LACO ASSOCIATES
ENGINEERS · GEOLOGISTS · ENVIRONMENTAL CONSULTANTS

LEONARD M. OSBORNE · CE 38573
DAVID R. GERVAN · CE 57282
DAVID N. LINDBERG · PG 5581/CEG 1895
FRANK R. BICKNER · PG 7428
RONALD C. CHANEY, Ph.D · CE 29027/GE 00934

August 14, 2006

3577.05

Humboldt County Department of Health and Human Services
Division of Environmental Health
100 H Street, Suite 100
Eureka, California 95501

Attention: Mr. Mark Verhey, C.E.G.

Subject: Groundwater Monitoring Report, Second Quarter 2006
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, California
LOP No. 12261, USTCF Claim No. 545

Dear Mr. Verhey:

LACO ASSOCIATES (LACO) presents to the Humboldt County Division of Environmental Health (HCDEH) results of groundwater monitoring for the second quarter of 2006 at 481 Wildwood Avenue in Rio Dell, California. This report has been prepared on behalf of Mr. Jim Seiler and W & S Enviro. The following elements are included:

- Summary of work performed, site history, and site characterization
- Hydrogeology and hydraulic gradient
- Tabular summary of analytical data
- Discussion of quarterly analytical results
- Location map, site map, and hydraulic gradient maps
- Statement of recommendations and future work

Please contact LACO at (707) 443-5054 if you have any questions or concerns.

Sincerely,
LACO ASSOCIATES

Gwendolyn Erickson
Staff Geologist

Christopher Watt
C.E.G. 2415, Exp. 3/31/08

PROFESSIONAL GEOLOGIST
CHRISTOPHER JOHN WATT
No. 2415
CERTIFIED ENGINEERING GEOLOGIST
STATE OF CALIFORNIA

GJE:jg

Attachments

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21 W. 4th Street · P.O. Box 1023 · Eureka, California 95502 · 707-443-5054 · 1-800-515-5054 · FAX 707-443-0553
www.lacoassociates.us

GROUNDWATER MONITORING REPORT, SECOND QUARTER 2006

Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, California

LOP No. 12261, USTCF Claim No. 545, LACO Project No. 3577.05

INTRODUCTION

This report presents the cumulative results of groundwater monitoring conducted at the former Rio Dell Shell site (hereafter referred to as the "site") since 1999. Field activities associated with the second quarter 2006 groundwater monitoring event were conducted on June 13, 2006. Please refer to Table A, included below, for field sampling details for this quarter. Protocol for monitoring well sampling is included in LACO's *Standard Operating Procedures,* on file at your office. Location and site maps are provided as Figures 1 and 2, respectively. A key to abbreviations is included as Attachment 1, and field data sheets are included as Attachment 2.

Table A: Field Sampling Details -June 13, 2006

MONITORING WELL ID	SCREENED INTERVAL (feet)	DTW (feet bgs)	PURGE METHOD	WATER QUALITY PARAMETERS	ANALYTICALS	SAMPLING SCHEDULE
MW1	18-25	8.59	DTW ONLY			
MW2		7.23	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	Quarterly
MW3	13-20	7.14				
MW4	7-12	5.10				
MW5	5-12	2.81				
MW6		5.82				
MW7		6.97				
MW8		4.97				
MW9		4.87				
MW10		2.79				

SITE CHRONOLOGY

1990: Three single-wall, steel, gasoline underground storage tanks (USTs) were removed and replaced by two double-wall, fiberglass, gasoline USTs (one 10,000-gallon and one 12,000-gallon).

April 1999: One 10,000-gallon and one 12,000-gallon UST (both used for gasoline) were removed, along with the associated piping from the USTs.

December 1999: Five soil borings (B1 through B5) and three monitoring wells (MW1, MW2, and MW3) were installed to evaluate soil and groundwater quality in the vicinity of the former USTs.

June 2001: Monitoring wells MW4, MW5, and MW6 were installed and monitoring wells MW1 through MW3 were reconstructed.
August 2002: Nine borings (B6 through B14), four observation wells (OW1 through OW4), and one extraction well (EW1) were installed.
October 2002: Three monitoring wells (MW7 through MW9) were installed.
June 2004: Monitoring well MW10 was installed.
2005: LACO submitted a *Remedial Action Plan* in August and, in a letter dated October 7, 2005, concurrence was not granted by the HCDEH.

SITE CONCEPTUAL MODEL

Previous work on the site includes removal of three gasoline USTs, installation of two replacement gasoline USTs in the same cavity, and over-excavation of contaminated soil in 1990. The two replacement USTs were removed on April 21, 1999, from the single cavity on the north corner of the site. Petroleum hydrocarbon staining and odor were noted on walls of the excavated UST cavity. Following tank removal, the cavity was backfilled with river-run gravel and covered with compacted soil.

During the period December 1999 to the present, soil and groundwater samples have been collected from temporary borings and permanent monitoring wells to define and monitor the extent of petroleum hydrocarbon constituents in the subsurface. Results of investigations indicate: 1) a secondary source of gasoline-range material exists in the upper 6 feet of soil near the former eastern pump island, piping runs, and fuel dispensers; and 2) a dissolved-phase plume of fuel oxygenates, primarily methyl tertiary butyl ether (MTBE), extends from the site at least 60 feet to the north side of Wildwood Avenue. Since monitoring began at this site there has been a significant lack of benzene, toluene, ethylbenzene, and total xylenes (BTEX) constituents reported in groundwater samples. The lack of detectable dissolved BTEX suggests natural attenuation has been occurring at the source and within the hydrocarbon plume.

In December 2002 an aggressive groundwater extraction system was initiated at the site to test the effectiveness of preventing migration of MTBE offsite. The system proved to be effective during the dry season, but less effective during the winter season, as groundwater was infiltrating through the unsealed surface of the UST cavity. The pump and treat system was shutdown in September 2003. Quarterly groundwater monitoring has occurred regularly since termination of the pump and treat system.

HYDROGEOLOGY

The subject property is located atop colluvial deposits overlying Quaternary Eel River deposits, situated approximately 2,000 feet northwest of the Eel River, and is approximately 140 feet above sea level. Monitoring wells throughout the site are screened within two separate water bearing zones; the shallow aquifer is comprised of silt, and the lower aquifer is comprised of coarser grained silty sands and sandy gravels. The two separate aquifers are separated by a lean clay with silt unit. Monitoring wells MW1, MW2, and MW3 are screened in the deeper water bearing zone [approximately 13 to 25 feet below ground surface (bgs)], and monitoring wells MW4 through MW10 are screened in the shallower water bearing zone (approximately 5 to 12 feet bgs).

<u>The hydraulic gradient for the shallow zone: June 13, 2006</u>

- Calculated by three-point calculation using the hydraulic heads of monitoring wells MW5, MW8, and MW9
- 0.10 foot per foot in the N35°W direction.

<u>The hydraulic gradient for the deep zone: June 13, 2006</u>

- Calculated by three-point calculation using the hydraulic heads of monitoring wells MW1, MW2, and MW3
- Less than 0.01 foot per foot in the S43°W direction.

Hydraulic gradient contour maps for the shallow and deep zones (created with Surfer 7.0 software) and the three-point method are presented as Figures 3 and 4, respectively. Current and historical hydraulic head data are presented in Table 1, historical hydraulic gradients are presented in Table 2, and a copy of the field sampling data sheets are included as Attachment 2.

LABORATORY ANALYTICAL RESULTS

Groundwater analytical data from the June 13, 2006, quarterly sampling event are detailed in Table B, included below. Current and historical groundwater analytical data are included in Table 1, and copies of the laboratory analytical reports for this reporting period are included as Attachment 3. Water quality parameters from this sampling event are presented in Table 3.

Table B: Analytical Results for June 13, 2006										
MONITORING WELL ID	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	TAME (µg/L)	ETBE (µg/L)	DIPE (µg/L)
MW1	DTW ONLY									
MW2	<50	<0.50	<0.50	<0.50	<0.50	**34**	<10	**4.1**	<1.0	<1.0
MW3	**250**					**230**		**19**	<2.0	
MW4	**51**					**8.0**		**1.3**	<1.0	
MW5	**900**	**3.6**				**470**	<150	**99**		
MW6	**80**	**1.2**				<1.0	<10	<1.0		
MW7	**1,200**	<0.50				**1,100**	<40	**99**	<10	
MW8	**600**					**560**	<70	**48**	<7.0	
MW9	**360**					**340**	<150	<2.0	<6.0	
MW10	**450**					**390**	<80	**38**	<2.0	

DISCUSSION OF ANALYTICAL RESULTS

Analytical results reported for the shallow and deep monitoring wells sampled during the second quarter of 2006 generally fall within the range of previously reported sampling events. The lack of significant BTEX constituents supports previous analyses that natural attenuation has been occurring at the source area. The North Coast Laboratories' (NCL's) case narrative states that the reported gasoline values for monitoring wells MW3, MW7, MW8, MW9, and MW10 are associated with gasoline additives such as MTBE. MTBE and total petroleum hydrocarbons as gasoline (TPHg) are the primary constituents of concern (COCs) at this site. Additional laboratory notes are included in the case narrative of the NCL laboratory report found in Attachment 3.

DECAY RATES

Charts depicting analytical data from quarterly groundwater monitoring events over time were created using groundwater analytical data reported for samples collected from monitoring wells MW3, MW5, and MW7 through MW9 (Worksheets 1 through 5). A standard deviation analysis was performed on dissolved analyte concentration data for each well and is presented with each Worksheet 1 through 5. Concentrations in µg/L were plotted on a log scale versus the cumulative number of days since sampling was initiated. Best fit trend lines and trend line equations were generated using Excel software. The slope of the best fit trend line represents the first-order decay rate constant for the particular constituent. Three trendlines were applied to analytical data in each well MW3 and MW7 through MW9: 1) a remediation trendline showing analyte concentration trends before and during the pump and treat system; 2) a post-remediation

trendline illustrating analyte trends following the shutdown of the pump and treat system in September 2003; and 3) the all MTBE trendline illustrating the overall analyte concentration trend from the date of sampling initiation. For monitoring well MW5, a trendline was applied only to post-remediation analyte data due to worksheet space constraints (Worksheet 2).

For monitoring wells MW5 and MW7 through MW9, predicted time to reach water quality objectives (WQOs) for COCs from the termination of the pump and treat system date, post-remediation, are presented on each worksheet. Because of the apparent increasing post-remediation trendline in monitoring well MW3, the estimated days to reach WQO for MTBE is calculated using the overall trendline from the sampling initiation date. Predicted dates of WQO achievement, estimated using the chart trendlines, are compared to those determined using the first-order decay rate constants resulting from the regression analysis and are presented on each worksheet. WQO achievement dates were calculated using the first order decay rate equation:

Time = -ln (final concentration / initial concentration) / decay rate constant

The WQO of each COC is used in the decay rate equation in place of the final concentration. The initial concentration is the y-intercept of the *All MTBE* trendline equation for monitoring well MW3 (Worksheet 1) and the *Post-remediation* trendline equations for monitoring wells MW5 and MW7 through MW9 (Worksheets 2 through 5), displayed on the chart of each worksheet. The decay rate constant is the exponential value of the above-mentioned equations. Predicted times to reach WQO for analytes are reported in years and days (Worksheets 1 through 5). A summary of predicted dates to reach the WQO are included below in Table C.

Table C: Decay Rates and Time to Reach Water Quality Objectives					
Monitoring Well ID / Constituent of Concern	Initial Concentration (y-intercept value) (ug/L)	Final Concentration (WQO) (ug/L)	Decay Rate Constant ($days^{-1}$)	Predicted Date of WQO Achievement Since Termination of Pump & Treat (Empirically Derived)	Predicted Date of WQO Achievement Since Termination of Pump & Treat (Chart Derived)
MW3					
MTBE	612	13	-0.0007	2014*	2015*
MW5					
TPHg	1803	50	-0.0003	2035	2035
MTBE	1045	13	-0.0008	2020	2020
Benzene	197	1	-0.0022	2010	2009
MW7					
MTBE	1196	13	-0.0001	2126	2109
MW8					
MTBE	552	13	-0.0003	2037	2038
MW9					
MTBE	541	13	-0.0004	2028	2026
* WQO date estimated since sampling initiation					

Following the shutdown of the pump and treat system in September 2003, COCs in monitoring wells MW5 and MW7 through MW9 exhibit decreasing post-remediation concentration trends (Worksheets 2, 4, and 5). The post-remediation MTBE concentration trend in monitoring well MW3 appears to be increasing. However, the overall trendline since sampling initiation in monitoring well MW3 is decreasing and from this decay rate, MTBE in monitoring well MW3 is predicted to reach WQOs in the next 15 years. While the post-remediation MTBE concentration trendline in monitoring well MW7 does exhibit a decreasing trend, the estimated date to reach the WQO of 13 g/L is approximately 100 years.

Monitoring wells MW3 and MW5 are proximal to the former tank cavity and pump island secondary sources, respectively, and therefore these monitoring wells are considered source area monitoring wells. Overall, based on trendline analysis, COCs in the source wells are responding to natural attenuation processes (Worksheet 1 and 2). Alternatively, monitoring wells MW7 through MW9 are located down-gradient of the former tank cavity and pump island, respectively, and are considered distal wells. The process of attenuation of COCs in distal wells tends to be more complex than in source area wells, as the process in distal wells is typically

not a first order decay process. Groundwater intrinsic variabilities, soil geochemical differences, transport factors, advection, and dilution have different affects on COC concentrations spatially and temporally, from the source to down-gradient of the source. As natural attenuation of the up-gradient source occurs over time, the dissolved-phase plume will attenuate, COC concentrations will decrease, and less impacted groundwater will migrate into the distal wells, potentially steepening the slope of COC concentration declining trends at the distal wells, thereby, decreasing predicted time to reach WQOs at these wells. A continual decrease of MTBE concentrations in the distal wells with attenuation of the secondary source is anticipated .

CONCLUSIONS

- Based on decay rates presented, MTBE concentrations in monitoring wells MW3, MW5, MW8, and MW9, and TPHg and benzene concentrations in monitoring well MW5 are projected to achieve WQOs in approximately the next 32 years.
- Time-dependant attenuation of the source mass will increase decay rates down-gradient, decreasing predicted time to WQO achievement in monitoring well MW7.
- Data for the distal wells show decreasing analyte trends, implying the plume is receding.

RECOMMENDATIONS

- The next sampling event is scheduled for September 2006.
- Based on attenuation trends of COCs in source wells MW3 and MW5, LACO recommends the site be considered for no further action and regulatory closure.

LIMITATIONS

LACO has exercised a standard of care equal to that generated for this industry to ensure that the information contained in this report is current and accurate. LACO disclaims any and all liability for any errors, omissions, or inaccuracies in the information and data presented in this report and/or any consequences arising there from, whether attributable to inadvertence or otherwise. LACO makes no representations or warranties of any kind including, but not limited to, any implied warranties with respect to the accuracy or interpretations of the data furnished. LACO assumes no responsibility of any third party reliance on the data presented and that data generated for this report represents information gathered at that time and at the indicated locations. It should not be utilized by any third party to represent data for any other time or location. This report is valid solely for the purpose, site, and project described in this document.

Any alteration, unauthorized distribution, or deviation from this description will invalidate this report.

LIST OF FIGURES, TABLES, WORKSHEETS, AND ATTACHMENTS

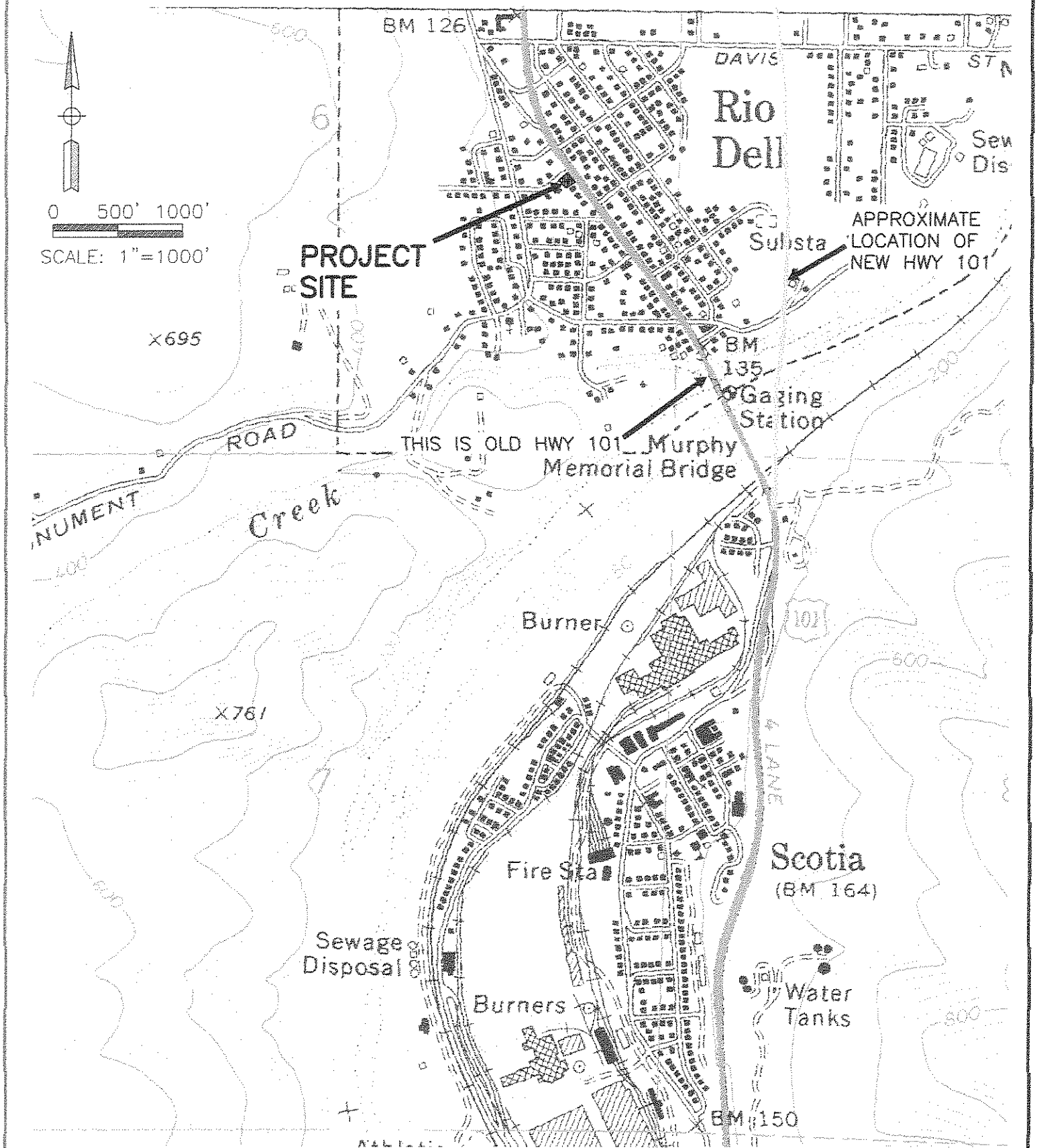
Figure 1: Location Map
Figure 2: Site Map
Figure 3: Hydraulic Gradient - Shallow Aquifer (6/13/06)
Figure 4: Hydraulic Gradient - Deep Aquifer (6/13/06)

