | --- | --- |
| MW5 | 05/07/10 | --- | 196.35 | 30.84 | 165.51 | No | 2,700b | 1,700 | 73 | 5.3 | 3.6 | 6.5 | --- | --- |
| MW5 | 11/01/10 | --- | 196.35 | 33.93 | 162.42 | No | 2,400b | 3,400 | 320 | 71 | 21 | 40 | --- | --- |
| MW5 | 05/27/11 d | --- | 196.35 | 31.65 | 164.70 | No | --- | --- | --- | --- | --- | --- | --- | --- |
| MW5 | 11/23/11 | --- | 196.35 | 32.58 | 163.77 | No | 1,900b | 3,200 | 72 | 2.7 | 3.1 | 8.1 | --- | --- |
| MW5 | 05/24/12 | --- | 196.35 | 30.26 | 166.09 | No | 2,900b | 1,700 | 54 | 31 | 5.2 | 17 | --- | --- |
| **MW5** | **10/31/12** | **---** | **196.35** | **33.94** | **162.41** | **No** | **2,200b** | **2,700** | **220** | **72** | **8.7** | **47** | **---** | **---** |
| MW6 | 03/09/09 | --- | --- | Well installed. | | | | | | | | | | |
| MW6 | 03/30/09 | --- | 192.41 | 26.94 | 165.47 | No | 2,800 | 4,800 | 0.91 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW6 | 04/02/09 | --- | 192.41 | Well surveyed. | | | | | | | | | | |

**TABLE 1A**
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| Well ID | Sampling Date | Depth (feet) | TOC Elev. (feet) | DTW (feet) | GW Elev. (feet) | NAPL (feet) | TPHg (µg/L) | MTBE (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) | Total Pb (µg/L) | Organic Pb (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW6 | 05/28/09 | --- | 192.41 | 28.04 | 164.37 | No | 2,800 | 6,000 | <100 | <100 | <100 | <100 | --- | --- |
| MW6 | 08/31/09 | --- | 192.41 | 30.57 | 161.84 | No | 4,900 | 6,600 | <100 | <100 | <100 | <100 | --- | --- |
| MW6 | 12/11/09 | --- | 192.41 | 30.78 | 161.63 | No | 4,900b | 6,200 | <100 | <100 | <100 | <100 | --- | --- |
| MW6 | 05/07/10 | --- | 192.41 | 25.42 | 166.99 | No | 2,900b | 3,700 | 2.7 | <0.50 | 0.74c | <1.0 | --- | --- |
| MW6 | 11/01/10 | --- | 192.41 | 30.68 | 161.73 | No | 850b | 6,100 | 2.1 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW6 | 05/27/11 d | --- | 192.41 | 27.07 | 165.34 | No | --- | --- | --- | --- | --- | --- | --- | --- |
| MW6 | 11/23/11 | --- | 192.41 | 29.25 | 163.16 | No | 1,600b | 6,400 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW6 | 05/24/12 | --- | 192.41 | 26.36 | 166.05 | No | 2,000b | 3,400 | 1.3c | 9.7 | 0.97c | 5.5 | --- | --- |
| **MW6** | **10/31/12** | **---** | **192.41** | **30.74** | **161.67** | **No** | **1,400b** | **5,400** | **3.8** | **28** | **2.2** | **11** | **---** | **---** |
| MW7 | 03/09/09 | --- | --- | Well installed. | | | | | | | | | | |
| MW7 | 03/30/09 | --- | 194.34 | 29.15 | 165.19 | No | 55 | 66 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW7 | 04/02/09 | --- | 194.34 | Well surveyed. | | | | | | | | | | |
| MW7 | 05/28/09 | --- | 194.34 | 30.16 | 164.18 | No | 50 | 67 | <1.0 | <1.0 | <1.0 | <1.0 | --- | --- |
| MW7 | 08/31/09 | --- | 194.34 | 33.31 | 161.03 | No | <50 | 12 | <0.50 | 0.60 | <0.50 | <0.50 | --- | --- |
| MW7 | 12/11/09 | --- | 194.34 | 32.71 | 161.63 | No | <50 | 31 | 0.78 | 1.7 | 0.62 | 2.4 | --- | --- |
| MW7 | 05/07/10 | --- | 194.34 | 27.54 | 166.80 | No | 510b | 700 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW7 | 11/01/10 | --- | 194.34 | 32.82 | 161.52 | No | 68b | 140 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW7 | 05/27/11 d | --- | 194.34 | 28.85 | 165.49 | No | --- | --- | --- | --- | --- | --- | --- | --- |
| MW7 | 11/23/11 | --- | 194.34 | 31.39 | 162.95 | No | 190b | 300 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW7 | 05/24/12 d | --- | 194.34 | 28.31 | 166.03 | No | --- | --- | --- | --- | --- | --- | --- | --- |
| **MW7** | **10/31/12** | **---** | **194.34** | **32.86** | **161.48** | **No** | **230b** | **290** | **2.9** | **21** | **1.8** | **9.2** | **---** | **---** |
| MW8 | 03/04/09 | --- | --- | Well installed. | | | | | | | | | | |
| MW8 | 03/30/09 | --- | 192.96 | 27.35 | 165.61 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW8 | 04/02/09 | --- | 192.96 | Well surveyed. | | | | | | | | | | |
| MW8 | 05/28/09 | --- | 192.96 | 28.72 | 164.24 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW8 | 08/31/09 | --- | 192.96 | 31.93 | 161.03 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW8 | 12/11/09 | --- | 192.96 | 31.24 | 161.72 | No | <50 | <0.50 | 0.74 | 1.6 | 0.59 | 2.3 | --- | --- |
| MW8 | 05/07/10 | --- | 192.96 | 25.68 | 167.28 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW8 | 11/01/10 | --- | 192.96 | 31.18 | 161.78 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW8 | 05/27/11 | --- | 192.96 | 27.55 | 165.41 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW8 | 11/23/11 | --- | 192.96 | 29.74 | 163.22 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW8 | 05/24/12 | --- | 192.96 | 26.93 | 166.03 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| **MW8** | **10/31/12** | **---** | **192.96** | **31.35** | **161.61** | **No** | **75** | **<0.50** | **2.5** | **19** | **1.7** | **8.7** | **---** | **---** |
| MW9 | 03/05/09 | --- | --- | Well installed. | | | | | | | | | | |
| MW9 | 03/30/09 | --- | 195.16 | 28.31 | 166.85 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW9 | 04/02/09 | --- | 195.16 | Well surveyed. | | | | | | | | | | |
| MW9 | 05/28/09 | --- | 195.16 | 29.69 | 165.47 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |

**TABLE 1A**
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| Well ID | Sampling Date | Depth (feet) | TOC Elev. (feet) | DTW (feet) | GW Elev. (feet) | NAPL (feet) | TPHg (µg/L) | MTBE (µg/L) | B (µg/L) | T (µg/L) | E (µg/L) | X (µg/L) | Total Pb (µg/L) | Organic Pb (mg/L) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW9 | 08/31/09 | --- | 195.16 | 33.20 | 161.96 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| MW9 | 12/11/09 | --- | 195.16 | 32.62 | 162.54 | No | <50 | <0.50 | 0.73 | 1.7 | 0.54 | 2.2 | --- | --- |
| MW9 | 05/07/10 | --- | 195.16 | 26.59 | 168.57 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW9 | 11/01/10 | --- | 195.16 | 32.45 | 162.71 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW9 | 05/27/11 | --- | 195.16 | 29.62 | 165.54 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW9 | 11/23/11 | --- | 195.16 | 30.56 | 164.60 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| MW9 | 05/24/12 | --- | 195.16 | 27.94 | 167.22 | No | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| **MW9** | **10/31/12** | **---** | **195.16** | **32.66** | **162.50** | **No** | **140** | **<0.50** | **6.9** | **38** | **2.7** | **13** | **---** | **---** |
| RW1 | 12/22/11 | --- | --- | Well installed. | | | | | | | | | | |
| RW1 | 12/30/11 | --- | 195.15 | Well surveyed. | | | | | | | | | | |
| RW1 | 05/24/12 | --- | 195.15 | 28.55 | 166.60 | No | 5,500b | 2,500 | 920 | 5.9c | 51 | 14 | --- | --- |
| **RW1** | **10/31/12d** | **---** | **195.15** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** |
| **Grab Groundwater Samples** | | | | | | | | | | | | | | |
| Pit Water | 06/14/02 | 11.5a | --- | --- | --- | --- | 5,600 | 12,000 | 140 | 840 | 100 | 530 | --- | --- |
| UST Pit | 06/19/02 | 13.5a | --- | --- | --- | --- | 680 | 640 | 2.7 | 36 | 18 | 130 | --- | --- |
| W-38-B11 | 11/14/07 | 38 | --- | --- | --- | --- | <50 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| W-15-B12 | 11/13/07 | 15 | --- | --- | --- | --- | 8,400 | 78 | 67 | <5.0 | 140 | 150 | --- | --- |
| W-40-B13 | 11/12/07 | 40 | --- | --- | --- | --- | <50 | 0.53 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| W-15-B14 | 11/13/07 | 15 | --- | --- | --- | --- | 2,500 | 16 | 1.7 | 3.0 | 26 | 13 | --- | --- |
| W-38-B15 | 11/15/07 | 38 | --- | --- | --- | --- | 18,000 | 12,000 | 3,400 | 2,500 | 330 | 2,000 | --- | --- |
| W-40-B16 | 11/15/07 | 40 | --- | --- | --- | --- | <50 | 7.7 | <0.50 | <0.50 | <0.50 | <0.50 | --- | --- |
| W-37-B17 | 11/13/07 | 37 | --- | --- | --- | --- | 630 | 2,200 | 1.8 | <0.50 | 4.1 | 1.4 | --- | --- |
| W-38-B18 | 11/12/07 | 38 | --- | --- | --- | --- | 4,300 | 1,400 | 52 | <12 | 56 | 96 | --- | --- |
| W-35-B19 | 03/03/09 | 35 | --- | --- | --- | --- | 4,400 | 7,100 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| W-35-B20 | 03/03/09 | 35 | --- | --- | --- | --- | 640 | 440 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |
| W-35-B21 | 03/03/09 | 35 | --- | --- | --- | --- | <50 | 1.4 | <0.50 | <0.50 | <0.50 | <1.0 | --- | --- |

