

Harding Lawson Associates

2100  
N. 1ST  
SUITE 150 94948



October 19, 1994

26560 1

Ms. Madhulla Logan  
Alameda County Health Agency  
Department of Environmental Health  
80 Swan Way, Room 200  
Oakland, California 94621

**Third Quarter 1994 Groundwater Monitoring Report  
James River Corporation  
San Leandro, California**

Dear Ms. Logan:

This report presents the results of the third quarter of 1994 groundwater monitoring for the James River Corporation facility at 2101 Williams Street, San Leandro, California (Plate 1). This document was prepared for the sole use of the James River Corporation and the Alameda County Department of Environmental Health (ACDEH), the only intended beneficiaries of our work. No other party may rely on the information contained in this report without prior written consent of HLA.

**THIRD QUARTER GROUNDWATER MONITORING**

**Field Investigation**

On September 9, 1994, groundwater samples were collected from 8 wells for chemical analysis. Monitoring Wells W-3, W-5, W-6, W-7, W-8, W-9, W-10, and B-1 were sampled. All sampling equipment was steam cleaned before sampling activities began. The equipment was then rinsed with deionized water and placed in clean containers to minimize the possibility of cross-contamination.

Before the eight wells were purged and sampled, water-level measurements were obtained using a steel survey tape graduated in hundredths of a foot. Water-level measurements were also obtained for two wells (W-1 and W-4) that were not scheduled to be sampled. The measurements were repeated twice, or until consecutive measurements differed by less than 0.01 foot. After each water level was recorded, an observation sample was collected from the well and its visual quality was evaluated.

Each well was purged of at least three well volumes of water using a dedicated purge hose for each well and a clean centrifugal pump. Field parameters consisting of temperature, specific conductance, pH, and turbidity were monitored during purging and recorded on HLA groundwater sampling forms. Samples were collected after the readings had stabilized (Table 1). Copies of HLA's groundwater sampling forms are attached.

October 19, 1994

26560 1

Ms. Madhulla Logan

Alameda County Health Agency

Page 2

After purging, the groundwater sample was collected from each well using a clean stainless steel bailer. To minimize the potential for cross-contamination, a new dropline and a different bailer were used for each well. Samples collected for volatile organic analysis (VOA) were decanted into three 40-milliliter VOA bottles. In addition, two 1-liter amber glass bottles of groundwater were collected from Wells W-7 and W-8 for analysis of total petroleum hydrocarbons (TPH) as motor oil. Samples were assigned sequential numbers unrelated to the well of origin (to maintain sample anonymity during laboratory analysis), stored on ice, and delivered with a chain of custody record to Anametrix Laboratories (Anametrix), San Jose, California.

One VOA trip blank was submitted to the laboratory as a quality assurance (QA) check. The purpose of the trip blank was to identify the presence of artifact laboratory chemicals in the sample bottles. This sample was entered on the chain of custody form and delivered to the laboratory with the cooler containing the groundwater samples. A copy of the chain of custody record is attached.

#### **Groundwater Gradient and Flow Direction**

Potentiometric surface elevations from past water-level surveys and the September 1994 water-level survey are presented in Table 2. The direction of groundwater flow is toward the west at a gradient ranging between 0.0018 to 0.005 ft/ft (Plate 2). Groundwater flow direction and gradient data are consistent with data collected from previous monitoring periods.

#### **Chemical Analyses**

Samples collected on September 9, 1994, were submitted to Anametrix, which is state certified to perform EPA Test Methods 8240 and 8015. Plate 3 graphically presents the analytes detected in each well. Table 3 presents November 1993 through September 1994 analytical data. Chemical concentrations reported in September 1994 were in most cases similar or, in some cases, lower than the concentrations detected in June 1994. One exception to the concentrations being lower is for the compound cis-1,2 DCE which was reported in greater concentrations in Wells W-6, W-7, and W-9. The compounds trichloroethene (TCE) and tetrachloroethene (PCE) were detected for the first time during this quarterly monitoring period in Well W-3. This well was reported to contain TCE at a concentration of 14 micrograms per liter ( $\mu\text{g/l}$ ) and PCE at a concentration of 19  $\mu\text{g/l}$ .

During the September 9, 1994 sampling event, HLA collected groundwater from Wells W-7 and W-8 for analysis of TPH as motor oil (TPHmo) and diesel (TPHd). This analysis was first performed during the June 1994 quarterly monitoring event to investigate the extent of a hydrocarbon release from the abandoned cardboard bailer vault located inside the Flexible Packaging Plant. Peaks on the chromatograph identifying both diesel and motor oil were reported by the laboratory. During the September sampling event, the sample from Well W-7 was reported to contain TPHd at 71 parts per billion (ppb) and TPHmo at 630 ppb. The sample from Well W-8 was reported to contain TPHd and TPHmo at 170 ppb and 870 ppb, respectively. A copy of the laboratory report is attached for all wells sampled.

October 19, 1994  
26560 1  
Ms. Madhulla Logan  
Alameda County Health Agency  
Page 3

#### CONCLUSIONS AND RECOMMENDATIONS

Results of quarterly groundwater sampling and analysis performed during September 1994, indicate that chlorinated hydrocarbons continue to be present in the shallow groundwater beneath the James River facility in San Leandro. As stated in HLA's letter report to James River dated February 11, 1994, it is evident that the chlorinated hydrocarbons detected in the shallow groundwater at the James River San Leandro facility originated from an upgradient offsite source, possibly 1964 Williams Street. James River is committed to remediating soil and groundwater problems resulting from their activities; however, they should not be required to remediate groundwater containing chlorinated hydrocarbons that have migrated onto their facility from an offsite source.

The next groundwater monitoring event is scheduled to take place in December 1994. If you have any questions regarding this report, please contact either of the undersigned at (415) 883-0112.

Very truly yours,

#### HARDING LAWSON ASSOCIATES



Richard J. Hutton  
Senior Hydrologist



R. Bruce Scheibach, R.G. 5062  
Principal Hydrogeologist

cc: Mr. Mel Lawyer, James River Corporation

Attachments: Table 1: Field Parameter Measurements of Water Purged from Wells  
Before Sampling  
Table 2: Water-Level Measurements  
Table 3: Analytical Results for Groundwater Samples  
Plate 1: Area Map  
Plate 2: Groundwater Level and Contour Map  
Plate 3: Groundwater Quality Analytical Results, September 9, 1994  
Groundwater Sampling Forms  
Anametrix Analytical Data  
Chain of Custody Form

**Table 1. Field Parameter Measurements of Water Purged from Wells Before Sampling**

James River Corporation  
San Leandro, California  
September 9, 1994

Well No.	Gallons Purged	pH	Specific Conductance* ( $\mu$ mhos/cm)	Temperature ( $^{\circ}$ C)	Turbidity (NTU)
B-1	0	6.5	660	20.0	28
	25	6.7	672	19.0	24
	50	6.7	672	19.0	24
	75	6.7	672	19.0	24
W-3	0	6.1	1080	21.0	40
	20	6.2	880	20.0	35
	40	6.4	825	20.0	33
	55	6.4	825	20.0	31
W-5	0	6.6	689	22.0	>100
	5	6.6	650	23.0	>100
	10	6.7	650	23.0	>100
	15	6.7	650	23.0	>100
W-6	0	6.2	702	23.0	>100
	5	6.5	728	23.0	>100
	10	6.6	728	23.0	>100
	15	6.6	676	23.0	69
W-7	0	6.5	770	20.0	70
	15	6.5	743	20.0	39
	30	6.5	743	20.0	32
	50	6.5	743	20.0	30
W-8	0	6.3	616	19.0	83
	15	6.4	616	19.0	50
	30	6.4	616	19.0	39
	45	6.4	616	19.0	34

\* at 25 $^{\circ}$  C  
 $\mu$ mhos/cm Micromhos per centimeter  
 $^{\circ}$  C Degrees Celsius

**Table 1. Field Parameter Measurements of Water Purged from Wells Before Sampling**

James River Corporation  
 San Leandro, California  
 September 9, 1994  
 (Continued)

Well No.	Gallons Purged	pH	Specific Conductance* ( $\mu$ mhos/cm)	Temperature (° C)	Turbidity (NTU)
W-9	0	6.5	798	20.0	51
	15	6.5	798	20.0	33
	30	6.5	798	20.0	30
	40	6.5	798	20.0	27
W-10	0	6.8	714	24.0	28
	5	5.9	1040	23.0	31
	10	5.9	1040	23.0	39
	15	5.8	1020	24.0	42

\* at 25° C  
 $\mu$ mhos/cm Micromhos per centimeter  
 ° C Degrees Celsius

**Table 2. Water-Level Measurements**

James River Corporation  
San Leandro, California

Well Number	Date	Top of Well Casing Elevation (feet above MSL)	Depth to Water Below Top of Casing (feet)	Water Table Elevation (feet above MSL)
W-1	9-6-90	20.67	13.15	7.52
	12-27-90	20.67	12.67	8.00
	8-27-91	20.67	12.98	7.69
	11-19-91	20.67	13.03	7.64
	2-13-92	20.67	10.54	10.13
	5-22-92	20.67	11.94	8.73
	2-19-93	20.67	8.90	11.77
	11-22-93	20.67	12.31	8.36
	3-1-94	20.67	10.72	9.95
	6-3-94	20.67	11.62	9.05
9-9-94	20.67	12.27	8.40	
W-3	9-6-90	20.80	13.37	7.43
	12-27-90	20.80	12.89	7.91
	8-27-91	20.80	13.00	7.80
	11-19-91	20.80	13.25	7.55
	2-13-92	20.80	10.84	9.96
	5-22-92	20.80	12.22	8.58
	2-19-93	20.80	9.30	11.50
	11-22-93	20.80	12.47	8.33
	3-1-94	20.80	10.97	9.83
	6-3-94	20.80	11.82	8.98
9-9-94	20.80	12.48	8.32	
W-4	9-6-90	21.00	13.50	7.50
	12-27-90	21.00	13.07	7.93
	8-27-91	21.00	13.34	7.66
	11-19-91	21.00	13.35	7.65
	2-13-92	21.00	10.92	10.08
	5-22-92	21.00	12.33	8.67
	2-19-93	21.00	9.53	11.47
	11-22-93	21.00	12.64	8.36
	3-1-94	21.00	11.08	9.92
	6-3-94	21.00	11.98	9.02
9-9-94	21.00	12.63	8.37	

