SEMI-ANNUAL GROUNDWATER MONITORING REPORT

ARROW RENTALS LIVERMORE, CALIFORNIA

APRIL 2001



Prepared for: Don-Sul Inc. 187 North L Street Livermore, California 94607

Date Prepared: June 15, 2001

By: Environmental Sampling Services and Aquifer Sciences, Inc.

June 4, 2001 971275

Rita Sullins Don-Sul, Inc. 187 North L Street Livermore, CA 94550

Subject: Semi-Annual Groundwater Monitoring, April 2001

187 North L Street, Livermore, California

Dear Ms. Sullins:

Groundwater monitoring was conducted in April 2001 at the Arrow Rentals site, located at 187 North L Street in Livermore, California. This report presents the groundwater measurement and sampling procedures, evaluation of hydrogeologic data, and the results of laboratory analyses.

MEASUREMENT AND SAMPLING PROCEDURES

On April 18, 2001, groundwater monitoring was performed at the site by Environmental Sampling Services of Martinez, California. The locations of the groundwater monitoring wells are illustrated on Figure 1. Sampling procedures and measurements are described in the field activity report, included in Appendix A.

Prior to sampling, the depth of static groundwater was measured in all four wells (W-1s, W-3s, W-Bs, and W-Es) to the nearest 0.01 foot using an electrical water level recorder. The interface probe was washed using a Liqui-Nox[®] detergent solution, rinsed with potable water, and rinsed with distilled water. Groundwater elevation data for each well are listed in Table 1. The potentiometric surface corresponding to groundwater elevations measured on April 18, 2001, is shown on Figure 2.

Three of the wells (W-1s, W-3s, and W-Bs) were purged and sampled after static water level measurements were recorded. At least three casing volumes of groundwater were removed from each well prior to sampling. Each well was purged using a submersible pump with new tubing. Purge water from the monitoring wells was stored in 55-gallon drums, pending the analytical results.

Water quality parameters (pH, specific conductance, temperature, turbidity, color, and odor) were recorded at regular intervals during well purging. Water quality parameters for the three

wells were recorded in the sampling logs. Copies of the well sampling logs are included in Appendix A.

Groundwater samples were collected from each well using the submersible pump set to the minimum possible pump rate. Groundwater samples were collected in clean bottles supplied by the analytical laboratory, labeled, stored on ice in a cooler, and transported under chain-of-custody protocol within 24 hours of collection to McCampbell Analytical Laboratories, a California-certified laboratory located in Pacheco, California. A travel blank was prepared by the laboratory and accompanied the groundwater samples for quality assurance purposes.

The groundwater samples were analyzed for total petroleum hydrocarbons quantified as gasoline (TPH-gasoline) by EPA Method 8015 Modified; total petroleum hydrocarbons quantified as diesel (TPH-diesel) by EPA Method 8015 Modified; benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8020; and methyl tertiary butyl ether (MTBE) by EPA Method 8020 Modified. The travel blank was analyzed for gasoline by EPA Method 8015 Modified, BTEX by EPA Method 8020, and MTBE by EPA Method 8020 Modified.

HYDROGEOLOGIC DATA EVALUATION

Groundwater elevations in the four monitoring wells ranged from 442.63 feet in well W-Es to 447.80 feet in well W-1s. Based upon measurements recorded on April 18, 2001, groundwater generally flows to the northwest as shown on Figure 2. The hydraulic gradient is approximately 0.019 ft/ft.

RESULTS OF LABORATORY ANALYSES

Results of laboratory analyses for groundwater samples collected in April 2001 are summarized in Tables 2 and 3. The laboratory report and chain-of-custody documentation are included in Appendix B.

Gasoline was detected in the groundwater samples collected from wells W-3s, W-Bs, W-1s, at concentrations ranging from 2,300 to 54,000 μ g/L. TPH-diesel was detected at concentrations ranging from 1,600 to 6,800 μ g/L. However, the laboratory indicated that non-diesel petroleum hydrocarbons were also present in all samples. Benzene was detected at concentrations ranging from 320 to 5,200 μ g/L. The Maximum Contaminant Level (MCL) for benzene is 1 μ g/L. Toluene (up to 1,800 μ g/L), ethylbenzene (up to 1,500 μ g/L), and xylenes (up to 7,000 μ g/L) were also detected in the samples collected from all three wells. The concentrations of toluene, ethylbenzene, and xylenes in wells W-1s and W-Bs exceeded MCLs. MTBE was not detected in any of the groundwater samples.

SUMMARY AND CONCLUSIONS

Table 4 presents a summary of the analytical data for groundwater at the three wells since March 1996. High levels of gasoline, diesel, BTEX, and MTBE have been consistently detected in groundwater samples collected from wells W-1s and W-Bs. Lower levels of gasoline, diesel, BTEX, and MTBE have also been detected in samples collected from well W-3s (and W-Es when sampled). Fluctuations in the concentrations of gasoline, diesel, and BTEX may be related to seasonal variations in groundwater elevations and the groundwater flow direction. In April 2001, the direction of groundwater flow beneath the site was northwest.

Please call us if you have any questions concerning this report.

