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June 9, 2005

3577.02

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

Attention: Mr. Mark Verhey

Subject: Groundwater Monitoring Report; First Quarter 2005
HPI / Former Rio Dell Shell; 481 Wildwood Avenue, Rio Dell, CA
LOP No. 12261

Dear Mr. Verhey:

LACO ASSOCIATES (LACO) presents to the Humboldt County Division of Environmental Health (HCDEH) the results of groundwater monitoring for the first quarter of 2005 at 481 Wildwood Avenue in Rio Dell, California.

Please call or email if you have any questions or concerns

Sincerely,
LACO ASSOCIATES

Wilson J. Martinez
Assistant Engineer

Timothy D. Nelson, P.G.
PG 7579, Exp. 05/31/07

PROFESSIONAL GEOLOGIST
TIMOTHY DOUGLAS NELSON
No. 7579
Exp. 05/31/07
STATE OF CALIFORNIA

WJM:cs

Attachments

cc: Jim Seiler (electronically sent)

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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
FIRST QUARTER 2005

481 Wildwood Avenue, Rio Dell, California
LOP No. 12261; LACO Project No. 3577.02

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 first quarter 2005 groundwater monitoring event were conducted on March 15, 2005. Please refer to Table A for details regarding monitoring activities performed during the first quarter of 2005, included below. Monitoring well sampling protocol is included in LACO's *Standard Operating Procedures* on file at your office. A location and a site map are provided as Figures 1 and 2, respectively.

Table A: Field Sampling Data - March 15, 2005

MONITORING WELL ID	SCREENED INTERVAL	DTW (feet bgs)	PURGE METHOD	WATER QUALITY PARAMETERS	ANALYTICALS		SAMPLING SCHEDULE
					ORGANICS	INORGANICS	
MW1	18-25	7.58	DHP	---	---	---	
MW2	18-25	6.40	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	---	Quarterly
MW3	13-20	6.32	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	---	Quarterly
MW4	7-12	7.72	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	---	Quarterly
MW5	5-12	3.38	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	---	Quarterly
MW6	5-12	7.88	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	---	Quarterly
MW7	5-12	7.07	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	---	Quarterly
MW8	5-12	5.25	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	---	Quarterly
MW9	5-12	6.98	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	---	Quarterly
MW10	5-12	3.93	DHP	ORP and DO	TPHG, BTEX, MTBE, TBA, DIPE, ETBE, TAME	---	Quarterly

A key of this Table is included as Attachment 1.

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 UST used for unleaded gasoline, one 12,000-gallon UST used for regular and premium unleaded gasoline, and associated piping from both USTs were removed.

- December 16 and 17, 1999: Five temporary soil borings (B-1 through B-5) and three monitoring wells (MW-1, MW-2, and MW-3) were installed.

- 2001: Monitoring wells MW-4, MW-5, and MW-6 were installed and MW-1 through MW-3 were reconstructed.

- August 2002: Nine borings (B-6 through B-14), four observation wells (OW1 through OW4), and one extraction well (EW1) were installed.

- October 2002: Three monitoring wells were installed (MW-7 through MW-9).

- June 2004: Monitoring well MW-10 was installed

HYDRAULIC GRADIENT AND HYDROGEOLOGY

The subject property is located on colluvial deposits overlying quaternary Eel River deposits. The overlying culluvial deposits originated from the upgradient hill slope.

The hydraulic gradient for the shallow aquifer was calculated using the hydraulic heads of monitoring wells MW5, MW8, and MW9 and the three-point method. The calculated hydraulic gradient for the shallow aquifer for the current sampling event was calculated as 7.3 percent in the N8°W direction. The hydraulic gradient for the deep aquifer, as calculated by using the three-point method in the area defined by monitoring wells MW1, MW2, and MW3, was 0.1 percent in the N55°E direction. Hydraulic gradient contour maps for the shallow and deep aquifers created with Surfer 7.0 software are presented as Figures 3 and 4, respectively. Current and historical hydraulic head data are presented in Table 1, historical hydraulic gradient data are presented in Table 2, and a copy of the field sampling data sheets are included as Attachment 2.

QUARTERLY LABORATORY ANALYTICAL RESULTS

Groundwater analytical data from the March 15, 2005, quarterly sampling event are detailed in Table B, included below. Current and historical groundwater analytical data are included in Table 1. Copies of the laboratory analytical reports for this reporting period are included as Attachment 3.

Table B: Analytical Results for the March 15, 2005, Quarterly Sampling Event										
WELL	TPHg (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Xylenes (µg/L)	MTBE (µg/L)	TBA (µg/L)	TAME (µg/L)	ETBE (µg/L)	DIPE (µg/L)
MW1	---	---	---	---	---	---				
MW2	<50	<0.50	<0.50	<0.50	<0.50	**12**	<10	**1.6**	<1.0	<1.0
MW3	**140**	<0.50	<0.50	<0.50	<0.50	**180**	<10	**15**	<1.0	<1.0
MW4	<50	<0.50	<0.50	<0.50	<0.50	**23**	<10	**3.5**	<1.0	<1.0
MW5	**890**	**2.7**	<0.50	**1.6**	**0.59**	**560**	<10	**130**	<1.0	<1.0
MW6	**63**	<0.50	<0.50	<0.50	<0.50	<1.0	<50	<1.0	<1.0	<1.0
MW7	**810**	<0.50	<0.50	<0.50	<0.50	**1,100**	**140**	**90**	**6.2**	<1.0
MW8	**410**	<0.50	<0.50	<0.50	<0.50	**520**	**180**	**56**	**3.9**	<1.0
MW9	**320**	<0.50	<0.50	<0.50	<0.50	**420**	**160**	**1.2**	**4.4**	<1.0
MW10	**340**	<0.50	<0.50	<0.50	<0.50	**400**	**140**	**41**	**1.2**	<1.0

DISCUSSION OF QUARTERLY RESULTS

Analytical results reported for the shallow and deep monitoring wells sampled during the first quarter of 2005 generally fall within the range of previously reported sampling events. However, total petroleum hydrocarbons as gasoline (TPHg) in monitoring well MW-5 appears to be lower by one order of magnitude in comparison with the previous sampling event. Concentrations of tertiary butyl alcohol (TBA) in monitoring well MW-5 were reported as non-detect. The laboratory noted that the gasoline values for the samples collected from monitoring wells MW-3 and MW-7 through MW-10 were primarily from the reported gasoline range. The gasoline value for the sample collected from monitoring well MW-5 included the reported gasoline additives methyl tertiary butyl ether (MTBE) in addition to other peaks in the gasoline range. Finally, the sample collected from monitoring well MW-6 did not present a peak pattern consistent with that of gasoline. The reported result represented the amount of material in the gasoline range.

