

1-17-02
JAN 24 2002

Dear Eve,

Enclosed is another monitoring
report.

Happy New Year & hope all
is well with you.

Sincerely,

Peta

JAN 2

COPY

**SEMI-ANNUAL GROUNDWATER
MONITORING EVENT
NOVEMBER 2001**

**ARROW RENTALS
LIVERMORE, CALIFORNIA**

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

Date Prepared: January 11, 2002

December 27, 2001
971275

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

Subject: Semi-Annual Groundwater Monitoring, November 2001
187 North L Street, Livermore, California

Dear Ms. Sullins:

Groundwater monitoring was conducted in November 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 November 13, 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 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 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. Approximately 0.14 foot of floating product was measured in well W-1s.

Two wells (W-1s and W-Bs) were purged and sampled after static water level measurements were recorded. Well W-3s was purged dry, and the water level did not recover adequately to obtain a sample. Well W-Es did not contain sufficient water for purging or sampling. Each well was purged using either a disposable bailer or a submersible pump with new tubing. The purge water from the monitoring wells was stored in 55-gallon drums.

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 sampling logs are included in Appendix A.

Groundwater samples were collected from wells W-1s and W-Bs 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, 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 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; benzene, toluene, ethylbenzene, xylenes (BTEX) by EPA Method 8020; and methyl tertiary butyl ether (MTBE) by EPA Method 8020 Modified. Sample W-Bs was also analyzed for total petroleum hydrocarbons quantified as diesel (TPH-diesel) by EPA Method 8015 Modified. Sample W-1s was not analyzed for TPH-diesel due to a lack of volume. 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

On November 13, 2001, groundwater elevations in the four monitoring wells ranged from 431.05 feet in well W-Es to 443.59 feet in well W-Bs. The elevations were used to construct a potentiometric surface map, as shown on Figure 2. Evaluation of the potentiometric surface shows that groundwater generally flows to the south or southwest. The hydraulic gradient is approximately 0.17 ft/ft.

RESULTS OF LABORATORY ANALYSIS

Results of laboratory analysis for groundwater samples collected in November 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-Bs and W-1s, at concentrations of 17,000 µg/L and 750,000 µg/L, respectively. The concentration of diesel in the groundwater sample from well W-Bs was 3,600 µg/L. However, the laboratory indicated that a significant amount of the reported diesel was due to gasoline in the sample. Benzene was detected at 2,000 µg/L in well W-Bs and 9,500 µg/L in well W-1s. The Maximum Contaminant Level (MCL) for benzene is 1 µg/L. Toluene (up to 7,800 µg/L), ethylbenzene (up to 7,200 µg/L), and xylenes (up to 33,000 µg/L) were also detected in the samples collected from wells W-Bs and W-1s. The concentrations of toluene, ethylbenzene, and xylenes in wells W-Bs and W-

AQUIFER SCIENCES, INC.

1s exceeded their corresponding MCLs. MTBE was not detected in either groundwater sample. Gasoline, BTEX, and MTBE were not detected in the travel blank.

SUMMARY AND CONCLUSIONS

Table 3 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.

Monitoring wells W-3s and W-Es did not have sufficient volumes of groundwater for purging and sampling in November 2001. Insufficient recharge of groundwater at well W-1s limited the available volume for sampling. As a result, no sample was collected at well W-1s for diesel analysis. In addition, 0.14 foot of floating product was measured on the water column at well W-1s. None of the other wells (W-Bs, W-3s, and W-Es) contained measurable floating product.

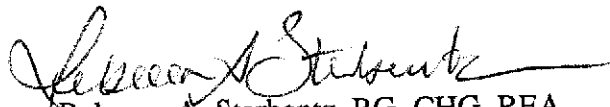
In November 2001, the direction of groundwater flow beneath the site was south or southwest. Fluctuations in the concentrations of gasoline, diesel, and BTEX may be related to seasonal variations in groundwater elevations and the groundwater flow direction. Please call us if you have any questions concerning this report.