Respectfully yours,

Richard P. Salopek Hydrogeologist

Attachments

Rebecca A. Sterbentz, RG, CHG, REA

President

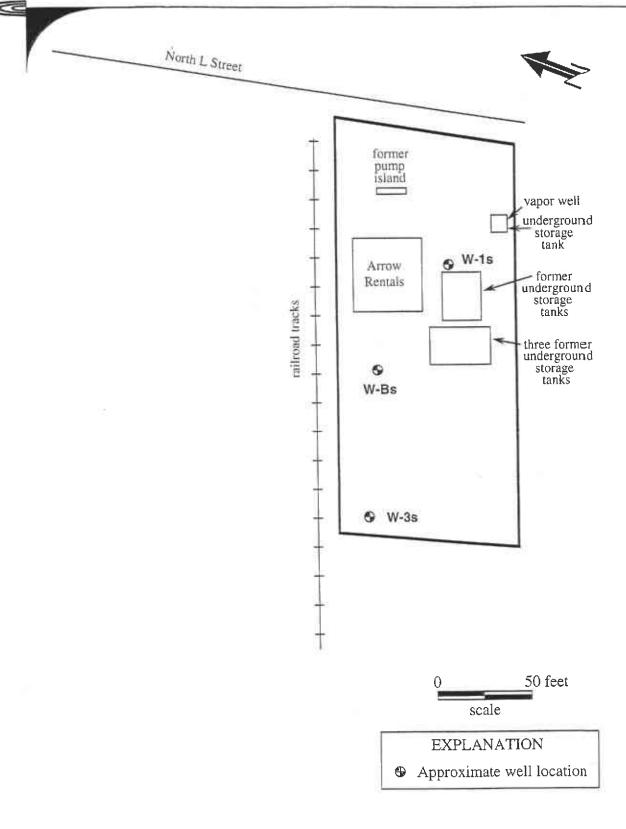


Figure 1. SITE MAP 187 North L Street, Livermore, California

W-Es

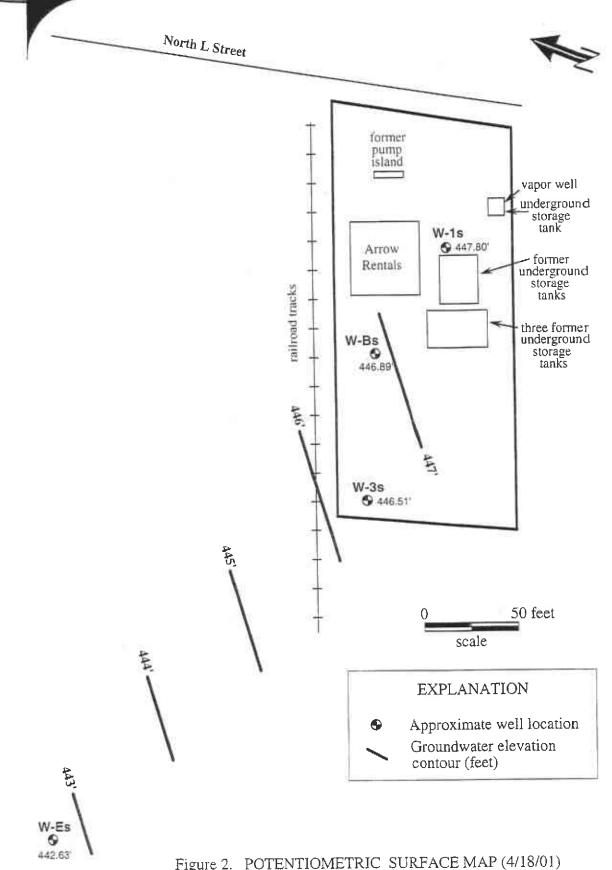
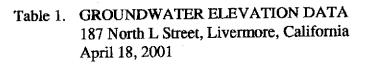


Figure 2. POTENTIOMETRIC SURFACE MAP (4/18/01) 187 North L Street, Livermore, California



Well Number	Top of Casing Elevation (feet above MSL)	Depth to Water (feet below TOC)	Water Elevation (feet above MSL)
W-1s	479.09	31.29	447.80
W-3s	476.98	30.47	446.51
W-Bs	478.82	31.93	446.89
W-Es	474.66	32.03	442.63

MSL = mean sea level (elevations based on City of Livermore datum)

TOC = top of well casing

Table 2. ANALYTICAL RESULTS FOR GROUNDWATER - PETROLEUM HYDROCARBONS 187 North L Street, Livermore, California April 18, 2001

Well Number	TPH- gasoline (µg/L)	TPH- diesel (µg/L)	TPH- motor oil (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	Naphthalene (µg/L)	2-Methyl- naphthalene (µg/L)
W-1s W-3s W-Bs Travel Blank	54,000*† 2,300* 20,000* < 50	6,800†‡ 1,600‡\$ 2,500‡ NA	NA NA NA	5,200 320 2,400 < 0.5	1,800 8.0 180 < 0.5	1,500 16 880 < 0.5	7,000 7.0 1,800 < 0.5	< 330 < 20 < 20 < 5.0	NA NA NA NA	NA NA NA NA
MDL MCL	50 NE	50 NE	 NE	0.5 1	0.5 150	0.5 700	0.5 1,750	5.0-330 5	NE	NE

μg/L = micrograms per liter [parts per billion (ppb)]

NA = not analyzed

NE = none established

TPH-gasoline = total petroleum hydrocarbons quantified as gasoline

TPH-diesel = total petroleum hydrocarbons quantified as diesel

TPH-motor oil = total petroleum hydrocarbons quantified as motor oil

MTBE = methyl tertiary butyl ether

MDL = method detection limit

MCL = Maximum Contaminant Level, February 2000

* Unmodified or weakly modified gasoline is significant.

† Lighter than water immiscible sheen is present.

‡ Gasoline range compounds are significant.

§ Oil range compounds are significant.

Table 3. SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER 187 North L Street, Livermore, California

Well Number	Date Sampled	TPH- gasoline (µg/L)	TPH- diesel (µg/L)	TPH- motor oil (µg/L)	Benzene (µg/L)	Toluene (μg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (μg/L)	Lead (µg/L)	Naphthalene (µg/L)	2-Methyl- naphthalene (µg/L)
W-1s	3/22/96	6,400	NA	NA	580	470	85	1,100	< 500	NA	NA	NA
W-1s	11/22/96	170,000	NA	NA	13,000	18,000	3,500	18,000	< 10,000	NA	NA	NA
W-1s W-1s	7/15/97	140,000	38,000*	3,000	12,000	12,000	2,600	16,000	< 800	NA	NA	NA
W-1s	10/29/97	650,000	180,000	1,600	14,000	19,000	7,800	35,000	< 3,000	NA	NA	NA.
W-1s	4/27/98	6,700	2,200†	NA	410	250	77	870	< 30	< 5	NA	NA
W-1s	10/23/98	99,000	18,000†	NA	9,800	9,400	1,800	11,000	< 600	NA	NA	NA
W-1s	4/9/99	70,000	24,000	NA	6,500	7,000	1,800	8,900	360	NA	330	ND
W-1s	10/5/99	82,000	60,000‡	NA	5,500	4,500	2,500	14,000	< 300	NA	510	280
W-1s	4/5/00	47,000	15,000‡	NA	4,300	2,300	1,500	6,100	170	NA	330	110
W-1s	10/26/00	50,000	1,200	< 500	3,800	1,800	1,700	7,600	< 50	NA	350	180
W-1s	4/18/01	54,000§,**	6,800**,††	NA	5,200	1,800	1,500	7,000	< 330	NA	NA	NA
, ,	1, 10, 01	2 1,000 3,	2,						_			
W-3s	3/22/96	100	NA	NA	13	6.9	5.3	14	< 5	NA	NA	NA
W-3s	11/22/96	3,200	NA	NA	270	29.0	63.0	100	< 100	NA	NA	NA
W-3s	7/15/97	2,100	340*	740	230	7	33	51	< 20	NA	NA	NA
W-3s	10/29/97	2,800	750	88	630	31	71	69	< 30	NA	NA	NA
W-3s	4/27/98	< 50	< 50	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA ·
W-3s	10/23/98	3,800	1,000†	NA	500	28	90	37	35	NA	NA	NA
W-3s	4/9/99	980	430	NA	240	4	37	3	< 12	NA	NA	NA
W-3s	10/5/99	1,500	1,000‡,‡‡	NA	290	9.5	53	9.8	< 6	NA	NA	NA
W-3s	4/5/00	810	320‡	NA	150	3.0	9.0	5.7	< 5	NA	ND	ND
W-3s	10/26/00	310	120	140	83	3.5	6.4	1.2	< 5	NA	NA	NA
W-3s	4/18/01	2,300§	1,600††,§§	NA	320	8.0	16	7.0	< 20	NA	NA	NA
,, ••	, -	,							# 000			374
W-Bs	3/22/96	61,000	NA	NA	9,800	8,000	2,200	11,000	< 5,000	NA	NA	NA
W-Bs	11/22/96	47,000	NA	NA	5,100	3,100	1,400	7,800	< 2,500	NA	NA	NA
W-Bs	7/15/97	66,000	17,000*	490	7,800	4,900	1,900	10,000	< 600	NA	NA	NA
W-Bs	10/29/97	44,000	27,000	4,000	6,000	500	1,500	6,400	380	NA	NA	NA
W-Bs	4/27/98	63,000	17,000†	NA	6,100	5,400	1,900	9,100	< 600	NA	NA	NA
W-Bs	10/23/98	48,000	9,600†	NA	6,700	1,200	1,500	6,200	< 300	NA	NA	NA
W-Bs	4/9/99	39,000	12,000	NA	4,100	1,900	1,400	5,600	< 300	NA	NA	NA

