Harding Lawson Associates

January 4, 1995

30374 001

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

Revised Fourth Quarter 1994 Groundwater Monitoring Report
James River Corporation
San Leandro, California

Dear Ms. Logan:

This report presents the results of the fourth 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.

FOURTH QUARTER GROUNDWATER MONITORING

Field Investigation

On December 6 and 7, 1994, groundwater samples were collected from 8 wells for chemical analysis. Monitoring Wells W-3, W-5, W-6, W-9, W-10, and B-1 were sampled on December 6, and Monitoring Wells MW-7 and MW-8 were sampled on December 7, 1994. 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.

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 December 1994 water-level survey are presented in Table 2. The direction of groundwater flow is toward the west at a gradient ranging between 0.0027 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 December 6 and 7, 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 December 1994 analytical data. Chemical concentrations reported in December 1994 were in most cases lower than the concentrations detected in September 1994. However, cis-1,2 DCE concentrations increased in Wells W-3, W-5, and W-9 to 61, 1,600, and 100 micrograms per liter (µ/l), respectively. Vinyl chloride was detected for the first time in Well W-7 during this quarterly monitoring period. This well was reported to contain vinyl chloride at a concentration of 37 µg/l.

On September 7, 1994, 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. As stated in the Anametrix Laboratories Report, the concentrations reported as diesel are primarily due to the presence of discrete peaks not indicative of diesel fuel, but of a similar hydrocarbon. During the December sampling event, the sample from Well W-7 was reported to contain TPHd at 300 µg/l and TPHmo at 120 µg/l. The sample from Well W-8 was reported to contain TPHd and TPHmo at 450 µg/l and 270 µg/l, respectively. A copy of the laboratory report is attached for all wells sampled.

CONCLUSIONS AND RECOMMENDATIONS

Results of quarterly groundwater sampling and analysis performed during December 1994, indicate that chlorinated hydrocarbons continue to be present in the shallow groundwater beneath the James River facility in San Leandro. As previously 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. HLA continues to support this hypothesis, and as a result James River 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 March 1995. 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: Ms. Regina Colbert, 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, December 6-7, 1994
Groundwater Sampling Forms
Anametrix Analytical Data
Chain of Custody Form

RJH/RBS:gj/GJ38389-JR

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

James River Corporation
San Leandro, California
December 6-7, 1994

Well No.	Gallons Purged	pH	Specific Conductance* (μmhos/cm)	Temperature (° C)	Turbidity (NTU)
B-1	0	6.8	728	19.0	15
	25	7.0	672	19.0	2
	50	7.1	672	19.0	2
	75	7.1	672	19.0	2
W-3	0	6.3	1120	19.0	>100
	20	6.5	1120	19.0	22
	40	6.6	784	19.0	15
	55	6.6	784	19.0	6
W-5	0	6.6	672	19.0	>100
	5	6.8	660	20.0	>100
	10	6.8	648	21.0	>100
	15	6.8	648	21.0	79
W-6	0	6.7	784	19.0	>100
	5	6.8	728	19.0	>100
	10	6.9	715	20.0	>100
	15	6.9	715	20.0	63
W-7	0	6.7	784	19.0	42
	15	6.9	715	20.0	20
	30	6.9	715	20.0	8
	40	6.9	715	20.0	3
W-8	0	6.7	672	19.0	>100
	15	6.7	715	19.0	36
	30	6.7	715	19.0	18
	50	6.7	715	19.0	13

* at 25° C
μmhos/cm Micromhos per centimeter
° C Degrees Celsius

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

James River Corporation
San Leandro, California
December 6-7, 1994
(Continued)

Well No.	Gallons Purged	pH	Specific Conductance* (μmhos/cm)	Temperature (° C)	Turbidity (NTU)
W-9	0	6.8	855	18.0	8
	15	7.0	770	20.0	6
	30	7.1	770	20.0	4
	40	7.1	770	20.0	3
W-10	0	6.1	1100	20.0	13
	5	6.0	1060	22.0	12
	10	6.0	1060	22.0	11
	15	6.0	1060	22.0	11

* at 25° C
μmhos/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
	12-6-94	20.67	10.96	9.71
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
	12-6-94	20.80	11.20	9.60
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
	12-6-94	21.00	11.35	9.65

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
	12-6-94	21.64	12.00	9.64
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
	12-6-94	21.05	11.35	9.70
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
	12-6-94	20.41	11.44	8.97

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
	12-6-94	20.50	10.85	9.65
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
	12-6-94	20.16	10.92	9.24
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
	12-6-94	20.22	11.53	8.69

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
	12-6-94	20.59	10.97	9.62

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
	Dec-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
	Dec-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
	Dec-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
	Dec-94	<5	<5	<5	<5	300	120
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
	Dec-94	<5	<5	<5	<5	450	270
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
	Dec-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
	Dec-94	<500	<500	<500	<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
	Dec-94	<5	<5	<5	<5	NA	NA

