

**ExxonMobil**  
**Environmental Services Company**  
4096 Piedmont Avenue #194  
Oakland, California 94611  
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510 547 8706 Facsimile

**Jennifer C. Sedlachek**  
Project Manager

**RECEIVED**

**8:59 am, Nov 28, 2011**

Alameda County  
Environmental Health

November 18, 2011



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

**RE: Former Exxon RAS #79374/990 San Pablo Avenue, Albany, California.**

Dear Ms. Jakub:

Attached for your review and comment is a copy of the letter report entitled ***Groundwater Monitoring Report, Fourth Quarter 2011***, dated November 18, 2011, for the above-referenced site. The report was prepared by Cardno ERI of Petaluma, California, and details activities pertaining to 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,

A handwritten signature in black ink, appearing to read "J. Sedlachek".

Jennifer C. Sedlachek  
Project Manager

Attachment: Cardno ERI's ***Groundwater Monitoring Report, Fourth Quarter 2011***, dated November 18, 2011

cc: w/ attachment  
Ms. Muriel T. Blank, Trustee, The Blank Family Trusts  
Reverend Deborah Blank, Trustee, The Blank Family Trusts  
Ms. Marcia Blank Kelly, The Blank Family Trusts

w/o attachment  
Ms. Paula Sime, Cardno ERI

Cardno ERI  
License A/C10-611383

November 18, 2011  
Cardno ERI 273513.Q114

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**SUBJECT**      **Groundwater Monitoring Report, Fourth Quarter 2011**  
 Former Exxon Service Station 79374  
 990 San Pablo Avenue, Albany, California

Alameda County RO#2974

## INTRODUCTION

At the request of ExxonMobil Environmental Services (EMES), on behalf of Exxon Mobil Corporation, Cardno ERI performed fourth quarter 2011 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 occupied by a retail outlet for paints and painting products.

## GROUNDWATER MONITORING AND SAMPLING SUMMARY

<b>Gauging and sampling date:</b>	10/13/11
<b>Wells gauged and sampled:</b>	MW1 through MW6
<b>Presence of NAPL:</b>	Not observed
<b>Laboratory:</b>	Calscience Environmental Laboratories, Inc. Garden Grove, California
<b>Analyses performed:</b>	EPA Method 8015B      TPHd, TPHg, TPHmo EPA Method 8260B      BTEX, MTBE, ETBE, TAME, TBA, DIPE, EDB, 1,2-DCA
<b>Waste disposal:</b>	57 gallons purge and decon water delivered to InStrat, Inc., of Rio Vista, California, on 10/18/11

## CONCLUSIONS

Concentrations of TPHd were reported in wells MW1 through MW6. Concentrations of TPHg were reported in wells MW2 through MW6. Concentrations of TPHmo were reported in wells MW4 and MW5. BTEX constituents were reported in wells MW3 through MW6. Concentrations of MTBE, TBA, ETBE, DIPE, TAME,

November 18, 2011

Cardno ERI 273513.Q114 Former Exxon Service Station 79374, Albany, California

EDB, and 1,2-DCA were not reported in samples collected from wells MW1 through MW6. The analytical results of this sampling event are consistent with historical data.

The groundwater flow direction during the third quarter was towards northwest. Groundwater elevation data from the site indicate that the groundwater flow direction at the site may be variable.

## RECOMMENDATIONS

Cardno ERI recommends semi-annual monitoring and sampling of wells MW1 through MW6 during the second and fourth quarters. Cardno ERI has monitored and sampled wells MW1 through MW6 on a quarterly basis for one year.

Cardno ERI recommends implementing the work proposed in the *Work Plan for Air Sparge and Soil Vapor Extraction Well Installation and Feasibility Testing*, dated July 5, 2011.

Cardno ERI recommends performing additional off-site assessment at the site.

## 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 Ms. Paula Sime, Cardno ERI's project manager for this site, at [paula.sime@cardno.com](mailto:paula.sime@cardno.com) or at (707) 766-2000 with any questions regarding this report.

Sincerely,

SCANNED  
IMAGE  
*Jennifer Lacy*

SCANNED  
IMAGE  
*David R. Daniels*

Jennifer L. Lacy  
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November 18, 2011  
Cardno ERI 273513.Q114 Former Exxon Service Station 79374, Albany, California

Enclosures:

Acronym List

Plate 1 Site Vicinity Map

Plate 2 Select Analytical Results

Plate 3 Groundwater Elevation Map

Table 1A Cumulative Groundwater Monitoring and Sampling Data

Table 1B Additional Cumulative Groundwater Monitoring and Sampling Data

Table 2 Well Construction Details

Appendix A Groundwater Sampling Protocol

Appendix B Field Notes

Appendix C Laboratory Analytical Report and Chain-of-Custody Record

Appendix D Waste Disposal Documentation

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

Ms. Muriel T. Blank, Trustee, The Blank Family Trusts, 1164 Solano Avenue, #406, Albany, California  
94706

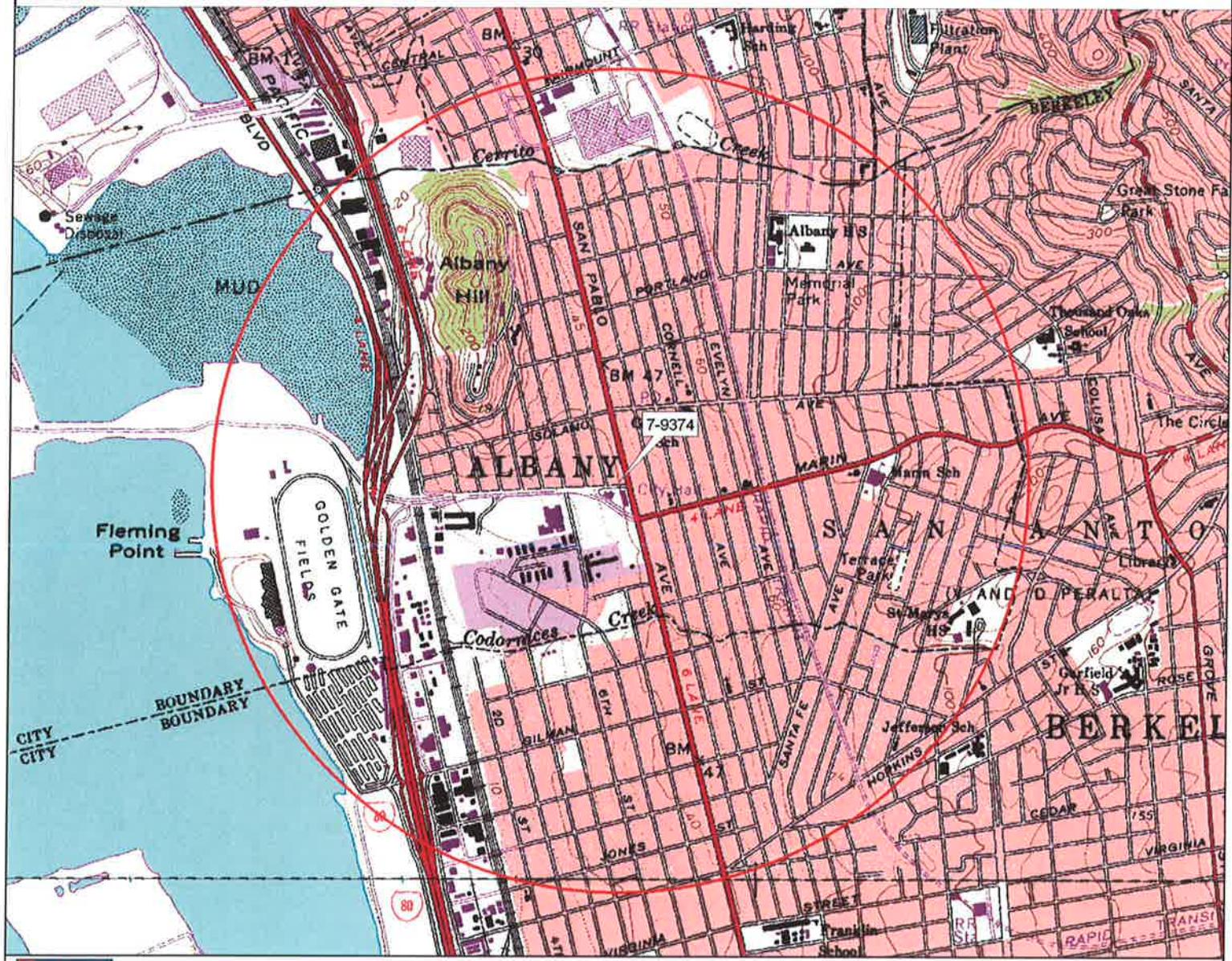
Reverend Deborah Blank, Trustee, The Blank Family Trust, 1563 Solano Avenue, #344, Berkeley,  
California 94707

Ms. Marcia Blank, Trustee, The Blank Family Trust, 641 SW Morningside Road, Topeka, Kansas 66606

November 18, 2011  
 Cardno ERI 273513.Q114 Former Exxon Service Station 79374, Albany, California