Table 3 (continued). SUMMARY OF ANALYTICAL RESULTS FOR GROUNDWATER 187 North L Street, Livermore, California

Well Number	Date Sampled	TPH- gasoline (µg/L)	TPH- diesel (µg/L)	TPH- motor oil (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethyl- benzene (µg/L)	Total Xylenes (µg/L)	MTBE (µg/L)	Lead (µg/L)	Naphthalene (µg/L)	2-Methyl- naphthalene (µg/L)
TIV D	10.65.600	20 000	7 200+	NA	3,800	390	1,600	5,900	< 60	NA	NA	NA
W-Bs	10/5/99	38,000	7,300‡ 9,600‡	NA NA	3,500	1,200	1,400	4,700	< 150	NA	280	68
W-Bs	4/5/00	34,000	9,000 ₄ 650	< 50	2,500	210	1,100	2,600	150	NA	260	88
W-Bs W-Bs	10/26/00 4/18/01	23,000 20,000§	2,500††	NA NA	2,400	180	880	1,800	< 20	NA	NA	NA
W-Es	3/22/96	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5	NA	NA	NA
W-Es W-Es	11/22/96	280	NA.	NA	24	0.6	1.8	2.2	< 5	NA	NA	NA
W-Es W-Es	10/23/98	82	69†	NA	< 0.5	0.8	< 0.5	0.8	4	NA	NA	NA
W-Es	10/5/99	68	88‡	NA	< 0.5	< 0.5	< 0.5	< 1.0	4	NA	NA	NA
W-Es	10/26/00	110	< 50	< 50	0.7	< 0.5	< 0.5	< 1.0	< 5	NA	NA	NA
Travel Blank	7/15/97	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank		< 5 0	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank		< 50	NA NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank		< 50	NA	NA.	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	4/9/99	< 50	NA.	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA
Travel Blank	10/5/99	< 5 0	NA.	NA	< 0.5	< 0.5	< 0.5	< 1.0	< 3	NA	NA	NA
Travel Blank		< 5 0	NA	NA	1.8	< 0.5	< 0.5	< 1.0	< 5	NA	NA	NA
Travel Blank		< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 1.0	< 5	NA	NA	NA
Travel Blank		< 50	NA NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	NA	NA	NA
MOT		NE	NE	NE	1	150	700	1,750	5	50	NE	NE
MCL AL		NE NE	NE NE	NE NE	NE	NE	NE	NE	35	15	NE	NE

μg/L = micrograms per liter [parts per billion (ppb)]

NA = not analyzed

NE = none established

TPH-gasoline = total petroleum hydrocarbons quantified as gasoline

TPH-diesel = total petroleum hydrocarbons quantified as diesel

MTBE = methyl tertiary butyl ether

MCL = Maximum Contaminant Level, February 2000

AL = Action Level, February 2000

- * The method blank contained heavy oil at 120 µg/L
- † The chromatogram does not match the typical diesel pattern
- ‡ The sample contained a lower boiling point mixture of hydrocarbons quantitated as diesel.
- § Unmodified or weakly modified gasoline is significant.
- ** Lighter than water immiscible sheen is present.
- †† Gasoline range compounds are significant.
- ‡‡ The sample contained a higher boiling point hydrocarbon mixture quantitated as diesel.
- §§ Oil range compounds are significant.

APPENDIX A

FIELD ACTIVITY REPORT

FIELD ACTIVITY REPORT

SEMI-ANNUAL GROUNDWATER
MONITORING EVENT
APRIL 2001

ARROW RENTALS LIVERMORE, CALIFORNIA

Prepared for: Don-Sul, Inc. 187 North L Street Livermore, California 94550

Date Prepared: May 17, 2001



FIELD ACTIVITY REPORT

SEMI-ANNUAL GROUNDWATER MONITORING EVENT ARROW RENTALS LIVERMORE, CALIFORNIA

ESS Personnel: Jacqueline Lee and Stephen Penman

Date of Activities: April 18, 2001

Decontamination Procedures

All downhole equipment was cleaned with a solution of Liqui-Nox® laboratory-grade detergent and potable water, rinsed with potable water, followed by a final rinse with distilled water.

Groundwater Level Measurements

A total of four monitoring wells were measured for static water level. All readings were performed with an Oil/Water Interface meter (Table 1). Water level measurements were referenced to the surveyor's mark (a black mark on the top of well casing).

Prior to measuring, monitoring wells were allowed to equilibrate with the atmosphere. static water level was determined by lowering the interface probe into the well and obtaining three successive readings that agree to within one-hundredth of a foot. The presence of oil was not detected in the four monitoring wells.

