

COPY

**ARROW RENTALS
LIVERMORE, CALIFORNIA**

**SEMIANNUAL GROUNDWATER MONITORING EVENT
SEPTEMBER 2003**

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

Date Prepared: November 12, 2003

12-29-03

Dear Eva,

Hope you had a great holiday season. We have moved back to Levensmore to be closer to the children + grand-children + "doctors"! We are very happy about it.

Here's another report. Any chance of doing this on an annual basis? Please advise.

Have a happy + safe
New Year.

Sincerely,

Pete Sullins

October 31, 2003
971275

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

Subject: Semiannual Groundwater Monitoring, September 2003
187 North L Street, Livermore, California

Dear Ms. Sullins:

This report presents the results of semiannual groundwater monitoring conducted in September 2003 at the Arrow Rentals site, located at 187 North L Street in Livermore, California. Included are discussions of measurement and sampling procedures, hydrogeologic data, and analytical data.

MEASUREMENT AND SAMPLING PROCEDURES

On September 16, 2003, 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 to groundwater was measured in all four wells (W-1s, W-3s, W-Bs, and W-Es) to the nearest 0.01 foot using an oil-water interface probe. The interface probe was washed with a Liqui-Nox[®] detergent solution, rinsed with tap water, and rinsed with distilled water. No floating product was present in any of the wells. The depth measurements, groundwater elevation data, and product thicknesses are listed in Table 1. A summary of groundwater elevation and product thickness data is presented in Table 2.

On September 16, 2003, groundwater samples were collected from three of the four wells (W-1s, W-3s, and W-Bs). Prior to sampling, each well was purged using a submersible pump equipped with dedicated tubing to ensure that fresh formation water entered the casing. Each well was purged until dry and allowed to recover for approximately one to two hours prior to sampling. The purge water from the monitoring wells was stored in 55-gallon drums.

Water quality parameters (temperature, pH, specific conductance, turbidity, color, and odor) were recorded at regular intervals during well purging. Water quality parameters for the four wells were recorded in the sampling logs. Copies of the sampling logs are included in the Field Activity Report in Appendix A.

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Groundwater samples were collected from the wells using a new disposable bailer. Groundwater samples were collected in clean bottles supplied by the analytical laboratory. The bottles were sealed, labeled, stored on ice in a cooler, and transported under chain-of-custody protocol within 24 hours of collection to McCampbell Analytical, a California-certified laboratory in Pacheco, California. A travel blank was transported with the samples to the laboratory.

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 with a silica gel cleanup; benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8021B; and methyl tertiary butyl ether (MTBE) by EPA Method 8021B. For quality assurance purposes, the travel blank was analyzed for TPH-gasoline by EPA Method 8015 Modified, BTEX by EPA Method 8021B, and MTBE by EPA Method 8021B.

HYDROGEOLOGIC DATA EVALUATION

On September 16, 2003, groundwater elevations in the four monitoring wells ranged from 436.14 feet in well W-Es to 441.40 feet in well W-Bs. The elevations were used to construct a potentiometric surface map, as shown on Figure 2. The potentiometric surface shows that groundwater flows to the southwest. The hydraulic gradient is approximately 0.050 ft/ft.

ANALYTICAL DATA EVALUATION

Analytical data for groundwater samples collected in September 2003 are summarized in Table 3. The laboratory report and chain-of-custody documentation are included in Appendix B.

TPH-gasoline, TPH-diesel, and BTEX were detected in the groundwater samples. TPH-gasoline was detected at concentrations ranging from 1,600 $\mu\text{g/L}$ in well W-3s to 53,000 $\mu\text{g/L}$ in well W-1s. TPH-diesel was detected at concentrations ranging from 1,400 $\mu\text{g/L}$ in well W-3s to 24,000 $\mu\text{g/L}$ in well W-1s. However, the laboratory indicated that a significant amount of the reported diesel in the samples was due to gasoline.

Benzene was detected at concentrations ranging from 270 $\mu\text{g/L}$ in well W-3s to 4,100 $\mu\text{g/L}$ in well W-1s. The Maximum Contaminant Level (MCL) for benzene is 1 $\mu\text{g/L}$. Toluene (up to 1,200 $\mu\text{g/L}$), ethylbenzene (up to 1,400 $\mu\text{g/L}$), and xylenes (up to 6,600 $\mu\text{g/L}$) were also detected in the samples. The concentrations of toluene, ethylbenzene, and xylenes in the sample collected from well W-1s exceeded their corresponding MCLs. MTBE was not detected in the samples. TPH-gasoline, BTEX, and MTBE were not detected in the travel blank.

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SUMMARY AND CONCLUSIONS

A summary of analytical data for the four groundwater monitoring wells is presented in Table 4. Elevated levels of TPH-gasoline, TPH-diesel, BTEX, and MTBE have been consistently detected in groundwater samples collected from wells W-1s and W-Bs. Lower levels of TPH-gasoline, TPH-diesel, BTEX, and MTBE have also been detected in samples collected from well W-3s and W-Es.

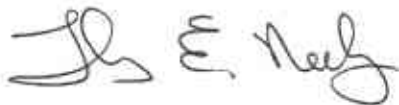
At the beginning of each semiannual monitoring event, the wells are checked for the presence of floating product. No floating product was present in any of the wells in September 2003. Previously, a small amount (0.14 foot) of floating product was measured on the water column in well W-1s in November 2001. None of the other wells (W-Bs, W-3s, and W-Es) have ever contained measurable floating product.

In September 2003, the direction of groundwater flow beneath the site was southwest. Fluctuations in the concentrations of petroleum hydrocarbons may be related to seasonal variations in groundwater elevations and the groundwater flow direction.