Table 1: Monitoring Well Data and Groundwater Analytical Results
Table 2: Historical Hydraulic Gradient Data
Table 3: Historical Water Quality Parameters

Worksheet 1: MTBE Concentrations and Trendlines in monitoring well MW3 since 12/28/1999
Worksheet 2: Analyte Concentrations and Trendlines in monitoring well MW5 since 7/6/2001
Worksheet 3: MTBE Concentrations and Trendlines in monitoring well MW7 since 10/31/2002
Worksheet 4: MTBE Concentrations and Trendlines in monitoring well MW8 since 10/31/2002
Worksheet 5: MTBE Concentrations and Trendlines in monitoring well MW9 since 10/31/2002

Attachment 1: Key to Abbreviations
Attachment 2: Groundwater Sampling Field Data Sheets
Attachment 3: Laboratory Analytical Reports

LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT	GROUNDWATER MONITORING REPORT	BY	RJM	FIGURE
	CLIENT	W & S ENVIRO	DATE	7/25/06	1
	LOCATION	481 WILDWOOD AVE, RIO DELL	CHECK		JOB NO.
		LOCATION MAP	SCALE	1"=1000'	3577.05



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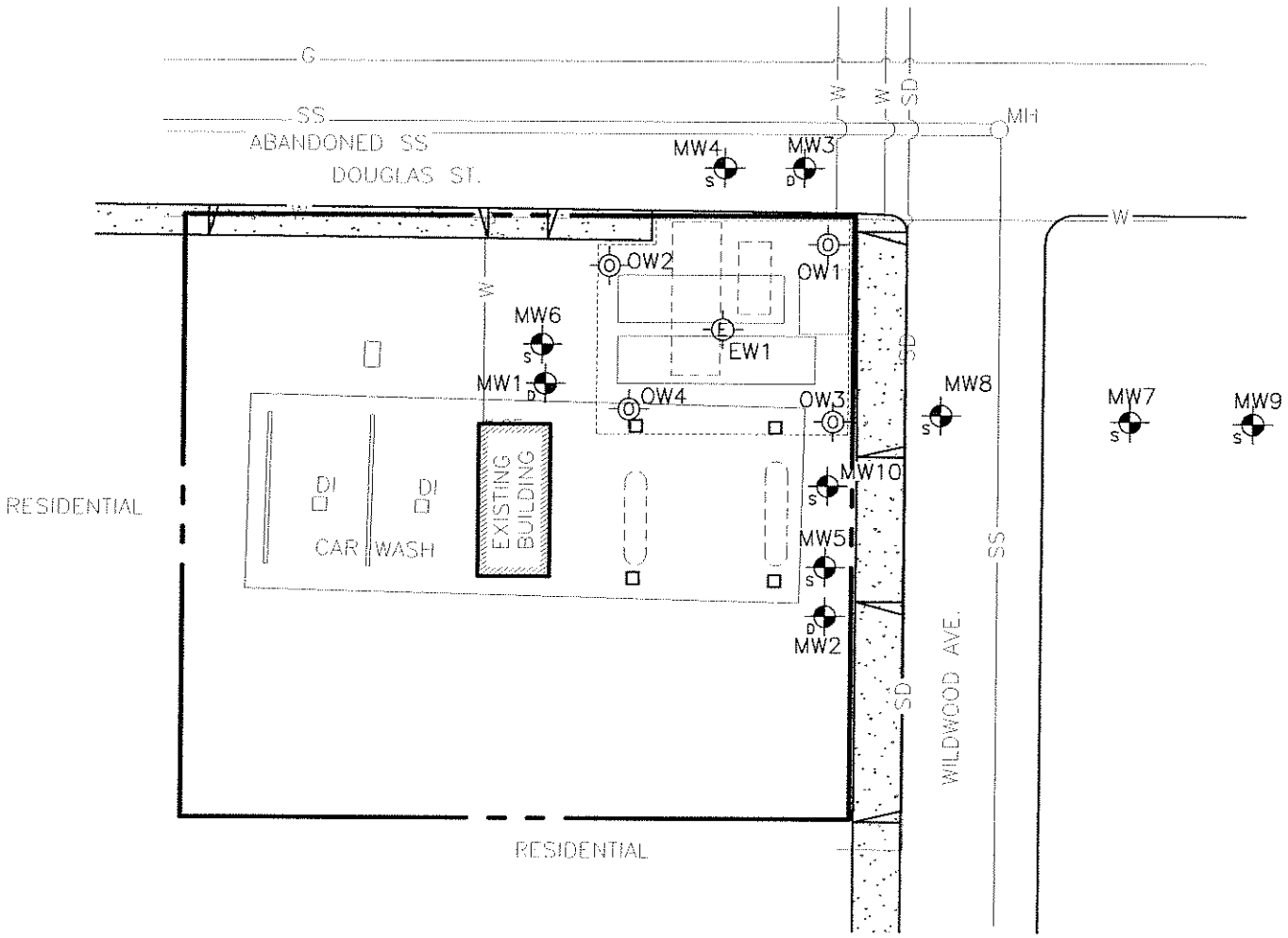
LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT GROUNDWATER MONITORING REPORT	BY RJM	FIGURE
	CLIENT W & S ENVIRO	DATE 7/25/06	2
	LOCATION 481 WILDWOOD AVE, RIO DELL	CHECK	JOB NO.
	SITE MAP	SCALE 1"=30'	3577.05

LEGEND

- FORMER UST'S – REMOVED 1990
- UST'S REMOVED 4/21/99
- MONITORING WELL–SHALLOW
- MONITORING WELL–DEEP
- EXTRACTION WELL
- OBSERVATION WELL

0 15' 30'

SCALE: 1"=30'



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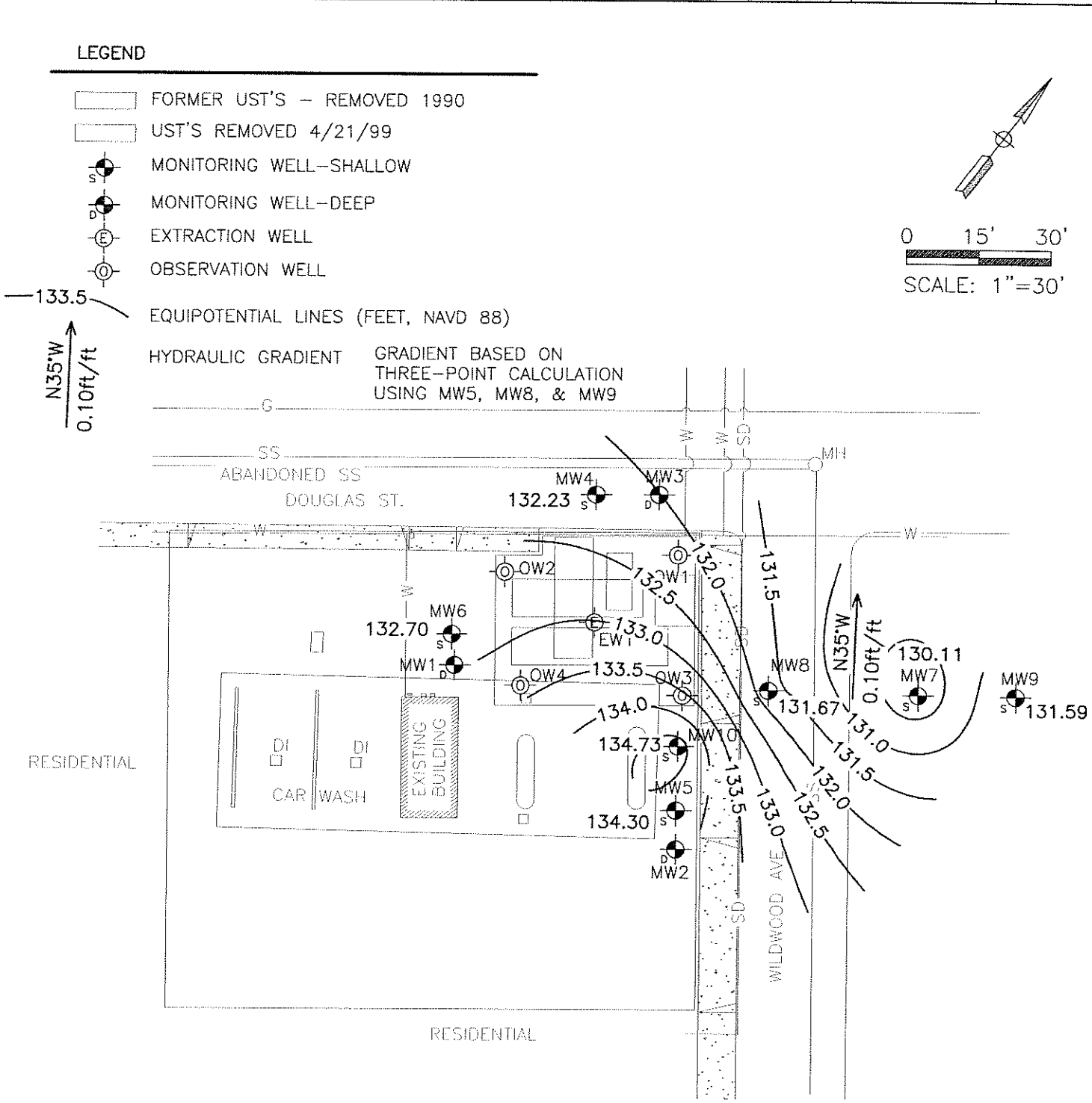
LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT GROUNDWATER MONITORING REPORT	BY RJM	FIGURE 3
	CLIENT HUMBOLDT PETROLEUM INC	DATE 7/25/06	
	LOCATION 481 WILDWOOD AVE, RIO DELL	CHECK	JOB NO. 3577.05
	HYDRAULIC GRADIENT-SHALLOW AQUIFER (6/13/06)	SCALE 1"=30'	



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LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT GROUNDWATER MONITORING REPORT	BY RJM	FIGURE 4
	CLIENT HUMBOLDT PETROLEUM INC	DATE 7/25/06	
	LOCATION 481 WILDWOOD AVE, RIO DELL	CHECK	JOB NO. 3577.05
	HYDRAULIC GRADIENT-DEEP AQUIFER (6/13/06)	SCALE 1"=30'	

LEGEND

- FORMER UST'S – REMOVED 1990
- UST'S REMOVED 4/21/99
- MONITORING WELL–SHALLOW
- MONITORING WELL–DEEP
- EXTRACTION WELL
- OBSERVATION WELL
- 129.96 EQUIPOTENTIAL LINES (FEET, NAVD 88)
- S43°W <0.01ft/ft HYDRAULIC GRADIENT

GRADIENT BASED ON THREE-POINT CALCULATION USING MW1, MW2, & MW3

0 15' 30'

SCALE: 1"=30'

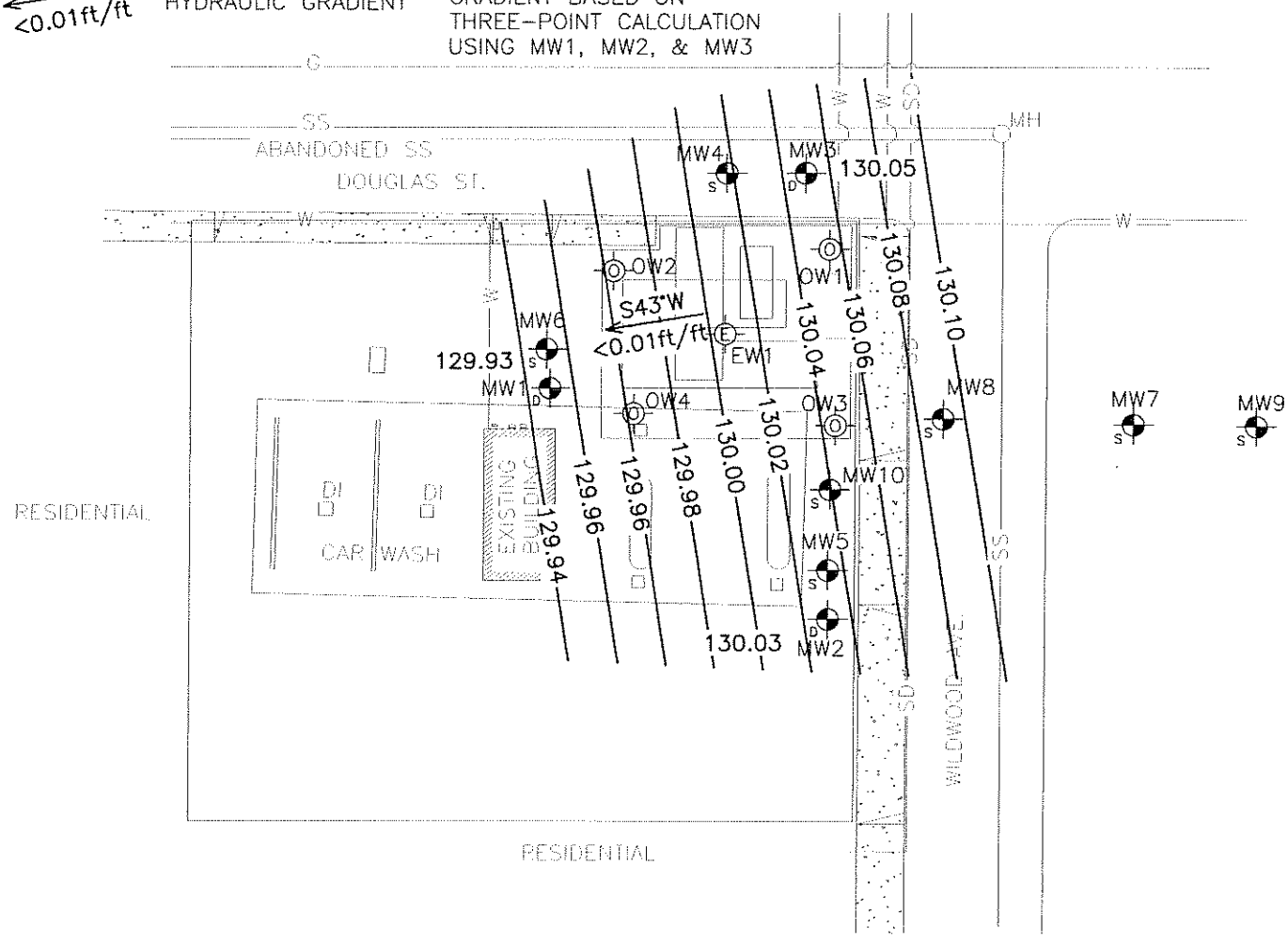

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TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP No. 12261

Well ID	Sample Date	Screened Interval (feet bgs)	Well Head Elevation* (ft msl)	Water Surface Elevation (ft msl)	Depth to Water (ft)	Foot notes	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	TAME (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Methanol/ Ethanol (µg/L)
MW-1	**12/28/1999**	**18-25**	**135.21**	130.55	7.97		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<1.0	<1.0	<1.0	---
	2/24/2000			132.09	6.43		---	---	---	---	---	---	---	---	---	---	---
	3/21/2000			131.72	6.8		---	---	---	---	---	---	---	---	---	---	---
	4/18/2000			130.71	7.81		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<1.0	<1.0	<1.0	---
	5/26/2000			130.45	8.07		---	---	---	---	---	---	---	---	---	---	---
	6/30/2000			129.75	8.77		---	---	---	---	---	---	---	---	---	---	---
	7/31/2000			129.07	9.45		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<1.0	<1.0	<1.0	---
	8/30/2000			128.55	9.97		---	---	---	---	---	---	---	---	---	---	---
	9/22/2000			128.40	10.12		---	---	---	---	---	---	---	---	---	---	---
	10/26/2000			127.94	10.58		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<10	<1.0	<1.0	<1.0	---
	11/24/2000			128.04	10.48		---	---	---	---	---	---	---	---	---	---	---
	12/12/2000			129.84	8.68		---	---	---	---	---	---	---	---	---	---	---
	1/12/2001			130.12	8.4		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---
	2/22/2001			131.01	7.51		---	---	---	---	---	---	---	---	---	---	---
	4/5/2001			130.96	7.56		---	---	---	---	---	---	---	---	---	---	---
	5/2/2001			130.86	7.66		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---
	6/14/01		**138.52**	**Reconstructed**													
	7/6/2001			129.07	**9.45**		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	**Ethanol =10**
	9/4/2001			127.86	10.66		---	---	---	---	---	---	---	---	---	---	---
	10/18/2001			127.07	11.45		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---
	11/29/2001			128.52	10		---	---	---	---	---	---	---	---	---	---	---
	1/2/2002			131.33	7.19		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---
	1/21/2002			130.92	**7.6**		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	**Methanol = 77**
	2/27/2002			131.38	7.14		---	---	---	---	---	---	---	---	---	---	---
	3/13/2002			131.01	7.51		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---
	4/19/2002			130.42	8.1		---	---	---	---	---	---	---	---	---	---	---
	5/20/2002			130.44	8.08		---	---	---	---	---	---	---	---	---	---	---
	6/13/2002			129.62	8.9		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---
	10/31/2002			---	---		---	---	---	---	---	---	---	---	---	---	---
	1/3/2003			131.04	7.48		---	---	---	---	---	---	---	---	---	---	---
	3/18/2003			133.81	4.71		---	---	---	---	---	---	---	---	---	---	---
	6/24/2003			129.83	8.69		---	---	---	---	---	---	---	---	---	---	---
	9/18/2003			128.20	10.32		---	---	---	---	---	---	---	---	---	---	---
	12/9/2003			129.17	9.35		---	---	---	---	---	---	---	---	---	---	---
	3/4/2004			131.69	6.83		---	---	---	---	---	---	---	---	---	---	---
	6/23/2004			129.47	9.05		---	---	---	---	---	---	---	---	---	---	---
	9/14/2004			127.54	10.98		---	---	---	---	---	---	---	---	---	---	---
	12/16/2004			129.63	8.89		---	---	---	---	---	---	---	---	---	---	---
	3/15/2005			130.94	7.58		---	---	---	---	---	---	---	---	---	---	---
	6/8/2005			130.82	7.7		---	---	---	---	---	---	---	---	---	---	---
	9/22/2005			128.68	9.84		---	---	---	---	---	---	---	---	---	---	---
	12/5/2005			131.26	7.26		---	---	---	---	---	---	---	---	---	---	---
	3/30/2006			132.00	6.52		---	---	---	---	---	---	---	---	---	---	---
	6/13/2006			129.93	8.59		---	---	---	---	---	---	---	---	---	---	---