Field Equipment Calibration

All field measurements were performed in accordance with the instruments' calibration and operating procedures. Field measurements included: pH, Specific Conductance, Turbidity, and Temperature. Physical characteristic such as color and odor were also noted.

Well Purging and Sampling Methods

A Grundfos® Redi-Flow submersible pump and new tubing were used for well purging at monitoring wells: W-1s, W-Bs, and W-3s. A minimum removal of three casing volumes and stabilization of water quality parameters were required prior to sampling. All wells were sampled for the following analyses: EPA Method 8015M (TPH (Gasoline)/BTEX, and MTBE), and TPH as Diesel. All wells were sampled with the submersible pump set at the slowest pump speed.



Laboratory, Sample Containers & Preservation

McCampbell Analytical Laboratories of Pacheco, California supplied all sample containers and performed all required analyses. All samples were properly preserved according to analysis.

Gasoline, BTEX, and MTBE samples were contained in three 40-ml glass containers preserved with hydrochloric acid.

Diesel samples were contained in a non-preserved, 1-liter amber glass container.

QA/QC

Trip blanks for EPA Method 8015M were supplied and remained in the cooler containing all sample containers. No other QA/QC samples were required nor requested.

Comments

All work was performed under satisfactory workmanship and according to the Alameda County Health and Care Services' directive, dated October 8, 1997, March 15, 1999, and January 10, 2000. On April 18, 2001, Ms. Eva Chu directed ESS not to collect samples for PNAS or Oxygenates.

Jacqueline Lee President

Attachment
Table 1
Water Sample Log Sheets
Chain of Custody



TABLE 1: SUMMARY OF GROUNDWATER LEVEL MEASUREMENTS ARROW RENTALS LIVERMORE, CALIFORNIA

DEPTH TO GROUNDWATER (ft., TOC) (Measured April 18, 2001)	WELL DEPTH (ft., TOC)
31.29	44.64
31.93	44.47
30.47	44.76
32.03	44.32
	GROUNDWATER (ft., TOC) (Measured April 18, 2001) 31.29 31.93 30.47

TOC = Top of well casing

APPENDIX B

LABORATORY REPORT

AND

CHAIN-OF-CUSTODY DOCUMENTATION



WAIER	QUALIT	Y SAMPLE LO	OG SHE	EET	WELL IDENT	IFICATIO)N: W-3s	DATE: 4/18/01					
		ow Rentals - Li			Project Task:	<u>Semi-Ann</u>	ual Ground	water Monitoring					
Weather Conditions: Partly cloudy / Low clouds, 77 F													
Well Desc	cription: .	75" 2" `3" (4	") 5" 6"		Well Type:			Other:					
Is Well Se	cured 🏹	es/No Bolt	Size /5	16"	Type of lock /	Lock num	ber: Maste	. 					
Observati	ons / Con	nments:						<u> </u>					
Purge Me	thod: Tet	flon / PVC Disp	oosable E	Bailer Peri	istaltic Pump	GrundFos	Redi-flow	Other:					
		New Cleaned						edicated					
Method of	f Cleaning	Pump: NA A	Alconox (Liqui-Nox	Tap Water D	RinseOt	her:						
		g Bailer: NA A											
		Disp. Teflon E											
pH Meter	Serial No	217254 /	330089	<u> </u>	Spec. Cond. N	leter Seria	al No.: (96H	10203AB (AE)					
Date/Time	e Calibrat	ed: ½:00 12:40	4 7 10	@ 25°C	Spec.Cond. M	eter Calib	ration: Sel	f Test Other:					
								IA ppm @ Well Head					
Water Le	vel at Sta	irt (DTW): <u>36</u>	.44C13:	03 Wate	er Level Prior	Fo Samplii	ng: <u>32.3</u>	3D					
TD = 44.76	6 - 39. 47	(DTW) = <u>14.29</u>	(ft.of wa	ter) x "K" =	9.33 (Gals./C	V) x ق	(No. of CV)	= 11.9 (Gals.)					
"k" = .	.023(.75" v	vell) "K"= 0.16						" = 1.46(6" well)					
FIELD WATER QUALITY PARAMETERS													
Date Time Discharge pH Temp. Conductance Turbidity Color Comments (Gallons) (°C) mS (S)													
(Gallons) (°C) ms (s) 4 7.06 20.4 636 24.6 Cloudy light 0.4 Shown*													
1/14/4													
1		8	£03	(9.8)		0.41	Cleav	Pet oder					
7.070	13:13	8	7.03	19.8	641			Pet oder					
71070	13:13	12	7.01	19.7	641 641	14.0 3.43	Clear	Pet oder					
1	(1:51 31:61 71:61	12	7.01 7.05	19.7	641 622 659	0.41 61.7	(lew	Pet oder					
1	13:13 13:15 13:17 13:19	12	7.01 7.05 7.04	19.7 19.8 20.1	64 (652 659 663	3.43 7.18 6.98	Clear 11	Pet oder					
1	13:10 10:15 13:17 13:19 13:21	12 16 20 24	7.01 7.05 7.04 7.04	19.7 19.8 20.1 19.9	64 (652 659 663 662	14.0 343 7.18 6.98 7.64	(lessr	Pet oder					
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	13:10 13:17 13:17 13:21 13:22 13:24	12 20 24 28 32	7.01 7.05 7.04 7.04 7.03 7.04	19.7 17.8 20.1 19.9 20.0	64 (652 659 662 658 665	14.0 3.43 7.18 6.98 7.64 7.55 7.23	Clessy 11 11 11	Light Shaw T fatto.					
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Total Dis	13:13 13:15 13:17 13:19 13:21 13:22 13:24 13:32 scharge:	20 24 28 30 After Sampling	7.01 7.05 7.04 7.04 7.04 7.02 allons	19.7 19.8 20.1 19.7 20.0 20.1 20.4	64 (652 659 662 662 665 662 Casing Volum Drum(3) Poly	14.0 3.43 7.18 6.98 7.64 7.55 7.23 8.16 nes Remo	Cless If It It Ved:	Light Sharn T Patro. ddar. 3.75 stem Other:					
Total Dis Method of Date/Tim	13:13 13:15 13:17 13:19 13:21 13:22 13:24 13:32 charge: of disposa ne Sampl	20 24 28 33 After Sampling 35 ga al of discharged ed: 4/180 @	7.01 7.05 7.04 7.04 7.02 7.02 allons d water: (3:36	19.7 19.8 20.1 19.7 20.0 20.1 20.4 S5 Gallon Analysis	64 (652 659 662 665 662 Casing Volum Drum(s) Poly s/No. of Bottles Non-Preserve	14.0 3.43 7.18 6.98 7.64 7.55 7.23 8.16 nes Remo Tank Tre s: EPA 80°	ved:seatment Sys	S.15 stem Other: TPHg/BTEX, MTBE (3-					
Total Dis Method of Date/Tim	13:13 13:15 13:17 13:19 13:21 13:22 13:24 13:32 charge: of disposa ne Sampl	20 24 28 33 After Sampling 35 ga al of discharged ed: 4/180 @	7.01 7.05 7.04 7.04 7.02 7.02 allons d water: (3:36	19.7 19.8 20.1 19.7 20.0 20.1 20.4 S5 Gallon Analysis	64 (652 659 662 665 662 Casing Volum Drum(s) Poly s/No. of Bottles Non-Preserve	14.0 3.43 7.18 6.98 7.64 7.55 7.23 8.16 nes Remo Tank Tre s: EPA 80°	ved:seatment Sys	Light Sharn T Patro. ddar. 3.75 stem Other:					
Total Dis Method of Date/Tim 40ml VO	13:13 13:15 13:17 13:19 13:21 13:22 13:24 13:32 charge: of disposa ne Sampl	IC 2D 24 28 33 After Sampling 35 ga al of discharged ed: 1/18/01 @ 1), TPHd (1-1 L	7.01 7.05 7.04 7.04 7.02 7.02 allons d water: (3:36	19.7 19.8 20.1 19.7 20.0 20.1 20.4 S5 Gallon Analysis	64 (652 659 662 665 662 Casing Volum Drum(s) Poly s/No. of Bottles Non-Preserve	14.0 3.43 7.18 6.98 7.64 7.55 7.23 8.16 nes Remo Tank Tre s: EPA 80°	ved:seatment Sys	S.15 stem Other: TPHg/BTEX, MTBE (3-					
Total Dis Method of Date/Tim 40ml VO	13:13 13:15 13:17 13:21 13:22 13:24 13:32 scharge: of disposa- ne Sampli OCs w/HC	IC 2D 24 28 33 After Sampling 35 ga al of discharged ed: 1/18/01 @ 1), TPHd (1-1 L	7.01 7.05 7.04 7.04 7.02 7.02 allons d water: (3:36	19.7 19.8 20.1 19.7 20.0 20.1 20.4 S5 Gallon Analysis	64 (652 659 662 665 662 Casing Volum Drum(s) Poly s/No. of Bottles Non-Preserve	14.0 3.43 7.18 6.98 7.64 7.55 7.23 8.16 nes Remo Tank Tre s: EPA 80°	ved:seatment Sys	S.15 stem Other: TPHg/BTEX, MTBE (3-					
Total Dis Method of Date/Tim 40ml VO QA/QC: Commen	3:13 3:17 3:17 3:19 3:21 3:22 3:24 3:32 scharge:_of dispose ne Sample OCs w/HC	IC 2D 24 28 33 After Sampling 35 ga al of discharged ed: 1/18/01 @ 1), TPHd (1-1 L	7.01 7.05 7.04 7.04 7.04 7.02 allons d water: (3:34 iter Glas	19.7 19.8 20.1 19.7 20.0 20.1 20.4 65 Gallon Analysis ss Ambere	64 (652 659 663 662 665 662 Casing Volum Drum(s) Poly s/No. of Bottles Non-Preserve	14.0 3.43 7.18 6.98 7.64 7.55 7.23 8.16 nes Remo Tank Tre s: EPA 80°	ved:seatment Sys	S.15 stem Other: TPHg/BTEX, MTBE (3-					



