ADDITIONAL SITE INVESTIGATION SUMMARY REPORT

FOR THE
JAMES RIVER CORPORATION
FLEXIBLE PACKAGING PLANT

SAN LEANDRO, CALIFORNIA

Prepared by Brown and Caldwell Consultants

July 11, 1991

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July 11, 1991

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

5081-01/01

Subject: Additional Site Investigation Summary Report for the James River Corporation Flexible Packaging Plant San Leandro, California

Dear Bob:

Enclosed are five copies of the Additional Site Investigation Summary Report for the subject site.

We appreciate the opportunity to have assisted you in this investigation. If you have any questions or require additional information regarding this report, please call me at (415) 210-2203.

Sincerely,

BROWN AND CALDWELL

Anthony Mongero
Principal Hydrogeologist

AM:lp
Enclosure

cc: Donna Stevens, Brown and Caldwell, Pleasant Hill

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CHAPTER 1

INTRODUCTION

The James River Flexible Packaging Division's San Leandro Plant (site) is located as shown on Figure 1-1. The San Leandro Plant prints and coats packaging used in a variety of food products. The plant has been operational since the early 1940's. James River purchased the site from Crown-Zellerbach Corporation in 1987.

This report describes site activities conducted by Brown and Caldwell Consultants (BCC) between the months of September to November, 1990. These activities included the installation of an additional groundwater monitoring well, the observation and documentation of soil excavation in the ink room area, and the removal of piping associated with former underground storage tanks. Excavation and pipeline removal activities were performed by a subcontractor to James River. Background information for each area of the site in which work was performed is included in the chapter describing the current work in each area.

The scope of work performed during this investigation was determined in a meeting held on March 1, 1990, between James River and the Alameda County Department of Health Services (County). A work plan describing the scope was prepared by BCC and submitted to the County on April 6, 1990. Based on the County's comments on the April 6 work plan, an addendum to the work plan dated July 5, 1990, was prepared. The County authorized the work plan and addendum with a letter dated August 8, 1990. Copies of the approved work plan and the County's letter of authorization are included as Appendix A.

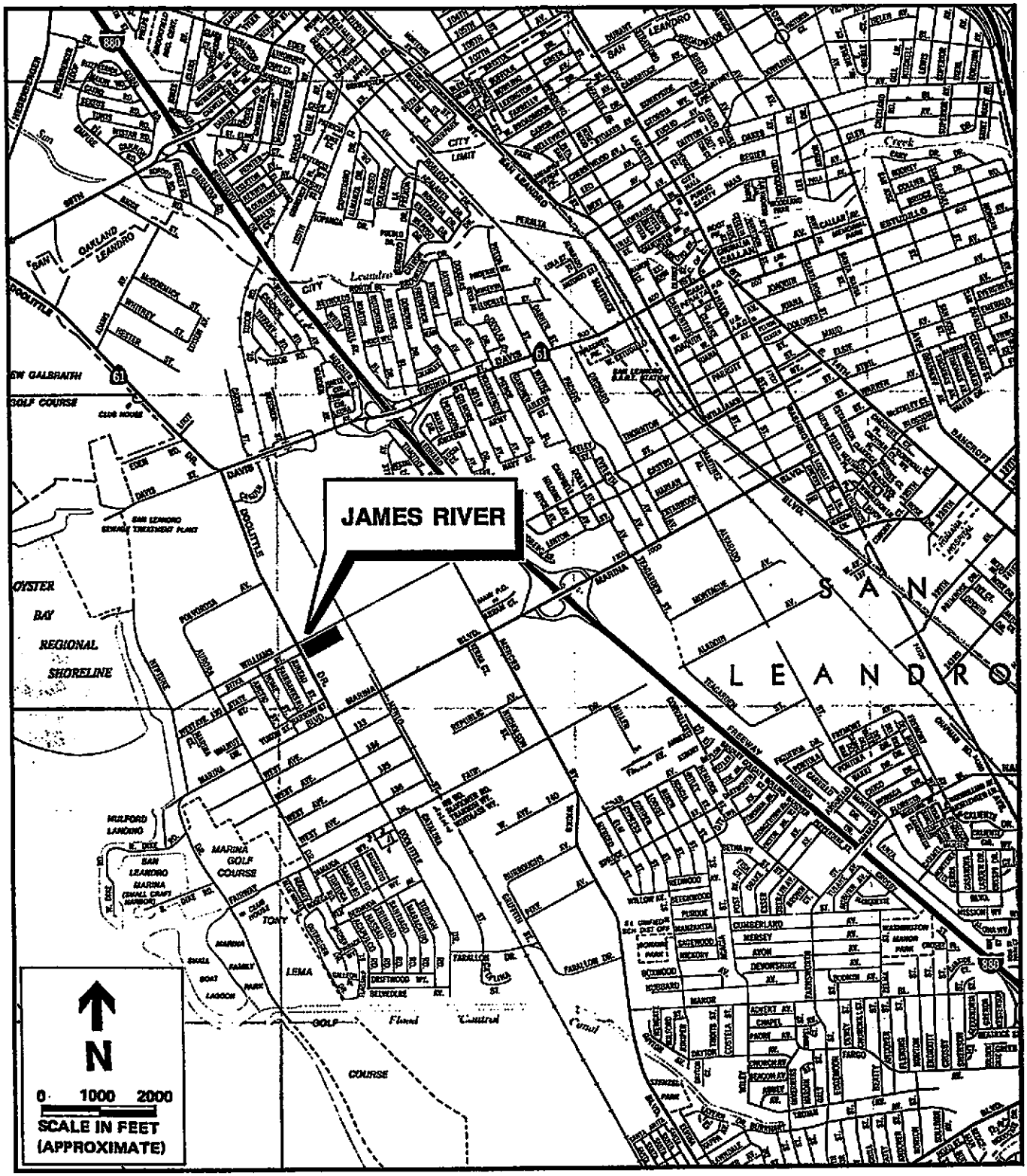

Figure 1–1 Site Location

CHAPTER 2

ADDITIONAL SOIL EXCAVATION - NEW INK ROOM AREA

This chapter describes additional soil excavation activities in the vicinity of the new ink room.

Background

In early 1989, Engineering Services, Inc. (ESI), as a consultant to James River, began soil excavation in the vicinity of the ink room in order to install new underground solvent storage tanks and an underground fire runoff containment tank. During this excavation, stained soils were encountered in the location shown on Figure 2-1. The stained soils were observed at a depth of approximately 3 to 5 feet below grade and appeared to fill a 3 to 4 foot wide east-west trending trench. The limits of the stained soil were not identified during the installation of the tanks. Brown and Caldwell Consultants (BCC) was contracted in April 1989 to identify the lateral extent of the stained soil prior to excavation by James River. A copy of the June 6, 1989, BCC report of this limited investigation is included as Appendix B.

During the limited investigation, BCC hand-auger drilled 16 boreholes in the vicinity of the stained soil as shown on Figure 2-2. Cuttings from the boreholes were examined for the presence of staining. Based on the results of the hand-auger drilling and limited soil sampling and analysis, the approximate extent of the stained soil was identified as designated on Figure 2-2.

