Brown and Caldwell
Consultants

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January 26, 1991

Mr. Robert Wenning
Engineering Manager
James River Corporation
2101 Williams Street
San Leandro, California 94577

11-5081-02/3

Subject: Third Quarter Groundwater Monitoring Report, James River Corporation, Flexible Packaging Plant, 2101 Williams Street, San Leandro, California

Dear Mr. Wenning:

This letter report presents the methods and results of the third quarterly groundwater sampling conducted on September 6 and 7, 1990 at the subject facility. This work was performed under the terms and conditions of our engineering services agreement dated December 8, 1988, and your Purchase Order No. SL02826-EE dated February 6, 1990.

Background

A brief discussion of the site history is presented in "First Quarterly Groundwater Monitoring Report, James River Corporation Flexible Packaging Plant", dated July 10, 1990.

Field Methods

Ten groundwater monitoring wells have been installed at the site, in the locations shown on Figure 1. Groundwater samples were collected from nine of the ten existing monitoring wells. A groundwater sample could not be collected from well W2 because the well casing is blocked, preventing the pump suction line from reaching groundwater.

Prior to sample collection, 3 to 5 well volumes of water were purged from each well using a gasoline powered centrifugal pump. As each well was purged, the specific conductance, pH, and temperature of the groundwater were measured. The purpose of monitoring these parameters was to ensure that all stagnant water present in the well casing was removed prior to sample collection. Samples were collected after these parameters had stabilized. Data sheets presenting these measurements are included as Attachment A. Water produced during purging of monitoring wells was stored on-site in sealed 55-gallon drums

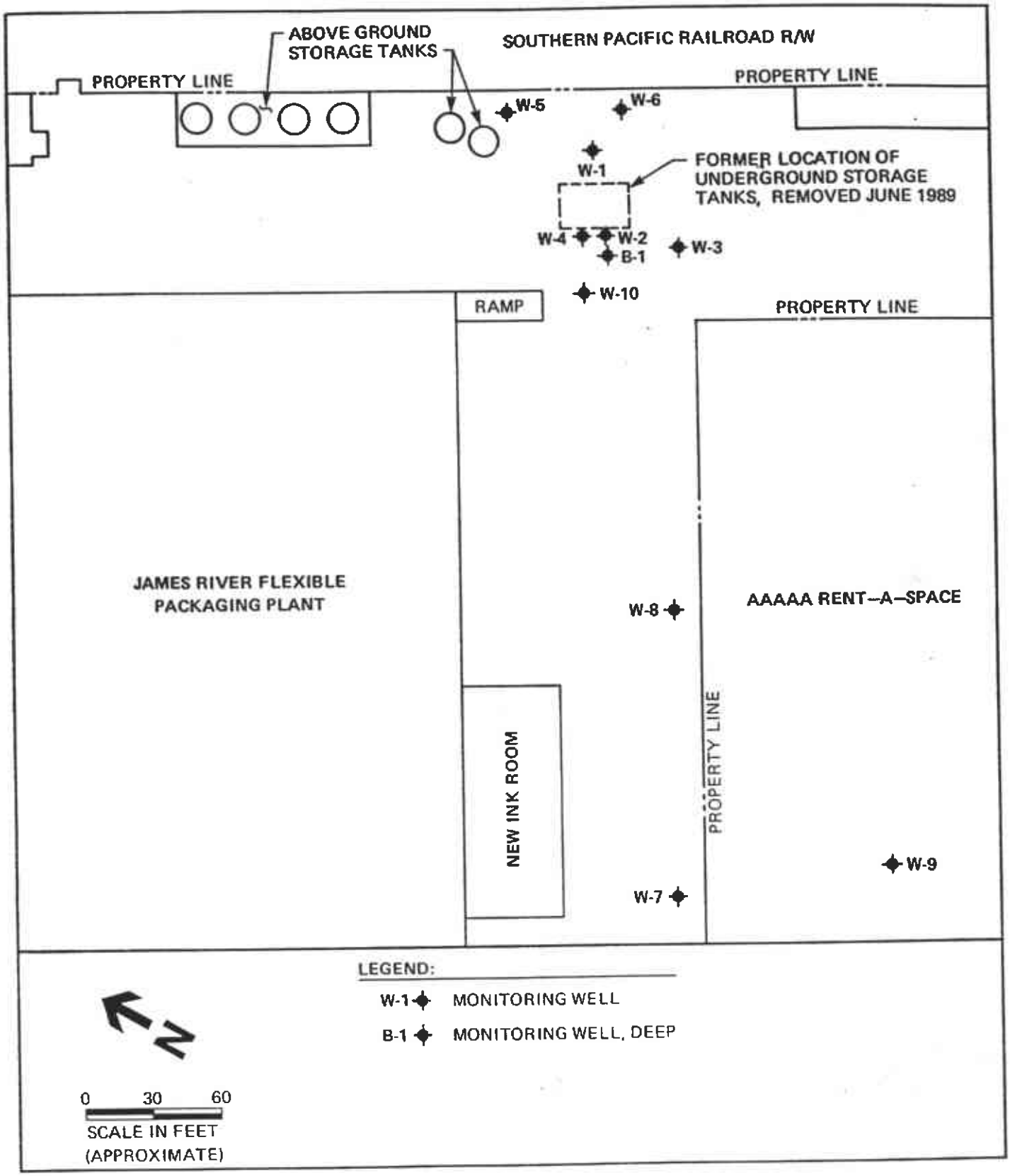

Figure 1 Site Map

for proper disposal or treatment by James River pending receipt of laboratory analyses.