## ACRONYM LIST

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



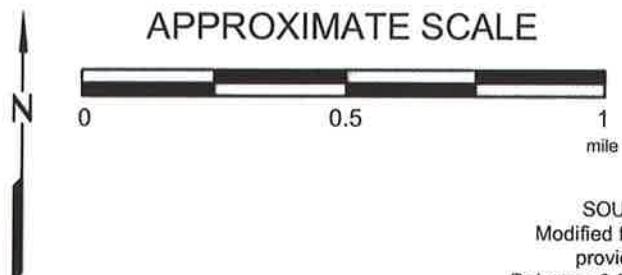
FN 2735 TOPO

### EXPLANATION



1/2-mile radius circle

### APPROXIMATE SCALE



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

Analyte Concentrations in ug/L  
Sampled October 13, 2011

Total Petroleum Hydrocarbons  
as gasoline

Benzene

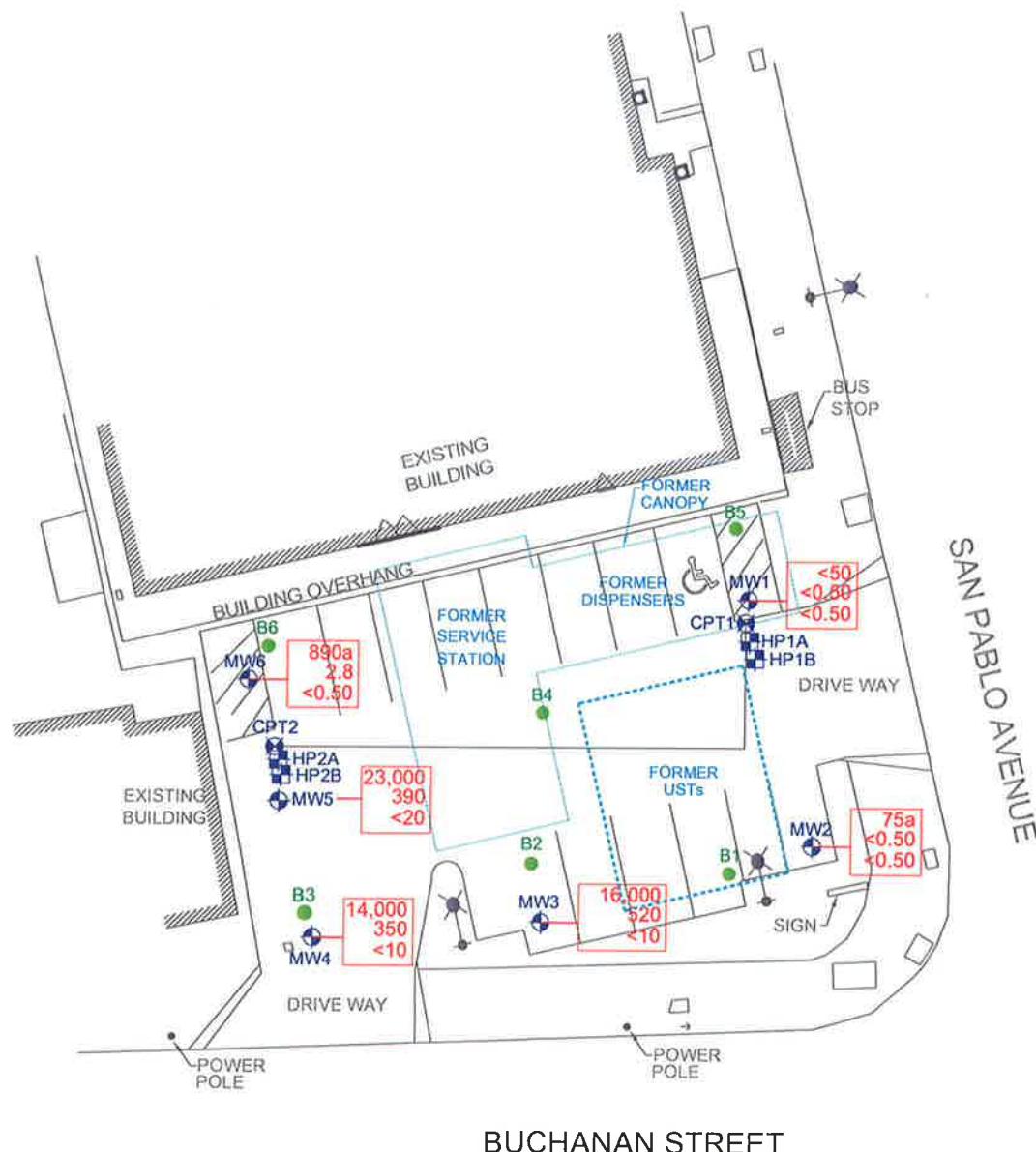
Methyl Tertiary Butyl Ether

< Less Than the Stated Laboratory  
Reporting Limit

ug/L Micrograms per Liter

a Sample chromatographic pattern does  
not match that of the specified standard.

N



APPROXIMATE SCALE



FN 2735 11 4QTR QM

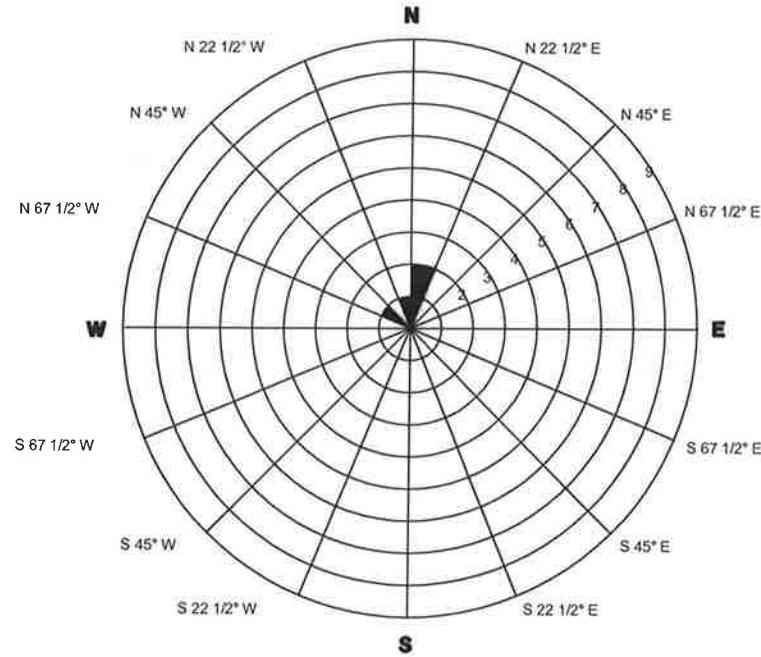


**SELECT ANALYTICAL RESULTS**  
**October 13, 2011**  
FORMER EXXON SERVICE STATION 79374  
990 San Pablo Avenue  
Albany, California

EXPLANATION  
MW6 Groundwater Monitoring Well  
B6 Soil Boring

HP2B Hydropunch Boring  
CPT2 Cone Penetration Test Boring

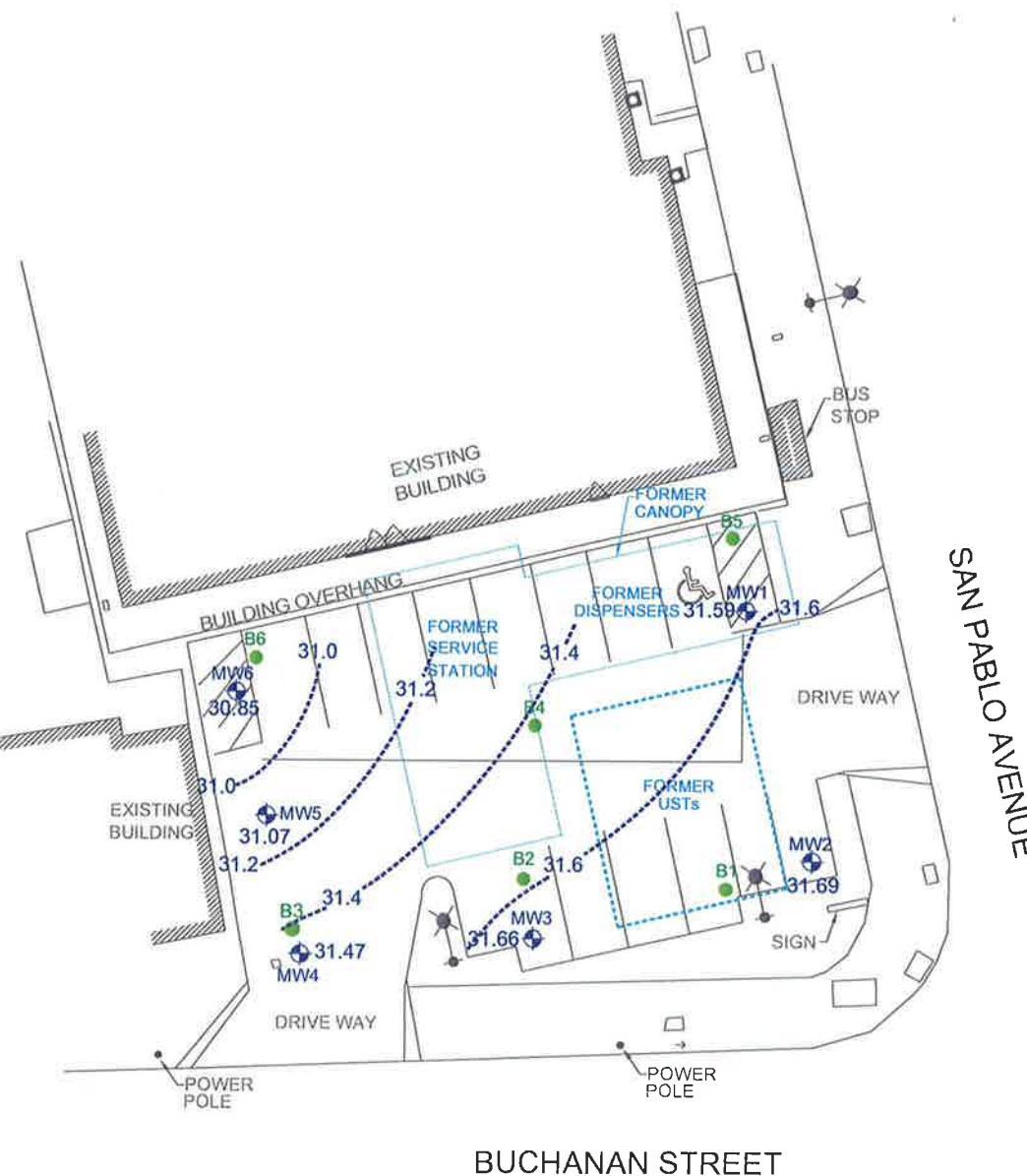
**PROJECT NO.**  
2735  
**PLATE**  
2



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.