Based upon analytical data collected to date, the contaminant plume beneath the site appears to be stable and/or degrading. The concentrations of petroleum hydrocarbons in samples collected from well W-Bs have steadily decreased over time, indicating that the contamination is attenuating naturally. This trend would be expected, since the sources of contamination (e.g., the underground fuel tanks) have been removed.

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

Respectfully yours,



Thomas E. Neely, REA
Senior Hydrogeologist



Rebecca A. Sterbentz, RG, CHG
President

Attachments



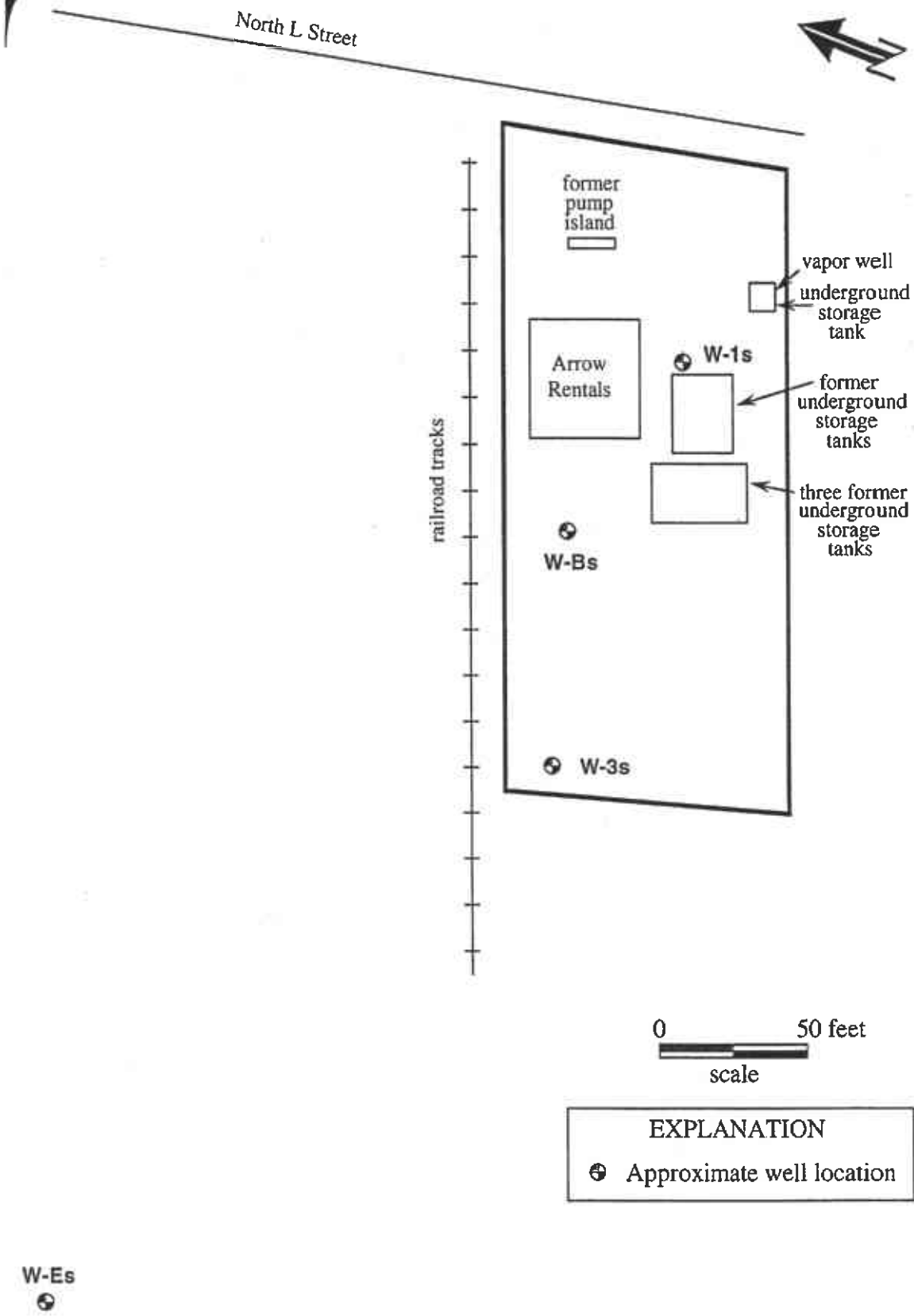


Figure 1. SITE MAP
187 North L Street, Livermore, California

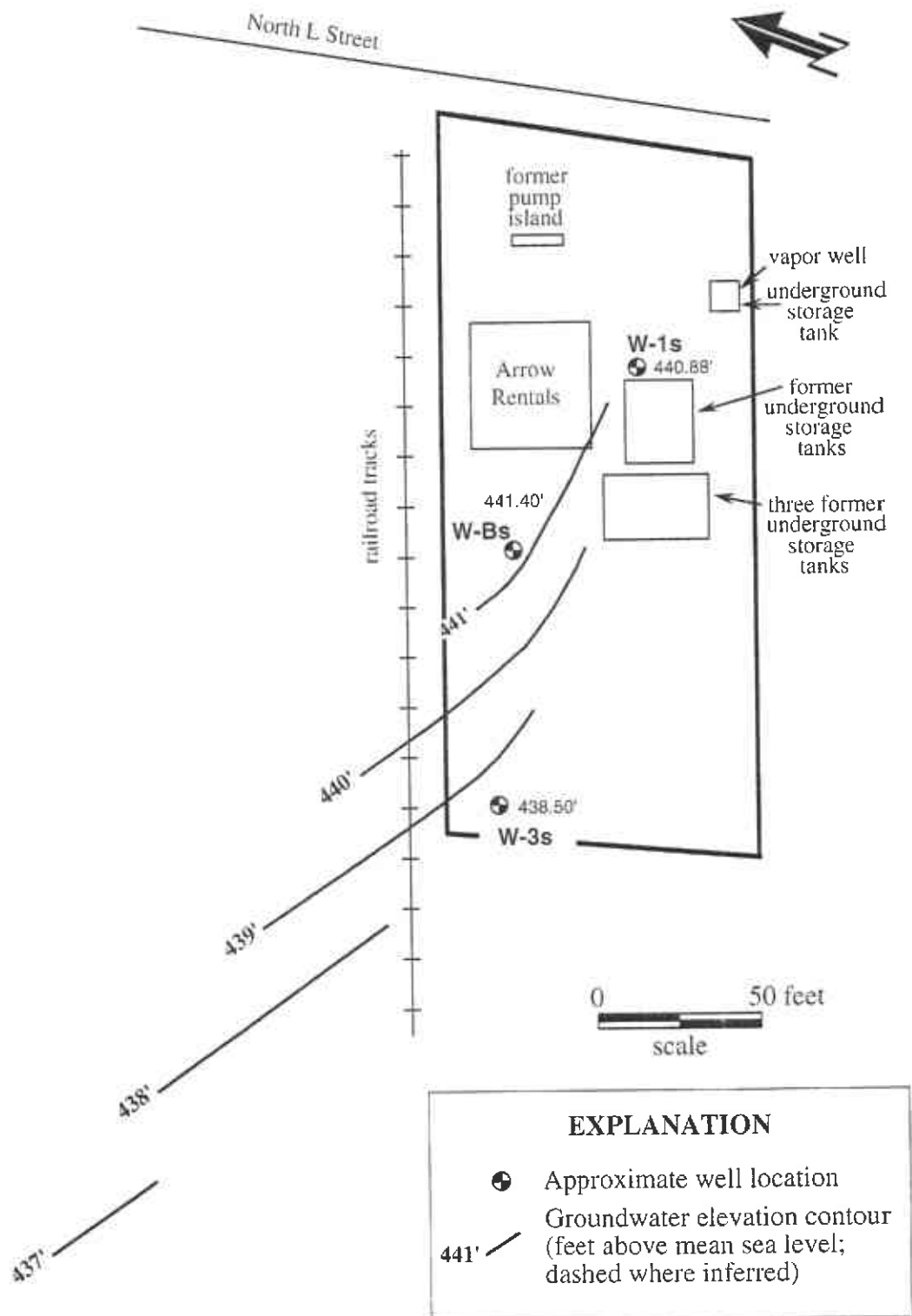


Figure 2. POTENTIOMETRIC SURFACE MAP (9/16/03)
187 North L Street, Livermore, California

Table 1. MONITORING WELL DATA
 187 North L Street, Livermore, California
 September 16, 2003

Well Identification	Top-of-Casing Elevation (feet above MSL)	Depth to Water (feet below TOC)	Groundwater Elevation (feet above MSL)	Product Thickness (feet)
W-1s	479.09	38.21	440.88	0.00
W-3s	476.98	38.48	438.50	0.00
W-Bs	478.82	37.42	441.40	0.00
W-Es	474.66	38.52	436.14	0.00

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

TOC = top of well casing