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP No. 12261

Well ID	Sample Date	Screened Interval (feet bgs)	Well Head Elevation* (ft msl)	Water Surface Elevation (ft msl)	Depth to Water (ft)	Foot notes	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	TAME (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Methanol/ Ethanol (µg/L)
MW-2	12/28/1999	18-25	133.88	130.41	6.85		<50	<0.50	<0.50	<0.50	<0.50	1.8	<10	<1.0	<1.0	<1.0	---
	2/24/2000			131.97	5.29		---	---	---	---	---	---	---	---	---	---	---
	3/24/2000			131.59	5.67		---	---	---	---	---	---	---	---	---	---	---
	4/18/2000			130.56	6.7		<50	<0.50	<0.50	<0.50	<0.50	21	<10	<1.0	<1.0	<1.0	---
	5/26/2000			130.32	6.94		---	---	---	---	---	---	---	---	---	---	---
	6/30/2000			129.61	7.65		---	---	---	---	---	---	---	---	---	---	---
	7/31/2000			128.92	8.34		<50	<0.50	<0.50	<0.50	<0.50	8.8	<10	<1.0	<1.0	<1.0	---
	8/30/2000			128.41	8.85		---	---	---	---	---	---	---	---	---	---	---
	9/22/2000			128.28	8.98		---	---	---	---	---	---	---	---	---	---	---
	10/26/2000			128.03	9.23		<50	<0.50	<0.50	<0.50	<0.50	22	<10	<1.0	<1.0	<1.0	---
	11/24/2000			127.92	9.34		---	---	---	---	---	---	---	---	---	---	---
	12/12/2000			128.58	8.68		---	---	---	---	---	---	---	---	---	---	---
	1/12/2001			130.03	7.23		<50	<0.50	<0.50	<0.50	<0.50	39	<5.0	<1.0	<1.0	<1.0	---
	2/22/2001			131.45	5.81		---	---	---	---	---	---	---	---	---	---	---
	4/5/2001			130.76	6.5		---	---	---	---	---	---	---	---	---	---	---
	5/2/2001			130.56	6.7		<50	<0.50	<0.50	<0.50	<0.50	49	7.6	1.2	<1.0	<1.0	---
	6/15/01		137.26	Reconstructed													
	7/6/2001			129.19	8.07		<50	<0.50	<0.50	<0.50	<0.50	7.9	5.4	<1.0	<1.0	<1.0	---
	9/4/2001			128.02	9.24		---	---	---	---	---	---	---	---	---	---	---
	10/18/2001			127.06	10.2		74	<0.50	<0.50	<0.50	<0.50	5.1	12	<1.0	<1.0	<1.0	---
	11/29/2001			128.53	8.73		---	---	---	---	---	---	---	---	---	---	---
	1/2/2002			131.34	5.92		<100	<0.50	<0.50	<0.50	<0.50	5.4	<10	<1.0	<1.0	<1.0	---
	1/21/2002			130.92	6.34		<50	<0.50	<0.50	<0.50	<0.50	7.3	<5.0	<1.0	<1.0	<1.0	Methanol = 87
	2/27/2002			131.35	5.91		---	---	---	---	---	---	---	---	---	---	---
	3/13/2002			131.01	6.25		<50	<0.50	<0.50	<0.50	<0.50	8.0	<5.0	<1.0	<1.0	<1.0	---
	4/19/2002			130.42	6.84		---	---	---	---	---	---	---	---	---	---	---
	5/20/2002			130.41	6.85		---	---	---	---	---	---	---	---	---	---	---
	6/13/2002			129.80	7.46		<50	<0.50	<0.50	<0.50	<0.50	0.78	<5.0	<1.0	<1.0	<1.0	---
	10/31/2002			132.49	4.77		<50	<0.50	<0.50	<0.50	<0.50	6.3	<20	<1.0	<1.0	<1.0	---
	1/3/2003			131.16	6.1		<50	<0.50	<0.50	<0.50	<0.50	4.6	<20	<1.0	<1.0	<1.0	---
	3/18/2003			130.98	6.28		<50	<0.50	<0.50	<0.50	<0.50	11	<20	<1.0	<1.0	<1.0	---
	6/24/2003			129.79	7.47		<50	<0.50	<0.50	<0.50	<0.50	5.6	<20	<1.0	<1.0	<1.0	---
	9/18/2003			128.17	9.09		50	<0.50	<0.50	<0.50	<0.50	9.3	<20	<1.0	<1.0	<1.0	---
	12/9/2003			129.16	8.10		<50	<0.50	<0.50	<0.50	<0.50	7.0	<20	<1.0	<1.0	<1.0	---
	3/4/2004			131.65	5.61		<50	<0.50	<0.50	<0.50	<0.50	4.4	<10	<1.0	<1.0	<1.0	---
	6/23/2004			129.44	7.82		<50	<0.50	<0.50	<0.50	<0.50	18	<10	1.9	<1.0	<1.0	---
	9/14/2004			127.49	9.77		<50	<0.50	<0.50	<0.50	<0.50	19	<10	1.8	<1.0	<1.0	---
	12/16/2004			129.61	7.65		<50	<0.50	<0.50	<0.50	<0.50	18	<10	1.9	<1.0	<1.0	---
	3/15/2005			130.86	6.40		<50	<0.50	<0.50	<0.50	<0.50	12	<10	1.6	<1.0	<1.0	---
	6/8/2005			131.81	5.45		<50	<0.50	<0.50	<0.50	<0.50	8.5	<10	1.2	<1.0	<1.0	---
	9/22/2005			128.45	8.81		52	<0.50	<0.50	<0.50	<0.50	31	<10	3.5	<1.0	<1.0	---
	12/5/2005			130.17	7.09		<50	<0.50	<0.50	<0.50	<0.50	14	<10	1.7	<1.0	<1.0	---
	3/30/2006			131.91	5.35		<50	<0.50	<0.50	<0.50	<0.50	11	<10	1.6	<1.0	<1.0	---
	6/13/2006			130.03	7.23		<50	<0.50	<0.50	<0.50	<0.50	34	<10	4.1	<1.0	<1.0	---

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP No. 12261

Well ID	Sample Date	Screened Interval (feet bgs)	Well Head Elevation* (ft msl)	Water Surface Elevation (ft msl)	Depth to Water (ft)	Foot notes	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	TAME (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Methanol/ Ethanol (µg/L)
MW-3	12/28/1999	13-20	134.11	130.55	6.64		73	<0.50	<0.50	<0.50	<0.50	240	<10	36	<1.0	<1.0	---
	2/24/2000			132.06	5.13		---	---	---	---	---	---	---	---	---	---	---
	3/21/2000			131.72	5.47		---	---	---	---	---	---	---	---	---	---	---
	4/18/2000			130.72	6.47		1,700	<1.0	<1.0	<1.0	<1.0	3,700	<50	500	<1.0	<1.0	---
	5/26/2000			130.44	6.75		---	---	---	---	---	---	---	---	---	---	---
	6/30/2000			129.76	7.43		---	---	---	---	---	---	---	---	---	---	---
	7/31/2000			129.08	8.11		1,900	<1.0	<1.0	<1.0	<1.0	2,400	<50	570	<1.0	<1.0	---
	8/30/2000			128.56	8.63		---	---	---	---	---	---	---	---	---	---	---
	9/22/2000			128.41	8.78		---	---	---	---	---	---	---	---	---	---	---
	10/26/2000			127.96	9.23		570	<2.5	<2.5	<2.5	<2.5	900	<100	180	<1.0	<1.0	---
	11/24/2000			128.11	9.08		---	---	---	---	---	---	---	---	---	---	---
	12/12/2000			128.53	8.66		---	---	---	---	---	---	---	---	---	---	---
	1/12/2001			130.08	7.11		380	<2.0	<2.0	<2.0	<2.0	1,600	<20	360	<1.0	<1.0	---
	2/22/2001			131.08	6.11		---	---	---	---	---	---	---	---	---	---	---
	4/5/2001			130.97	6.22		---	---	---	---	---	---	---	---	---	---	---
	5/2/2001			130.81	6.38		350	<2.5	<2.5	<2.5	<2.5	1,300	27	320	<1.0	<1.0	---
	6/13/01		137.19	Reconstructed													---
	7/6/2001			129.24	7.95		<200	<2.0	<2.0	<2.0	<2.0	670	<20	140	<1.0	<1.0	---
	9/4/2001			128.31	8.88		---	---	---	---	---	---	---	---	---	---	---
	10/18/2001			127.06	10.13		140	<0.50	<0.50	<0.50	<0.50	410	15	90	0.59	<1.0	
	11/29/2001			128.46	8.73		---	---	---	---	---	---	---	---	---	---	---
	1/2/2002			131.30	5.89		290	<1.0	<1.0	<1.0	<1.0	330	<20	61	<1.0	<1.0	---
	1/21/2002			130.92	6.27		240	<0.50	<0.50	<0.50	<0.50	300	<10	47	<1.0	<1.0	Methanol = 82
	2/27/2002			131.29	5.9		---	---	---	---	---	---	---	---	---	---	---
	3/13/2002			130.97	6.22		120	<0.50	<0.50	<0.50	<0.50	190	<5.0	24	<1.0	<1.0	---
	4/19/2002			130.33	6.86		---	---	---	---	---	---	---	---	---	---	---
	5/20/2002			130.45	6.74		---	---	---	---	---	---	---	---	---	---	---
	6/13/2002			129.84	7.35		160	<0.50	<0.50	<0.50	<0.50	380	<5.0	34	1.2	<1.0	---
	10/31/2002			126.96	10.23		110	<0.50	<0.50	<0.50	<0.50	210	<20	18	1.3	<1.0	---
	1/3/2003			130.99	6.2		100	<0.50	<0.50	<0.50	<0.50	140	21	8.1	<1.0	1.1	---
	3/18/2003			131.04	6.15		150	<0.50	<0.50	<0.50	<0.50	210	<20	23	<1.0	<1.0	---
	6/24/2003			129.83	7.36		270	<0.50	<0.50	<0.50	<0.50	280	<20	28	1.3	<1.0	---
	9/18/2003			128.19	9.00		210	<0.50	<0.50	<0.50	<0.50	130	<20	7.4	<1.0	<1.0	---
	12/9/2003			129.18	8.01		120	<0.50	<0.50	<0.50	<0.50	150	<20	12	<1.0	<1.0	---
	3/4/2004			131.65	5.54		200	<0.50	<0.50	<0.50	<0.50	210	<10	16	<1.0	<1.0	---
	6/23/2004			129.47	7.72	3	170	<0.50	<0.50	<0.50	<0.50	150	<10	9.7	<1.0	<1.0	---
	9/14/2004			127.53	9.66	3,6	150	<0.50	<0.50	<0.50	<0.50	120	<15	7.2	<1.0	<1.0	---
	12/16/2004			129.62	7.57	3,6	200	<0.50	<0.50	<0.50	<0.50	160	<15	10	<1.0	<1.0	---
	3/15/2005			130.87	6.32		140	<0.50	<0.50	<0.50	<0.50	180	<10	15	<1.0	<1.0	---
	6/8/2005			130.81	6.38		210	<0.50	<0.50	<0.50	<0.50	180	<10	14	<1.0	<1.0	---
	9/22/2005			128.66	8.53		210	<0.50	<0.50	<0.50	<0.50	180	<10	14	<1.0	<1.0	---
	12/5/2005			130.14	7.05		220	<0.50	<0.50	<0.50	<0.50	190	<10	17	<1.0	<1.0	---
	3/30/2006			131.91	5.28		260	<0.50	<0.50	<0.50	<0.50	180	<10	18	<1.0	<1.0	---
	6/13/2006			130.05	7.14		250	<0.50	<0.50	<0.50	<0.50	230	<10	19	<2.0	<1.0	---

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP No. 12261

Well ID	Sample Date	Screened Interval (feet bgs)	Well Head Elevation* (ft msl)	Water Surface Elevation (ft msl)	Depth to Water (ft)	Foot notes	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	TAME (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Methanol/ Ethanol (µg/L)
MW-4	7/6/2001	7-12	137.33	128.84	8.49		<50	<0.50	<0.50	<0.50	<0.50	72	8.7	13	<1.0	<1.0	---
	9/4/2001			131.58	5.75												
	10/18/2001			130.90	6.43		86	<0.50	<0.50	<0.50	<0.50	160	9.5	35	<1.0	<1.0	---
	11/29/2001			132.68	4.65												
	1/2/2002			133.86	3.47		140	<0.50	<0.50	<0.50	<0.50	160	9	40	<1.0	<1.0	Methanol=57
	1/21/2002			134.01	3.32		160	<0.50	<0.50	<0.50	<0.50	190	<5.0	45	<1.0	<1.0	Methanol = 56
	2/27/2002			134.49	2.84		---	---	---	---	---	---	---	---	---	---	---
	3/13/2002			133.83	3.50		<50	<0.50	<0.50	<0.50	<0.50	68	<5.0	13	<1.0	<1.0	---
	4/19/2002			133.97	3.36		---	---	---	---	---	---	---	---	---	---	---
	5/20/2002			134.08	3.25		---	---	---	---	---	---	---	---	---	---	---
	6/13/2002			133.51	3.82		<50	<0.50	<0.50	<0.50	<0.50	28	<5.0	4.6	<1.0	<1.0	Ethanol = 6.7
	10/31/2002			130.84	6.49		<50	<0.50	<0.50	<0.50	<0.50	41	<20	7.9	<1.0	<1.0	---
	1/3/2003			133.92	3.41		<50	<0.50	<0.50	<0.50	<0.50	22	<20	3.6	<1.0	<1.0	---
	3/18/2003			131.32	6.01		<50	<0.50	<0.50	<0.50	<0.50	22	<20	3.8	<1.0	<1.0	---
	6/24/2003			129.77	7.56		68	<0.50	<0.50	<0.50	<0.50	32	<20	4.5	<1.0	<1.0	---
	9/18/2003			129.46	7.87		94	<0.50	<0.50	<0.50	<0.50	33	<20	4.6	<1.0	<1.0	---
	12/9/2003			130.17	7.16		<50	<0.50	<0.50	<0.50	<0.50	16	<20	2.3	<1.0	<1.0	---
	3/4/2004			130.70	6.63		<50	<0.50	<0.50	<0.50	<0.50	27	<10	3.1	<1.0	<1.0	---
	6/23/2004			129.80	7.53		<50	<0.50	<0.50	<0.50	0.5	24	<10	4.2	<1.0	<1.0	---
	9/14/2004			129.27	8.06		<50	<0.50	<0.50	<0.50	<0.50	15	<10	2.1	<1.0	<1.0	---
	12/16/2004			129.64	7.69	2	<50	<0.50	<0.50	<0.50	<0.50	12	<10	1.6	<1.0	<1.0	---
	3/15/2005			129.61	7.72		<50	<0.50	<0.50	<0.50	<0.50	23	<10	3.5	<1.0	<1.0	---
	6/8/2005			129.40	7.93		54	<0.50	<0.50	<0.50	<0.50	23	<10	3.4	<1.0	<1.0	---
	9/22/2005			128.62	8.71		<50	<0.50	<0.50	<0.50	<0.50	24	<10	3.2	<1.0	<1.0	---
	12/5/2005			128.86	8.47		<50	<0.50	<0.50	<0.50	<0.50	9.1	<10	1.3	<1.0	<1.0	---
	3/30/2006			132.87	4.46		<50	<0.50	<0.50	<0.50	<0.50	16	<10	2.3	<1.0	<1.0	---
	6/13/2006			132.23	5.10		51	<0.50	<0.50	<0.50	<0.50	8.0	<10	1.3	<1.0	<1.0	---
MW-5	7/6/2001	5-12	137.11	127.07	10.04		<100	<1.0	<1.0	<1.0	<1.0	340	150	50	<1.0	<1.0	---
	9/4/2001			131.26	5.85		---	---	---	---	---	---	---	---	---	---	---
	10/18/2001			131.96	5.15		1,200	150	<2.5	19	9.8	1,000	330	250	<1.0	<1.0	---
	11/29/2001			133.22	3.89		---	---	---	---	---	---	---	---	---	---	---
	1/2/2002			133.86	3.25		2,200	370	2.9	26	8.5	1,200	290	280	<1.0	<1.0	Methanol = 130
	1/21/2002			133.72	3.39		2,400	380	2.9	27	6.1	1,400	<30	320	<1.0	<1.0	Methanol = 80
	2/27/2002			132.95	4.16		---	---	---	---	---	---	---	---	---	---	---
	3/13/2002			130.43	6.68		910	85	1.1	11	3.9	790	<20	170	<1.0	<1.0	---
	4/19/2002			133.48	3.63		---	---	---	---	---	---	---	---	---	---	---
	5/20/2002			134.03	3.08		---	---	---	---	---	---	---	---	---	---	---
	6/13/2002			133.78	3.33		1,500	270	1.7	15	3.2	1,400	380	250	<1.0	<1.0	Methanol = 120
	10/31/2002			132.39	4.72		2,200	420	3.6	24	5.56	1,200	470	340	1.2	<1.0	---
	1/3/2003			135.14	1.97		1,100	190	ND<5.0	8.1	ND<5.0	770	<20	210	<1.0	<1.0	---
	3/18/2003			133.64	3.47		1,600	310	2.2	17	2.60	710	110	160	<1.0	<1.0	---
	6/24/2003			132.90	4.21		2,300	280	2.0	24	1.80	780	150	180	<1.0	<1.0	---
	9/18/2003			132.00	5.11		1,700	32	1.0	10	1.30	910	99	210	<1.0	<1.0	---
	12/9/2003			132.38	4.73		1,000	17	0.65	7.1	1.30	880	94	210	<1.0	<1.0	---
	3/4/2004			133.54	3.57		1,400	95	1.1	7.2	0.98	940	130	180	<1.0	<1.0	---