4 Data Point Shown  
Shown for 10/13/11

### GROUNDWATER FLOW DIRECTION ROSE DIAGRAM



### APPROXIMATE SCALE



FN 2735 11 4QTR QM

### EXPLANATION

- MW6 Groundwater Monitoring Well
- 30.85 Groundwater elevation in feet; datum is mean sea level
- B6 Soil Boring

31.6-----Line of Equal Groundwater Elevation;  
datum is mean sea level

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	TOC Elev. (feet)	DTW (feet)	GW Elev. (feet)	NAPL (feet)	O&G (µg/L)	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
<b>Monitoring Well Samples</b>															
MW1	11/04/10	—	Well installed.												
MW1	12/01/10	—	41.45	Well surveyed.											
MW1	12/16/10	—	41.45	9.18	32.27	No	—	<250	71a	54	<0.50	1.4	0.65	0.58	1.6
MW1	01/31/11	—	41.45	8.78	32.67	No	—	<250	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW1	04/07/11	—	41.45	8.45	33.00	No	—	<250	65a	160a	<0.50	2.9	0.92	<0.50	1.7
MW1	07/18/11	—	41.45	9.49	31.96	No	—	<250	<50	63a	<0.50	<0.50	<0.50	<0.50	<0.50
<b>MW1</b>	<b>10/13/11</b>	<b>—</b>	<b>41.45</b>	<b>9.86</b>	<b>31.59</b>	<b>No</b>	<b>—</b>	<b>&lt;250</b>	<b>54</b>	<b>&lt;50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>
MW2	11/04/10	—	Well installed.												
MW2	12/01/10	—	41.25	Well surveyed.											
MW2	12/16/10	—	41.25	8.11	33.14	No	—	<250	110a	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	01/31/11	—	41.25	9.29	31.96	No	—	<250	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
MW2	04/07/11	—	41.25	8.21	33.04	No	—	<250	<50	<50	0.51	<0.50	<0.50	<0.50	<0.50
MW2	07/18/11	—	41.25	9.52	31.73	No	—	<250	<50	54a	<0.50	<0.50	<0.50	<0.50	<0.50
<b>MW2</b>	<b>10/13/11</b>	<b>—</b>	<b>41.25</b>	<b>9.56</b>	<b>31.69</b>	<b>No</b>	<b>—</b>	<b>&lt;250</b>	<b>98</b>	<b>75a</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>
MW3	11/08/10	—	Well installed.												
MW3	12/01/10	—	40.42	Well surveyed.											
MW3	12/16/10	—	40.42	8.18	32.24	No	—	<250	2,900a	19,000	<12	350	130	940	290
MW3	01/31/11	—	40.42	7.64	32.78	No	—	390	2,800a	17,000a	<12	540	140	700	270
MW3	04/07/11	—	40.42	5.88	34.54	No	—	<250	2,700a	14,000	<10	600	150	780	230
MW3	07/18/11	—	40.42	8.31	32.11	No	—	<250	1,700a	19,000	<10	650	140	660	220
<b>MW3</b>	<b>10/13/11</b>	<b>—</b>	<b>40.42</b>	<b>8.76</b>	<b>31.66</b>	<b>No</b>	<b>—</b>	<b>&lt;250</b>	<b>1,900a</b>	<b>16,000</b>	<b>&lt;10</b>	<b>520</b>	<b>150</b>	<b>900</b>	<b>270</b>
MW4	11/05/10	—	Well installed.												
MW4	12/01/10	—	39.30	Well surveyed.											
MW4	12/16/10	—	39.30	6.10	33.20	No	—	<250	2,000a	9,900	<5.0	440	40	170	380
MW4	01/31/11	—	39.30	6.84	32.46	No	—	260	3,900a	13,000	<10	500	59	320	740
MW4	04/07/11	—	39.30	5.29	34.01	No	—	<250	1,900a	9,600	<10	530	59	250	340
MW4	07/18/11	—	39.30	7.36	31.94	No	—	<250	2,800a	14,000	<10	570	66	320	510
<b>MW4</b>	<b>10/13/11</b>	<b>—</b>	<b>39.30</b>	<b>7.83</b>	<b>31.47</b>	<b>No</b>	<b>—</b>	<b>320</b>	<b>7,200a</b>	<b>14,000</b>	<b>&lt;10</b>	<b>350</b>	<b>43</b>	<b>340</b>	<b>690</b>
MW5	11/11/10	—	Well installed.												
MW5	12/01/10	—	40.38	Well surveyed.											
MW5	12/16/10	—	40.38	7.69	32.69	No	—	<250	1,100a	6,200	<2.5	150	96	270	980
MW5	01/31/11	—	40.38	8.00	32.38	No	—	270	4,600a	15,000	<10	520	310	1,100	2,500
MW5	04/07/11	—	40.38	6.73	33.65	No	—	<250	610a	2,500	<2.5	61	32	180	390

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	TOC Elev. (feet)	DTW (feet)	GW Elev. (feet)	NAPL (feet)	O&G (µg/L)	TPHmo (µg/L)	TPHd (µg/L)	TPHg (µg/L)	MTBE (µg/L)	B (µg/L)	T (µg/L)	E (µg/L)	X (µg/L)
MW5	07/18/11	--	40.38	7.63	32.75	No	--	<250	2,000a	11,000	<2.5	340	160	990	1,800
MW5	10/13/11	--	40.38	9.31	31.07	No	--	660	7,600a	23,000	<20	390	160	1,200	3,100
MW6	11/03/10	--	Well installed.												
MW6	12/01/10	--	41.06	Well surveyed.											
MW6	12/16/10	--	41.06	8.55	32.51	No	--	<250	110a	1,700	<0.50	2.8	1.2	61	46
MW6	01/31/11	--	41.06	8.52	32.54	No	--	<250	800a	2,000a	<1.0	6.0	<1.0	30	24
MW6	04/07/11	--	41.06	7.78	33.28	No	--	<250	660a	2,000	<0.50	10	1.0	20	19
MW6	07/18/11	--	41.06	9.27	31.79	No	--	<250	350a	1,000a	<0.50	2.5	<0.50	3.8	3.5
MW6	10/13/11	--	41.06	10.21	30.85	No	--	<250	370a	890a	<0.50	2.8	<0.50	7.9	5.5
<b>Grab Groundwater Samples</b>															
B-1W	01/06/08	--	--	--	--	--	26r,s	<5,000	99,000o,n,r	76,000m,p,r	<50	<50	93	3,100	9,600
B-2W	01/06/08	--	--	--	--	--	--	310s	23,000o,r,s	77,000l,r,s	<50	1,500	300	2,000	6,800
B-3W	01/06/08	--	--	--	--	--	--	<250s	2,000o,s	6,200l,s	<10	170	32	740	250
B-4W	01/06/08	--	--	--	--	--	--	<250s	3,100o,s	7,700l,s	<10	360	<10	240	20
B-5W	01/06/08	--	--	--	--	--	--	<250s	120o,s	120q,s	<0.5	<0.5	<0.5	<0.5	<0.5
B-6W	01/06/08	--	--	--	--	--	--	<250s	830o,s	1,700l,s	<2.5	5.2	<2.5	100	8.6
DR-W	01/06/08	--	--	--	--	--	--	<250	96o	730m,p	<0.5	<0.5	<0.5	6.9	14
W-27.5-HP1A	10/28/10	27.5	--	--	--	--	--	260	330a	63a	<0.50	<0.50	<0.50	<0.50	<0.50
W-36-HP1A	10/28/10	36	--	--	--	--	--	<250	220a	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-46.5-HP1A	10/28/10	46.5	--	--	--	--	--	<420	<83	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-59-HP1B	10/27/10	59	--	--	--	--	--	<250	130	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-27.5-HP2A	10/29/10	27.5	--	--	--	--	--	<250	100a	340	<0.50	1.7	2.1	20	46
W-52-HP2A	10/29/10	52	--	--	--	--	--	<250	<50	<50	<0.50	<0.50	<0.50	<0.50	<0.50
W-60.5-HP2B	10/27/10	60.5	--	--	--	--	--	<250	62	<50	<0.50	<0.50	<0.50	<0.50	<0.50

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Notes:

TOC	= Top of well casing elevation; datum is mean sea level.
DTW	= Depth to water.
GW Elev.	= Groundwater elevation; datum is mean sea level. If liquid-phase hydrocarbons present, elevation adjusted using TOC - [DTW - (PT x 0.76)].
NAPL	= Non-aqueous phase liquid.
O&G	= Oil and grease with silica gel clean-up analyzed using Standard Method 5520B/F.
TPHmo	= Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015 (modified).
TPHd	= Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015 (modified).
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015 (modified).
MTBE	= Methyl tertiary butyl ether analyzed using EPA Method 8260B.
BTEX	= Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
EDB	= 1,2-dibromoethane analyzed using EPA Method 8260B.
1,2-DCA	= 1,2-dichloroethane analyzed using EPA Method 8260B.
TAME	= Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	= Tertiary butyl alcohol analyzed using EPA Method 8260B.
ETBE	= Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
DIPE	= Di-isopropyl ether analyzed using EPA Method 8260B.
Add'l VOCs	= Additional volatile organic carbons analyzed using EPA Method 8260B.
Add'l SVOCs	= Additional semi-volatile organic carbons analyzed using EPA Method 8270C.
µg/L	= Micrograms per liter.
ND	= Not detected at or above laboratory reporting limits.
---	= Not measured/Not sampled/Not analyzed.
<	= Less than the stated laboratory reporting limit.
a	= Sample chromatographic pattern does not match that of the specified standard.
b	= n-butylbenzene.
c	= sec-butylbenzene.
d	= Isopropylbenzene.
e	= n-propylbenzene.
f	= 1,2,4-trimethylbenzene.
g	= 1,3,5-trimethylbenzene.
h	= Naphthalene.
i	= 1-butanone.
j	= 1,2-dibromo-3-chloropropane.
k	= 2-methylnaphthalene.
l	= Unmodified or weakly modified gasoline is significant.
m	= Heavier gasoline range compounds are significant.
n	= Diesel range compounds are significant; no recognizable pattern.
o	= Gasoline range compounds are significant.

