RO-394

Dear Eva,

Enclosed is the latest report.



Hope you have a great Christmas + New Year.

Tony just had back surgery + is doing pretty good.

Sincerely,

Pete

120-394

**Environmental Sampling Services**

COPY

Alameda County
DEC 18 2002
Environmental Health

November 15, 2002

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

**Subject: Semi-Annual Report for September 2002**

Dear Ms. Sullins:

Please find enclosed an original and three copies of the September 2002 Semi-Annual Report, generated by Aquifer Sciences and Enviromental Sampling Services. This report is based on the groundwater monitoring event that occurred on September 30, 2002.

Our invoice will be submitted once all invoices from the subcontractors are received.

If you have any questions regarding this Semi-Annual Report, please contact Ms. Rebecca Sterbentz of Aquifer Sciences at (925) 283-9098 or me.

Sincerely,

Jacqueline Lee
President

Enclosure

**PMB 102 • 6680 Alhambra Ave. • Martinez, CA 94553-6105 • (925) 372-8108 • Fax: (925) 372-6705**
www.enssampling.com

# SEMI-ANNUAL GROUNDWATER MONITORING EVENT SEPTEMBER 2002

## ARROW RENTALS
## LIVERMORE, CALIFORNIA

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

Date Prepared: November 15, 2002

AQUIFER SCIENCES, INC.
3680-A Mt. Diablo Blvd.
Lafayette, CA 94549
(925) 283-9098

November 6, 2002
971275

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

Subject: Semiannual Groundwater Monitoring, September 2002
187 North L Street, Livermore, California

Dear Ms. Sullins:

This report presents the results of semiannual groundwater monitoring conducted in September 2002 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 30, 2002, 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. 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.

In November 2001, 0.14 foot of floating product was measured in well W-1s. Floating product had not been detected previously in well W-1s, and has not been detected in the other three monitoring wells. On January 25, 2002, Eva Chu of Alameda County Health Care Services Agency (Alameda County) requested that well W-1s be checked for the presence of floating product on a monthly basis. The well was checked in February, March, April, May, and June 2002. No floating product has been detected in well W-1s since November 2001. By correspondence dated July 15, 2002, Eva Chu concurred with us that monthly checking for floating product in well W-1s could be discontinued.

On September 30, 2002, 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 to ensure that fresh formation water entered the casing. Each well was purged dry twice, and less than three casing volumes of water were removed. 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 three wells were recorded in the sampling logs. Copies of the sampling logs are included in the Field Activity Report in Appendix A.

Groundwater samples were collected from the wells using a disposable bailer or submersible pump set to the minimum possible pumping rate. 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.

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) and motor oil (TPH-motor oil) by EPA Method 8015 Modified with a silica gel cleanup; benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8020; and methyl tertiary butyl ether (MTBE) by EPA Method 8020 Modified.

## HYDROGEOLOGIC DATA EVALUATION

On September 30, 2002, groundwater elevations in the four monitoring wells ranged from 434.50 feet in well W-Es to 439.39 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 0.037 ft/ft.

## ANALYTICAL DATA EVALUATION

Analytical data for groundwater samples collected in September 2002 are summarized in Table 3. The laboratory report and chain-of-custody documentation are included in Appendix B.

TPH-gasoline, TPH-diesel, TPH-motor oil, and BTEX were detected in the groundwater samples. TPH-gasoline was detected at concentrations ranging from 420 µg/L in well W-3s to 51,000 µg/L in well W-1s. TPH-diesel was detected at concentrations ranging from 390 µg/L in well W-3s to 1,500 µg/L in well W-Bs. However, the laboratory indicated that a significant amount of the reported diesel in samples W-1s and W-Bs was due to gasoline. The laboratory

also noted that a significant amount of the reported diesel in sample W-3s was due to motor oil. TPH-motor oil was detected in sample W-3s at 1,400 µg/L.

Benzene was detected at concentrations ranging from 68 µg/L in well W-3s to 5,600 µg/L in well W-1s. The Maximum Contaminant Level (MCL) for benzene is 1 µg/L. Toluene (up to 1,500 µg/L), ethylbenzene (up to 2,000 µg/L), and xylenes (up to 9,400 µg/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.

## 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.

In November 2001, a small amount (0.14 foot) of floating product was measured on the water column in well W-1s. Floating product was not been detected in well W-1s during any prior or subsequent monitoring event. None of the other wells (W-Bs, W-3s, and W-Es) have ever contained measurable floating product.