Samples were collected with a Teflon bailer equipped with a bottom emptying device and placed into 40 milliliter, glass sample vials equipped with a Teflon septum. The vials were provided by Brown and Caldwell Analytical (BCA). The vials were filled so that no head space was present in the sample container. Samples were stored in a chilled ice chest until delivery to BCA. Standard chain-of-custody procedures were followed during sample handling.

The bailer and suction line of the pump were washed with laboratory-grade detergent and rinsed with tap water between sample locations. A new length of rope was attached to the bailer prior to sampling each well to prevent cross-contamination of samples.

Analytical Methods

Groundwater samples were submitted for analysis to BCA on September 7, 1990. The samples were analyzed for purgeable priority pollutant organic chemicals using EPA test method 8240. This test method uses gas chromatography/mass spectrometry methods. The analytical method is described in detail in the EPA Publication SW-846, "Test Methods for Evaluating Solid Waste", November 1986.

Groundwater Quality Results

Analytical results for the third quarter samples are summarized in Table 1 (columns identified as September 1990). Only constituents present above method detection limits are included. Analytical results for samples collected in the first and second quarterly sampling events (March and June 1990) are included for comparison purposes. The chain-of-custody form and laboratory analytical reports for the second quarter samples are included as Attachment B. The following paragraphs summarize significant findings.

Alcohol, Acetates, and Acetone. Alcohols were detected in wells W4, W5, and W8 by semi-quantified methods. Isopropanol was identified in wells W4 and W5 at concentrations of 1,000 and 100 micrograms per liter (ug/l), respectively. Methylethanol was identified in well W8 at a concentration of 90 ug/l.

No acetate was detected in third quarter samples. Acetate levels have declined from several thousand milligrams per liter (mg/l) in 1984 (Harding-Lawson Associates).

Acetone was detected in wells W4, W6 and W8 at concentrations ranging from 17 to 330,000 micrograms per liter (ug/l). Levels

Table 1. Analytical Results - Quarterly Groundwater Monitoring

Well Identification	W1			W3			W4		
Sampling Date	Mar-90	Jun-90	Sep-90	Mar-90	Jun-90	Sep-90	Mar-90	Jun-90	Sep-90
PARAMETER									
Purgeable Organic Compounds, ug/l									
1,1,1-Trichloroethane	<500	<2000	<1	<5	<2	<1	<500	<200	<1
1,1-Dichloroethane	<500	<2000	<1	<5	2	3	<500	<200	<1
1,1-Dichloroethene	<500	<2000	<1	<5	<2	<1	<500	<200	<1
1,2-Dichloroethene	<500	<2000	-	<5	2	-	<500	<200	-
cis-1,2-Dichloroethene	<500	<2000	320	400	140	130	<500	350	120
2-Hexanone	<500	<2000	35	<5	<2	<1	<500	<200	900
Acetone	290,000	180,000	<10	<50	<20	<10	400,000	60,000	17
Ethylbenzene	<500	<2000	<1	<5	<2	<1	<500	<200	13
Methyl Ethyl Ketone	<10000	<40000	990	<100	<40	<20	<10000	<4000	1,000
Tetrachloroethene	<500	<2000	330	29	340	190	<500	390	40
Toluene	<500	<2000	7	<5	<2	<1	1,200	400	450
Total Xylene Isomers	<500	<2000	2	<5	<2	2	<500	<200	99
Trichloroethene	<500	<2000	58	130	200	140	<500	<200	14
Vinyl Chloride	<500	<2000	100	24	<2	14	<500	<200	41
Semi-Quantified Results									
C5H1002 Ester	-	-	-	-	-	-	-	-	200
C6H12O Ketone	-	-	-	-	-	-	-	-	20
C6 Hydrocarbon	-	-	10	-	-	-	-	-	-
C7H14O3 Ester	-	-	-	-	-	-	-	-	7
C9H18O Ketone	-	-	-	-	-	-	-	-	7
Diisopropyl Ether	-	-	-	30	40	-	-	-	-
Di-N-Propyl Ether	-	-	-	-	-	5	-	-	-
Isopropanol	-	-	-	-	-	-	-	-	1,000
Methylethanol	-	-	-	-	-	-	-	-	-
Methylethylacetate	-	-	-	-	-	-	10,000	-	-
N-Butylether	-	-	-	-	-	-	-	-	20
Thiobismethane	-	-	-	-	-	-	-	-	500

Notes:

1. ug/l = micrograms per liter
2. * denotes duplicate sample
3. Well W2 is damaged and is no longer sampled.
4. - indicates not reported
5. Semi-quantified results based upon comparison of total ion count of the compound with that of the nearest internal standard.

Table 1. Analytical Results - Quarterly Groundwater Monitoring (continued)

Well Identification	W5			W6			W7		
Sampling Date	Mar-90	Jun-90	Sep-90	Mar-90	Jun-90	Sep-90	Mar-90	Jun-90	Sep-90
PARAMETER									
Purgeable Organic Compounds, ug/l									
1,1,1-Trichloroethane	<20	<50	<20	<20	<5	<5	<5	<5	<5
1,1-Dichloroethane	<20	<50	<20	<20	<5	<5	<5	<5	<5
1,1-Dichloroethene	<20	<50	<20	<20	<5	<5	<5	<5	<5
1,2-Dichloroethene	<20	<50	-	<20	<5	-	<5	<5	-
cis-1,2-Dichloroethene	1,900	4,200	2,900	<20	<5	7	72	81	65
2-Hexanone	<20	<50	<20	<20	<5	<5	<5	<5	<5
Acetone	<20	<500	<200	<200	<50	74	<50	<50	<50
Ethylbenzene	<20	<50	<20	<20	<5	<5	<5	<5	<5
Methyl Ethyl Ketone	<400	<1000	<400	<400	<100	<100	<100	<100	<100
Tetrachloroethene	5,600	2,100	670	1,700	940	980	740	590	680
Toluene	<20	<50	<20	<20	<5	<5	<5	<5	<5
Total Xylene Isomers	<20	<50	<20	<20	<5	<5	<5	<5	<5
Trichloroethene	460	340	170	280	230	280	240	210	270
Vinyl Chloride	190	300	220	<20	<5	<5	<5	<5	<5
Semi-Quantified Results									
C5H1002 Ester	-	-	-	-	-	-	-	-	-
C6H12O Ketone	-	-	-	-	-	-	-	-	-
C6 Hydrocarbon	-	-	-	-	-	-	-	-	-
C7H14O3 Ester	-	-	-	-	-	-	-	-	-
C9H18O Ketone	-	-	-	-	-	-	-	-	-
Diisopropyl Ether	-	-	-	-	-	-	-	-	-
Di-N-Propyl Ether	-	-	-	-	-	-	-	-	-
Isopropanol	-	-	100	-	-	-	-	-	-
Methylethanol	-	-	-	-	-	-	-	-	-
Methylethylacetate	-	-	-	-	-	-	-	-	-
N-Butylether	-	-	-	-	-	-	-	-	-
Thiobismethane	-	-	-	-	-	-	-	-	-