WATER	QUALIT	Y SAMPLE L	OG SH	EET	WELL IDENT	TIFICATION	ON: W-Bs	DATE: 4/18/01				
Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring												
Weather Conditions: Sunny, warm; start breeze 77 F												
		.75" 2" 3" 🕢			Well Type: 6							
is Well S	ecured? (es No Bolt	Size <u>l</u>	5/16"	Type of lock /	Lock nun	nber: Mas	tev-				
		mments:										
		flon / PVC Disp			istaltic Pump (GrundFos	Redi-flow	Other:				
E .		New / Cleaned			Bailer Line: N							
		g Pump: NA A										
Bř		g Bailer: NA										
Sampling	Method:	Disp. Teflon E	Bailer D	isp. PVC E	Bailer GrundF	os Redi-f	low Pump	Other:				
pH Meter	Serial No	o.: 217 25 4 /	330089	Ð	Spec. Cond. M	/leter Seri	al No.: 96H	10203AB / AE				
Date/Tim	e Calibra	ted: ½/15/5/c 12:4	o (7 1	0 @ 25%	Spec.Cond. M	leter Calib	ration: <u>Sel</u>	Test Other:				
Method to	Measur	e Water Level:	Solinst	Serial No.	: %w Ind	_ P.I.D. R	eading: <u>N</u>	IA_ppm @ Well Head				
Water Le	vel at Sta	art (DTW): <u>31.</u>	<u>930(3:</u>	09 Wate	er Level Prior 1	Γο Sampli	ng: 40.	701 = <u>2#5</u> (Gals.)				
TD = <u>44.4</u>	<u>7 - 31.93</u>	(DTW) = 12.54	(ft.of wa	ater) x "K" =	8-18 (Gals./C	V) x <u>3</u>	(No. of CV)	= 14.5 (Gals.)				
"k" =	.023(.75" v	vell) "K"= 0.16	3(2" wel) 9 K K" = 0.	653(4" well)	'K" = 1.02(5" well) C"K	" = 1.46(6" well)				
			FIELD \	NATER Q	UALITY PARA	METERS	•					
Date	Time	Discharge	pН	Temp.	Specific Conductance	Turbidity	Color	Comments				
Date	Time	(Gallons)	рп	(°C)	ms (us)			*				
4/10/01	13:56	4.0	6.72	20.0	405.8	14	Bray Cir.	Pet, Odor				
1	13:59	8. 0	6.72	19.9	406.6	66	Light gray	11 44 44 11r				
	14: 02	12.0	6.70	20.4	407.6	5.7	"/elr					
	14:04	16.0	6.69	20.2	408.0	4.3	"/chr	do de				
	[4:10	25.0	6.76	19.9	432.8	6.8	dr	* "				
	14:14	35.0	6.84	19.5	458.6	15.5	ut. army cur	es de				
	14219	45.0	6.82	19.7	480.1	33.1	Lt gray/	مقید ا				
 		1	6.83	19.8	472.3	90.3	ut tanick	<u> </u>				
	14:25	55.0 65.0			573		Ltgray	M 4				
	14:35	I Atter Sampiin g	6.92	20.1	Casing Volum	170.4 240.0		Dest.				
Total Dis	charge: _	<u>65</u> 9a	llons					.\$5				
		al of discharged						PHgas/BTEX, MTBE (3-				
	•	ea. <u>Y 13751 (0)</u> 1); TPHd (2-1 L	•	_	3		101VI/0020-1	Tragasio TEX. INTOL (U				
401111 VC	CS W/I IC	i), 11-110 (#-1 L	itter Gras	3 AIIIDCIP,	140II-1 1030IVO	,u)						
OA/OC:	None	<i>®</i> —	as an	Equipmen	nt Blank Blind	1 Duplicat	e MS/MSE	Field Blank				
		sś 7 = 321										
1.	Used 2 fell droms for was + was.											
i		ki Lee / Stephe		an Signat	ture(s):	16-	Atra	- Dunn				
I Samoleo												