Respectfully yours,



Richard P. Salopek
Hydrogeologist

Attachments



Rebecca A. Sterbentz, RG, CHG, REA
President



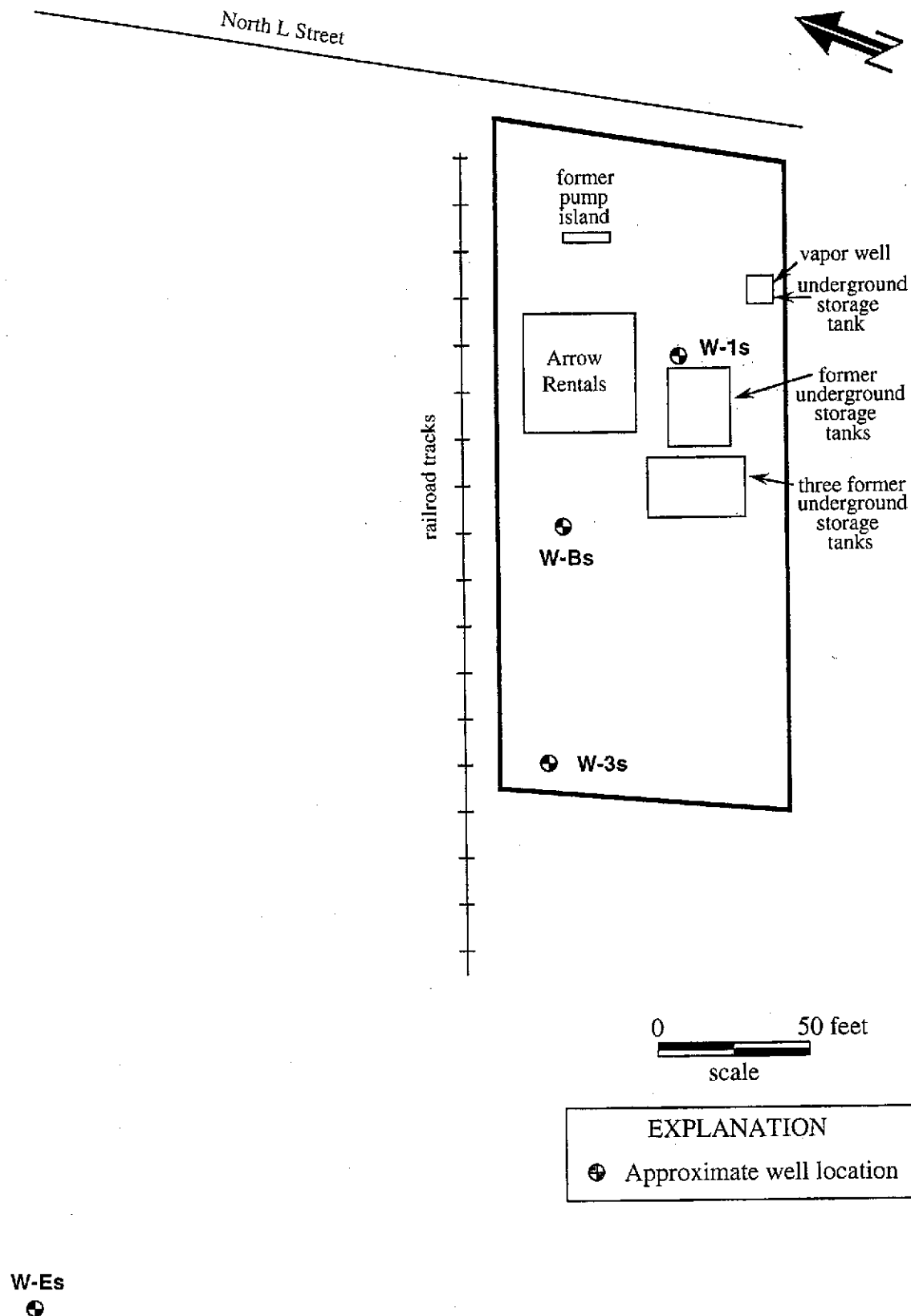


Figure 1. SITE MAP
187 North L Street, Livermore, California