Table 2. CUMULATIVE GROUNDWATER ELEVATION AND PRODUCT THICKNESS DATA
187 North L Street, Livermore, California

Date	Groundwater Elevation Data*				Product Thickness Data			
	Well W-1s (feet)	Well W-3s (feet)	Well W-Bs (feet)	Well W-Es (feet)	Well W-1s (feet)	Well W-3s (feet)	Well W-Bs (feet)	Well W-Es (feet)
7/15/97	448.68	447.81	449.20	443.20	0.00	0.00	0.00	0.00
10/29/97	442.64	441.53	442.19	437.98	0.00	0.00	0.00	0.00
4/27/98	460.48	457.25	459.96	455.39	0.00	0.00	0.00	0.00
10/23/98	445.11	444.01	445.60	440.16	0.00	0.00	0.00	0.00
4/9/99	453.14	451.02	452.78	447.25	0.00	0.00	0.00	0.00
10/5/99	446.66	445.20	446.72	441.47	0.00	0.00	0.00	0.00
4/5/00	453.12	451.96	453.77	448.04	0.00	0.00	0.00	0.00
10/26/00	447.91	446.50	448.14	442.43	0.00	0.00	0.00	0.00
4/18/01	447.80	446.51	446.89	442.63	0.00	0.00	0.00	0.00
11/13/01	435.69	433.32	443.59	431.05	0.14	0.00	0.00	0.00
2/15/02	442.46	NM	NM	NM	0.00	NM	NM	NM
3/15/02	441.32	NM	NM	NM	0.00	NM	NM	NM
4/16/02	441.79	NM	NM	NM	0.00	NM	NM	NM
4/30/02	441.80	439.19	441.50	437.09	0.00	0.00	0.00	0.00
9/30/02	439.17	437.01	439.39	434.50	0.00	0.00	0.00	0.00
3/19/03	446.83	445.03	446.74	441.80	0.00	0.00	0.00	0.00
9/16/03	440.88	438.50	441.40	436.14	0.00	0.00	0.00	0.00

NM = not measured

* All groundwater elevations were surveyed relative to a City of Livermore mean sea level datum.