Notes:
1. ug/l = micrograms per liter
2. * denotes duplicate sample
3. Well W2 is damaged and is no longer sampled.
4. - indicates not reported
5. Semi-quantified results based upon comparison of total ion count of the compound with that of the nearest internal standard.

Table 1. Analytical Results - Quarterly Groundwater Monitoring (continued)

Well Identification	W8			W9			B1		
Sampling Date	Mar-90	Jun-90	Sep-90	Mar-90	Jun-90	Sep-90	Mar-90	Jun-90	Sep-90
PARAMETER									
Purgeable Organic Compounds, ug/l									
1,1,1-Trichloroethane	<1000	<1000	<1	<1	<1	5	<1	<1	<1
1,1-Dichloroethane	<1000	<1000	<1	<1	<1	1	<1	<1	<1
1,1-Dichloroethene	<1000	<1000	<1	<1	<1	4	<1	<1	<1
1,2-Dichloroethene	<1000	<1000	-	<1	<1	-	<1	<1	-
cis-1,2-Dichloroethene	<1000	<1000	31	<1	<1	<1	2	1	2
2-Hexanone	<1000	<1000	4,100	<1	<1	<1	<1	<1	<1
Acetone	870,000	390,000	330,000	<10	<10	<10	<10	<10	<10
Ethylbenzene	<1000	<1000	<1	<1	<1	<1	<1	<1	<1
Methyl Ethyl Ketone	<20000	<20000	3,200	<20	<20	<20	<20	<20	<20
Tetrachloroethene	<1000	<1000	1	13	23	20	2	2	3
Toluene	<1000	<1000	87	<1	<1	<1	<1	<1	<1
Total Xylene Isomers	<1000	<1000	7	<1	<1	<1	<1	<1	<1
Trichloroethene	<1000	<1000	3	21	28	26	<1	<1	<1
Vinyl Chloride	<1000	<1000	5	<1	<1	<1	<1	<1	<1
Semi-Quantified Results									
C5H1002 Ester	-	-	-	-	-	-	-	-	-
C6H12O Ketone	-	-	-	-	-	-	-	-	-
C6 Hydrocarbon	-	-	-	-	-	-	-	-	-
C7H14O3 Ester	-	-	-	-	-	-	-	-	-
C9H18O Ketone	-	-	8	-	-	-	-	-	-
Diisopropyl Ether	-	-	-	-	-	-	-	-	-
Di-N-Propyl Ether	-	-	-	-	-	-	-	-	-
Isopropanol	-	-	-	-	-	-	-	-	-
Methylethanol	-	-	90	-	-	-	-	-	-
Methylethylacetate	-	-	-	-	-	-	-	-	-
N-Butylether	-	-	-	-	-	-	-	-	-
Thiobismethane	-	-	500	-	-	-	-	-	-

Notes:
1. ug/l = micrograms per liter
2. * denotes duplicate sample
3. Well W2 is damaged and is no longer sampled.
4. - indicates not reported
5. Semi-quantified results based upon comparison of total ion count of the compound with that of the nearest internal standard.

of acetone in well W8 are comparable to those detected in previous quarterly sampling events. The reported acetone concentrations of 17 ug/l in well W4 and non-detectable (<10 ug/l) in well W1, represent significant decreases when compared with previous quarterly results. This may be related to sampling or laboratory errors. The fourth quarterly sampling in December 1990 will aid in determining whether this apparent decrease is erroneous. Prior to the third quarter reported concentration of 74 ug/l, no acetone has been identified in well W6. The source of acetone in the groundwater has not been determined.

Purgeable Organic Chemicals. The hydrocarbons toluene, tetrachloroethylene or perchloroethene (PCE), trichloroethylene (TCE), 1,2-dichloroethane (1,2-DCA), cis-1,2-dichloroethene (cis-1,2-DCE), 2-Hexanone, Methyl Ethyl Ketone (MEK), xylenes, and vinyl chloride were identified in shallow groundwater samples collected this quarter. Due to changes in detection limits between samples collected this quarter and those previously collected, comparisons between sampling events cannot be made for all constituents. However, where comparisons are possible, the data indicate that, in general, concentrations of organic compounds in the shallow groundwater are decreasing.

Exceptions to this trend are the concentrations of PCE and TCE in wells W6 and W7, which increased slightly. MEK and 2-Hexanone were previously reported as semi-quantified compounds, thus direct comparisons between third quarter and earlier samples are not possible.