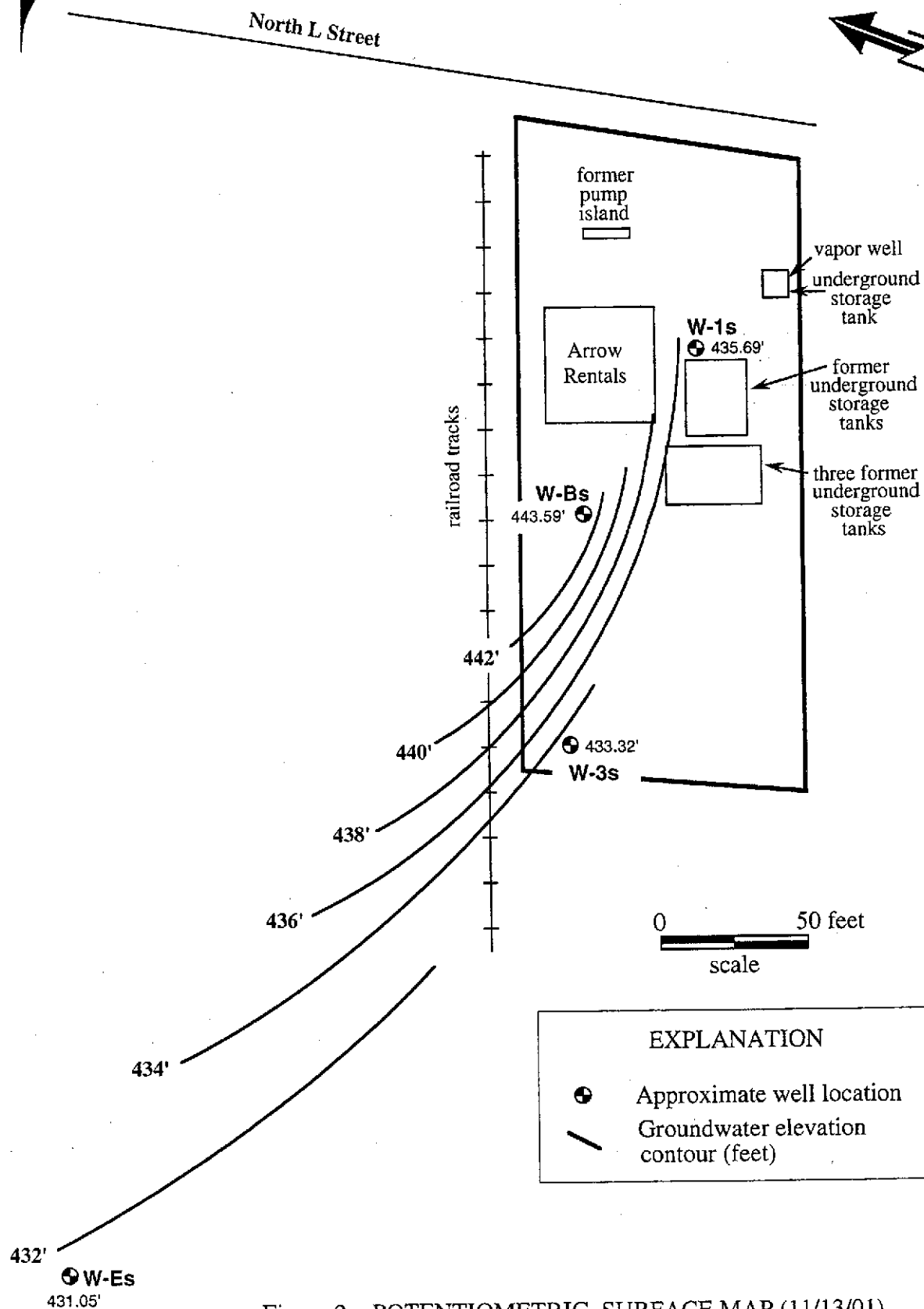


Figure 2. POTENTIOMETRIC SURFACE MAP (11/13/01)
187 North L Street, Livermore, California

Table 1. GROUNDWATER ELEVATION DATA
187 North L Street, Livermore, California
November 13, 2001