WATER	QUALIT	Y SAMPLE L	OG SH	EET	WELL IDEN	rification (ON: W-1 s	DATE: 4/1	8/01
		ow Rentals - L			Project Task:			water Monitor	ing
Weather	Condition	s: Sonry, se	medox	ls, shaht	breeze; ligh	t drizzle	y		
Well Des	cription: .	.75" 2" `3" 4	" 5" (6	")	Well Type: 6	VC) Stai	niess Steel	Other:	
Is Well Se	ecured? Y	es / No Bolt	Size <u>(</u> \$	/16"	Type of lock /	Lock num	ber: <u>Mast</u>	er	
		mments:							
					ristaltic Pump				
Pump Lin	es: NA 🕻	New Cleaned	/ Dedica	ited	Bailer Line: (N	A New / 0	Cleaned / D	edicated	
Method o	f Cleaning	g Pump: NA	Alconox	Liqui-Nox	Tap Water D	Rinse	ther:		
Method o	f Cleaning	g Bailer: NA /	Alconox	Liqui-Nox	Tap Water D	I Rinse Of	ther:		
Sampling	Method:	Disp. Teflon I	Bailer D	isp. PVC l	Bailer Gr undF	os Redi-fl	ow Pump	Other:	
pH Meter	Serial No	o.: 217254 /	330089	D	Spec. Cond. N	Aeter Seria	al No.: 96H	10203AB / AE	,
Date/Tim	e Calibrat	ted: 1/18@12:4	7 10	@ 25°C	Spec.Cond. M	leter Calib	ration: G el	f Test Other:	
Method to	Measure	e Water Level:	Solinst	Serial No.	: <u> </u>	_ P.I.D. R	eading: <u>N</u>	<u>IA</u> ppm @ W	ell Head
Water Le	vel at Sta	ırt (DTW): <u>3 t</u>	29012	. 56 Wat	er Level Prior	Γο Sampli	ng:	34,5 0	
TD = 44.64	4 - 31.29	(DTW) = 13.35	(ft.of wa	iter) x "K" =	Gals./C	V) x <u>3</u>	(No. of CV)	= 184 (Gals.)	58.4
"K" =	023(.75" v	vell) "K"≃ 0.16	33(2" well) "K" = 0	.653(4" well) "	'K" = 1.02(5	5" well) 🕏	" = 1.46(6" well)	<u> </u>
			FIELD \	NATER Q	UALITY PARA	METERS			
Date	Time	Discharge	рН	Temp.	Specific Conductance	Turbidity	Color	Comme	ents
u / 1		(Gallons)		(°C)	mS uS				
10/01	15:05	10	6.77	20.3	680	(0	ut teus/clr	Pet. Odor	
	15:11	20	6.77	19.8	675	5. %	Cir silentia		
l I	เร:เร	30	6.80	20.1	664	16.7	clay.		
								DIVERS BUTS	
	6.50			- ^ ^		1 1	ы	77 - 20 (1)	D-1 01-
	(3:50	Bcf. Sampl	6.93	21.4	639	lol	v	¥ = 39.50	FET, COM
<u> </u>	16:01	After Sampling	6.88	20.8	692	63	<u> </u>	1	
		36 ga			Casing Volum				
Method o	of disposa	of discharged	d water:	55 Gallon	Drum(Poly	Tank Tre	atment Sys	stem Other:	
					No. of Bottles	: <u>EPA 801</u>	5M/8020-1	PHg/BTEX, M	<u> IBE (3-</u>
40ml VO	Cs w/HCl); TPH (Diesel) * ₫ -1L aı	nber ∌ , No	n-Preserved				
0.4/20	45				at Black Bline	Duplicate	- MC/MCF	C Field Blank	
1					nt Blank Blind	Duplicati	e Monviol	7 Field Blank	
Commer	115: <u>1 67</u>	um filled to	Ande	<u> </u>					
						<u>i/</u>	Attal	D	
Sampled	⊩Ву: <u>Jac</u>	<u>ki Lee / Stephe</u>	en Penm	<u>an</u> Signa	ture(s):	<u> </u>	MAY -	,———	