**TABLE 1A**  
**CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

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Notes (Cont.):

- p = No recognizable pattern.
- q = Strongly aged gasoline or diesel compounds are significant.
- r = Lighter than water immiscible sheen/product is present.
- s = Liquid sample that contains greater than approximately 1 volume % sediment.

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	EDB (µg/L)	1,2-DCA (µg/L)	TAME (µg/L)	TBA (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Add'l VOCs (µg/L)	Add'l SVOCs (µg/L)
<b>Monitoring Well Samples</b>										
MW1	12/16/10	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
MW1	01/31/11	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
MW1	04/07/11	--	<0.50	<0.50	<0.50	10	<0.50	<0.50	--	--
MW1	07/18/11	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
<b>MW1</b>	<b>10/13/11</b>	--	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;5.0</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	--	--
MW2	12/16/10	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
MW2	01/31/11	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
MW2	04/07/11	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
MW2	07/18/11	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
<b>MW2</b>	<b>10/13/11</b>	--	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;5.0</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	--	--
MW3	12/16/10	--	<12	<12	<12	<120	<12	<12	--	--
MW3	01/31/11	--	<12	<12	<12	<120	<12	<12	--	--
MW3	04/07/11	--	<10	<10	<10	<100	<10	<10	--	--
MW3	07/18/11	--	<10	<10	<10	<100	<10	<10	--	--
<b>MW3</b>	<b>10/13/11</b>	--	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;100</b>	<b>&lt;10</b>	<b>&lt;10</b>	--	--
MW4	12/16/10	--	<5.0	<5.0	<5.0	<50	<5.0	<5.0	--	--
MW4	01/31/11	--	<10	<10	<10	<100	<10	<10	--	--
MW4	04/07/11	--	<10	<10	<10	<100	<10	<10	--	--
MW4	07/18/11	--	<10	<10	<10	<100	<10	<10	--	--
<b>MW4</b>	<b>10/13/11</b>	--	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;10</b>	<b>&lt;100</b>	<b>&lt;10</b>	<b>&lt;10</b>	--	--
MW5	12/16/10	--	<2.5	<2.5	<2.5	<25	<2.5	<2.5	--	--
MW5	01/31/11	--	<10	<10	<10	<100	<10	<10	--	--
MW5	04/07/11	--	<2.5	<2.5	<2.5	<25	<2.5	<2.5	--	--
MW5	07/18/11	--	<2.5	<2.5	<2.5	<25	<2.5	<2.5	--	--
<b>MW5</b>	<b>10/13/11</b>	--	<b>&lt;20</b>	<b>&lt;20</b>	<b>&lt;20</b>	<b>&lt;200</b>	<b>&lt;20</b>	<b>&lt;20</b>	--	--
MW6	12/16/10	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
MW6	01/31/11	--	<1.0	<1.0	<1.0	<10	<1.0	<1.0	--	--
MW6	04/07/11	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
MW6	07/18/11	--	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	--	--
<b>MW6</b>	<b>10/13/11</b>	--	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	<b>&lt;5.0</b>	<b>&lt;0.50</b>	<b>&lt;0.50</b>	--	--
<b>Grab Groundwater Samples</b>										
B-1W	01/06/08	--	<50	<50	<50	<200	<50	<50	210b, 68c, 370d, 1,100e, 3,800f, 1,300g, 1,500h	4,000h, 3,900k

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Sampling Date	Depth (feet)	EDB (µg/L)	1,2-DCA (µg/L)	TAME (µg/L)	TBA (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Add'l VOCs (µg/L)	Add'l SVOCs (µg/L)
B-2W	01/06/08	---	<50	<50	<50	<200	<50	<50	110b, 140e, 440f, 2,400g, 730h, 610i, 32j	---
B-3W	01/06/08	---	<10	<10	<10	<40	<10	<10	25b, 11c, 74d, 190e, 290f, 49g, 55i	---
B-4W	01/06/08	---	<10	<10	<10	<40	<10	<10	46b, 19c, 48d, 160e, 16f, 100h	---
B-5W	01/06/08	---	ND	<0.5	<0.5	<2.0	<0.5	<0.5	2.6b, 0.83e, 4.8f, 1.2g, 6.5h	---
B-6W	01/06/08	---	<2.5	<2.5	<2.5	<10	<2.5	<2.5	14b, 5.6c, 17d, 60e, 32f, 5.8g, 38h, 10i	---
DR-W	01/06/08	---	<0.5	<0.5	<0.5	<2.0	<0.5	<0.5	6.9b, 2.4c, 2.5d, 11e, 17f, 5.5g, 7.0h	---
W-27.5-HP1	10/28/10	27.5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-36-HP1A	10/28/10	36	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-46.5-HP1	10/28/10	46.5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-59-HP1B	10/27/10	59	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-27.5-HP2	10/29/10	27.5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-52-HP2A	10/29/10	52	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---
W-60.5-HP2	10/27/10	60.5	<0.50	<0.50	<0.50	<5.0	<0.50	<0.50	---	---

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Notes:

TOC	= Top of well casing elevation; datum is mean sea level.
DTW	= Depth to water.
GW Elev.	= Groundwater elevation; datum is mean sea level. If liquid-phase hydrocarbons present, elevation adjusted using TOC - [DTW - (PT x 0.76)].
NAPL	= Non-aqueous phase liquid.
O&G	= Oil and grease with silica gel clean-up analyzed using Standard Method 5520B/F.
TPHmo	= Total petroleum hydrocarbons as motor oil analyzed using EPA Method 8015 (modified).
TPHd	= Total petroleum hydrocarbons as diesel analyzed using EPA Method 8015 (modified).
TPHg	= Total petroleum hydrocarbons as gasoline analyzed using EPA Method 8015 (modified).
MTBE	= Methyl tertiary butyl ether analyzed using EPA Method 8260B.
BTEX	= Benzene, toluene, ethylbenzene, and total xylenes analyzed using EPA Method 8260B.
EDB	= 1,2-dibromoethane analyzed using EPA Method 8260B.
1,2-DCA	= 1,2-dichloroethane analyzed using EPA Method 8260B.
TAME	= Tertiary amyl methyl ether analyzed using EPA Method 8260B.
TBA	= Tertiary butyl alcohol analyzed using EPA Method 8260B.
ETBE	= Ethyl tertiary butyl ether analyzed using EPA Method 8260B.
DIPE	= Di-isopropyl ether analyzed using EPA Method 8260B.
Add'l VOCs	= Additional volatile organic carbons analyzed using EPA Method 8260B.
Add'l SVOCs	= Additional semi-volatile organic carbons analyzed using EPA Method 8270C.
µg/L	= Micrograms per liter.
ND	= Not detected at or above laboratory reporting limits.
---	= Not measured/Not sampled/Not analyzed.
<	= Less than the stated laboratory reporting limit.
a	= Sample chromatographic pattern does not match that of the specified standard.
b	= n-butylbenzene.
c	= sec-butylbenzene.
d	= Isopropylbenzene.
e	= n-propylbenzene.
f	= 1,2,4-trimethylbenzene.
g	= 1,3,5-trimethylbenzene.
h	= Naphthalene.
i	= 1-butanone.
j	= 1,2-dibromo-3-chloropropane.
k	= 2-methylnaphthalene.
l	= Unmodified or weakly modified gasoline is significant.
m	= Heavier gasoline range compounds are significant.
n	= Diesel range compounds are significant; no recognizable pattern.
o	= Gasoline range compounds are significant.

**TABLE 1B**  
**ADDITIONAL CUMULATIVE GROUNDWATER MONITORING AND SAMPLING DATA**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

---

Notes (Cont.):

- p = No recognizable pattern.
- q = Strongly aged gasoline or diesel compounds are significant.
- r = Lighter than water immiscible sheen/product is present.
- s = Liquid sample that contains greater than approximately 1 volume % sediment.

**TABLE 2**  
**WELL CONSTRUCTION DETAILS**  
Former Exxon Service Station 79374  
990 San Pablo Avenue  
Albany, California

Well ID	Well Installation 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	11/04/10	41.45	8	17	17	2	Schedule 40 PVC	12-17	0.020	10-17	#3 Sand
MW2	11/04/10	41.25	8	17	17	4	Schedule 40 PVC	12-17	0.020	10-17	#3 Sand
MW3	11/08/10	40.42	8	17	17	4	Schedule 40 PVC	11-16	0.020	9-16	#3 Sand
MW4	11/05/10	39.30	8	17	13	2	Schedule 40 PVC	8-13	0.020	6-13	#3 Sand
MW5	11/05/10	40.38	8	17	14	2	Schedule 40 PVC	9-14	0.020	7-14	#3 Sand
MW6	11/03/10	41.06	10	20	20	2	Schedule 40 PVC	15-20	0.020	13-20	#3 Sand

Notes:

TOC = Top of well casing elevation; datum is mean sea level.