In September 2002, 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
Hydrogeologist

Rebecca A. Sterbentz, RG, CHG, RE
President

REGISTERED GEOLOGIST
REBECCA A. STERBENTZ
No. 4119
STATE OF CALIFORNIA

Attachments

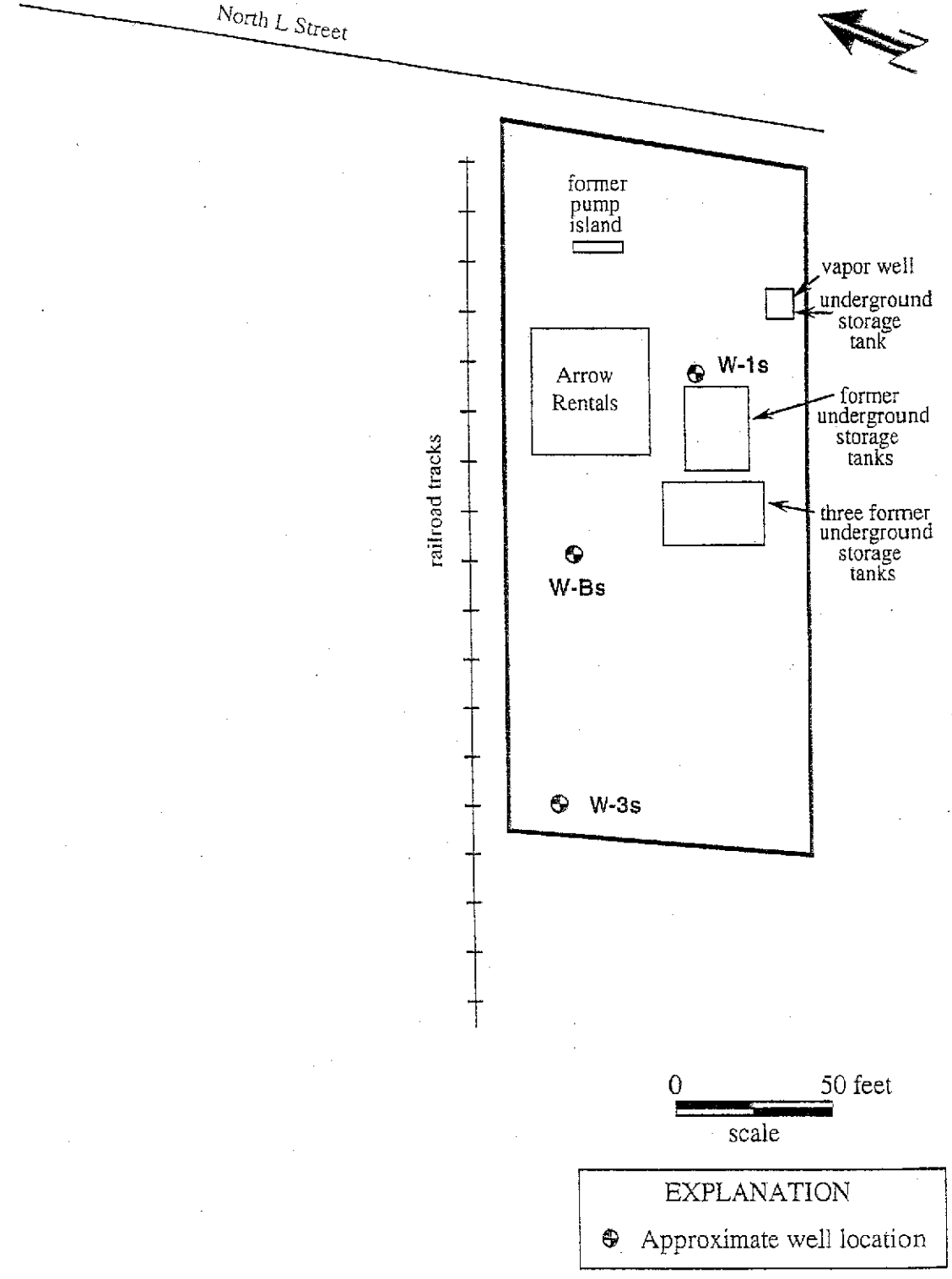


Figure 1. SITE MAP
187 North L Street, Livermore, California

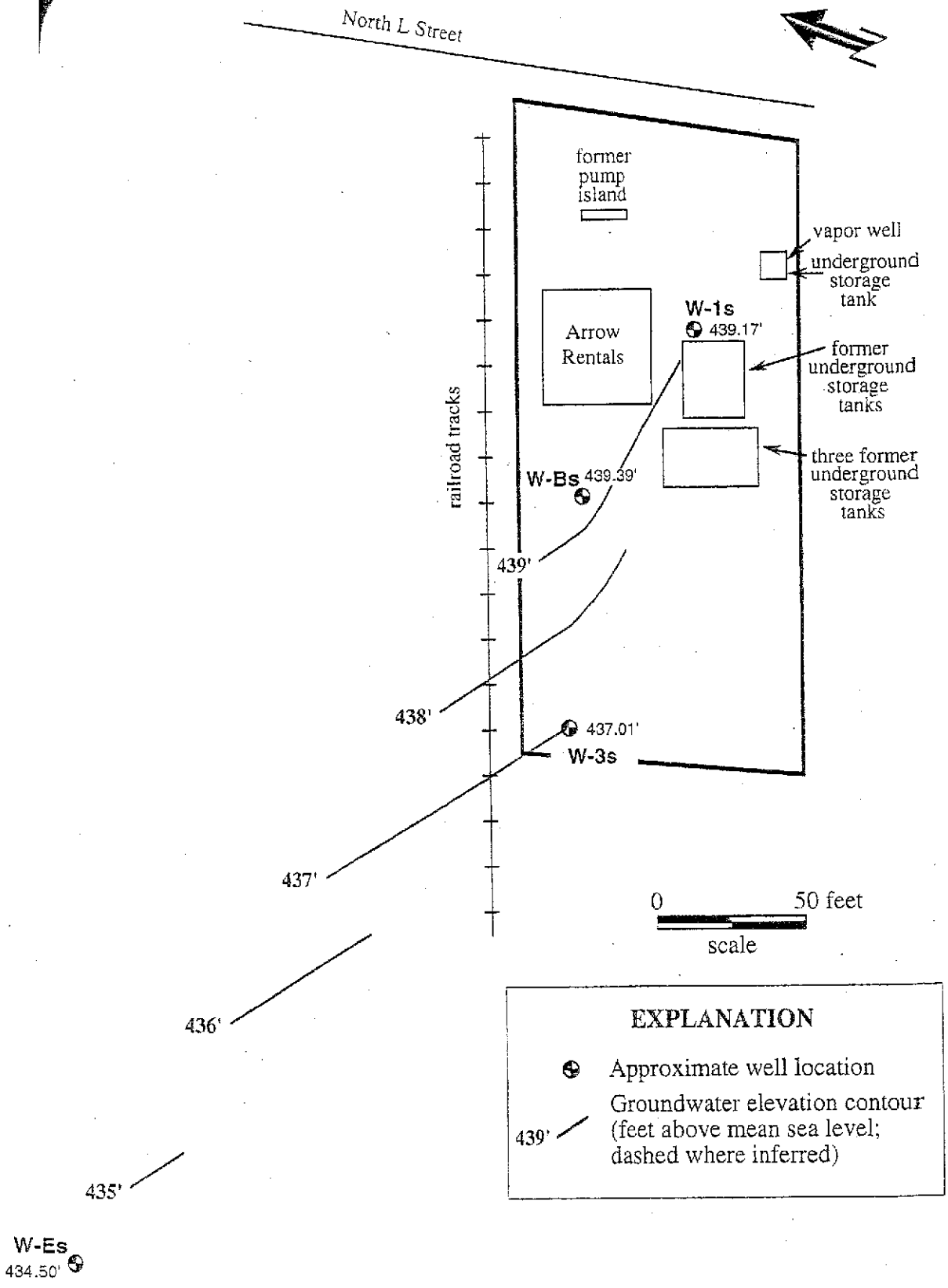


Figure 2. POTENTIOMETRIC SURFACE MAP (9/30/02)
187 North L Street, Livermore, California

Table 1. MONITORING WELL DATA
187 North L Street, Livermore, California
September 30, 2002

| 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 | 39.92 | 439.17 | 0.00 |
| W-3s | 476.98 | 39.97 | 437.01 | 0.00 |
| W-Bs | 478.82 | 39.43 | 439.39 | 0.00 |
| W-Es | 474.66 | 40.16 | 434.50 | 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

| | Groundwater Elevation Data* | | | | Product Thickness Data | | | |
|---|---|---|---|---|---|---|---|---|
| Date | 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 |
| 5/31/02 | 442.24 | NM | NM | NM | 0.00 | NM | NM | NM |
| 6/28/02 | 441.61 | NM | NM | NM | 0.00 | NM | NM | NM |
| 9/30/02 | 439.17 | 437.01 | 439.39 | 434.50 | 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 30, 2002