Intrinsic Indicator Results and Discussion

Field intrinsic bioremediation indicators dissolved oxygen (DO) and oxidation reduction potential (ORP) are routinely monitored during sampling. Do levels of +2.0 mg/L and greater and ORP levels of +50 mV and greater are typical of aerobic conditions at a site. In the contrary, DO and ORP recordings below these thresholds generally indicate anaerobic conditions at a site. The recordings of DO obtained from monitoring wells for this sampling event generally exhibited levels below the threshold which suggests anaerobic conditions exist at this site. The recordings of ORP were unreadable for this sampling event

RECOMMENDATION

The next sampling event is scheduled to take place in June 2005.

LIST OF FIGURES, TABLES, AND ATTACHMENTS

Figure 1: Location Map
Figure 2: Site Map
Figure 3: Hydraulic Gradient - Shallow Aquifer, March 15, 2005
Figure 4: Hydraulic Gradient - Deep Aquifer, March 15, 2005

Table 1: Historical Well Data and Groundwater Analytical Results
Table 2: Historical Hydraulic Gradient Data

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

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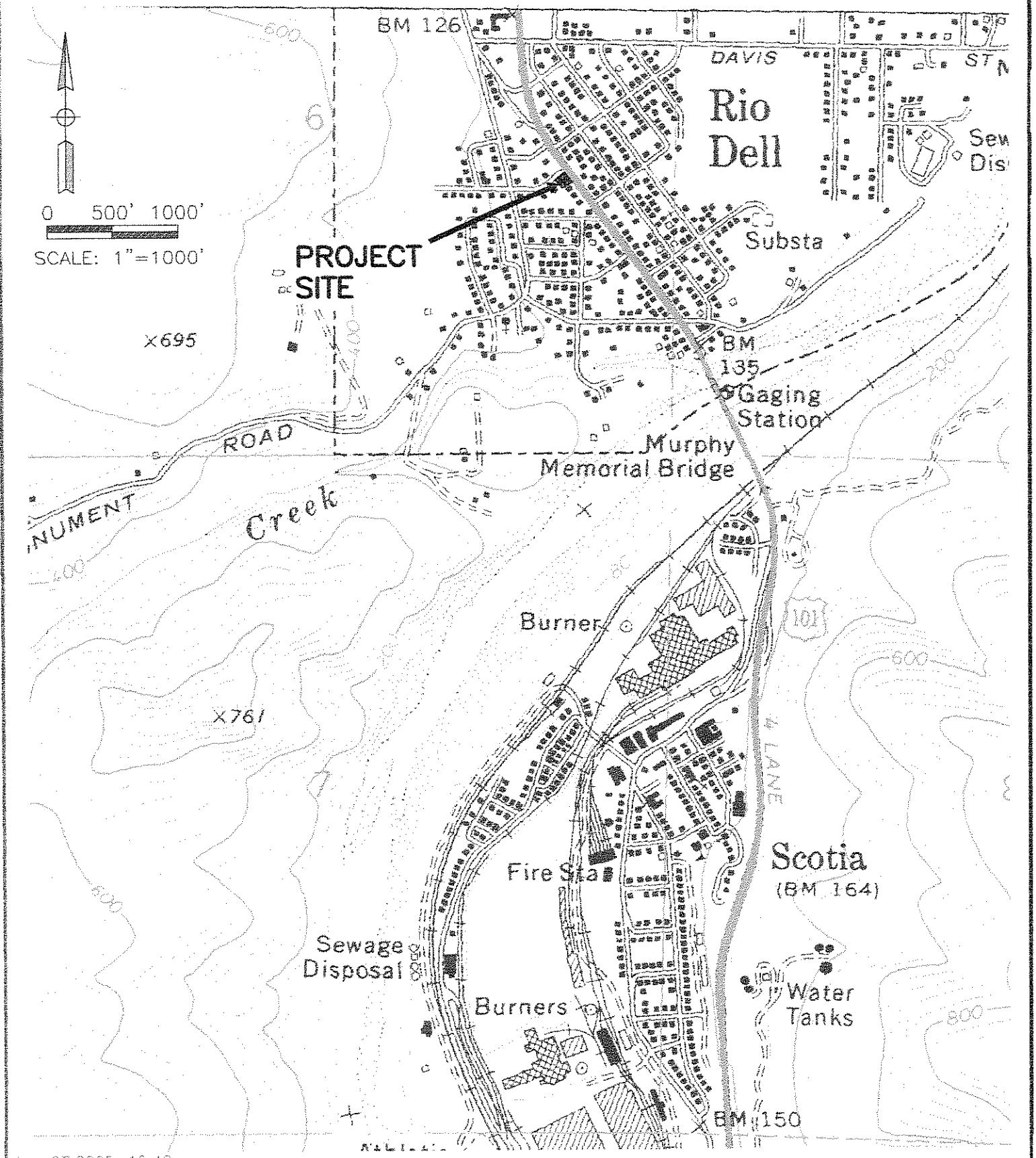
LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT	GROUNDWATER MONITORING REPORT	BY	RJM	FIGURE
	CLIENT	HUMBOLDT PETROLEUM INC.	DATE	5/26/05	1
	LOCATION	481 WILDWOOD AVE, RIO DELL	CHECK		JOB NO.
		LOCATION MAP	SCALE	1"=1000'	3577.02