**Table 2. Water-Level Measurements**

James River Corporation  
San Leandro, California  
(Continued)

Well Number	Date	Top of Well Casing Elevation (feet above MSL)	Depth to Water Below Top of Casing (feet)	Water Table Elevation (feet above MSL)
W-5	9-6-90	21.64	14.22	7.42
	12-27-90	21.64	13.62	8.02
	8-27-91	21.64	14.03	7.61
	11-19-91	21.64	14.04	7.60
	2-13-92	21.64	12.68	8.96
	5-22-92	21.64	12.98	8.66
	2-19-93	21.64	9.92	11.72
	11-22-93	21.64	13.30	8.34
	3-1-94	21.64	11.75	9.89
	6-3-94	21.64	12.64	9.00
9-9-94	21.64	13.29	8.35	
W-6	9-6-90	21.05	13.53	7.52
	12-27-90	21.05	13.04	8.01
	8-27-91	21.05	13.34	7.71
	11-19-91	21.05	13.37	7.68
	2-13-92	21.05	10.88	10.17
	5-22-92	21.05	12.30	8.75
	2-19-93	21.05	9.26	11.79
	11-22-93	21.05	12.64	8.41
	3-1-94	21.05	11.14	9.91
	6-3-94	21.05	11.97	9.08
9-9-94	21.05	12.62	8.43	
W-7	9-6-90	20.41	13.47	6.94
	12-27-90	20.41	13.08	7.33
	8-27-91	20.41	13.32	7.09
	11-19-91	20.41	13.34	7.07
	2-13-92	20.41	11.28	9.13
	5-22-92	20.41	12.36	8.05
	2-19-93	20.41	9.98	10.43
	11-22-93	20.41	12.62	7.79
	3-1-94	20.41	11.20	9.21
	6-3-94	20.41	12.02	8.39
9-9-94	20.41	12.63	7.78	

**Table 2. Water-Level Measurements**

James River Corporation  
San Leandro, California  
(Continued)

Well Number	Date	Top of Well Casing Elevation (feet above MSL)	Depth to Water Below Top of Casing (feet)	Water Table Elevation (feet above MSL)
W-8	9-6-90	20.50	12.98	7.52
	12-27-90	20.50	12.58	7.92
	8-27-91	20.50	12.78	7.72
	11-19-91	20.50	12.81	7.69
	2-13-92	20.50	10.60	9.90
	5-22-92	20.50	11.80	8.70
	2-19-93	20.50	9.12	11.38
	11-22-93	20.50	12.07	8.43
	3-1-94	20.50	10.63	9.87
	6-3-94	20.50	11.48	9.02
9-9-94	20.50	12.08	8.42	
W-9	9-6-90	20.16	13.00	7.16
	12-27-90	20.16	12.56	7.60
	8-27-91	20.16	12.84	7.32
	11-19-91	20.16	12.84	7.32
	2-13-92	20.16	10.78	9.38
	5-22-92	20.16	11.90	8.26
	2-19-93	20.16	9.38	10.78
	11-22-93	20.16	12.11	8.05
	3-1-94	20.16	10.71	9.45
	6-3-94	20.16	11.52	8.64
9-9-94	20.16	12.00	8.16	
W-10	9-6-90	20.22	----	----
	12-27-90	20.22	----	----
	8-27-91	20.22	----	----
	11-19-91	20.22	13.58	6.64
	2-13-92	20.22	11.06	9.16
	5-22-92	20.22	12.58	7.64
	2-19-93	20.22	9.60	10.62
	11-22-93	20.22	12.87	7.35
	3-1-94	20.22	11.30	8.92
	6-3-94	20.22	12.16	8.06
9-9-94	20.22	12.85	7.37	



**Table 2. Water-Level Measurements**

James River Corporation  
 San Leandro, California  
 (Continued)

Well Number	Date	Top of Well Casing Elevation (feet above MSL)	Depth to Water Below Top of Casing (feet)	Water Table Elevation (feet above MSL)
B-1	9-6-90	20.59	13.12	7.47
	12-27-90	20.59	12.68	7.91
	8-27-91	20.59	12.95	7.64
	11-19-91	20.59	12.95	7.64
	2-13-92	20.59	10.72	9.87
	5-22-92	20.59	11.91	8.68
	2-19-93	20.59	9.04	11.55
	11-22-93	20.59	12.22	8.37
	3-1-94	20.59	10.73	9.86
	6-3-94	20.59	11.60	8.99
	9-9-94	20.59	12.26	8.33

Data recorded after 11-22-93 were provided by Harding Lawson Associates, Novato, CA. Data recorded on all dates prior to 11-22-93 shown above were provided by Brown & Caldwell Consultants, Emeryville, CA.

**Table 3: Analytical Results for Groundwater Samples**

James River Corporation  
 San Leandro, California  
 (Concentrations in ug/l)

**Hydrocarbons: Light and Heavy Fractions**

Well Name	Sample Date	Benzene	Ethylbenzene	Toluene	Xylenes	TPH diesel	TPH motor oil
W-3	Nov-93	<5	<5	<5	<5	NA	NA
	Mar-94	<5	<5	<5	<5	NA	NA
	Jun-94	<5	<5	<5	<5	NA	NA
	Sep-94	<5	<5	<5	<5	NA	NA
W-5	Nov-93	<50	<50	<50	<50	NA	NA
	Mar-94	<50	<50	<50	<50	NA	NA
	Jun-94	<50	<50	<50	<50	NA	NA
	Sep-94	<50	<50	<50	<50	NA	NA
W-6	Nov-93	<10	<10	<10	<10	NA	NA
	Mar-94	<5	<5	<5	<5	NA	NA
	Jun-94	<5	<5	<5	<5	NA	NA
	Sep-94	<5	<5	<5	<5	NA	NA
W-7	Nov-93	<10	<10	<10	<10	NA	NA
	Mar-94	<5	<5	<5	<5	NA	NA
	Jun-94	<5	<5	<5	<5	130	130
	Sep-94	<5	<5	<5	<5	71	630
W-8	Nov-93	<5	<5	<5	<5	NA	NA
	Mar-94	<5	<5	<5	<5	NA	NA
	Jun-94	<5	<5	<5	<5	200	110
	Sep-94	<5	<5	<5	<5	170	870
W-9	Nov-93	<5	<5	<5	<5	NA	NA
	Mar-94	<5	<5	<5	<5	NA	NA
	Jun-94	<5	<5	<5	<5	NA	NA
	Sep-94	<5	<5	<5	<5	NA	NA
W-10	Nov-93	<5,000	<5,000	<5,000	<5,000	NA	NA
	Mar-94	<1,300	<1,300	<1,300	<1,300	NA	NA
	Jun-94	<2,000	<2,000	<2,000	<2,000	NA	NA
	Sep-94	<2,500	<2,500	<2,500	<2,500	NA	NA
B-1	Nov-93	<5	<5	<5	<5	NA	NA
	Mar-94	<5	<5	<5	<5	NA	NA
	Jun-94	<5	<5	<5	<5	NA	NA
	Sep-94	<5	<5	<5	<5	NA	NA