Table 3. ANALYTICAL DATA FOR GROUNDWATER
 187 North L Street, Livermore, California
 September 16, 2003

Well Identification	TPH-gasoline ($\mu\text{g/L}$)	TPH-diesel ($\mu\text{g/L}$)	TPH-motor oil ($\mu\text{g/L}$)	Benzene ($\mu\text{g/L}$)	Toluene ($\mu\text{g/L}$)	Ethyl-benzene ($\mu\text{g/L}$)	Total Xylenes ($\mu\text{g/L}$)	MTBE ($\mu\text{g/L}$)	Naphthalene ($\mu\text{g/L}$)	2-Methyl-naphthalene ($\mu\text{g/L}$)
W-1s	53,000 ^{ab}	24,000 ^{bc}	NA	4,100	1,200	1,400	6,600	< 1,000	NA	NA
W-3s	1,600 ^a	1,400 ^{cd,e}	NA	270	1.7	5.2	< 0.5	< 5.0	NA	NA
W-Bs	9,400 ^a	1,900 ^c	NA	1,300	36	580	160	< 150	NA	NA
W-Es	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Travel Blank	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	NA	NA
MCL	NE	NE	NE	1	150	700	1,750	5	NE	NE

$\mu\text{g/L}$ = micrograms per liter [parts per billion (ppb)]

NA = not analyzed

NE = none established

NS = not sampled

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

MCL = Maximum Contaminant Level, July 2002

a: Unmodified or weakly modified gasoline is significant.

b: Lighter than water immiscible sheen/product is present.

c: Gasoline range compounds are significant.

d: Diesel range compounds are significant; no recognizable pattern.

e: Oil range compounds are significant.

Table 4. SUMMARY OF ANALYTICAL DATA FOR GROUNDWATER
187 North L Street, Livermore, California

Well Identification	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	7/15/97	140,000	38,000 ^a	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 ^b	NA	410	250	77	870	< 30	< 5	NA	NA
W-1s	10/23/98	99,000	18,000 ^b	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	< 50
W-1s	10/5/99	82,000	60,000 ^c	NA	5,500	4,500	2,500	14,000	< 300	NA	510	280
W-1s	4/5/00	47,000	15000 ^c	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 ^d	6,800 ^c	NA	5,200	1,800	1,500	7,000	< 330	NA	NA	NA
W-1s	11/13/01	750,000 ^d	NA	NA	9,500	7,800	7,200	33,000	< 2,000	NA	NA	NA
W-1s	4/30/02	66,000 ^d	8,200 ^c	NA	6,000	2,700	2,300	11,000	< 1,200	NA	NA	NA
W-1s	9/30/02	51,000 ^d	1,200 ^e	< 2500	5,600	1,500	2,000	9,400	< 1,000	NA	NA	NA
W-1s	3/19/03	49,000 ^d	9,800 ^{e,h}	NA	3,400	880	1,300	7,300	< 500	NA	NA	NA
W-1s	9/16/03	53,000 ^{d,j}	24,000 ^{e,j}	NA	4,100	1,200	1,400	6,600	< 1,000	NA	NA	NA
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 ^a	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 ^b	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

Table 4 (continued). SUMMARY OF ANALYTICAL DATA FOR GROUNDWATER
187 North L Street, Livermore, California

Well Identification	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-3s	10/5/99	1,500	1,000 ^{c,f}	NA	290	9.5	53	9.8	< 6	NA	NA	NA
W-3s	4/5/00	810	320 ^c	NA	150	3.0	9.0	5.7	< 5	NA	< 5	< 5
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 ^d	1,600 ^{e,g}	NA	320	8.0	16	7.0	< 20	NA	NA	NA
W-3s	11/13/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-3s	4/30/02	1,400 ^d	490 ^{e,g}	NA	320	5.5	24	5.0	< 25	NA	NA	NA
W-3s	9/30/02	420 ^d	390 ^g	1,400	68	1.4	3.1	1.1	< 5.0	NA	NA	NA
W-3s	3/19/03	5,300 ^d	1,500 ^c	NA	920	24	140	27	< 25	NA	NA	NA
W-3s	9/16/03	1,600 ^d	1,400 ^{g,e,h}	NA	270	1.7	5.2	< 0.5	< 5.0	NA	NA	NA
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 ^a	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 ^b	NA	6,100	5,400	1,900	9,100	< 600	NA	NA	NA
W-Bs	10/23/98	48,000	9,600 ^b	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
W-Bs	10/5/99	38,000	7,300 ^c	NA	3,800	390	1,600	5,900	< 60	NA	NA	NA
W-Bs	4/5/00	34,000	9,600 ^c	NA	3,500	1,200	1,400	4,700	< 150	NA	280	68
W-Bs	10/26/00	23,000	650	< 50	2,500	210	1,100	2,600	150	NA	260	88
W-Bs	4/18/01	20,000 ^d	2,500 ^e	NA	2,400	180	880	1,800	< 20	NA	NA	NA
W-Bs	11/13/01	17,000 ^d	3,600 ^e	NA	2,000	130	1,100	1,700	< 150	NA	NA	NA
W-Bs	4/30/02	13,000 ^d	2,300 ^e	NA	1,000	38	660	360	< 170	NA	NA	NA
W-Bs	9/30/02	7,100 ^d	1,500 ^e	< 250	940	28	260	93	< 250	NA	NA	NA

Table 4 (continued). SUMMARY OF ANALYTICAL DATA FOR GROUNDWATER
187 North L Street, Livermore, California