Groundwater Flow

Water levels were measured with an electric water level sounder in each monitoring well on September 6, 1990. Groundwater elevations were calculated using top-of-casing elevations as reported in an April 10, 1986 Harding-Lawson Associates report. Groundwater elevation data are summarized in Table 2. Data collected in previous quarterly sampling events are included for comparison purposes.

Groundwater levels have decreased in all wells when compared to the June data. Decreases average 1.03 feet. The reduction in groundwater elevation is probably a seasonal variation related to precipitation.

Figure 2 illustrates the configuration of the shallow groundwater in the vicinity of the site based on the September 6, 1990 measurements Groundwater flows west, toward San Francisco Bay, under a hydraulic gradient of approximately 0.002 feet per foot. This gradient is equal to that calculated from the June 1990 data. San Francisco Bay is located approximately one-half mile west-southwest of the site.

Table 2 Groundwater Elevation, feet above mean sea level

Monitoring Well	Top of Casing Elevation	Date		
		5-Mar-90	6-Jun-90	6-Sep-90
W-1	20.67	8.73	8.67	7.52
W-2	20.02	7.58	7.22	6.20
W-3	20.80	8.59	8.48	7.43
W-4	21.00	8.80	8.78	7.50
W-5	21.64	8.42	8.37	7.42
W-6	21.05	8.73	8.58	7.52
W-7	20.41	8.03	7.77	6.94
W-8	20.50	8.66	8.55	7.52
W-9	20.16	8.24	8.11	7.16
B-1	20.59	8.66	8.43	7.47

Notes:

Top of casing elevation data from Harding-Lawson Associates, 1986.
Well B-1 monitors a deeper groundwater zone.
Well W2 is damaged. Water level data questionable.

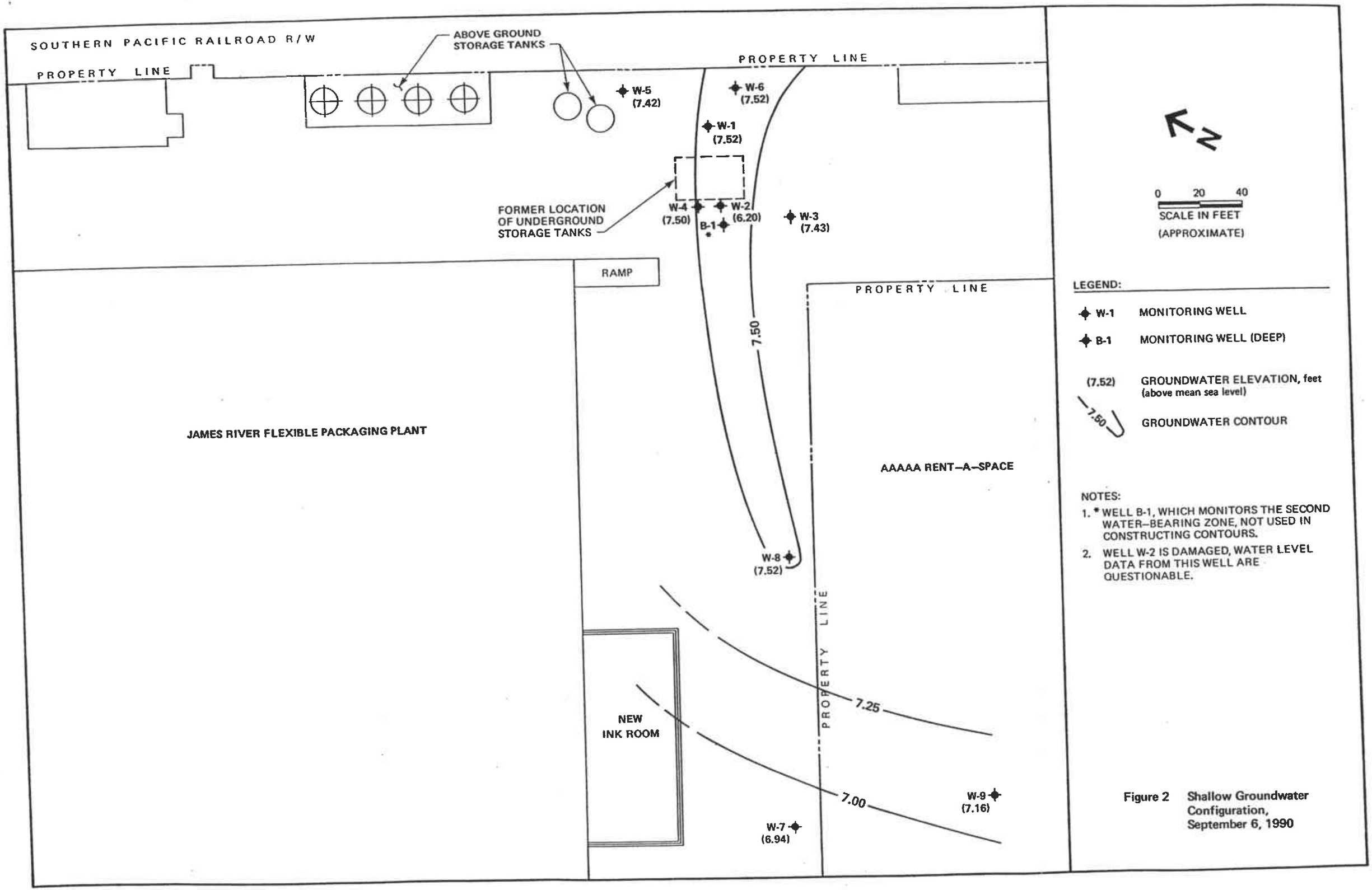

Figure 2 Shallow Groundwater Configuration, September 6, 1990

The groundwater mound in the vicinity of the former tank location, denoted by the 7.5 foot contour interval on Figure 2, may be a result of removing the relatively impermeable asphalt in that location to conduct tank and pipeline removal. Increased infiltration of precipitation and/or surface runoff may be occurring in the area where no asphalt is present, causing groundwater levels to rise. The asphalt was replaced upon completion of pipeline removal. Future water level monitoring will aid in determining whether the mound is an actual hydrologic feature or is related to increased infiltration.