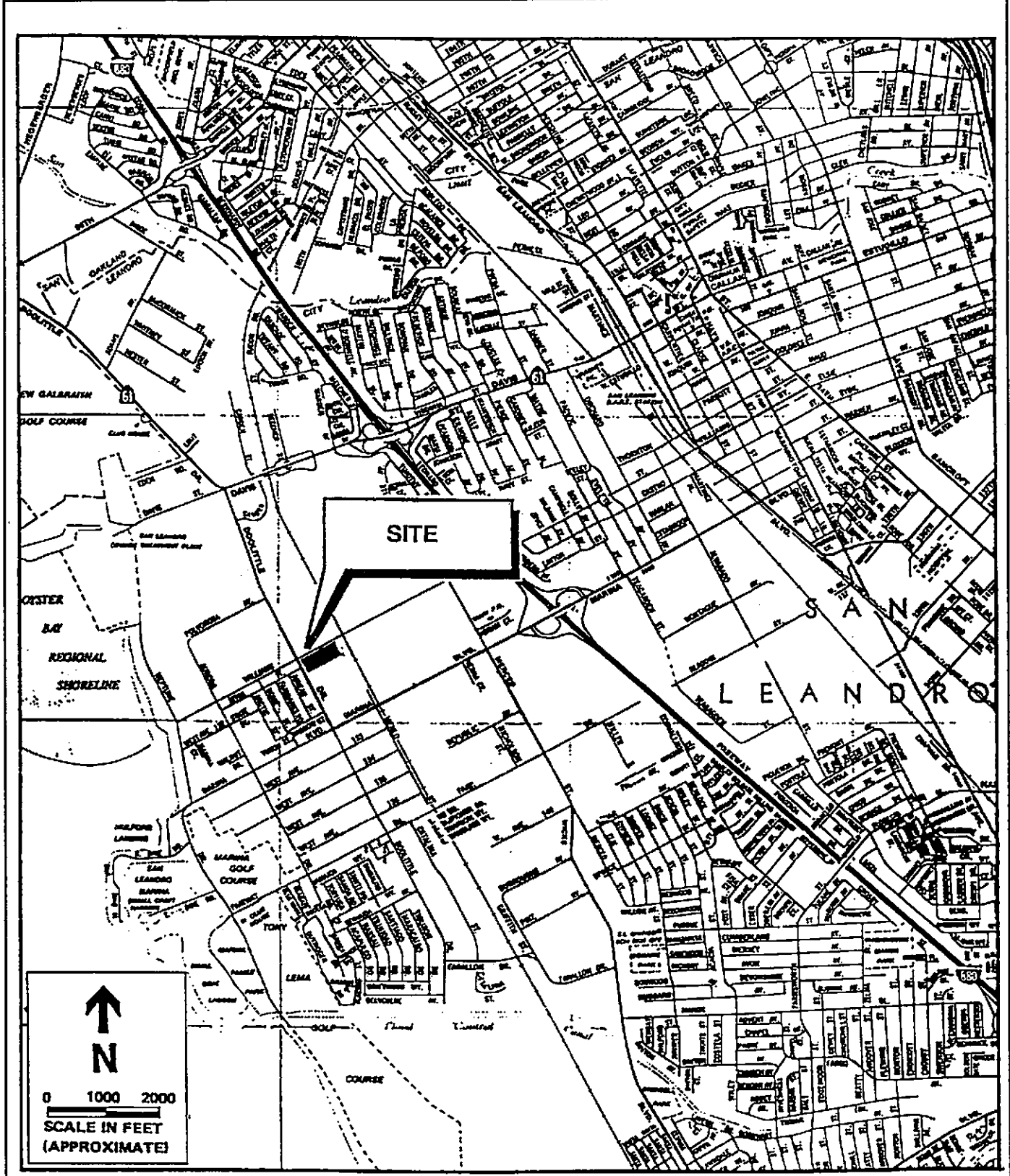
NA = Not Applicable

**Table 3: Analytical Results for Groundwater Samples**

James River Corporation  
 San Leandro, California  
 (Concentrations in ug/l)

**Volatile Organics**

Well Name	Sample Date	TCE	Vinyl Chloride	PCE	TCA	Cis-1,2 DCE	1,1 DCA	Acetone	MIBK	1,1-DCE	Carbon Disulfide
W-3	Nov-93	<5	26	<5	<5	14	<5	<20	<10	<5	<5
	Mar-94	<5	<10	<5	<5	25	<5	62	<10	<5	<5
	Jun-94	<5	<10	<5	<5	8	<5	<20	210	<5	<5
	Sep-94	14	<10	19	<5	8	<5	<20	<10	<5	<5
W-5	Nov-93	500	160	2,100	<50	1,000	<50	<200	<100	<50	<50
	Mar-94	460	<100	2,600	<50	1,200	<50	<200	<100	<50	<50
	Jun-94	530	160	3,400	<50	1,700	<50	<200	<100	<50	<50
	Sep-94	530	140	2,500	<50	1,300	<50	<200	<100	<50	<50
W-6	Nov-93	170	<10	280	<10	<10	<10	23	<20	<10	<10
	Mar-94	160	<10	220	<5	56	<5	<20	<10	<5	<5
	Jun-94	310	<10	450	5	100	<5	<20	<10	<5	<5
	Sep-94	230	<10	310	<5	380	<5	<20	<10	<5	<5
W-7	Nov-93	160	<20	190	<10	15	<10	<40	<20	<10	<10
	Mar-94	230	<10	220	<5	21	<5	<20	<10	<5	<5
	Jun-94	240	<10	240	<5	26	<5	<20	<10	<5	<5
	Sep-94	120	<10	86	<5	230	<5	<20	<10	<5	<5
W-8	Nov-93	3	130	<5	<5	150	3	<20	<10	<5	<5
	Mar-94	<5	180	<5	<5	250	<5	<20	<10	<5	<5
	Jun-94	<5	280	<5	<5	290	<5	<20	<10	<5	<5
	Sep-94	<5	43	<5	<5	59	<5	<20	<10	<5	<5
W-9	Nov-93	92	<5	11	5	<5	3	<20	<10	<5	<5
	Mar-94	110	<10	13	<5	<5	<5	<20	<10	<5	<5
	Jun-94	110	<10	12	5	<5	<5	<20	<10	6	<5
	Sep-94	80	<10	7	<5	30	<5	<20	<10	<5	<5
W-10	Nov-93	<5,000	<10,000	<5,000	<5,000	<5,000	<5,000	210,000	6,000	<5,000	<5,000
	Mar-94	<1,300	<2,500	<1,300	<1,300	<1,300	<1,300	99,000	3,600	<1,300	<1,300
	Jun-94	<2,000	<4,000	<2,000	<4,000	<2,000	<2,000	150,000	4,800	<2,000	<2,000
	Sep-94	<2,500	<5,000	<2,500	<2,500	<2,500	<2,500	74,000	<5,000	<2,500	<2,500
B-1	Nov-93	<5	<5	3	<5	<5	<5	<20	<10	<5	<5
	Mar-94	<5	<10	<5	<5	<5	<5	<20	<10	<5	<5
	Jun-94	<5	<10	<5	<5	<5	<5	27	<10	<5	13
	Sep-94	<5	<10	<5	<5	<5	<5	66	<10	<5	<5



SOURCE: "Reproduced with permission granted by THOMAS BROS. MAPS. This map is copyrighted by THOMAS BROS. MAPS. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission."



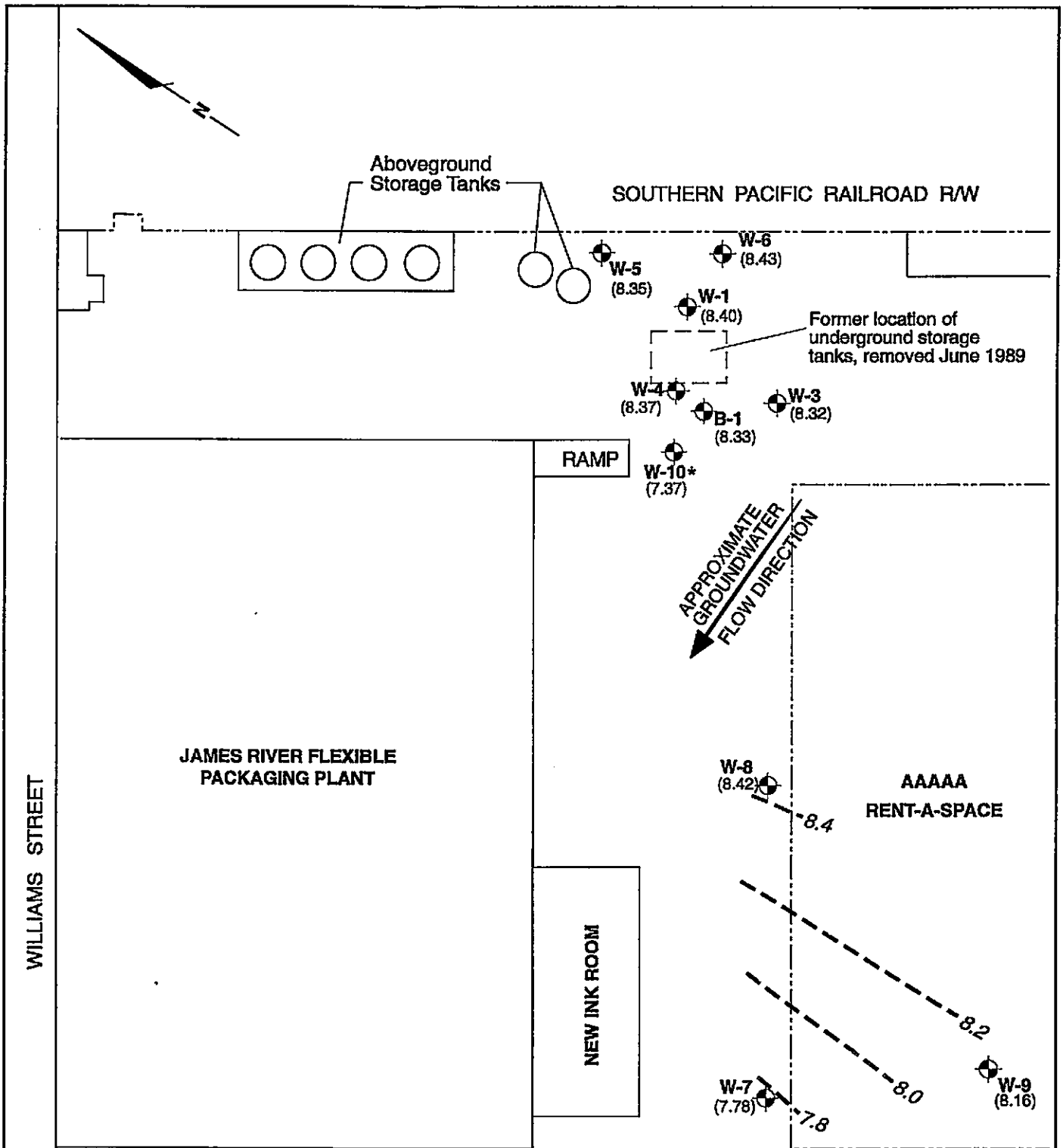
**Harding Lawson Associates**  
Engineering and  
Environmental Services

**Area Map**  
James River Corporation  
2101 Williams Street  
San Leandro, California

PLATE

**1**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	26560 1	<i>[Signature]</i>	7/94	



**EXPLANATION**

W-7 (7.78) Groundwater Elevation (in feet MSL) \* Data Not Used in Contouring Measured September 9, 1994

----- Property Line

8.0 - - - - Groundwater Potentiometric Contour (in feet MSL)