Well Identification	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-Bs	3/19/03	14,000 ^d	3,900 ^e	NA	1,200	77	820	900	< 120	NA	NA	NA
W-Bs	9/16/03	9,400 ^d	1,900 ^e	NA	1,300	36	580	160	< 150	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	11/22/96	280	NA	NA	24	0.6	1.8	2.2	< 5	NA	NA	NA
W-Es	7/15/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	10/29/97	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	4/27/98	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	10/23/98	82	69 ^b	NA	< 0.5	0.8	< 0.5	0.8	4	NA	NA	NA
W-Es	4/9/99	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	10/5/99	68	88 ^c	NA	< 0.5	< 0.5	< 0.5	< 1.0	4	NA	NA	NA
W-Es	4/5/00	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	10/26/00	110	< 50	< 50	0.7	< 0.5	< 0.5	< 1.0	< 5	NA	NA	NA
W-Es	4/18/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	11/13/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	4/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	9/30/02	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Es	3/19/03	86 ¹	61 ^e	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5.0	NA	NA	NA
W-Es	9/16/03	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Travel Blank	3/20/96	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 5	NA	NA	NA
Travel Blank	11/22/96	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 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	10/29/97	< 50	NA	NA	< 0.5	< 0.5	< 0.5	< 0.5	< 3	NA	NA	NA

Table 4 (continued). SUMMARY OF ANALYTICAL DATA FOR GROUNDWATER
187 North L Street, Livermore, California

Well Identification	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)
Travel Blank	4/27/98	< 50	NA	NA	<0.5	<0.5	<0.5	<0.5	< 3	NA	NA	NA
Travel Blank	10/23/98	< 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	< 50	NA	NA	<0.5	<0.5	<0.5	< 1.0	< 3	NA	NA	NA
Travel Blank	4/5/00	< 50	NA	NA	1.8	<0.5	<0.5	< 1.0	< 5	NA	NA	NA
Travel Blank	10/26/00	< 50	NA	NA	<0.5	<0.5	<0.5	< 1.0	< 5	NA	NA	NA
Travel Blank	4/18/01	< 50	NA	NA	<0.5	<0.5	<0.5	<0.5	< 5.0	NA	NA	NA
Travel Blank	11/13/01	< 50	NA	NA	<0.5	<0.5	<0.5	<0.5	< 5.0	NA	NA	NA
Travel Blank	4/29/02	< 50	NA	NA	<0.5	<0.5	<0.5	<0.5	< 5	NA	NA	NA
Travel Blank	3/19/03	< 50	NA	NA	<0.5	<0.5	<0.5	<0.5	< 5.0	NA	NA	NA
Travel Blank	9/16/03	< 50	NA	NA	<0.5	<0.5	<0.5	<0.5	< 5.0	NA	NA	NA
MCL		NE	NE	NE	1	150	700	1,750	5	50	NE	NE
AL		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
 NS = not sampled
 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, July 2002
 AL = Action Level, July 2002
 a: The method blank contained heavy oil at 120 µg/L.
 b: The chromatogram does not match the typical diesel pattern.

c: The sample contained a lower boiling point mixture of hydrocarbons quantitated as diesel.
 d: Unmodified or weakly modified gasoline is significant.
 e: Gasoline range compounds are significant.
 f: The sample contained a higher boiling point hydrocarbon mixture quantitated as diesel.
 g: Oil range compounds are significant.
 h: Diesel range compounds are significant; no recognizable pattern.
 i: Heavier gasoline range compounds are significant (aged gasoline?).
 j: Lighter than water immiscible sheen/product is present.

APPENDIX A

FIELD ACTIVITY REPORT

FIELD ACTIVITY REPORT

**ARROW RENTALS
LIVERMORE, CALIFORNIA**

**SEMIANNUAL GROUNDWATER MONITORING EVENT
SEPTEMBER 2003**

Prepared for: Don Stahl, Inc.
187 North P Street
Livermore, California 94550

Date Prepared: September 29, 2003



FIELD ACTIVITY REPORT

SEMI-ANNUAL GROUNDWATER MONITORING EVENT ARROW RENTALS LIVERMORE, CALIFORNIA

ESS Personnel: Jacqueline Lee and Steve Penman

Date of Activities: September 16, 2003

Decontamination Procedures

Prior to use, 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.

Depth to Groundwater Level Measurements

Depth to groundwater level measurements for all four monitoring wells were measured and recorded prior to any purging activities. All readings were performed with an Oil/Water Interface meter. Each depth to groundwater level measurement was referenced to the north rim at the top of PVC well casing (Table 1). Three successive readings that agreed to within one-hundredth of a foot determined depth to groundwater.

The presence of floating product was not detected in the four monitoring wells.

Field Equipment Calibration

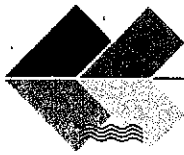
All field instrumentation was calibrated in accordance with the instruments' calibration procedures prior to use. The pH meter was calibrated using two pH buffer standard solutions: 4 and 7. The Specific Conductivity/Temperature meter is factory calibrated and runs through a self-test when the meter is activated. The turbidity meter was calibrated against a 0.02 NTUs standard.

Field measurements included: pH, Specific Conductance (uS), Turbidity (NTUs), and Temperature (°C). Physical characteristic such as color and odor were also noted.

Well Purging and Sampling Methods

Three monitoring wells are designated for sampling (W-1s, W-3s, and W-Bs). As part of standard purging protocol, a minimum removal of three casing volumes and stabilization of water quality parameters is required prior to sampling unless a well is purged dry. If the well goes dry, it is allowed to recover prior to sampling.

A Grundfos® Redi-Flow submersible pump and dedicated tubing were used for well purging at monitoring wells: W-1s, W-3s, and W-Bs. Each monitoring well was purged



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dry and allowed to recover for approximately one to two hours. Each monitoring well was sampled with a new disposable PVC bailer.