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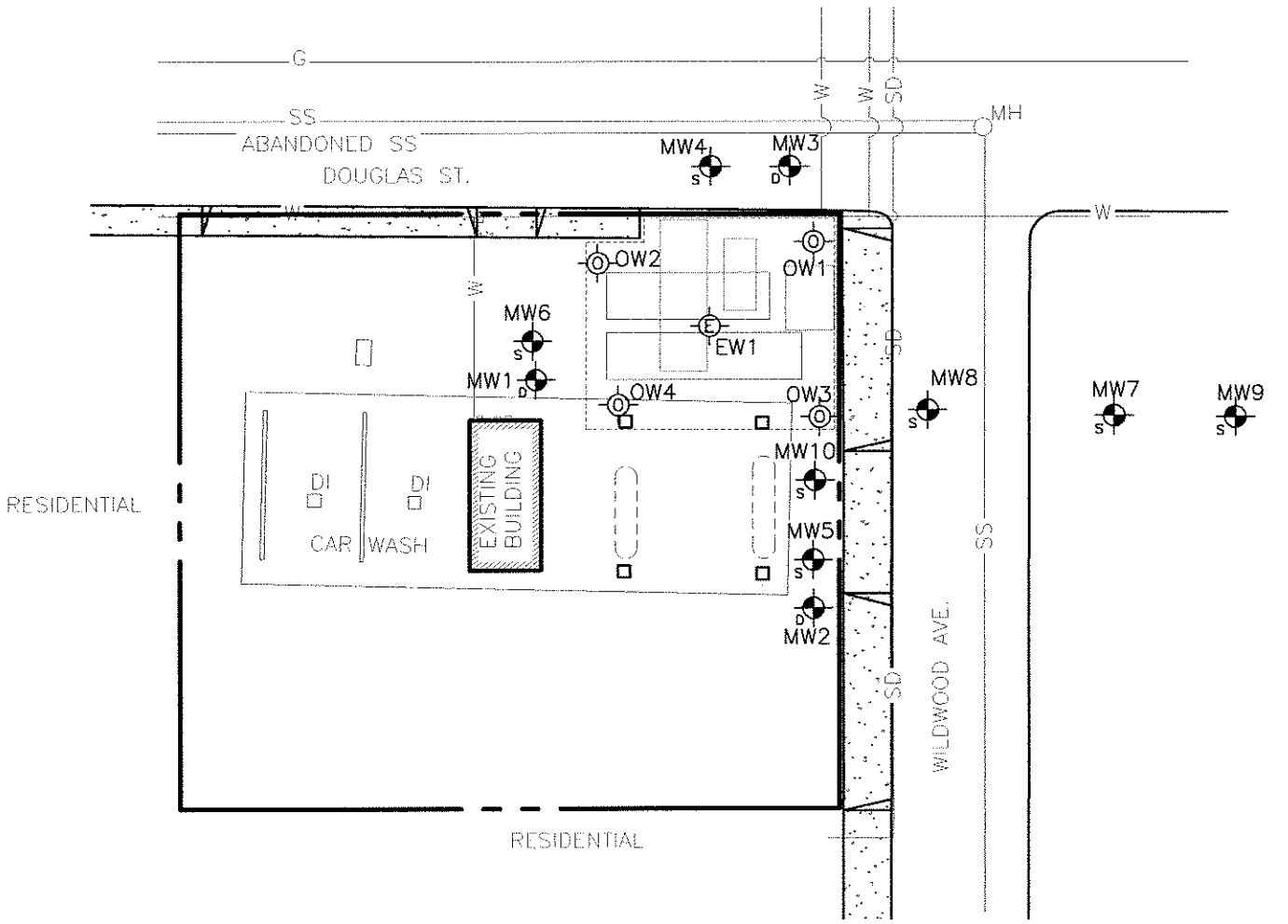
LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT GROUNDWATER MONITORING REPORT	BY RJM	FIGURE 2
	CLIENT HUMBOLDT PETROLEUM INC	DATE 5/26/05	
	LOCATION 481 WILDWOOD AVE, RIO DELL	CHECK	JOB NO. 3577.02
	SITE MAP	SCALE 1"=30'	

LEGEND

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

0 15' 30'

SCALE: 1"=30'



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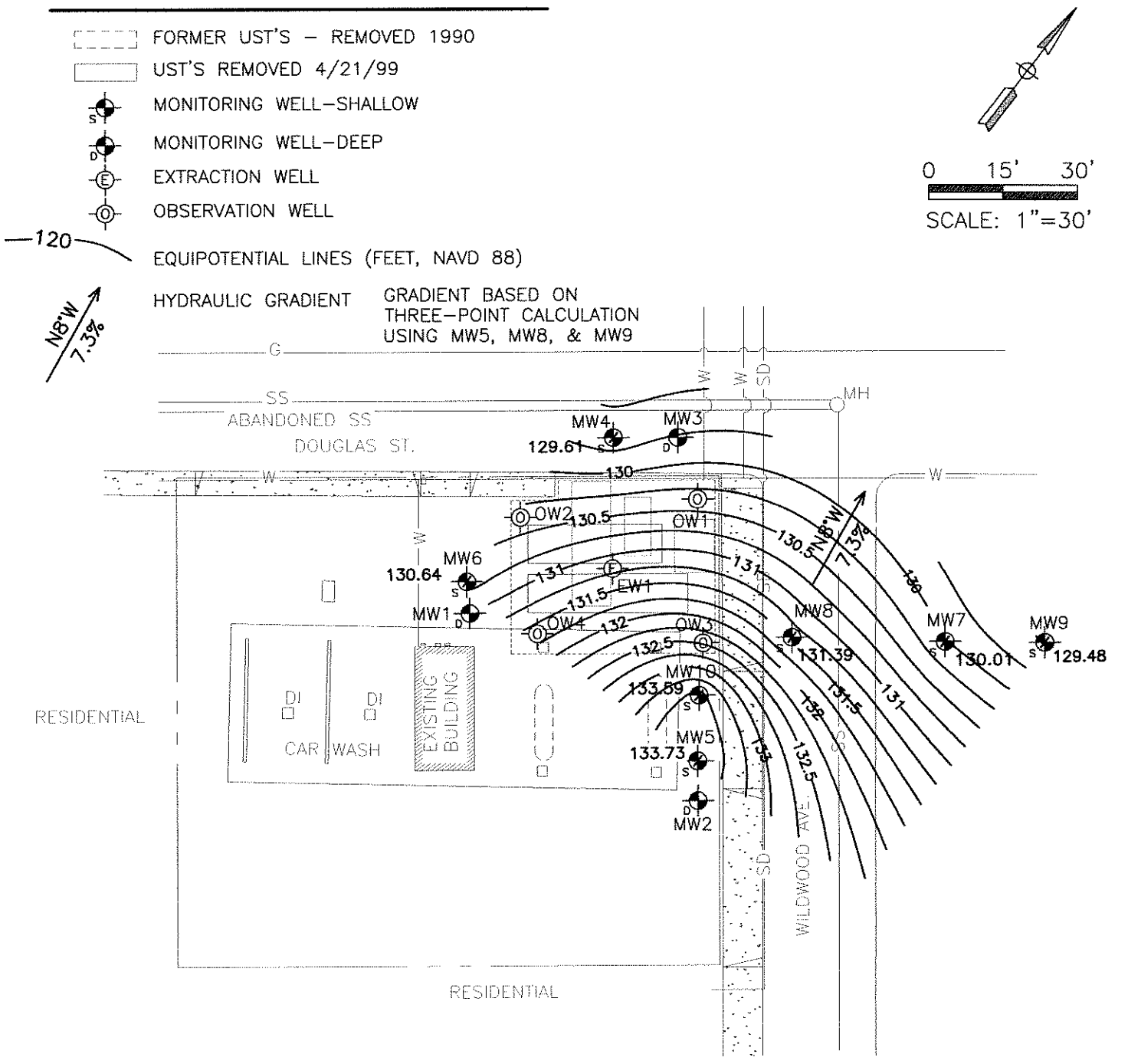
LACO ASSOCIATES CONSULTING ENGINEERS 21 W 4TH ST. EUREKA, CA 95501 (707)443-5054	PROJECT GROUNDWATER MONITORING REPORT	BY RJM	FIGURE 3
	CLIENT HUMBOLDT PETROLEUM INC	DATE 5/26/05	
	LOCATION 481 WILDWOOD AVE, RIO DELL	CHECK	JOB NO. 3577.02
	HYDRAULIC GRADIENT-SHALLOW AQUIFER (3/15/05)	SCALE 1"=30'	