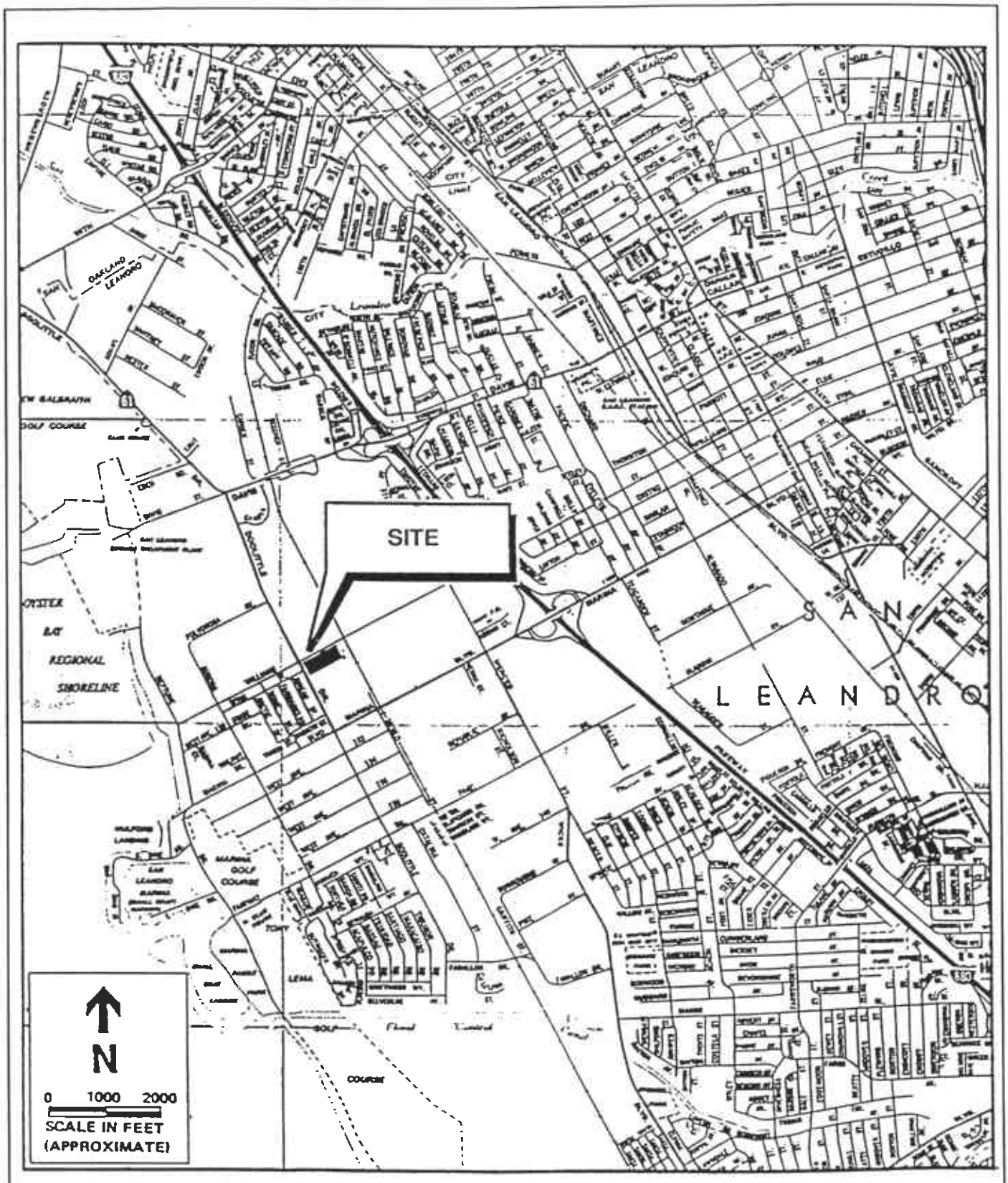
NA = Not Analyzed

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
	Dec-94	<5	<10	<5	<5	61	<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
	Dec-94	350	<100	1,800	<50	1,600	<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
	Dec-94	78	<10	120	<5	280	<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
	Dec-94	9	37	8	<5	120	<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
	Dec-94	<5	<10	<5	<5	15	<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
	Dec-94	<5	<10	<5	<5	110	<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
	Dec-94	<500	<1,000	<500	<500	<500	<500	18,000	1,600	<500	<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
	Dec-94	<5	<10	<5	<5	<5	<5	23	<10	<5	<5



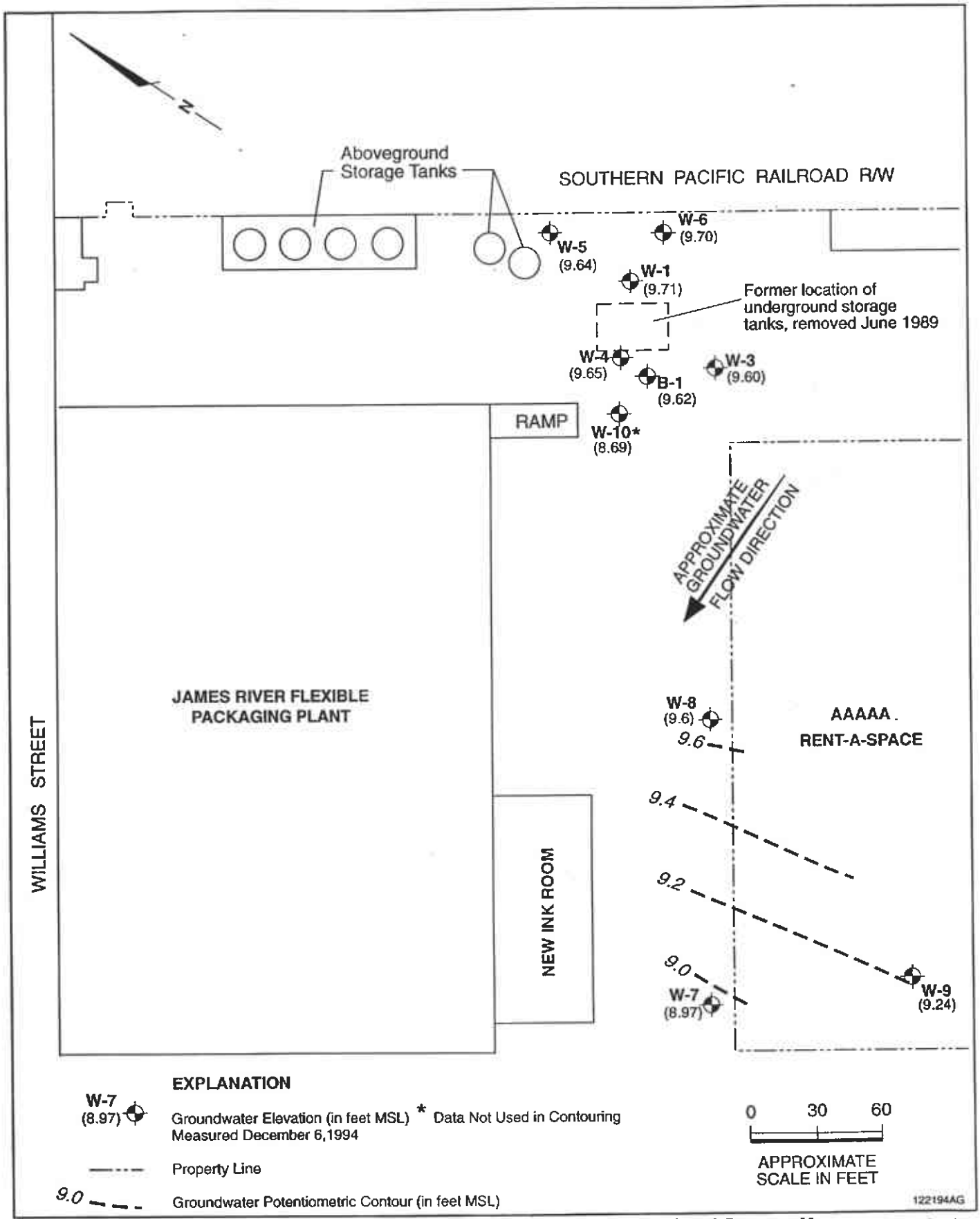
SOURCE: "Reproduced with permission granted by THOMAS BROS. MAPS. This map is copyrighted by THOMAS BROS. MAPS. It is unlawful to copy or reproduce all or any part thereof, whether for personal use or resale, without permission."