**TABLE 1A**
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| | | |
|---|---|---|
| Notes: | | Data prior to 1999 provided by EA Environmental Science and Engineering in previously submitted reports. |
| TOC Elev. | = | Top of well casing elevation; datum is NAVD88. |
| DTW | = | Depth to water. |
| GW Elev. | = | Groundwater elevation; datum is NAVD88. |
| NAPL | = | Non-aqueous phase liquid. |
| TPHg | = | Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B. |
| MTBE | = | Methyl tertiary butyl ether analyzed using EPA Method 8260B. |
| BTEX | = | Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B; from April 2009 to October 2010, analyzed using EPA Method 8260B. |
| Total Pb | = | Total lead analyzed using EPA Method 6010. |
| Organic Pb | = | Organic lead analyzed using CA DHS LUFT method. |
| EDB | = | 1,2-dibromoethane analyzed using EPA Method 8260B. |
| 1,2-DCA | = | 1,2-dicloroethane analyzed using EPA Method 8260B. |
| TBA | = | Tertiary butyl alcohol analyzed using EPA Method 8260B. |
| TAME | = | Tertiary amyl methyl ether analyzed using EPA Method 8260B. |
| ETBE | = | Ethyl tertiary butyl ether analyzed using EPA Method 8260B. |
| DIPE | = | Di-isopropyl ether analyzed using EPA Method 8260B. |
| Ethanol | = | Ethanol analyzed using EPA Method 8260B. |
| µg/L | = | Micrograms per liter. |
| mg/L | = | Milligrams per liter. |
| < | = | Less than the stated laboratory reporting limit. |
| --- | = | Not sampled/Not analyzed/Not measured/Not applicable. |
| a | = | Approximate depth to groundwater surface at time of sampling. |
| b | = | Hydrocarbon pattern does not match that of the specified standard. |
| c | = | Analyte presence was not confirmed by second column or GC/MS analysis. |
| d | = | Well inaccessible. |

**TABLE 1B**
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| Well ID | Sampling Date | Depth (feet) | EDB (µg/L) | 1,2-DCA (µg/L) | TBA (µg/L) | TAME (µg/L) | ETBE (µg/L) | DIPE (µg/L) | Ethanol (µg/L) |
|---|---|---|---|---|---|---|---|---|---|
| **Monitoring Well Samples** | | | | | | | | | |
| MW1 | 07/17/92 - 09/20/99 | --- | Not analyzed for these analytes. | | | | | | |
| MW1 | Well destroyed in June 2000. | | | | | | | | |
| MW2 | 07/17/92 - 09/20/99 | --- | Not analyzed for these analytes. | | | | | | |
| MW2 | Well destroyed in June 2000. | | | | | | | | |
| MW3 | 07/17/92 - 09/20/99 | --- | Not analyzed for these analytes. | | | | | | |
| MW3 | Well destroyed in June 2000. | | | | | | | | |
| MW4 | 03/30/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW4 | 05/28/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW4 | 08/31/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW4 | 12/11/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW4 | 05/07/10 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW4 | 11/01/10 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW4 | 05/27/11 d | --- | --- | --- | --- | --- | --- | --- | --- |
| MW4 | 11/23/11 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW4 | 05/24/12 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| **MW4** | **10/31/12** | **---** | **<0.50** | **<0.50** | **<5.0** | **<0.50** | **<0.50** | **<0.50** | **---** |
| MW5 | 03/30/09 | --- | <12 | 17 | 450 | <12 | <12 | <12 | --- |
| MW5 | 05/28/09 | --- | <25 | <25 | 530 | <25 | <25 | <25 | --- |
| MW5 | 08/31/09 | --- | <100 | <100 | <1,000 | <100 | <100 | <100 | --- |
| MW5 | 12/11/09 | --- | <100 | <100 | 2,000 | <100 | <100 | <100 | --- |
| MW5 | 05/07/10 | --- | <25 | <25 | 400 | <25 | <25 | <25 | --- |
| MW5 | 11/01/10 | --- | <50 | <50 | 1,500 | <50 | <50 | <50 | --- |
| MW5 | 05/27/11 d | --- | --- | --- | --- | --- | --- | --- | --- |
| MW5 | 11/23/11 | --- | <50 | <50 | <500 | <50 | <50 | <50 | --- |
| MW5 | 05/24/12 | --- | <50 | <50 | 1,400 | <50 | <50 | <50 | --- |
| **MW5** | **10/31/12** | **---** | **<50** | **<50** | **730** | **<50** | **<50** | **<50** | **---** |
| MW6 | 03/30/09 | --- | <0.50 | <0.50 | 410 | 1.3 | <0.50 | 0.82 | --- |
| MW6 | 05/28/09 | --- | <100 | <100 | <1,000 | <100 | <100 | <100 | --- |
| MW6 | 08/31/09 | --- | <100 | <100 | 1,100 | <100 | <100 | <100 | --- |
| MW6 | 12/11/09 | --- | <100 | <100 | 2,600 | <100 | <100 | <100 | --- |
| MW6 | 05/07/10 | --- | <100 | <100 | <1,000 | <100 | <100 | <100 | --- |
| MW6 | 11/01/10 | --- | <50 | <50 | 2,400 | <50 | <50 | <50 | --- |

**TABLE 1B**
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| Well ID | Sampling Date | Depth (feet) | EDB (µg/L) | 1,2-DCA (µg/L) | TBA (µg/L) | TAME (µg/L) | ETBE (µg/L) | DIPE (µg/L) | Ethanol (µg/L) |
|---|---|---|---|---|---|---|---|---|---|
| MW6 | 05/27/11 d | --- | --- | --- | --- | --- | --- | --- | --- |
| MW6 | 11/23/11 | --- | <100 | <100 | <1,000 | <100 | <100 | <100 | --- |
| MW6 | 05/24/12 | --- | <100 | <100 | 2,700 | <100 | <100 | <100 | --- |
| **MW6** | **10/31/12** | **---** | **<100** | **<100** | **<1,000** | **<100** | **<100** | **<100** | **---** |
| MW7 | 03/30/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW7 | 05/28/09 | --- | <1.0 | <1.0 | <10 | <1.0 | <1.0 | <1.0 | --- |
| MW7 | 08/31/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW7 | 12/11/09 | --- | <0.50 | <0.50 | 12 | <0.50 | <0.50 | <0.50 | --- |
| MW7 | 05/07/10 | --- | <0.50 | <0.50 | 130 | <0.50 | <0.50 | <0.50 | --- |
| MW7 | 11/01/10 | --- | <2.5 | <2.5 | 27 | <2.5 | <2.5 | <2.5 | --- |
| MW7 | 05/27/11 d | --- | --- | --- | --- | --- | --- | --- | --- |
| MW7 | 11/23/11 | --- | <5.0 | <5.0 | <50 | <5.0 | <5.0 | <5.0 | --- |
| MW7 | 05/24/12 d | --- | --- | --- | --- | --- | --- | --- | --- |
| **MW7** | **10/31/12** | **---** | **<5.0** | **<5.0** | **<50** | **<5.0** | **<5.0** | **<5.0** | **---** |
| MW8 | 03/30/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW8 | 05/28/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW8 | 08/31/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW8 | 12/11/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW8 | 05/07/10 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW8 | 11/01/10 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW8 | 05/27/11 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW8 | 11/23/11 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW8 | 05/24/12 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| **MW8** | **10/31/12** | **---** | **<0.50** | **<0.50** | **<5.0** | **<0.50** | **<0.50** | **<0.50** | **---** |
| MW9 | 03/30/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW9 | 05/28/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW9 | 08/31/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW9 | 12/11/09 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW9 | 05/07/10 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW9 | 11/01/10 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW9 | 05/27/11 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW9 | 11/23/11 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| MW9 | 05/24/12 | --- | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | --- |
| **MW9** | **10/31/12** | **---** | **<0.50** | **<0.50** | **<5.0** | **<0.50** | **<0.50** | **<0.50** | **---** |
| RW1 | 05/24/12 | --- | <50 | <50 | 1,900 | <50 | <50 | <50 | --- |
| **RW1** | **10/31/12 d** | **---** | **---** | **---** | **---** | **---** | **---** | **---** | **---** |

**TABLE 1B**
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| Well ID | Sampling Date | Depth (feet) | EDB (µg/L) | 1,2-DCA (µg/L) | TBA (µg/L) | TAME (µg/L) | ETBE (µg/L) | DIPE (µg/L) | Ethanol (µg/L) |
|---|---|---|---|---|---|---|---|---|---|
| **Grab Groundwater Samples** | | | | | | | | | |
| Pit Water | 06/14/02 | 11.5a | --- | --- | --- | --- | --- | --- | --- |
| UST Pit | 06/19/02 | 13.5a | --- | --- | --- | --- | --- | --- | --- |
| W-38-B11 | 11/14/07 | 38 | <0.50 | <0.50 | <10 | <0.50 | <0.50 | <0.50 | <50 |
| W-15-B12 | 11/13/07 | 15 | <5.0 | <5.0 | <100 | <5.0 | <5.0 | <5.0 | <500 |
| W-40-B13 | 11/12/07 | 40 | <0.50 | <0.50 | <10 | <0.50 | <0.50 | <0.50 | <50 |
| W-15-B14 | 11/13/07 | 15 | <1.0 | <1.0 | <20 | <1.0 | <1.0 | <1.0 | <100 |
| W-38-B15 | 11/15/07 | 38 | <25 | <25 | 1,900 | <25 | <25 | <25 | <2,500 |
| W-40-B16 | 11/15/07 | 40 | <0.50 | <0.50 | <10 | <0.50 | <0.50 | <0.50 | 85 |
| W-37-B17 | 11/13/07 | 37 | <0.50 | <0.50 | 58 | <0.50 | <0.50 | <0.50 | <50 |
| W-38-B18 | 11/12/07 | 38 | <12 | <12 | <250 | <12 | <12 | <12 | <1,200 |
| W-35-B19 | 03/03/09 | 35 | <50 | <50 | <500 | <50 | <50 | <50 | <5,000 |
| W-35-B20 | 03/03/09 | 35 | <0.50 | <0.50 | 12 | <0.50 | <0.50 | <0.50 | <50 |
| W-35-B21 | 03/03/09 | 35 | <0.50 | <0.50 | <5.0 | <0.50 | <0.50 | <0.50 | <50 |

**TABLE 1B**
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| | | |
|---|---|---|
| Notes: | | Data prior to 1999 provided by EA Environmental Science and Engineering in previously submitted reports. |
| TOC Elev. | = | Top of well casing elevation; datum is NAVD88. |
| DTW | = | Depth to water. |
| GW Elev. | = | Groundwater elevation; datum is NAVD88. |
| NAPL | = | Non-aqueous phase liquid. |
| TPHg | = | Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015B. |
| MTBE | = | Methyl tertiary butyl ether analyzed using EPA Method 8260B. |
| BTEX | = | Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8021B; from April 2009 to October 2010, analyzed using EPA Method 8260B. |
| Total Pb | = | Total lead analyzed using EPA Method 6010. |
| Organic Pb | = | Organic lead analyzed using CA DHS LUFT method. |
| EDB | = | 1,2-dibromoethane analyzed using EPA Method 8260B. |
| 1,2-DCA | = | 1,2-dicloroethane analyzed using EPA Method 8260B. |
| TBA | = | Tertiary butyl alcohol analyzed using EPA Method 8260B. |
| TAME | = | Tertiary amyl methyl ether analyzed using EPA Method 8260B. |
| ETBE | = | Ethyl tertiary butyl ether analyzed using EPA Method 8260B. |
| DIPE | = | Di-isopropyl ether analyzed using EPA Method 8260B. |
| Ethanol | = | Ethanol analyzed using EPA Method 8260B. |
| µg/L | = | Micrograms per liter. |
| mg/L | = | Milligrams per liter. |
| < | = | Less than the stated laboratory reporting limit. |
| --- | = | Not sampled/Not analyzed/Not measured/Not applicable. |
| a | = | Approximate depth to groundwater surface at time of sampling. |
| b | = | Hydrocarbon pattern does not match that of the specified standard. |
| c | = | Analyte presence was not confirmed by second column or GC/MS analysis. |
| d | = | Well inaccessible. |