Jun 02,2005-1:29pm
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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 5/26/05	
	LOCATION 481 WILDWOOD AVE, RIO DELL	CHECK	JOB NO. 3577.02
	HYDRAULIC GRADIENT-DEEP AQUIFER (3/15/05)	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
- 130.90 — EQUIPOTENTIAL LINES (FEET, NAVD 88)
- N55°E 0.1% → HYDRAULIC GRADIENT — GRADIENT BASED ON THREE-POINT CALCULATION USING MW1, MW2, & MW3

0 15' 30'
SCALE: 1"=30'

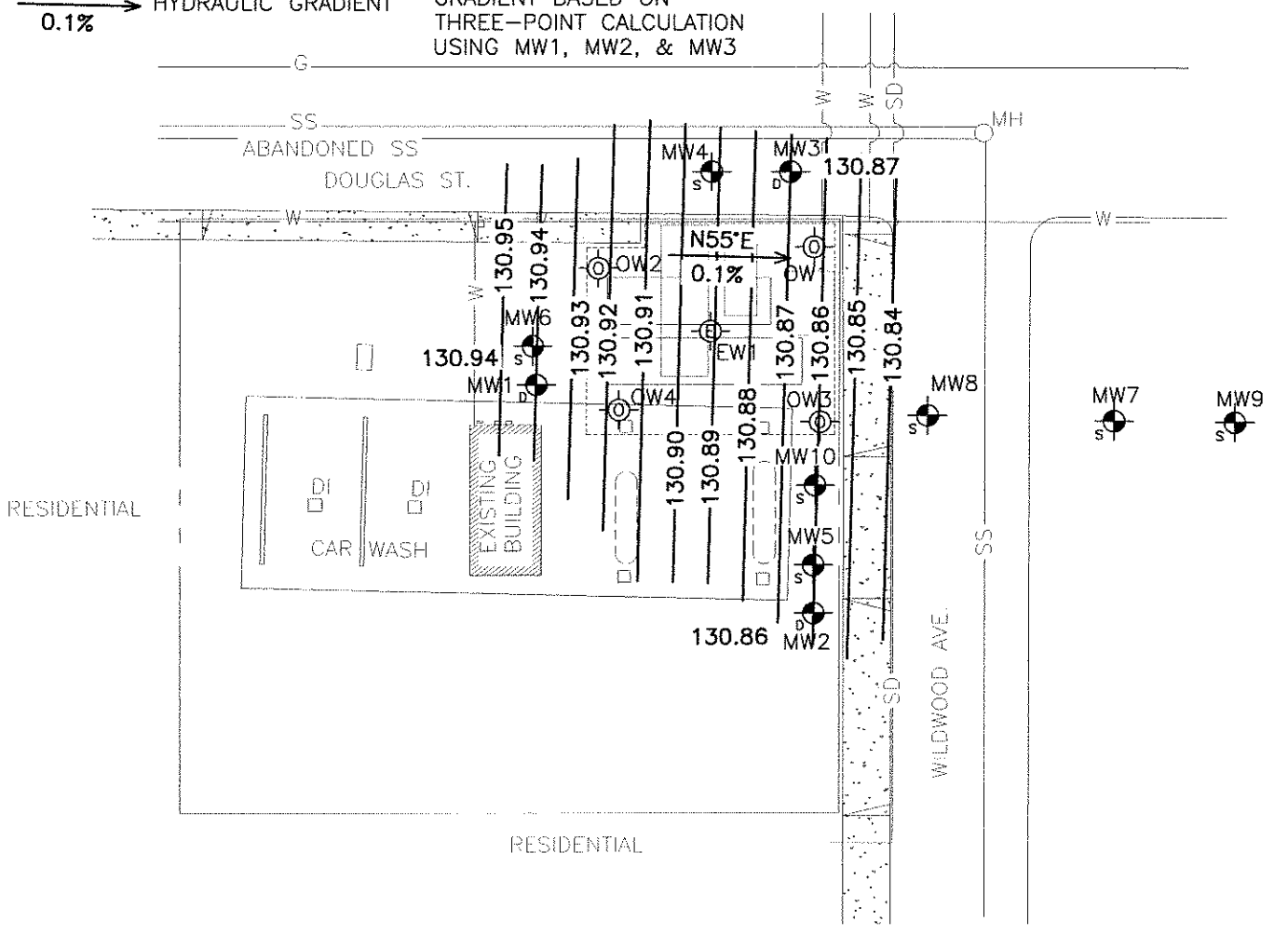

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TABLE 1: WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.02; LOP No. 12261

Well ID	Sample Date	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**	**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		---	---	---	---	---	---	---	---	---	---	---

TABLE 1: WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.02; LOP No. 12261

Well ID	Sample Date	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	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	---

TABLE 1: WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.02; LOP No. 12261

Well ID	Sample Date	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	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	---

TABLE 1: WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.02; LOP No. 12261

Well ID	Sample Date	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	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	0.50	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	---
	3/15/05		129.61	7.72		<50	<0.50	<0.50	<0.50	<0.50	23	<10	3.5	<1.0	<1.0	---
MW-5	7/6/2001	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	---
	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	---

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Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.02; LOP No. 12261

Well ID	Sample Date	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-6	7/6/2001	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	---
	10/31/02		132.24	6.28		<50	2.5	<0.50	<0.50	<0.50	<0.50	<5.0	<1.0	<1.0	<1.0	---
	1/3/03		133.11	5.41		70	<0.50	<0.50	<0.50	<0.50	<1.0	<20	<1.0	<1.0	<1.0	---
	3/18/03		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	---
	3/15/05		130.64	7.88		63	<0.50	<0.50	<0.50	<0.50	<1.0	<50	<1.0	<1.0	<1.0	---
MW-7	10/31/02	137.08	127.22	9.86		1,100	<0.50	<0.50	<0.50	<0.50	2,200	1,200	39	23	<1.0	---
	1/3/03		131.69	5.39		200	<0.50	<0.50	<0.50	<0.50	260	56	<1.0	<1.0	<1.0	---
	3/18/03		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	---
	3/15/05		130.01	7.07		810	<0.50	<0.50	<0.50	<0.50	1,100	140	90	6.2	<1.0	---
MW-8	10/31/02	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	---

TABLE 1: WELL DATA AND GROUNDWATER ANALYTICAL RESULTS
Former Rio Dell Shell, 481 Wildwood Avenue, Rio Dell, CA
LACO Project No. 3577.02; LOP No. 12261