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP No. 12261

Well ID	Sample Date	Screened Interval (feet bgs)	Well Head Elevation* (ft msl)	Water Surface Elevation (ft msl)	Depth to Water (ft)	Foot notes	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	TAME (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Methanol/ Ethanol (µg/L)
MW-5 Cont'd																	
	6/23/2004			133.29	3.82	2	1,600	51	0.75	5.3	1.2	760	130	170	<1.0	<1.0	---
	9/14/2004			132.85	4.26	2	1,500	14	<0.50	2.3	0.68	650	100	120	<1.0	<1.0	---
	12/16/2004			135.08	2.03		1,300	14	<0.50	1.8	0.56	670	90	120	<1.0	<1.0	---
	3/15/2005			133.73	3.38		890	2.7	<0.50	1.6	0.59	560	<10	130	<1.0	<1.0	---
	6/8/2005			133.76	3.35		1,300	16	<0.50	1.3	0.53	540	86	110	<1.0	<1.0	---
	9/22/2005			133.06	4.05		1,100	7.8	<0.50	0.85	<0.50	480	72	88	<1.0	<1.0	---
	12/5/2005			133.35	3.76		1,100	8.8	<0.50	0.77	<0.50	510	73	95	<1.0	<1.0	---
	3/30/2006			136.21	0.90		1,100	12	<0.50	0.69	<0.50	430	68	90	<1.0	<1.0	---
	6/13/2006			134.30	2.81		900	3.6	<0.50	<0.50	<0.50	470	<150	99	<1.0	<1.0	---
MW-6	7/6/2001	5-12	138.52	129.57	8.95		<50	<0.50	<0.50	<0.50	<0.50	1.0	<5.0	<1.0	<1.0	<1.0	---
	9/4/2001			129.46	9.06		---	---	---	---	---	---	---	---	---	---	---
	10/18/2001			130.36	8.16		57	<0.50	<0.50	<0.50	<0.50	2.1	<5.0	<1.0	<1.0	<1.0	---
	11/29/2001			131.56	6.96		---	---	---	---	---	---	---	---	---	---	---
	1/2/2002			133.19	5.33		<50	<0.50	<0.50	<0.50	<0.50	0.81	<5.0	<1.0	<1.0	<1.0	---
	1/21/2002			134.03	4.49		<50	<0.50	<0.50	<0.50	<0.50	1.4	<5.0	<1.0	<1.0	<1.0	Methanol = 64
	2/27/2002			132.35	6.17		---	---	---	---	---	---	---	---	---	---	---
	3/13/2002			132.71	5.81		<50	<0.50	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---
	4/19/2002			134.04	4.48		---	---	---	---	---	---	---	---	---	---	---
	5/20/2002			134.21	4.31		---	---	---	---	---	---	---	---	---	---	---
	6/13/2002			134.06	4.46		59	0.9	<0.50	<0.50	<0.50	0.99	<5.0	<1.0	<1.0	<1.0	---
	10/31/2002			132.24	6.28		<50	2.5	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---
	1/3/2003			133.11	5.41		70	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<1.0	<1.0	<1.0	---
	3/18/2003			132.77	5.75		58	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<1.0	<1.0	<1.0	---
	6/24/2003			131.24	7.28		120	0.65	<0.50	<0.50	<0.50	1.0	<20	<1.0	<1.0	<1.0	---
	9/18/2003			130.55	7.97		110	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<1.0	<1.0	<1.0	---
	12/9/2003			130.61	7.91		52	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<1.0	<1.0	<1.0	---
	3/4/2004			130.95	7.57	4	68	<0.50	<0.50	<0.50	<0.50	<1.0	<30	<1.0	<1.0	<1.0	---
	6/23/2004			130.66	7.86	2	68	0.75	<0.50	<0.50	<0.50	<1.0	<30	<1.0	<1.0	<1.0	---
	9/14/2004			130.15	8.37		<50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0	---
	12/16/2004			130.37	8.15		<50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0	---
	3/15/2005			130.64	7.88		63	<0.50	<0.50	<0.50	<0.50	<1.0	<50	<1.0	<1.0	<1.0	---
	6/8/2005			130.45	8.07		61	<0.50	<0.50	<0.50	<0.50	1.1	<50	<1.0	<1.0	<1.0	---
	9/22/2005			133.17	5.35		66	<0.50	<0.50	<0.50	<0.50	<1.0	<50	<1.0	<1.0	<1.0	---
	12/5/2005			132.74	5.78		69	0.80	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0	---
	3/30/2006			133.45	5.07		76	0.69	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0	---
	6/13/2006			132.70	5.82		80	1.2	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0	---
MW-7	10/31/2002	5-12	137.08	127.22	9.86		1,100	<0.50	<0.50	<0.50	<0.50	2,200	1,200	39	23	<1.0	---
	1/3/2003			131.69	5.39		200	<0.50	<0.50	<0.50	<0.50	260	56	<1.0	<1.0	<1.0	---
	3/18/2003			131.58	5.50		420	<0.50	<0.50	<0.50	<0.50	620	130	22	8.5	<1.0	---
	6/24/2003			130.65	6.43		720	<0.50	<0.50	<0.50	<0.50	1,000	260	45	8.6	<1.0	---
	9/18/2003			129.77	7.31		900	<0.50	<0.50	<0.50	<0.50	1,000	190	45	6.8	<1.0	---
	12/9/2003			129.76	7.32		710	<0.50	<0.50	<0.50	<0.50	1,000	220	64	7.4	<1.0	---
	3/4/2004			130.65	6.43		910	<0.50	<0.50	<0.50	<0.50	1,300	320	80	7.3	<1.0	---
	6/23/2004			130.06	7.02	3	1,100	<0.50	<0.50	<0.50	<0.50	1,200	240	78	7.3	<1.0	---
	9/14/2004			129.35	7.73	3	1,300	<0.50	<0.50	<0.50	<0.50	1,000	210	73	5.7	<1.0	---
	12/16/2004			129.85	7.23	3	1,200	<0.50	<0.50	<0.50	<0.50	1,100	160	79	5.6	<1.0	---
	3/15/2005			130.01	7.07		810	<0.50	<0.50	<0.50	<0.50	1,100	140	90	6.2	<1.0	---
	6/8/2005			130.63	6.45		1,100	<0.50	<0.50	<0.50	<0.50	1,100	95	89	5.9	<1.0	---
	9/22/2005			129.19	7.89		1,100	<0.50	<0.50	<0.50	<0.50	990	58	97	5.2	<1.0	---

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP No. 12261

Well ID	Sample Date	Screened Interval (feet bgs)	Well Head Elevation* (ft msl)	Water Surface Elevation (ft msl)	Depth to Water (ft)	Foot notes	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	TAME (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Methanol/ Ethanol (µg/L)
MW-7 Cont'd																	
	12/5/2005			129.48	7.6		1,000	<0.50	<0.50	<0.50	<0.50	990	<60	97	5.0	<1.0	---
	3/30/2006			130.55	6.53		1,300	<0.50	<0.50	<0.50	<0.50	980	<30	94	4.5	<1.0	---
	6/13/2006			130.11	6.97		1,200	<0.50	<0.50	<0.50	<0.50	1,100	<40	99	<10	<1.0	---
MW-8	10/31/02	5-12	136.64	126.38	10.26		220	<0.50	<0.50	<0.50	0.51	400	560	26	2.9	<1.0	---
	1/3/03			132.88	3.76		160	<0.50	<0.50	<0.50	<0.50	210	67	28	4.6	<1.0	---
	3/18/03			131.79	4.85		270	<0.50	<0.50	<0.50	<0.50	380	59	67	4.2	<1.0	---
	6/24/2003			130.93	5.71		420	<0.50	<0.50	<0.50	<0.50	460	120	76	3.3	<1.0	---
	9/18/2003			130.81	5.83		830	<0.50	<0.50	<0.50	<0.50	830	160	88	4.7	<1.0	---
	12/9/2003			134.71	1.93		260	<0.50	<0.50	<0.50	<0.50	300	74	40	2.2	<1.0	---
	3/4/2004			132.63	4.01		570	<0.50	<0.50	<0.50	<0.50	630	270	84	4.3	<1.0	---
	6/23/2004			131.43	5.21	3	810	<0.50	<0.50	<0.50	<0.50	700	190	88	4.2	<1.0	---
	9/14/2004			131.11	5.53	3	500	<0.50	<0.50	<0.50	<0.50	360	77	54	1.9	<1.0	---
	12/16/2004			131.69	4.95	3	730	<0.50	<0.50	<0.50	<0.50	600	130	69	3.2	<1.0	---
	3/15/2005			131.39	5.25		410	<0.50	<0.50	<0.50	<0.50	520	180	56	3.9	<1.0	---
	6/8/2005			130.04	6.6		340	<0.50	<0.50	<0.50	<0.50	300	57	33	1.9	<1.0	---
	9/22/2005			130.72	5.92		510	<0.50	<0.50	<0.50	<0.50	430	57	56	2.1	<1.0	---
	12/5/2005			130.75	5.89		530	<0.50	<0.50	<0.50	<0.50	460	58	53	2.7	<1.0	---
	3/30/2006			132.94	3.70		580	<0.50	<0.50	<0.50	<0.50	410	<50	43	2.5	<1.0	---
	6/13/2006			131.67	4.97		600	<0.50	<0.50	<0.50	<0.50	560	<70	48	<7.0	<1.0	---
MW-9	10/31/02	5-12	136.46	125.46	11.00		200	<0.50	<0.50	<0.50	<0.50	330	230	2.5	3.4	<1.0	---
	1/3/03			128.96	7.50		66	<0.50	<0.50	<0.50	<0.50	69	54	<1.0	3.5	<1.0	---
	3/18/03			130.86	5.60		180	<0.50	<0.50	<0.50	<0.50	280	59	<1.0	4.2	<1.0	---
	6/24/2003			130.38	6.08		420	<0.50	<0.50	<0.50	<0.50	420	200	1.2	5.6	1.1	---
	9/18/2003			129.09	7.37		450	<0.50	<0.50	<0.50	<0.50	460	150	1.2	4.6	1.1	---
	12/9/2003			128.88	7.58		320	<0.50	<0.50	<0.50	<0.50	400	140	1.2	4.5	<1.0	---
	3/4/2004			129.53	6.93		420	<0.50	<0.50	<0.50	<0.50	500	250	1.2	5.2	<1.0	---
	6/23/2004			128.71	7.75	3	460	<0.50	<0.50	<0.50	<0.50	470	160	1.4	4.7	<1.0	---
	9/14/2004			127.84	8.62	3	460	<0.50	<0.50	<0.50	<0.50	370	100	1.0	3.7	<1.0	---
	12/16/2004			128.10	8.36	3	460	<0.50	<0.50	<0.50	<0.50	410	100	<1.0	3.8	<1.0	---
	3/15/2005			129.48	6.98		320	<0.50	<0.50	<0.50	<0.50	420	160	1.2	4.4	<1.0	---
	6/8/2005			129.54	6.92		400	<0.50	<0.50	<0.50	<0.50	370	100	1.1	4.0	<1.0	---
	9/22/2005			128.52	7.94		370	<0.50	<0.50	<0.50	<0.50	320	77	<1.0	3	<1.0	---
	12/5/2005			128.49	7.97		350	<0.50	<0.50	<0.50	<0.50	310	87	<1.0	2.8	<1.0	---
	3/30/2006			132.08	4.38		410	<0.50	<0.50	<0.50	<0.50	330	75	<1.0	2.9	<1.0	---
	6/13/2006			131.59	4.87		360	<0.50	<0.50	<0.50	<0.50	340	<150	<2.0	<6.0	<1.0	---
MW-10	6/23/2004	5-12	137.52	133.80	3.72	3, 4	160	<0.50	<0.50	<0.50	<0.50	140	<60	17	<1.0	<1.0	---
	9/14/2004			132.97	4.55	5,6	130	<0.50	<0.50	<0.50	<0.50	94	<30	8.2	<1.0	<1.0	---
	12/16/2004			134.41	3.11	3	410	<0.50	<0.50	<0.50	<0.50	350	62	29	<1.0	<1.0	---
	3/15/2005			133.59	3.93		340	<0.50	<0.50	<0.50	<0.50	400	140	41	1.2	<1.0	---
	6/8/2005			133.10	4.42		420	<0.50	<0.50	<0.50	<0.50	370	88	38	<2.0	<1.0	---
	9/22/2005			132.68	4.84		400	<0.50	<0.50	<0.50	<0.50	330	62	34	<2.0	<1.0	---
	12/5/2005			133.13	4.39		420	<0.50	<0.50	<0.50	<0.50	370	73	35	<1.0	<1.0	---
	3/30/2006			133.33	4.19		510	<0.50	<0.50	<0.50	<0.50	370	71	38	<1.0	<1.0	---
	6/13/2006			134.73	2.79		450	<0.50	<0.50	<0.50	<0.50	390	<80	38	<2.0	<1.0	---

TABLE 1: MONITORING WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP No. 12261

Well ID	Sample Date	Screened Interval (feet bgs)	Well Head Elevation* (ft msl)	Water Surface Elevation (ft msl)	Depth to Water (ft)	Foot notes	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	TAME (µg/L)	ETBE (µg/L)	DIPE (µg/L)	Methanol/ Ethanol (µg/L)
Field Duplicate																	
MW-5	**12/5/2005**	**5-12**	---	---	---		**1,100**	**10**	<0.50	**0.8**	<0.50	**500**	**74**	**93**	<1.0	<1.0	---
MW-10	**3/30/2006**	**5-12**	---	---	---		**500**	<0.50	<0.50	<0.50	<0.50	**350**	**65**	**38**	<2.0	<1.0	---
MW-10	**6/13/2006**	**5-12**	---	---	---		**450**	<0.50	<0.50	<0.50	<0.50	**390**	<100	**38**	<2.0	<1.0	---

*Reference NAVD 88, 11/02.
Elevations of 8/15/02 set by R. Smith, LS. Used Caltrans HPGN monument "D CA 01 NC" south of Rio Dell @ Jordan Road/Hwy. 254 (Pepperwood) off-ramp

Laboratory Notations

[1] Samples does not present a peak pattern consistent with that of gasoline.

[2] The gasoline value includes the reported gasoline components and additives in addition to other peaks in the gasoline range

[3] The gasoline value is primarly from the reported gasoline additives.

[4] TBA reporting limit was raised due to matrix interference.

[5] The gasoline value includes the reported gasoline addditives in addition to other peaks in the gasoline range.

[6] Some reporting limits were raised due to matrix interfernce.

[7] The travel blank for this work order was prepared with water that had a high background of MTBE.
The containers for this project were not affected as demonstrated by the ND results for sample MW6 (9/14/04)
Bold indicates analyte detections
A key to abbreviations is included as Attachment 1

TABLE 2: HISTORICAL HYDRAULIC GRADIENT DATA
Former Rio Dell Shell, 481 Wildwood Ave., Rio Dell, CA
LACO Project No. 3577.05; LOP No. 12261

	Shallow Aquifer		Deep Aquifer	
Date	**Direction**	**Slope (ft/ft)**	**Direction**	**Slope (ft/ft)**
12/28/1999	---	---	S49°E	0.01
2/24/2000	---	---	S61°E	0.02
3/21/2000	---	---	S57°E	0.01
4/18/2000	---	---	S58°E	0.01
5/26/2000	---	---	S46°E	0.01
6/30/2000	---	---	S55°E	0.01
7/31/2000	---	---	S46°E	0.01
8/28/2000	---	---	S43°E	0.01
9/22/2000	---	---	S43°E	0.01
10/26/2000	---	---	S5°E	<0.01
1/12/2001	---	---	S45°E	0.01
5/2/2001	---	---	S59°E	<0.01
6/1/2001	**shallow wells installed**		**deep wells reconstructed**	
7/6/2001	N73°E	0.05	S11°W	0.01
9/4/2001	S31°W	0.06	S20°W	0.01
10/18/2001	S87°W	0.03	N56°W	<0.01
11/29/2001	S45°W	0.04	N35°W	0.01
1/2/2002	S35°W	0.02	N50°W	0.01
1/21/2002	N89°E	<0.01	N76°W	<0.01
2/27/2002	S20°W	0.05	N1°W	<0.01
3/13/2002	S54°W	0.05	N27°W	<0.01
4/19/2002	N85°E	0.01	N14°W	<0.01
5/20/2002	N49°E	<0.01	S41°E	<0.01
6/13/2002	N21°W	0.01	S52°W	<0.01
10/31/2002	N46°E	0.06	N77°W	0.10
1/3/2003	S85°W	0.04	N61°W	<0.01
3/18/2003	N9°W	0.04	N50°E	0.06
6/24/2003	N20°W	0.04	S77°E	<0.01
9/18/2003	N40°W	0.06	N79°E	<0.01
12/9/2003	N21°E	0.01	S52°E	<0.01
3/4/2004	N73°W	0.04	N50°E	<0.01
6/23/2004	N57°W	0.05	S77°E	<0.01
9/14/2004	N34°E	0.07	S77°E	<0.01
12/16/2004	N3°E	0.11	N72°E	<0.01
3/15/2005	N8°W	0.08	N55°E	<0.01
6/8/2005	N33°W	0.06	N75°W	0.01
9/22/2005	N3°W	0.1	S83°W	<0.01
12/5/2005	N5°W	0.06	N55°E	0.02
3/30/2006	N37°W	0.11	N49°E	<0.01
6/13/2006	N35°W	0.1	S43°W	0.01