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 a 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:

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

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.

The wells are purged using a submersible pump. Prior to use at the site and between wells the pump is cleaned.

Five gallons of water are placed in three 15-gallon tubs. Liquinox detergent is added to the first tub of water. The pump and tubing are submerged in the first tub and the water is pumped through the pump. The process is repeated in the second and third tub.

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.

Water generated during purging and cleaning is contained and transported off site for treatment and disposal.

**APPENDIX B**

**FIELD NOTES**

# Daily Field Report

Cardno ERI



Shaping the Future

Project ID #: 79374

Cardno ERI Job # 022735C

Subject: GW SAMPLING

Date: 10/13/2011

Equipment Used: SOLINST/HYDAC/PUMPS/BATT'S/SAMPLING EQUIPMENT/ETC.

Sheet: 1

Name(s): CHURCH, STEVE

Time Arrived On Site: 4:30

Time Departed Site: 8:30

- 04:30 -ARRIVED ON SITE  
-INFORMED STATION OF WORK TO BE DONE  
-SET UP EXCLUSION ZONE AND CHOCKED THE WHEELS ON VEHICLE  
-REVIEWED APPLICABLE JSA'S  
-STARTED PAPERWORK FOR SITE AND LABELS  
-SET UP DECON/WORK AREA AND DECON'D EQUIPMENT  
04:30 -HELD H&S MEETING/REVIEWED HOSPITAL ROUTE /FINISHED AT 04:45  
04:45 -OPENED WELLS AND ALLOWED WELLS TO CHARGE  
05:00 -STARTED MEASURING /FINISHED AT 05:15  
05:15 -STARTED PURGING /FINISHED AT 06:34  
07:05 -STARTED SAMPLING /FINISHED AT 08:25  
08:30 -CARDNO ERI OFF SITE  
10:00 -STARTED PURGE WATER TREATMENT (TRAILER) /FINISHED AT 10:15

\*M/P/S 6 WELLS

\*M/S 0 WELLS

M/S LOW FLOW 0 WELLS

\*MO 0 WELLS

\*O/P 0 WELLS

\*POTABLE 0 WELLS

TOTAL PURGED GALLONS: 37

DECON WATER GALLONS: 20

\*0 T/C SET UPS

# DAILY FIELD REPORT



PROJECT: \_\_\_\_\_ JOB # + ACTIVITY: \_\_\_\_\_

SUBJECT: \_\_\_\_\_ DATE: \_\_\_\_\_

EQUIPMENT USED: \_\_\_\_\_ SHEET: \_\_\_\_ OF \_\_\_\_

NAME: \_\_\_\_\_ PROJECT MNGR: \_\_\_\_\_

Onsite 0430      T1&S 0430-0445

Open 0445

PTH 0500-0515

Purge 0515-634

Sample 705-825

Offsite ~~830~~ 830

@ ET 900 Pickup flow meter

.30

@ Napa 945- YSI Networking O<sub>2</sub> membrane gene

@ office 1045 unload drop off YSI

FIELDRP.DWG	REV. 02/10
601 N. McDowell Boulevard, Petaluma, California 94954 707 766 2000 (Fax 707 789 0414)	

## **GROUNDWATER SAMPLING FIELD LOG**

**Client Name:** \_\_\_\_\_

**Location:** \_\_\_\_\_

**Field Crew:** \_\_\_\_\_

ERI Job #: \_\_\_\_\_

**Field Cleaning Performed:**

**Analysis:** \_\_\_\_\_

Date: \_\_\_\_\_ Page \_\_\_\_ of

**Case Volume = (TD - DTW) x F** where F =

0.163 for 2" inside-diameter well casing

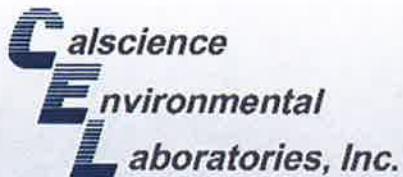
0.652 for 4" inside-diameter well casing

1.457 for 6" inside-diameter well casing



**APPENDIX C**

**LABORATORY ANALYTICAL REPORT  
AND CHAIN-OF-CUSTODY RECORD**



# CALSCIENCE

WORK ORDER NUMBER: 11-10-1136

*The difference is service*

RECEIVED  
OCT 28 2011

BY: \_\_\_\_\_



AIR SOIL WATER MARINE CHEMISTRY

## Analytical Report For

Client: Cardno ERI

Client Project Name: ExxonMobil 79374/022735C

Attention: Paula Sime  
601 North McDowell Blvd.  
Petaluma, CA 94954-2312

*Cecile L deGuia*

Approved for release on 10/27/2011 by:  
Cecile deGuia  
Project Manager

[ResultLink ▶](#)

[Email your PM ▶](#)



Calscience Environmental Laboratories 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 provided herein, and follows the standard Calscience data package. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety. Note that the Chain-of-Custody Record and Sample Receipt Form are integral parts of this report.



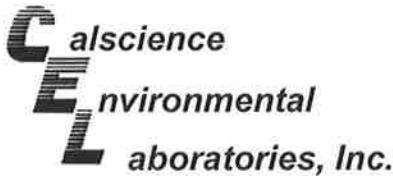
7440 Lincoln Way, Garden Grove, CA 92841-1432 • TEL: (714) 895-5494 • FAX: (714) 894-7501 • [www.calscience.com](http://www.calscience.com)

NELAP ID: 03220CA | DoD-ELAP ID: L10-41 | CSDLAC ID: 10109 | SCAQMD ID: 93LA0830

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Work Order Number: 11-10-1136

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## Analytical Report

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 3510C  
Method: EPA 8015B (M)

Project: ExxonMobil 79374/022735C

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-10-MW1	11-10-1136-1-G	10/13/11 07:05	Aqueous	GC 47	10/17/11	10/18/11 06:00	111017B05S

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	54	50	1	SG	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	124	68-140	

W-10-MW2	11-10-1136-2-G	10/13/11 07:20	Aqueous	GC 47	10/17/11	10/18/11 06:15	111017B05S
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Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	98	50	1	SG	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	131	68-140	

W-9-MW3	11-10-1136-3-G	10/13/11 07:35	Aqueous	GC 47	10/17/11	10/18/11 06:30	111017B05S
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Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	1900	50	1	SG,HD	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	110	68-140	

W-9-MW4	11-10-1136-4-G	10/13/11 07:50	Aqueous	GC 47	10/17/11	10/18/11 06:45	111017B05S
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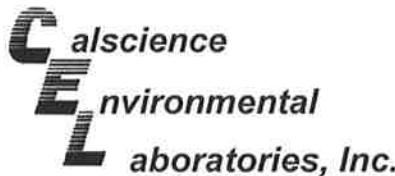
Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	7200	50	1	SG,HD	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	116	68-140	



Return to Contents

RL - Reporting Limit    DF - Dilution Factor    Qual - Qualifiers



## Analytical Report

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 3510C  
Method: EPA 8015B (M)

Project: ExxonMobil 79374/022735C

Page 2 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-11-MW5	11-10-1136-5-G	10/13/11 08:05	Aqueous	GC 47	10/17/11	10/18/11 10:58	111017B05S

Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	7600	1200	25	SG,HD	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	108	68-140	

W-12-MW6	11-10-1136-6-G	10/13/11 08:25	Aqueous	GC 47	10/17/11	10/18/11 07:30	111017B05S
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Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	370	50	1	SG,HD	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	114	68-140	

Method Blank	099-12-330-2,039	N/A	Aqueous	GC 47	10/17/11	10/18/11 00:29	111017B05S
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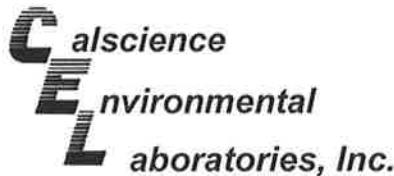
Parameter	Result	RL	DF	Qual	Units
TPH as Diesel	ND	50	1	U	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	112	68-140	



Return to Contents

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



## Analytical Report

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 3510C  
Method: EPA 8015B (M)

Project: ExxonMobil 79374/022735C

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-10-MW1	11-10-1136-1-G	10/13/11 07:05	Aqueous	GC 47	10/17/11	10/18/11 06:00	111017B06S

Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	ND	250	1	SG,U	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	124	68-140	

W-10-MW2	11-10-1136-2-G	10/13/11 07:20	Aqueous	GC 47	10/17/11	10/18/11 06:15	111017B06S
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Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	ND	250	1	SG,U	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	131	68-140	

W-9-MW3	11-10-1136-3-G	10/13/11 07:35	Aqueous	GC 47	10/17/11	10/18/11 06:30	111017B06S
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Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	ND	250	1	SG,U	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	110	68-140	

W-9-MW4	11-10-1136-4-G	10/13/11 07:50	Aqueous	GC 47	10/17/11	10/18/11 06:45	111017B06S
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Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	320	250	1	SG	ug/L

Surrogates:	REC (%)	Control Limits	Qual
Decachlorobiphenyl	116	68-140	

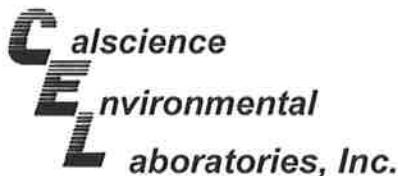


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RL - Reporting Limit , DF - Dilution Factor , Qual - Qualifiers