As part of the limited investigation, one composite sample composed of two subsamples of stained soil was analyzed using the EPA's Toxicity Characteristic Leaching Procedure (TCLP). The TCLP extract from the composite sample was analyzed for purgeable priority pollutants by

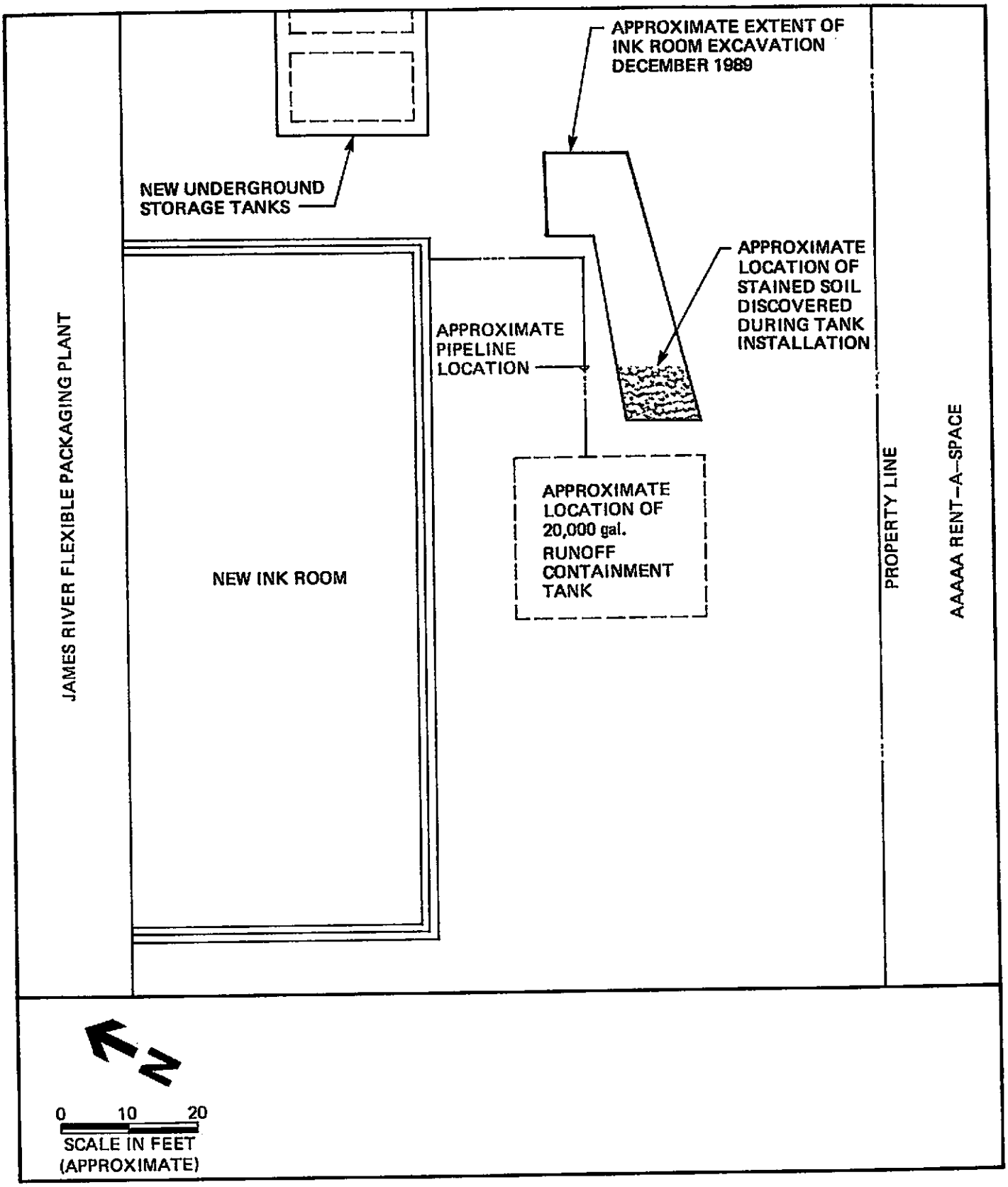

Figure 2–1 New Ink Room Area Location Map

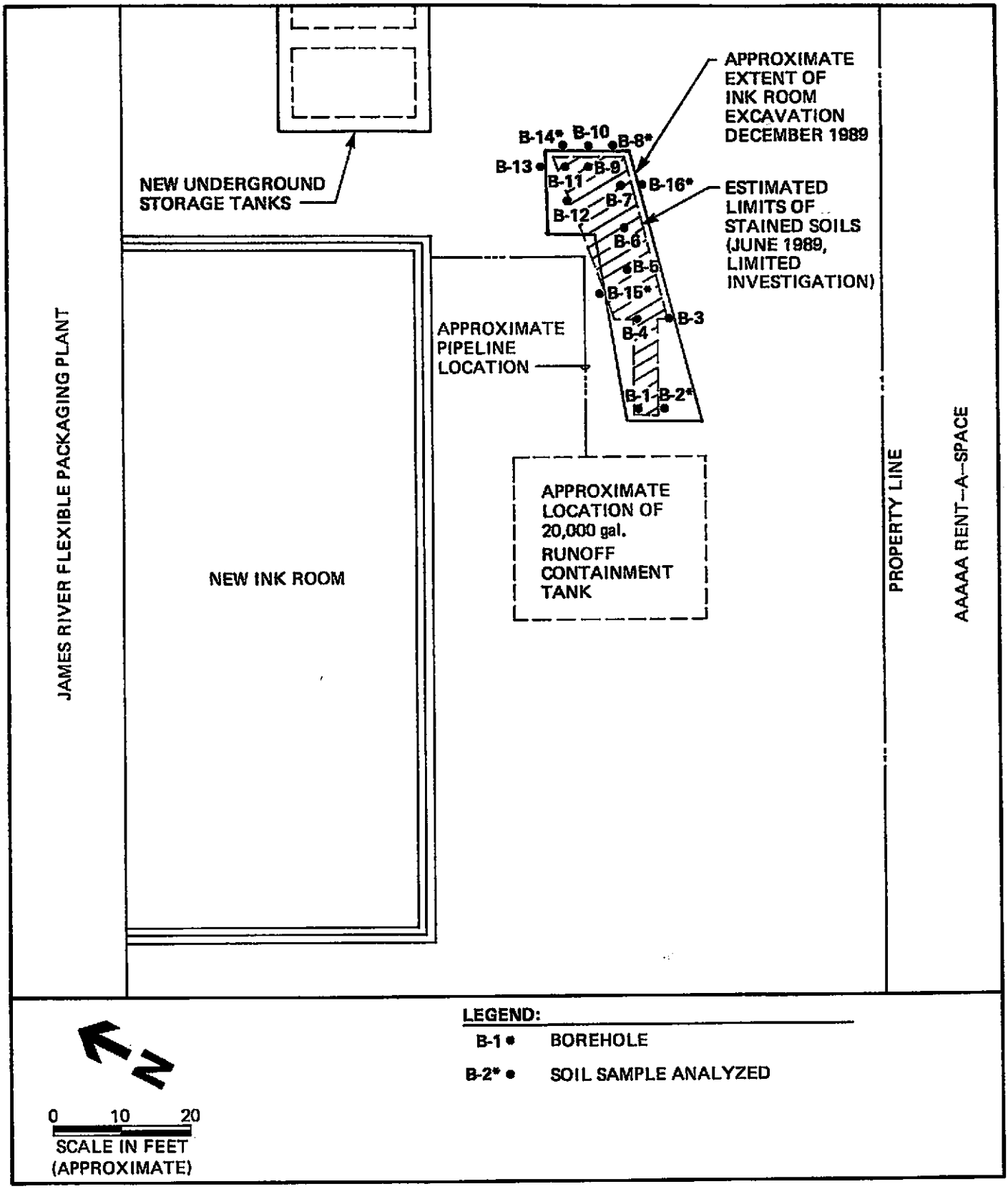

Figure 2–2 Hand-Auger Borehole Locations, Limited Investigation of Stained Soils

EPA Method 8240; base neutral/acid extractable priority pollutants by EPA Method 8270; and the metals silver, barium, cadmium, chromium, lead, mercury, arsenic, and selenium by EPA Method 1310. Copies of the laboratory reports are included in Appendix C. Results of the TCLP analyses are summarized in Table 2-1. Tetrachloroethene was the only constituent present at levels in excess of its established Toxicity Characteristic Limit.