TABLE 3. HISTORICAL WATER QUALITY PARAMETERS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP NO. 12261

Well ID/Sample Date	pH	Temperature (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
MW1					
6/13/2002	---	---	---	-59	-0.9
MW2					
6/13/2002	---	---	---	-62	-2.7
10/31/2002	---	---	---	0.9	174
1/3/2003	---	---	---	37	1.6
3/18/2003	---	---	---	-67	Ur
6/24/2003	---	---	---	-11	0.07
9/18/2003	---	---	---	-43	0.00
12/9/2003	---	---	---	5	0.54
3/4/2004	---	---	---	2	0.61
6/23/2004	---	---	---	Ur	0.55
9/14/2004	---	---	---	Ur	0.55
12/16/2004	---	---	---	-72	0.66
3/15/2005	---	---	---	Ur	0.95
9/22/2005	---	---	---	-59	0.42
12/5/2005	---	---	---	57	0.48
3/30/2006	---	---	---	-39	0.60
6/13/2006	---	---	---	UR	0.65
MW3					
6/13/2002	---	---	---	-74	-2.4
10/31/2002	---	---	---	92	0.8
3/18/2003	---	---	---	-94	-64
6/24/2003	---	---	---	0	0.71
9/18/2003	---	---	---	-64	0.49
12/9/2003	---	---	---	-18	0.54
3/4/2004	---	---	---	-4	0.52
6/23/2004	---	---	---	Ur	0.61
9/14/2004	---	---	---	Ur	0.47
12/16/2004	---	---	---	-53	0.53
3/15/2005	---	---	---	Ur	0.59
6/8/2005	---	---	---	-103	0.53
9/22/2005	---	---	---	-62	0.44
12/5/2005	---	---	---	51	0.47
3/30/2006	---	---	---	-46	0.58
6/13/2006	---	---	---	UR	0.45
MW4					
6/13/2002	---	---	---	-96	-2.2
10/31/2002	---	---	---	44	0.9
1/3/2003	---	---	---	-22	0.8
3/18/2003	---	---	---	-75	-64
6/24/2003	---	---	---	-34	0.67
9/18/2003	---	---	---	-52	0.22
12/9/2003	---	---	---	-2	0.49
3/4/2004	---	---	---	5	0.84
6/23/2004	---	---	---	Ur	0.88
9/14/2004	---	---	---	Ur	0.45
12/16/2004	---	---	---	-63	0.74
3/15/2005	---	---	---	Ur	0.50
6/8/2005	---	---	---	-83	0.64
9/22/2005	---	---	---	-73	0.63

TABLE 3. HISTORICAL WATER QUALITY PARAMETERS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP NO. 12261

Well ID/Sample Date	pH	Temperature (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
MW4 Cont'd					
12/5/2005	---	---	---	54	0.56
3/30/2006	---	---	---	-57	0.69
6/13/2006	---	---	---	UR	0.54
MW5					
6/13/2002	---	---	---	-58	-1.6
10/31/2002	---	---	---	113	0.6
1/3/2003	---	---	---	-5	0.8
3/18/2003	---	---	---	-79	-70
6/24/2003	---	---	---	-64	1.2
9/18/2003	---	---	---	-83	0.44
12/9/2003	---	---	---	-30	0.64
3/4/2004	---	---	---	-21	0.67
6/23/2004	---	---	---	Ur	0.82
9/14/2004	---	---	---	Ur	0.49
12/16/2004	---	---	---	-55	0.42
3/15/2005	---	---	---	Ur	0.35
9/22/2005	---	---	---	-81	0.5
12/5/2005	---	---	---	6	0.5
3/30/2006	---	---	---	-58	0.70
6/13/2006	---	---	---	UR	0.67
MW6					
6/13/2002	---	---	---	-47	-0.05
10/31/2002	---	---	---	82	0.50
1/3/2003	---	---	---	52	1.10
3/18/2003	---	---	---	24	1.45
6/24/2003	---	---	---	14	0.89
9/18/2003	---	---	---	-64	0.29
12/9/2003	---	---	---	10	0.77
3/4/2004	---	---	---	-6	1.23
6/23/2004	---	---	---	Ur	1.15
9/14/2004	---	---	---	Ur	0.49
12/16/2004	---	---	---	-68	1.18
3/15/2005	---	---	---	Ur	0.86
9/22/2005	---	---	---	-84	0.56
12/5/2005	---	---	---	50	0.53
3/30/2006	---	---	---	-68	0.61
6/13/2006	---	---	---	UR	0.67
MW7					
10/31/2002	---	---	---	248	4.50
1/3/2003	---	---	---	34	0.70
3/18/2003	---	---	---	Ur	0.61
6/24/2003	---	---	---	-48	1.20
9/18/2003	---	---	---	-63	0.10
12/9/2003	---	---	---	-27	0.45
3/4/2004	---	---	---	-24	0.53
6/23/2004	---	---	---	Ur	0.48
9/14/2004	---	---	---	Ur	0.60
12/16/2004	---	---	---	-78	0.53
3/15/2005	---	---	---	Ur	0.37
6/8/2005	---	---	---	-86	0.43
9/22/2005	---	---	---	-79	0.45

TABLE 3. HISTORICAL WATER QUALITY PARAMETERS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP NO. 12261

Well ID/Sample Date	pH	Temperature (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
MW7 Cont'd					
12/5/2005	---	---	---	19	0.36
3/30/2006	---	---	---	-59	0.54
6/13/2006	---	---	---	UR	0.37
MW8					
1/3/2003	---	---	---	7	0.70
3/18/2003	---	---	---	Ur	0.21
6/24/2003	---	---	---	-86	0.88
9/18/2003	---	---	---	-86	0.12
12/9/2003	---	---	---	0	3.44
3/4/2004	---	---	---	-36	0.68
6/23/2004	---	---	---	Ur	0.80
9/14/2004	---	---	---	Ur	5.53
12/16/2004	---	---	---	-69	0.72
3/15/2005	---	---	---	Ur	0.37
9/22/2005	---	---	---	-85	0.67
12/5/2005	---	---	---	10	0.60
3/30/2006	---	---	---	-59	0.50
6/13/2006	---	---	---	UR	0.76
MW9					
1/3/2003	---	---	---	22	0.90
3/18/2003	---	---	---	-91	1.25
6/24/2003	---	---	---	-21	1.53
9/18/2003	---	---	---	-44	0.24
12/9/2003	---	---	---	-15	0.37
3/4/2004	---	---	---	-14	0.61
6/23/2004	---	---	---	Ur	0.70
9/14/2004	---	---	---	Ur	8.62
12/16/2004	---	---	---	-79	0.52
3/15/2005	---	---	---	Ur	0.37
6/8/2005	---	---	---	-104	0.49
9/22/2005	---	---	---	-75	0.49
12/5/2005	---	---	---	30	0.53
3/30/2006	---	---	---	-50	0.70
6/13/2006	---	---	---	UR	0.58
MW10					
12/16/2004	---	---	---	Ur	0.43
3/15/2005	---	---	---	Ur	0.46
6/8/2005	---	---	---	-134	0.57
9/22/2005	---	---	---	-97	0.55
12/5/2005	---	---	---	-1	0.49
3/30/2006	---	---	---	-88	0.45
6/13/2006				UR	0.48

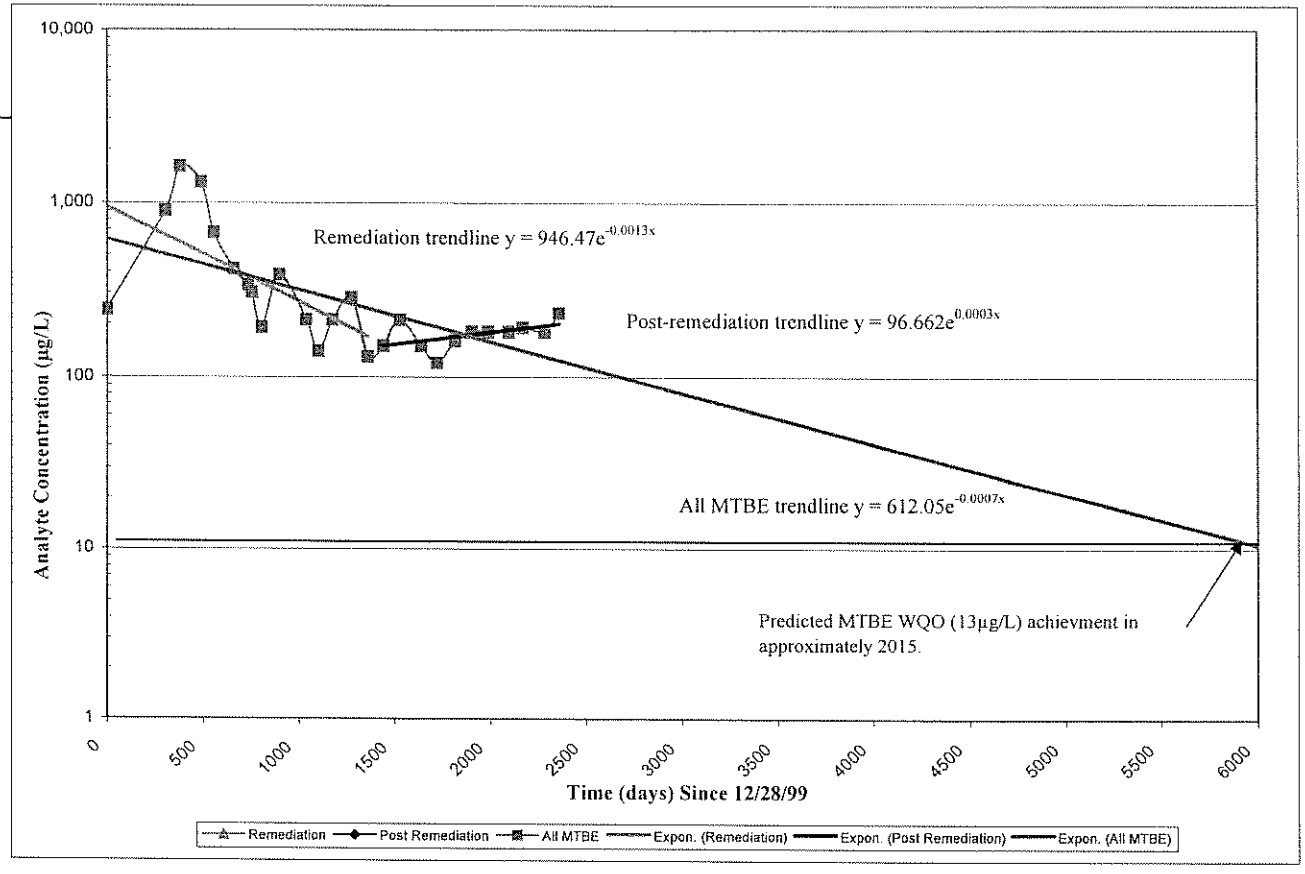
Notes:
A key to abbreviations is included in Attachment 1

WORKSHEET 1: CHART OF MTBE CONCENTRATIONS AND TRENDLINES FOR MONITORING WELL MW3 SINCE 12/28/1999

Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA

LACO Project No. 3577.05; LOP No. 12261

Date	Time since sampling inititation (days)	MTBE (µg/L)
12/28/1999	0	240
*4/18/2000	112	3,700
*7/31/2000	216	2,400
10/26/2000	303	900
1/12/2001	381	1,600
5/2/2001	491	1,300
7/6/2001	556	670
10/18/2001	660	410
1/2/2002	736	330
1/21/2002	755	300
3/13/2002	806	190
6/13/2002	898	380
10/31/2002	1,038	210
1/3/2003	1,102	140
3/18/2003	1,176	210
6/24/2003	1,274	280
9/18/2003	1,360	130
12/9/2003	1,442	150
3/4/2004	1,528	210
6/23/2004	1,639	150
9/14/2004	1,722	120
12/16/2004	1,815	160
3/15/2005	1,904	180
6/8/2005	1,989	180
9/22/2005	2,095	180
12/5/2005	2,169	190
3/30/2006	2,284	180
6/13/2006	2,359	230
	average=µ	547



st dev=σ	810
µ + 2σ =	2168
µ - 2σ =	-1074

MTBE WQO	from equation of exponential trendline y-int	exp	Predicted days to WQO achievement from 12/28/1999	
13	612	0.0007	5502.5	Days
			15.1	Years

Time: days since 12/28/1999
= -Ln (WQO) / Y intercept) / exponent

Pump and treat remediation within the tank cavity was intitiated December 2002. The pump and treat system was shutdown September 2003.

WQO achievement time for MW3 was calculated using the All MTBE decay rate because apparent increasing trend following shutdown of pump and treat

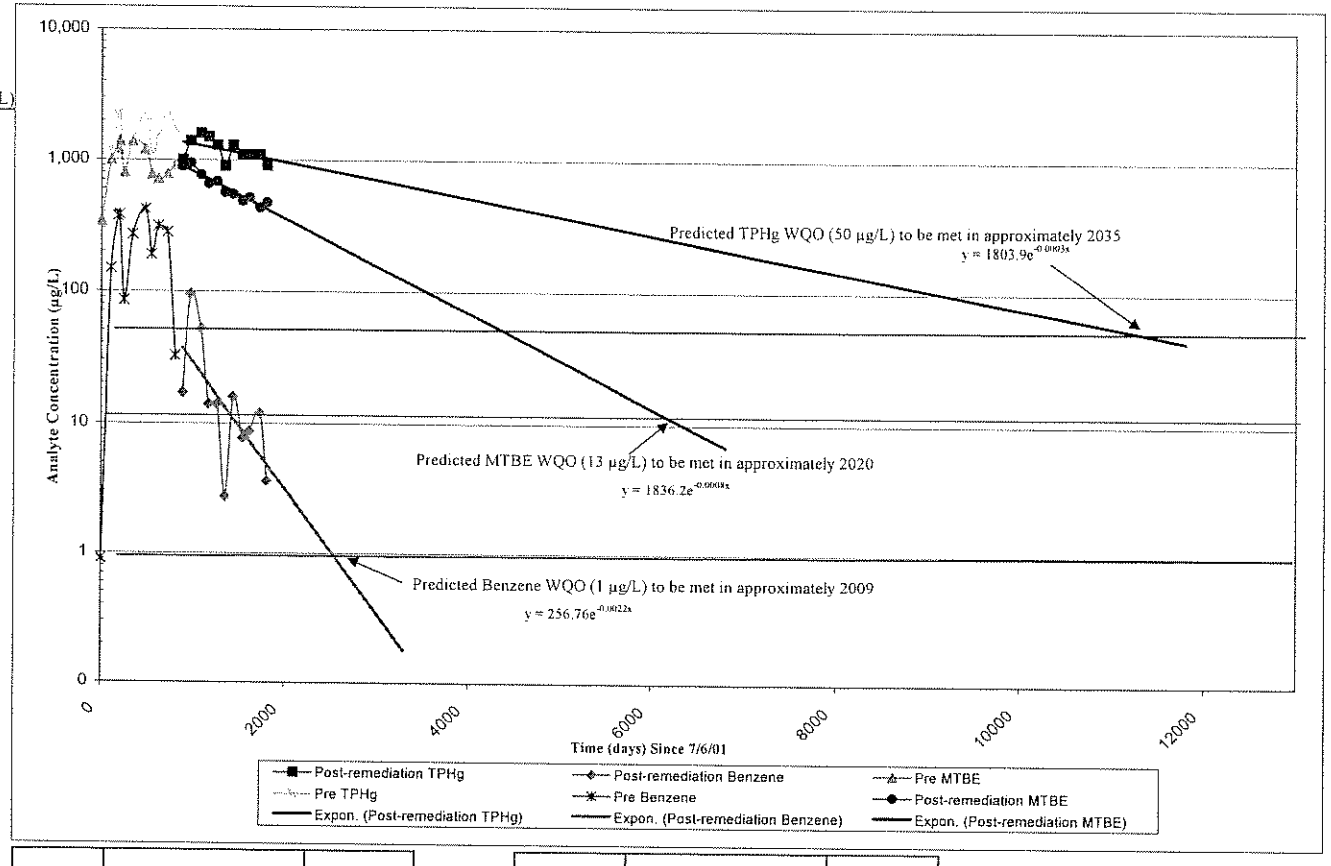
*** TPHg and MTBE data not included in trendline because concentrations fall outside 2σ.**

WORKSHEET 2: CHART OF ANALYTE CONCENTRATIONS AND TRENDLINES FOR MONITORING WELL MW5 SINCE 7/6/2001

Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA

LACO Project No. 3577.05; LOP No. 12261

Date	Time since sampling inititation (days)	TPHg (µg/L)	Benzene (µg/L)	MTBE (µg/L)
7/6/2001	0	<100	0.9	340
10/18/2001	104	1,200	150	1,000
1/2/2002	180	2,200	370	1,200
1/21/2002	199	2,400	380	1,400
3/13/2002	250	910	85	790
6/13/2002	342	1,500	270	1,400
10/31/2002	482	2,200	420	1,200
1/3/2003	546	1,100	190	770
3/18/2003	620	1,600	310	710
6/24/2003	718	2,300	280	780
9/18/2003	804	1,700	32	910
12/9/2003	886	1,000	17	880
3/4/2004	972	1,400	95	940
6/23/2004	1083	1,600	51	760
9/14/2004	1166	1,500	14	650
12/16/2004	1259	1,300	14	670
3/15/2005	1348	890	2.7	560
6/8/2005	1433	1,300	16	540
9/22/2005	1539	1,100	7.8	480
12/5/2005	1613	1,100	8.8	510
3/30/2006	1728	1,100	12	430
6/13/2006	1803	900	3.6	470
	average=µ	1,443	124	790
	st dev=σ	478	146	304
	µ + 2σ =	2399	416	1398
	µ - 2σ =	487	-167	183



Benzene WQO	from equation of exponential trendline y-int	exp	Predicted days to WQO achievement from 9/18/2003	
1	256	0.0022	2520.5	Days
			6.9	Years

MTBE WQO	from equation of exponential trendline y-int	exp	Predicted days to WQO achievement from 9/18/2003	
13	1,836	0.0008	6188.0	Days
			17.0	Years

TPHg WQO	from equation of exponential trendline y-int	exp	Predicted days to WQO achievement from 9/18/2003	
50	1,803	0.0003	11950.6	Days
			32.7	Years