Summary

Acetates were not detected in the groundwater samples collected this quarter. Alcohols were detected by semi-quantified methods in wells W4, W5, and W8. Acetone was detected in wells W4, W6, and W8. Acetone levels have declined in wells W1 and W4 when compared with previously collected data. With the exception of PCE and TCE in well W6 and W7, concentrations of purgeable organic constituents have generally decreased when compared to previous analytical results.

Groundwater levels have decreased in all wells when compared to data collected in September 1990. The decrease probably reflects seasonal variations related to precipitation. Groundwater in the vicinity of the James River Corporation site flows southwest, toward San Francisco Bay.

We appreciate this opportunity to be of service to you. Please contact me if you have any questions or comments regarding this report.

Very truly yours,

BROWN AND CALDWELL

Donna L. Courington
Project Manager

DLC:dc

Enclosures

cc: Mr. Larry Seto, Alameda County Health Agency
Mr. Lester Feldman, San Francisco Regional Water Quality Control Board

Brown and Caldwell
Consultants

FIELD DATA

JOB NAME: James Rwere
LOCATION: San Leandro, CA
JOB NO: 5081-02
DATE: 9-6-90 / 9-7-90
PROJ. MGR: Courington
FIELD PERSONNEL: Hallock

CLIENT:
CONTACT:
PHONE:
SECONDARY:
PHONE:

SAFETY OFFICER: H&S PLAN ONSITE? (YES)/(NO) WEATHER:

pH INSTRUMENT: SER. NO: pH 4.0 = pH 7.0 = pH 10.0 =

CONDUCTIVITY INSTRUMENT: SER. NO: INTERNAL CALIBRATION PERFORMED (YES)/(NO)

OTHER INSTRUMENTATION:

0800 - 0900 Stop at stores to replenish supplies (towels, brushes)

0940 Arrived at site, met with Bob Kenney, made arrangements for drum removal at JA Storage

1000 Measured SWL's

W-1	(4")	13.15'	W-6	(2")	13.53'
W-2	(2")	13.82'	W-7	(4")	13.47'
W-3	(4")	13.37'	W-8	(4")	12.98'
W-4	(4")	13.50'	W-9	(4")	13.00' (measured 9/7/90)
W-5	(2")	14.21 ✓	B-1	(4")	13.12'

Standardize pH/SC meters 4.0, 9.99, 7.14

1530 Sampled 5 wells today
finished paperwork, drums, labeled drums

1615 left site arr. WC 1715

JOB NUMBER		SUBJECT	DATE	SHEET NO.

Brown and Caldwell Consultants

FIELD DATA

JOB NAME: James River — CLIENT: _____

LOCATION: _____ — CONTACT: _____

JOB NO: _____ — PHONE: _____

DATE: 9/7/90 — SECONDARY: _____

PROJ. MGR: _____ — PHONE: _____

FIELD PERSONNEL: _____

SAFETY OFFICER: _____ H&S PLAN ONSITE? (YES)/(NO) WEATHER: _____

pH INSTRUMENT: _____ SER. NO: _____ pH 4.0 = _____ pH 7.0 = _____ pH 10.0 = _____

CONDUCTIVITY INSTRUMENT: _____ SER. NO: _____ INTERNAL CALIBRATION PERFORMED (YES)/(NO)

OTHER INSTRUMENTATION: _____

Day 2

0800-0900 Drive to site, stop for ice
→ Engineering office to confirm drum removal at 5-A Self Storage; unload truck to make room

0955 Standardize pH, SC meters pH 4.0, 10.04, 7.08

1030 finished w 9, met w/ Bob & forklift driver to move drum - requested another MT drum (1 short)

1200 Look for Bob to locate the MT - Rec'd 1230.

1310 Finished sampling, decon & pack vehicle

1340 left site

1410 Delivered samples BCA

1430 → BCPH

JOB NUMBER		SUBJECT	DATE	SHEET NO.

BC GROUNDWATER DATA

BC Personnel SH
Job Number 5056-02
Date 9-7-90

Well ID. B1
Static W.L. 13.12'
Well Volume _____

Casing Dia. 4"
Borehole Dia. _____
Casing Above L.S. _____

Pump Used Trash
Samples Collected 8240
Other _____

Time	p.H.	TEMPERATURE	CONDUCTIVITY	Gallons Removed	Remarks
1136	7.11	18.8	320	18	Clear
1141	7.17	18.8	320	36	"
1144	7.21	18.8	320	53	"
1150	Sampled				

CAPACITIES – Gallons per Linear Foot

2" Hole - 0.16
4" Hole - 0.65
6" Hole - 1.46
6.5" Hole - 1.7
8" Hole - 2.6
10" Hole - 4.1

BC GROUNDWATER DATA

BC Personnel SH
Job Number 5031-02
Date 9-6-90

Well ID. W.1
Static W.L. 13.15'
Well Volume

Casing Dia. 4"
Borehole Dia.
Casing Above L.S.