In December 1989, Atlas Hydraulic, a subcontractor to ESI, began excavation of the stained soil. Soil was removed to a depth of approximately 6 feet throughout the area identified by the BCC drilling program. The approximate extent of the excavation is shown on Figure 2-2. The excavation remained open from December 1989 until work was resumed in September 1990. Based on the TCLP results obtained by BCC during the June 1989 investigation, all stained soil excavated during December 1989 was transported to a Class I disposal facility by a contractor to James River.

At the conclusion of the December 1989 excavation, verification samples were collected by Atlas Hydraulic from the excavation at the locations shown on Figure 2-3. The samples were collected from the excavation sidewalls at a depth of approximately 4 feet below ground level. The samples were analyzed for priority organic pollutants by EPA Methods 8010/8020 at the Trace Analysis Laboratory in Hayward, California. Analytical results are summarized in Table 2-2. Copies of the laboratory reports for these samples are included in Appendix C. These results indicated that tetrachloroethylene, benzene, ethylbenzene, toluene, and xylenes were present in soil remaining in the sidewalls of the excavation at the conclusion of the December 1989 soil removal activities.

Based on the December verification sample results, the County and James River agreed in the March 1, 1990, meeting to continue to deepen the excavation until field screening indicated no organic vapors were present, or until a depth of 13 feet, approximately the water table, was

Table 2–1 TCLP Extract Samples - December 1989
Ink Room Excavation

Sample I.D.	Sample #1 and #2 Composite
EPA Method 8240, ug/L	
2-Hexanone	6000
Acetone	650
Benzene	200
Ethylbenzene	260
Trichloroethene	190
Toluene	180000
Tetrachloroethene	4000
Total Xylene Isomers	1200
N-Butyl acetate*	6000
EPA Method 8270, ug/L	
2,4-Dimethylphenol	100
2-Methylphenol	870
4-Methylphenol	1100
Benzoic Acid	740
Dibutylphthalate	270
Diethylphthalate	350
Dimethylphthalate	40
Phenol	1100
Semi-Quantified Results	
Benzaldehyde	100
Butoxy Butanoic Acid	70
C11H12O2 (Acid)	100
C2 Phenol	300
C3 Phenol	200
C6H12O2 (Acid)	300
C7H9O2NS	400
C8H16O2 Ester	200
C 9H13O2NS	2000
Di-n-butylphthalate	270
Ethoxy Ethanol Acetate	2000
Metals, mg/L	
Silver	<0.02
Barium	0.98
Cadmium	<0.04
Chromium	0.06
Lead	1.1
Mercury	<0.0002
Arsenic	<0.02
Selenium	<0.02

Notes:

ug/L - micrograms per liter
mg/L - milligrams per liter
*Semi - Qualified Result

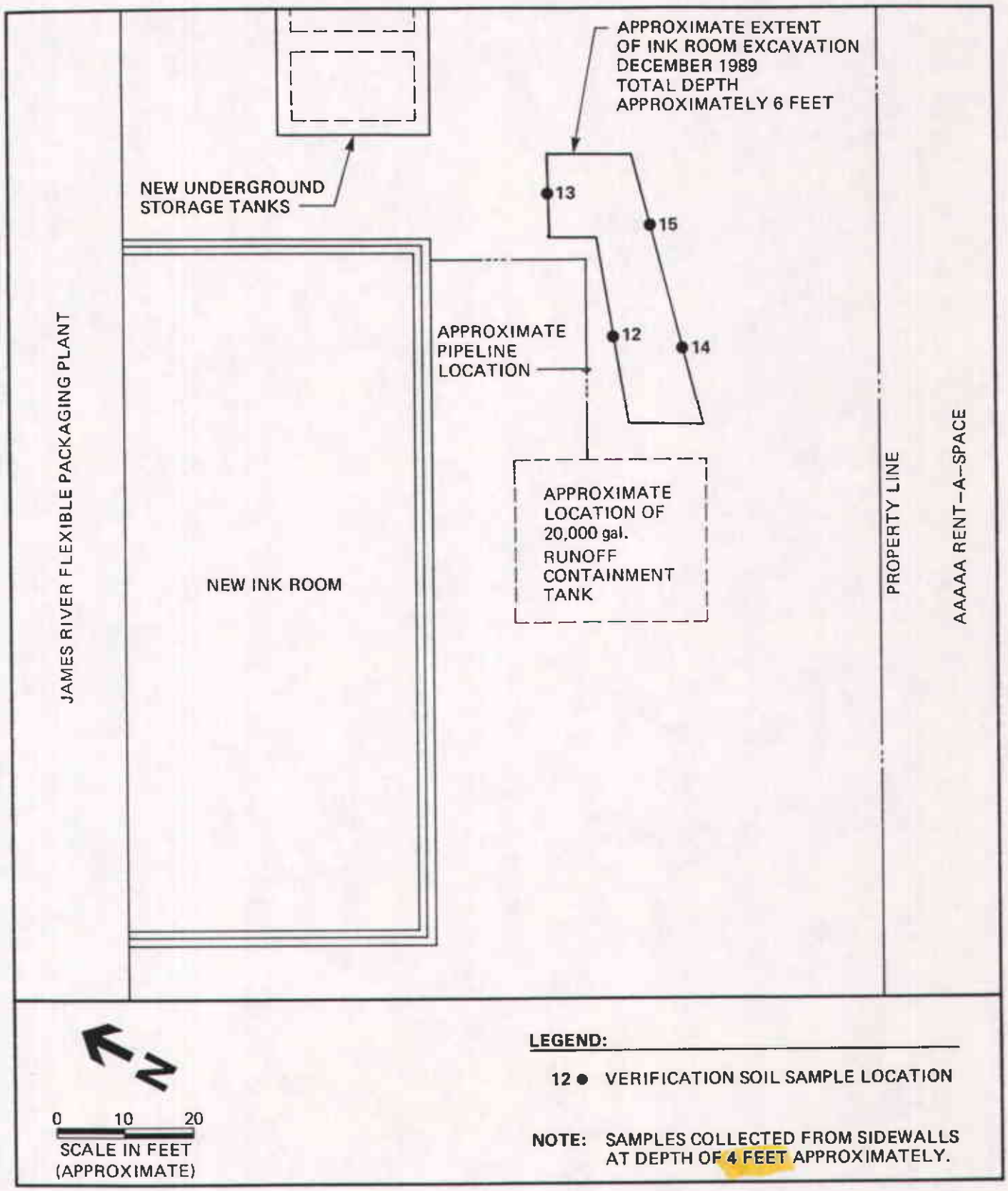

Figure 2–3 Ink Room Excavation With December 1989 Verification Soil Sample Locations

Table 2–2 Verification Soil Samples - December 1989 Ink Room Excavation

Sample I.D.	12	13	14	15
EPA Method 8010, ug/kg				
Chloroform	64	<50	<50	<50
Tetrachloroethylene	180	<50	50	<50
EPA Method 8020, ug/kg				
Benzene	<200	<100	<50	720
Ethylbenzene	<200	<100	490	180
Toluene	39,000	3,800	16,000	2,100
Total Xylenes	1,200	<300	270	<50

Notes:

Samples collected by Atlas Hydraulic, December 1989

ug/kg - micrograms per kilogram

Constituents not detected are shown as less than the reporting detection limit.

reached. Limited lateral excavation, involving removal of an additional foot of material from each sidewall, was agreed upon. Extensive lateral excavation would result in a disruption of existing underground structures at the facility. The County requested that one verification sample for every 200 square feet of surface area in the excavation be collected at the completion of the additional excavation.