| Well Identifcation | 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 | 51,000* | 1,200† | < 2,500 | 5,600 | 1,500 | 2,000 | 9,400 | < 1,000 | NA | NA |
| W-3s | 420* | 390‡ | 1,400 | 68 | 1.4 | 3.1 | 1.1 | < 5.0 | NA | NA |
| W-Bs | 7,100* | 1,500† | < 250 | 940 | 28 | 260 | 93 | < 250 | NA | NA |
| W-Es | NS | NS | NS | NS | NS | NS | NS | NS | NS | NS |
| RL | 50 | 50 | 250 | 0.5 | 0.5 | 0.5 | 0.5 | 5 - 1,200 | -- | -- |
| MCL | NE | NE | NE | 1 | 150 | 700 | 1,750 | 5 | 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
TPH-motor oil = total petroleum hydrocarbons quantified as motor oil
MTBE = methyl tertiary butyl ether
RL = reporting limit
MCL = Maximum Contaminant Level, February 2000
* Unmodified or weakly modified gasoline is significant.
† Gasoline range compounds are significant.
‡ 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* | 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 | < 50 |
| 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 |
| W-1s | 11/13/01 | 750,000§ | NA | NA | 9,500 | 7,800 | 7,200 | 33,000 | < 2,000 | NA | NA | NA |
| W-1s | 4/30/02 | 66,000§ | 8,200** | NA | 6,000 | 2,700 | 2,300 | 11,000 | < 1,200 | NA | NA | NA |
| W-1s | 9/30/02 | 51,000§ | 1,200** | < 2,500 | 5,600 | 1,500 | 2,000 | 9,400 | < 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* | 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 | < 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§ | 1,600**,‡‡ | 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§ | 490**,‡‡ | NA | 320 | 5.5 | 24 | 5.0 | < 25 | NA | NA | NA |
| W-3s | 9/30/02 | 420§ | 390‡‡ | 1,400 | 68 | 1.4 | 3.1 | 1.1 | < 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 |

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 | 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 |
| W-Bs | 10/5/99 | 38,000 | 7,300‡ | NA | 3,800 | 390 | 1,600 | 5,900 | < 60 | NA | NA | NA |
| W-Bs | 4/5/00 | 34,000 | 9,600‡ | 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§ | 2,500** | NA | 2,400 | 180 | 880 | 1,800 | < 20 | NA | NA | NA |
| W-Bs | 11/13/01 | 17,000§ | 3,600** | NA | 2,000 | 130 | 1,100 | 1,700 | < 150 | NA | NA | NA |
| W-Bs | 4/30/02 | 13,000§ | 2,300** | NA | 1,000 | 38 | 660 | 360 | < 170 | NA | NA | NA |
| W-Bs | 9/30/02 | 7,100§ | 1,500** | < 250 | 940 | 28 | 260 | 93 | < 250 | 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† | 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‡ | 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 |
| 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 |
| 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, 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.
** Gasoline range compounds are significant.
†† The sample contained a higher boiling point hydrocarbon mixture quantitated as diesel.
‡‡ Oil range compounds are significant.

**Environmental Sampling Services**

| Post-it® Fax Note 7671 | Date 7-12-02 | # of pages ▶ 1 |
|---|---|---|
| To Rebecca Sterbentz | From Jacki Lee | |
| Co./Dept. Aquifer Sciences | Co. ESS | |
| Phone # 293-9095 | Phone # 372-8108 | |
| Fax # 293-9133 | Fax # 372-6705 | |

July 12, 2002

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

**Subject: Monthly Floating Product Confirmation at Monitoring well, W-1S**

Dear Ms. Sullins,

Please find below an update of the monthly floating product confirmation.

The measurements are as follows:

| Date of Measurement | Depth to Water | Presence of Floating Product |
|---|---|---|
| February 15, 2002 | 36.63 | None |
| March 15, 2002 | 37.77 | None |
| April 16, 2002 | 37.30 | None |
| May 31, 2002 | 36.85 | None |
| June 28, 2002 | 37.48 | None |

Mr. Tom Neely of Aquifer Sciences will be in contact with Ms. Eva Chu during the week of July 15th to discuss the possibility of discontinuing the monthly floating product measurements. I will let you know the outcome as soon as possible.

Sincerely,

Jacqueline Lee
President

cc: Aquifer Sciences, Ms. Rebecca Sterbentz

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www.envsampling.com

# FIELD ACTIVITY REPORT

## ARROW RENTALS
## LIVERMORE, CALIFORNIA

### SEMI-ANNUAL GROUNDWATER MONITORING EVENT
### SEPTEMBER 2002

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

Date Prepared: October 13, 2002

Environmental
Sampling Services

# FIELD ACTIVITY REPORT

## SEMI-ANNUAL GROUNDWATER MONITORING EVENT
## ARROW RENTALS
## LIVERMORE, CALIFORNIA

**ESS Personnel:** Jacqueline Lee and Steve Penman
**Date of Activities:** September 30, 2002

### *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.

### *Depth to Groundwater Level Measurements*

Depth to groundwater level measurements for 4 monitoring wells were measured and recorded. All readings were performed with an Oil/Water Interface meter. Each depth to groundwater level measurement was referenced to the surveyor's mark or 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 product 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-3s, and W-Bs. 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/8020 (TPH-Gasoline/BTEX, and MTBE), and TPH as Diesel. Wells were sampled with the submersible pump set at the slowest pump speed or with a new disposable PVC bailer.