			4314	¥ 7:2:5	CLAI	I K I	71						Т					C^{1}	L F A	INI	\circ	17 6	711	21	'OI	īν	15	FC	<u>'O'</u>	RD)		
	McCΛM	IPBELL ⊓o 2ººAV	ANAL ÆNUESO	, Y. F.J. WITE, A	CAL ID7	, IIN	C.							T	ЛRN	Α1	श					. (<i>ا</i> ل ا	O, Di	ΟL						•		Ì
		PACHEC	O, CA 945		0		anes	701	160	17				ΙÜ	ж	. AM	W	J I R I C.		# I Y J				JSH	2	4			48 H		72	HR	5 i
Telephor	ne: (925) 798	-1620	В	iii Ta	1.8	1X: (923)	798 2 -	3-162	' L	75		- -					Δn	alys	is R	equ	est					$\dagger \dagger$		Oth	ier		Com	men
Report To: Nec. Company: Envis 668 Mas Tele (125) 372	re tee	\ ~	رماني	<u> </u>		• 1	~		ka.		, ~				-	T	Τ	T			Ť						\prod		T	\Box			
Company. <u>ଅନୁ</u> କୃତ	O Alhum	bra A	neans	# 1	07	V.4.									188														1				
Mag	tirez	CA '	9455	3									+ 8015V WIRE		(F.8.F.)						l		8310					.]	ı				
Tele(195) 372	<u>-808</u> '		F	ax: ()	12)	<u>37</u>	2-6	₹ 0	5	-	٠,		- N. A. S.		100	80							707		- [
roject Location: LiverMars CA							•	- 8	3	1) Suc		020		رخ			2 / 82		Į	္ပါ												
Project Location: , Sampler Signature	PINCLWOLK	3 cv	ـ دلا	, 1/ t								_,		17007	(1986年) (4520年) 日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本	Garb.		12 / 8		8			EPA 625 / 8270 / 8310			1097	1	1 1					
Sampler Signature	- A	SAME	NUNC	~~		1	MAT	RT.	x	Ī	иеп	IOD	— §	<u> </u>		3 S		.A 60		GB's	8260		eg ,		İ	239.				i 1	ivity		
		SAIVII	CLIND?	l h	ners	<u> </u>	(1717)		-	PR	ESE	KVE)	با را	5 6	8 S	1 1	2		08	80 P	70%	0.	iq s,	tais	됢	7421/					Conductivity		
SAMPLE ID	LOCATION		•	Containers	Type Containers								Other	g ,	TPH as Diesel (8015)	Total Perroleum Hydragarbuns (418.1)	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239.2/6010)			i 1		S.		
Ordin CD ID		Date	Time	ontz	ပ္ပိ	펄		2				၀	ij k	8 .	H 2	, F	09	18	1 608	¥ 60%	4 62	4 62	H's/	M-1	5	5			23	ں	Specific (
*			1	\ #±	1,75	Water	Soil	All	Other	္ပ	Ξ	SH S	Other		Ē .3	֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓	: B	E	E E	EP.	E	윱	PA.	S.	밁	اڌ	RCI	뜐	r l	ğ	Šp		
T. DI		1/18/01	11:00	1	glass	1		+	\top	V	X		卜	7	_		1	1															
Trip Blank W-35		4/10/01	13:30	4	Spag 2	V	-			X	X	\top	-15	水		_	_	1-															
w βs		4/18/01	14:24		glass			\dagger		铽	X	\dashv	-5	([)	\mathbf{X}^{-}			1									Ш						
W-18	 	1798 6	15:58		9/453			-	1	X			1)	$\hat{\mathbf{x}}$.	-			j											_		
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APPENDIX B

LABORATORY REPORT

AND

CHAIN-OF-CUSTODY DOCUMENTATION



Environmental Sampling Services	Client Project ID: Arrow Rentals	Date Sampled: 04/18/01
6680 Alhambra Ave, #102		Date Received: 04/18/01
Martinez, CA 94553	Client Contact: Jacki Lee	Date Extracted: 04/18/01
	Client P.O:	Date Analyzed: 04/18/01

04/25/2001

Dear Jacki:

Enclosed are:

- 1). the results of 4 samples from your Arrow Rentals project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Edward Hamilton, Lab Director

Environ	Environmental Sampling Services			Project ID:	Arrow Ren	tals	Date Sam	oled: 04/18	3/01			
6680 AL	hambra Ave,	#102					Date Rece	ived: 04/1	3/01			
Martine	z, CA 94553		Client 6	Contact: Jac	ki Lee		Date Extra	acted: 04/1	9-04/20/01			
			Client l	2.0:			Date Analyzed: 04/19-04/20					
Gasolii EPA metho	ne Range (Co	-C12) Vo	olatile Hydro	carbons as	Gasoline*	, with Me	thyl tert-Bu	utyl Ether	* & BTEX*			
Lab ID	Client ID	Matrix	TPH(g) [†]	МТВЕ	Benzene	Ethyl- benzene	Xylenes	% Recovery Surrogate				
65774	Trip Blank	W	ND	ND	ND	ND	ND	ND	105			
65775	W-3S	w	2300,a	ND<20	320	8.0	16	7.0	116			
65776	W-BS	W	20,000,a	ND<20	2400	180	880	1800	105			
65777	W-1S	W	54,000,a,h	ND<330	5200	1800	1500	7000	103			
	N 4 4 7											
								_				
Reporting	g Limit unless	w	50 ug/L	5.0	0.5	0.5	0.5	0.5				
means not	e stated; ND detected above orting limit	S	1.0 mg/kg	0.05	0.005							

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



^{*} cluttered chromatogram; sample peak coelutes with surrogate peak



Environmental Sampling Service	s Client Pr	roject ID: Arrow Rentals	Date Sampled: 04/18/01						
6680 Alhambra Ave, #102			Date Received: 0	04/18/01					
Martinez, CA 94553	Client Co	ontact: Jacki Lee	Date Extracted: (04/18/01					
	Client P.	O:	Date Analyzed: (Date Analyzed: 04/20/01					
Diesel Range (C10-C EPA methods modified 8015, and 3550 o	23) Extracta r 3510; Californ	able Hydrocarbons as Diesel v	vith Silica Gel Cle GCFID(3550) or GCFII	ean-up					
Lab ID Client ID	Matrix	TPH(d) ⁺		% Recovery Surrogate					
65775 W-3S	W	1600,d,g		119					
65776 W-BS	W	2500,d		116					
65777 W-1S	W	6800,d,h		107					
				· · · · · · · · · · · · · · · · · · ·					
·			120						
				· · · · · · · · · · · · · · · · · · ·					

				-					
Reporting Limit unless otherwise	W	50 ug/L							
stated; ND means not detected above the reporting limit	S	1.0 mg/kg							

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

[#] cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation; a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

110 2nd Ave. South, #D7, Pacheco, CA 94553-5560 Telephone: 925-798-1620 Fax: 925-798-1622

http://www.mccampbell.com E-mail: main@mccampbell.com

QC REPORT

Date:

04/20/01-04/21/01

Matrix:

Water

Extraction:

TTLC

	i I	Concenti	ration: ι	ıg/L	%Rec			
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD	
SampleID: 41801			Instr	ıment:	G	C-7		
Surrogate1	0.000	99.0	102.0	100.00	99	: 102	3.0	
Xylenes	0.000	30.3	29.1	30.00	101	97	4.0	
Ethyl Benzene	0.000	9.4	9.3	10.00	94	93	1.1	
Toluene	0.000	9.6	9.4	10.00	96	94	2.1	
Benzene	0.000	9.2	9.0	10.00	92	90	2.2	
MTBE	0.000	8.3	8.2	10.00	83	82	1.2	
GAS	0.000	97.3	94.8	100.00	97	95	2.6	
SampieID: 41901				Instr	ument:	GC-	-6 A	
Surrogate1	0.000	110.0	109.0	100.00	110	109	0.9	
TPH (diesel)	0.000	8725.0	8600.0	7500.00	116	115	1.4	

$$\% \text{ Re covery} = \frac{\left(MS - Sample\right)}{AmountSpiked} \cdot 100$$