Additional Excavation, September 1990

On September 24 and 25, 1990, BCC observed the additional soil removal from the ink room excavation. Excavation was performed by Diablo Tank and Equipment of Martinez, California, a contractor to James River. The Bay Area Air Quality Management District (BAAQMD) was properly notified prior to initiation of the additional excavation. A copy of the written notification form submitted to the BAAQMD is included as Appendix D. Mr. Larry Seto of Alameda County and Mr. Mike Bakaldin of the San Leandro Fire Department were verbally notified prior to initiation of the work. Methods and results of the additional excavation are described below.

Field Observations. Excavated soil was classified as silty to sandy clay. The soil contained some root material and vertical, open, root traces were common. Soil removed from the excavation was screened for the presence of organic vapors using a Photovac Microtip total ionization potential (TIP) meter as described in the work plan (Appendix A). Screening with the TIP indicated organic vapors were present to the total depth of the excavation (13 feet). Vapor screening results are summarized in Table 2-3.

Staining was noted in some of the open root traces. This staining, and the TIP readings, indicate that the inks or ink constituents at this location have migrated downward through the root traces to the total depth of the excavation.

Table 2–3 Summary of Vapor Readings - Ink Room Excavation

Location	Approximate Depth (feet)	TIP Reading (parts per million)
S sidewall	6	7.2
S sidewall	6	1.9
S sidewall	6	1.0
S sidewall	6	8.4
NE sidewall	6	1.9
SW corner	7	4.8
SW corner	8	302
S sidewall	8	373
center bottom	9.5	636
center bottom	10	1963
center bottom	10.5	>9999
bottom	11	314
bottom	12.5	1985

Notes:

Data collected with Photovac-brand Micro-Tip.

The approved work plan indicated that a maximum of 1 foot of additional material would be removed from the sidewalls of the December 1989 excavation. Due to the presence of a utility trench and the underground fire runoff water collection tanks and associated piping, additional material could not be excavated from the western and southwestern sidewalls. One foot of soil was removed from all other sidewalls.

Verification Soil Sampling Methods. At the completion of the additional excavation on September 25, 1990, the surface area of the trench was calculated and an appropriate number of samples were collected. The excavation was approximately 13 feet deep and the sidewalls totaled 107 feet in length. Thus, the total area of the excavation sidewalls equaled 1,391 square feet. Six sidewall verification samples were collected. The area of the excavation bottom equaled 413 square feet. Two bottom verification samples were collected. Sample locations are shown on Figure 2-4.

Sampling locations were evenly distributed throughout the excavation. Sidewall samples were collected from a depth of 8 to 9 feet below grade. Samples were collected in brass tubes from a backhoe bucket of soil removed from the selected sampling location as described in the work plan. Samples were stored on ice until delivery to Brown and Caldwell Analytical in Emeryville. Samples were handled in accordance with chain-of-custody procedures described in the work plan (Appendix A).

Verification Soil Sample - Analytical Results. Verification samples were analyzed for purgeable priority pollutants by EPA Method 8240 and the metals antimony, arsenic, barium, chromium, cobalt, copper, lead, mercury, molybdenum, nickel, selenium, vanadium, and zinc by EPA Methods 6000/7000 Series. Table 2-4 summarizes the analytical results of verification soil samples collected from the ink room excavation (Samples IR-1 through IR-6). Laboratory reports for these analyses are included in Appendix C.

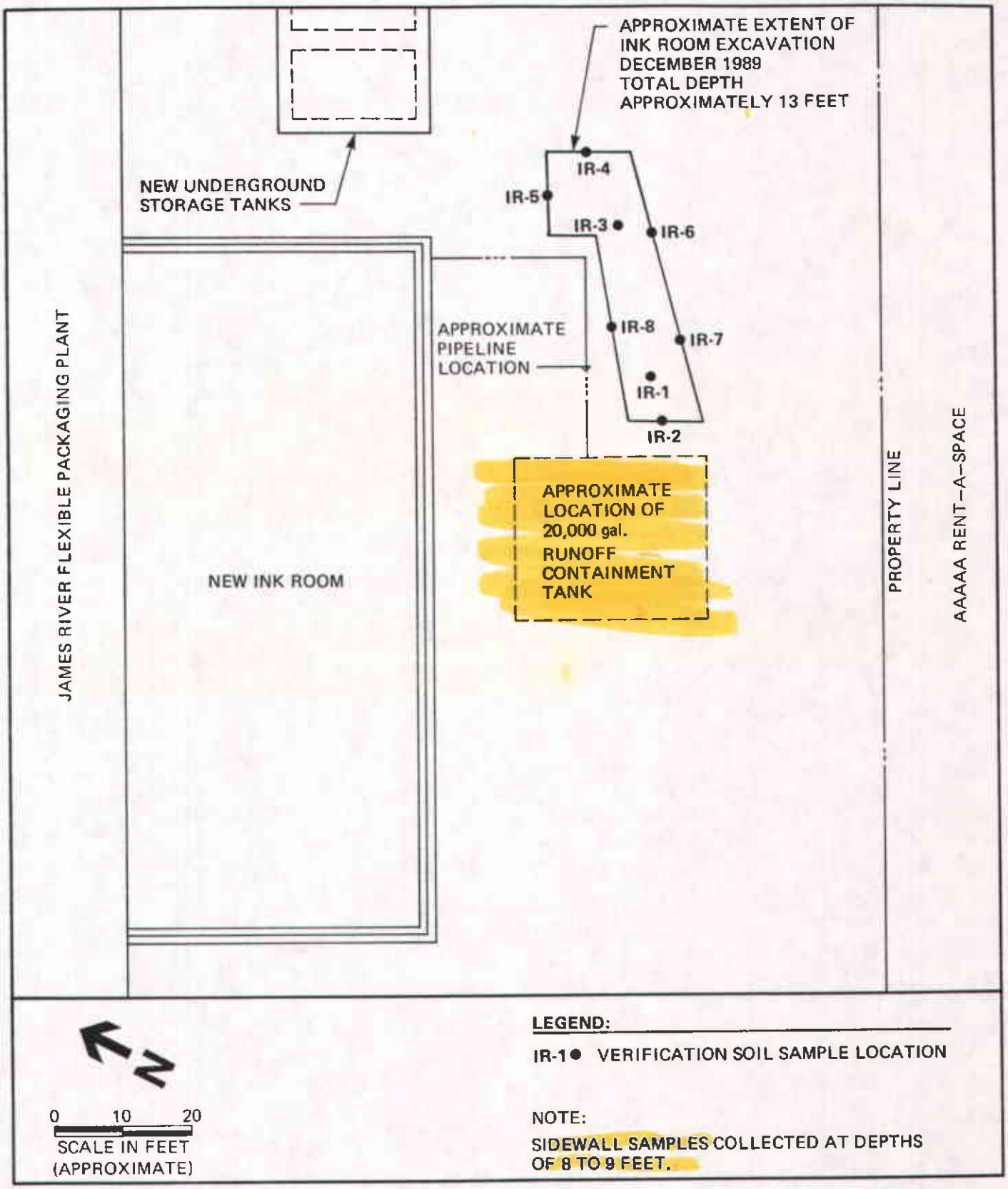

Figure 2–4 Ink Room Excavation With September 1990 Verification Soil Sample Locations