Well ID	Sample Date	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-9	10/31/02	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	---
MW-10	6/23/2004	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	---
QCTB	9/14/2004	---	---	---	7	880	<0.50	<0.50	<0.50	<0.50	~1100	61	<1.0	<1.0	<1.0	---
	12/16/2004	---	---	---		<50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<1.0	---
	3/15/2005	---	---	---		<50	<0.50	<0.50	<0.50	<0.50	<1.0	<10	<1.0	<1.0	<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)

TABLE 2: HISTORICAL HYDRAULIC GRADIENT DATA
Former Rio Dell Shell, 481 Wildwood Ave., Rio Dell, CA
LACO Project No. 3577.02; LOP No. 12261

	Shallow Aquifer		Deep Aquifer	
Date	**Direction**	**Slope (%)**	**Direction**	**Slope (%)**
12/28/99	---	---	S49°E	0.81
2/24/00	---	---	S61°E	0.63
3/21/00	---	---	S57°E	0.69
4/18/00	---	---	S58°E	0.74
5/26/00	---	---	S46°E	0.69
6/30/00	---	---	S55°E	0.74
7/31/00	---	---	S46°E	0.76
8/28/00	---	---	S43°E	0.70
9/22/00	---	---	S43°E	0.70
10/26/00	---	---	S5°E	0.40
1/12/01	---	---	S45°E	0.06
5/2/01	---	---	S59°E	0.10
6/1/01	**shallow wells installed**		**deep wells reconstructed**	
7/6/01	N73°E	4.5	S11°W	0.70
9/4/01	S31°W	5.5	S20°W	0.70
10/18/01	S87°W	2.7	N56°W	0.03
11/29/01	S45°W	3.6	N35°W	0.10
1/2/02	S35°W	1.8	N50°W	0.07
1/21/02	N89°E	0.6	N76°W	0.04
2/27/02	S20°W	5	N1°W	0.15
3/13/02	S54°W	5.1	N27°W	0.10
4/19/02	N85°E	1	N14°W	0.20
5/20/02	N49°E	0.45	S41°E	0.03
6/13/02	N21°W	1.36	S52°W	0.44
10/31/02	N46°E	5.6	N77°W	9.30
1/3/03	S85°W	4	N61°W	0.26
3/18/03	N9°W	3.5	N50°E	6.30
6/24/03	N20°W	4.3	S77°E	0.01
9/18/03	N40°W	5.5	N79°E	0.05
12/9/03	N21°E	1.1	S52°E	0.01
3/4/04	N73°W	4.3	N50°E	0.08
6/23/04	N57°W	5.3	S77°E	0.05
9/14/04	N34°E	6.7	S77°E	0.07
12/16/04	N3°E	10.9	N72°E	0.02
3/15/05	N8°W	7.6	N55°E	0.10

Attachment 1

ATTACHMENT 1: ABBREVIATIONS USED IN TABULATED DATA
HPI/Former Rio Dell Shell
481 Wildwood Avenue, Rio Dell
LACO No. 3577.02; LOP No. 12261

KEY TO TABLE 1

Abbreviations

ND = Not detected over the method detection limit
--- = Analyte not tested
µg/l = micrograms per liter
mg/l = milligrams per liter
µmohs = micromohs, a measure of electrical resistance
mV = millivolts
mcl = maximum contaminant level, an enforceable California or Federal drinking water standard.
al = action limit; a non-enforceable California drinking water standard; shown in parentheses.
tot = taste and odor threshold, a non-enforceable California drinking water standard.
TPHg = Total petroleum hydrocarbons as gasoline
TPHd = Total petroleum hydrocarbons as diesel
Oxygenates (fuel additives): methyl tertiary butyl ether (MTBE), di-isopropyl ether (DIPE), ethyl tertiary butyl ether (ETBE), tert-amyl methyl ether (TAME) and tert-butyl alcohol (TBA).
ORP = Oxidation-reduction potential
$CaCO_3$ = Calcium carbonate
CO_2 = Carbon dioxide
BOD = Biological oxygen demand
COD = Chemical oxygen demand

Laboratory Notations

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

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

[3] Sample values are primarly from the reported gasoline additives.

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

Attachment 2

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

Project Name: HPI - Rio Dell Shell
Project No.: ~~3577.03~~ 3577.02
Date: 3-15-05
Golbal ID No.: T0602300252
PM: CJW

Tech: SJD
Mob/Demob time: .50/.25
Travel time: 1.25
Time on site: 8:15
Time off site: 1:55
Mileage: 51

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)	7.58		6.40		6.33		7.72		7.88	
	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
FIELD INTRINSICS: pH										
TEMP (°C)										
Ecw (µmohs)										
ORP (mV)			Ur	Ur	Ur	Ur	Ur	Ur	-77	Ur
DO (mg/L)			3.49	0.95	1.89	0.59	2.56	0.50	1.67	0.86
OTHER (units)			—		—		—		—	
PURGE: TIME			9:03	9:13	9:30	9:38	9:57	10:05	10:20	10:30
METHOD (DHP/CB/B)			DHP		DHP		DHP		DHP	
RATE (Lpm)			0.18		0.18		0.19		0.18	
VOLUME (L)			1.80		1.40		1.50		1.75	
COLOR			CLEAR	CLOUDY	CLEAR	CLEAR	CLEAR	CLEAR	CLOUDY	LT. GREY TINT
ODOR			MED. SULFUR		MED. SULFUR		MED. SULFUR		LIGHT SULFUR	SLIGHT ORGANIC
INTAKE DEPTH (FEET)			21.0		16.0		11.0		11.0	
SAMPLE: TIME			9:14		9:39		10:06		10:31	
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		0.03		0.80		0.78	
REMARKS			—		—		—		—	
WELL CONDITION			good		all three bolt holes stripped		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
21 West Fourth Street, Eureka, CA 95501
TEL 707.443.5054
FAX 707.443.0553

Project Name: HPI - Rio Dell Shell
Project No.: 3577.0~~1~~ 2
Date: 3-15-05
Golbal ID No.: T0602300252
PM: CJW

Tech: SJD
Mob/Demob time: .50/.25
Travel time: 1.25
Time on site: 8:15
Time off site: 1:55
Mileage: 51