Well Number	Top of Casing Elevation (feet above MSL)	Depth to Water (feet below TOC)	Water Elevation (feet above MSL)
W-1s	479.09	43.40	435.69
W-3s	476.98	43.66	433.32
W-Bs	478.82	35.23	443.59
W-Es	474.66	43.61	431.05

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

TOC = top of well casing

Table 2. ANALYTICAL DATA FOR GROUNDWATER - PETROLEUM HYDROCARBONS
187 North L Street, Livermore, California
November 13, 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	750,000*	NA	NA	9,500	7,800	7,200	33,000	< 2,000	NA	NA
W-3s	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
W-Bs	17,000*	3,600†	NA	2,000	130	1,100	1,700	< 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
MDL	50	50	--	0.5	0.5	0.5	0.5	5.0-2,000	--	--
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

MDL = method detection limit

MCL = Maximum Contaminant Level, February 2000

* Unmodified or weakly modified gasoline is significant.

† Gasoline range compounds are significant.

Table 3. SUMMARY OF ANALYTICAL DATA 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	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
W-1s	11/13/01	750,000§	NA	NA	9,500	7,800	7,200	33,000	< 2,000	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	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
W-3s	11/13/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
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
W-Bs	10/5/99	38,000	7,300‡	NA	3,800	390	1,600	5,900	< 60	NA	NA	NA

Table 3 (continued). SUMMARY OF ANALYTICAL DATA 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-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-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	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
W-Es	11/13/01	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
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
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
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.

** 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.

**FIELD ACTIVITY REPORT FOR
ARROW RENTALS
LIVERMORE, CALIFORNIA**

**SEMI-ANNUAL GROUNDWATER SAMPLING MONITORING
NOVEMBER 2001**

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

Date Prepared: November 18, 2001



**FIELD ACTIVITY REPORT
FOR SEMI-ANNUAL GROUNDWATER MONITORING EVENT
ARROW RENTALS,
LIVERMORE, CALIFORNIA**

ESS Personnel: Jacqueline Lee and Stephen Penman
Activity Date: November 13, 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

Prior to well purging, static groundwater was measured in all four monitoring wells. Each well was allowed to equilibrate to atmospheric pressure prior to measurement. All readings were performed with Oil/Water Interface meter (Table 1). The measurements were referenced to the surveyor's mark (a black mark on the top of well casing).

Field Equipment Calibration

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

Monitoring Well Summary:

Monitoring well W-1s:

Initial product thickness was 0.14 feet. The well was purged dry with a disposable bailer prior to sampling. After allotting approximately 2.5 hours for recovery, the well was sampled for EPA Method 8015M (TPH as Gasoline/BTEX, and MTBE). TPH (Diesel) samples were not obtained due to insufficient volume of groundwater.

Monitoring well W-Bs:

This well was purged dry twice with a Grundfos® Redi-Flow Submersible pump and dedicated tubing. 2.2 casing volumes were removed prior to sampling. The well was sampled for the: EPA Method 8015M (TPH (Gasoline)/BTEX, and MTBE) and TPH (Diesel).

Monitoring well W-3s:

The well was purged dry once with a disposable bailer. After approximately 3 hours of recovery, the well did not have sufficient volume of water to collect samples.



**Environmental
Sampling Services**

Monitoring well W-Bs:


This well did not have enough water during initial inspection and therefore was not purged or sampled.

Disposable bailers were used for sampling purposes. McCampbell Analytical Inc., of Pacheco supplied all sample containers and performed all required analyses. All samples were properly preserved according to analysis.

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.

All work was performed under satisfactory workmanship and according to the Alameda County Health and Care Services' directive, dated October 8, 1997 and March 15, 1999.