Table 2–4 Verification Soil Sample Results - Ink Room Excavation and Rail Spur Area

SAMPLE ID	RS-1	IR-1	IR-2	IR-3	IR-4	IR-5	IR-6	IR-7	IR-8
CONSTITUENT									
Metals, mg/kg									
Arsenic	4.6	4.6	3.5	5.6	5.4	4.2	5.6	5.9	4.7
Selenium	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4
Barium	380	140	140	180	190	180	180	180	170
Chromium	91	76	49	55	55	54	56	60	56
Cobalt	13	9	9	17	12	11	11	12	12
Copper	54	22	18	28	22	25	25	28	24
Lead	390	130	11	10	5	<4	4	<4	<4
Mercury	0.07	0.06	<0.05	0.05	0.08	0.05	0.05	0.05	<0.05
Molybdenum	19	<4	<4	<4	<4	<4	<4	<4	<4
Nickel	28	49	45	71	60	58	58	63	61
Vanadium	62	48	40	47	46	47	51	54	49
Zinc	150	56	45	64	58	55	56	59	59
Purgeable Priority Pollutants, mg/kg									
2-Hexanone	<2	<400	3	<60	<2	<2	<2	<2	16
Acetone	<5	<1000	<5	<200	<5	14	7.4	<5	24
Ethylbenzene	<0.2	<40	1.1	<6	<0.2	<0.2	<0.2	<0.2	<0.2
Methyl Ethyl Ketone	<2	<400	7.7	<60	<2	<2	<2	<2	30
Trichloroethene	<0.2	<40	0.2	<6	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.2	15,000	630	600	<0.2	4.0	4.2	1.6	83
Tetrachloroethene	<0.2	160	23	16	<0.2	<0.2	<0.2	<0.2	1.1
Total Xylene Isomers	<0.2	<40	7.4	<6	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene	<0.2	<40	0.9	<6	<0.2	<0.2	<0.2	<0.2	<0.2
Semi-Quantified Results, mg/kg									
C7-C11 Hydrocarbons	--	100	30	--	--	--	--	--	--
C6H10O2	--	--	--	--	--	--	--	--	7
C7H10O	--	--	--	--	--	--	--	--	2
N-Butyl Acetate	--	--	--	--	--	--	--	--	1

Notes:
mg/kg - milligrams per kilogram
< - indicates constituent not identified at level greater than reporting detection limit
semi-quantified results based on comparison with nearest internal standard

None of the ink room verification samples contained metals in excess of the Total Threshold Limit Concentrations (TTLC) established in California Code of Regulations (CCR) Title 22.

No purgeable priority pollutants were identified in Sample IR-4 collected from the northeastern sidewall of the excavation. All other sidewall samples (IR-2, IR-5, IR-6, IR-7, and IR-8) contained purgeable constituents. Samples IR-2 and IR-8, collected from the western and northwestern sidewalls where no additional excavation could be performed, generally contained higher concentrations of purgeable organic constituents than other sidewall samples. Samples IR-1 and IR-3, collected from the excavation bottom, contained toluene and tetrachloroethene.

In order to evaluate disposal options for the soil removed during the additional excavation, three composite soil samples, each composed of four subsamples, were collected from the stockpiled excavated soil. The composite samples were analyzed for soluble metals by the California Waste Extraction Test (WET) as requested by the Class III landfill contacted regarding disposal of the soil. Analytical results are summarized in Table 2-5. Laboratory reports are included in Appendix C. Based on the WET results for lead, the soil was transported to a Class I disposal facility by a contractor to James River.

Upon the completion of additional excavation, the excavation was backfilled with pea gravel to approximately 1 foot below grade. The area was then paved with asphalt.

Table 2–5 Analytical Results - Composite Samples of Excavated Soil

Sample I.D.	SP-1, SP-2, SP-3, SP-4 Composite	SP-5, SP-6, SP-7, SP-8 Composite	SP-9, SP-10, SP-11, SP-12 Composite	STLC
METALS by CAM WET				
Arsenic	0.06	0.08	0.08	5.0
Antimony	<0.2	<0.2	0.2	15
Barium	7.8	6.8	6.9	100
Beryllium	<0.01	<0.01	<0.01	0.75
Cadmium	<0.05	0.05	<0.05	1.0
Cobalt	0.22	0.34	0.28	80
Chromium (Total)	1.4	3.6	0.82	5.0 (VI), 560 (III)
Copper	0.37	0.56	0.47	25
Lead	6.7	14	3.3	5.0
Mercury	<0.005	<0.005	<0.005	0.2
Molybdenum	0.4	0.7	0.3	350
Nickel	0.7	0.7	0.8	20
Selenium	<0.02	<0.02	<0.02	1.0
Silver	<0.05	<0.05	<0.05	5.0
Thallium	<0.2	<0.2	0.2	7.0
Vanadium	0.52	0.37	0.33	24
Zinc	0.06	0.08	0.08	250

Notes:
All results in milligrams per liter
CAM WET - California Assessment Manual Waste Extraction Test
STLC - Soluble Threshold Limit Concentration, California Code of Regulations, Title 22, Division 4

CHAPTER 3

UNDERGROUND STORAGE TANK AND PIPELINE REMOVAL

This chapter describes the removal of pipelines associated with underground storage tanks (USTs) formerly used at the site. Underground storage tank removal activities which were performed in 1989 by a contractor to James River are also described.

Background

USTs have been reported to have been in use at the site from the early 1950's to 1983 in the location shown on Figure 3-1. A chronology of events related to the operation of the USTs is presented below. This information was supplied by Crown-Zellerbach to Harding-Lawson Associates (HLA) and was presented in HLA's report "Hydrogeologic Investigation, Flexible Packaging Division Facility, San Leandro, California", dated April 10, 1986.

Tank 1 — 6,000-gallon coated steel tank
Contents - Ethyl Alcohol
Installed in 1953. Pressure tested in 1983. No leaks detected, but tank removed from service due to age. No information on the date the tank was removed from ground is available.

Tank 2 — 3,000-gallon coated steel tank
Contents - Butyl Acetate and Isopropyl Acetate
Installed in 1967. Pressure tested May 26, 1983 - passed. Tank reportedly failed on June 6, 1983, with a loss of approximately 2,000 gallons of isopropyl acetate. Removed in December 1983.