Pump Used Trash
Samples Collected 8240
Other

Time	p.H.	TEMPERATURE	CONDUCTIVITY	Gallons Removed	Remarks
1434	6.8	20.4	340	18	Large, bright orange particulate mild musty odor, slightly cloudy
1441	6.78	20.0	330	36	fewer particles, clearing
1445	6.78	19.9	330	53	" "
1455	Sampled				

CAPACITIES – Gallons per Linear Foot

2" Hole - 0.16
4" Hole - 0.65
6" Hole - 1.46
6.5" Hole - 1.7
8" Hole - 2.6
10" Hole - 4.1

BC GROUNDWATER DATA

BC Personnel SH
Job Number 5091.6
Date 9-7-9

Well ID. MW-3
Static W.L. 13.37'
Well Volume _____

Casing Dia. 4"
Borehole Dia. _____
Casing Above L.S. _____

Pump Used Trash
Samples Collected _____
Other _____

Time	p.H.	TEMPERATURE	CONDUCTIVITY	Gallons Removed	Remarks
1245	6.93	19.9	340	18	Clear, yellowish, mild odor
1250	6.96	19.2	330	36	Clear, w/particles, mild odor
1255	6.85	19.5	330	53	Clear, v. faint odor
1305	Sampled -	samples	contain		boron, fibrous
		particles			

CAPACITIES – Gallons per Linear Foot

2" Hole - 0.16
4" Hole - 0.65
6" Hole - 1.46
6.5" Hole - 1.7
8" Hole - 2.6
10" Hole - 4.1

BC GROUNDWATER DATA

BC Personnel SH
Job Number 5081-02
Date 9-7-90

Well ID. MW-4
Static W.L. 13.5
Well Volume

Casing Dia. 4"
Borehole Dia.
Casing Above L.S.

Pump Used Trash
Samples Collected
Other

Time	p.H.	TEMPERATURE	CONDUCTIVITY	Gallons Removed	Remarks
1118	6.38	19.6	360	18	grey, cloudy, very strong acetic odor
1122	6.44	19.3	360	36	Clearing, odor still strong
1128	6.53	19.4	340	53	" "
1135	Sampled - samples contain numerous black particles				

CAPACITIES – Gallons per Linear Foot

2" Hole - 0.16
4" Hole - 0.65
6" Hole - 1.46
6.5" Hole - 1.7
8" Hole - 2.6
10" Hole - 4.1

BC GROUNDWATER DATA

BC Personnel SH
Job Number 5051-02
Date 9-6-90

Well ID. W-5
Static W.L. 14.22
Well Volume

Casing Dia. 2"
Borehole Dia.
Casing Above L.S.

Pump Used Trash
Samples Collected S240
Other

Time	p.H.	TEMPERATURE	CONDUCTIVITY	Gallons Removed	Remarks
1337	6.92	19.1	320	18	greyish, cloudy mild odor
1340	6.95	19.1	320	36	Cleaning, slightly cloudy
1345	6.74	19.3	310	53	" " " faint odor
1355	Sampled - Samples thick, grey (silty)				
1418	Resampled - VOAs from first sampling broke (salt in threads of cap?)				

CAPACITIES – Gallons per Linear Foot

2" Hole - 0.16
4" Hole - 0.65
6" Hole - 1.46
6.5" Hole - 1.7
8" Hole - 2.6
10" Hole - 4.1

BC GROUNDWATER DATA

BC Personnel SH
Job Number 5031-02
Date 9-16-90

Well ID. W-6
Static W.L. 13.53'
Well Volume

Casing Dia. 2"
Borehole Dia.
Casing Above L.S.

Pump Used Trash
Samples Collected 8240
Other

Time	p.H.	TEMPERATURE	CONDUCTIVITY	Gallons Removed	Remarks
1513 ~~1548~~	7.1	19.4	330	18	Clear
1518	7.07	19.2	320	36	"
1523	7.03	19.2	320	53	"
1530	Sampled				

CAPACITIES – Gallons per Linear Foot

2" Hole - 0.16
4" Hole - 0.65
6" Hole - 1.46
6.5" Hole - 1.7
8" Hole - 2.6
10" Hole - 4.1

BC GROUNDWATER DATA

BC Personnel [illegible]
Job Number 5151-02
Date 4-6-95

Well ID. W-87
Static W.L. 12.98'
Well Volume _____

Casing Dia. 4"
Borehole Dia. _____
Casing Above L.S. _____

Pump Used Teflon
Samples Collected _____
Other _____

Time	p.H.	TEMPERATURE	CONDUCTIVITY	Gallons Removed	Remarks
1155	7.09	19.0	280	18	Clear.
1203	6.93	15.7	240	36	"
1207	6.96	18.7	300	53	"
1215	Sampled	- Sample	contains many		fibrous particles

CAPACITIES – Gallons per Linear Foot

2" Hole - 0.16
4" Hole - 0.65
6" Hole - 1.46
6.5" Hole - 1.7
8" Hole - 2.6
10" Hole - 4.1

BC GROUNDWATER DATA

BC Personnel Hauck
Job Number 5081-02
Date 9-6-90

Well ID. W-8
Static W.L. 12.98'
Well Volume

Casing Dia. 4"
Borehole Dia.
Casing Above L.S.

Pump Used Trash
Samples Collected 9240
Other

Time	p.H.	TEMPERATURE	CONDUCTIVITY	Gallons Removed	Remarks
1248	6.45	19.1	520	18	Acid odor Cloudy, effervescent
1251	6.45	18.6	500	36	" "
1255	6.4	18.8	480	53	" "
1305	Sampled - Sample contains black, solid particles				

CAPACITIES – Gallons per Linear Foot

2" Hole - 0.16
4" Hole - 0.65
6" Hole - 1.46
6.5" Hole - 1.7
8" Hole - 2.6
10" Hole - 4.1

BC GROUNDWATER DATA

BC Personnel SA
Job Number 3051.02
Date 9-7-90

Well ID. W-9
Static W.L. 13.00
Well Volume

Casing Dia. 4"
Borehole Dia.
Casing Above L.S.