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
	30374 001		7/94	

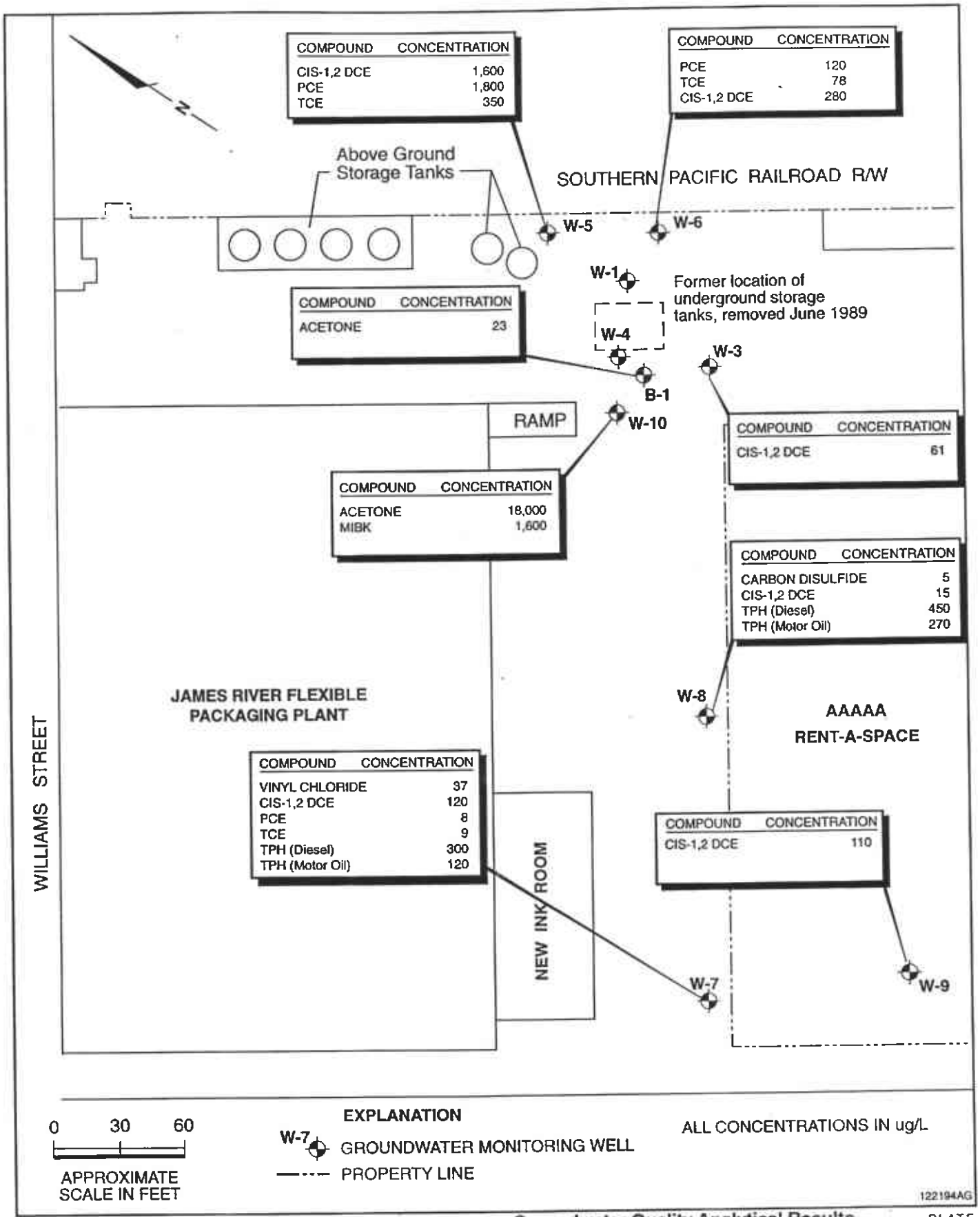


Harding Lawson Associates
Engineering and Environmental Services

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

PLATE **2**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
DJPc	30374 001		2/94	12/94