25490 zessa

											v	$\overline{\mathcal{Q}}$					<u> </u>	<u>ر ب</u>	20	<u></u>													
· · · · · · · · · · · · · · · · · · ·	McCAM	PBELL	ANAL	ΥIJ	Ĉ٨I.	JN	C.											CI	-IA	JN	\mathbf{O}	ΓC	U	ST	ΟI	ŊΥ	Ŗ	EC	CO	RL)		N.E.
		10 2 nd AV	TENUE SO	UTH. /	/I)7									FUI	RN	ΑF	OU						[_j						ı			X
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	ie: (925) 798		13	711.71	-	ax: (9												Δ112	alve	is R	edile	est					11		Otl	ner		Com	ments
Report To: Jack	<u> ei lee</u>		<u> </u>	ill To	<u> </u>	<u> </u>	15	CL	bor.	T	<u>(</u>	·	-	1	-	1		7,,,,	4153	3 10			Т										
Report To: Jack Company: Envir	at nomes	/ Daw	blina	Şu	cyte	67								Chan	Grense (5520 E&F/B&F)	ì									-								
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Environmental Sampling Services	Client Project ID: Arrow Rentals	Date Sampled: 04/18/01
6680 Alhambra Ave, #102		Date Received: 04/18/01
Martinez, CA 94553	Client Contact: Jacki Lee	Date Extracted: 04/18/01
	Client P.O:	Date Analyzed: 04/18/01

04/25/2001

Dear Jacki:

Enclosed are:

- 1). the results of 4 samples from your Arrow Rentals project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

All analyses were completed satisfactorily and all QC samples were found to be within our control limits. If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Edward Hamilton, Lab Director

Environmental Sampling Services	Client Project ID: Arrow Rentals	Date Sampled: 04/18/01
6680 Alhambra Ave, #102		Date Received: 04/18/01
Martinez, CA 94553	Client Contact: Jacki Lee	Date Extracted: 04/19-04/20/01
	Client P.O:	Date Analyzed: 04/19-04/20/01

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*

EPA metho	ods 5030, modifi	ed 8015, an	d 8020 or 602; C	California RW(QCB (SF Bay	Region) meth	od GCFID(50)	30)	& DIEX.
Lab ID	Client ID	Matrix	TPH(g)⁺	MTBE	Benzene	Toluene	Ethyl- benzene	Xylenes	% Recovery Surrogate
65774	Trip Blank	W	ND	ND	ND	ND	ND	ND	105
65775	W-3S	W	2300,a	ND<20	320	8.0	16	7.0	116
65776	W-BS	W	20,000,a	ND<20	2400	180	880	1800	105
65777	W-1S	W	54,000,a,h	ND<330	5200	1800	1500	7000	103
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otherwis	Limit unless e stated; ND	W	50 ug/L	5.0	0.5	0.5	0.5	0.5	
	detected above orting limit	S	1.0 mg/kg	0.05	0.005	0.005	0.005	0.005	

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP and SPLP extracts in ug/L

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment; j) no recognizable pattern.



[#] cluttered chromatogram; sample peak coelutes with surrogate peak

												
Environmenta	l Sampling Services	Client	Project ID: Arrow Rentals	Date Sampled: 04/18/01								
6680 Alhambi	ra Ave, #102			Date Received: (04/18/01							
Martinez, CA	94553	Client	Contact: Jacki Lee	Date Extracted:	04/18/01							
· · · · · · · · · · · · · · · · · · ·		Client	P.O;	Date Analyzed:	04/20/01							
Die EPA methods mo	esel Range (C10-C2 dified 8015, and 3550 or	3) Extraction 3510; Califo	ctable Hydrocarbons as Diesel v omia RWQCB (SF Bay Region) method (vith Silica Gel Cle	ean-up							
Lab ID	Client ID	Matrix	TPH(d)⁺	seria (see of or defin	% Recovery Surrogate							
65775	W-3S	w	1600,d,g		119							
65776	W-BS	w	W 2500,d									
65777	W-1S	W	6800,d,h		107							
				" !								
					11.00							
					1,11							
107 h .d.												
	it unless otherwise	w	50 ug/L									
stated; ND means not detected above the reporting limit		s	1.0 mg/kg	g								

The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~5 vol. % sediment.

^{*} water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil and sludge samples in mg/kg, and all TCLP / STLC / SPLP extracts in ug/L

^{*} cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

QC REPORT

Date:

04/20/01-04/21/01

Matrix:

Water

Extraction:

TTLC

		Concent	ration: (ug/L	%Rec	:		
Compound	Sample	MS	MSD	Amount Spiked	MS	MSD	RPD	
SampleID: 41801				Instr	ument:	G	C-7	
Surrogate1	0.000	99.0	102.0	100.00	99	102	3.0	
Xylenes	0.000	30.3	29.1	30.00	101	97	4.0	
Ethyl Benzene	0.000	9.4	9.3	10.00	94	93	1.1	
Toluene	0.000	9.6	9.4	10.00	96	94	2.1	
Benzene	0.000	9.2	9.0	10.00	92	90	2.2	
MTBE	0.000	8.3	8.2	10.00	83	82	1.2	
GAS	0.000	97.3	94.8	100.00	97	95	2.6	
SampielD: 41901				Instr	ument:	GC-	-6 A	
Surrogate1	0.000	110.0	109.0	100.00	110	109	0.9	
TPH (diesel)	0.000	8725.0	8600.0	7500.00	116	115	1.4	

% Re covery =
$$\frac{(MS-Sample)}{AmountSpiked} \cdot 100$$

$$RPD = \frac{(MS-MSD)}{2.100}$$

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		3/11/11	لرزيية	λi	ners	<u> </u>			- -	PR	ESE	RVE:	띡	8 8	TPH as Diesei (8015) by/	Total Peroieum Oil & Grease (5520 E&F/B&F)	Total Petroleum Hydrocarbons (418.1)	<u>.</u>	BTEX ONLY (EPA 602 / 8020)	3	EPA 608 / 8080 PCB's ONLY	EPA 624 / 8240 / 8260	: ا ع	PAH'S / PNA'S by	slas	훤	Lead (7240/7421/239,2/6010)					Specific Conductivity		
SAMPLE ID	LOCATION			Containers	Type Containers						ļ			H ₂) E	Toler		EPA 601 / 8010		EFA 608 / 8080	æ 5 ≿	8/	EPA 625 / 8270	Ž	CAM-17 Metals	LUFT 5 Metals	7407					2		
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