Pump Used Trash
Samples Collected 8240
Other

Time	p.H.	TEMPERATURE	CONDUCTIVITY	Gallons Removed	Remarks
1000	6.13	18.9	340	18	Slightly cloudy
1003	6.97	18.7	340	36	Clearing
1007	7.16	18.9	330	53	slightly Cloudy
1015	Sampled - Samples clear, but contain particles white, black, and colored				

CAPACITIES – Gallons per Linear Foot

2" Hole - 0.16
4" Hole - 0.65
6" Hole - 1.46
6.5" Hole - 1.7
8" Hole - 2.6
10" Hole - 4.1

ATTACHMENT B

CHAIN OF CUSTODY FORM/
LABORATORY ANALYTICAL REPORTS

CHAIN OF CUSTODY RECORD

BCA Log Number 9004134

Client name: BCPH / James River	Project or PO#: 5051.02
Address:	Phone #: 937-9010
City, State, Zip:	Report attention: Donna Covington

Sampled by: Sandy Hallock

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	8240	Hazardous sample Special handling required	Remarks
1	9-7-90	1150	GW	B-1	2	2		
2	9-6-90	1455		W-1				
3	9-7	1305		W-3				
4	9-7	1135		W-4				
5	9-6	1418		W-5				
6	9-6	1530		W-6				
7	9-6	1215		W-7				
8	9-6	1305		W-8				
9	9-7	1015		W-9				

	Signature	Print Name	Company	Date	Time
Relinquished by		Sandy Hallock	BCPH	9-7-90	2:10
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory		Monika Scott	BCA	9-7-90	2:19

B C ANALYTICAL

- ☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737
- ☐ 1200 Pacifico Avenue, Anaheim, CA 92805 (714) 978-0113

Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

*KEY: AO—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

Analytical Report

LOG NO: E90-09-139

Received: 07 SEP 90
Reported: 20 SEP 90

REVISED 10-8-90

Ms. Donna Courington
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 5081-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-139-1	B-1	07 SEP 90
09-139-2	W-1	06 SEP 90
09-139-3	W-3	07 SEP 90
09-139-4	W-4	07 SEP 90
09-139-5	W-5	06 SEP 90

PARAMETER	09-139-1	09-139-2	09-139-3	09-139-4	09-139-5
Purgeable Priority Pollutants					
Date Analyzed	09.13.90	09.13.90	09.13.90	09.13.90	09.13.90
Date Extracted	09.13.90	09.13.90	09.13.90	09.13.90	09.13.90
Dilution Factor, Times	1	1	1	1	20
1,1,1-Trichloroethane, ug/L	<1	<1	<1	<1	<20
1,1,2,2-Tetrachloroethane, ug/L	<1	<1	<1	<1	<20
1,1,2-Trichloroethane, ug/L	<1	<1	<1	<1	<20
1,1-Dichloroethane, ug/L	<1	<1	3	<1	<20
1,1-Dichloroethene, ug/L	<1	<1	<1	<1	<20
1,2-Dichloroethane, ug/L	<1	<1	<1	<1	<20
1,2-Dichlorobenzene, ug/L	<1	<1	<1	<1	<20
1,2-Dichloropropane, ug/L	<1	<1	<1	<1	<20
1,3-Dichlorobenzene, ug/L	<1	<1	<1	<1	<20
1,4-Dichlorobenzene, ug/L	<1	<1	<1	<1	<20
2-Chloroethylvinylether, ug/L	<1	<1	<1	<1	<20
2-Hexanone, ug/L	<1	35	<1	900	<20
4-Methyl-2-Pentanone, ug/L	<1	<1	<1	<1	<20
Acetone, ug/L	<10	<10	<10	17	<200
Acrolein, ug/L	<10	<10	<10	<10	<200
Acrylonitrile, ug/L	<10	<10	<10	<10	<200
Bromodichloromethane, ug/L	<1	<1	<1	<1	<20
Bromomethane, ug/L	<1	<1	<1	<1	<20
Benzene, ug/L	<1	<1	<1	<1	<20

Brown and Caldwell
Analytical

1255 Powell Street
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Analytical Report

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Received: 07 SEP 90
Reported: 20 SEP 90

Ms. Donna Courington
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3480 Buskirk Avenue
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Project: 5081-02

REPORT OF ANALYTICAL RESULTS

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09-139-1	B-1	07 SEP 90
09-139-2	W-1	06 SEP 90
09-139-3	W-3	07 SEP 90
09-139-4	W-4	07 SEP 90
09-139-5	W-5	06 SEP 90

PARAMETER	09-139-1	09-139-2	09-139-3	09-139-4	09-139-5
Bromoform, ug/L	<1	<1	<1	<1	<20
Chlorobenzene, ug/L	<1	<1	<1	<1	<20
Carbon Tetrachloride, ug/L	<1	<1	<1	<1	<20
Chloroethane, ug/L	<1	<1	<1	<1	<20
Chloroform, ug/L	<1	<1	<1	<1	<20
Chloromethane, ug/L	<1	<1	<1	<1	<20
Carbon Disulfide, ug/L	<1	<1	<1	<1	<20
Dibromochloromethane, ug/L	<1	<1	<1	<1	<20
Ethylbenzene, ug/L	<1	<1	<1	13	<20
Freon 113, ug/L	<1	<1	<1	<1	<20
Methyl ethyl ketone, ug/L	<20	990	<20	1000	<400
Methylene chloride, ug/L	<5	<5	<5	<5	<100
Styrene, ug/L	<1	<1	<1	<1	<20
Trichloroethene, ug/L	<1	58	140	14	170
Trichlorofluoromethane, ug/L	<1	<1	<1	<1	<20
Toluene, ug/L	<1	7	<1	450	<20
Tetrachloroethene, ug/L	3	330	190	40	670
Vinyl acetate, ug/L	<1	<1	<1	<1	<20
Vinyl chloride, ug/L	<1	100	14	41	220
Total Xylene Isomers, ug/L	<1	2	2	99	<20
cis-1,2-Dichloroethene, ug/L	2	320	130	120	2900
cis-1,3-Dichloropropene, ug/L	<1	<1	<1	<1	<20
trans-1,2-Dichloroethene, ug/L	<1	<1	<1	<1	<20