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Analytical Report

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 3510C  
Method: EPA 8015B (M)

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-11-MW5	11-10-1136-5-G	10/13/11 08:05	Aqueous	GC 47	10/17/11	10/18/11 07:00	111017B06S

Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	660	250	1	SG	ug/L
<u>Surrogates:</u>					
Decachlorobiphenyl	115	68-140			

W-12-MW6	11-10-1136-6-G	10/13/11 08:25	Aqueous	GC 47	10/17/11	10/18/11 07:30	111017B06S
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Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	ND	250	1	SG,U	ug/L
<u>Surrogates:</u>					
Decachlorobiphenyl	114	68-140			

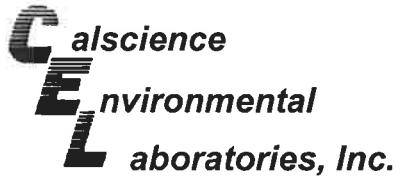
Method Blank	099-12-234-949	N/A	Aqueous	GC 47	10/17/11	10/18/11 00:29	111017B06S
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Parameter	Result	RL	DF	Qual	Units
TPH as Motor Oil	ND	250	1	U	ug/L
<u>Surrogates:</u>					
Decachlorobiphenyl	112	68-140			



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RL - Reporting Limit    DF - Dilution Factor    Qual - Qualifiers



## Analytical Report

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 79374/022735C

Page 1 of 2

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-10-MW1	11-10-1136-1-E	10/13/11 07:05	Aqueous	GC 42	10/17/11	10/17/11 13:03	111017B01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	ND	50	48	1	U	ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	79	38-134	

W-10-MW2	11-10-1136-2-D	10/13/11 07:20	Aqueous	GC 42	10/17/11	10/17/11 14:46	111017B01
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Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	75	50	48	1	HD	ug/L

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

W-9-MW3	11-10-1136-3-D	10/13/11 07:35	Aqueous	GC 42	10/17/11	10/17/11 15:21	111017B01
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Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	16000	1000	960	20		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	92	38-134	

W-9-MW4	11-10-1136-4-D	10/13/11 07:50	Aqueous	GC 42	10/17/11	10/17/11 15:55	111017B01
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Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

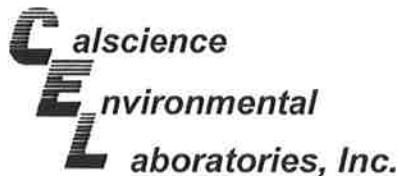
Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	14000	500	480	10		ug/L

Surrogates:	REC (%)	Control Limits	Qual
1,4-Bromofluorobenzene	102	38-134	



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RL - Reporting Limit    DF - Dilution Factor    Qual - Qualifiers



## Analytical Report

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-11-MW5	11-10-1136-5-D	10/13/11 08:05	Aqueous	GC 42	10/17/11	10/17/11 16:29	111017B01

Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	23000	500	480	10		ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
1,4-Bromofluorobenzene	110	38-134				

W-12-MW6	11-10-1136-6-D	10/13/11 08:25	Aqueous	GC 42	10/17/11	10/17/11 17:04	111017B01
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Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	890	50	48	1	HD	ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
1,4-Bromofluorobenzene	103	38-134				

Method Blank	099-12-436-6,719	N/A	Aqueous	GC 42	10/17/11	10/17/11 11:19	111017B01
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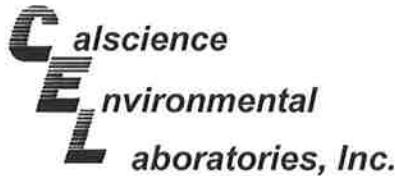
Comment(s): -Results were evaluated to the MDL, concentrations >= to the MDL but < RL, if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qual	Units
TPH as Gasoline	ND	50	48	1	U	ug/L
<u>Surrogates:</u>	<u>REC (%)</u>	<u>Control Limits</u>		<u>Qual</u>		
1,4-Bromofluorobenzene	80	38-134				



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RL - Reporting Limit    DF - Dilution Factor    Qual - Qualifiers



## Analytical Report

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-10-MW1	11-10-1136-1-A	10/13/11 07:05	Aqueous	GC/MS BB	10/17/11	10/18/11 03:52	111017L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1	U	Diisopropyl Ether (DIPE)	ND	0.50	1	U
Toluene	ND	0.50	1	U	Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	U
Ethylbenzene	ND	0.50	1	U	Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	U
Xylenes (total)	ND	0.50	1	U	1,2-Dibromoethane	ND	0.50	1	U
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	U	1,2-Dichloroethane	ND	0.50	1	U
Tert-Butyl Alcohol (TBA)	ND	5.0	1	U					
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	99	68-120			Dibromofluoromethane	97	80-127		
1,2-Dichloroethane-d4	94	80-128			Toluene-d8	96	80-120		

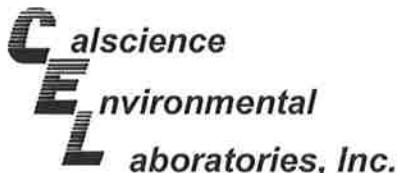
Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-10-MW2	11-10-1136-2-A	10/13/11 07:20	Aqueous	GC/MS BB	10/17/11	10/18/11 06:25	111017L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1	U	Diisopropyl Ether (DIPE)	ND	0.50	1	U
Toluene	ND	0.50	1	U	Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	U
Ethylbenzene	ND	0.50	1	U	Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	U
Xylenes (total)	ND	0.50	1	U	1,2-Dibromoethane	ND	0.50	1	U
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	U	1,2-Dichloroethane	ND	0.50	1	U
Tert-Butyl Alcohol (TBA)	ND	5.0	1	U					
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	98	68-120			Dibromofluoromethane	94	80-127		
1,2-Dichloroethane-d4	94	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-9-MW3	11-10-1136-3-A	10/13/11 07:35	Aqueous	GC/MS BB	10/17/11	10/18/11 06:55	111017L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	520	10	20		Diisopropyl Ether (DIPE)	ND	10	20	U
Toluene	150	10	20		Ethyl-t-Butyl Ether (ETBE)	ND	10	20	U
Ethylbenzene	900	12	25		Tert-Amyl-Methyl Ether (TAME)	ND	10	20	U
Xylenes (total)	270	10	20		1,2-Dibromoethane	ND	10	20	U
Methyl-t-Butyl Ether (MTBE)	ND	10	20	U	1,2-Dichloroethane	ND	10	20	U
Tert-Butyl Alcohol (TBA)	ND	100	20	U					
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	100	68-120			Dibromofluoromethane	96	80-127		
1,2-Dichloroethane-d4	92	80-128			Toluene-d8	96	80-120		

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



## Analytical Report

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
W-9-MW4	11-10-1136-4-A	10/13/11 07:50	Aqueous	GC/MS BB	10/17/11	10/18/11 07:25	111017L04

Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	350	10	20		Diisopropyl Ether (DIPE)	ND	10	20	U
Toluene	43	10	20		Ethyl-t-Butyl Ether (ETBE)	ND	10	20	U
Ethylbenzene	340	10	20		Tert-Amyl-Methyl Ether (TAME)	ND	10	20	U
Xylenes (total)	690	10	20		1,2-Dibromoethane	ND	10	20	U
Methyl-t-Butyl Ether (MTBE)	ND	10	20	U	1,2-Dichloroethane	ND	10	20	U
Tert-Butyl Alcohol (TBA)	ND	100	20	U					
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
1,4-Bromofluorobenzene	100	68-120			Dibromofluoromethane	95	80-127		
1,2-Dichloroethane-d4	95	80-128			Toluene-d8	95	80-120		

W-11-MW5	11-10-1136-5-A	10/13/11 08:05	Aqueous	GC/MS BB	10/17/11	10/18/11 04:23	111017L04
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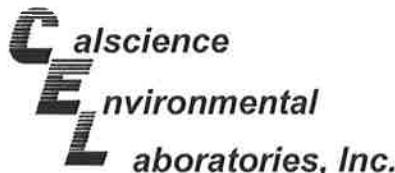
Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	390	20	40		Diisopropyl Ether (DIPE)	ND	20	40	U
Toluene	160	20	40		Ethyl-t-Butyl Ether (ETBE)	ND	20	40	U
Ethylbenzene	1200	20	40		Tert-Amyl-Methyl Ether (TAME)	ND	20	40	U
Xylenes (total)	3100	20	40		1,2-Dibromoethane	ND	20	40	U
Methyl-t-Butyl Ether (MTBE)	ND	20	40	U	1,2-Dichloroethane	ND	20	40	U
Tert-Butyl Alcohol (TBA)	ND	200	40	U					
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
1,4-Bromofluorobenzene	99	68-120			Dibromofluoromethane	93	80-127		
1,2-Dichloroethane-d4	90	80-128			Toluene-d8	96	80-120		

W-12-MW6	11-10-1136-6-A	10/13/11 08:25	Aqueous	GC/MS BB	10/17/11	10/18/11 07:56	111017L04
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	2.8	0.50	1		Diisopropyl Ether (DIPE)	ND	0.50	1	U
Toluene	ND	0.50	1	U	Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	U
Ethylbenzene	7.9	0.50	1		Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	U
Xylenes (total)	5.5	0.50	1		1,2-Dibromoethane	ND	0.50	1	U
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	U	1,2-Dichloroethane	ND	0.50	1	U
Tert-Butyl Alcohol (TBA)	ND	5.0	1	U					
Surrogates:	REC (%)	Control Limits	Qual		Surrogates:	REC (%)	Control Limits	Qual	
1,4-Bromofluorobenzene	101	68-120			Dibromofluoromethane	97	80-127		
1,2-Dichloroethane-d4	95	80-128			Toluene-d8	97	80-120		