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)	6.98		5.25		7.07		3.38		3.93	
	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL	INITIAL	FINAL
FIELD INTRINSICS: pH										
TEMP (°C)										
Ecw (µmohs)										
ORP (mV)	Ur	Ur	-99	Ur	-88	Ur	-99	Ur	Ur	Ur
DO (mg/L)	1.30	0.37	2.11	0.37	1.20	0.37	1.09	0.35	1.76	0.46
OTHER (units)	—		—		—		—		—	
PURGE: TIME	10:51	10:59	11:16	11:24	11:40	11:48	12:14	12:22	12:45	12:53
METHOD (DHP/CB/B)	DHP		DHP		DHP		DHP		DHP	
RATE (Lpm)	0.18		0.19		0.19		0.16		0.19	
VOLUME (L)	1.40		1.50		1.50		1.30		1.50	
COLOR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	CLEAR	LT. GREY TINT	MED. GREY TINT
ODOR	LIGHT SULFUR / SWEET		LIGHT SWEET / SLIGHT SULFUR		LIGHT SWEET / SLIGHT SULFUR		LIGHT RUBBER / SULFUR		LIGHT SULFUR	
INTAKE DEPTH (FEET)	11.0		10.0		10.0		10.0		10.0	
SAMPLE: TIME	11:00		11:25		11:49		12:23		12:54	
METHOD (DHP/CB/B)	DHP		DHP		DHP		DHP		DHP	
ANALYTES	8260 list 1		8260 list 1		8260 list 1		8260 list 1		8260 list 1	
TOTAL DRAWDOWN (FEET)	0.70		0.63		0.73		0.75		1.59	
REMARKS	—		—		—		—		—	
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

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

Project Name: HPI - RIO DELL SHELL
Project No.: 3577.02
Tech: SJD
Date: 3-15-05

METER ACCURACY RANGE	+/- 0.2 pH	+/- 0.5 °C	+/- 20 µmohs	+/- 2 mv	+/- 0.3 mg/L

WELL ID: mw2

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
9:05	~	~	~	Ur	1.37
9:07	~	~	~	Ur	1.03
9:09	~	~	~	Ur	0.77
9:11	~	~	~	Ur	0.86
9:13	~	~	~	Ur	0.95

WELL ID: mw3

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
9:32	~	~	~	Ur	1.72
9:34	~	~	~	Ur	0.84
9:36	~	~	~	Ur	0.63
9:38	~	~	~	Ur	0.59

WELL ID: mw4

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
9:59	~	~	~	Ur	1.50
10:01	~	~	~	Ur	0.78
10:03	~	~	~	Ur	0.57
10:05	~	~	~	Ur	0.50

WELL ID: mw6

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
10:22	~	~	~	-99	1.16
10:24	~	~	~	Ur	0.77
10:26	~	~	~	Ur	0.62
10:28	~	~	~	Ur	0.89
10:30	~	~	~	Ur	0.86

WELL ID: mw9

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
10:53	~	~	~	Ur	0.85
10:55	~	~	~	Ur	0.57
10:57	~	~	~	Ur	0.45
10:59	~	~	~	Ur	0.37

WELL ID: mw8

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
11:18	~	~	~	Ur	0.93
11:20	~	~	~	Ur	0.56
11:22	~	~	~	Ur	0.47
11:24	~	~	~	Ur	0.37

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

Project Name: HPI - Rio Dell Shell
Project No.: 3577.02
Tech: SJD
Date: 3-15-05

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)
11:42	~	~	~	Ur	0.84
11:44	~	~	~	Ur	0.60
11:46	~	~	~	Ur	0.46
11:48	~	~	~	Ur	0.37

WELL ID: MW5

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
12:16	~	~	~	Ur	0.92
12:18	~	~	~	Ur	0.68
12:20	~	~	~	Ur	0.42
12:22	~	~	~	Ur	0.35

WELL ID: MW10

TIME	pH	TEMP (°C)	Ecw (µmohs)	ORP (mV)	DO (mg/L)
12:47	~	~	~	Ur	0.98
12:49	~	~	~	Ur	0.70
12:51	~	~	~	Ur	0.51
12:53	~	~	~	Ur	0.46

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)

WELL ID:

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

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

Project Name: HPI - RIO DELL SHELL
Project No.: 3577.03
Tech: SJD
Date: 3-15-05

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)
:12	7.58	8:30	6.40	8:33	6.32	8:35	7.72	8:38	3.38	8:37	7.88
:22	7.58	9:00	6.40	9:27	6.32	9:53	7.72	12:10	3.38	10:17	7.88

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)
8:43	7.02	8:40	5.35	8:45	6.98	8:48	3.93	1:14	1.84	1:15	2.76
1:37	7.02	11:13	5.35	10:48	6.98	12:42	3.93	1:24	1.84	1:25	2.76

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)
:17	1.70	1:19	3.51								
:27	1.70	1:29	3.51								

WASTE DISPOSAL FORM

Project No. 3577.02 Date 3-15-05

Location RIO DELL SHELL By SJD

Number of Soil Drums 9 Number of Water Drums Ø

Please Insert a Check Mark

	Yes	No	Condition of Drums: Good	Fair	Deteriorated
Soil DOT drums	☑	☐	☑	☑	☐
Water DOT drums	☐	☐	☐	☐	☐

Other _____

※ Please describe location of all drums with references with the site, or write any comments, below.

LOCATED IN OLD CAR WASH STALLS

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:

PROJECT INFORMATION
Project Number: 3577.02
Project Name: HPI Rio Dell Shell
Purchase Order Number: TASK - 3020

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

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS: 8260 List 1 (CONTAINER: 9; PRESERVATIVE: b)
	3577-MW2-W	3-15-05	AM	GW	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

Attachment 3

NORTH COAST LABORATORIES LTD.

RECEIVED
LACO ASSOCIATES
MAR 2 9 2005
BY: JG

March 25, 2005

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

Attn: Accounts Payable

RE: 3577.03, HPI Rio Dell Shell

CJW
FRB
DRG

Order No.: 0503369
Invoice No.: 49005
PO No.: TASK-3020
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

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 (for SKD) — Laboratory Supervisor(s)

T. Sherman — QA Unit

Lab Manager — Jesse G. Chaney, Jr. Laboratory Director

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

North Coast Laboratories, Ltd. **Date:** *28-Mar-05*

CLIENT: LACO Associates
Project: 3577.03, HPI Rio Dell Shell
Lab Order: 0503369

CASE NARRATIVE

Gasoline Components/Additives:
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-MW7-W, 3577-MW8-W, 3577-MW9-W and 3577-MW10-W are primarily from the reported gasoline additives.

Some reporting limits were raised for sample 3577-MW6-W due to matrix interference.