**TABLE 3**
**WELL CONSTRUCTION DETAILS**
Former Exxon Service Station 70234
3450 35th Avenue
Oakland, California

| Well ID | Well Installation Date | Well Destruction Date | TOC Elevation (feet) | Borehole Diameter (inches) | Total Depth of Boring (feet bgs) | Well Depth (feet bgs) | Casing Diameter (inches) | Well Casing Material | Screened Interval (feet bgs) | Slot Size (inches) | Filter Pack Interval (feet bgs) | Filter Pack Material |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW1 | 07/15/92 | Jun-00 | 192.00 | 11 | 45 | 45 | 4 | Schedule 40 PVC | 25-45 | 0.010 | 23-45 | 2/12 Lonestar Sand |
| MW2 | 07/15/92 | Jun-00 | 194.85 | 11 | 45 | 45 | 4 | Schedule 40 PVC | 25-45 | 0.010 | 23-45 | 2/12 Lonestar Sand |
| MW3 | 07/15/92 | Jun-00 | 196.90 | 11 | 45 | 45 | 4 | Schedule 40 PVC | 25-45 | 0.010 | 23-45 | 2/12 Lonestar Sand |
| MW4 | 03/02/09 | --- | 197.62 | 8 | 45 | 45 | 2 | Schedule 40 PVC | 35-45 | 0.020 | 33-45 | #3 Sand |
| MW5 | 03/06/09 | --- | 196.35 | 8 | 40 | 40 | 2 | Schedule 40 PVC | 30-40 | 0.020 | 28-40 | #3 Sand |
| MW6 | 03/09/09 | --- | 192.41 | 8 | 40 | 39 | 2 | Schedule 40 PVC | 29-39 | 0.020 | 27-39 | #3 Sand |
| MW7 | 03/09/09 | --- | 194.34 | 8 | 40 | 40 | 2 | Schedule 40 PVC | 30-40 | 0.020 | 28-40 | #3 Sand |
| MW8 | 03/04/09 | --- | 192.96 | 8 | 40 | 40 | 2 | Schedule 40 PVC | 30-40 | 0.020 | 28-40 | #3 Sand |
| MW9 | 03/05/09 | --- | 195.16 | 8 | 40 | 40 | 2 | Schedule 40 PVC | 30-40 | 0.020 | 28-40 | #3 Sand |
| RW1 | 12/22/11 | --- | 195.15 | 10 | 40 | 40 | 4 | Stainless Steel | 25-39.5 | 0.020 | 23-40 | #2/12 Sand |

Notes:
TOC = Top of well casing elevation; datum is NAVD88.
PVC = Polyvinyl chloride.
feet bgs = feet below ground surface.

# APPENDIX A

# GROUNDWATER SAMPLING PROTOCOL

## GROUNDWATER SAMPLING PROTOCOL

The static water level and separate-phase product level, if present, in each well that contained water and/or separate-phase product are measured with an ORS Interface Probe, which is accurate to the nearest 0.01 foot. To calculate groundwater elevations and evaluate groundwater gradient, depth to water (DTW) levels are subtracted from top of casing elevations.

Groundwater samples collected for subjective evaluation are collected by gently lowering approximately half the length of a clean Teflon® or polypropylene bailer past the air-water interface (if possible) and collecting a sample from near the surface of the water in the well. The samples are checked for measurable free-phase hydrocarbons or sheen. If appropriate, free-phase hydrocarbons are removed from the well.

Before water samples are collected from the groundwater monitoring wells, the wells are purged until a minimum of three well casing volumes is purged and stabilization of the temperature, pH, and conductivity is obtained. Water samples from the wells that do not obtain stability of the temperature, pH, and conductivity are considered to be "grab samples." The quantity of water purged from each well is calculated as follows:

1 well casing volume = $\pi r^2 h(7.48)$ where:

| | | |
|---|---|---|
| r | = | radius of the well casing in feet |
| h | = | column of water in the well in feet (depth to bottom - depth to water) |
| 7.48 | = | conversion constant from cubic feet to gallons |
| $\pi$ | = | ratio of the circumference of a circle to its diameter |

Gallons of water purged/gallons in 1 well casing volume = well casing volumes removed.

After purging, each well is allowed to recharge to at least 80% of the initial water level. Water samples from wells that do not recover at least 80% (due to slow recharging of the well) between purging and sampling are considered to be "grab samples." Water samples are collected with a new, disposable Teflon® or polypropylene bailer. The groundwater is carefully poured into selected sample containers (40-milliliter [ml] glass vials, 1,000-ml glass amber bottles, etc.), which are filled so as to produce a positive meniscus.

Depending on the required analysis, each sample container is preserved with hydrochloric acid, nitric acid, etc., or it is preservative free. The type of preservative used for each sample is specified on the Chain-of-Custody record.

Each vial and glass amber bottle is sealed with a cap containing a Teflon® septum, and subsequently examined for air bubbles to avoid headspace, which would allow volatilization to occur. The samples are promptly transported in iced storage in a thermally-insulated ice chest, accompanied by a Chain-of-Custody record, to a California state-certified laboratory.

# APPENDIX B

# GROUNDWATER MONITORING DATA
# CONOCOPHILLIPS, 3420 35TH AVENUE

# TABLE 1
## GROUNDWATER MONITORING AND SAMPLING DATA
## CHEVRON #351639
## FORMER UNOCAL #6129
## 3420 35TH AVE., OAKLAND, CALIFORNIA

| | | | | | HYDROCARBONS | PRIMARY VOCS | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Location | Date | TOC | DTW | GWE | TPH - Gasoline | B | T | E | X | MTBE by SW8260 | TBA | ETBE | DIPE | TAME | EDB | 1,2-DCA | Ethanol |
| | Units | ft | ft | ft-amsl | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L | µg/L |
| MW-1 | 05/27/2011 | 190.79 | 26.87 | 163.92 | 110 | <0.50 | <0.50 | <0.50 | <1.0 | 220 | <10 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <250 |
| | 11/23/2011 | 190.79 | 29.14 | 161.65 | 110 | <0.50 | <0.50 | <0.50 | <1.0 | 150 | 41 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <250 |
| | 05/24/2012 | 190.79 | 26.58 | 164.21 | 140 | <0.50 | <0.50 | <0.50 | <1.0 | 190 | 66 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <250 |
| | **10/23/2012** | **190.79** | **30.51** | **160.28** | **130** | **<0.50** | **<0.50** | **<0.50** | **<1.0** | **140** | **47** | **<0.50** | **<0.50** | **<0.50** | **<0.50** | **<0.50** | **<250** |
| MW-2 | 05/27/2011 | 190.80 | 26.44 | 164.36 | 560 | <0.50 | <0.50 | <0.50 | <1.0 | 1,100 | 210 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <250 |
| | 11/23/2011 | 190.80 | 28.53 | 162.27 | 830 | <0.50 | <0.50 | <0.50 | <1.0 | 1,500 | 400 | <0.50 | 9.0 | <0.50 | <0.50 | <0.50 | <250 |
| | 05/24/2012 | 190.80 | 25.97 | 164.83 | 1,000 | <0.50 | <0.50 | <0.50 | <1.0 | 1,200 | 430 | <0.50 | 8.8 | <0.50 | <0.50 | <0.50 | <250 |
| | **10/23/2012** | **190.80** | **30.14** | **160.66** | **750** | **<0.50** | **<0.50** | **<0.50** | **<1.0** | **1,300** | **410** | **<0.50** | **14** | **<0.50** | **<0.50** | **<0.50** | **<250** |
| MW-3 | 05/27/2011 | 188.58 | 26.53 | 162.05 | 340 | <0.50 | <0.50 | <0.50 | <1.0 | 890 | 73 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <250 |
| | 11/23/2011 | 188.58 | 28.11 | 160.47 | 520 | <0.50 | <0.50 | <0.50 | <1.0 | 730 | 170 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <250 |
| | 05/24/2012 | 188.58 | 25.95 | 162.63 | 660 | <0.50 | <0.50 | <0.50 | <1.0 | 1,100 | 300 | <0.50 | <0.50 | <0.50 | <0.50 | <0.50 | <250 |
| | **10/23/2012** | **188.58** | **29.39** | **159.19** | **480** | **<0.50** | **<0.50** | **<0.50** | **<1.0** | **500** | **160** | **<0.50** | **<0.50** | **<0.50** | **<0.50** | **<0.50** | **<250** |

**Abbreviations and Notes:**

TOC = Top of Casing

DTW = Depth to Water

GWE = Groundwater elevation

(ft-amsl) = Feet Above Mean sea level

ft = Feet

µg/L = Micrograms per Liter

TPH - Total Petroleum Hydrocarbons

VOCS = Volatile Organic Compounds

B = Benzene

T = Toluene

E = Ethylbenzene

X = Xylene

MTBE = Methyl tert butyl ether

TBA = Tert-Butyl alcohol

DIPE = Diisopropyl ether

ETBE = Tert-Butyl ethyl ether

TAME = Tert-Amyl methyl ether

EDB = 1,2-Dibromoethane (Ethylene dibromide)

1,2-DCA = 1,2-Dichloroethane

– = Not available / not applicable

<x = Not detected above laboratory method detection limit

# APPENDIX C

# LABORATORY ANALYTICAL REPORT AND CHAIN-OF-CUSTODY RECORD

Calscience Environmental Laboratories, Inc.

# CALSCIENCE

## WORK ORDER NUMBER: 12-11-0104

*The difference is service*

AIR | SOIL | WATER | MARINE CHEMISTRY

RECEIVED
NOV 16 2012
BY:_____

**Analytical Report For**

**Client:** Cardno ERI

**Client Project Name:** ExxonMobil 70234 / 022476

**Attention:** Janice Jacobson
601 North McDowell Blvd.
Petaluma, CA 94954-2312

Cecile L deGuia

Approved for release on 11/13/2012 by:
Cecile deGuia
Project Manager

ResultLink ▸

Email your PM ▸

Calscience Environmental Laboratories, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

Calscience Environmental Laboratories, Inc.

# Contents

Client Project Name: ExxonMobil 70234 / 022476
Work Order Number: 12-11-0104

Calscience Environmental Laboratories, Inc.

## Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | 11/02/12 |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |

Project: ExxonMobil 70234 / 022476



| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-36-MW4** | **12-11-0104-2-E** | **10/31/12 10:30** | **Aqueous** | **GC 4** | **11/03/12** | **11/03/12 15:14** | **121103B01** |

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| TPH as Gasoline | 110 | 50 | 1 | | ug/L |

| Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|
| 1,4-Bromofluorobenzene | 83 | 38-134 | |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-34-MW5** | **12-11-0104-3-E** | **10/31/12 11:30** | **Aqueous** | **GC 4** | **11/03/12** | **11/03/12 15:45** | **121103B01** |

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| TPH as Gasoline | 2200 | 50 | 1 | HD | ug/L |

| Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|
| 1,4-Bromofluorobenzene | 93 | 38-134 | |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-31-MW6** | **12-11-0104-4-E** | **10/31/12 11:55** | **Aqueous** | **GC 4** | **11/03/12** | **11/03/12 13:41** | **121103B01** |

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| TPH as Gasoline | 1400 | 50 | 1 | HD | ug/L |

| Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|
| 1,4-Bromofluorobenzene | 86 | 38-134 | |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-33-MW7** | **12-11-0104-5-E** | **10/31/12 11:00** | **Aqueous** | **GC 4** | **11/03/12** | **11/03/12 16:16** | **121103B01** |

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| TPH as Gasoline | 230 | 50 | 1 | HD | ug/L |

| Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|
| 1,4-Bromofluorobenzene | 82 | 38-134 | |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

## Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | 11/02/12 |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |

Project: ExxonMobil 70234 / 022476



| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-32-MW8** | **12-11-0104-6-E** | **10/31/12 10:00** | **Aqueous** | **GC 4** | **11/03/12** | **11/03/12 16:47** | **121103B01** |

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| TPH as Gasoline | 75 | 50 | 1 | | ug/L |

| Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|
| 1,4-Bromofluorobenzene | 85 | 38-134 | |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-34-MW9** | **12-11-0104-7-E** | **10/31/12 09:30** | **Aqueous** | **GC 4** | **11/03/12** | **11/03/12 17:18** | **121103B01** |

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| TPH as Gasoline | 140 | 50 | 1 | | ug/L |

| Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|
| 1,4-Bromofluorobenzene | 85 | 38-134 | |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-436-8,001** | **N/A** | **Aqueous** | **GC 4** | **11/03/12** | **11/03/12 10:37** | **121103B01** |

| Parameter | Result | RL | DF | Qual | Units |
|---|---|---|---|---|---|
| TPH as Gasoline | ND | 50 | 1 | U | ug/L |

| Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|
| 1,4-Bromofluorobenzene | 88 | 38-134 | |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

# Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | 11/02/12 |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8021B |
| | | Units: | ug/L |
| Project: ExxonMobil 70234 / 022476 | | | Page 1 of 2 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-36-MW4** | **12-11-0104-2-F** | **10/31/12 10:30** | **Aqueous** | **GC 8** | **11/03/12** | **11/03/12 20:06** | **121103B01** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 5.3 | 0.50 | 1 | | Ethylbenzene | 4.2 | 0.50 | 1 | |
| Toluene | 45 | 0.50 | 1 | | Xylenes (total) | 21 | 1.0 | 1 | |
| Surrogates: | REC (%) | Control Limits | | Qual | | | | | |
| 1,4-Bromofluorobenzene | 94 | 70-130 | | | | | | | |

| **W-34-MW5** | **12-11-0104-3-F** | **10/31/12 11:30** | **Aqueous** | **GC 8** | **11/03/12** | **11/03/12 20:41** | **121103B01** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 220 | 0.50 | 1 | | Ethylbenzene | 8.7 | 0.50 | 1 | |
| Toluene | 72 | 0.50 | 1 | | Xylenes (total) | 47 | 1.0 | 1 | |
| Surrogates: | REC (%) | Control Limits | | Qual | | | | | |
| 1,4-Bromofluorobenzene | 98 | 70-130 | | | | | | | |

| **W-31-MW6** | **12-11-0104-4-F** | **10/31/12 11:55** | **Aqueous** | **GC 8** | **11/03/12** | **11/03/12 21:16** | **121103B01** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 3.8 | 0.50 | 1 | | Ethylbenzene | 2.2 | 0.50 | 1 | |
| Toluene | 28 | 0.50 | 1 | | Xylenes (total) | 11 | 1.0 | 1 | |
| Surrogates: | REC (%) | Control Limits | | Qual | | | | | |
| 1,4-Bromofluorobenzene | 95 | 70-130 | | | | | | | |

| **W-33-MW7** | **12-11-0104-5-F** | **10/31/12 11:00** | **Aqueous** | **GC 8** | **11/03/12** | **11/03/12 23:37** | **121103B01** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 2.9 | 0.50 | 1 | | Ethylbenzene | 1.8 | 0.50 | 1 | |
| Toluene | 21 | 0.50 | 1 | | Xylenes (total) | 9.2 | 1.0 | 1 | |
| Surrogates: | REC (%) | Control Limits | | Qual | | | | | |
| 1,4-Bromofluorobenzene | 93 | 70-130 | | | | | | | |

| **W-32-MW8** | **12-11-0104-6-F** | **10/31/12 10:00** | **Aqueous** | **GC 8** | **11/03/12** | **11/04/12 00:12** | **121103B01** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 2.5 | 0.50 | 1 | | Ethylbenzene | 1.7 | 0.50 | 1 | |
| Toluene | 19 | 0.50 | 1 | | Xylenes (total) | 8.7 | 1.0 | 1 | |
| Surrogates: | REC (%) | Control Limits | | Qual | | | | | |
| 1,4-Bromofluorobenzene | 95 | 70-130 | | | | | | | |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

# Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | 11/02/12 |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8021B |
| | | Units: | ug/L |

Project: ExxonMobil 70234 / 022476 

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-34-MW9** | **12-11-0104-7-F** | **10/31/12 09:30** | **Aqueous** | **GC 8** | **11/03/12** | **11/04/12 00:47** | **121103B01** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 6.9 | 0.50 | 1 | | Ethylbenzene | 2.7 | 0.50 | 1 | |
| Toluene | 38 | 0.50 | 1 | | Xylenes (total) | 13 | 1.0 | 1 | |

| Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|
| 1,4-Bromofluorobenzene | 93 | 70-130 | |

| **Method Blank** | **099-12-667-1,602** | **N/A** | **Aqueous** | **GC 8** | **11/03/12** | **11/03/12 12:29** | **121103B01** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 0.50 | 1 | U | Ethylbenzene | ND | 0.50 | 1 | U |
| Toluene | ND | 0.50 | 1 | U | Xylenes (total) | ND | 1.0 | 1 | U |

| Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|
| 1,4-Bromofluorobenzene | 99 | 70-130 | |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

# Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

Cardno ERI
601 North McDowell Blvd.
Petaluma, CA 94954-2312

Date Received: 11/02/12
Work Order No: 12-11-0104
Preparation: EPA 5030C
Method: EPA 8260B
Units: ug/L

Project: ExxonMobil 70234 / 022476



| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-36-MW4** | **12-11-0104-2-F** | **10/31/12 10:30** | **Aqueous** | **GC/MS L** | **11/07/12** | **11/08/12 02:01** | **121107L02** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | ND | 0.50 | 1 | U | Tert-Amyl-Methyl Ether (TAME) | ND | 0.50 | 1 | U |
| Tert-Butyl Alcohol (TBA) | ND | 5.0 | 1 | U | 1,2-Dibromoethane | ND | 0.50 | 1 | U |
| Diisopropyl Ether (DIPE) | ND | 0.50 | 1 | U | 1,2-Dichloroethane | ND | 0.50 | 1 | U |
| Ethyl-t-Butyl Ether (ETBE) | ND | 0.50 | 1 | U | | | | | |
| Surrogates: | REC (%) | Control Limits | | Qual | Surrogates: | REC (%) | Control Limits | | Qual |
| 1,4-Bromofluorobenzene | 100 | 68-120 | | | Dibromofluoromethane | 100 | 80-127 | | |
| 1,2-Dichloroethane-d4 | 104 | 80-128 | | | Toluene-d8 | 98 | 80-120 | | |

| **W-34-MW5** | **12-11-0104-3-E** | **10/31/12 11:30** | **Aqueous** | **GC/MS L** | **11/07/12** | **11/08/12 02:30** | **121107L02** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | 2700 | 50 | 100 | | Tert-Amyl-Methyl Ether (TAME) | ND | 50 | 100 | U |
| Tert-Butyl Alcohol (TBA) | 730 | 500 | 100 | | 1,2-Dibromoethane | ND | 50 | 100 | U |
| Diisopropyl Ether (DIPE) | ND | 50 | 100 | U | 1,2-Dichloroethane | ND | 50 | 100 | U |
| Ethyl-t-Butyl Ether (ETBE) | ND | 50 | 100 | U | | | | | |
| Surrogates: | REC (%) | Control Limits | | Qual | Surrogates: | REC (%) | Control Limits | | Qual |
| 1,4-Bromofluorobenzene | 98 | 68-120 | | | Dibromofluoromethane | 101 | 80-127 | | |
| 1,2-Dichloroethane-d4 | 103 | 80-128 | | | Toluene-d8 | 98 | 80-120 | | |

| **W-31-MW6** | **12-11-0104-4-E** | **10/31/12 11:55** | **Aqueous** | **GC/MS L** | **11/07/12** | **11/08/12 02:59** | **121107L02** |
|---|---|---|---|---|---|---|---|

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | 5400 | 100 | 200 | | Tert-Amyl-Methyl Ether (TAME) | ND | 100 | 200 | U |
| Tert-Butyl Alcohol (TBA) | ND | 1000 | 200 | U | 1,2-Dibromoethane | ND | 100 | 200 | U |
| Diisopropyl Ether (DIPE) | ND | 100 | 200 | U | 1,2-Dichloroethane | ND | 100 | 200 | U |
| Ethyl-t-Butyl Ether (ETBE) | ND | 100 | 200 | U | | | | | |
| Surrogates: | REC (%) | Control Limits | | Qual | Surrogates: | REC (%) | Control Limits | | Qual |
| 1,4-Bromofluorobenzene | 97 | 68-120 | | | Dibromofluoromethane | 101 | 80-127 | | |
| 1,2-Dichloroethane-d4 | 105 | 80-128 | | | Toluene-d8 | 99 | 80-120 | | |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

# Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | 11/02/12 |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |
| | | Units: | ug/L |
| Project: ExxonMobil 70234 / 022476 | | | Page 2 of 3 |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-33-MW7** | **12-11-0104-5-E** | **10/31/12 11:00** | **Aqueous** | **GC/MS L** | **11/07/12** | **11/08/12 03:27** | **121107L02** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | 290 | 5.0 | 10 | | Tert-Amyl-Methyl Ether (TAME) | ND | 5.0 | 10 | U |
| Tert-Butyl Alcohol (TBA) | ND | 50 | 10 | U | 1,2-Dibromoethane | ND | 5.0 | 10 | U |
| Diisopropyl Ether (DIPE) | ND | 5.0 | 10 | U | 1,2-Dichloroethane | ND | 5.0 | 10 | U |
| Ethyl-t-Butyl Ether (ETBE) | ND | 5.0 | 10 | U | | | | | |

| Surrogates: | REC (%) | Control Limits | Qual | Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|---|---|---|---|
| 1,4-Bromofluorobenzene | 97 | 68-120 | | Dibromofluoromethane | 102 | 80-127 | |
| 1,2-Dichloroethane-d4 | 104 | 80-128 | | Toluene-d8 | 97 | 80-120 | |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-32-MW8** | **12-11-0104-6-E** | **10/31/12 10:00** | **Aqueous** | **GC/MS L** | **11/07/12** | **11/08/12 03:56** | **121107L02** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | ND | 0.50 | 1 | U | Tert-Amyl-Methyl Ether (TAME) | ND | 0.50 | 1 | U |
| Tert-Butyl Alcohol (TBA) | ND | 5.0 | 1 | U | 1,2-Dibromoethane | ND | 0.50 | 1 | U |
| Diisopropyl Ether (DIPE) | ND | 0.50 | 1 | U | 1,2-Dichloroethane | ND | 0.50 | 1 | U |
| Ethyl-t-Butyl Ether (ETBE) | ND | 0.50 | 1 | U | | | | | |

| Surrogates: | REC (%) | Control Limits | Qual | Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|---|---|---|---|
| 1,4-Bromofluorobenzene | 98 | 68-120 | | Dibromofluoromethane | 100 | 80-127 | |
| 1,2-Dichloroethane-d4 | 102 | 80-128 | | Toluene-d8 | 96 | 80-120 | |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **W-34-MW9** | **12-11-0104-7-E** | **10/31/12 09:30** | **Aqueous** | **GC/MS L** | **11/07/12** | **11/08/12 04:25** | **121107L02** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | ND | 0.50 | 1 | U | Tert-Amyl-Methyl Ether (TAME) | ND | 0.50 | 1 | U |
| Tert-Butyl Alcohol (TBA) | ND | 5.0 | 1 | U | 1,2-Dibromoethane | ND | 0.50 | 1 | U |
| Diisopropyl Ether (DIPE) | ND | 0.50 | 1 | U | 1,2-Dichloroethane | ND | 0.50 | 1 | U |
| Ethyl-t-Butyl Ether (ETBE) | ND | 0.50 | 1 | U | | | | | |

| Surrogates: | REC (%) | Control Limits | Qual | Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|---|---|---|---|
| 1,4-Bromofluorobenzene | 98 | 68-120 | | Dibromofluoromethane | 105 | 80-127 | |
| 1,2-Dichloroethane-d4 | 107 | 80-128 | | Toluene-d8 | 96 | 80-120 | |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

## Analytical Report

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | 11/02/12 |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |
| | | Units: | ug/L |

Project: ExxonMobil 70234 / 022476 

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-884-958** | **N/A** | **Aqueous** | **GC/MS L** | **11/07/12** | **11/08/12 01:32** | **121107L02** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | ND | 0.50 | 1 | U | Tert-Amyl-Methyl Ether (TAME) | ND | 0.50 | 1 | U |
| Tert-Butyl Alcohol (TBA) | ND | 5.0 | 1 | U | 1,2-Dibromoethane | ND | 0.50 | 1 | U |
| Diisopropyl Ether (DIPE) | ND | 0.50 | 1 | U | 1,2-Dichloroethane | ND | 0.50 | 1 | U |
| Ethyl-t-Butyl Ether (ETBE) | ND | 0.50 | 1 | U | | | | | |

| Surrogates: | REC (%) | Control Limits | Qual | Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|---|---|---|---|
| 1,4-Bromofluorobenzene | 97 | 68-120 | | Dibromofluoromethane | 101 | 80-127 | |
| 1,2-Dichloroethane-d4 | 103 | 80-128 | | Toluene-d8 | 99 | 80-120 | |

| Client Sample Number | Lab Sample Number | Date/Time Collected | Matrix | Instrument | Date Prepared | Date/Time Analyzed | QC Batch ID |
|---|---|---|---|---|---|---|---|
| **Method Blank** | **099-12-884-959** | **N/A** | **Aqueous** | **GC/MS L** | **11/09/12** | **11/09/12 17:03** | **121109L01** |

| Parameter | Result | RL | DF | Qual | Parameter | Result | RL | DF | Qual |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | ND | 0.50 | 1 | U | Tert-Amyl-Methyl Ether (TAME) | ND | 0.50 | 1 | U |
| Tert-Butyl Alcohol (TBA) | ND | 5.0 | 1 | U | 1,2-Dibromoethane | ND | 0.50 | 1 | U |
| Diisopropyl Ether (DIPE) | ND | 0.50 | 1 | U | 1,2-Dichloroethane | ND | 0.50 | 1 | U |
| Ethyl-t-Butyl Ether (ETBE) | ND | 0.50 | 1 | U | | | | | |

| Surrogates: | REC (%) | Control Limits | Qual | Surrogates: | REC (%) | Control Limits | Qual |
|---|---|---|---|---|---|---|---|
| 1,4-Bromofluorobenzene | 101 | 68-120 | | Dibromofluoromethane | 101 | 80-127 | |
| 1,2-Dichloroethane-d4 | 101 | 80-128 | | Toluene-d8 | 102 | 80-120 | |

RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers

Calscience Environmental Laboratories, Inc.

## Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Cardno ERI
601 North McDowell Blvd.
Petaluma, CA 94954-2312

Date Received: 11/02/12
Work Order No: 12-11-0104
Preparation: EPA 5030C
Method: EPA 8015B (M)

Project ExxonMobil 70234 / 022476

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **W-31-MW6** | **Aqueous** | **GC 4** | **11/03/12** | **11/03/12** | **121103S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| TPH as Gasoline | 1428 | 2000 | 2953 | 76 | 3134 | 85 | 68-122 | 6 | 0-18 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Cardno ERI
601 North McDowell Blvd.
Petaluma, CA 94954-2312

Date Received: 11/02/12
Work Order No: 12-11-0104
Preparation: EPA 5030C
Method: EPA 8021B

Project ExxonMobil 70234 / 022476

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-10-2102-1** | **Aqueous** | **GC 8** | **11/03/12** | **11/03/12** | **121103S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Benzene | ND | 100.0 | 91.40 | 91 | 99.20 | 99 | 57-129 | 8 | 0-23 | |
| Toluene | ND | 100.0 | 87.83 | 88 | 94.42 | 94 | 50-134 | 7 | 0-26 | |
| Ethylbenzene | ND | 100.0 | 85.21 | 85 | 90.49 | 90 | 58-130 | 6 | 0-26 | |
| Xylenes (total) | ND | 300.0 | 254.1 | 85 | 268.8 | 90 | 58-130 | 6 | 0-28 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

Cardno ERI
601 North McDowell Blvd.
Petaluma, CA 94954-2312

Date Received: 11/02/12
Work Order No: 12-11-0104
Preparation: EPA 5030C
Method: EPA 8260B

Project ExxonMobil 70234 / 022476

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **W-34-MW9** | **Aqueous** | **GC/MS L** | **11/07/12** | **11/08/12** | **121107S02** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | ND | 10.00 | 9.536 | 95 | 9.852 | 99 | 67-121 | 3 | 0-49 | |
| Tert-Butyl Alcohol (TBA) | ND | 50.00 | 62.17 | 124 | 58.89 | 118 | 36-162 | 5 | 0-30 | |
| Diisopropyl Ether (DIPE) | ND | 10.00 | 10.30 | 103 | 10.64 | 106 | 60-138 | 3 | 0-45 | |
| Ethyl-t-Butyl Ether (ETBE) | ND | 10.00 | 10.06 | 101 | 10.42 | 104 | 69-123 | 4 | 0-30 | |
| Tert-Amyl-Methyl Ether (TAME) | ND | 10.00 | 9.801 | 98 | 10.45 | 104 | 65-120 | 6 | 0-20 | |
| 1,2-Dibromoethane | ND | 10.00 | 10.33 | 103 | 10.45 | 105 | 80-120 | 1 | 0-20 | |
| 1,2-Dichloroethane | ND | 10.00 | 10.22 | 102 | 10.85 | 108 | 80-120 | 6 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - Spike/Spike Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | 11/02/12 |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project ExxonMobil 70234 / 022476

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | MS/MSD Batch Number |
|---|---|---|---|---|---|
| **12-11-0102-8** | **Aqueous** | **GC/MS L** | **11/09/12** | **11/09/12** | **121109S01** |

| Parameter | SAMPLE CONC | SPIKE ADDED | MS CONC | MS %REC | MSD CONC | MSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | 0.6130 | 10.00 | 10.93 | 103 | 10.59 | 100 | 67-121 | 3 | 0-49 | |
| Tert-Butyl Alcohol (TBA) | ND | 50.00 | 78.78 | 158 | 70.24 | 140 | 36-162 | 11 | 0-30 | |
| Diisopropyl Ether (DIPE) | ND | 10.00 | 10.81 | 108 | 10.67 | 107 | 60-138 | 1 | 0-45 | |
| Ethyl-t-Butyl Ether (ETBE) | ND | 10.00 | 10.67 | 107 | 10.47 | 105 | 69-123 | 2 | 0-30 | |
| Tert-Amyl-Methyl Ether (TAME) | ND | 10.00 | 10.44 | 104 | 10.21 | 102 | 65-120 | 2 | 0-20 | |
| 1,2-Dibromoethane | ND | 10.00 | 10.74 | 107 | 10.41 | 104 | 80-120 | 3 | 0-20 | |
| 1,2-Dichloroethane | ND | 10.00 | 10.35 | 103 | 10.23 | 102 | 80-120 | 1 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | N/A |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8015B (M) |

Project: ExxonMobil 70234 / 022476

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-12-436-8,001** | **Aqueous** | **GC 4** | **11/03/12** | **11/03/12** | **121103B01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| TPH as Gasoline | 2000 | 2021 | 101 | 2049 | 102 | 78-120 | 1 | 0-10 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | N/A |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8021B |

Project: ExxonMobil 70234 / 022476

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-12-667-1,602** | **Aqueous** | **GC 8** | **11/03/12** | **11/03/12** | **121103B01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Benzene | 100.0 | 97.18 | 97 | 103.5 | 104 | 70-118 | 6 | 0-9 | |
| Toluene | 100.0 | 93.83 | 94 | 95.62 | 96 | 66-114 | 2 | 0-9 | |
| Ethylbenzene | 100.0 | 90.80 | 91 | 92.85 | 93 | 72-114 | 2 | 0-9 | |
| Xylenes (total) | 300.0 | 271.3 | 90 | 277.8 | 93 | 74-116 | 2 | 0-9 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | N/A |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project: ExxonMobil 70234 / 022476