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

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## Analytical Report

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8260B  
Units: ug/L

Project: ExxonMobil 79374/022735C

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Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
<b>Method Blank</b>	<b>099-12-884-707</b>	N/A	Aqueous	GC/MS BB	10/17/11	10/18/11 03:22	111017L04

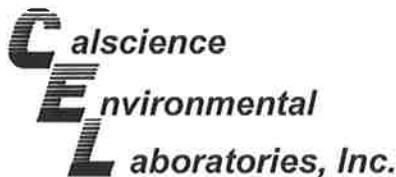
Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1	U	Diisopropyl Ether (DIPE)	ND	0.50	1	U
Toluene	ND	0.50	1	U	Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	U
Ethylbenzene	ND	0.50	1	U	Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	U
Xylenes (total)	ND	0.50	1	U	1,2-Dibromoethane	ND	0.50	1	U
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	U	1,2-Dichloroethane	ND	0.50	1	U
Tert-Butyl Alcohol (TBA)	ND	5.0	1	U					
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	101	68-120			Dibromofluoromethane	93	80-127		
1,2-Dichloroethane-d4	95	80-128			Toluene-d8	97	80-120		

Method Blank	099-12-884-709	N/A	Aqueous	GC/MS BB	10/18/11	10/18/11 14:05	111018L02
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Parameter	Result	RL	DF	Qual	Parameter	Result	RL	DF	Qual
Benzene	ND	0.50	1	U	Diisopropyl Ether (DIPE)	ND	0.50	1	U
Toluene	ND	0.50	1	U	Ethyl-t-Butyl Ether (ETBE)	ND	0.50	1	U
Ethylbenzene	ND	0.50	1	U	Tert-Amyl-Methyl Ether (TAME)	ND	0.50	1	U
Xylenes (total)	ND	0.50	1	U	1,2-Dibromoethane	ND	0.50	1	U
Methyl-t-Butyl Ether (MTBE)	ND	0.50	1	U	1,2-Dichloroethane	ND	0.50	1	U
Tert-Butyl Alcohol (TBA)	ND	5.0	1	U					
Surrogates:	REC (%)	Control Limits		Qual	Surrogates:	REC (%)	Control Limits		Qual
1,4-Bromofluorobenzene	98	68-120			Dibromofluoromethane	96	80-127		
1,2-Dichloroethane-d4	92	80-128			Toluene-d8	96	80-120		

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



## Quality Control - Spike/Spike Duplicate

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project ExxonMobil 79374/022735C

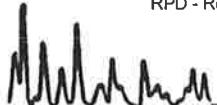
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
W-10-MW1	Aqueous	GC 42	10/17/11	10/17/11	111017S01

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2000	116	115	68-122	1	0-18	

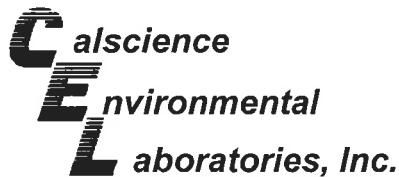


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RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - Spike/Spike Duplicate

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8260B

Project ExxonMobil 79374/022735C

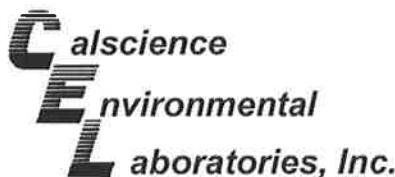
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
W-10-MW1	Aqueous	GC/MS BB	10/17/11	10/18/11	111017S02

Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	10.00	100	100	76-124	0	0-20	
Toluene	10.00	96	95	80-120	1	0-20	
Ethylbenzene	10.00	99	99	78-126	0	0-20	
Methyl-t-Butyl Ether (MTBE)	10.00	91	89	67-121	3	0-49	
Tert-Butyl Alcohol (TBA)	50.00	101	93	36-162	8	0-30	
Diisopropyl Ether (DIPE)	10.00	91	91	60-138	1	0-45	
Ethyl-t-Butyl Ether (ETBE)	10.00	89	86	69-123	3	0-30	
Tert-Amyl-Methyl Ether (TAME)	10.00	87	87	65-120	0	0-20	
Ethanol	100.0	114	105	30-180	8	0-72	
1,2-Dibromoethane	10.00	96	96	80-120	1	0-20	
1,2-Dichloroethane	10.00	95	95	80-120	1	0-20	



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RPD - Relative Percent Difference , CL - Control Limit



## Quality Control - Spike/Spike Duplicate

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

Date Received: 10/15/11  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8260B

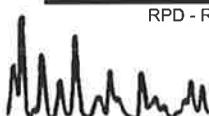
Project ExxonMobil 79374/022735C

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
11-10-1200-2	Aqueous	GC/MS BB	10/18/11	10/18/11	111018S01

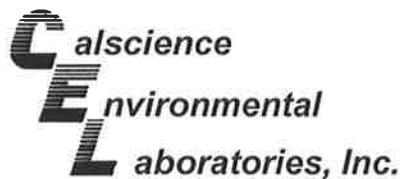
Parameter	SPIKE ADDED	MS %REC	MSD %REC	%REC CL	RPD	RPD CL	Qualifiers
Benzene	10.00	100	72	76-124	6	0-20	HX
Toluene	10.00	97	97	80-120	0	0-20	
Ethylbenzene	10.00	101	100	78-126	1	0-20	
Methyl-t-Butyl Ether (MTBE)	10.00	86	86	67-121	1	0-49	
Tert-Butyl Alcohol (TBA)	50.00	93	91	36-162	1	0-30	
Diisopropyl Ether (DIPE)	10.00	89	90	60-138	1	0-45	
Ethyl-t-Butyl Ether (ETBE)	10.00	87	87	69-123	0	0-30	
Tert-Amyl-Methyl Ether (TAME)	10.00	87	87	65-120	0	0-20	
Ethanol	100.0	113	118	30-180	4	0-72	
1,2-Dibromoethane	10.00	96	97	80-120	2	0-20	
1,2-Dichloroethane	10.00	109	106	80-120	3	0-20	

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RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - LCS/LCS Duplicate

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

Date Received: N/A  
Work Order No: 11-10-1136  
Preparation: EPA 3510C  
Method: EPA 8015B (M)

Project: ExxonMobil 79374/022735C

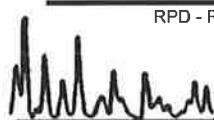
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-234-949	Aqueous	GC 47	10/17/11	10/18/11	111017B06S

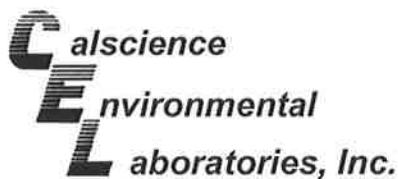
Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Motor Oil	2000	92	99	75-117	7	0-13	



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RPD - Relative Percent Difference , CL - Control Limit





## Quality Control - LCS/LCS Duplicate

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

Date Received: N/A  
Work Order No: 11-10-1136  
Preparation: EPA 3510C  
Method: EPA 8015B (M)

Project: ExxonMobil 79374/022735C

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-330-2,039	Aqueous	GC 47	10/17/11	10/18/11	111017B05S

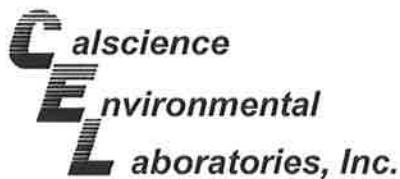
Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Diesel	2000	79	77	75-117	3	0-13	

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RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - LCS/LCS Duplicate

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

Date Received: N/A  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8015B (M)

Project: ExxonMobil 79374/022735C

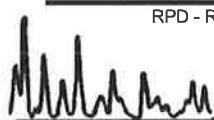
Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-12-436-6,719	Aqueous	GC 42	10/17/11	10/17/11	111017B01

Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	RPD	RPD CL	Qualifiers
TPH as Gasoline	2000	117	113	78-120	3	0-10	

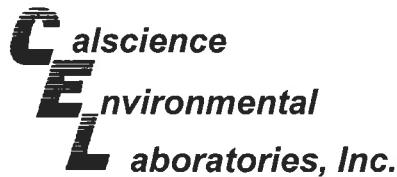


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RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - LCS/LCS Duplicate

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

Date Received: N/A  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 79374/022735C

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
099-12-884-707	Aqueous	GC/MS BB	10/17/11	10/18/11	111017L04			
Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	10.00	99	102	80-120	73-127	3	0-20	
Toluene	10.00	96	100	80-120	73-127	5	0-20	
Ethylbenzene	10.00	101	105	80-120	73-127	3	0-20	
Methyl-t-Butyl Ether (MTBE)	10.00	89	95	69-123	60-132	6	0-20	
Tert-Butyl Alcohol (TBA)	50.00	97	100	63-123	53-133	4	0-20	
Diisopropyl Ether (DIPE)	10.00	93	97	59-137	46-150	3	0-37	
Ethyl-t-Butyl Ether (ETBE)	10.00	90	95	69-123	60-132	5	0-20	
Tert-Amyl-Methyl Ether (TAME)	10.00	90	94	70-120	62-128	5	0-20	
Ethanol	100.0	120	114	28-160	6-182	5	0-57	
1,2-Dibromoethane	10.00	99	103	79-121	72-128	4	0-20	
1,2-Dichloroethane	10.00	94	100	80-120	73-127	7	0-20	

Total number of LCS compounds : 11

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

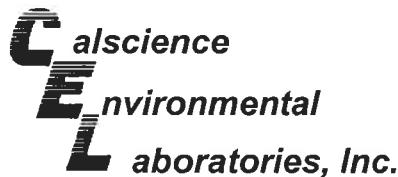
LCS ME CL validation result : Pass

  
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RPD - Relative Percent Difference , CL - Control Limit