Time: days since 9/18/2003
= -Ln (WQO) / Y intercept) / exponent

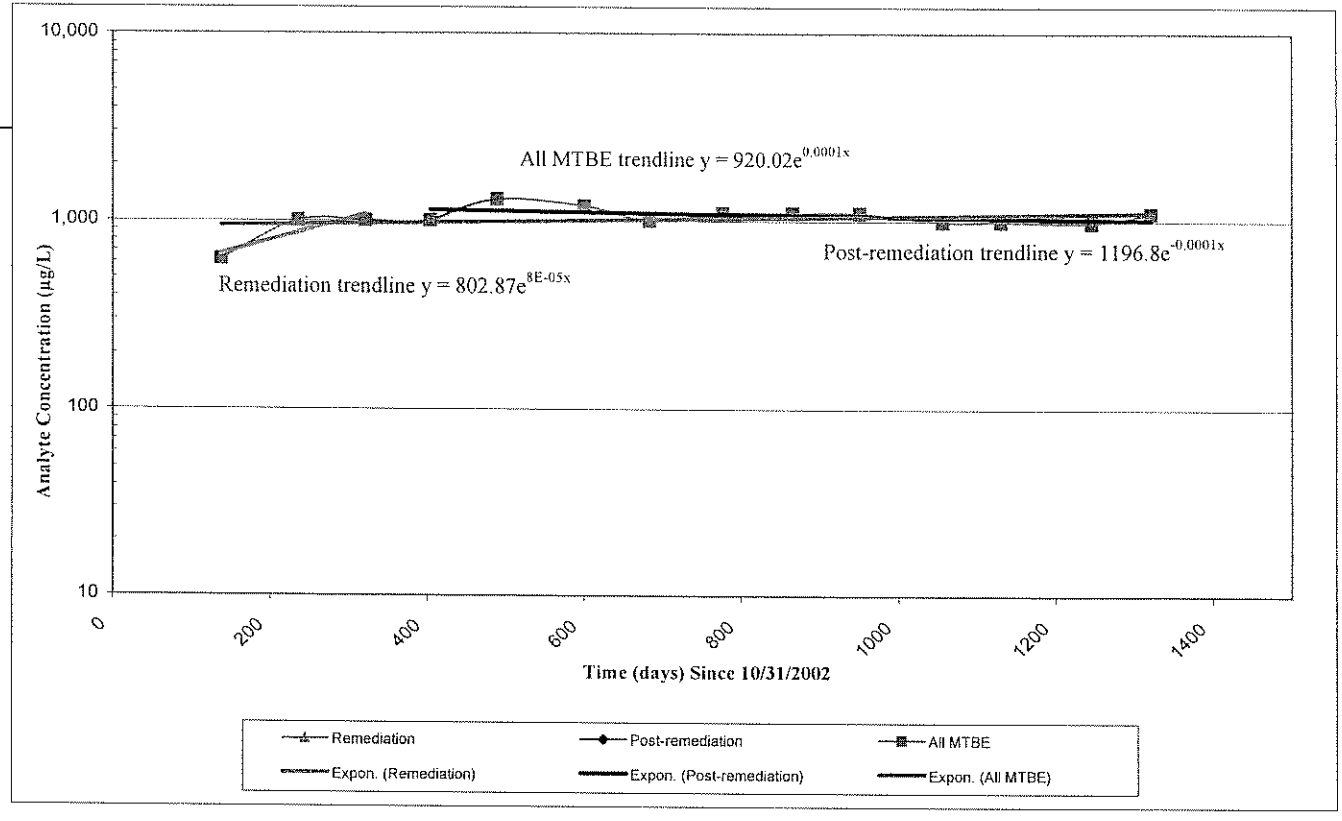
Pump and treat remediation within the tank cavity was intitiated December 2002. The pump and treat system was shutdown September 2003.
WQO achievement times for analytes in MW5 were calculated using the Post-remediation decay rate.

WORKSHEET 3: CHART OF MTBE CONCENTRATIONS AND TRENDLINES FOR MONITORING WELL MW7 SINCE 10/31/2002

Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA

LACO Project No. 3577.05; LOP No. 12261

Date	Time since sampling inititation (days)	MTBE (µg/L)
*10/31/2002	0	2,200
*1/3/2003	64	260
3/18/2003	138	620
6/24/2003	236	1,000
9/18/2003	322	1,000
12/9/2003	404	1,000
3/4/2004	490	1,300
6/23/2004	601	1,200
9/14/2004	684	1,000
12/16/2004	777	1,100
3/15/2005	866	1,100
6/8/2005	951	1,100
9/22/2005	1,057	990
12/5/2005	1,131	990
3/30/2006	1,246	980
6/13/2006	1,321	1,100
	average=µ	1,059
	st dev=σ	387
	µ + 2σ =	1,833
	µ - 2σ =	285



MTBE WQO	from equation of exponential trendline		Predicted days to WQO achievement from 9/18/2003	
	y-int	exp		
13	1,196	0.0001	45217.9	Days
			123.9	Years

Time: days since 9/18/2003
= -Ln (WQO) / Y intercept) / exponent

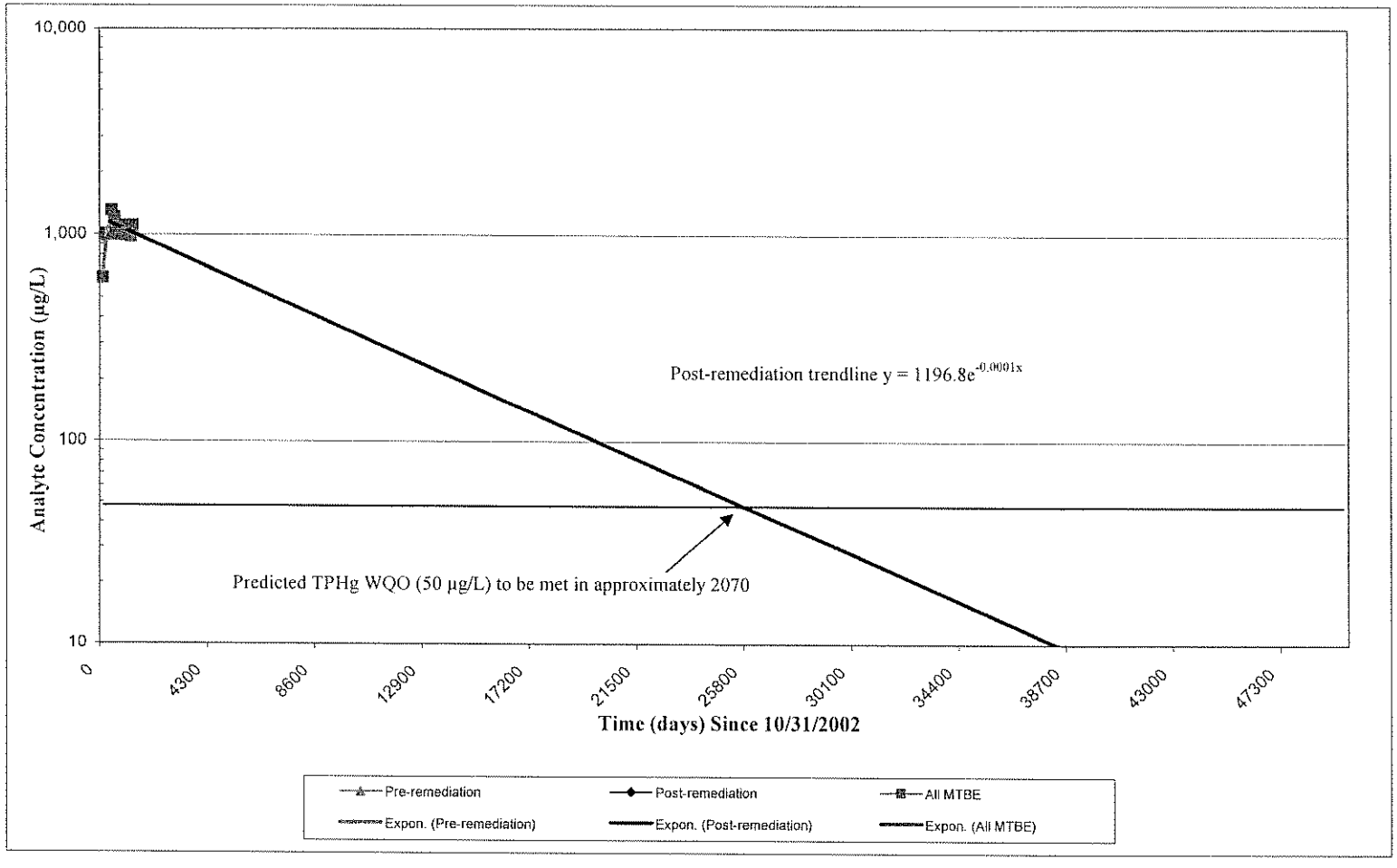
Pump and treat remediation within the tank cavity was intitiated December 2002. The pump and treat system was shutdown September 2003.
WQO achievement time for MW7 was calculated using the Post-remediation decay rate.

*** MTBE data not included in trendline because concentrations fall outside 2σ.**

WORKSHEET 3: CHART OF MTBE CONCENTRATIONS AND TRENDLINES FOR MONITORING WELL MW7 SINCE 10/31/2002

Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA

LACO Project No. 3577.05; LOP No. 12261

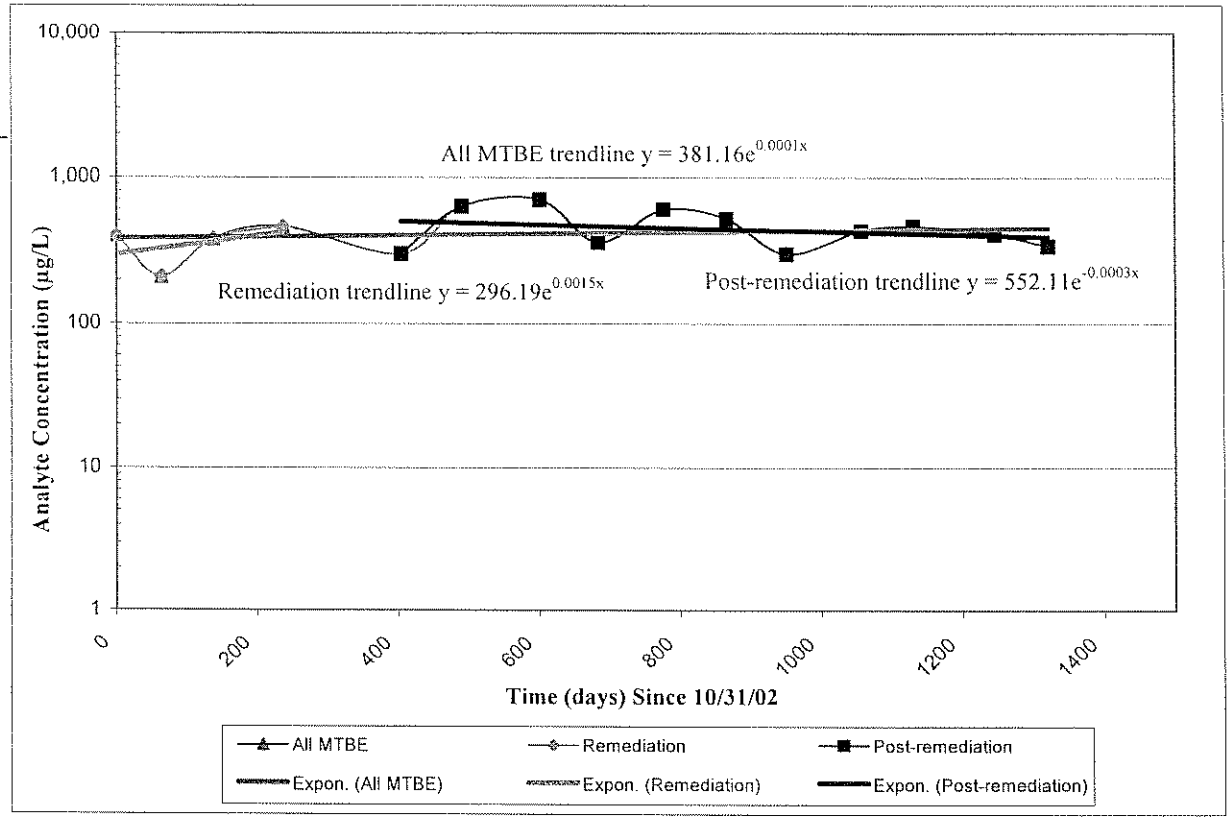


WORKSHEET 4: CHART OF MTBE CONCENTRATIONS AND TRENDLINES IN MONITORING WELL MW8 SINCE 10/31/2002

Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA

LACO Project No. 3577.05; LOP No. 12261

Date	Time since sampling initiation (days)	MTBE (µg/L)
10/31/02	0	400
1/3/03	64	210
3/18/03	138	380
6/24/2003	236	460
*9/18/2003	322	830
12/9/2003	404	300
3/4/2004	490	630
6/23/2004	601	700
9/14/2004	684	360
12/16/2004	777	600
3/15/2005	866	520
6/8/2005	951	300
9/22/2005	1057	430
12/5/2005	1131	460
3/30/2006	1246	410
6/13/2006	1321	340
	average	458
	st dev	163
	µ + 2σ =	784
	µ - 2σ =	132



MTBE WQO	from equation of exponential trendline		Predicted days to WQO achievement from 9/18/2003	
	y-int	exp		
13	552	0.0003	12495.3	Days
			34.2	Years

Time: days since 9/18/2003
= -Ln (WQO) / Y intercept) / exponent

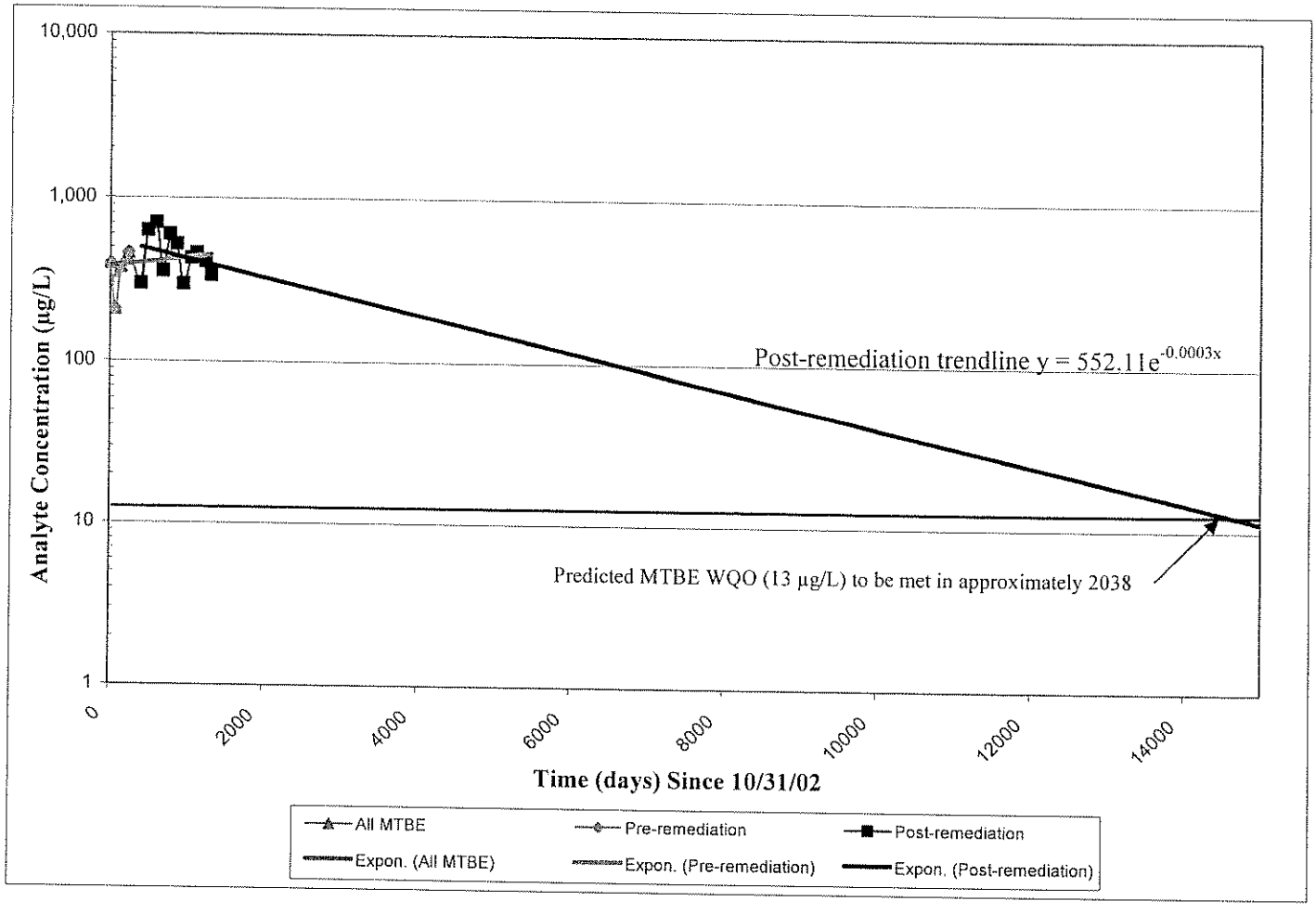
Pump and treat remediation within the tank cavity was intitiated December 2002. The pump and treat system was shutdown September 2003.
WQO achievement time for MW8 was calculated using the Post-remediation decay rate.