Jacqueline Lee
President

Attachment

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



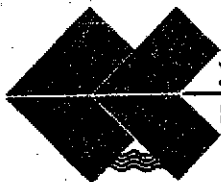
**Environmental
Sampling Services**

TABLE 1: SUMMARY OF GROUNDWATER MONITORING AND SAMPLING
SITE NAME: ARROW RENTALS
SITE LOCATION: 187 NORTH L STREET, LIVERMORE, CALIFORNIA
DATE: NOVEMBER 13, 2001

WELL IDENTIFICATION	DEPTH TO GROUNDWATER (Ft., TOC)	WELL DEPTH (Ft., TOC)	SAMPLE TIME
W-1s**	43.40	44.64	14:53
W-Bs	35.23	44.47	15:05
W-3s	43.66	44.76	NS
W-Es	43.61	44.32	NS

TOC = Top of Casing

** Product was detected from 43.26'-43.40' during initial reading.



Environmental Sampling Services

WATER QUALITY SAMPLE LOG SHEET	WELL IDENTIFICATION: W-1s DATE: 11/13/01
Project Name: <u>Arrow Rentals - Livermore, CA</u> Project Task: <u>Semi-Annual Groundwater Monitoring</u>	
Laboratory: <u>McC Campbell Analytical, Inc.</u> Weather Conditions: _____	
Well Description: 2" 3" 4" 5" <u>6"</u> Other: _____ Well Type: <u>PVC</u> Stainless Steel Other: _____	
Is Well Secured? Yes / No Bolt Size _____ Type of lock / Lock number: _____	
Observations / Comments: _____	
Purge Method: Teflon <u>PVC Disposable Bailer</u> Centrifugal Pump Peristaltic Pump Other: <u>Submersible Pump</u>	
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.: 217254 / <u>330089</u> Spec. Cond. Meter Serial No.: <u>96H0203AB</u> / AE	
Date/Time Calibrated: <u>11/13/01 10:30</u> 7 10 @ 25°C Spec. Cond. Meter Calibration: <u>Self Test</u> Other: _____	
Method to Measure Water Level: Solinst Serial No.: <u>0/W Ind.</u> P.I.D. Reading: <u>NA</u> ppm @ Well Head	
Water Level at Start (DTW): <u>43.40</u> * Water Level Prior To Sampling: _____	
TD = 44.64 - <u>43.40</u> (DTW) = <u>1.24</u> (ft. of water) x "K" = <u>1.81</u> (Gals./CV) x <u>3</u> (No. of CV) = <u>5.43</u> (Gals.)	
"K" = 0.163(2" well) "K" = 0.653(4" well) "K" = 1.02(5" well) <u>"K" = 1.46(6" well)</u> "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
11/13/01	12:01	1.0	6.30	19.7	328.3	71000	gray green	STRONG PET. ODOR; SEE REPORT IN SAMPLE.
	14:12							

Total Discharge: _____ gallons **Casing Volumes Removed:** _____

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

Date/Time Sampled: 11/13/01 @ 14:53 **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) Not enough water for TPH-D sample

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

Comments: *Product = 43.26 - 43.40 =

Prod = 44.11 - 44.21 @ 14:18

80% = 43.65

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



Environmental Sampling Services

WATER QUALITY SAMPLE LOG SHEET		WELL IDENTIFICATION: W-Bs		DATE: 11/13/01
Project Name: <u>Arrow Rentals - Livermore, CA</u>		Project Task: <u>Semi-Annual Groundwater Monitoring</u>		
Laboratory: <u>McC Campbell Analytical, Inc.</u>		Weather Conditions: <u>Cloudy overcast, +65°F</u>		
Well Description: 2" 3" 4" 5" <u>6"</u> Other: _____		Well Type: <u>PVC</u> Stainless Steel Other: _____		
Is Well Secured? <u>Yes</u> No Bolt Size <u>1/2"</u>		Type of lock / Lock number: <u>Master</u>		
Observations / Comments: _____				
Purge Method: Teflon/PVC Disposable Bailer Centrifugal Pump Peristaltic Pump Other: <u>Grundfos pump</u>				
Pump Lines: NA New / Cleaned <u>Dedicated</u> Bailer Line: NA New / Cleaned / Dedicated				
Method of Cleaning Pump: NA Alconox <u>Liqui-nox</u> 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 / <u>330089</u>		Spec. Cond. Meter Serial No.: <u>66H0203AB</u> AE		
Date/Time Calibrated: <u>11/10/01 10:30</u> (4 7 10) @ 25°C		Spec. Cond. Meter Calibration: <u>Self Test</u> Other: _____		
Method to Measure Water Level: Solinst Serial No.: <u>970 Ind.</u> P.I.D. Reading: <u>NA</u> ppm @ Well Head				
Water Level at Start (DTW): <u>35.23 @ 10:40</u> Water Level Prior To Sampling: _____				
TD = 44.47 - <u>35.23</u> (DTW) = <u>9.24</u> (ft. of water) x "K" = <u>13.4</u> (Gals./CV) x <u>3</u> (No. of CV) = <u>40.4</u> (Gals.)				
"K" = 0.163(2" well) "K" = 0.653(4" well) "K" = 1.02(5" well) <u>"K" = 1.46(6" well)</u> "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
11/13/01	11:24	10.8	6.64	20.0	353.8	62	lt. yellow tan	Pet. Odor. Light sheen
	11:36	20.16	6.55	20.5	342.1	19.2	"	"
	11:48	24	6.54	21.2	342.3	28.5	"	Dry @ 25 gals.
	14:08	29.5	6.51	20.2	342.8	78.1	lt tan	Dry @ 29.5 gals.
		40						