0 30 60

APPROXIMATE SCALE IN FEET

100594AG



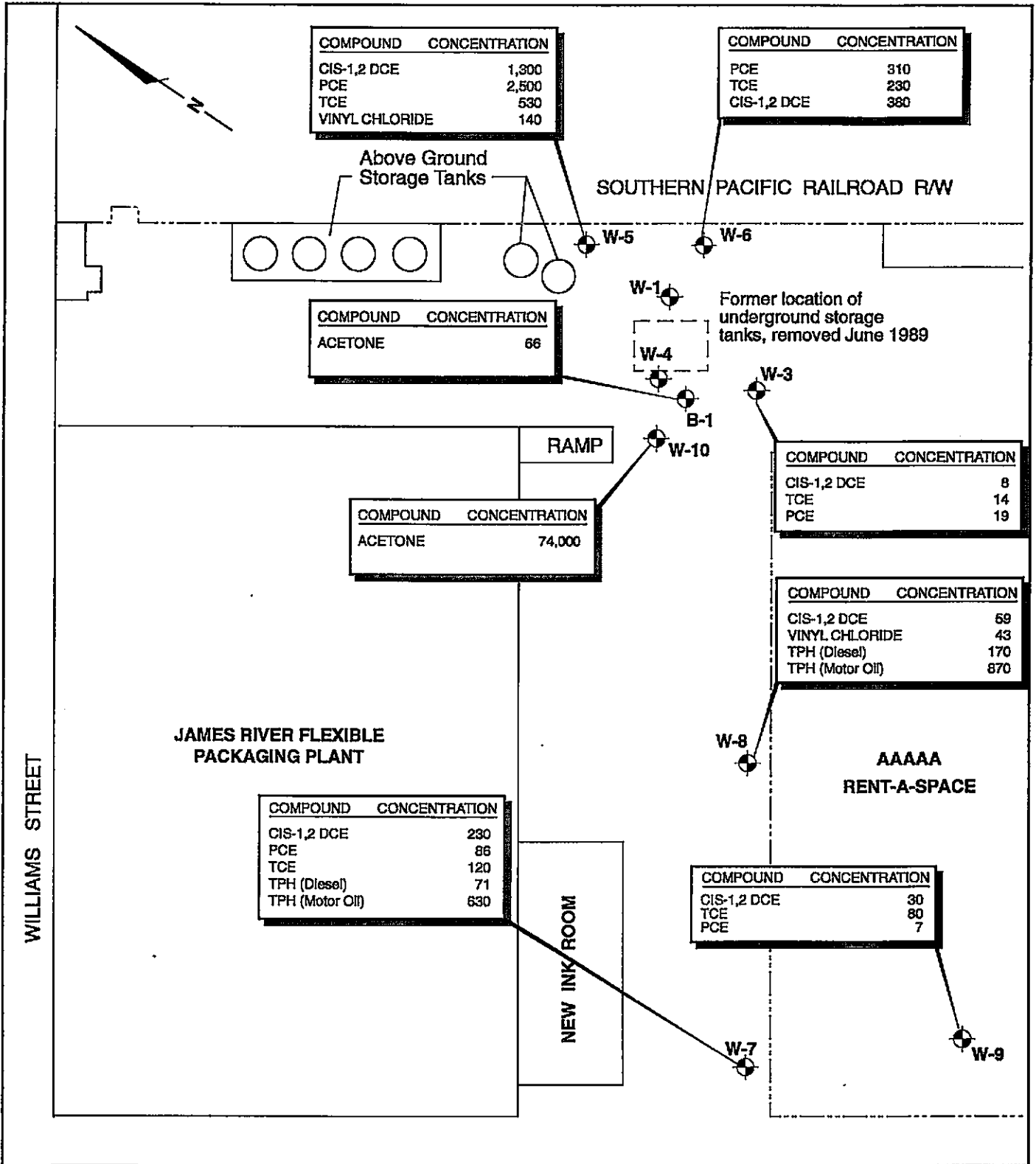
**Harding Lawson Associates**  
 Engineering and Environmental Services

**Groundwater Level and Contour Map**  
 James River Corporation  
 2101 Williams Street  
 San Leandro, California

PLATE

**2**

DRAWN DJPC	JOB NUMBER 26560 1	APPROVED <i>BCD</i>	DATE 2/94	REVISED DATE 10 /94
---------------	-----------------------	------------------------	--------------	------------------------



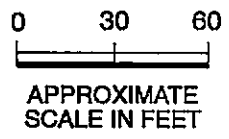
WILLIAMS STREET

JAMES RIVER FLEXIBLE PACKAGING PLANT

RAMP

NEW INK ROOM

AAAAA RENT-A-SPACE



**EXPLANATION**  
 W-7 GROUNDWATER MONITORING WELL  
 - - - - - PROPERTY LINE

ALL CONCENTRATIONS IN ug/L

100794LZ



**Harding Lawson Associates**  
 Engineering and Environmental Services

**Groundwater Quality Analytical Results**  
 September 9, 1994  
 James River Corporation  
 2101 Williams Street  
 San Leandro, California

PLATE

**3**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	26560 1	<i>BD</i>	4/94	10/94

**ANAMETRIX ANALYTICAL DATA**



# Inchcape Testing Services

## Anamatrix Laboratories

1961 Concourse Drive  
 Suite E  
 San Jose, CA 95131  
 Tel: 408-432-8192  
 Fax: 408-432-8198

MR. RICK J. HUTTON  
 HARDING LAWSON ASSOCIATES - NOVATO  
 105 DIGITAL DRIVE  
 NOVATO, CA 94949

Workorder # : 9409084  
 Date Received : 09/09/94  
 Project ID : 26560.1  
 Purchase Order: N/A

The following samples were received at Anamatrix for analysis :

ANAMATRIX ID	CLIENT SAMPLE ID
9409084- 1	9436JR01
9409084- 2	9436JR02
9409084- 3	9436JR03
9409084- 4	9436JR04
9409084- 5	9436JR05
9409084- 6	9436JR06
9409084- 7	9436JR07
9409084- 8	9436JR08
9409084- 9	9436JR09

This report is organized in sections according to the specific Anamatrix laboratory group which performed the analysis(es) and generated the data.

The results contained within this report relate to only the sample(s) tested. Additionally, these data should be considered in their entirety and Anamatrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anamatrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234.

If you have any further questions or comments on this report, please call us as soon as possible. Thank you for using Anamatrix.

*Doug Robbins for*  
 Doug Robbins  
 Laboratory Director

9-22-94  
 Date

This report consists of 28 pages.





## ANAMATRIX REPORT DESCRIPTION GCMS

### Organic Analysis Data Sheets (OADS)

OADS forms contain tabulated results for target compounds. The OADS are grouped by method and, within each method, organized sequentially in order of increasing Anamatrix ID number.

### Tentatively Identified Compounds (TICs)

TIC forms contain tabulated results for non-target compounds detected in GC/MS analyses. TICs must be requested at the time samples are submitted at Anamatrix. TIC forms immediately follow the OADS form for each sample. If TICs are requested but not found, then TIC forms will not be included with the report.

### Surrogate Recovery Summary (SRS)

SRS forms contain quality assurance data. An SRS form will be printed for each method, if the method requires surrogate compounds. They will list surrogate percent recoveries for all samples and any method blanks. Any surrogate recovery outside the established limits will be flagged with an "e", and the total number of surrogates outside the limits will be listed in the column labelled "Total Out".

### Matrix Spike Recovery Form (MSR)

MSR forms contain quality assurance data. They summarize percent recovery and relative percent difference information for matrix spikes and matrix spike duplicates. This information is a statement of both accuracy and precision. Any percent recovery or relative percent difference outside established limits will be flagged with an "e", and the total number outside the limits will be listed at the bottom of the page. Not all reports will contain an MSR form.

### Qualifiers

Anamatrix uses several data qualifiers (Q) in its report forms. These qualifiers give additional information on the compounds reported. They should help a data reviewer to verify the integrity of the analytical results. The following is a list of qualifiers and their meanings:

- U - Indicates that the compound was analyzed for, but was not detected at or above the specified reporting limit.
- B - Indicates that the compound was detected in the associated method blank.
- J - Indicates that the compound was detected at an amount below the specified reporting limit. Consequently, the amount should be considered an approximate value. Tentatively identified compounds will always have a "J" qualifier because they are not included in the instrument calibration.
- E - Indicates that the amount reported exceeded the linear range of the instrument calibration.
- D - Indicates that the compound was detected in an analysis performed at a secondary dilution.
- A - Indicates that the tentatively identified compound is a suspected aldo1 condensation product. This is common in EPA Method 8270 soil analyses.

Absence of a qualifier indicates that the compound was detected at a concentration at or above the specified reporting limit.

### REPORTING CONVENTIONS

- Due to a size limitation in our data processing step, only the first eight (8) characters of your project ID and sample ID will be printed on the report forms. However, the report cover letter and report summary pages display up to twenty (20) characters of your project and sample IDs.
- Amounts reported are gross values, i.e., not corrected for method blank contamination.

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. RICK J. HUTTON  
HARDING LAWSON ASSOCIATES - NOVATO  
105 DIGITAL DRIVE  
NOVATO, CA 94949

Workorder # : 9409084  
Date Received : 09/09/94  
Project ID : 26560.1  
Purchase Order: N/A  
Department : GCMS  
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9409084- 1	9436JR01	WATER	09/09/94	8240
9409084- 2	9436JR02	WATER	09/09/94	8240
9409084- 3	9436JR03	WATER	09/09/94	8240
9409084- 4	9436JR04	WATER	09/09/94	8240
9409084- 5	9436JR05	WATER	09/09/94	8240
9409084- 6	9436JR06	WATER	09/09/94	8240
9409084- 7	9436JR07	WATER	09/09/94	8240
9409084- 8	9436JR08	WATER	09/09/94	8240
9409084- 9	9436JR09	WATER	09/09/94	8240

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. RICK J. HUTTON  
HARDING LAWSON ASSOCIATES - NOVATO  
105 DIGITAL DRIVE  
NOVATO, CA 94949

Workorder # : 9409084  
Date Received : 09/09/94  
Project ID : 26560.1  
Purchase Order: N/A  
Department : GCMS  
Sub-Department: GCMS

QA/QC SUMMARY :

- No QA/QC problems for EPA Method 8240 analysis.