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-12-884-958** | **Aqueous** | **GC/MS L** | **11/07/12** | **11/08/12** | **121107L02** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | 10.00 | 9.486 | 95 | 9.579 | 96 | 69-123 | 1 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | 50.00 | 48.20 | 96 | 51.45 | 103 | 63-123 | 7 | 0-20 | |
| Diisopropyl Ether (DIPE) | 10.00 | 10.19 | 102 | 10.23 | 102 | 59-137 | 0 | 0-37 | |
| Ethyl-t-Butyl Ether (ETBE) | 10.00 | 10.02 | 100 | 10.21 | 102 | 69-123 | 2 | 0-20 | |
| Tert-Amyl-Methyl Ether (TAME) | 10.00 | 9.930 | 99 | 10.12 | 101 | 70-120 | 2 | 0-20 | |
| 1,2-Dibromoethane | 10.00 | 10.31 | 103 | 10.25 | 103 | 79-121 | 1 | 0-20 | |
| 1,2-Dichloroethane | 10.00 | 9.827 | 98 | 10.03 | 100 | 80-120 | 2 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Quality Control - LCS/LCS Duplicate

ACCREDITED IN ACCORDANCE WITH nelac

| | | | |
|---|---|---|---|
| Cardno ERI | | Date Received: | N/A |
| 601 North McDowell Blvd. | | Work Order No: | 12-11-0104 |
| Petaluma, CA 94954-2312 | | Preparation: | EPA 5030C |
| | | Method: | EPA 8260B |

Project: ExxonMobil 70234 / 022476

| Quality Control Sample ID | Matrix | Instrument | Date Prepared | Date Analyzed | LCS/LCSD Batch Number |
|---|---|---|---|---|---|
| **099-12-884-959** | **Aqueous** | **GC/MS L** | **11/09/12** | **11/09/12** | **121109L01** |

| Parameter | SPIKE ADDED | LCS CONC | LCS %REC | LCSD CONC | LCSD %REC | %REC CL | RPD | RPD CL | Qualifiers |
|---|---|---|---|---|---|---|---|---|---|
| Methyl-t-Butyl Ether (MTBE) | 10.00 | 9.402 | 94 | 9.716 | 97 | 69-123 | 3 | 0-20 | |
| Tert-Butyl Alcohol (TBA) | 50.00 | 47.91 | 96 | 47.73 | 95 | 63-123 | 0 | 0-20 | |
| Diisopropyl Ether (DIPE) | 10.00 | 10.47 | 105 | 10.49 | 105 | 59-137 | 0 | 0-37 | |
| Ethyl-t-Butyl Ether (ETBE) | 10.00 | 10.20 | 102 | 10.21 | 102 | 69-123 | 0 | 0-20 | |
| Tert-Amyl-Methyl Ether (TAME) | 10.00 | 9.738 | 97 | 10.18 | 102 | 70-120 | 4 | 0-20 | |
| 1,2-Dibromoethane | 10.00 | 10.11 | 101 | 10.10 | 101 | 79-121 | 0 | 0-20 | |
| 1,2-Dichloroethane | 10.00 | 9.755 | 98 | 9.891 | 99 | 80-120 | 1 | 0-20 | |

RPD - Relative Percent Difference , CL - Control Limit

Calscience Environmental Laboratories, Inc.

## Glossary of Terms and Qualifiers

Work Order Number: 12-11-0104

| Qualifier | Definition |
|---|---|
| AZ | Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification. |
| B | Analyte was present in the associated method blank. |
| BA | The MS/MSD RPD was out of control due to matrix interference. The LCS/LCSD RPD was in control and, therefore, the sample data was reported without further clarification. |
| BB | Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater. |
| BU | Sample analyzed after holding time expired. |
| DF | Reporting limits elevated due to matrix interferences. |
| E | Concentration exceeds the calibration range. |
| ET | Sample was extracted past end of recommended max. holding time. |
| GE | The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to a matrix interference effect. The associated batch LCS/LCSD was in control and, hence, the associated sample data was reported without further clarification. |
| HD | Chromat. profile inconsistent with pattern(s) of ref. fuel stnds. |
| HO | High concentration matrix spike recovery out of limits |
| HT | Analytical value calculated using results from associated tests. |
| HX | Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to matrix interference. The associated LCS and/or LCSD was in control and, therefore, the sample data was reported without further clarification. |
| IL | Relative percent difference out of control. |
| J | Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated. |
| LD | Analyte presence was not confirmed by second column or GC/MS analysis. |
| LP | The LCS and/or LCSD recoveries for this analyte were above the upper control limit. The associated sample was non-detected. Therefore, the sample data was reported without further clarification. |
| LQ | LCS recovery above method control limits. |
| LR | LCS recovery below method control limits. |
| ND | Parameter not detected at the indicated reporting limit. |
| QO | Compound did not meet method-described identification guidelines. Identification was based on additional GC/MS characteristics. |
| RU | LCS/LCSD Recovery Percentage is within Marginal Exceedance (ME) Control Limit range. |
| SG | A silica gel cleanup procedure was performed. |
| SN | See applicable analysis comment. |
| U | Undetected at detection limit. |

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
MPN - Most Probable Number

## Sandy Tat

**From:** David R. Daniels [david.daniels@cardno.com]
**Sent:** Monday, November 05, 2012 10:51 AM
**To:** Sandy Tat; Judy Hutton
**Subject:** RE: ExxonMobil 70234 / 022476 (12-11-0104)

Sandy,

Yes, I meant CEL#6, not MW6. Just to clarify,

CEL#4 should be W-31-MW6.
CEL#6 should be W-32-MW8.

Thank You,

David Daniels
SR STAFF GEOLOGIST
CARDNO ERI

Phone (+1) 707-766-2000 Fax (+1) 707-789-0414 Direct (+1) 707-766-2024 Mobile (+1) 707-338-6997
Address 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA
Email david.daniels@cardno.com Web www.cardno.com www.cardnoeri.com

---

**From:** Sandy Tat [mailto:stat@calscience.com]
**Sent:** Monday, November 05, 2012 10:46 AM
**To:** David R. Daniels; Judy Hutton
**Subject:** FW: ExxonMobil 70234 / 022476 (12-11-0104)

Hi David,

Thank you for your revised COC, but did you meant sample MW8 (Cel# 6) instead of sample MW6 (cel# 4)? Please advise. Thanks!

Sandy Tat
Project Manager Assistant
(714) 895-5494

*The difference is service*

---

**From:** David R. Daniels [mailto:david.daniels@cardno.com]
**Sent:** Monday, November 05, 2012 10:28 AM
**To:** Sandy Tat; Judy Hutton
**Subject:** RE: ExxonMobil 70234 / 022476 (12-11-0104)

I attached a revised COC. I also noticed an error on one of the sample labels. MW6 (CEL#4) should be W-32-MW6, not W-22-MW6 as shown on the label.

Thank You,

David Daniels
SR STAFF GEOLOGIST
CARDNO ERI

Phone (+1) 707-766-2000 Fax (+1) 707-789-0414 Direct (+1) 707-766-2024 Mobile (+1) 707-338-6997
Address 601 North McDowell Blvd., Petaluma, CA 94954-2312 USA
Email david.daniels@cardno.com Web www.cardno.com www.cardnoeri.com

---

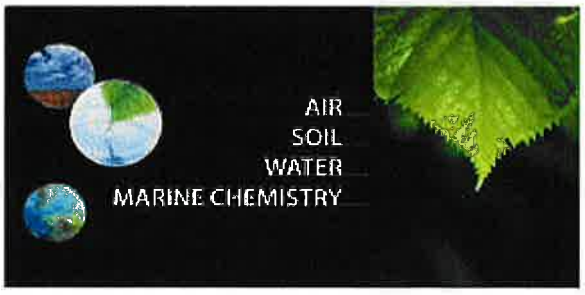
**From:** Sandy Tat [mailto:stat@calscience.com]
**Sent:** Monday, November 05, 2012 10:12 AM
**To:** David R. Daniels; Judy Hutton
**Subject:** ExxonMobil 70234 / 022476 (12-11-0104)
**Importance:** High

Hi David / Judy,

Please fill in the rest of the sample IDs for this work order. Thanks!

Sandy Tat
Project Manager Assistant

Calscience
7440 Lincoln Way
Garden Grove, CA 92841-1427
(714) 895-5494
www.calscience.com



# Calscience Environmental Laboratories, Inc.

7440 Lincoln Way
Garden Grove, CA 92841

Phone: 714-895-5494
Fax: 714-894-7501

**ExxonMobil**
**12-11-0104**

**Consultant Name:** Cardno ERI | **Account #:** NA | **PO#:** 4512312717
**Consultant Address:** 601 N. McDowell Boulevard | **Invoice To:** Jennifer Sedlachek
**Consultant City/State/Zip:** Petaluma, California, 94954 | **Report To:** Janice Jacobson
**ExxonMobil Project Mgr:** Jennifer Sedlachek | **Project Name:** 02 2476 13X
**Consultant Project Mgr:** Janice Jacobson | **ExxonMobil Site #:** 70234 | **ajor Project (AFE #**
**Consultant Telephone Number:** 707-766-2000 | **Fax No.:** 707-789-0414 | **Site Address:** 3450 35th Avenue
**Sampler Name (Print):** Steve Church | **Site City, State, Zip:** Oakland, California
**Sampler Signature:** | **Oversight Agency:** Alameda County Environmental Health Department

| | Sample ID | Field Point Name | Date Sampled | Time Sampled | No. of Containers Shipped | Grab | Composite | Field Filtered | Preservative: Methanol | Sodium Bisulfate | HCl | NaOH | $H_2SO_4$ Plastic | $H_2SO_4$ Glass | $HNO_3$ | Ice | Other | None | Matrix: Groundwater | Wastewater | Drinking Water | Sludge | Soil | Air | Other (specify): Distilled Water | Analyze For: TPHg 8015B | BTEX 8021B | OXYGENATES 8260B | | | | | RUSH TAT (Pre-Schedule) | 5-day TAT | Standard 10-day TAT | Due Date of Report |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | QCBB | QCBB | 10-31-12 | 1315 | 2V | | | | | | x | | | | | | | | | | | | | | x | H | O | L | D | | | | | | X | |
| 2 | W-36 -MW4 | MW4 | 10-31 | 1030 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | X | |
| 3 | W-34 -MW5 | MW5 | 10-31 | 1130 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | X | |
| 4 | W-31 -MW6 | MW6 | 10-31 | 1155 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | X | |
| 5 | W-33 -MW7 | MW7 | 10-31 | 1100 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | X | |
| 6 | W-32 -MW8 | MW8 | 10-31 | 1000 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | X | |
| 7 | W-34 -MW9 | MW9 | 10-31 | 930 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | X | |
| | ~~W- -RW1~~ | RW1 | | | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | ~~X~~ | |

**Comments/Special Instructions:**
PLEASE E-MAIL ALL PDF FILES TO
norcallabs@eri-us.com; ERI-EIMLABS@eri-us.com
GLOBAL ID # T06019757161