### *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.

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

***QA/QC***

The laboratory did not supply trip blanks. 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' directives.

Jacqueline Lee
President

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

Environmental Sampling Services

**Table 1: Summary of October 2002 Quarterly 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 | 39.92 | 10:22 | 9/30/2002 | 14:15 | None |
| W-3s | 39.97 | 10:14 | 9/30/2002 | 13:30 | None |
| W-Bs | 39.43 | 10:40 | 9/30/2002 | 13:50 | None |
| W-Es | 40.16 | 10:38 | NS | NA | NA |

NS = Not Sampled
NA = Not Applicable

**Environmental Sampling Services**

| WATER QUALITY SAMPLE LOG SHEET | WELL IDENTIFICATION: W-1s DATE: 9/30/02 |
|---|---|

Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring

Laboratory: McCampbell Analytical, Inc. Weather Conditions: _____

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

Observations / Comments: _____

Purge Method: Teflon/PVC Disposable Bailer Centrifugal Pump Peristaltic Pump Other: Grundfos

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: 9/30 10:40 (4) (7) (10) @ 25°C Spec.Cond. Meter Calibration: (Self Test) Other: _____

Method to Measure Water Level: Solinst Serial No.: 25083 P.I.D. Reading: NA ppm @ Well Head

Water Level at Start (DTW): 39.92 @ 10:22 Water Level Prior To Sampling: 4:53

TD = 44.64 - 39.92 (DTW) = 4.72 ( ft.of water) x "K" = 6.87 (Gals./CV) x 3 (No. of CV) = 20.6 (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 |
|---|---|---|---|---|---|---|---|---|
| 9/30/02 | 12:06 | 2.0 | 6.31 | 20.2 | 1149 | 15.8 | lt yell. | sheen & odor |
| | 12:07 | 4.0 | 6.65 | 20.4 | 1084 | 36.1 | " | " |
| | 12:09 | 6.0 | 6.66 | 20.5 | 1131 | 54.1 | lt gray/tan | " |
| | 12:10 | 8.0 | 6.54 | 20.9 | 1160 | 61.6 | " | " Day @ 8 gallons |
| | 13:25 | 10.0 | 6.55 | 21.7 | 1220 | 89.3 | lt tan/gray | sheen & odor present Day @ 10 gallons |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Total Discharge: 10 Gallons Casing Volumes Removed: _____

Method of disposal of discharged water: (55 Gallon Drum(s)) Poly Tank Treatment System Other: _____

Date/Time Sampled: 9/30/02 @ 14:15 Analysis/No. of Bottles: EPA 8015M/8020 TPHgas/BTEX, MTBE, (3-40ml VOC's w/HCl); TPH diesel (1, 1 liter glass amber, non-preserved)

QA/QC: None @ — as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank

Comments: W-1s = 40.16' @ 10:38

Sampled By: Jacki Lee and Stephen Penman Signature(s): _____

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www.envsampling.com

**Environmental Sampling Services**

| WATER QUALITY SAMPLE LOG SHEET | WELL IDENTIFICATION: W-Bs DATE: 9/30/02 |
|---|---|

Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring

Laboratory: McCampbell Analytical, Inc. Weather Conditions: Sunny + hazy, warm ~ 70's °F

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: ____

Observations / Comments: ____

Purge Method: Teflon/PVC Disposable Bailer Centrifugal Pump Peristaltic Pump Other: Grundfos

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: 9/30@10:40 (4 7 10) @ 25°C Spec.Cond. Meter Calibration: (Self Test) Other: ____

Method to Measure Water Level: Solinst Serial No.: 25033 P.I.D. Reading: NA ppm @ Well Head

Water Level at Start (DTW): 39.43@ 10:18 Water Level Prior To Sampling: 43.10

TD = 44.47 - 39.43 (DTW) = 5.04 ( ft.of water) x "K" = 7.35 (Gals./CV) x 3 (No. of CV) = 22.0 (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 (µS) | Turbidity (NTU's) | Color | Comments |
|---|---|---|---|---|---|---|---|---|
| 9/30/02 | 11:12 | 5.0 | 6.52 | 19.4 | 909 | 18.1 | lt yell/tan | pet odor; no sheen |
| | 11:13 | 10.0 | 6.41 | 19.6 | 934 | 122 | cloudy | Dry @ 11 gals. |
| | 11:51 | 12.0 | 6.67 | 20.4 | 942 | 48 | " | Dry @ 12 gals. |
| | 13:48 | - | - | - | - | - | - | T = 43.10 |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Total Discharge: 12.0 Gallons Casing Volumes Removed: 1.63