David L. Schermer 9/21/94  
Department Supervisor Date

Denise Powell 9-21-94  
Chemist Date

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
Sample ID : 9436JR01  
Matrix : WATER  
Date Sampled : 9/ 9/94  
Date Analyzed : 9/14/94  
Instrument ID : MSD1

W-9

Anamatrix ID : 9409084-01  
Analyst : DP  
Supervisor : DCJ  
Dilution Factor : 1.0  
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	30.	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	80.	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	7.	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
 Sample ID : 9436JR02  
 Matrix : WATER  
 Date Sampled : 9/ 9/94  
 Date Analyzed : 9/14/94  
 Instrument ID : MSD1

W-7

Anamatrix ID : 9409084-02  
 Analyst : DP  
 Supervisor : DLS  
 Dilution Factor : 1.0  
 Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	230.	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	120.	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	86.	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
 Sample ID : 9436JR03  
 Matrix : WATER  
 Date Sampled : 9/ 9/94  
 Date Analyzed : 9/14/94  
 Instrument ID : MSD1

W-8

Anamatrix ID : 9409084-03  
 Analyst : DP  
 Supervisor : DC  
 Dilution Factor : 1.0  
 Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	43.	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	59.	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
 Sample ID : 9436JR04  
 Matrix : WATER  
 Date Sampled : 9/ 9/94  
 Date Analyzed : 9/14/94  
 Instrument ID : MSD1

B-1

Anamatrix ID : 9409084-04  
 Analyst : DP  
 Supervisor : DCJ  
 Dilution Factor : 1.0  
 Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	66.	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
Sample ID : 9436JR05  
Matrix : WATER  
Date Sampled : 9/ 9/94  
Date Analyzed : 9/16/94  
Instrument ID : MSD1

W-10

Anamatrix ID : 9409084-05  
Analyst : DP  
Supervisor : DC

Dilution Factor : 500.0  
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	5000.	ND	U
75-01-4	Vinyl chloride	5000.	ND	U
74-83-9	Bromomethane	5000.	ND	U
75-00-3	Chloroethane	5000.	ND	U
75-69-4	Trichlorofluoromethane	2500.	ND	U
75-35-4	1,1-Dichloroethene	2500.	ND	U
76-13-1	Trichlorotrifluoroethane	2500.	ND	U
67-64-1	Acetone	10000.	74000.	U
75-15-0	Carbon disulfide	2500.	ND	U
75-09-2	Methylene chloride	2500.	ND	U
156-60-5	Trans-1,2-dichloroethene	2500.	ND	U
75-34-3	1,1-Dichloroethane	2500.	ND	U
156-59-2	Cis-1,2-dichloroethene	2500.	ND	U
78-93-3	2-Butanone	10000.	ND	U
67-66-3	Chloroform	2500.	ND	U
71-55-6	1,1,1-Trichloroethane	2500.	ND	U
56-23-5	Carbon tetrachloride	2500.	ND	U
108-05-4	Vinyl acetate	5000.	ND	U
71-43-2	Benzene	2500.	ND	U
107-06-2	1,2-Dichloroethane	2500.	ND	U
79-01-6	Trichloroethene	2500.	ND	U
78-87-5	1,2-Dichloropropane	2500.	ND	U
75-27-4	Bromodichloromethane	2500.	ND	U
10061-01-5	Cis-1,3-dichloropropene	2500.	ND	U
108-10-1	4-Methyl-2-pentanone	5000.	ND	U
108-88-3	Toluene	2500.	ND	U
10061-02-6	Trans-1,3-dichloropropene	2500.	ND	U
79-00-5	1,1,2-Trichloroethane	2500.	ND	U
127-18-4	Tetrachloroethene	2500.	ND	U
591-78-6	2-Hexanone	5000.	ND	U
124-48-1	Dibromochloromethane	2500.	ND	U
108-90-7	Chlorobenzene	2500.	ND	U
100-41-4	Ethylbenzene	2500.	ND	U
1330-20-7	Xylene (Total)	2500.	ND	U
100-42-5	Styrene	2500.	ND	U
75-25-2	Bromoform	2500.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	2500.	ND	U
541-73-1	1,3-Dichlorobenzene	2500.	ND	U
106-46-7	1,4-Dichlorobenzene	2500.	ND	U
95-50-1	1,2-Dichlorobenzene	2500.	ND	U



ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
 Sample ID : 9436JR06  
 Matrix : WATER  
 Date Sampled : 9/ 9/94  
 Date Analyzed : 9/20/94  
 Instrument ID : MSD1

W-3

Anamatrix ID : 9409084-06  
 Analyst : DP  
 Supervisor : DCJ  
 Dilution Factor : 1.0  
 Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	8.	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	14.	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	19.	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
Sample ID : 9436JR08  
Matrix : WATER  
Date Sampled : 9/ 9/94  
Date Analyzed : 9/16/94  
Instrument ID : MSD1

W-6

Anamatrix ID : 9409084-08  
Analyst : DP  
Supervisor : DC  
Dilution Factor : 1.0  
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	380.	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	230.	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	310.	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
 Sample ID : 9436JR09  
 Matrix : WATER  
 Date Sampled : 9/ 9/94  
 Date Analyzed : 9/16/94  
 Instrument ID : MSD1

W-5

Anamatrix ID : 9409084-09  
 Analyst : DJ  
 Supervisor : DC  
 Dilution Factor : 10.0  
 Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	100.	ND	U
75-01-4	Vinyl chloride	100.	140.	U
74-83-9	Bromomethane	100.	ND	U
75-00-3	Chloroethane	100.	ND	U
75-69-4	Trichlorofluoromethane	50.	ND	U
75-35-4	1,1-Dichloroethene	50.	ND	U
76-13-1	Trichlorotrifluoroethane	50.	ND	U
67-64-1	Acetone	200.	ND	U
75-15-0	Carbon disulfide	50.	ND	U
75-09-2	Methylene chloride	50.	ND	U
156-60-5	Trans-1,2-dichloroethene	50.	ND	U
75-34-3	1,1-Dichloroethane	50.	ND	U
156-59-2	Cis-1,2-dichloroethene	50.	1300.	U
78-93-3	2-Butanone	200.	ND	U
67-66-3	Chloroform	50.	ND	U
71-55-6	1,1,1-Trichloroethane	50.	ND	U
56-23-5	Carbon tetrachloride	50.	ND	U
108-05-4	Vinyl acetate	100.	ND	U
71-43-2	Benzene	50.	ND	U
107-06-2	1,2-Dichloroethane	50.	ND	U
79-01-6	Trichloroethene	50.	530.	U
78-87-5	1,2-Dichloropropane	50.	ND	U
75-27-4	Bromodichloromethane	50.	ND	U
10061-01-5	Cis-1,3-dichloropropene	50.	ND	U
108-10-1	4-Methyl-2-pentanone	100.	ND	U
108-88-3	Toluene	50.	ND	U
10061-02-6	Trans-1,3-dichloropropene	50.	ND	U
79-00-5	1,1,2-Trichloroethane	50.	ND	U
127-18-4	Tetrachloroethene	50.	2500.	U
591-78-6	2-Hexanone	100.	ND	U
124-48-1	Dibromochloromethane	50.	ND	U
108-90-7	Chlorobenzene	50.	ND	U
100-41-4	Ethylbenzene	50.	ND	U
1330-20-7	Xylene (Total)	50.	ND	U
100-42-5	Styrene	50.	ND	U
75-25-2	Bromoform	50.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	50.	ND	U
541-73-1	1,3-Dichlorobenzene	50.	ND	U
106-46-7	1,4-Dichlorobenzene	50.	ND	U
95-50-1	1,2-Dichlorobenzene	50.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID :  
 Sample ID : VBLK8R  
 Matrix : WATER  
 Date Sampled : 0/ 0/ 0  
 Date Analyzed : 9/14/94  
 Instrument ID : MSD1

Anamatrix ID : BS1402A2  
 Analyst : *[Signature]*  
 Supervisor : *[Signature]*  
 Dilution Factor : 1.0  
 Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID :  
 Sample ID : VBLK9A  
 Matrix : WATER  
 Date Sampled : 0/ 0/ 0  
 Date Analyzed : 9/16/94  
 Instrument ID : MSD1

Anamatrix ID : BS1602A2  
 Analyst : DP  
 Supervisor : OLS  
 Dilution Factor : 1.0  
 Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

ORGANIC ANALYSIS DATA SHEET -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID :  
 Sample ID : VBLK9P  
 Matrix : WATER  
 Date Sampled : 0/ 0/ 0  
 Date Analyzed : 9/20/94  
 Instrument ID : MSD1