All dedicated tubing was discarded after use.

Laboratory, Analysis, Sample Containers & Preservation

McC Campbell Analytical Inc. of Pacheco, California supplied a trip blank, sample containers and performed all required analyses. All monitoring wells were sampled for the following analyses: EPA Method 8015M/8020 (TPH-Gasoline/BTEX, and MTBE) and TPH as Diesel with Silica Gel Cleanup. The laboratory supplied pre-preserved and non-preserved sample containers according to analysis.

Each TPH-Gasoline, BTEX, and MTBE sample set was contained in three 40-ml clear glass containers preserved with hydrochloric acid.

Each Diesel sample was contained in a non-preserved, 1-liter amber glass container.

Sample Handling

Sample labels were completed with waterproof ink and affixed to sample containers prior to sample collection.

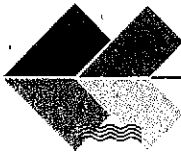
During decanting, all 40-ml sample containers were slightly tilted to avoid aeration or degassing. Each container was filled until there was a meniscus at the top. After capping, the container was inverted and tapped lightly to check for air bubbles. The absence of air bubbles indicated a successful seal. Non-preserved sample containers were filled to the neck of the sample container.

Sample handling was conducted under strict chain of custody procedures. All sample containers were wiped dry, sealed in Ziploc® bags, and placed in a chilled cooler for storage and shipment to the laboratory. ESS relinquished all samples to McC Campbell Analytical Inc. on September 16, 2003.

QA/QC

One trip blank container was submitted for TPH-Gasoline, BTEX and MTBE analysis. The trip blank was re-labeled and remained in the sample cooler throughout the sampling event.

No other QA/QC samples were required nor requested.



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Storage of Wastewater

Approximately 110 gallons of wastewater was generated during this sampling event and are stored in two labeled 55-gallon drums. ESS will arrange for proper disposal following confirmation of chemical analysis.

Jacqueline Lee
President

Enclosure

Table 1: Summary of Groundwater Monitoring and Sampling
Water Sample Log Sheets
Copy of Chain of Custody



Table 1: Summary of September 2003 Semi-Annual Groundwater Monitoring Event
Site Location: Arrow Rentals, Livermore, California

Well I.D.	Groundwater Level Measurement (ft.)	Time of Measurement	Sample Date	Sample Time	QA/QC
W-1s	38.21	13:30	9/16/2003	16:17	None
W-3s	38.48	13:18	9/16/2003	15:47	None
W-Bs	37.42	13:22	9/16/2003	15:59	None
W-Es	38.52	13:00	NS	NA	NA

NS=Not Sampled per DTSC Scope of Work

NA=Not Applicable



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WATER QUALITY SAMPLE LOG SHEET WELL IDENTIFICATION W-1s DATE 9/16/03

Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring
 Laboratory: McC Campbell Analytical, Inc. Weather Conditions: Sunny, breezy
 Well Description: 2" 3" 4" 5" 6" Other: _____ Well Type: PVC Stainless Steel Other: _____
 Is Well Secured? Yes / No Bolt Size: 15/16" Type of Lock / Lock number: Master/Unknown Number
 Observations / Comments: _____
 Purge Method: Teflon/PVC Disposable Bailer Centrifugal Pump Grundfos Pump Other: _____
 Pump Lines: NA New / Cleaned Dedicated* Bailer Line: NA New / Cleaned / Dedicated
 Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: _____
 Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: _____
 Sampling Method: Disp. Teflon Bailer Disp. PVC Bailer GrundFos Redi-flow Pump Peristaltic Pump
 pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AB AE
 Date/Time Calibrated: 9/16 @ 8:15 7 10 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: _____
 Method to Measure Water Level: Solinst Serial No.: 0/w Ind. P.I.D. Reading: NA ppm @ Well Head
 Water Level at Start (DTW): 38.21 @ 13:30 Water Level Prior To Sampling: 39.71 @ 15:45 = 41.22 @ 16:12
 TD = 44.64 - 38.21 (DTW) = 6.43 (ft. of water) x "K" = 9.38 (Gals./CV) x 3 (No. of CV) = 28.1 (Gals.)
 "K" = 0.163(2" well) "K" = 0.653(4" well) "K" = 1.02(5" well) "K" = 1.46(6" well) "k" = 2.61(8" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS (uS)	Turbidity (NTU's)	Color	Comments
9/16/03	14:28	489	6.51	21.1	1179	36	lt tan/grey	Act. Odor
	14:30	8	6.42	20.8	1154	19	"	"
	14:33	12	6.55	20.9	1164	15	lt tan/yell.	Dry @ 14 gals.

Total Discharge: 14 Gallons Casing Volumes Removed: 1.49
 Method of disposal of discharged water: 55 Gallon Drum(s) Poly Tank Treatment System Other: _____
 Date/Time Sampled: 9/16/03 @ 15:47 Analysis: TPH-Gas/BTEX, MTBE (EPA 8015M/8020);
TPH-Diesel w/Silica Gel Cleanup (EPA 8015M)
 Number of Sample Containers: 4 Preservative: None + HCl
 QA/QC: None @ _____ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank
 Comments: * Discarded tubing after use.