Method of disposal of discharged water: (55 Gallon Drum(s)) Poly Tank Treatment System Other: ____

Date/Time Sampled: 9/30/02@ 13:50 Analysis/No. of Bottles: EPA 8015M/8020 TPHgas/BTEX, MTBE, (3-40ml VOC's w/HCl); TPH diesel (1, 1 liter glass amber, non-preserved)

QA/QC: None @ — as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank

Comments: ____

Sampled By: Jacki Lee and Stephen Penman Signature(s): [signature]

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**Environmental Sampling Services**

| WATER QUALITY SAMPLE LOG SHEET | WELL IDENTIFICATION: W-3s DATE: 9/30/02 |
|---|---|

Project Name: Arrow Rentals - Livermore, CA Project Task: Semi-Annual Groundwater Monitoring

Laboratory: McCampbell Analytical, Inc. Weather Conditions: Sunny, warm & hazy

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: None

Observations / Comments: _____

Purge Method: Teflon/PVC Disposable Bailer Centrifugal Pump Peristaltic Pump Other: Grundfos

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: 9/30/02 @ 10:40 4 7 10 @ 25°C Spec.Cond. Meter Calibration: (Self Test) Other: _____

Method to Measure Water Level: Solinst Serial No.: 25083 P.I.D. Reading: NA ppm @ Well Head

Water Level at Start (DTW): 39.97 @ 10:14 Water Level Prior To Sampling: 41.45

TD = 44.76 - 39.97 (DTW) = 4.79 (ft.of water) x "K" = 3.12 (Gals./CV) x 3 (No. of CV) = 9.38 (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 |
|---|---|---|---|---|---|---|---|---|
| 9/30/02 | 10:53 | 1.0 | 6.83 | 20.1 | 1014 | 59.5 | Lt gray/tan | slight oily sheen / slight pet. odor |
| | 10:55 | 2.0 | 6.74 | 20.5 | 1013 | 29.1 | Lt tan | slight pet odor no sheen |
| | 10:56 | 3.0 | 6.69 | 20.8 | 1021 | 11.2 | Lt tan | " |
| | 10:59 | 4.0 | 6.66 | 20.8 | 1015 | 5.7 | " | " |
| | 11:01 | 4.5 | 6.72 | 20.5 | 999 | 64.0 | Lt gray/tan | slight oily sheen / slight odor Dry @ 4.5 gals. |
| | 11:27 | 5.5 | 6.68 | 21.0 | 1003 | 60.2 | " | Dry @ 5.5 gals. |
| | | | | | | | | |
| | | | | | | | | |
| | | | | | | | | |

Total Discharge: 5.5 Gallons Casing Volumes Removed: 1.76

Method of disposal of discharged water: (55 Gallon Drum(s)) Poly Tank Treatment System Other: _____

Date/Time Sampled: 9/30/02 @ 13:30 Analysis/No. of Bottles: EPA 8015M/8020 TPHgas/BTEX, MTBE, (3-40ml VOC's w/HCl); TPH diesel (1, 1 liter glass amber, non-preserved)

QA/QC: None @ — as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank

Comments: _____

Sampled By: Jacki Lee and Stephen Penman Signature(s): _____

Environmental Sampling Services
6680 Alhambra Ave., #102, Martinez, CA 94553 Phone/Fax: (925) 372.5108
www.Envsampling.com

# McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME ☐ RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☒ 5 DAY

Report To: Jacqueline Lee Bill To: "Accounts Payable"
Company: Environmental Sampling Services
6680 Alhambra Avenue #902
Martinez, CA 94553-6105
Tele: (925 372-8108 Fax: (925 372-6705
Project #: — Project Name: Arrow Rentals
Project Location: Livermore
Sampler Signature:

| SAMPLE ID | LOCATION | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX: Water | Soil | Air | Sludge | Other | METHOD PRESERVED: Ice | HCl | $HNO_3$ | Other | BTEX & TPH as Gas (602/8020 + 8015)/ MTBE | TPH as Diesel (8015) w/ Silica Gel Cleanup | Total Petroleum Oil & Grease (5520 E&F/B&F) | Total Petroleum Hydrocarbons (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 EPA 625 / 8270 / 8310 | CAM-17 Metals | LUFT 5 Metals | Lead (7240/7421/239.2/6010) | RCI | pH | TSS | TOC | Specific Conductivity | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| W-3S | — | 9/30/02 | 13:30 | 4 | VOAs, Liter | | | | | | | | | | X | X | | | | | | | | | | | | | | | | | | |
| W-8S | — | 9/30/02 | 13:50 | 4 | VOAs, Liter | | | | | | | | | | X | X | | | | | | | | | | | | | | | | | | |
| W-13 | — | 9/30/02 | 14:15 | 4 | VOAs, Liter | | | | | | | | | | X | X | | | | | | | | | | | | | | | | | | |