Anamatrix ID : BS2002A2  
 Analyst : *df*  
 Supervisor : *DC*

Dilution Factor : 1.0  
 Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	10.	ND	U
75-01-4	Vinyl chloride	10.	ND	U
74-83-9	Bromomethane	10.	ND	U
75-00-3	Chloroethane	10.	ND	U
75-69-4	Trichlorofluoromethane	5.	ND	U
75-35-4	1,1-Dichloroethene	5.	ND	U
76-13-1	Trichlorotrifluoroethane	5.	ND	U
67-64-1	Acetone	20.	ND	U
75-15-0	Carbon disulfide	5.	ND	U
75-09-2	Methylene chloride	5.	ND	U
156-60-5	Trans-1,2-dichloroethene	5.	ND	U
75-34-3	1,1-Dichloroethane	5.	ND	U
156-59-2	Cis-1,2-dichloroethene	5.	ND	U
78-93-3	2-Butanone	20.	ND	U
67-66-3	Chloroform	5.	ND	U
71-55-6	1,1,1-Trichloroethane	5.	ND	U
56-23-5	Carbon tetrachloride	5.	ND	U
108-05-4	Vinyl acetate	10.	ND	U
71-43-2	Benzene	5.	ND	U
107-06-2	1,2-Dichloroethane	5.	ND	U
79-01-6	Trichloroethene	5.	ND	U
78-87-5	1,2-Dichloropropane	5.	ND	U
75-27-4	Bromodichloromethane	5.	ND	U
10061-01-5	Cis-1,3-dichloropropene	5.	ND	U
108-10-1	4-Methyl-2-pentanone	10.	ND	U
108-88-3	Toluene	5.	ND	U
10061-02-6	Trans-1,3-dichloropropene	5.	ND	U
79-00-5	1,1,2-Trichloroethane	5.	ND	U
127-18-4	Tetrachloroethene	5.	ND	U
591-78-6	2-Hexanone	10.	ND	U
124-48-1	Dibromochloromethane	5.	ND	U
108-90-7	Chlorobenzene	5.	ND	U
100-41-4	Ethylbenzene	5.	ND	U
1330-20-7	Xylene (Total)	5.	ND	U
100-42-5	Styrene	5.	ND	U
75-25-2	Bromoform	5.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	5.	ND	U
541-73-1	1,3-Dichlorobenzene	5.	ND	U
106-46-7	1,4-Dichlorobenzene	5.	ND	U
95-50-1	1,2-Dichlorobenzene	5.	ND	U

SURROGATE RECOVERY SUMMARY -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
 Matrix : LIQUID

Anamatrix ID : 9409084  
 Analyst : *df*  
 Supervisor : *DC*

	SAMPLE ID	SU1	SU2	SU3
1	VBLK8R	103	103	100
2	VLCSLH	103	104	100
3	9436JR01	103	104	98
4	9436JR02	103	106	99
5	9436JR04	102	101	98
6	9436JMS	101	102	98
7	9436JMSD	102	104	98
8	9436JR03	101	103	98
9	9436JR07	102	104	99
10	VBLK9A	93	101	98
11	VLCSLL	96	102	98
12	9436JR08	96	102	100
13	9436JR05	95	101	97
14	9436JR09	96	102	99
15	VBLK9P	94	99	99
16	VLCSLP	96	99	100
17	9436JR06	95	99	98
18				
19				
20				
21				
22				
23				
24				
25				
26				
27				
28				
29				
30				

QC LIMITS

SU1 = 1,2-Dichloroethane-d4 (75-113)  
 SU2 = Toluene-d8 (83-110)  
 SU3 = 1,4-Bromofluorobenzene (82-114)

\* Values outside of Anamatrix QC limits

MATRIX SPIKE RECOVERY FORM -- EPA METHOD 8240  
 ANAMETRIX, INC. (408)432-8192

Project ID : 26560.1  
 Sample ID : 9436JR04  
 Matrix : WATER  
 Date Sampled : 9/ 9/94  
 Date Analyzed : 9/14/94  
 Instrument ID : MSD1

Anamatrix ID : 9409084-04  
 Analyst : *bf*  
 Supervisor : *DC*

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	MS CONCENTRATION (ug/L)	MS % REC	%REC LIMITS
1,1-Dichloroethene	50.	0.	46.	92	67-150
Benzene	50.	0.	54.	108	75-134
Trichloroethene	50.	0.	52.	105	69-136
Toluene	50.	0.	49.	98	78-130
Chlorobenzene	50.	0.	52.	104	85-130

COMPOUND	SPIKE ADDED (ug/L)	MSD CONCENTRATION (ug/L)	MSD % REC	% RPD	RPD LIMITS	%REC LIMITS
1,1-Dichloroethene	50.	44.	89	3	25	67-150
Benzene	50.	53.	107	2	25	75-134
Trichloroethene	50.	51.	102	3	25	69-136
Toluene	50.	50.	99	1	25	78-130
Chlorobenzene	50.	52.	103	1	25	85-130

\* Value is outside of Anamatrix QC limits

RPD: 0 out of 5 outside limits  
 Spike Recovery: 0 out of 10 outside limits



LABORATORY CONTROL SPIKE RECOVERY FORM --- EPA METHOD 624/8240  
 ANAMETRIX, INC. (408)432-8192

Project/Case : Anamatrix ID : MS1401A2.D  
 Matrix : WATER Analyst : *[Signature]*  
 Date Sampled : Supervisor : *[Signature]*  
 Date Analyzed : 14 Sep 94 11:29 am SDG/Batch :  
 Instrument ID : MSD1 Sample ID : VLCSLH @ 50ug/L

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	%REC LIMITS
1,1-Dichloroethene	50	0	48	96	72-145
Benzene	50	0	56	113	83-125
Trichloroethene	50	0	55	110	61-140
Toluene	50	0	54	107	82-123
Chlorobenzene	50	0	56	111	82-125

LABORATORY CONTROL SPIKE RECOVERY FORM --- EPA METHOD 624/8240

ANAMETRIX, INC. (408)432-8192

Project/Case : Anamatrix ID : MS1601A2.D  
 Matrix : WATER Analyst : DP  
 Date Sampled : Supervisor : DL  
 Date Analyzed : 16 Sep 94 12:57 pm SDG/Batch :  
 Instrument ID : MSD1 Sample ID : VLCSLL @ 50ug/L

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	%REC LIMITS
1,1-Dichloroethene	50	0	59	118	72-145
Benzene	50	0	63	125	83-125
Trichloroethene	50	0	60	119	61-140
Toluene	50	0	60	120	82-123
Chlorobenzene	50	0	59	118	82-125

LABORATORY CONTROL SPIKE RECOVERY FORM --- EPA METHOD 624/8240  
 ANAMETRIX, INC. (408)432-8192

Project/Case : Anamatrix ID : MS2001A2.D  
 Matrix : WATER Analyst : DP  
 Date Sampled : Supervisor : DL  
 Date Analyzed : 20 Sep 94 1:30 pm SDG/Batch :  
 Instrument ID : MSD1 Sample ID : VLCSLP @ 50ug/L

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	%REC LIMITS
1,1-Dichloroethene	50	0	48	95	72-145
Benzene	50	0	51	102	83-125
Trichloroethene	50	0	49	99	61-140
Toluene	50	0	49	97	82-123
Chlorobenzene	50	0	50	99	82-125

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. RICK J. HUTTON  
HARDING LAWSON ASSOCIATES - NOVATO  
105 DIGITAL DRIVE  
NOVATO, CA 94949

Workorder # : 9409084  
Date Received : 09/09/94  
Project ID : 26560.1  
Purchase Order: N/A  
Department : GC  
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9409084- 2	9436JR02	WATER	09/09/94	TPHd
9409084- 3	9436JR03	WATER	09/09/94	TPHd

REPORT SUMMARY  
ANAMETRIX, INC. (408)432-8192

MR. RICK J. HUTTON  
HARDING LAWSON ASSOCIATES - NOVATO  
105 DIGITAL DRIVE  
NOVATO, CA 94949

Workorder # : 9409084  
Date Received : 09/09/94  
Project ID : 26560.1  
Purchase Order: N/A  
Department : GC  
Sub-Department: TPH

QA/QC SUMMARY :

- The concentrations reported as diesel for samples 9436JR02 and 9436JR03 are due to the presence of a combination of diesel and discrete peaks not indicative of diesel.
- The concentrations reported as motor oil for samples 9436JR02 and 9436JR03 are due to the presence of a combination of motor oil and discrete peaks not indicative of motor oil.

Cheryl Belmer 9/19/94  
Department Supervisor Date

Laura Steer 9/20/94  
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL  
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9409084  
 Matrix : WATER  
 Date Sampled : 09/09/94  
 Date Extracted: 09/13/94

Project Number : 26560.1  
 Date Released : 09/16/94  
 Instrument I.D.: HP19

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9409084-02	9436JR02 W-7	09/14/94	50	71	101%
9409084-03	9436JR03 W-8	09/14/94	50	170	105%
BS1311F9	METHOD BLANK	09/13/94	50	ND	100%

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.  
 The surrogate recovery limits for o-terphenyl are 47-114%.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Lucia Shea 9/20/94  
 Analyst Date

Cheryl Balmer 9/19/94  
 Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL  
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9409084  
Matrix : WATER  
Date Sampled : 09/09/94  
Date Extracted: 09/13/94

Project Number : 26560.1  
Date Released : 09/16/94  
Instrument I.D.: HP19

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9409084-02	9436JR02 W-7	09/14/94	100	630	101%
9409084-03	9436JR03 W-8	09/14/94	100	870	105%
BS1311F9	METHOD BLANK	09/13/94	100	ND	100%

Note : Reporting limit is obtained by multiplying the dilution factor times 100 ug/L.  
The surrogate recovery limits for o-terphenyl are 47-114%.

ND - Not detected at or above the practical quantitation limit for the method.

TPHd - Total Petroleum Hydrocarbons as motor oil is determined by GCFID following sample extraction by EPA Method 3510.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Suecia Stear 9/20/94  
Analyst Date

Cheryl Balmer 9/19/94  
Supervisor Date

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT  
 EPA METHOD 3510 WITH GC/FID  
 ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE  
 Matrix : WATER  
 Date Sampled : N/A  
 Date Extracted: 09/13/94  
 Date Analyzed : 09/13/94

Anamatrix I.D. : MS1311F9  
 Analyst : JS  
 Supervisor : C  
 Date Released : 09/16/94  
 Instrument I.D.: HP19

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	770	62%	820	66%	6%	38-96
SURROGATE			85%		71%		47-114

\* Quality control limits established by Anamatrix, Inc.