Total Discharge: <u>29.5</u> gallons	Casing Volumes Removed: <u>2.20</u>
Method of disposal of discharged water: <u>45 Gallon Drum(s)</u> Poly Tank Treatment System Other: _____	
Date/Time Sampled: <u>11/13/01 @ 15:05</u> Analysis/No. of Bottles: <u>EPA 8015M/8020 TPHgas/BTEX, MTBE, (3-40ml VOC's w/HCl); TPH diesel (1, 1 liter glass amber, non-preserved)</u>	
QA/QC: <u>None</u> @ _____ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank	
Comments: <u>80%: 1108</u>	

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



Environmental Sampling Services

WATER QUALITY SAMPLE LOG SHEET	WELL IDENTIFICATION: W-3s DATE: 11/13/01
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>Overcast</u>	
Well Description: 2" 3" <u>4"</u> 5" 6" Other: _____ Well Type: <u>PVC</u> Stainless Steel Other: _____	
Is Well Secured? <u>Yes</u> / No Bolt Size <u>15/16"</u> Type of lock / Lock number: <u>None, well cap = broken</u>	
Observations / Comments: <u>4" well cap was replaced by ESS.</u>	
Purge Method: Teflon <u>PVC Disposable Bailer</u> Centrifugal Pump Peristaltic Pump Other: _____	
Pump Lines: NA New / Cleaned / Dedicated Bailer Line: NA New / Cleaned / Dedicated	
Method of Cleaning Pump: <u>NA</u> Alconox Liqui-nox Tap Water DI Rinse Other: _____	
Method of Cleaning Bailer: NA Alconox Liqui-nox Tap Water DI Rinse Other: <u>Well Water</u>	
Sampling Method: Disp. Teflon Bailer <u>Disp. PVC Bailer</u> GrundFos Redi-flow Pump Peristaltic Pump	
pH Meter Serial No.: 217254 / <u>330089</u> Spec. Cond. Meter Serial No.: <u>96H0203AB</u> AE	
Date/Time Calibrated: <u>11/13/01 7:10</u> @ 25°C Spec. Cond. Meter Calibration: <u>Self Test</u> Other: _____	
Method to Measure Water Level: Solinst Serial No.: <u>NA Ind.</u> P.I.D. Reading: <u>NA</u> ppm @ Well Head	
Water Level at Start (DTW): <u>43.66 @ 10:35</u> Water Level Prior To Sampling: _____	
TD = 44.76 - <u>43.66</u> (DTW) = <u>1.10</u> (ft. of water) x "K" = <u>0.91</u> (Gals./CV) x <u>3</u> (No. of CV) = <u>2.15</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 (µS)	Turbidity (NTU's)	Color	Comments
11/13/01	11:03	0.5	6.88	19.6	248.0	71000	gray/blk.	Very viscous organic material in the slight petroleum odor Pumped DRY!