Harding Lawson Associates
Engineering and Environmental Services

Groundwater Quality Analytical Results
December 6-7,1994
James River Corporation
2101 Williams Street
San Leandro, California

PLATE **3**

DRAWN	JOB NUMBER	APPROVED	DATE	REVISED DATE
	30374 001		4/94	12/94

GROUNDWATER SAMPLING FORMS

Harding Lawson Associates
Engineering and Environmental Services

GROUND-WATER SAMPLING FORM

Job Name James River
Job Number 26560,008
Recorded by Steve Kolay (Signature)

Well No. W-3
Well Type: ☒ Monitor ☐ Extraction ☐ Other ____
Well Material: ☒ PVC ☐ St. Steel ☐ Other ____
Date 12-6-94 Time 1215
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): 11.20
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:

$(37.0 \text{ (TD)} - 11.20 \text{ (WL)}) \times 4^2 \text{ (D)} \times 3 \text{ (\# Vols)} \times 0.0408 = 50.5$ gallons (Calculated Purge Volume)

PURGE TIME

1152 Start 1210 Stop 18 Elapsed

PURGE RATE

Initial 3 gpm Final ____ gpm

ACTUAL PURGE VOLUME

55 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other turb.
initial	6.3	1,000	19.0	>100
20	6.5	1,000	19.0	22
40	6.6	700	19.0	15
55	6.6	700	19.0	6

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

Observations During Purging (Well Condition, Turbidity, Color, Odor): Cloudy light brown, clearing
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drums on site

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: S.S.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: ____

☐ Same As Above
☐ Grab - Type: ____
☐ Other - Type: ____

SAMPLING DISTRIBUTION

Sample Series: 9406

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
JR06	3VOA	8240	HCL	Anametrix	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name James River
Job Number 26560,008
Recorded by Steve Kalay (Signature)

Well No. W-5
Well Type: ☒ Monitor ☐ Extraction ☐ Other _____
Well Material: ☒ PVC ☐ St. Steel ☐ Other _____
Date 12-6-94 Time 1340
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): 12.0
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:

$(33.0 - 12.0) \times 2^2 \times 3 \times 0.0408 = 10.2$ gallons

(33.0 = TD (feet); 12.0 = WL (feet); 2 = D (inches); 3 = # Vols; 10.2 = Calculated Purge Volume)

PURGE TIME

1325 Start 1331 Stop 6 Elapsed

PURGE RATE

Initial 2.5 gpm Final _____ gpm

ACTUAL PURGE VOLUME

15 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other turb.
initial	6.6	600	19.0	>100
5	6.8	600	20.0	>100
10	6.8	600	21.0	>100
15	6.8	600	21.0	79

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

Observations During Purging (Well Condition, Turbidity, Color, Odor): Light Brown - Clearing
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drums on site

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: S.S.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: _____

☐ Same As Above
☐ Grab - Type: _____
☐ Other - Type: _____

SAMPLING DISTRIBUTION

Sample Series: 9406

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
JR08	3VOA	8240	HCL	Anametrix	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.
Trip	JR09

Other Samples

Type	Sample No.

0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name James River
Job Number 26560,008
Recorded by Steve Kolay (Signature)

Well No. W-6
Well Type: ☒ Monitor ☐ Extraction ☐ Other ____
Well Material: ☒ PVC ☐ St. Steel ☐ Other ____
Date 12-6-94 Time 1300
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): 36.0
Water Level Depth (WL in feet BTOC): 11.35
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:

$(36.0 - 11.35) \times 2^2 \times 3 \times 0.0408 = 12.0$ gallons

(36.0 = TD (feet); 11.35 = WL (feet); 2 = D (inches); 3 = # Vols; 12.0 = Calculated Purge Volume)

PURGE TIME

1247 Start 1253 Stop 6 Elapsed

PURGE RATE

Initial 2.5 gpm Final ____ gpm

ACTUAL PURGE VOLUME

15 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other turb.
initial	6.7	700	19.0	>100
5	6.8	650	19.0	>100
10	6.9	650	20.0	>100
15	6.9	650	20.0	63

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

Observations During Purging (Well Condition, Turbidity, Color, Odor): Dark brown silty, no odor, clearing.
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drums on site

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: S.S.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.: ____
☐ Same As Above
☐ Grab - Type: ____
☐ Other - Type: ____

SAMPLING DISTRIBUTION

Sample Series: 9406

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
JR07	3VOA	8240	HCL	Anametrix	

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 30374,001
Recorded by Steve Kalay (Signature)

Well No. W-7
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 12-7-94 Time 1425
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): 31.0
Water Level Depth (WL in feet BTOC): 11.50
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:

(31.0 (TD feet) - 11.50 (WL feet)) X 4 (D inches)^2 X 3 (# Vols) X 0.0408 = 38.1 gallons (Calculated Purge Volume)

PURGE TIME

1410 Start 1420 Stop 10 Elapsed

PURGE RATE

Initial 4 gpm Final ____ gpm

ACTUAL PURGE VOLUME

____ gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other turb
initial	6.7	700	19.0	42
15	6.9	650	20.0	20
30	6.9	650	20.0	8
40	6.9	650	20.0	3

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

Observations During Purging (Well Condition, Turbidity, Color, Odor): clear, no odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drum on site

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: S.S.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series: 9407

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
JR01	2 liter amb.	8015 TPH Motor Oil	None	Anametrix	

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 30374,001
Recorded by Steve Kalby (Signature)

Well No. W-8
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 12-7-94 Time 1302
Sampled by SVK (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): 34.0
Water Level Depth (WL in feet BTOC): 10.90
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