7 CA Oxys= MTBE, ETBE, TAME, TBA, EDB, 1,2-DCA, DIPE.
Set TBA detection limit at or below 12 ug/L

**Laboratory Comments:**
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N
QC Deliverables (please circle one)
Level 2
Level 3
Level 4
Site Specific - if yes, please attach pre-schedule w/ TestAmerica Project Manager or attach specific instructions

| Relinquished by: | | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|---|
| | | 11/1/12 | 1220 | Tom O'Malley CCE | 11/1/12 | 1220 |
| Relinquished by: | | Date | Time | Received by (Lab personnel): | Date | Time |
| Tom O'Malley TO | GSO | 11/1/12 | 1730 | [illegible] | 11/2/12 | 10:15 |

# Calscience Environmental Laboratories, Inc.

7440 Lincoln Way
Garden Grove, CA 92841

Phone: 714-895-5494
Fax: 714-894-7501

**ExxonMobil**
**12-11-0104**

**Consultant Name:** Cardno ERI | **Account #:** NA | **PO#:** 4512312717
**Consultant Address:** 601 N. McDowell Boulevard | **Invoice To:** Jennifer Sedlachek
**Consultant City/State/Zip:** Petaluma, California, 94954 | **Report To:** Janice Jacobson
**ExxonMobil Project Mgr:** Jennifer Sedlachek | **Project Name:** 02 2476 13X
**Consultant Project Mgr:** Janice Jacobson | **ExxonMobil Site #:** 70234 | ajor Project (AFE #
**Consultant Telephone Number:** 707-766-2000 | **Fax No.:** 707-789-0414 | **Site Address:** 3450 35th Avenue
**Sampler Name (Print):** Steve Church | **Site City, State, Zip:** Oakland, California
**Sampler Signature:** | **Oversight Agency:** Alameda County Environmental Health Department

| Sample ID | Field Point Name | Date Sampled | Time Sampled | No. of Containers Shipped | Grab | Composite | Field Filtered | Preservative: Methanol | Sodium Bisulfate | HCl | NaOH | $H_2SO_4$ Plastic | $H_2SO_4$ Glass | $HNO_3$ | Ice | Other | None | Matrix: Groundwater | Wastewater | Drinking Water | Sludge | Soil | Air | Other (specify): Distilled Water | Analyze For: TPHg 8015B | BTEX 8021B | OXYGENATES 8260B | | | | | | RUSH TAT (Pre-Schedule) | 5-day TAT | Standard 10-day TAT | Due Date of Report |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| QCBB | QCBB | 10-31-12 | 1315 | 2V | | | | | | x | | | | | | | | | | | | | | x | H | O | L | D | | | | | | | X | |
| W-36-MW4 | MW4 | 10-31 | 1030 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | | | X | |
| W- -MW5 | MW5 | 10-31 | 1130 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | | | X | |
| W- -MW6 | MW6 | 10-31 | 1155 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | | | X | |
| W- -MW7 | MW7 | 10-31 | 1100 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | | | X | |
| W- -MW8 | MW8 | 10-31 | 1000 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | | | X | |
| W- -MW9 | MW9 | 10-31 | 930 | 6V | | | | | | x | | | | | | | | x | | | | | | | x | x | x | | | | | | | | | X | |
| ~~W- -RW1~~ | ~~RW1~~ | | | ~~6V~~ | | | | | | ~~x~~ | | | | | | | | ~~x~~ | | | | | | | ~~x~~ | ~~x~~ | ~~x~~ | | | | | | | | | ~~X~~ | |

**Comments/Special Instructions:**
PLEASE E-MAIL ALL PDF FILES TO
norcallabs@eri-us.com; ERI-EIMLABS@eri-us.com
**GLOBAL ID # T06019757161**

7 CA Oxys= MTBE, ETBE, TAME, TBA, EDB, 1,2-DCA, DIPE.
Set TBA detection limit at or below 12 ug/L

**Laboratory Comments:**
Temperature Upon Receipt:
Sample Containers Intact? Y N
VOCs Free of Headspace? Y N
QC Deliverables (please circle one)
Level 2
Level 3
Level 4
Site Specific - if yes, please attach pre-schedule w/ TestAmerica Project Manager or attach specific instructions

| Relinquished by: | | Date | Time | Received by: | Date | Time |
|---|---|---|---|---|---|---|
| | | 11/1/12 | 1220 | Tom O'Malley CEC | 11/1/12 | 1220 |
| Relinquished by: Tom O'Malley TOMALLEY GSO | | 11/1/12 | 1730 | Received by (Lab personnel): | 11/2/12 | 10:15 |

0104

GSO

WebShip > > > > >

800-322-5555 www.gso.com

*Ship From:*
ALAN KEMP
CAL SCIENCE- CONCORD
5063 COMMERCIAL CIRCLE #H
CONCORD, CA 94520

*Ship To:*
SAMPLE RECEIVING
CEL
7440 LINCOLN WAY
GARDEN GROVE, CA 92841

COD:
$0.00

Reference:
CARDNO ERI

Delivery Instructions:

Signature Type:
SIGNATURE REQUIRED

Tracking #: 520350340

NPS

ORC

A

GARDEN GROVE

D92841A

6167582

Print Date : 11/01/12 16:26 PM

Package 3 of 4

Send Label To Printer | ☑ Print All | Edit Shipment | Finish

## LABEL INSTRUCTIONS:

**Do not copy or reprint this label for additional shipments - each package must have a unique barcode.**

STEP 1 - Use the "Send Label to Printer" button on this page to print the shipping label on a laser or inkjet printer.

STEP 2 - Fold this page in half.

STEP 3 - Securely attach this label to your package, do not cover the barcode.

STEP 4 - Request an on-call pickup for your package, if you do not have scheduled daily pickup service or Drop-off your package at the nearest GSO drop box. Locate nearest GSO dropbox locations using this link.

## ADDITIONAL OPTIONS:

Send Label Via Email | Create Return Label

## TERMS AND CONDITIONS:

By giving us your shipment to deliver, you agree to all the service terms and conditions described in this section.
Our liability for loss or damage to any package is limited to your actual damages or $100 whichever is less, unless you pay for and declare a higher authorized value. If you declare a higher value and pay the additional charge, our liability will be the lesser of your declared value or the actual value of your loss or damage. In any event, we will not be liable for any damage, whether direct, incidental, special or consequential, in excess of the declared value of a shipment whether or not we had knowledge that such damage might be incurred including but not limited to loss of income or profit. We will not be liable for your acts or omissions, including but not limited to improper or insufficient packaging, securing, marking or addressing. Also, we will not be liable if you or the recipient violates any of the terms of our agreement. We will not be liable for loss, damage or delay caused by events we cannot control, including but not limited to acts of God, perils of the air, weather conditions, act of public enemies, war, strikes, or civil commotion. The highest declared value for our GSO Priority Letter or GSO Priority Package is $500. For other shipments the highest declared value is $10,000 unless your package contains items of "extraordinary value", in which case the highest declared value we allow is $500. Items of "extraordinary value" include, but or not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-11-0104

# SAMPLE RECEIPT FORM

Cooler 1 of 1

CLIENT: CARDNO ERI DATE: 11/02/12

**TEMPERATURE:** Thermometer ID: SC4 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 1.7 °C - 0.3 °C (CF) = 1.4 °C ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____).

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling.

☐ **Received at ambient temperature, placed on ice for transport by Courier.**

**Ambient Temperature:** ☐ Air ☐ Filter Initial: JR

**CUSTODY SEALS INTACT:**

| | | | | | |
|---|---|---|---|---|---|
| ☑ Cooler | ☐ _____ | ☐ No (Not Intact) | ☐ Not Present | ☐ N/A | Initial: JR |
| ☐ Sample | ☐ _____ | ☐ No (Not Intact) | ☑ Not Present | | Initial: TS |

| **SAMPLE CONDITION:** | Yes | No | N/A |
|---|---|---|---|
| Chain-Of-Custody (COC) document(s) received with samples | ☑ | ☐ | ☐ |
| COC document(s) received complete | ☑ | ☐ | ☐ |
| ☐ Collection date/time, matrix, and/or # of containers logged in based on sample labels. | | | |
| ☐ No analysis requested. ☐ Not relinquished. ☐ No date/time relinquished. | | | |
| Sampler's name indicated on COC | ☑ | ☐ | ☐ |
| Sample container label(s) consistent with COC | ☐ TS 11/02/12 | ☑ | ☐ |
| Sample container(s) intact and good condition | ☑ | ☐ | ☐ |
| Proper containers and sufficient volume for analyses requested | ☑ | ☐ | ☐ |
| Analyses received within holding time | ☑ | ☐ | ☐ |
| pH / Res. Chlorine / Diss. Sulfide / Diss. Oxygen received within 24 hours | ☐ | ☐ | ☑ |
| Proper preservation noted on COC or sample container | ☑ | ☐ | ☐ |
| ☐ Unpreserved vials received for Volatiles analysis | | | |
| Volatile analysis container(s) free of headspace | ☑ | ☐ | ☐ |
| Tedlar bag(s) free of condensation | ☐ | ☐ | ☑ |

**CONTAINER TYPE:**

**Solid:** ☐4ozCGJ ☐8ozCGJ ☐16ozCGJ ☐Sleeve (_____) ☐EnCores® ☐TerraCores® ☐_____

**Water:** ☐VOA ☑VOAh ☐VOA**na$_2$** ☐125AGB ☐125AGB**h** ☐125AGB**p** ☐1AGB ☐1AGB**na$_2$** ☐1AGB**s** ☐500AGB ☐500AGJ ☐500AGJ**s** ☐250AGB ☐250CGB ☐250CGB**s** ☐1PB ☐1PB**na** ☐500PB ☐250PB ☐250PB**n** ☐125PB ☐125PB**znna** ☐100PJ ☐100PJ**na$_2$** ☐_____ ☐_____ ☐_____

**Air:** ☐Tedlar® ☐Canister **Other:** ☐_____ **Trip Blank Lot#:**_____ **Labeled/Checked by:** TS

**Container:** C: Clear A: Amber P: Plastic G: Glass J: Jar B: Bottle Z: Ziploc/Resealable Bag E: Envelope **Reviewed by:** MZC

**Preservative:** h: HCL n: $HNO_3$ na$_2$:$Na_2S_2O_3$ na: NaOH p: $H_3PO_4$ s: $H_2SO_4$ u: Ultra-pure znna: $ZnAc_2$+NaOH f: Filtered **Scanned by:**

Calscience Environmental Laboratories, Inc.