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Date: 25-Mar-05
WorkOrder: 0503369

ANALYTICAL REPORT

Client Sample ID: 3577-MW2-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-01A **Matrix:** Groundwater

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	12	1.0	µg/L	1.0		3/23/05
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		3/23/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/23/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		3/23/05
Benzene	ND	0.50	µg/L	1.0		3/23/05
Tert-amyl methyl ether (TAME)	1.6	1.0	µg/L	1.0		3/23/05
Toluene	ND	0.50	µg/L	1.0		3/23/05
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/05
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/05
o-Xylene	ND	0.50	µg/L	1.0		3/23/05
Surrogate: 1,4-Dichlorobenzene-d4	88.4	80.8-139	% Rec	1.0		3/23/05

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		3/23/05

Client Sample ID: 3577-MW3-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-02A **Matrix:** Groundwater

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	180	50	µg/L	50		3/22/05
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		3/23/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/23/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		3/23/05
Benzene	ND	0.50	µg/L	1.0		3/23/05
Tert-amyl methyl ether (TAME)	15	1.0	µg/L	1.0		3/23/05
Toluene	ND	0.50	µg/L	1.0		3/23/05
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/05
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/05
o-Xylene	ND	0.50	µg/L	1.0		3/23/05
Surrogate: 1,4-Dichlorobenzene-d4	87.5	80.8-139	% Rec	1.0		3/23/05

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	140	50	µg/L	1.0		3/23/05

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Date: 25-Mar-05
WorkOrder: 0503369

ANALYTICAL REPORT

Client Sample ID: 3577-MW4-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-03A **Matrix:** Groundwater

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	23	1.0	µg/L	1.0		3/23/05
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		3/23/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/23/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		3/23/05
Benzene	ND	0.50	µg/L	1.0		3/23/05
Tert-amyl methyl ether (TAME)	3.5	1.0	µg/L	1.0		3/23/05
Toluene	ND	0.50	µg/L	1.0		3/23/05
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/05
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/05
o-Xylene	ND	0.50	µg/L	1.0		3/23/05
Surrogate: 1,4-Dichlorobenzene-d4	88.1	80.8-139	% Rec	1.0		3/23/05

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		3/23/05

Client Sample ID: 3577-MW5-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-04A **Matrix:** Groundwater

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	560	50	µg/L	50		3/22/05
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		3/23/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/23/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		3/23/05
Benzene	2.7	0.50	µg/L	1.0		3/23/05
Tert-amyl methyl ether (TAME)	130	50	µg/L	50		3/22/05
Toluene	ND	0.50	µg/L	1.0		3/23/05
Ethylbenzene	1.6	0.50	µg/L	1.0		3/23/05
m,p-Xylene	0.59	0.50	µg/L	1.0		3/23/05
o-Xylene	ND	0.50	µg/L	1.0		3/23/05
Surrogate: 1,4-Dichlorobenzene-d4	93.2	80.8-139	% Rec	1.0		3/23/05

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	890	50	µg/L	1.0		3/23/05

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Date: 25-Mar-05
WorkOrder: 0503369

ANALYTICAL REPORT

Client Sample ID: 3577-MW6-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-05A **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		3/23/05
Tert-butyl alcohol (TBA)	ND	50	µg/L	1.0		3/23/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/23/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		3/23/05
Benzene	ND	0.50	µg/L	1.0		3/23/05
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		3/23/05
Toluene	ND	0.50	µg/L	1.0		3/23/05
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/05
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/05
o-Xylene	ND	0.50	µg/L	1.0		3/23/05
Surrogate: 1,4-Dichlorobenzene-d4	88.8	80.8-139	% Rec	1.0		3/23/05

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	63	50	µg/L	1.0		3/23/05

Client Sample ID: 3577-MW7-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-06A **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		3/22/05
Tert-butyl alcohol (TBA)	140	10	µg/L	1.0		3/23/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/23/05
Ethyl tert-butyl ether (ETBE)	6.2	1.0	µg/L	1.0		3/23/05
Benzene	ND	0.50	µg/L	1.0		3/23/05
Tert-amyl methyl ether (TAME)	90	1.0	µg/L	1.0		3/23/05
Toluene	ND	0.50	µg/L	1.0		3/23/05
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/05
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/05
o-Xylene	ND	0.50	µg/L	1.0		3/23/05
Surrogate: 1,4-Dichlorobenzene-d4	87.8	80.8-139	% Rec	1.0		3/23/05

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	810	50	µg/L	1.0		3/23/05

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Date: 25-Mar-05
WorkOrder: 0503369

ANALYTICAL REPORT

Client Sample ID: 3577-MW8-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-07A **Matrix:** Groundwater

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	520	50	µg/L	50		3/22/05
Tert-butyl alcohol (TBA)	180	10	µg/L	1.0		3/23/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/23/05
Ethyl tert-butyl ether (ETBE)	3.9	1.0	µg/L	1.0		3/23/05
Benzene	ND	0.50	µg/L	1.0		3/23/05
Tert-amyl methyl ether (TAME)	56	1.0	µg/L	1.0		3/23/05
Toluene	ND	0.50	µg/L	1.0		3/23/05
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/05
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/05
o-Xylene	ND	0.50	µg/L	1.0		3/23/05
Surrogate: 1,4-Dichlorobenzene-d4	86.5	80.8-139	% Rec	1.0		3/23/05

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	410	50	µg/L	1.0		3/23/05

Client Sample ID: 3577-MW9-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-08A **Matrix:** Groundwater

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	420	50	µg/L	50		3/23/05
Tert-butyl alcohol (TBA)	160	10	µg/L	1.0		3/23/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/23/05
Ethyl tert-butyl ether (ETBE)	4.4	1.0	µg/L	1.0		3/23/05
Benzene	ND	0.50	µg/L	1.0		3/23/05
Tert-amyl methyl ether (TAME)	1.2	1.0	µg/L	1.0		3/23/05
Toluene	ND	0.50	µg/L	1.0		3/23/05
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/05
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/05
o-Xylene	ND	0.50	µg/L	1.0		3/23/05
Surrogate: 1,4-Dichlorobenzene-d4	85.1	80.8-139	% Rec	1.0		3/23/05

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	320	50	µg/L	1.0		3/23/05

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Date: 25-Mar-05
WorkOrder: 0503369

ANALYTICAL REPORT

Client Sample ID: 3577-MW10-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-09A **Matrix:** Groundwater

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
Methyl tert-butyl ether (MTBE)	400	50	µg/L	50		3/23/05
Tert-butyl alcohol (TBA)	140	10	µg/L	1.0		3/23/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/23/05
Ethyl tert-butyl ether (ETBE)	1.2	1.0	µg/L	1.0		3/23/05
Benzene	ND	0.50	µg/L	1.0		3/23/05
Tert-amyl methyl ether (TAME)	41	1.0	µg/L	1.0		3/23/05
Toluene	ND	0.50	µg/L	1.0		3/23/05
Ethylbenzene	ND	0.50	µg/L	1.0		3/23/05
m,p-Xylene	ND	0.50	µg/L	1.0		3/23/05
o-Xylene	ND	0.50	µg/L	1.0		3/23/05
Surrogate: 1,4-Dichlorobenzene-d4	86.9	80.8-139	% Rec	1.0		3/23/05