$(34.0 \text{ TD (feet)} - 10.90 \text{ WL (feet)}) \times 4 \text{ D (inches)}^2 \times 3 \text{ \# Vols} \times 0.0408 = 45.2$ gallons (Calculated Purge Volume)

PURGE RATE

1443 Start 1456 Stop 13 Elapsed
Initial 4 gpm Final gpm

ACTUAL PURGE VOLUME

50 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other turb
initial	6.7	600	19.0	>100
15	6.7	550	19.0	36
30	6.7	550	19.0	18
50	6.7	550	19.0	13

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

Observations During Purging (Well Condition, Turbidity, Color, Odor): Light grey slight odor- clearing
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drum On Site

WELL SAMPLING

SAMPLING METHOD

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

SAMPLING DISTRIBUTION

Sample Series: 9407

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
JR02	2 liter amber	8015 TPH motor oil	None	Anametrix	

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 26560,008
Recorded by Steve Kadlay (Signature)

Well No. W-9
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 12-6-94 Time 0845
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): 31.0
Water Level Depth (WL in feet BTOC): 10.92
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:

$(31.0 - 10.92) \times 4^2 \times 3 \times 0.0408 = 39.3$ gallons

(TD (feet) − WL (feet)) × D (inches)² × # Vols × 0.0408 = Calculated Purge Volume

PURGE TIME

0830 Start 0840 Stop 10 Elapsed

PURGE RATE

Initial 4 gpm Final gpm

ACTUAL PURGE VOLUME

40 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other turb.
initial	6.8	750	18.0	8
15	7.0	700	20.0	6
30	7.1	700	20.0	4
40	7.1	700	20.0	3

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

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, slight sulphur odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drums on site

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: S.S.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series: 9406

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
JR01	3VOA	8240	HCL	Anametrix	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

0746

Harding Lawson Associates
Engineering and
Environmental Services

GROUND-WATER SAMPLING FORM

Job Name James River
Job Number 26560,008
Recorded by Steve Kalay (Signature)

Well No. W-10
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 12-6-94 Time 1055
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): 17.0
Water Level Depth (WL in feet BTOC): 11.53
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:

(17 (TD feet) - 11.53 (WL feet)) X 4 (D inches) ^{2} X 3 (# Vols) X 0.0408 = 10.7 gallons (Calculated Purge Volume)

PURGE TIME

1037 Start 1047 Stop 10 Elapsed

PURGE RATE

Initial 1.5 gpm Final gpm

ACTUAL PURGE VOLUME

15 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other turb.
initial	6.1	1,000	20.0	13
5	6.0	1,000	22.0	12
10	6.0	1,000	22.0	11
15	6.0	1,000	22.0	11

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

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, Slight odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drums on site

WELL SAMPLING

SAMPLING METHOD

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

SAMPLING DISTRIBUTION

Sample Series: 9406

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
JR05	3VOA	8240	HCL	Anametrix	

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 26560,008
Recorded by Steve Korday (Signature)

Well No. B-1
Well Type: ☒ Monitor ☐ Extraction ☐ Other
Well Material: ☒ PVC ☐ St. Steel ☐ Other
Date 12-6-94 Time 1128
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): 48.0
Water Level Depth (WL in feet BTOC): 10.97
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:

(48 (TD feet) - 10.97 (WL feet)) x 4 (D inches)^2 x 3 (# Vols) x 0.0408 = 72.5 gallons (Calculated Purge Volume)

PURGE TIME

1107 Start 1122 Stop 15 Elapsed

PURGE RATE

Initial 5 gpm Final gpm

ACTUAL PURGE VOLUME

75 gallons

FIELD PARAMETER MEASUREMENT

Minutes Since Pumping Began	pH	Cond. (µmhos/cm)	T ☒ °C ☐ °F	Other turb.
initial	6.8	650	19.0	15
25	7.0	600	19.0	2
50	7.1	600	19.0	2
75	7.1	600	19.0	2

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

Observations During Purging (Well Condition, Turbidity, Color, Odor): Clear, Slight odor
Discharge Water Disposal: ☐ Sanitary Sewer ☐ Storm Sewer ☒ Other Drums on site

WELL SAMPLING

SAMPLING METHOD

☒ Bailer - Type: S.S.
☐ Submersible ☐ Centrifugal ☐ Bladder; Pump No.:

☐ Same As Above
☐ Grab - Type:
☐ Other - Type:

SAMPLING DISTRIBUTION

Sample Series: 9406

Sample No.	Volume/Cont.	Analysis Requested	Preservatives	Lab	Comments
JB05	3VOA	8240	HCL	Anametrix	

QUALITY CONTROL SAMPLES

Duplicate Samples

Original Sample No.	Duplicate Sample No.

Blank Samples

Type	Sample No.

Other Samples

Type	Sample No.

ANAMETRIX ANALYTICAL DATA

Inchcape Testing Services
Anametrix 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 # : 9412065
Date Received : 12/06/94
Project ID : 26560.008
Purchase Order: N/A

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9412065- 1	9406JR01
9412065- 2	9406JR02
9412065- 3	9406JR03
9412065- 4	9406JR04
9412065- 5	9406JR05
9412065- 6	9406JR06
9412065- 7	9406JR07
9412065- 8	9406JR08
9412065- 9	9406JR09

This report is organized in sections according to the specific Anametrix 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 Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix 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 your project manager as soon as possible. Thank you for using Inchcape Testing Services.

Todd Stringer for
Susan Kraska Yeager
Laboratory Director

12-13-94
Date

Dave Wakeda
Project Manager

This report consists of 17 pages.