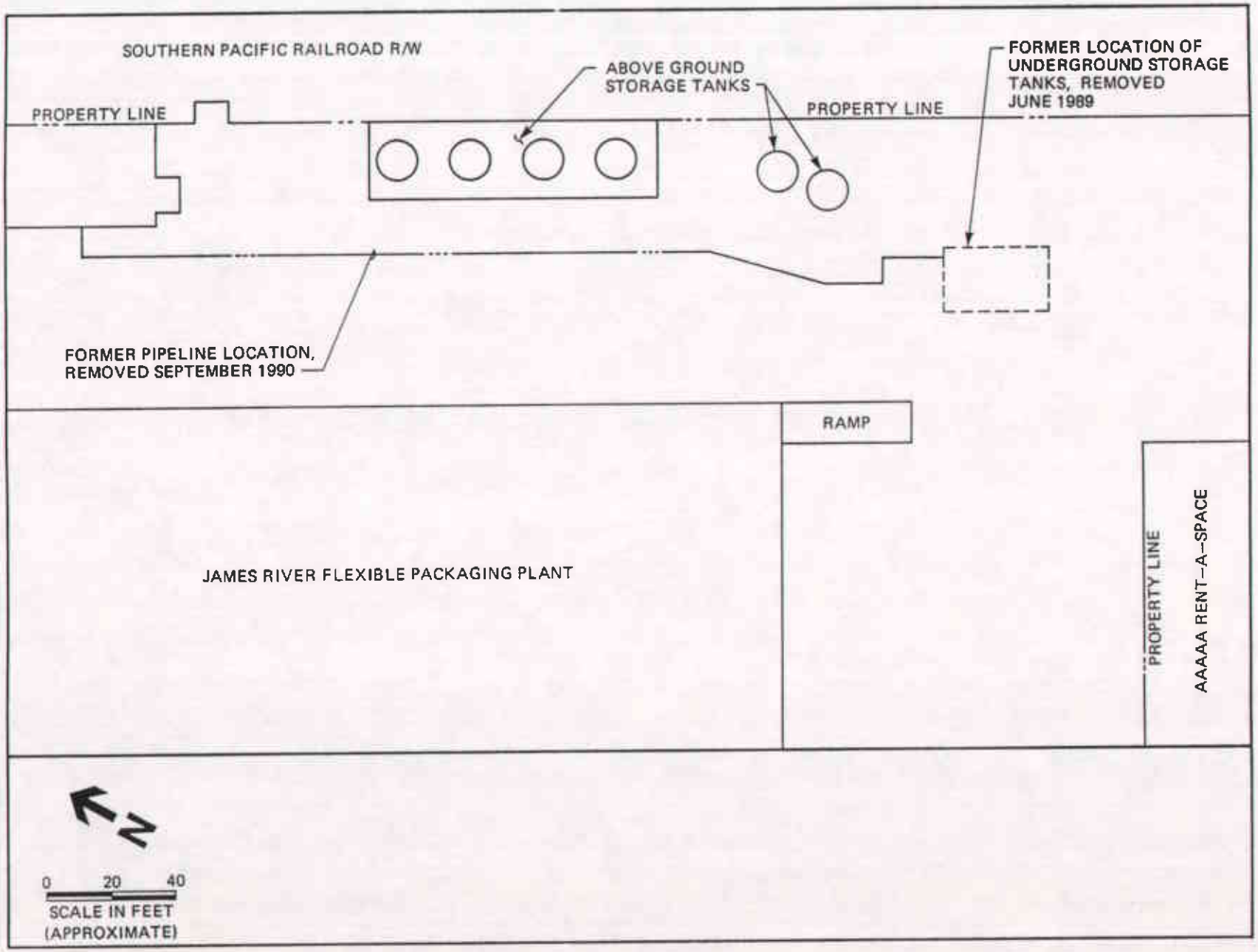

Figure 3–1 Former Location of Underground Storage Tanks

Tank 3 — 5,000-gallon coated steel tank
Contents - Ethyl Alcohol
Installed in December 1983 as replacement for Tank 2 above. No information on testing available. Removed in June 1989.

Tank 4 — 3,000-gallon coated steel tank
Contents - N-propyl Alcohol and Ethyl Alcohol
Installed in 1969 for N-propyl Alcohol storage. Used in mid- to late 1983 for Ethyl Alcohol storage. Used post 1983 for N-propyl Alcohol storage. No testing information available. Removed in June 1989.

Tank 5 — 2,000-gallon coated steel tank
Contents - Ethyl Acetate and N-propyl Acetate
Installed in 1967 for Ethyl Acetate storage. Tank reportedly failed on July 5, 1982, with loss of approximately 1,500 gallons of N-propyl Acetate. Removed in July 1982.

Tank 6 — 2,000-gallon coated steel tank
Contents - N-Propyl Acetate
Installed in 1982 as replacement for Tank 5 above. Used for storage of N-propyl Acetate. No testing information available. Removed in June 1989.

In June 1989, James River began removal of Tanks 3, 4, and 6 described above. A permit was obtained by James River from the City of San Leandro Fire Department (City) at the time removal began. Engineering Services, Inc. (ESI), and their subcontractor Atlas Hydraulic conducted the tank removal activities.

Verification samples were collected by Atlas Hydraulic from the tank excavation in the locations shown on Figure 3-2 at the conclusion of the June 1989 UST removal. The samples were analyzed for ethyl alcohol, n-propyl alcohol, and n-propyl acetate by the Supelco Method at Trace Analysis Laboratory in Hayward, California. Table 3-1 summarizes analytical results for these samples. Laboratory reports are included in Appendix E.

Results of the tank excavation verification sampling (Samples 1 through 6) indicated that the three constituents analyzed were not identified above the reporting detection limits. The sampling results were submitted to the County and they granted permission to backfill the tank excavation in a letter dated September 26, 1989. A copy of the authorization letter is included in Appendix F.

A portion of the piping associated with the USTs was also removed during the June 1989 tank removal (Figure 3-2). Five verification samples (Samples 7 to 11) were collected from the piping trench. Analytical results are summarized in Table 3-1 and laboratory reports are included in Appendix E.

Three of the five samples contained identifiable concentrations of constituents formerly stored in the USTs. The County requested further remedial actions be undertaken in the vicinity of Samples 9, 10, and 11. During additional excavation of soils in this area by Atlas Hydraulic stained soils were encountered. Pipeline removal was halted and James River contracted with ESI to perform an investigation into the extent of the stained soils in the vicinity of the pipelines. Chem-Tech Consulting, a subcontractor to ESI, performed a soil gas survey and determined an extent of the stained soil as shown on Figure 3-3. Subsequent excavation of this area to a depth of approximately 2 feet was performed by Atlas Hydraulic. This excavation included removal of a portion of a rail spur (Figure 3-3). Removal of the rail spur revealed that the stained soils continued beyond the approximate area delineated by Chem-Tech's vapor survey. At that time, James River halted the excavation and piping removal activities until further guidance could be obtained from the County.