Sampled By Jacki Lee / Stephen Penman / Casey Wheable Recorded by [Signature]



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WATER QUALITY SAMPLE LOG SHEET	WELL IDENTIFICATION W-3s DATE 9/16/03							
Project Name: <u>Arrow Rentals - Livermore, CA</u>	Project Task: <u>Semi-Annual Groundwater Monitoring</u>							
Laboratory: <u>McCampbell Analytical, Inc.</u>	Weather Conditions: <u>Sunny, warm, slight breeze</u>							
Well Description: 2" 3" <u>4"</u> 5" 6" Other: _____	Well Type: <u>PVC</u> Stainless Steel Other: _____							
Is Well Secured? Yes / No Bolt Size: <u>15/16"</u>	Type of Lock / Lock number: <u>No lock</u>							
Observations / Comments: _____								
Purge Method: Teflon/PVC Disposable Bailer Centrifugal Pump Grundfos Pump Other: _____								
Pump Lines: NA New / Cleaned / <u>Dedicated*</u> Bailer Line: NA <u>New</u> Cleaned / Dedicated								
Method of Cleaning Pump: NA Alconox <u>Liqui-nox Tap Water DI Rinse</u> Other: _____								
Method of Cleaning Bailer: <u>NA</u> Alconox Liqui-nox Tap Water DI Rinse Other: _____								
Sampling Method: Disp. Teflon Bailer <u>Disp. PVC Bailer</u> GrundFos Redi-flow Pump Peristaltic Pump								
pH Meter Serial No.: <u>217254</u> / 330089	Spec. Cond. Meter Serial No.: 96H0203AB <u>AE</u>							
Date/Time Calibrated: <u>9/16 @ 15:15</u> 4 7 10 @ 25°C Spec. Cond. Meter Calibration: <u>Self Test</u> Other: _____								
Method to Measure Water Level: Solinst Serial No.: <u>9/w Ind.</u> P.I.D. Reading: <u>NA</u> ppm @ Well Head								
Water Level at Start (DTW): <u>39.48 @ 13:18</u> Water Level Prior To Sampling: <u>39.71 @ 15:45</u>								
TD = 44.76 - <u>38.48</u> (DTW) = <u>6.28</u> (ft. of water) x "K" = <u>4.1</u> (Gals./CV) x <u>3</u> (No. of CV) = <u>12.3</u> (Gals.)								
"K" = 0.163(2" well) <u>"K" = 0.653(4" well)</u> "K" = 1.02(5" well) "K" = 1.46(6" well) "K" = 2.61(8" well)								
FIELD WATER QUALITY PARAMETERS								
Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS (<u>uS</u>)	Turbidity (NTU's)	Color	Comments
9/16/03	13:40	2	6.46	20.9	1050	28	<u>slight gray</u>	slight Pet. Odor
	13:41	5	6.42	20.3	1056	20	"	"
	13:43	7	6.46	20.2	1078	15	"	Dry @ 7.0 gallons
Total Discharge: <u>7.0</u> Gallons		Casing Volumes Removed: <u>1.7</u>						
Method of disposal of discharged water: <u>55 Gallon Drum(s)</u> Poly Tank Treatment System Other: _____								
Date/Time Sampled: <u>9/16/03 @ 15:47</u> Analysis: <u>TPH-Gas/BTEX, MTBE (EPA 8015M/8020);</u>								
TPH-Diesel w/Silica Gel Cleanup (EPA 8015M)								
Number of Sample Containers: <u>4</u>		Preservative: <u>None + HCl</u>						
QA/QC: <u>None @ _____</u> as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank								
Comments: <u>W-ES 3 = 38.52 @ 13:00</u>								
<u>Purge tube discarded after use.</u>								
Sampled By: <u>Jacki Lee / Stephen Penman / Casey Wheable</u> Recorded by: <u>[Signature]</u>								



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WATER QUALITY SAMPLE LOG SHEET WELL IDENTIFICATION W-Bs DATE 9/16/03

Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring
 Laboratory: McC Campbell Analytical, Inc. Weather Conditions: Sunny, slight breeze
 Well Description: 2" 3" 4" 5" 6" Other: _____ Well Type: PVC Stainless Steel Other: _____
 Is Well Secured? Yes / No Bolt Size: 15/16" Type of Lock / Lock number: Master/Unknown Number
 Observations / Comments: _____
 Purge Method: Teflon/PVC Disposable Bailer Centrifugal Pump Grundfos Pump Other: _____
 Pump Lines: NA New / Cleaned Dedicated* Bailer Line: NA New / Cleaned / Dedicated
 Method of Cleaning Pump: NA Alconox Liqui-nox Tap Water DI Rinse Other: _____
 Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: _____
 Sampling Method: Disp. Teflon Bailer Disp. PVC Bailer GrundFos Redi-flow Pump Peristaltic Pump
 pH Meter Serial No.: 217254 / 330089 Spec. Cond. Meter Serial No.: 96H0203AB / AE
 Date/Time Calibrated: 8:15 4 7 10 @ 25°C Spec. Cond. Meter Calibration: Self Test Other: _____
 Method to Measure Water Level: Solinst Serial No.: 9w Ind. P.I.D. Reading: NA ppm @ Well Head
 Water Level at Start (DTW): 37.42 @ 13:22 Water Level Prior To Sampling: 42.55 @ 15:55
 TD = 44.47 - 37.42 (DTW) = 7.05 (ft. of water) x "K" = 10.2 (Gals./CV) x 3 (No. of CV) = 30.8 (Gals.)
 "K" = 0.163(2" well) "K" = 0.653(4" well) "K" = 1.02(5" well) "K" = 1.46(6" well) "k" = 2.61(8" well)