ANAMETRIX 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 Anametrix 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 Anametrix. 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 "*", 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 "*", 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

Anametrix uses several data qualifiers (Q) in it's 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 aldol 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 # : 9412065
Date Received : 12/06/94
Project ID : 26560.008
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9412065- 1	9406JR01	WATER	12/06/94	8240
9412065- 2	9406JR02	WATER	12/06/94	8240
9412065- 3	9406JR03	WATER	12/06/94	8240
9412065- 4	9406JR04	WATER	12/06/94	8240
9412065- 5	9406JR05	WATER	12/06/94	8240
9412065- 6	9406JR06	WATER	12/06/94	8240
9412065- 7	9406JR07	WATER	12/06/94	8240
9412065- 8	9406JR08	WATER	12/06/94	8240
9412065- 9	9406JR09	WATER	12/06/94	8240

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

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

Workorder # : 9412065
Date Received : 12/06/94
Project ID : 26560.008
Purchase Order: N/A
Department : GCMS
Sub-Department: GCMS

QA/QC SUMMARY :

- All holding times have been met for the analyses reported in this section.
- No QA/QC problems for EPA Method 8240 analysis.

Denise Powell 12-9-94
Department Supervisor Date

Taghi Memarzadeh 12/12/94
Chemist Date

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

Project ID : 26560.00
Sample ID : 9406JR01 W-9
Matrix : WATER
Date Sampled :12/ 6/94
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : 9412065-01
Analyst : TM
Supervisor : DF

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.	110.	
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 : 26560.00
Sample ID : 9406JR02 W-7
Matrix : WATER
Date Sampled :12/ 6/94
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : 9412065-02
Analyst : TM
Supervisor : DT

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.	37.	
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.	120.	
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.	9.	
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.	8.	
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 : 26560.00
Sample ID : 9406JR03 W-8
Matrix : WATER
Date Sampled :12/ 6/94
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : 9412065-03
Analyst : TM
Supervisor : DP

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.	5.	
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.	15.	
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 : 26560.00
Sample ID : 9406JR04 W-10
Matrix : WATER
Date Sampled :12/ 6/94
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : 9412065-04
Analyst : TM
Supervisor : MP

Dilution Factor : 100.0
Conc. Units : ug/L

CAS No.	COMPOUND NAME	REPORTING LIMIT	AMOUNT DETECTED	Q
74-87-3	Chloromethane	1000.	ND	U
75-01-4	Vinyl chloride	1000.	ND	U
74-83-9	Bromomethane	1000.	ND	U
75-00-3	Chloroethane	1000.	ND	U
75-69-4	Trichlorofluoromethane	500.	ND	U
75-35-4	1,1-Dichloroethene	500.	ND	U
76-13-1	Trichlorotrifluoroethane	500.	ND	U
67-64-1	Acetone	2000.	18000.	
75-15-0	Carbon disulfide	500.	ND	U
75-09-2	Methylene chloride	500.	ND	U
156-60-5	Trans-1,2-dichloroethene	500.	ND	U
75-34-3	1,1-Dichloroethane	500.	ND	U
156-59-2	Cis-1,2-dichloroethene	500.	ND	U
78-93-3	2-Butanone	2000.	ND	U
67-66-3	Chloroform	500.	ND	U
71-55-6	1,1,1-Trichloroethane	500.	ND	U
56-23-5	Carbon tetrachloride	500.	ND	U
108-05-4	Vinyl acetate	1000.	ND	U
71-43-2	Benzene	500.	ND	U
107-06-2	1,2-Dichloroethane	500.	ND	U
79-01-6	Trichloroethene	500.	ND	U
78-87-5	1,2-Dichloropropane	500.	ND	U
75-27-4	Bromodichloromethane	500.	ND	U
10061-01-5	Cis-1,3-dichloropropene	500.	ND	U
108-10-1	4-Methyl-2-pentanone	1000.	1600.	
108-88-3	Toluene	500.	ND	U
10061-02-6	Trans-1,3-dichloropropene	500.	ND	U
79-00-5	1,1,2-Trichloroethane	500.	ND	U
127-18-4	Tetrachloroethene	500.	ND	U
591-78-6	2-Hexanone	1000.	ND	U
124-48-1	Dibromochloromethane	500.	ND	U
108-90-7	Chlorobenzene	500.	ND	U
100-41-4	Ethylbenzene	500.	ND	U
1330-20-7	Xylene (Total)	500.	ND	U
100-42-5	Styrene	500.	ND	U
75-25-2	Bromoform	500.	ND	U
79-34-5	1,1,2,2-Tetrachloroethane	500.	ND	U
541-73-1	1,3-Dichlorobenzene	500.	ND	U
106-46-7	1,4-Dichlorobenzene	500.	ND	U
95-50-1	1,2-Dichlorobenzene	500.	ND	U

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

Project ID : 26560.00
Sample ID : 9406JR05 B-1
Matrix : WATER
Date Sampled :12/ 6/94
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : 9412065-05
Analyst : TM
Supervisor : DF

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.	23.	
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 : 26560.00
Sample ID : 9406JR06 W-3
Matrix : WATER
Date Sampled :12/ 6/94
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : 9412065-06
Analyst : TM
Supervisor : MP

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.	61.	
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 : 26560.00
Sample ID : 9406JR07 W-6
Matrix : WATER
Date Sampled :12/ 6/94
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : 9412065-07
Analyst : TM
Supervisor : DP

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.	280.	
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.	78.	
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.	120.	
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 : 26560.00
Sample ID : 9406JR08 W-5
Matrix : WATER
Date Sampled :12/ 6/94
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : 9412065-08
Analyst : TM
Supervisor : MP

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.	ND	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.	1600.	
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.	350.	
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.	1800.	
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 : 26560.00
Sample ID : 9406JR09 TRIP BLANK
Matrix : WATER
Date Sampled :12/ 6/94
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : 9412065-09
Analyst : TM
Supervisor : DM