9/30/02 9/30/02 9/30/02 9/30/02

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 9/30/02 | 15:30 | |
| Relinquished By: | Date: | Time: | Received By: |
| Relinquished By: | Date: | Time: | Received By: |

Remarks:

# APPENDIX B

## LABORATORY REPORT

## AND

## CHAIN-OF-CUSTODY DOCUMENTATION

McCampbell 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

| | | |
|---|---|---|
| Environmental Sampling Services | Client Project ID: Arrow Rentals | Date Sampled: 09/30/02 |
| 6680 Alhambra Ave. #102 | | Date Received: 09/30/02 |
| Matinez, CA 94553 | Client Contact: Jacki Lee | Date Extracted: 10/03/02-10/07/02 |
| | Client P.O.: | Date Analyzed: 10/03/02-10/07/02 |

## Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline with BTEX and MTBE*

Extraction method: SW5030B Analytical methods: SW8021B/8015Cm Work Order: 0209498

| Lab ID | Client ID | Matrix | TPH(g) | MTBE | Benzene | Toluene | Ethylbenzene | Xylenes | DF | % SS |
|---|---|---|---|---|---|---|---|---|---|---|
| 001A | W-3s | W | 420,a | ND | 68 | 1.4 | 3.1 | 1.1 | 1 | ---# |
| 002A | W-Bs | W | 7100,a | ND<250 | 940 | 28 | 260 | 93 | 10 | ---# |
| 003A | W-1s | W | 51,000,a | ND<1000 | 5600 | 1500 | 2000 | 9400 | 200 | 101 |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | | W | 50 | 5.0 | 0.5 | 0.5 | 0.5 | 0.5 | 1 | µg/L |
| | | S | NA | NA | NA | NA | NA | NA | 1 | mg/Kg |

*water and vapor samples are reported in ug/L, soil and sludge samples in mg/kg, wipe samples in ug/wipe, product/oil/non-aqueous liquid samples in mg/L, and TCLP extracts in ug/L.

# cluttered chromatogram; sample peak coelutes with surrogate peak.

+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 (stoddard solvent); f) one to a few isolated non-target peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; j) reporting limit raised due to high MTBE content; k) TPH pattern that does not appear to be derived from gasoline (aviation gas). m) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCampbell 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

| | | |
|---|---|---|
| Environmental Sampling Services | Client Project ID: Arrow Rentals | Date Sampled: 09/30/02 |
| 6680 Alhambra Ave. #102 | | Date Received: 09/30/02 |
| Matinez, CA 94553 | Client Contact: Jacki Lee | Date Extracted: 09/30/02 |
| | Client P.O.: | Date Analyzed: 10/01/02-10/03/02 |

**Diesel (C10-23) and Oil (C18+) Range Extractable Hydrocarbons with Silica Gel Clean-Up***

Extraction method: SW3510C Analytical methods: SW8015C Work Order: 0209498

| Lab ID | Client ID | Matrix | TPH(d) | TPH(mo) | DF | % SS |
|---|---|---|---|---|---|---|
| 0209498-001B | W-3s | W | 390,g | 1400 | 1 | 98.3 |
| 0209498-002B | W-Bs | W | 1500,d | ND | 1 | 100 |
| 0209498-003B | W-1s | W | 1200,d | ND<2500 | 10 | 92.1 |

| | | | | |
|---|---|---|---|---|
| Reporting Limit for DF =1; ND means not detected at or above the reporting limit | W | 50 | 250 | µg/L |
| | S | NA | NA | mg/Kg |

* water and vapor samples are reported in ug/L, wipe samples in ug/wipe, soil/solid/sludge samples in mg/kg, product/oil/non-aqueous liquid samples in mg/L, 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) unknown medium boiling point pattern that does not appear to be derived from diesel; f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen/product is present; i) liquid sample that contains greater than ~2 vol. % sediment; k) kerosene/kerosene range; l) bunker oil; m) fuel oil; n) stoddard solvent.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCampbell 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: 0209498

EPA Method: SW8021B/8015Cm Extraction: SW5030B BatchID: 4208 Spiked Sample ID: N/A

| Compound | 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(gas) | N/A | 60 | N/A | N/A | N/A | 102 | 98.3 | 4.08 | 80 | 120 |
| MTBE | N/A | 10 | N/A | N/A | N/A | 97.9 | 98.7 | 0.784 | 80 | 120 |
| Benzene | N/A | 10 | N/A | N/A | N/A | 103 | 102 | 0.620 | 80 | 120 |
| Toluene | N/A | 10 | N/A | N/A | N/A | 105 | 104 | 0.715 | 80 | 120 |
| Ethylbenzene | N/A | 10 | N/A | N/A | N/A | 108 | 106 | 1.76 | 80 | 120 |
| Xylenes | N/A | 30 | N/A | N/A | N/A | 110 | 103 | 6.25 | 80 | 120 |
| %SS: | N/A | 100 | N/A | N/A | N/A | 95.9 | 95.9 | 0.0123 | 80 | 120 |

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.