Total Discharge: <u>0.5</u> gallons	Casing Volumes Removed: _____
Method of disposal of discharged water: <u>55 Gallon Drum</u> Poly Tank Treatment System Other: _____	
Date/Time Sampled: <u>11/13/01</u> @ _____ Analysis/No. of Bottles: <u>EPA 8015M/8020 TPHgas/BTEX, MTBE, (3-40ml VOC's w/HCl); TPH diesel (1, 1 liter glass amber, non-preserved)</u>	
QA/QC: <u>None</u> @ _____ as an Equipment Blank Duplicate MS/MSD Lab Split Field Blank	
Comments: <u>80% = 43.87</u>	
NO SAMPLES COLLECTED; WELL DID NOT RECOVER! Water did not register on W.L. Indicator!	
Sampled By: <u>Jacki Lee and Stephen Penman</u> Signature(s) <u>[Signature]</u>	



FIELD WATER QUALITY PARAMETERS

Total Discharge: NA* gallons Casing Volumes Removed: _____
Method of disposal of discharged water: 55 Gallon Drums Poly Tank Treatment System Other: _____
Date/Time Sampled: 7/13/01 @ — 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: * Well is not sampleable due to lack of water. Lowered boiler into well & remove mud, very viscous.

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

McCAMPBELL ANALYTICAL, INC.

110 2ND AVENUE SOUTH, #D7
PACIFIC CO. 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: Jacki Lee

Bill To:

Company: Environmental Sampling Services

4680 Alhambra Avenue #102

Martinez, CA 94553-6105

Tele: (925) 372-8108

Fax: (925) 372-6705

Project #:

Project Name: Arrow Rentals

Project Location: LIVERMORE, CA

Sampler Signature: [Signature]

SAMPLE ID	LOCATION	SAMPLING		# Containers	Type Containers	MATRIX					METHOD PRESERVED				BTEX & TPH as Gas (602/8020 - 8015)	TPH as Diesel (8015)	Total Petroleum Oil & Grease	Total Petroleum Hydrocarbons	EPA 601 / 8010	BTEX ONLY (EPA 602 / 8020)	EPA 608 / 8080	EPA 608 / 8080 PCB's O & O	EPA 624 / 8240 / 8260	EPA 625 / 8270	PAH's / PNA's by EPA 606 / 8270	CAM-17 Metals	LUFT 5 Metals	Lead (7240/7421/239 2/6010)	RCI	pH	TSS	TOC	Specific Conductivity																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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Date:

Time:

Received By:

Remarks:

STANDARD TAT.

PERFORM SILICA GEL CLEAN-UP PRIOR TO ANALYSIS.

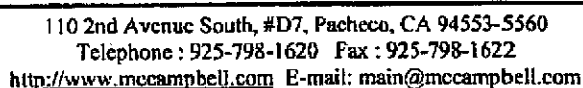
11 Vials contain mud + product

APPENDIX B

LABORATORY REPORT

AND

CHAIN-OF-CUSTODY DOCUMENTATION



Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with Methyl tert-Butyl Ether* & BTEX*
EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

*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.



McCAMPBELL ANALYTICAL INC.

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

Environmental Sampling Services 6680 Alhambra Ave, #102 Martinez, CA 94553	Client Project ID: Arrow Rentals	Date Sampled: 11/13/01
		Date Received: 11/13/01
	Client Contact: Jacki Lee	Date Extracted: 11/13/01
	Client P.O:	Date Analyzed: 11/14/01

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel with Silica Gel Clean Up*

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GC/FID(3550) or GC/FID(3510)


Lab ID	Client ID	Matrix	TPH(d)*	% Recovery Surrogate
83524	W-Bs	W	3600,d	98
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		W	50 ug/L	
		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 (?) is 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.

DHS Certification No. 1644

 Edward Hamilton, Lab Director

28753 z ess 3

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Report To: Jacki Lee

Bill To:

Company: Environmental Sampling Services

4680 Alhambra Avenue #102

Martinez, CA 94553-6105

Tele: (၇၅) ၃၇၁-၄၆၀၄

Fax: (913) 372-6705

Project #:

Project Name: Arrow Rentals

Project Location: LIVERMORE, CA

Sampler Signature: *[Signature]*

[illegible]