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-139-1	B-1	07 SEP 90
09-139-2	W-1	06 SEP 90
09-139-3	W-3	07 SEP 90
09-139-4	W-4	07 SEP 90
09-139-5	W-5	06 SEP 90

PARAMETER	09-139-1	09-139-2	09-139-3	09-139-4	09-139-5
trans-1,3-Dichloropropene, ug/L	<1	<1	<1	<1	<20
Semi-Quantified Results **					
C5H1002 Ester, ug/L	---	---	---	200	---
C6H120 Ketone, ug/L	---	---	---	20	---
C6-Hydrocarbon, ug/L	---	10	---	---	---
C7H1403 Ester, ug/L	---	---	---	7	---
C9H180 Ketone, ug/L	---	---	---	7	---
Di-N-Propyl Ether, ug/L	---	---	5	---	---
Isopropanol, ug/L	---	---	---	1000	100
N-Butylether, ug/L	---	---	---	20	---
Thiobismethane, ug/L	---	---	---	500	---

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

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Pleasant Hill, California 94523

Project: 5081-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-139-6	W-6	06 SEP 90
09-139-7	W-7	06 SEP 90
09-139-8	W-8	06 SEP 90
09-139-9	W-9	07 SEP 90

PARAMETER	09-139-6	09-139-7	09-139-8	09-139-9
Purgeable Priority Pollutants				
Date Analyzed	09.13.90	09.13.90	09.13.90	09.13.90
Date Extracted	09.13.90	09.13.90	09.13.90	09.13.90
Dilution Factor, Times	5	5	1	1
1,1,1-Trichloroethane, ug/L	<5	<5	<1	5
1,1,2,2-Tetrachloroethane, ug/L	<5	<5	<1	<1
1,1,2-Trichloroethane, ug/L	<5	<5	<1	<1
1,1-Dichloroethane, ug/L	<5	<5	<1	1
1,1-Dichloroethene, ug/L	<5	<5	<1	4
1,2-Dichloroethane, ug/L	<5	<5	<1	<1
1,2-Dichlorobenzene, ug/L	<5	<5	<1	<1
1,2-Dichloropropane, ug/L	<5	<5	<1	<1
1,3-Dichlorobenzene, ug/L	<5	<5	<1	<1
1,4-Dichlorobenzene, ug/L	<5	<5	<1	<1
2-Chloroethylvinylether, ug/L	<5	<5	<1	<1
2-Hexanone, ug/L	<5	<5	4100	<1
4-Methyl-2-Pentanone, ug/L	<5	<5	<1	<1
Acetone, ug/L	74	<50	330000	<10
Acrolein, ug/L	<50	<50	<10	<10
Acrylonitrile, ug/L	<50	<50	<10	<10
Bromodichloromethane, ug/L	<5	<5	<1	<1
Bromomethane, ug/L	<5	<5	<1	<1
Benzene, ug/L	<5	<5	<1	<1
Bromoform, ug/L	<5	<5	<1	<1

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Project: 5081-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-139-6	W-6	06 SEP 90
09-139-7	W-7	06 SEP 90
09-139-8	W-8	06 SEP 90
09-139-9	W-9	07 SEP 90

PARAMETER	09-139-6	09-139-7	09-139-8	09-139-9
Chlorobenzene, ug/L	<5	<5	<1	<1
Carbon Tetrachloride, ug/L	<5	<5	<1	<1
Chloroethane, ug/L	<5	<5	<1	<1
Chloroform, ug/L	<5	<5	<1	<1
Chloromethane, ug/L	<5	<5	<1	<1
Carbon Disulfide, ug/L	<5	<5	<1	<1
Dibromochloromethane, ug/L	<5	<5	<1	<1
Ethylbenzene, ug/L	<5	<5	<1	<1
Freon 113, ug/L	<5	<5	<1	<1
Methyl ethyl ketone, ug/L	<100	<100	3200	<20
Methylene chloride, ug/L	<20	<20	<5	<5
Styrene, ug/L	<5	<5	<1	<1
Trichloroethene, ug/L	280	270	3	26
Trichlorofluoromethane, ug/L	<5	<5	<1	<1
Toluene, ug/L	<5	<5	87	<1
Tetrachloroethene, ug/L	980	680	1	20
Vinyl acetate, ug/L	<5	<5	<1	<1
Vinyl chloride, ug/L	<5	<5	5	<1
Total Xylene Isomers, ug/L	<5	<5	7	<1
cis-1,2-Dichloroethene, ug/L	7	65	31	<1
cis-1,3-Dichloropropene, ug/L	<5	<5	<1	<1
trans-1,2-Dichloroethene, ug/L	<5	<5	<1	<1
trans-1,3-Dichloropropene, ug/L	<5	<5	<1	<1

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Project: 5081-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
09-139-6	W-6	06 SEP 90
09-139-7	W-7	06 SEP 90
09-139-8	W-8	06 SEP 90
09-139-9	W-9	07 SEP 90

PARAMETER	09-139-6	09-139-7	09-139-8	09-139-9
Semi-Quantified Results **				
C9H18O, ug/L	---	---	8	---
Methylethanol, ug/L	---	---	90	---
Thiobismethane, ug/L	---	---	500	---

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

This report has been revised to correct the omission of the detected acetone from sample 9009139-8. HJF 10.05.90

Sim D. Lessley, Ph.D., Laboratory Director

Brown and Caldwell
Analytical

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Emeryville CA 94608
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