WORK ORDER #: 12-11-0104

# SAMPLE ANOMALY FORM

## SAMPLES - CONTAINERS & LABELS:

- ☐ **Sample(s) NOT RECEIVED but listed on COC**
- ☐ **Sample(s) received but NOT LISTED on COC**
- ☐ **Holding time expired** – list sample ID(s) and test
- ☐ **Insufficient quantities for analysis** – list test
- ☐ **Improper container(s) used** – list test
- ☐ **Improper preservative used** – list test
- ☐ **No preservative noted on COC or label** – list test & notify lab
- ☐ **Sample labels illegible** – note test/container type
- ☑ **Sample label(s) do not match COC** – Note in comments
  - ☑ **Sample ID**
  - ☐ **Date and/or Time Collected**
  - ☐ **Project Information**
  - ☐ **# of Container(s)**
  - ☐ **Analysis**
- ☐ **Sample container(s) compromised** – Note in comments
  - ☐ **Water present in sample container**
  - ☐ **Broken**
- ☐ **Sample container(s) not labeled**
- ☐ **Air sample container(s) compromised** – Note in comments
  - ☐ **Flat**
  - ☐ **Very low in volume**
  - ☐ **Leaking (Not transferred - duplicate bag submitted)**
  - ☐ **Leaking (transferred into Calscience Tedlar® Bag*)**
  - ☐ **Leaking (transferred into Client's Tedlar® Bag*)**
- ☐ **Other:** _____

**Comments:**

Sample ID per label is;
(3) W-34-MW5
(4) W-31-MW6
(5) W-33-MW7
(6) W-22-MW8
(7) W-34-MW9
*Date and Time Match COC*

## HEADSPACE – Containers with Bubble > 6mm or ¼ inch:

| Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Vials Received | Sample # | Container ID(s) | # of Cont. received | Analysis |
|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |
| | | | | | | | | | |

**Comments:** _____

*Transferred at Client's request.

Initial / Date: TS 11/12/12

# APPENDIX D

# WASTE DISPOSAL DOCUMENTATION

# NON-HAZARDOUS WASTE MANIFEST

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

**NON-HAZARDOUS WASTE MANIFEST**

1. Generator's US EPA ID No.

Manifest Document No. ERI 2476

2. Page 1 of 1

3. Generator's Name and Mailing Address
ETM# 70234
3450 35TH AVE
OAKLAND CA

CARONO ERI

4. Generator's Phone ( )

5. Transporter 1 Company Name
CARONO ERI

6. US EPA ID Number

A. State Transporter's ID

B. Transporter 1 Phone

7. Transporter 2 Company Name

8. US EPA ID Number

C. State Transporter's ID

D. Transporter 2 Phone

9. Designated Facility Name and Site Address
INSTRAT, INC.
1105 C AIRPORT RD.
RIO VISTA, CA 94571

10. US EPA ID Number

E. State Facility's ID

F. Facility's Phone (707) 374-9834

| 11. WASTE DESCRIPTION | 12. Containers No. | 12. Containers Type | 13. Total Quantity | 14. Unit Wt./Vol. |
|---|---|---|---|---|
| a. NON-HAZ PURGE WATER | 01 | POLY | 53 | GAL |
| b. | | | | |
| c. | | | | |
| d. | | | | |

G. Additional Descriptions for Materials Listed Above
CLEAR, NO ODOR/SOLID

H. Handling Codes for Wastes Listed Above

15. Special Handling Instructions and Additional Information

**16. GENERATOR'S CERTIFICATION:** I hereby certify that the contents of this shipment are fully and accurately described and are in all respects in proper condition for transport. The materials described on this manifest are not subject to federal hazardous waste regulations.

| Printed/Typed Name | Signature | Date Month | Day | Year |
|---|---|---|---|---|
| | | | | |

17. Transporter 1 Acknowledgement of Receipt of Materials

| Printed/Typed Name | Signature | Date Month | Day | Year |
|---|---|---|---|---|
| Steve Chun | | 11 | 6 | 12 |

18. Transporter 2 Acknowledgement of Receipt of Materials

| Printed/Typed Name | Signature | Date Month | Day | Year |
|---|---|---|---|---|
| | | | | |

19. Discrepancy Indication Space

20. Facility Owner or Operator; Certification of receipt of the waste materials covered by this manifest, except as noted in item 19.

| Printed/Typed Name | Signature | Date Month | Day | Year |
|---|---|---|---|---|
| MICHAEL WHITEHEAD | | 11 | 6 | 12 |

NON-HAZARDOUS WASTE — GENERATOR — TRANSPORTER — FACILITY



Rev. 3/95

# APPENDIX E

# FIELD DATA SHEETS

# Daily Field Report

Cardno ERI

Cardno ERI

Shaping the Future

Project ID #: 70234 | Cardno ERI Job #: 2476

Subject: QM | Date: 10-3-12

Equipment Used: Sub pump, Bailer | Sheet: 1

Name(s): S. Chard

Time Arrived On Site: | Time Departed Site: | Total Travel:

Onsite 700 H&S

OPEN 730-745

DTW 815-830

Purge 903-1139

Sample 930-1155

| | |
|---|---|
| Purge | 33 |
| Decon | 20 |
| Total | 53 |

Sampled MW9, 8, 7, 6, 5, 4

RW1 Unable to access car parked on

Offsite 1230

Out-Of-Scope Tasks:

*M/P/S ___ WELLS *M/S ___ WELLS *M/S LOW FLOW ___ WELLS

*MO ___ WELLS *O/P ___ WELLS *POTABLE ___ WELLS

*TOOK TWO AT ___

TOTAL PURGED GALLONS: ___

* ___ T/C SET UPS

# GROUNDWATER SAMPLING FIELD LOG

Client Name: Exxon/Mobile
Location: 70234
Field Crew: S. Church

Cardno ERI Job #: 2476
Field Cleaning Performed: _____
Analysis: _____

Date: 10-31-12 Page 1 of ____

Case Volume = (TD - DTW) x F where F =
0.163 for 2" inside-diameter well casing
0.652 for 4" inside-diamter well casing
1.457 for 6" inside-diamter well casing

| Well ID | Time | Case Volume | Purge Volume | Temp | Cond | pH | Post-Purge DTW | 80% Recharge | BB | 40mil | Amber | DO | ORP | Comments Well Box Condition |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MW9 | 903 | 1.29 | | | | | 33.97 | Y | | 6 | | | | |
| | 905 | 2 | 2 | 19.1 | 684 | 7.63 | 34 | | | 930 | | | | |
| | 907 | | 4 | 19.3 | 719 | 7.47 | | | | | | | | |
| | 909 | | 6 | 19.3 | 747 | 7.25 | | | | | | | | |
| MW8 | 932 | 1.34 | | | | | 31.66 | Y | | 6 | | | | |
| | 934 | 2 | 2 | 19.1 | 537 | 7.18 | 32 | | | 1000 | | | | |
| | 936 | | 4 | 19.2 | 589 | 7.08 | | | | | | | | |
| | 938 | | 6 | 19.1 | 613 | 7.24 | | | | | | | | |
| MW4 | 1007 | 1.56 | | | | | 35.88 | Y | | 6 | | | | |
| | 1009 | 2 | 2 | 20.0 | 525 | 7.19 | 36 | | | 1030 | | | | |
| | 1011 | | 4 | 20.1 | 560 | 7.13 | | | | | | | | |
| | 1013 | | 6 | 20.2 | 553 | 7.12 | | | | | | | | |
| MW7 | 1034 | 1.09 | | | | | 33.29 | Y | | 6 | | | | |
| | 1036 | 2 | 2 | 20.5 | 609 | 6.81 | 33 | | | 1100 | | | | |
| | 1038 | | 4 | 20.7 | 638 | 6.89 | | | | | | | | |
| | 1041 | | 6 | 20.4 | 627 | 6.97 | | | | | | | | |
| MW5 | 1105 | 0.94 | | | | | 34.34 | Y | | 6 | | | | |
| | 1106 | 1 | 1 | 19.2 | 781 | 6.63 | 34 | | | 1130 | | | | |
| | 1107 | | 2 | 19.4 | 812 | 6.68 | | | | | | | | |
| | 1108 | | 3 | 19.3 | 836 | 6.67 | | | | | | | | |
| MW6 | 1133 | 1.22 | | | | | 31.17 | Y | | 6 | | | | |
| | 1135 | 2 | 2 | 19.7 | 795 | 7.06 | 31 | | | 1155 | | | | |
| | 1137 | | 4 | 19.9 | 829 | 6.93 | | | | | | | | |
| | 1139 | | 6 | 20.0 | 881 | 6.88 | | | | | | | | |
| RW1 | | | | | | | | | | | | | | |
| | | | | | | | Unaccessable car parkedon | | | | | | | |
| | | | | | | | | | | | | | | |
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# ERI Groundwater M+S
## Depth To Water

Case Volume= H($r^2$x0.163)

H=Height of Water Column in Feet
r=Radius of well casing in inches

Common conversion factors:
2"=0.163, 4"=0.652, 6"=1.457

| Project | Location | Date | Name |
|---|---|---|---|
| 2476 | 702341 | 10-31-12 | S. Charc/ |

| WELL ID | WELL DIAMETER | ODOR? SHEEN? | TOTAL DEPTH | Pre-Purge DTW | Depth To PRODUCT | PRODUCT THICKNESS | COMMENTS |
|---|---|---|---|---|---|---|---|
| mw9 | 2 | | 40.58 | 32.66 | | | H20 |
| mw8 | 2 | | 39.63 | 31.35 | | | |
| mw4 | 2 | | 44.73 | 35.14 | | | |
| mw7 | 2 | | 39.60 | 32.86 | | | H20 |
| mw5 | 2 | | 39.74 | 33.94 | | | H20 |
| mw6 | 2 | | 38.25 | 30.74 | | | |
| RW1 | 4 | | 40.10 | | | | unaccessable |
| | | | | | | | |
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# WATER SAMPLING SITE STATUS

Date: 10-31-12

Inspected by: S. Charel

ERI Job Number: 2476 Station No.: 70234 Site Address: 3450 35th Ave Oakland

| Well ID | Well Head Screws | Rubber Gasket | Well Cap Locking | Lock on Well Cap | Concrete Well Seal | Well Head PVC | Water in Well Vault | Tabs | Well Cover | Fence/Gate Condition | # Drums | Drum Contents | Building Condition | Site Appearance | Comments / Well Covers |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | N/R/ok | N/R/ok | N/R/ok | N/R/ok | N/R/ok | N/R/ok | Y / N | N/R/ok | N/R/ok | N/R/ok | | s/w/e | g/v/o | N/R/ok | |
| mw9 | ok | ok | ok | ok | ok | ok | Y | ok | ok | ok | | | g | | |
| mw8 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | N | ↓ | ↓ | ↓ | | | | | |
| mw4 | | | | | | | N | | | | | | | | |
| mw7 | | | | | | | Y | | | | | | | | |
| mw5 | | | | | | | Y | | | | | | | | |
| mw6 | | | | | | | N | | | | | | | | |
| RW1 | | | | | | | | | | | | | | | unable to open RW1 under car |

N = Not repairable in time available-see comments.
R = Repaired-see comments
ok = No action needed.

Y = Yes.
N = No.

s = Soil.
w = Water.
e = Empty.

g = Graffitti on walls.
v = Vagrants (or evidence of).
o = Open (not secured).