* **MTBE data not included in trendline because concentrations fall outside 2σ.**

WORKSHEET 4: CHART OF MTBE CONCENTRATIONS AND TRENDLINES IN MONITORING WELL MW8 SINCE 10/31/2002

Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA

LACO Project No. 3577.05; LOP No. 12261

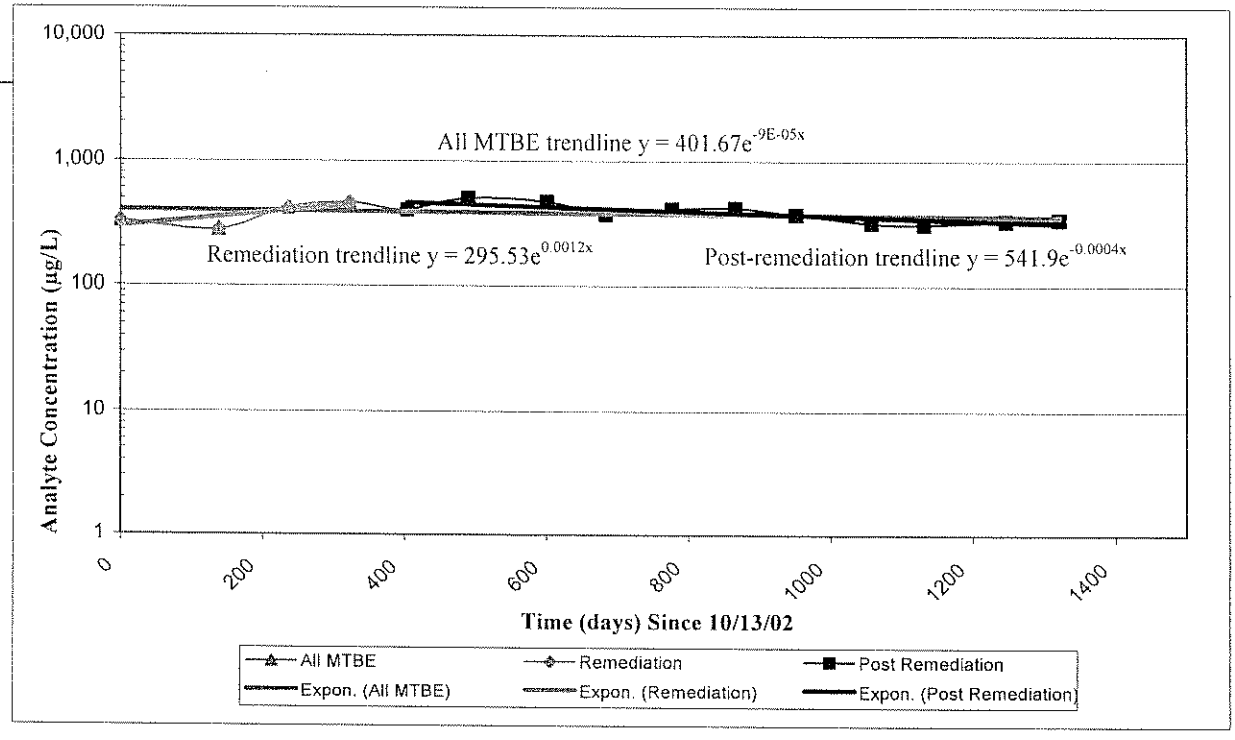


WORKSHEET 5: CHART OF MTBE CONCENTRATIONS AND TRENDLINES FOR MONITORING WELL MW9 SINCE 10/31/2002

Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA

LACO Project No. 3577.05; LOP No. 12261

Date	Time since sampling inititation (days)	MTBE (µg/L)
10/31/02	0	330
*1/3/2003	64	69
3/18/03	138	280
6/24/2003	236	420
9/18/2003	322	460
12/9/2003	404	400
3/4/2004	490	500
6/23/2004	601	470
9/14/2004	684	370
12/16/2004	777	410
3/15/2005	866	420
6/8/2005	951	370
9/22/2005	1057	320
12/5/2005	1131	310
3/30/2006	1246	330
6/13/2006	1321	340
	average	362
	st dev	100
	µ + 2σ =	563
	µ - 2σ =	162



MTBE WQO	from equation of exponential trendline		Predicted days to WQO achieveme 9/18/2003	
	y-int	exp		
13	541	0.0004	9321.2	Days
			25.5	Years

Time: days since 9/18/2003
= -Ln (WQO) / Y intercept) / exponent

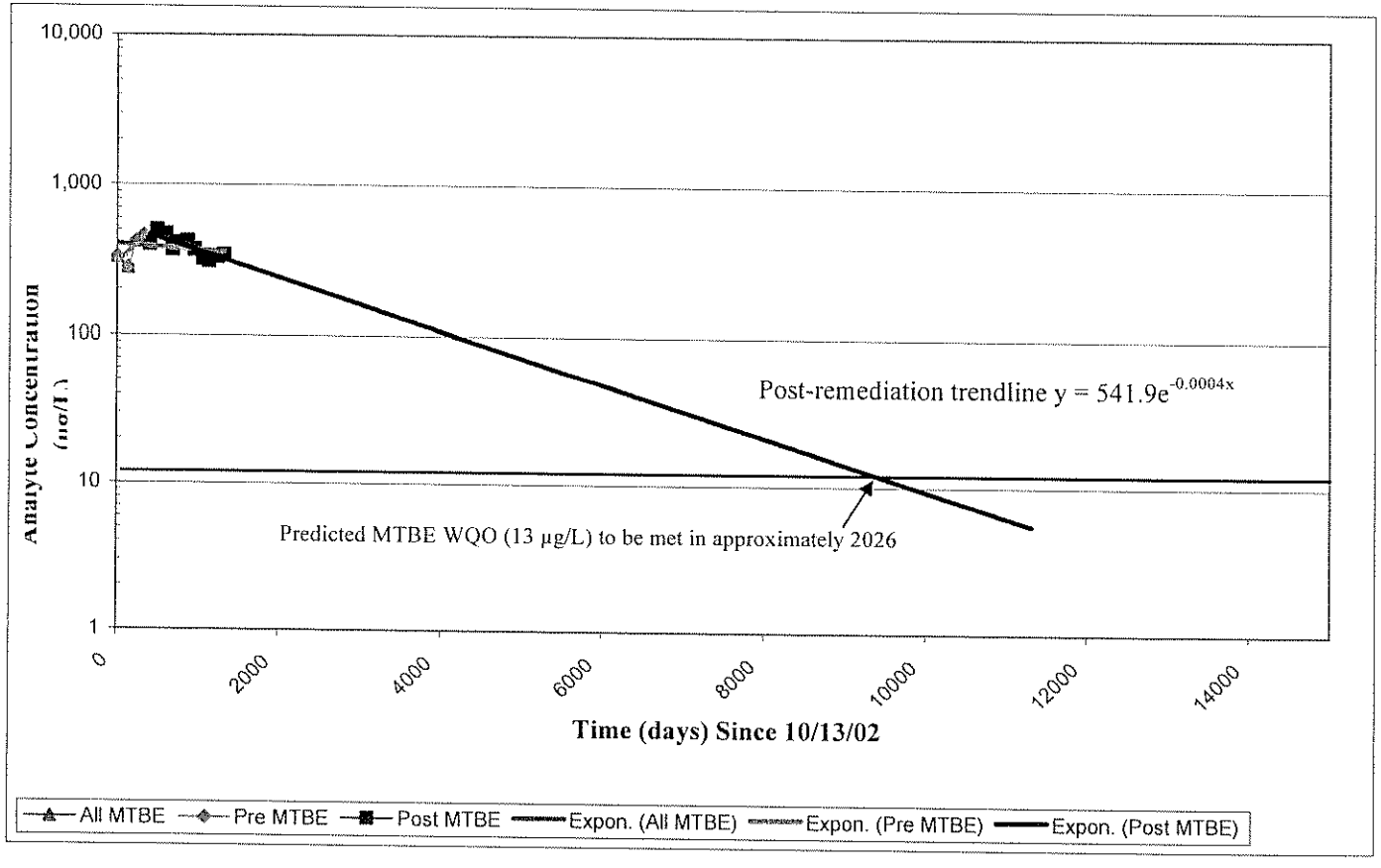
Pump and treat remediation within the tank cavity was intitiated December 2002. The pump and treat system was shutdown September 2003.
WQO achievement time for MW9 was calculated using the Post-remediation decay rate.

* **MTBE data not included in trendline because concentrations fall outside 2σ.**

WORKSHEET 5: CHART OF MTBE CONCENTRATIONS AND TRENDLINES FOR MONITORING WELL MW9 SINCE 10/31/2002

Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA

LACO Project No. 3577.05; LOP No. 12261



Attachment 1

KEY TO ABBREVIATIONS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.05; LOP No. 12261

KEY TO ABBREVIATIONS		
Alk	--	Alkalinity
BTEX	--	Benzene; Toluene; Ethylbenzene; m,p- and o- Xylenes
CO_2	--	Carbon dioxide
COC	--	Chain of custody
Cr	--	Chromium
DHP	--	Down-hole-pump (submersible pump)
DIPE	--	Di-isopropyl Ether
Dis	--	Dissolved
DO	--	Dissolved Oxygen
DTW	--	Depth-to-Water
ECw	--	Electrical Conductivity in water
ETBE	--	Ethyl Tertiary Butyl Ether
Fe	--	Iron
FP	--	Free Product
LNAPL	--	Light Non-Aqueous Phase Liquid
Mn	--	Manganese
MTBE	--	Methyl Tertiary Butyl Ether
N	--	Nitrogen
NA	--	Not Applicable
ND<50	--	non-detect at reporting limits shown
NO_3	--	Nitrate
NOT ACTIVE	--	Sample not analyzed for parameter during current sampling event
ORP	--	Oxidation Reduction Potential
P	--	Phosphorous
Pb	--	Lead
PCP/TCP	--	penta- tetra- tri- chlorophenols
pH	--	Potential of hydrogen
SGC	--	Silica gel cleanup
SO_4	--	Sulfate
T	--	Temperature
T&P	--	Tape and Paste
TAME	--	Tertiary Amyl Methyl Ether
TBA	--	Tetiary Butyl Alcohol
TBF	--	Tertiary Butyl Formate
TIC	--	Total Inorganic Carbon
TOC	--	Total Organic Carbon
Tot	--	Total
TPHd	--	Total Petroluem Hydrocarbons as Diesel
TPHg	--	Total Petroluem Hydrocarbons as Gasoline
TPHk	--	Total Petroluem Hydrocarbons as Kerosene
TPHmo	--	Total Petroluem Hydrocarbons as Motor Oil
TPHs	--	Total Petroluem Hydrocarbons as Solvent
UR	--	Reading exceeds the negative range of the meter
µg/L	--	Micro grams per liter (parts per billion)

Note: Not all abbreviations in this key are used in this report.

Attachment 2

LACO ASSOCIATES
CONSULTING ENGINEERS
21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: W&S - Rio Dell Shell
Project No.: 3577.05
Date: 6-13-06
Golbal ID No.: T0602300194
PM: CJW

Tech: SJD
Mob/Demob time: .25/.25
Travel time: 1.50
Time on site: 8:30
Time off site: 1:50
Mileage: 55

WELL No.:	MW1		MW2		MW3		MW4		MW6	
DIAMETER (in)	2.00		2.00		2.00		2.00		2.00	
SCREENED INTERVAL (ft)	18-25		18-25		13-20		7-12		5-12	
DEPTH TO WATER (ft)	8.59		7.23		7.14		5.10		5.82	
	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
FIELD INTRINSICS: pH										
TEMP (°C)										
Ecw (µmohs)										
ORP (mV)			-68	Ur	Ur	Ur	Ur	Ur	Ur	Ur
DO (mg/L)			1.17	0.65	1.45	0.45	1.31	0.54	1.84	0.67
OTHER (units)										
PURGE: TIME			9:33	9:41	9:58	10:06	10:24	10:32	10:49	10:57
METHOD (DHP/CB/B)			DHP		DHP		DHP		DHP	
RATE (Lpm)			0.18		0.20		0.18		0.18	
VOLUME (L)			1.40		1.60		1.40		1.40	
COLOR			CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
ODOR			LIGHT SULFUR/SLIGHT SWEET		MED. SULFUR		MED. SULFUR		MED. SULFUR	
INTAKE DEPTH (FEET)			20.0		16.0		10.0		10.0	
SAMPLE: TIME			9:42		10:07		10:33		10:58	
METHOD (DHP/CB/B)			DHP		DHP		DHP		DHP	
ANALYTES	MEASURE ONLY		8260 list 1		8260 list 1		8260 list 1		8260 list 1	
TOTAL DRAWDOWN (FEET)			0.05		0.13		1.40		0.66	
REMARKS										
WELL CONDITION			good		good		ONE BOLT HOLE STRIPPED		good	
WASTE DRUMS										

DEPTH MEASUREMENTS ARE REFERENCED TO TOP OF CASING

DHP=DOWN HOLE PUMP CB=CHECK BALL B=BAILER FD=FIELD DUPLICATE MB=METHOD BLANK FF=FIELD FILTERED

LACO ASSOCIATES
CONSULTING ENGINEERS
21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: W&S - Rio Dell Shell
Project No.: 3577.05
Date: 6-13-06
Golbal ID No.: T0602300252
PM: CJW

Tech: SJD
Mob/Demob time: .25/.25
Travel time: 1.50
Time on site: 8:30
Time off site: 1:50
Mileage: 55

WELL No.:	MW9		MW8		MW7		MW5		MW10	
DIAMETER (in)	2.00		2.00		2.00		2.00		2.00	
SCREENED INTERVAL (ft)	5-12		5-12		5-12		5-12		5-12	
DEPTH TO WATER (ft)	4.87		4.97		6.97		2.81		2.79	
	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
FIELD INTRINSICS: pH										
FIELD INTRINSICS: TEMP (°C)										
FIELD INTRINSICS: Ecw (µmohs)										
FIELD INTRINSICS: ORP (mV)	Ur	Ur	Ur	Ur	-96	Ur	-92	Ur	-87	Ur
FIELD INTRINSICS: DO (mg/L)	1.28	0.58	1.45	0.76	1.17	0.37	1.21	0.67	1.22	0.48
FIELD INTRINSICS: OTHER (units)	—		—		—		—		—	
PURGE: TIME	11:15	11:23	11:37	11:43	12:00	12:08	12:24	12:30	12:47	12:55
PURGE: METHOD (DHP/CB/B)	DHP		DHP		DHP		DHP		DHP	
PURGE: RATE (Lpm)	0.18		0.20		0.18		0.17		0.18	
PURGE: VOLUME (L)	1.40		1.20		1.40		1.0		1.35	
PURGE: COLOR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR
PURGE: ODOR	LIGHT SULFUR/SWEET		MED. SULFUR		MED. SWEET/LIGHT SULFUR		STRONG SHOE STORE/RUBBER		LIGHT SWEET/SULFUR	
PURGE: INTAKE DEPTH (FEET)	10.0		10.0		10.0		10.0		10.0	
SAMPLE: TIME	11:24		11:44		12:09		12:31		12:56	
SAMPLE: METHOD (DHP/CB/B)	DHP		DHP		DHP		DHP		DHP	
SAMPLE: ANALYTES	8260 list 1		8260 list 1		8260 list 1		8260 list 1		8260 list 1	
SAMPLE: TOTAL DRAWDOWN (FEET)	1.15		0.53		0.71		0.92		0.51	
SAMPLE: REMARKS	—		—		—		—		FD-MB	
WELL CONDITION	good		good		good		good		good	
WASTE DRUMS										

DEPTH MEASUREMENTS ARE REFERENCED TO TOP OF CASING

DHP=DOWN HOLE PUMP CB=CHECK BALL B=BAILER FD=FIELD DUPLICATE MB=METHOD BLANK FF=FIELD FILTERED

LACO ASSOCIATES
CONSULTING ENGINEERS

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TEL 707.443.5054
FAX 707.443.0553

Project Name: W&S RIO DELL SHELL

Project No.: 3577.05

Tech: SJD

Date: 6-13-06

WELL ID: MW1		WELL ID: MW2		WELL ID: MW3		WELL ID: MW4		WELL ID: MW5		WELL ID: MW6	
TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)
8:57	8.59	9:05	7.23	8:59	7.14	9:01	5.10	9:06	2.81	9:03	5.82
9:18	8.59	9:26	7.23	9:20	7.14	9:22	5.10	9:28	2.81	9:24	5.82

WELL ID: MW7		WELL ID: MW8		WELL ID: MW9		WELL ID: MW10		WELL ID: OW1		WELL ID: OW2	
TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)
9:15	6.97	9:10	4.97	9:13	4.87	9:08	2.79	1:12	2.87	1:14	3.08
9:50	6.97	10:15	4.97	9:52	4.87	10:17	2.79	1:22	2.87	1:23	3.08

WELL ID: OW3		WELL ID: OW4		WELL ID:		WELL ID:		WELL ID:		WELL ID:	
TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)	TIME	DTW (ft)
1:15	2.04	1:17	2.28								
1:25	2.04	1:27	2.28								

LACO ASSOCIATES
CONSULTING ENGINEERS

21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Tech: SJD

Project Name: WTS - RIO DELL SHELL

Date: 6-13-06

Project No.: 3577.05

WELL ID:	METER ACCURACY RANGE				
MW2	+/- 0.2 pH	+/- 0.5 °C	+/- 20 µmohs	+/- 2 mv	+/- 0.3 mg/L
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
9:35	~	~	~	-98	0.96
9:37	~	~	~	Ur	0.76
9:39	~	~	~	Ur	0.59
9:41	~	~	~	Ur	0.65

WELL ID: MW3					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
10:00	~	~	~	Ur	0.81
10:02	~	~	~	Ur	0.67
10:04	~	~	~	Ur	0.49
10:06	~	~	~	Ur	0.45

WELL ID: MW4					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
10:26	~	~	~	Ur	0.96
10:28	~	~	~	Ur	0.79
10:30	~	~	~	Ur	0.57
10:32	~	~	~	Ur	0.54

WELL ID: MW6					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
10:51	~	~	~	Ur	1.13
10:53	~	~	~	Ur	0.90
10:55	~	~	~	Ur	0.72
10:57	~	~	~	Ur	0.67

WELL ID: MW9					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
11:17	~	~	~	Ur	1.00
11:19	~	~	~	Ur	0.78
11:21	~	~	~	Ur	0.56
11:23	~	~	~	Ur	0.58

WELL ID:					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
11:39	~	~	~	Ur	1.03
11:41	~	~	~	Ur	0.80
11:43	~	~	~	Ur	0.76

LACO ASSOCIATES
CONSULTING ENGINEERS

21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Tech: SJD

Project Name: WBS-R10 DELL SHELL

Date: 6-13-06

Project No.: 3577.05

WELL ID:	METER ACCURACY RANGE				
MW7	+/- 0.2 pH	+/- 0.5 °C	+/- 20 µmohs	+/- 2 mv	+/- 0.3 mg/L
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
12:02	~	~	~	Ur	0.93
12:04	~	~	~	Ur	0.62
12:06	~	~	~	Ur	0.47
12:08	~	~	~	Ur	0.37

WELL ID:					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
12:26	~	~	~	Ur	0.83
12:28	~	~	~	Ur	0.69
12:30	~	~	~	Ur	0.67

WELL ID: MW10					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
12:49	~	~	~	-94	0.72
12:51	~	~	~	Ur	0.66
12:53	~	~	~	Ur	0.54
12:55	~	~	~	Ur	0.48

WELL ID:					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

WELL ID:					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

WELL ID:					
TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)

NORTH COAST LABORATORIES LTD.
5680 West End Road • Arcata • CA 95521-9202
707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER:

Attention: Accounts Payable
Results & Invoice to: Laco Associates
Address: 21 W. 4th St. Eureka CA 95501
Phone: (707) 443-5054
Copies of Report to: LACO; Chris Watt
Sampler (Sign & Print): SJD

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[✓] STD (2–3 Wk) [ ] Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [✓] Verbal [ ] By:
Final Report: FAX [ ] Verbal [ ] By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 3577.05
Project Name: W&S Rio Dell Shell
Purchase Order Number: Task 3037

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	CONTAINER	PRESERVATIVE	ANALYSIS: 8260 List 1
	3577-MW2-W	6-13-06	AM	GW	9	b	3
	3577-MW3-W						3
	3577-MW4-W						3
	3577-MW5-W						3
	3577-MW6-W						3
	3577-MW7-W						3
	3577-MW8-W						3
	3577-MW9-W						3
	3577-MW10-W						3
	3577-QCTB-W		PM				1

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
GEOTRACKER

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME

SAMPLE DISPOSAL
[ ] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

NORTH COAST LABORATORIES LTD.
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707-822-4649 Fax 707-822-6831

Chain of Custody

LABORATORY NUMBER:

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other: ______
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☑ Verbal ☐ By: __/__/__
Final Report: FAX ☐ Verbal ☐ By: __/__/__

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

Attention: Accounts Payable
Results & Invoice to: LACO Associates
Address: 21 W 4th Street, Eureka, CA 95501
Phone: (707) 443-5054
Copies of Report to: LACO; Chris Watt
Sampler (Sign & Print): SJD [signature]

PROJECT INFORMATION

Project Number: 3577.05
Project Name: W&S Rio Dell Shell
Purchase Order Number: Task 3037

PRESERVATIVE	b
CONTAINER	9
ANALYSIS	8260 List 1

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	8260 List 1
	3577-QCMB-W	6-13-06	Am	GW	3
	3577-QCFD-W	↓	Pm	↓	3

SAMPLE CONDITION/SPECIAL INSTRUCTIONS
GEOTRACKER

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

Attachment 3

NORTH COAST LABORATORIES LTD.