7440 Lincoln Way, Garden Grove, CA 92841-1427 • TEL:(714) 895-5494 • FAX: (714) 894-7501



## Quality Control - LCS/LCS Duplicate

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

Date Received: N/A  
Work Order No: 11-10-1136  
Preparation: EPA 5030C  
Method: EPA 8260B

Project: ExxonMobil 79374/022735C

Quality Control Sample ID	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number			
<b>099-12-884-709</b>	<b>Aqueous</b>	<b>GC/MS BB</b>	<b>10/18/11</b>	<b>10/18/11</b>	<b>111018L02</b>			
Parameter	SPIKE ADDED	LCS %REC	LCSD %REC	%REC CL	ME CL	RPD	RPD CL	Qualifiers
Benzene	10.00	100	99	80-120	73-127	0	0-20	
Toluene	10.00	97	97	80-120	73-127	0	0-20	
Ethylbenzene	10.00	101	101	80-120	73-127	0	0-20	
Methyl-t-Butyl Ether (MTBE)	10.00	86	88	69-123	60-132	3	0-20	
Tert-Butyl Alcohol (TBA)	50.00	92	96	63-123	53-133	4	0-20	
Diisopropyl Ether (DIPE)	10.00	88	89	59-137	46-150	2	0-37	
Ethyl-t-Butyl Ether (ETBE)	10.00	86	88	69-123	60-132	3	0-20	
Tert-Amyl-Methyl Ether (TAME)	10.00	87	88	70-120	62-128	1	0-20	
Ethanol	100.0	103	114	28-160	6-182	10	0-57	
1,2-Dibromoethane	10.00	96	99	79-121	72-128	3	0-20	
1,2-Dichloroethane	10.00	93	94	80-120	73-127	2	0-20	

Total number of LCS compounds : 11

Total number of ME compounds : 0

Total number of ME compounds allowed : 1

LCS ME CL validation result : Pass

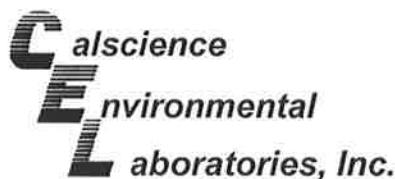


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RPD - Relative Percent Difference , CL - Control Limit



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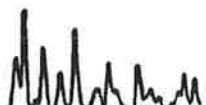


## Glossary of Terms and Qualifiers

Work Order Number: 11-10-1136

<u>Qualifier</u>	<u>Definition</u>
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 stdns.
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.
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.
RV	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
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.	

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**Calscience  
Environmental  
Laboratories, Inc.**

7440 Lincoln Way  
Garden Grove, CA 92841

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

**ExxonMobil**  
**11-10-1136**

Consultant Name:	Cardno ERI	Account #:	NA	PO#:	Direct Bill Cardno ERI
Consultant Address:	601 N. McDowell Boulevard	Invoice To:	Direct Bill Cardno ERI		
Consultant City/State/Zip:	Petaluma, California, 94954	Report To:	Paula Sime		
ExxonMobil Project Mgr:	Jennifer Sediachek	Project Name:	02 2735 C		
Consultant Project Mgr:	Paula Sime	ExxonMobil Site #:	79374	Major Project (AFE #):	
Consultant Telephone Number:	707-766-2000	Fax No.:	707-789-0414	Site Address:	990 San Pablo Avenue
Sampler Name (Print):	Steven Church	Site City, State, Zip:	Albany, California		
Sampler Signature:	<i>[Signature]</i>	Oversight Agency:	Alameda County Environmental Health Department		

Sample ID	Field Point Name	Date Sampled	Time Sampled	No. of Containers Shipped	Grab	Composite	Field Filtered	Methanol	Sodium Bisulfate	HCl	NaOH	H <sub>2</sub> SO <sub>4</sub> Plastic	H <sub>2</sub> SO <sub>4</sub> Glass	HNDA	Ice	Other: Unpreserved	None	Preservative			Matrix			Analyze For:			RUSH TAT (Pre-Schedule)	5-day TAT	Standard 10 day TAT	Due Date of Report	
																		Groundwater	Wastewater	Drinking Water	Sludge	Soil	Air	Other (Specify): Distilled Water	TPHg 8015M	TPHd 8015M	TPHm 8015M	BTEX 8260B	Oxygenates 8260B		
QCBB		10-13		2															X												
W-10-MW1	MW1	705	8	6v			2v													X	X	X	X	X					X		
W-10-MW2	MW2	720	8	6v			6v													X	X	X	X	X					X		
W-9-MW3	MW3	735	8	6v			6v													X	X	X	X	X					X		
W-9-MW4	MW4	750	8	6v			6v													X	X	X	X	X					X		
W-11-MW5	MW5	805	8	6v			6v													X	X	X	X	X					X		
W-12-MW6	MW6	825	8	6v			6v													X	X	X	X	X					X		

Comments/Special Instructions:

PLEASE E-MAIL ALL PDF FILES TO  
norcallabs@eri-us.com; ERJ-EIMLabs@eri-us.com  
GLOBAL ID # T0619716873

Relinquished by:

Date: 10/14/11 Time: 1220 Received by: Tom Molley CER Date: 10/14/11 Time: 1220

Laboratory Comments:

Temperature Upon Receipt:  
Sample Containers Intact?  
VOCs Free of Headspace?

Y  
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: 10/14/11 Time: 1730 Received by (Lab personnel): CER Date: 10/14/11 Time: 0920



**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

< WebShip > > > > >

800-322-5555 www.gso.com

Tracking #: 517624237



SDS

**ORC**  
**GARDEN GROVE**

**D**

**D92843A**



95195968

Print Date : 10/14/11 15:15 PM

**Package 1 of 2**

[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:

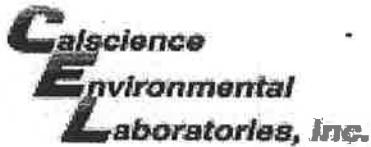
[Send Label Via Email](#)

[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 are not limited to, artwork, jewelry, furs, precious metals, tickets, negotiable instruments and other items with intrinsic value.

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WORK ORDER #: 11-10-1136

## SAMPLE RECEIPT FORM Cooler 1 of 1

CLIENT: Cardno ERI

DATE: 10/15/11

TEMPERATURE: Thermometer ID: SC1 (Criteria: 0.0 °C – 6.0 °C, not frozen)

Temperature 1.5 °C + 0.5 °C (CF) = 2.0 °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: YL

## CUSTODY SEALS INTACT:

<input checked="" type="checkbox"/> Cooler	<input type="checkbox"/>	<input type="checkbox"/> No (Not Intact)	<input type="checkbox"/> Not Present	<input type="checkbox"/> N/A	Initial: YL
<input type="checkbox"/> Sample	<input type="checkbox"/>	<input type="checkbox"/> No (Not Intact)	<input checked="" type="checkbox"/> Not Present		Initial: KM

## 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..... KM REL/BL   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 analysisVolatile analysis container(s) free of headspace.....   Tedlar bag(s) free of condensation.....   

## CONTAINER TYPE:

Solid:  4ozCGJ  8ozCGJ  16ozCGJ  Sleeve (\_\_\_\_\_)  EnCores®  TerraCores®  \_\_\_\_\_Water:  VOA  VOAh  VOAna<sub>2</sub>  125AGB  125AGBh  125AGBp  1AGB  1AGBna<sub>2</sub>  1AGBs 500AGB  500AGJ  500AGJs  250AGB  250CGB  250CGBs  1PB  1PBna  500PB 250PB  250PBn  125PB  125PBznna  100PJ  100PJna<sub>2</sub>  \_\_\_\_\_  \_\_\_\_\_ Air:  Tedlar®  Summa® Other:  \_\_\_\_\_ Trip Blank Lot#: \_\_\_\_\_ Labeled/Checked by: KM

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

Preservative: H: HCL N: HNO<sub>3</sub> Na<sub>2</sub>:Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> Na: NaOH P: H<sub>3</sub>PO<sub>4</sub> S: H<sub>2</sub>SO<sub>4</sub> U: Ultra-pure znna: ZnAc<sub>2</sub>+NaOH F: Filtered Scanned by: TN

WORK ORDER #: 11-10-1 1 3 6

## 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:

(-7) not received

### 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: KM 10/15/11

**APPENDIX D**

**WASTE DISPOSAL DOCUMENTATION**

# NON-HAZARDOUS WASTE MANIFEST

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

<b>NON-HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.		Manifest Document No. FO211-2735		2. Page 1 of /		
3. Generator's Name and Mailing Address <i>Exxon-Mobil #7-9374 990 San Pablo Ave. ALBANY CA</i>		4. Generator's Phone ( ) <i>707-553-3834</i>		5. Transporter 1 Company Name <i>CARDNO - ERT</i>		6. US EPA ID Number		
7. Transporter 2 Company Name		8. US EPA ID Number		A. State Transporter's ID		B. Transporter 1 Phone		
9. Designated Facility Name and Site Address <i>INSTRIAT INC 105-C AIRPORT Rd Ran VISTA, CA</i>		10. US EPA ID Number <i>CAR000150397</i>		C. State Transporter's ID		D. Transporter 2 Phone		
11. WASTE DESCRIPTION  a. <i>Non-Haz Purple water</i>		12. Containers No. <i>1</i> Type <i>Poly</i>		13. Total Quantity <i>57</i>		14. Unit Wt./Vol. <i>6gal</i>		
b.								
c.								
d.								
G. Additional Descriptions for Materials Listed Above  <i>COLOR - Brown ODOR - P SOLIDS - Free</i>				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
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