**SAMPLE RECEIVING CHECKLIST**

WORKORDER NUMBER: 9409084

CLIENT PROJECT ID: 26560.1

**COOLER**

Shipping slip (airbill, etc.) present?	YES	NO	<input checked="" type="radio"/> N/A
If YES, enter carrier name and airbill #: _____			
Custody Seal on the outside of cooler?	YES	NO	<input checked="" type="radio"/> N/A
Condition: INTACT _____ BROKEN _____			
Temperature of sample (s) within range?	YES	<input checked="" type="radio"/> NO	N/A
List temperature of cooler (s): <u>5°C, 9°C</u>			

**SAMPLES**

Chain of custody seal present for each container?	YES	NO	<input checked="" type="radio"/> N/A
Condition: INTACT _____ BROKEN _____			
Samples arrived within holding time?	<input checked="" type="radio"/> YES	NO	N/A
Samples in proper containers for methods requested?	<input checked="" type="radio"/> YES	NO	
Condition of containers: INTACT <input checked="" type="checkbox"/> BROKEN _____			
If NO, were samples transferred to proper container? _____			
Were VOA containers received with zero headspace?	<input checked="" type="radio"/> YES	NO	N/A
If NO, was it noted on the chain of custody? _____			
Were container labels complete? (ID, date, time preservative, etc.)	YES	<input checked="" type="radio"/> NO	
Were samples preserved with the proper preservative?	<input checked="" type="radio"/> YES	NO	N/A
If NO, was the proper preservative added at time of receipt? _____			
pH check of samples required at time of receipt?	YES	<input checked="" type="radio"/> NO	
If YES, pH checked and recorded by: _____			
Sufficient amount of sample received for methods requested?	<input checked="" type="radio"/> YES	NO	
If NO, has the client or lab project manager been notified? _____			
Field blanks received with sample batch? # of Sets: _____	YES	NO	<input checked="" type="radio"/> N/A
Trip blanks received with sample batch? # of Sets: _____	YES	NO	<input checked="" type="radio"/> N/A

**CHAIN OF CUSTODY**

Chain of custody received with samples?	<input checked="" type="radio"/> YES	NO
Has it been filled out completely and in ink?	<input checked="" type="radio"/> YES	NO
Sample ID's on chain of custody agree with container labels?	<input checked="" type="radio"/> YES	NO
Number of containers indicated on chain of custody agree with number received?	<input checked="" type="radio"/> YES	NO
Analysis methods clearly specified?	<input checked="" type="radio"/> YES	NO
Sampling date and time indicated?	<input checked="" type="radio"/> YES	NO
Proper signatures of sampler, courier, sample custodian in appropriate place? with time and date?	<input checked="" type="radio"/> YES	NO
Turnaround time? REGULAR <input checked="" type="checkbox"/> RUSH _____		

Any NO response and/or any "BROKEN" that was checked must be detailed in the Corrective Action Form.

Sample Custodian: BCJ Date: 9/9/94 Project Manager: WD Date: 9/12/94

**GROUNDWATER SAMPLING FORMS**



**GROUND-WATER SAMPLING FORM**

Job Name James River  
Job Number 26560.1  
Recorded by Steve Hodray

Well No. B-1  
Well Type:  Monitor  Extraction  Other  
Well Material:  PVC  St. Steel  Other  
Date 9-9-94 Time 1045  
Sampled by SJK

**WELL PURGING**

**PURGE VOLUME**

Casing Diameter (D in inches):  
 2-inch  4-inch  6-inch  Other  
Total Depth of Casing (TD in feet BTOC): 48  
Water Level Depth (WL in feet BTOC): 12.26  
Number of Well Volumes to be purged (# Vols)  
 3  4  5  10  Other

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**PUMP INTAKE SETTING**

Near Bottom  Near Top  Other  
Depth in feet (BTOC): \_\_\_\_\_ Screen Interval in Feet (BTOC) from \_\_\_\_\_ to \_\_\_\_\_

**PURGE VOLUME CALCULATION:**

$$\left( \frac{48}{\text{TD (feet)}} - \frac{12.26}{\text{WL (feet)}} \right) \times \frac{4}{\text{D (inches)}}^2 \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{69.9}{\text{Calculated Purge Volume}} \text{ gallons}$$

**PURGE TIME**

**PURGE RATE**

**ACTUAL PURGE VOLUME**

1024 Start 1040 Stop 16 Elapsed Initial 4.5 gpm Final 4.5 gpm 75 gallons

**FIELD PARAMETER MEASUREMENT**

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T <input checked="" type="checkbox"/> °C <input type="checkbox"/> °F	Other <u>Turb</u>
<u>Initial</u>	<u>6.5</u>	<u>600</u>	<u>20.0</u>	<u>28</u>
<u>25</u>	<u>6.7</u>	<u>600</u>	<u>19.0</u>	<u>24</u>
<u>50</u>	<u>6.7</u>	<u>600</u>	<u>19.0</u>	<u>24</u>
<u>75</u>	<u>6.7</u>	<u>600</u>	<u>19.0</u>	<u>24</u>

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T <input type="checkbox"/> °C <input type="checkbox"/> °F	Other _____

Meter Nos. \_\_\_\_\_

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear Strong odor (sulphur)

Discharge Water Disposal:  Sanitary Sewer  Storm Sewer  Other Drum On Site

**WELL SAMPLING**

**SAMPLING METHOD**

Bailer - Type: SS  Same As Above  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  Grab - Type: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**SAMPLING DISTRIBUTION**

Sample Series: 9409

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
<u>JR04</u>	<u>3WA</u>	<u>8240</u>	<u>HCL</u>	<u>Anamatrix</u>	

**QUALITY CONTROL SAMPLES**

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.



**GROUND-WATER SAMPLING FORM**

Job Name James River  
Job Number 26560.1  
Recorded by Steve Kobayashi

Well No. W-3  
Well Type:  Monitor  Extraction  Other \_\_\_\_\_  
Well Material:  PVC  St. Steel  Other \_\_\_\_\_  
Date 9-9-94 Time 1212  
Sampled by SJK (initials)

**WELL PURGING**

**PURGE VOLUME**

Casing Diameter (D in inches):  
 2-inch  4-inch  6-inch  Other \_\_\_\_\_  
Total Depth of Casing (TD in feet BTOC): 37  
Water Level Depth (WL in feet BTOC): 12.48  
Number of Well Volumes to be purged (# Vols)  
 3  4  5  10  Other \_\_\_\_\_

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**PUMP INTAKE SETTING**

Near Bottom  Near Top  Other \_\_\_\_\_  
Depth in feet (BTOC): \_\_\_\_\_ Screen Interval in Feet (BTOC) from \_\_\_\_\_ to \_\_\_\_\_

**PURGE VOLUME CALCULATION:**

$$\left( \frac{37}{\text{TD (feet)}} - \frac{12.48}{\text{WL (feet)}} \right) \times \frac{4}{\text{D (inches)}}^2 \times \frac{3}{\text{\# Vols}} \times 0.0408 = \underline{48.0} \text{ gallons}$$

Calculated Purge Volume

**PURGE TIME**

**PURGE RATE**

**ACTUAL PURGE VOLUME**

1150 Start 1205 Stop 15 Elapsed Initial 4 gpm Final \_\_\_\_\_ gpm 55 gallons

**FIELD PARAMETER MEASUREMENT**

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T <input checked="" type="checkbox"/> °C <input type="checkbox"/> °F	Other Turb
<u>Initial</u>	<u>6.1</u>	<u>1,000</u>	<u>21.0</u>	<u>40</u>
<u>20</u>	<u>6.2</u>	<u>800</u>	<u>20.0</u>	<u>35</u>
<u>40</u>	<u>6.4</u>	<u>750</u>	<u>20.0</u>	<u>33</u>
<u>55</u>	<u>6.4</u>	<u>750</u>	<u>20.0</u>	<u>31</u>

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T <input type="checkbox"/> °C <input type="checkbox"/> °F	Other _____

Observations During Purging (Well Condition, Turbidity, Color, Odor): clear slight odor

Discharge Water Disposal:  Sanitary Sewer  Storm Sewer  Other Drum On Site

**WELL SAMPLING**

**SAMPLING METHOD**

Bailer - Type: S.S.  Same As Above  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  Grab - Type: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**SAMPLING DISTRIBUTION**

Sample Series: 9409

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
<u>JR06</u>	<u>3V0A</u>	<u>8240</u>	<u>HCL</u>	<u>Anamatrix</u>	

**QUALITY CONTROL SAMPLES**

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
<u>T</u>	<u>JR07</u>

Other Samples

Type	Sample No.