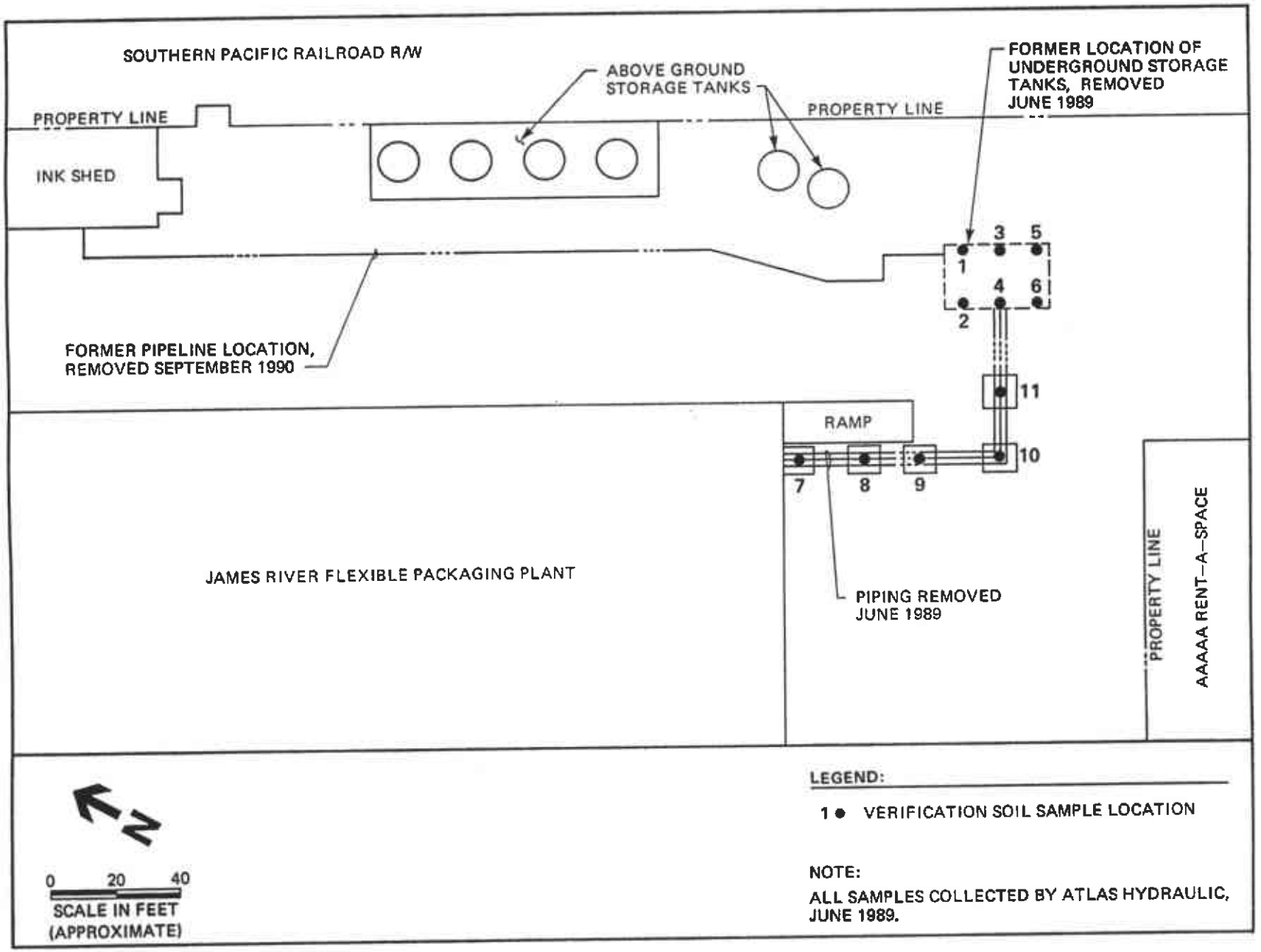

Figure 3–2 Tanks and Pipeline Removal With June 1989, Verification Soil Sample Locations

Table 3–1 Verification Sample Results 1989 UST Excavation and Pipeline Removal

SAMPLE I.D.	Concentration, ug/kg		
	Ethyl Alcohol	N-Propanol	N-Propylacetate
Tank Excavation			
Sample 1	<40,000	<20,000	<400
Sample 2	<40,000	<20,000	<400
Sample 3	NA	<20,000	NA
Sample 4	NA	<20,000	NA
Sample 5	<40,000	<20,000	<400
Sample 6	<40,000	<20,000	<400
Pipeline Trenches			
Sample 7	<40,000	<20,000	<400
Sample 8	<40,000	<20,000	<400
Sample 9	<10,000,000	<5,000,000	390,000
Sample 10	<40,000	<20,000	2,900
Sample 11	55,000,000	5,700,000	60,000

Notes:
ug/kg - micrograms per kilogram
NA - Not analyzed
All Samples collected by Atlas Hydraulic, June 1989
Constituents not detected shown as less than the reporting detection limit.
Samples analyzed by the Supelco Method at Trace Analytical Laboratory

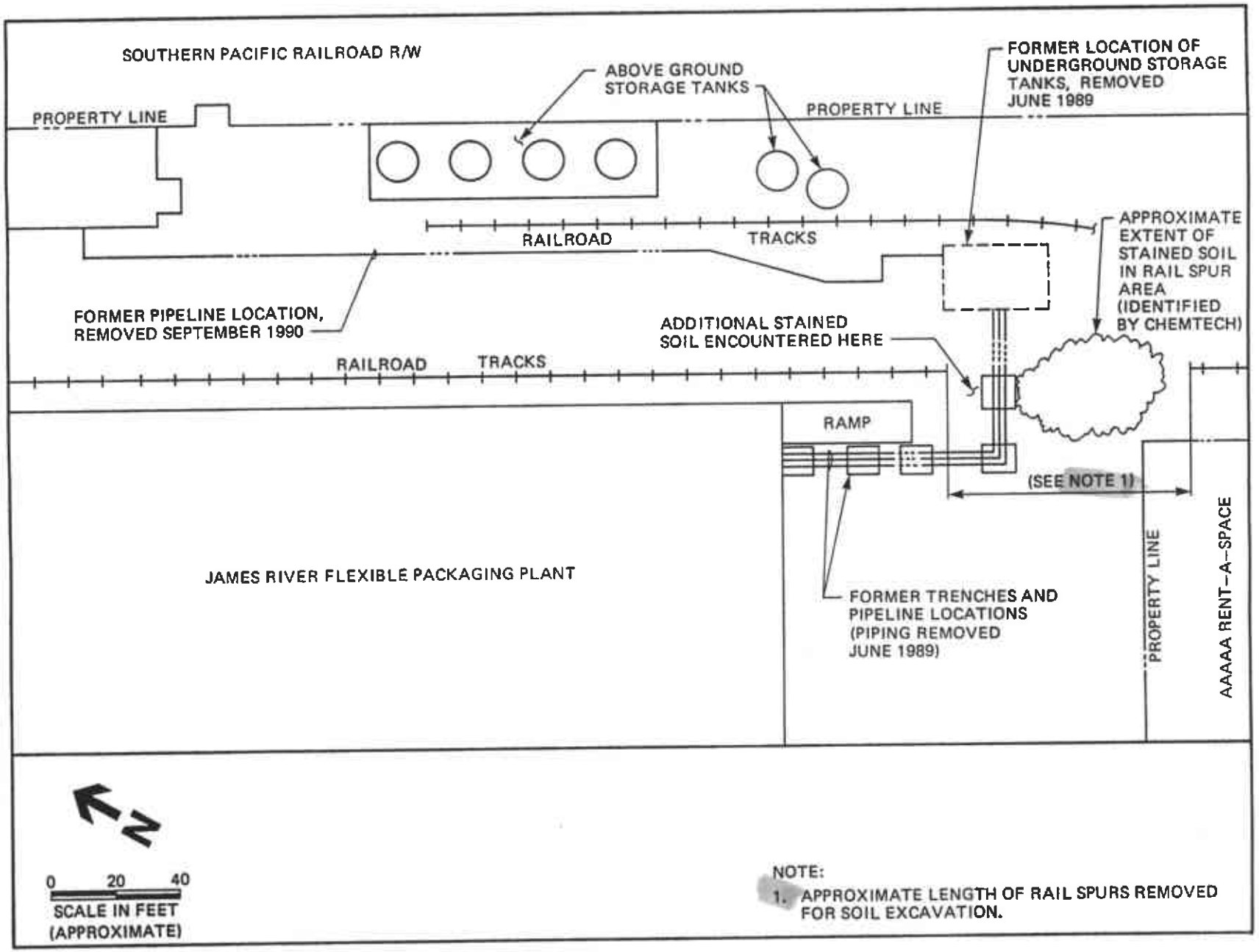

Figure 3–3 Location of Additional Stained Soils, Underground Storage Tanks and Pipeline Area