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 : VBLKQC
Matrix : WATER
Date Sampled : 0/ 0/ 0
Date Analyzed :12/ 8/94
Instrument ID : MSD1

Anametrix ID : BD0802A2
Analyst : TM
Supervisor : DP

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 : 26560.00
Matrix : LIQUID

Anametrix ID : 9412065
Analyst : TM
Supervisor : MP

	SAMPLE ID	SU1	SU2	SU3
1	VBLKQC	93	105	101
2	VLCSPT	90	108	101
3	9406JR01	99	102	98
4	9406JR02	101	100	97
5	9406JR03	97	101	98
6	9406JR06	98	103	98
7	9406JR07	99	102	98
8	9406JR08	99	102	100
9	9406JR09	95	103	98
10	9406JR05	93	104	100
11	9406JR04	96	103	100
12				
13				
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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 Anametrix QC limits

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

ANAMETRIX, INC. (408)432-8192

Project/Case	:	Anametrix ID	: MD0801A2.D
Matrix	: WATER	Analyst	: TM
Date Sampled	:	Supervisor	: MP
Date Analyzed	: 8 Dec 94 10:04 am	SDG/Batch	:
Instrument ID	: MSD1	Sample ID	: VLCSPT @ 50ug/

COMPOUND	SPIKE ADDED (ug/L)	SAMPLE CONCENTRATION (ug/L)	LCS CONCENTRATION (ug/L)	LCS % REC	%REC LIMITS
1,1-Dichloroethene	50	0	44	88	72-145
Benzene	50	0	50	100	83-125
Trichloroethene	50	0	50	100	61-140
Toluene	50	0	49	98	82-123
Chlorobenzene	50	0	48	96	82-125

Inchcape Testing Services
Anametrix Laboratories

SAMPLE RECEIVING CHECKLIST

WORKORDER NUMBER: 9412065 CLIENT PROJECT ID: 26560.008

COOLER

Item			
Shipping slip (airbill, etc.) present? If YES, enter carrier name and airbill # : ____	YES	NO	(N/A)
Custody Seal on the outside of cooler? Condition: INTACT ____ BROKEN ____	YES	NO	(N/A)
Temperature of sample (s) within range? List temperature of cooler (s): 6°C	(YES)	NO	N/A

SAMPLES

Item			
Chain of custody seal present for each container? Condition: INTACT ____ BROKEN ____	YES	NO	(N/A)
Samples arrived within holding time?	(YES)	NO	N/A
Samples in proper containers for methods requested? Condition of containers: INTACT ✓ BROKEN ____ If NO, were samples transferred to proper container? ____	YES	(NO)	
Were VOA containers received with zero headspace? If NO, was it noted on the chain of custody? ____	(YES)	NO	N/A
Were container labels complete? (ID, date, time preservative, etc.)	(YES)	NO	
Were samples preserved with the proper preservative? If NO, was the proper preservative added at time of receipt? ____	(YES)	NO	N/A
pH check of samples required at time of receipt? If YES, pH checked and recorded by: ____	YES	(NO)	
Sufficient amount of sample received for methods requested? If NO, has the client or lab project manager been notified? ____	(YES)	NO	
Field blanks received with sample batch? # of Sets: ____	YES	NO	(N/A)
Trip blanks received with sample batch? # of Sets: 1	(YES)	NO	N/A

CHAIN OF CUSTODY

Item		
Chain of custody received with samples?	(YES)	NO
Has it been filled out completely and in ink?	(YES)	NO
Sample ID's on chain of custody agree with container labels?	(YES)	NO
Number of containers indicated on chain of custody agree with number received?	(YES)	NO
Analysis methods clearly specified?	(YES)	NO
Sampling date and time indicated?	(YES)	NO
Proper signatures of sampler, courier, sample custodian in appropriate place? with time and date?	(YES)	NO
Turnaround time? REGULAR ✓ RUSH ____		

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

[illegible] RM [illegible] 12/1/94 [illegible] RW [illegible] 12/2/94

Inchcape Testing Services
Anametrix Laboratories

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

MR. BRENT DOSTERT
HARDING LAWSON ASSOCIATES - NOVATO
105 DIGITAL DRIVE
NOVATO, CA 94949

Workorder # : 9412096
Date Received : 12/08/94
Project ID : 26560.008
Purchase Order: N/A

The following samples were received at Anametrix for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9412096- 1	9407JR01
9412096- 2	9407JR02

This report is organized in sections according to the specific Anametrix 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 Anametrix cannot be responsible for the detachment, separation, or otherwise partial use of this report.

Anametrix 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 your project manager as soon as possible. Thank you for using Inchcape Testing Services.

Corinne Ham for
Susan Kraska Yeager
Laboratory Director

12/21/94
Date

Joyce Wakida
Project Manager

This report consists of 8 pages.

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

MR. BRENT DOSTERT
HARDING LAWSON ASSOCIATES - NOVATO
105 DIGITAL DRIVE
NOVATO, CA 94949

Workorder # : 9412096
Date Received : 12/08/94
Project ID : 26560.008
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9412096- 1	9407JR01	WATER	12/07/94	TPHd
9412096- 2	9407JR02	WATER	12/07/94	TPHd

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

MR. BRENT DOSTERT
HARDING LAWSON ASSOCIATES - NOVATO
105 DIGITAL DRIVE
NOVATO, CA 94949

Workorder # : 9412096
Date Received : 12/08/94
Project ID : 26560.008
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- All holding times have been met for the analyses reported in this section.
- The concentrations reported as diesel for samples 9407JR01 and 9407JR02 are primarily due to the presence of discrete peaks not indicative of diesel fuel.