FIELD WATER QUALITY PARAMETERS

Date	Time	Discharge (Gallons)	pH	Temp. (°C)	Specific Conductance mS (uS)	Turbidity (NTU's)	Color	Comments
<u>9/16/03</u>	<u>14:03</u>	<u>5</u>	<u>6.59</u>	<u>21.0</u>	<u>843</u>	<u>20.0</u>	<u>lt tan</u>	<u>Pet. Odor</u>
	<u>14:05</u>	<u>10</u>	<u>6.64</u>	<u>20.1</u>	<u>847</u>	<u>10.9</u>	<u>"</u>	<u>"</u>
	<u>14:06</u>	<u>15</u>	<u>6.55</u>	<u>20.1</u>	<u>853</u>	<u>15.2</u>	<u>"</u>	<u>"</u>
	<u>14:09</u>	<u>18</u>	<u>6.47</u>	<u>20.5</u>	<u>859</u>	<u>51.8</u>	<u>"</u>	<u>" Dye @ 18 gallons</u>

Total Discharge: 18 Gallons Casing Volumes Removed: 1.76
 Method of disposal of discharged water: 56 Gallon Drum(s) Poly Tank Treatment System Other: _____
 Date/Time Sampled: 9/16/03 @ 15:59 Analysis: TPH-Gas/BTEX, MTBE (EPA 8015M/8020);
TPH-Diesel w/Silica Gel Cleanup (EPA 8015M)
 Number of Sample Containers: 4 Preservative: None + HCl
 QA/QC: None @ _____ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank
 Comments: * Discarded purge tubing after use.

Sampled By: Jacki Lee / Stephen Penman / Casey Wheable Recorded by: [Signature]

APPENDIX B

LABORATORY REPORT

AND

CHAIN-OF-CUSTODY DOCUMENTATION



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mccampbell.com E-mail: main@mccampbell.com

QC SUMMARY REPORT FOR SW8021B/8015Cm

Matrix: W

WorkOrder: 0309298

EPA Method: SW8021B/8015Cm		Extraction: SW5030B		BatchID: 8556		Spiked Sample ID: 0309305-001A				
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(btex) [‡]	ND	60	111	107	4.27	107	100	6.87	70	130
MTBE	ND	10	98.5	94.7	3.86	90.7	95.6	5.27	70	130
Benzenc	ND	10	103	102	1.19	107	108	1.58	70	130
Toluene	ND	10	102	101	1.01	98.7	99.2	0.507	70	130
Ethylbenzene	1.768	10	103	102	0.607	107	105	1.69	70	130
Xylenes	2.8	30	107	101	5.88	99.3	95.3	4.11	70	130
%SS:	105	100	104	104	0	106	109	2.53	70	130

All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions:
 NONE

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

% Recovery = $100 * (MS - Sample) / (Amount Spiked)$; RPD = $100 * (MS - MSD) / (MS + MSD) * 2$.

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

‡ TPH(btex) = sum of BTEX areas from the FID.

cluttered chromatogram; sample peak coelutes with surrogate peak.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.



McC Campbell Analytical Inc.

110 2nd Avenue South, #D7, Pacheco, CA 94553-5560
 Telephone : 925-798-1620 Fax : 925-798-1622
 http://www.mcccampbell.com E-mail: main@mcccampbell.com

QC SUMMARY REPORT FOR SW8015C

Matrix: W

WorkOrder: 0309298

EPA Method: SW8015C		Extraction: SW3510C			BatchID: 8548		Spiked Sample ID: N/A			
	Sample	Spiked	MS*	MSD*	MS-MSD	LCS	LCSD	LCS-LCSD	Acceptance Criteria (%)	
	µg/L	µg/L	% Rec.	% Rec.	% RPD	% Rec.	% Rec.	% RPD	Low	High
TPH(d)	N/A	7500	N/A	N/A	N/A	111	109	1.28	70	130
%SS:	N/A	100	N/A	N/A	N/A	118	115	2.04	70	130
All target compounds in the Method Blank of this extraction batch were ND less than the method RL with the following exceptions: NONE										

MS = Matrix Spike; MSD = Matrix Spike Duplicate; LCS = Laboratory Control Sample; LCSD = Laboratory Control Sample Duplicate; RPD = Relative Percent Deviation.

$$\% \text{ Recovery} = 100 * (\text{MS} - \text{Sample}) / (\text{Amount Spiked}); \text{RPD} = 100 * (\text{MS} - \text{MSD}) / (\text{MS} + \text{MSD}) * 2.$$

* MS and / or MSD spike recoveries may not be near 100% or the RPDs near 0% if: a) the sample is inhomogenous AND contains significant concentrations of analyte relative to the amount spiked, or b) if that specific sample matrix interferes with spike recovery.

N/A = not enough sample to perform matrix spike and matrix spike duplicate.

NR = analyte concentration in sample exceeds spike amount for soil matrix or exceeds 2x spike amount for water matrix or sample diluted due to high matrix or analyte content.

McC Campbell Analytical Inc.



110 Second Avenue South, #D7
 Pacheco, CA 94553-5560
 (925) 798-1620

CHAIN-OF-CUSTODY RECORD

WorkOrder: 0309298

Client:

Environmental Sampling Services
 6680 Alhambra Ave. #102
 Matinez, CA 94553

TEL:
 FAX: () 372-6705
 ProjectNo: Arrow Rentals
 PO:

Date Received: 9/16/03
 Date Printed: 9/16/03

Sample ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests					
					SW8015C	V8021B/8015C				
0309298-001	Trip Blank	Water	9/16/03 1:00:00 PM	<input type="checkbox"/>		A				
0309298-002	W-3s	Water	9/16/03 3:47:00 PM	<input type="checkbox"/>	B	A				
0309298-003	W-Bs	Water	9/16/03 3:59:00 PM	<input type="checkbox"/>	B	A				
0309298-004	W-1s	Water	9/16/03 4:17:00 PM	<input type="checkbox"/>	B	A				

Prepared by: Melissa Valles

Comments:

NOTE: Samples are discarded 60 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client expense.