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

Parameter	Result	Limit	Units	DF	Extracted	Analyzed
TPHC Gasoline	340	50	µg/L	1.0		3/23/05

Client Sample ID: 3577-QCTB-W **Received:** 3/15/05 **Collected:** 3/15/05 0:00
Lab ID: 0503369-10A **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		3/22/05
Tert-butyl alcohol (TBA)	ND	10	µg/L	1.0		3/22/05
Di-isopropyl ether (DIPE)	ND	1.0	µg/L	1.0		3/22/05
Ethyl tert-butyl ether (ETBE)	ND	1.0	µg/L	1.0		3/22/05
Benzene	ND	0.50	µg/L	1.0		3/22/05
Tert-amyl methyl ether (TAME)	ND	1.0	µg/L	1.0		3/22/05
Toluene	ND	0.50	µg/L	1.0		3/22/05
Ethylbenzene	ND	0.50	µg/L	1.0		3/22/05
m,p-Xylene	ND	0.50	µg/L	1.0		3/22/05
o-Xylene	ND	0.50	µg/L	1.0		3/22/05
Surrogate: 1,4-Dichlorobenzene-d4	87.6	80.8-139	% Rec	1.0		3/22/05

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		3/22/05

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North Coast Laboratories, Ltd.

Date: 25-Mar-05

CLIENT: LACO Associates
Work Order: 0503369
Project: 3577.03, HPI Rio Dell Shell

QC SUMMARY REPORT

Method Blank

Sample ID **MB 032205** Batch ID: **R34013** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **3/23/05 10:19:00 AM** Prep Date

Client ID: Run ID: **ORGCMS2_050322B** SeqNo: **492647**

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	0.1271	0.50									J
Tert-amyl methyl ether (TAME)	ND	1.0									
Toluene	ND	0.50									
Ethylbenzene	0.09025	0.50									J
m,p-Xylene	ND	0.50									
o-Xylene	0.1428	0.50									J
1,4-Dichlorobenzene-d4	0.860	0.10	1.00	0	86.1%	81	139	0			

Sample ID **MB 032205** Batch ID: **R34011** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **3/22/05 7:40:00 AM** Prep Date

Client ID: Run ID: **ORGCMS2_050322A** SeqNo: **492058**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	33.25	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: 25-Mar-05

CLIENT: LACO Associates
Work Order: 0503369
Project: 3577.03, HPI Rio Dell Shell

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-05191** Batch ID: **R34013** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **3/22/05 3:36:00 AM** Prep Date

Client ID: Run ID: **ORGCMS2_050322B** SeqNo: **492101**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	18.56	1.0	20.0	0	92.8%	80	120	0			
Tert-butyl alcohol (TBA)	512.8	10	400	0	128%	25	162	0			
Di-isopropyl ether (DIPE)	17.44	1.0	20.0	0	87.2%	80	120	0			
Ethyl tert-butyl ether (ETBE)	17.99	1.0	20.0	0	89.9%	77	120	0			
Benzene	17.47	0.50	20.0	0	87.4%	78	117	0			
Tert-amyl methyl ether (TAME)	19.16	1.0	20.0	0	95.8%	64	136	0			
Toluene	17.68	0.50	20.0	0	88.4%	80	120	0			
Ethylbenzene	19.19	0.50	20.0	0	95.9%	80	120	0			
m,p-Xylene	40.33	0.50	40.0	0	101%	80	120	0			
o-Xylene	18.28	0.50	20.0	0	91.4%	80	120	0			
1,4-Dichlorobenzene-d4	1.24	0.10	1.00	0	123%	81	139	0			

Sample ID **LCSD-05191** Batch ID: **R34013** Test Code: **8260OXYW** Units: **µg/L** Analysis Date **3/22/05 4:06:00 AM** Prep Date

Client ID: Run ID: **ORGCMS2_050322B** SeqNo: **492102**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methyl tert-butyl ether (MTBE)	18.49	1.0	20.0	0	92.4%	80	120	18.6	0.392%	20	
Tert-butyl alcohol (TBA)	509.8	10	400	0	127%	25	162	513	0.575%	20	
Di-isopropyl ether (DIPE)	17.04	1.0	20.0	0	85.2%	80	120	17.4	2.32%	20	
Ethyl tert-butyl ether (ETBE)	17.80	1.0	20.0	0	89.0%	77	120	18.0	1.04%	20	
Benzene	17.40	0.50	20.0	0	87.0%	78	117	17.5	0.400%	20	
Tert-amyl methyl ether (TAME)	18.97	1.0	20.0	0	94.9%	64	136	19.2	1.02%	20	
Toluene	17.12	0.50	20.0	0	85.6%	80	120	17.7	3.21%	20	
Ethylbenzene	18.43	0.50	20.0	0	92.1%	80	120	19.2	4.04%	20	
m,p-Xylene	38.48	0.50	40.0	0	96.2%	80	120	40.3	4.69%	20	
o-Xylene	18.08	0.50	20.0	0	90.4%	80	120	18.3	1.10%	20	
1,4-Dichlorobenzene-d4	1.22	0.10	1.00	0	122%	81	139	1.24	1.43%	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: 0503369
Project: 3577.03, HPI Rio Dell Shell

QC SUMMARY REPORT

Laboratory Control Spike

Sample ID **LCS-05192** Batch ID: **R34011** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **3/22/05 5:38:00 AM** Prep Date
Client ID: Run ID: **ORGCMS2_050322A** SeqNo: **492055**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	995.9	50	1,000	0	99.6%	80	120	0			

Sample ID **LCSD-05192** Batch ID: **R34011** Test Code: **GASW-MS** Units: **µg/L** Analysis Date **3/22/05 6:08:00 AM** Prep Date
Client ID: Run ID: **ORGCMS2_050322A** SeqNo: **492056**

Analyte	Result	Limit	SPK value	SPK Ref Val	% Rec	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
TPHC Gasoline	1,048	50	1,000	0	105%	80	120	996	5.10%	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

NORTH COAST LABORATORIES LTD.
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Chain of Custody

LABORATORY NUMBER: 0503369

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: 3577.03
Project Name: HPI Rio Dell Shell
Purchase Order Number: TASK - 3020

LAB ID	SAMPLE ID	DATE	TIME	MATRIX*	ANALYSIS	CONTAINER	PRESERVATIVE	SAMPLE CONDITION/SPECIAL INSTRUCTIONS
	3577-MW2-W	3-15-05	AM	GW	8260 List 1	9	b	GEOTRACKER
	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		Cold, intact

RELINQUISHED BY (Sign & Print)	DATE/TIME	RECEIVED BY (Sign)	DATE/TIME
STEVE DAVIS	3:48 pm 3/15/05	R. Thompson	3/15/05 1540

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