Cheryl Balmer 12/20/94
Department Supervisor Date

C.R.Patel 12/20/94
Chemist Date

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

Anametrix W.O.: 9412096
Matrix : WATER
Date Sampled : 12/07/94
Date Extracted: 12/13/94

Project Number : 26560.008
Date Released : 12/16/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9412096-01	9407JR01	12/15/94	50	300	70%
9412096-02	9407JR02	12/15/94	50	450	84%
BD1312F1	METHOD BLANK	12/15/94	50	ND	74%

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for o-terphenyl are 67-103%.

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.

P Patel 12/20/94
Analyst Date

Cheryl Balmer 12/20/94
Supervisor Date

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

Anametrix W.O.: 9412096
Matrix : WATER
Date Sampled : 12/07/94
Date Extracted: 12/13/94

Project Number : 26560.008
Date Released : 12/16/94
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)	Surrogate %Rec
9412096-01	9407JR01	12/15/94	100	120	70%
9412096-02	9407JR02	12/15/94	100	270	84%
BD1312F1	METHOD BLANK	12/15/94	100	ND	74%

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
The surrogate recovery limits for o-terphenyl are 67-103%.

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.

CRPatel 12/20/94
Analyst Date

Cheryl Balmer 12/20/94
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: 12/13/94
Date Analyzed : 12/15/94

Anametrix I.D. : MD1312F1
Analyst : ARP
Supervisor : [illegible]
Date Released : 12/16/94
Instrument I.D.: HP23

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	1040	83%	1030	82%	-1%	38-96
SURROGATE			77%		73%		47-114

* Quality control limits established by Anametrix, Inc.

Inchcape Testing Services
Anametrix Laboratories

SAMPLE RECEIVING CHECKLIST

WORKORDER NUMBER: 9412096 CLIENT PROJECT ID: 26560.008

COOLER

Shipping slip (airbill, etc.) present?	YES	NO	(N/A)
If YES, enter carrier name and airbill # : _____			
Custody Seal on the outside of cooler?	YES	NO	(N/A)
Condition: INTACT ____ BROKEN ____			
Temperature of sample (s) within range?	(YES)	NO	N/A
List temperature of cooler (s): 5°C			

SAMPLES

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

CHAIN OF CUSTODY

Chain of custody received with samples?	(YES)	NO
Has it been filled out completely and in ink?	(YES)	NO
Sample ID's on chain of custody agree with container labels?	(YES)	NO
Number of containers indicated on chain of custody agree with number received?	(YES)	NO
Analysis methods clearly specified?	(YES)	NO
Sampling date and time indicated?	(YES)	NO
Proper signatures of sampler, courier, sample custodian in appropriate place? with time and date?	(YES)	NO
Turnaround time? REGULAR ✓ RUSH ____		

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

MB 12/8/94

CHAIN OF CUSTODY FORM

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

CHAIN OF CUSTODY FORM

9412005 (10/21)

Lab: Anametrix

Samplers: SJK

Project Number: 26560.008

Name/Location: James River / San Leandro

Project Manager: Rick Hutton

Recorder: Steve Kabay (Signature Required)

	SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	HCl	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	ANALYSIS REQUESTED: EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH - Motor Oil
1	23	X							3	94	06	JR01	94	12	06	0845				X			
2	23	X						4	3	94	06	JR02	94	12	06	0930				X			X
3	23	X						4	3	94	06	JR03	94	12	06	1005				X			X
4	23	X							3	94	06	JR04	94	12	06	1055				X			
5	23	X							3	94	06	JR05	94	12	06	1128				X			
6	23	X							3	94	06	JR06	94	12	06	1215				X			
7	23	X							3	94	06	JR07	94	12	06	1300				X			
8	23	X							3	94	06	JR08	94	12	06	1340				X			
9	23	X							3	94	06	JR09	94	12	06	1355				X			

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Standard T.A.T

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature) Steve Kabay	RECEIVED BY: (Signature)	DATE/TIME 12/6/94 1430
RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME 12/6/94 1605
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)	DATE/TIME 12/6/94 1605
METHOD OF SHIPMENT: cooler - blue ice 2°c		

6533

Laboratory Copy White — Project Office Copy Yellow — Field or Office Copy Pink

#4485 9412096 (10/24)

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

CHAIN OF CUSTODY FORM

Lab: Anametrix 1925 [illegible]

Samplers: SJK

Project Number: 26560,008

Name/Location: James River /San Leandro

Project Manager: Rick Hutton

Recorder: Steve Korbay (Signature Required)

	SOURCE CODE	MATRIX: Water	Sediment	Soil	Oil	#CONTAINERS & PRESERV.: Unpres.	H_2SO_4	HNO_3	SAMPLE NUMBER OR LAB NUMBER: Yr	Wk	Seq	DATE: Yr	Mo	Dy	Time	STATION DESCRIPTION/ NOTES	EPA 601/8010	EPA 602/8020	EPA 624/8240	EPA 625/8270	ICP METALS	EPA 8015M/TPH Motor Oil	AND DIESEL PER	RICK HUTTON 12/9/94 (LW)
(1)	23	X				2			94	07	JR01	94	12	07	1425							X		
(2)	23	X				2			94	07	JR02	94	12	07	1302							X		

LAB NUMBER: Yr	Wk	Seq	DEPTH IN FEET	COL MTD CD	QA CODE	MISCELLANEOUS
						Standard T.A.T

CHAIN OF CUSTODY RECORD

RELINQUISHED BY: (Signature)	RECEIVED BY: (Signature)	DATE/TIME
Steve Korbay	[signature]	12/8/94 0600
[signature]	[signature]	12-8-94 1510
[signature]		12-8-94 1700

DISPATCHED BY: (Signature)	DATE/TIME	RECEIVED FOR LAB BY: (Signature)	DATE/TIME
		[signature]	12/8/94 1700

METHOD OF SHIPMENT

6533

Laboratory Copy White | Project Office Copy Yellow | Field or Office Copy Pink