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.

% 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.

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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 SW8015C

Matrix: W WorkOrder: 0209498

| EPA Method: SW8015C | Extraction: SW3510C | BatchID: 4204 | Spiked Sample ID: N/A |
|---|---|---|---|

| Compound | 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 | 102 | 103 | 0.948 | 70 | 130 |
| %SS: | N/A | 100 | N/A | N/A | N/A | 112 | 111 | 0.734 | 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.

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.

% 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.

**McCampbell Analytical Inc.**
110 Second Avenue South, #D7
Pacheco, CA 94553-5560
(925) 798-1620

# CHAIN-OF-CUSTODY RECORD



**WorkOrder: 0209498**

Client:
Environmental Sampling Services
6680 Alhambra Ave. #102
Martinez, CA 94553

TEL:
FAX:
ProjectNo: Arrow Rentals
PO:

30-Sep-02

| Sample ID | ClientSampID | Matrix | Collection Date | Hold | Requested Tests | |
|---|---|---|---|---|---|---|
| | | | | | SW8015C | 8021B/8015 |
| 0209498-001 | W-3s | Water | 9/30/02 1:30:00 PM | | B | A |
| 0209498-002 | W-Bs | Water | 9/30/02 1:50:00 PM | | B | A |
| 0209498-003 | W-1s | Water | 9/30/02 2:15:00 PM | | B | A |

**Comments:**

| | Date/Time | | Date/Time |
|---|---|---|---|
| **Relinquished by:** | | **Received by:** | |
| **Relinquished by:** | | **Received by:** | |
| **Relinquished by:** | | **Received by:** | |

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.

Bottle Type: L-Liter V-Voa S-Soil Jar O-Orbo T-Tedlar B-Brass P-Plastic OT-Other

Q209498

# McCAMPBELL ANALYTICAL INC.

110 2nd AVENUE SOUTH #D7
PACHECO, CA 94553-5560
Telephone: (925) 798-1620 Fax: (925) 798-1622

# CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH ☐ 24 HR ☐ 48 HR ☐ 72 HR ☐ 5 DAY ☒

Report To: Jacqueline Lee Bill To: "Accounts Payable"
Company: Environmental Sampling Services
6680 Alhambra Avenue #402
Martinez, CA 94553-6105
Tele: (925) 372-8108 Fax: (925) 372-6705
Project #: — Project Name: Arrow Rentals
Project Location: Livermore
Sampler Signature:

| SAMPLE ID | LOCATION | SAMPLING Date | SAMPLING Time | # Containers | Type Containers | MATRIX: Water | Soil | Air | Sludge | Other | METHOD PRESERVED: Ice | HCl | $HNO_3$ | Other |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| (5) W-3S | — | 9/30/02 | 13:30 | 4 | VOAs, Liter | | | | | | | | | |
| (6) W-13S | — | 9/30/02 | 13:50 | 4 | VOAs, Liter | | | | | | | | | |
| (7) W-13 | — | 9/30/02 | 14:15 | 4 | VOAs, Liter | | | | | | | | | |

Analysis Request

| BTEX & TPH as Gas (602/8020 + 8015) MTBE | TPH as Diesel (8015) w/ Silica Gel Cleanup | Total Petroleum Oil & Grease (5520 E&F/B&F) | Total Petroleum Hydrocarbons (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 EPA 625 / 8270 / 8310 | CAM-17 Metals | LUFT 5 Metals | Lead (7240/7421/239.2/6010) | RCI |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| X | X | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | |
| X | X | | | | | | | | | | | | | |

Other: pH | TSS | TOC | Specific Conductivity

Comments:

| Relinquished By: | Date: | Time: | Received By: |
|---|---|---|---|
| | 9/30/02 | 15:30 | |
| Relinquished By: | Date: | Time: | Received By: |
| Relinquished By: | Date: | Time: | Received By: |

Remarks:

RUSH ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT
DECHLORINATED IN LAB
PRESERVATION APPROPRIATE ✓
CONTAINERS
PRESERVED IN LAB

| VOAS ✓ | O&G | METALS | OTHER |
|---|---|---|---|