RECEIVED
LACO ASSOCIATES
JUL 0 3 2006
BY: CR

LMO
DRG
GH
FRB
DNL
✓COW cpr
PROJECT
FILE

June 29, 2006

LACO Associates
P.O. Box 1023
Eureka, CA 95502

Attn: Chris Watt

RE: 3577.05 W&S Rio Dell Shell

Order No.: 0606446
Invoice No.: 59224
PO No.: TASK 3037
ELAP No. 1247-Expires July 2006

SAMPLE IDENTIFICATION

Fraction	Client Sample Description
01A	3577-MW2-W
02A	3577-MW3-W
03A	3577-MW4-W
04A	3577-MW5-W
05A	3577-MW6-W
06A	3577-MW7-W
07A	3577-MW8-W
08A	3577-MW9-W
09A	3577-MW10-W
10A	3577-QCTB-W
11A	3577-QCMB-W
12A	3577-QCFD-W

ND = Not Detected at the Reporting Limit

Limit = Reporting Limit

All solid results are expressed on a wet-weight basis unless otherwise noted.

REPORT CERTIFIED BY

Colleen Blackstone — Laboratory Supervisor(s)

T. Shea — QA Unit

Jesse G. Chaney, Jr.
Laboratory Director

5680 West End Road • Arcata California 95521-9202 • 707-822-4649 • FAX 707-822-6831

Printed on Recycled Paper

CLIENT: LACO Associates
Project: 3577.05 W&S Rio Dell Shell
Lab Order: 0606446

CASE NARRATIVE

Gasoline Components/Additives:
The reporting limit for ETBE was raised for samples 3577-MW3-W, 3577-MW7-W, 3577-MW8-W, 3577-MW9-W, 3577-MW10-W and 3577-QCFD-W due to matrix interference.

The reporting limit for TBA was raised for samples 3577-MW5-W, 3577-MW7-W, 3577-MW8-W, 3577-MW9-W, 3577-MW10-W, 3577-QCMB-W and 3577-QCFD-W due to matrix interference.

The reporting limit for TAME was raised for sample 3577-MW9-W due to matrix interference.

TPH as Gasoline:
Sample 3577-MW6-W does not present a peak pattern consistent with that of gasoline. The reported result represents the amount of material in the gasoline range.

The gasoline value for sample 3577-MW5-W includes the reported gasoline additives in addition to other peaks in the gasoline range.

The gasoline values for samples 3577-MW3-W, 3577-MW4-W, 3577-MW7-W, 3577-MW8-W, 3577-MW9-W, 3577-MW10-W and 3577-QCFD-W are primarily from the reported gasoline additives.

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Date: 29-Jun-2006
WorkOrder: 0606446

ANALYTICAL REPORT

Client Sample ID: 3577-MW2-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-01A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	34	1.0	µg/L	1.0		6/27/06
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		6/27/06
Benzene	ND	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	4.1	1.0	µg/L	1.0		6/27/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	96.2	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND	50	µg/L	1.0		6/27/06

Client Sample ID: 3577-MW3-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-02A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	230	50	µg/L	50		6/26/06
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	2.0	µg/L	1.0		6/27/06
Benzene	ND	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	19	1.0	µg/L	1.0		6/27/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	95.7	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	250	50	µg/L	1.0		6/27/06

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Date: 29-Jun-2006
WorkOrder: 0606446

ANALYTICAL REPORT

Client Sample ID: 3577-MW4-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-03A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	8.0	1.0	µg/L	1.0		6/27/06
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		6/27/06
Benzene	ND	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	1.3	1.0	µg/L	1.0		6/27/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	95.9	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	51	50	µg/L	1.0		6/27/06

Client Sample ID: 3577-MW5-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-04A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	470	50	µg/L	50		6/26/06
Tert-butyl alcohol (TBA)	ND	150	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		6/27/06
Benzene	3.6	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	99	50	µg/L	50		6/26/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	91.9	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	900	50	µg/L	1.0		6/27/06

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Date: 29-Jun-2006
WorkOrder: 0606446

ANALYTICAL REPORT

Client Sample ID: 3577-MW6-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-05A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		6/27/06
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		6/27/06
Benzene	1.2	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		6/27/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	95.5	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	80	50	µg/L	1.0		6/27/06

Client Sample ID: 3577-MW7-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-06A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	1,100	50	µg/L	50		6/26/06
Tert-butyl alcohol (TBA)	ND	40	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	10	µg/L	1.0		6/27/06
Benzene	ND	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	99	50	µg/L	50		6/26/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	96.0	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	1,200	50	µg/L	1.0		6/27/06

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Date: 29-Jun-2006
WorkOrder: 0606446

ANALYTICAL REPORT

Client Sample ID: 3577-MW8-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-07A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	560	50	µg/L	50		6/26/06
Tert-butyl alcohol (TBA)	ND	70	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	7.0	µg/L	1.0		6/27/06
Benzene	ND	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	48	1.0	µg/L	1.0		6/27/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	94.3	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	600	50	µg/L	1.0		6/27/06

Client Sample ID: 3577-MW9-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-08A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	340	50	µg/L	50		6/26/06
Tert-butyl alcohol (TBA)	ND	150	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	6.0	µg/L	1.0		6/27/06
Benzene	ND	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	ND	2.0	µg/L	1.0		6/27/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	95.8	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	360	50	µg/L	1.0		6/27/06

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Date: 29-Jun-2006
WorkOrder: 0606446

ANALYTICAL REPORT

Client Sample ID: 3577-MW10-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-09A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	390	50	µg/L	50		6/26/06
Tert-butyl alcohol (TBA)	ND	80	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	2.0	µg/L	1.0		6/27/06
Benzene	ND	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	38	1.0	µg/L	1.0		6/27/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	95.6	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	450	50	µg/L	1.0		6/27/06

Client Sample ID: 3577-QCTB-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-10A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		6/26/06
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		6/26/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/26/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		6/26/06
Benzene	ND	0.50	µg/L	1.0		6/26/06
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		6/26/06
Toluene	ND	0.50	µg/L	1.0		6/26/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/26/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/26/06
o-Xylene	ND	0.50	µg/L	1.0		6/26/06
Surrogate: 1,4-Dichlorobenzene-d4	93.7	80.8-139	% Rec	1.0		6/26/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND	50	µg/L	1.0		6/26/06

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Date: 29-Jun-2006
WorkOrder: 0606446

ANALYTICAL REPORT

Client Sample ID: 3577-QCMB-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-11A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	ND	1.0	µg/L	1.0		6/27/06
Tert-butyl alcohol (TBA)	ND	20	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		6/27/06
Benzene	ND	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		6/27/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	97.0	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	ND	50	µg/L	1.0		6/27/06

Client Sample ID: 3577-QCFD-W **Received:** 6/15/06 **Collected:** 6/13/06 0:00
Lab ID: 0606446-12A **Matrix:** Groundwater

Test Name: Gasoline Components/Additives **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	390	50	µg/L	50		6/26/06
Tert-butyl alcohol (TBA)	ND	100	µg/L	1.0		6/27/06
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		6/27/06
Ethyl tert-butyl ether (ETBE)	ND	2.0	µg/L	1.0		6/27/06
Benzene	ND	0.50	µg/L	1.0		6/27/06
Tert-amyl methyl ether (TAME)	38	1.0	µg/L	1.0		6/27/06
Toluene	ND	0.50	µg/L	1.0		6/27/06
Ethylbenzene	ND	0.50	µg/L	1.0		6/27/06
m,p-Xylene	ND	0.50	µg/L	1.0		6/27/06
o-Xylene	ND	0.50	µg/L	1.0		6/27/06
Surrogate: 1,4-Dichlorobenzene-d4	94.7	80.8-139	% Rec	1.0		6/27/06

Test Name: TPH as Gasoline **Reference:** LUFT/EPA 8260B Modified

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	450	50	µg/L	1.0		6/27/06

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North Coast Laboratories, Ltd.

Date: 29-Jun-2006

CLIENT: LACO Associates
Work Order: 0606446
Project: 3577.05 W&S Rio Dell Shell

QC SUMMARY REPORT

Method Blank

Sample ID **MB 062606** Batch ID: **R41969** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **6/26/06 5:26:00 AM** Prep Date

Client ID: Run ID: **ORGCMS3_060626A** SeqNo: **602578**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	ND	1.0									
Tert-butyl alcohol (TBA)	ND	10									
Di-isopropyl ether (DIPE)	ND	1.0									
Ethyl tert-butyl ether (ETBE)	ND	1.0									
Benzene	ND	0.50									
Tert-amyl methyl ether (TAME)	ND	1.0									
Toluene	0.09359	0.50									J
Ethylbenzene	ND	0.50									
m,p-Xylene	ND	0.50									
o-Xylene	ND	0.50									
1,4-Dichlorobenzene-d4	0.922	0.10	1.00	0	92.2%	81	139	0			

Sample ID **MB 062606** Batch ID: **R41971** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **6/26/06 5:26:00 AM** Prep Date

Client ID: Run ID: **ORGCMS3_060626B** SeqNo: **602614**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	14.34	50									J

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

North Coast Laboratories, Ltd.

Date: 29-Jun-2006

CLIENT: LACO Associates
Work Order: 0606446
Project: 3577.05 W&S Rio Dell Shell

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-06380** Batch ID: **R41969** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **6/26/06 2:53:00 AM** Prep Date

Client ID: Run ID: **ORGCMS3_060626A** SeqNo: **602576**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	19.85	1.0	20.0	0	99.2%	80	120	0			
Tert-butyl alcohol (TBA)	390.9	10	400	0	97.7%	25	162	0			
Di-isopropyl ether (DIPE)	20.25	1.0	20.0	0	101%	80	120	0			
Ethyl tert-butyl ether (ETBE)	20.43	1.0	20.0	0	102%	77	120	0			
Benzene	19.84	0.50	20.0	0	99.2%	78	117	0			
Tert-amyl methyl ether (TAME)	19.77	1.0	20.0	0	98.8%	64	136	0			
Toluene	18.66	0.50	20.0	0	93.3%	80	120	0			
Ethylbenzene	18.32	0.50	20.0	0	91.6%	80	120	0			
m,p-Xylene	39.51	0.50	40.0	0	98.8%	80	120	0			
o-Xylene	21.52	0.50	20.0	0	108%	80	120	0			
1,4-Dichlorobenzene-d4	0.977	0.10	1.00	0	97.7%	81	139	0			

Sample ID **LCSD-06380** Batch ID: **R41969** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **6/26/06 10:07:00 AM** Prep Date

Client ID: Run ID: **ORGCMS3_060626A** SeqNo: **602587**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	19.71	1.0	20.0	0	98.5%	80	120	19.8	0.715%	20	
Tert-butyl alcohol (TBA)	397.7	10	400	0	99.4%	25	162	391	1.74%	20	
Di-isopropyl ether (DIPE)	19.46	1.0	20.0	0	97.3%	80	120	20.2	3.94%	20	
Ethyl tert-butyl ether (ETBE)	19.25	1.0	20.0	0	96.3%	77	120	20.4	5.94%	20	
Benzene	19.63	0.50	20.0	0	98.2%	78	117	19.8	1.05%	20	
Tert-amyl methyl ether (TAME)	18.68	1.0	20.0	0	93.4%	64	136	19.8	5.69%	20	
Toluene	18.44	0.50	20.0	0	92.2%	80	120	18.7	1.22%	20	
Ethylbenzene	17.61	0.50	20.0	0	88.0%	80	120	18.3	3.98%	20	
m,p-Xylene	39.17	0.50	40.0	0	97.9%	80	120	39.5	0.848%	20	
o-Xylene	19.33	0.50	20.0	0	96.6%	80	120	21.5	10.7%	20	
1,4-Dichlorobenzene-d4	1.01	0.10	1.00	0	101%	81	139	0.977	3.29%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

CLIENT: LACO Associates
Work Order: 0606446
Project: 3577.05 W&S Rio Dell Shell

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-06381** Batch ID: **R41971** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **6/26/06 4:10:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_060626B** SeqNo: **602612**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	888.4	50	1,000	0	88.8%	80	120	0			

Sample ID **LCSD-06381** Batch ID: **R41971** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **6/26/06 10:32:00 AM** Prep Date
Client ID: Run ID: **ORGCMS3_060626B** SeqNo: **602616**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	928.2	50	1,000	0	92.8%	80	120	888	4.38%	20	

Qualifiers:
ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits
B - Analyte detected in the associated Method Blank

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Chain of Custody

LABORATORY NUMBER: 0006446

Attention: Accounts Payable
Results & Invoice to: Laco Associates
Address: 21 W. 4th St. Eureka CA 95501
Phone: (707) 443-5054
Copies of Report to: LACO; Chris Watt
Sampler (Sign & Print): SJD Steve

TAT: [ ] 24 Hr [ ] 48 Hr [ ] 5 Day [ ] 5–7 Day
[✓] STD (2–3 Wk) [ ] Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms [ ]
Preliminary: FAX [✓] Verbal [ ] By:
Final Report: FAX [ ] Verbal [ ] By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 3577.05
Project Name: W&S Rio Dell Shell
Purchase Order Number: Task 3037

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS	CONTAINER	PRESERVATIVE
	3577-MW2-W	6-13-06	AM	GW	8260 List 1	9	b
	3577-MW3-W				3		
	3577-MW4-W				3		
	3577-MW5-W				3		
	3577-MW6-W				3		
	3577-MW7-W				3		
	3577-MW8-W				3		
	3577-MW9-W				3		
	3577-MW10-W				3		
	3577-QCTB-W		PM		1		

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

GEOTRACKER

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
J. Wellik 1300	6/15/06	Colin Montgomery	6/15/06 1245

SAMPLE DISPOSAL
[ ] NCL Disposal of Non-Contaminated
[ ] Return [ ] Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

***MATRIX:** DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT

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Chain of Custody

LABORATORY NUMBER: 0606446

Attention: Accounts Payable
Results & Invoice to: LACO Associates
Address: 21 W 4th Street, Eureka, CA 95501
Phone: (707) 443-5054
Copies of Report to: LACO; Chris Watt
Sampler (Sign & Print): SJD

TAT: ☐ 24 Hr ☐ 48 Hr ☐ 5 Day ☐ 5–7 Day
☑ STD (2–3 Wk) ☐ Other:
PRIOR AUTHORIZATION IS REQUIRED FOR RUSHES

REPORTING REQUIREMENTS: State Forms ☐
Preliminary: FAX ☑ Verbal ☐ By:
Final Report: FAX ☐ Verbal ☐ By:

CONTAINER CODES: 1—½ gal. pl; 2—250 ml pl; 3—500 ml pl; 4—1 L Nalgene; 5—250 ml BG; 6—500 ml BG; 7—1 L BG; 8—1 L cg; 9—40 ml VOA; 10—125 ml VOA; 11—4 oz glass jar; 12—8 oz glass jar; 13—brass tube; 14—other

PRESERVATIVE CODES: a—HNO_3; b—HCl; c—H_2SO_4; d—$Na_2S_2O_3$; e—NaOH; f—$C_2H_3O_2Cl$; g—other

PROJECT INFORMATION

Project Number: 3577.05
Project Name: W&S Rio Dell Shell
Purchase Order Number: Task 3037

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS	CONTAINER	PRESERVATIVE
	3577-QCMB-W	6-13-06	AM	GW	8260 List 1	9	b
	3577-QCFD-W	↓	PM	↓	8260 List 1	9	b

SAMPLE CONDITION/SPECIAL INSTRUCTIONS

GEOTRACKER

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
J. Wellik 1300	6/15/06	Colin Montgomery	6/15/06 1245

SAMPLE DISPOSAL
☑ NCL Disposal of Non-Contaminated
☐ Return ☐ Pickup

CHAIN OF CUSTODY SEALS Y/N/NA
SHIPPED VIA: UPS Air-Ex Fed-Ex Bus Hand

*MATRIX: DW=Drinking Water; Eff=Effluent; Inf=Influent; SW=Surface Water; GW=Ground Water; S=Soil; O=Other.

ALL CONTAMINATED NON-AQUEOUS SAMPLES WILL BE RETURNED TO CLIENT