**GROUND-WATER SAMPLING FORM**

Job Name James River  
Job Number 26560.1  
Recorded by Steve Kobay (Signature)

Well No. W-5  
Well Type:  Monitor  Extraction  Other  
Well Material:  PVC  St. Steel  Other  
Date 9-9-94 Time 1345  
Sampled by SJK (Initials)

**WELL PURGING**

**PURGE VOLUME**

Casing Diameter (D in inches):  
 2-inch  4-inch  6-inch  Other  
Total Depth of Casing (TD in feet BTOC): 33.0  
Water Level Depth (WL in feet BTOC): 13.29  
Number of Well Volumes to be purged (# Vols)  
 3  4  5  10  Other

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**PUMP INTAKE SETTING**

Near Bottom  Near Top  Other  
Depth in feet (BTOC): \_\_\_\_\_ Screen Interval in Feet (BTOC)  
from \_\_\_\_\_ to \_\_\_\_\_

**PURGE VOLUME CALCULATION:**

$$\left( \frac{33.0}{\text{TD (feet)}} - \frac{13.29}{\text{WL (feet)}} \right) \times \frac{2}{\text{D (inches)}}^2 \times \frac{3}{\text{\# Vols}} \times 0.0408 = \frac{9.6}{\text{Calculated Purge Volume}} \text{ gallons}$$

**PURGE TIME**

**PURGE RATE**

**ACTUAL PURGE VOLUME**

1328 Start 1337 Stop 9 Elapsed Initial 1.5 gpm Final \_\_\_\_\_ gpm 15 gallons

**FIELD PARAMETER MEASUREMENT**

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T <input checked="" type="checkbox"/> °C <input type="checkbox"/> °F	Other <u>Turb</u>
<u>Initial</u>	<u>6.6</u>	<u>650</u>	<u>22.0</u>	<u>&gt;100</u>
<u>5</u>	<u>6.6</u>	<u>625</u>	<u>23.0</u>	<u>&gt;100</u>
<u>10</u>	<u>6.7</u>	<u>625</u>	<u>23.0</u>	<u>&gt;100</u>
<u>15</u>	<u>6.7</u>	<u>625</u>	<u>23.0</u>	<u>&gt;100</u>

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T <input type="checkbox"/> °C <input type="checkbox"/> °F	Other

Meter Nos. \_\_\_\_\_

Observations During Purging (Well Condition, Turbidity, Color, Odor): Light brown, slight odor

Discharge Water Disposal:  Sanitary Sewer  Storm Sewer  Other Drum On Site

**WELL SAMPLING**

**SAMPLING METHOD**

Bailer - Type: S.S.  Same As Above  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  Grab - Type: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**SAMPLING DISTRIBUTION**

Sample Series: 9409

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
<u>JR09</u>	<u>3 VOA</u>	<u>8240</u>	<u>HCL</u>	<u>Anamatrix</u>	

**QUALITY CONTROL SAMPLES**

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.





**Harding Lawson Associates**  
Engineering and  
Environmental Services

**GROUND-WATER SAMPLING FORM**

Job Name James River  
Job Number 26560.1  
Recorded by Steve Kobayashi

Well No. W-7  
Well Type:  Monitor  Extraction  Other  
Well Material:  PVC  St. Steel  Other  
Date 9-9-94 Time 0926  
Sampled by SJK

**WELL PURGING**

**PURGE VOLUME**

Casing Diameter (D in inches):  
 2-inch  4-inch  6-inch  Other  
Total Depth of Casing (TD in feet BTOC): 36  
Water Level Depth (WL in feet BTOC): 12.63  
Number of Well Volumes to be purged (# Vols)  
 3  4  5  10  Other

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**PUMP INTAKE SETTING**

Near Bottom  Near Top  Other  
Depth in feet (BTOC): \_\_\_\_\_ Screen Interval in Feet (BTOC)  
from \_\_\_\_\_ to \_\_\_\_\_

**PURGE VOLUME CALCULATION:**

$$\left( \frac{36}{\text{TD (feet)}} - \frac{12.63}{\text{WL (feet)}} \right) \times \frac{4}{\text{D (inches)}}^2 \times \frac{3}{\text{\# Vols}} \times 0.0408 = \underline{45.7} \text{ gallons}$$

Calculated Purge Volume

**RUNSET TIME**

**PURGE RATE**

**ACTUAL PURGE VOLUME**

0858 Start 0922 Stop 24 Elapsed Initial 2 gpm Final 2 gpm 50 gallons

**FIELD PARAMETER MEASUREMENT**

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T °C / °F	Other <u>Turb</u>
<u>Initial</u>	<u>6.5</u>	<u>700</u>	<u>20.0</u>	<u>70</u>
<u>15</u>	<u>6.5</u>	<u>675</u>	<u>20.0</u>	<u>39</u>
<u>30</u>	<u>6.5</u>	<u>675</u>	<u>20.0</u>	<u>32</u>
<u>50</u>	<u>6.5</u>	<u>675</u>	<u>20.0</u>	<u>30</u>

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T °C / °F	Other

Meter Nos. \_\_\_\_\_

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear no odors

Discharge Water Disposal:  Sanitary Sewer  Storm Sewer  Other Drum On Site

**WELL SAMPLING**

**SAMPLING METHOD**

Bailer - Type: S.S.  Same As Above  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  Grab - Type: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**SAMPLING DISTRIBUTION** Sample Series: 9409

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
<u>JRO2</u>	<u>3 Vol A</u>	<u>8290</u>	<u>HCL</u>	<u>Anamatrix</u>	
	<u>2 liter glass</u>	<u>8015 TPH motor oil</u>	<u>None</u>		

**QUALITY CONTROL SAMPLES**

Duplicate Samples		Blank Samples		Other Samples	
Original Sample No.	Duplicate Sample No.	Type	Sample No.	Type	Sample No.



**GROUND-WATER SAMPLING FORM**

Job Name James River  
Job Number 26560.1  
Recorded by Steve Korbay

Well No. W-8  
Well Type:  Monitor  Extraction  Other  
Well Material:  PVC  St. Steel  Other  
Date 9-9-94 Time 1003  
Sampled by SJK

**WELL PURGING**

**PURGE VOLUME**

Casing Diameter (D in inches):  
 2-inch  4-inch  6-inch  Other  
Total Depth of Casing (TD in feet BTOC): 34.0  
Water Level Depth (WL in feet BTOC): 12.08  
Number of Well Volumes to be purged (# Vols)  
 3  4  5  10  Other

**PURGE METHOD**

Bailer - Type: \_\_\_\_\_  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**PUMP INTAKE SETTING**

Near Bottom  Near Top  Other  
Depth in feet (BTOC): \_\_\_\_\_ Screen Interval in Feet (BTOC) from \_\_\_\_\_ to \_\_\_\_\_

**PURGE VOLUME CALCULATION:**

$$\left( \frac{34.0}{\text{TD (feet)}} - \frac{12.08}{\text{WL (feet)}} \right) \times \frac{4^2}{\text{D (inches)}} \times \frac{3}{\text{\# Vols}} \times 0.0408 = \underline{42.9} \text{ gallons}$$
  
Calculated Purge Volume

**PURGE TIME**

**PURGE RATE**

**ACTUAL PURGE VOLUME**

0947 Start 0956 Stop 9 Elapsed Initial 5 gpm Final 5 gpm 45 gallons

**FIELD PARAMETER MEASUREMENT**

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T $\frac{^{\circ}\text{C}}{^{\circ}\text{F}}$	Other Turb
<u>Initial</u>	<u>6.3</u>	<u>550</u>	<u>19.0</u>	<u>83</u>
<u>15</u>	<u>6.4</u>	<u>550</u>	<u>19.0</u>	<u>50</u>
<u>30</u>	<u>6.4</u>	<u>550</u>	<u>19.0</u>	<u>39</u>
<u>45</u>	<u>6.4</u>	<u>550</u>	<u>19.0</u>	<u>34</u>

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T $\frac{^{\circ}\text{C}}{^{\circ}\text{F}}$	Other

Meter Nos. \_\_\_\_\_

Observations During Purging (Well Condition, Turbidity, Color, Odor): clear slight odor

Discharge Water Disposal:  Sanitary Sewer  Storm Sewer  Other Drum On Site

**WELL SAMPLING**

**SAMPLING METHOD**

Bailer - Type: S-S.  Same As Above  
 Submersible  Centrifugal  Bladder; Pump No.: \_\_\_\_\_  Grab - Type: \_\_\_\_\_  
 Other - Type: \_\_\_\_\_

**SAMPLING DISTRIBUTION** Sample Series: 9409

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
<u>JR</u>	<u>3 UOA</u>	<u>8240</u>	<u>HCL</u>	<u>Anamatrix</u>	
	<u>2 / Lamb. gl.</u>	<u>8015 TPH motor oil</u>	<u>None</u>		

**QUALITY CONTROL SAMPLES**

Duplicate Samples		Blank Samples		Other Samples	
Original Sample No.	Duplicate Sample No.	Type	Sample No.	Type	Sample No.







**CHAIN OF CUSTODY FORM**



**Harding Lawson Associates**  
 105 Digital Drive  
 Novato, CA 94949  
 P.O. Box 6107  
 Novato, CA 94948  
 (415) 883-0112 • (415) 883-3300 FAX

# CHAIN OF CUSTODY FORM

Lab: Anametrix

Samplers: SJK

Project Number: 26560.1

Name/Location: James River / San Leandro

Project Manager: Rick Hutton

Recorder: Steve Korbay  
 (Signature Required)

ANALYSIS REQUESTED	
EPA 601/8010	
EPA 602/8020	
EPA 624/8240	X
EPA 625/8270	
ICP METALS	X
EPA 8015M/TPH - Motor Oil	

SOURCE CODE	MATRIX				#CONTAINERS & PRESERV.				SAMPLE NUMBER OR LAB NUMBER			DATE				STATION DESCRIPTION/NOTES
	Water	Sediment	Soil	Oil	Unpres.	H <sub>2</sub> SO <sub>4</sub>	HNO <sub>3</sub>	HCL	Yr	Wk	Seq	Yr	Mo	Dy	Time	
23	X							3	94	36	JR01	94	09	09	0838	
23	X				2			3	94	36	JR02	94	09	09	0926	
23	X				2			3	94	36	JR03	94	09	09	1003	
23	X							3	94	36	JR04	94	09	09	1045	
23	X							3	94	36	JR05	94	09	09	1126	
23	X							3	94	36	JR06	94	09	09	1212	
23	X							3	94	36	JR07	94	09	09	1235	
23	X							3	94	36	JR08	94	09	09	1307	
23	X							3	94	36	JR09	94	09	09	1345	

LAB NUMBER			DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
Yr	Wk	Seq				
						Standard T.A.T
						Temps: 5°C, 9°C

CHAIN OF CUSTODY RECORD		
RELINQUISHED BY: (Signature) <u>Steve Korbay</u>	RECEIVED BY: (Signature) <u>[Signature]</u>	DATE/TIME 9-07-94 11:05
RELINQUISHED BY: (Signature) <u>[Signature]</u>	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature) <u>[Signature]</u> 9/9/94 1500
METHOD OF SHIPMENT		