The approximately 2 foot deep excavation in the vicinity of the rail spur was left open from late 1989 until completion of the current work described below. Stained soil and soil removed from the piping trenches were disposed of by James River.

Current Work

Based on the March 1, 1990, meeting between BCC, James River, and the County, a work plan describing further activities in the vicinity of the former tank location was prepared. This work plan (Appendix A) included sampling of the stained soils present under the rail spur in the former tank location, installation of one additional shallow groundwater monitoring well (see Chapter 4), removal of remaining pipelines associated with the former USTs, and collection and analysis of verification soil samples at 20-foot intervals along the length of the remaining pipeline.

Pipeline Removal. From September 26 to 28, 1990, Diablo Tank and Equipment of Martinez, California, performed pipeline removal activities. BCC personnel were present to document removal activities, to visually examine exposed soil for indications of ink staining, and to collect verification samples. Trenches were opened at 20-foot intervals along the length of the pipeline (Figure 3-4). The piping exposed in each trench was then cut and pulled through the trench. Piping was stockpiled on-site where it was then cut into appropriate lengths and transported to a Class I disposal facility by James River. No stained soils were observed in the trenches opened for pipeline removal.

Thirteen verification soil samples were collected by BCC from the trenches at the depth of the backfill/native soil interface using methods described in the work plan (Appendix A). Samples were appropriately labeled and stored on ice until delivery to BC Analytical under proper chain-of-custody.

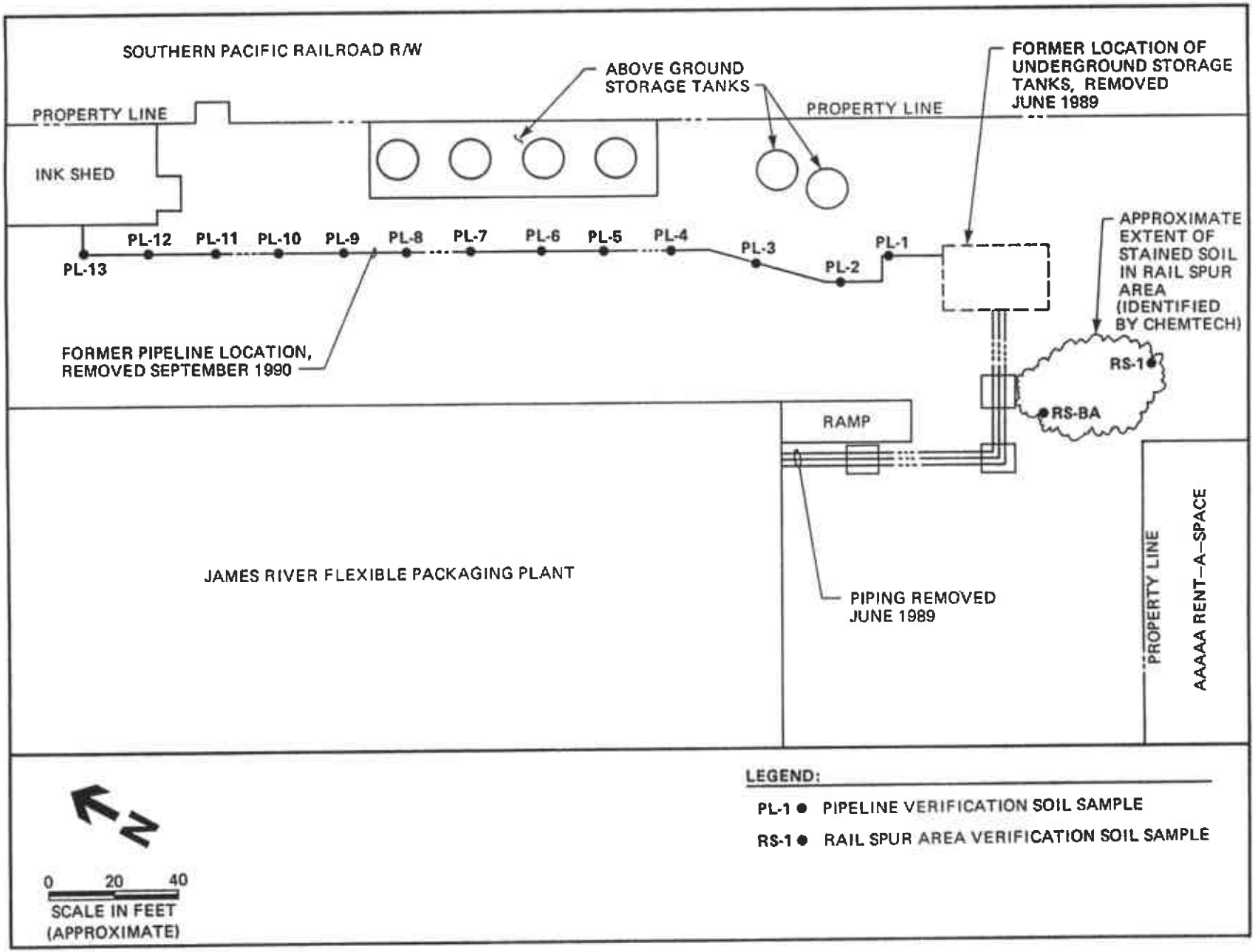

Figure 3–4 Pipeline and Rail Spur Area With September 1990, Verification Soil Sample Locations

As indicated in the addendum to the work plan (Appendix A), the 13 verification samples were analyzed by EPA Methods 8010/8020. The rationale for analytical method selection is presented in the approved work plan (Appendix A). Pipeline verification sample results are summarized in Table 3-2. Laboratory reports for samples collected during pipeline removal are included in Appendix E. Low concentrations of toluene were identified in eight of the samples, xylenes were identified in four of the samples, and trichloroethene was identified in one sample. With the exception of toluene in Sample PL-12, the other purgeable organic constituents were identified at levels near their reporting detection limits.

Additional Sampling in Rail Spur Area. Under the terms of the work plan approved by the County, two additional soil samples were collected from the rail spur area. One sample, RS-1, was collected from the southeastern corner of the area previously excavated (Figure 3-4). This sample was collected using methods described in the approved workplan (Appendix A). Purgeable organic constituents were not detected in Sample RS-1 from the southern end of the rail spur excavation (Table 2-4).

Sample RS-BA was collected from stained soil present in the northwestern corner of the area previously excavated for use in a bioassay. This sample was collected by placing stained soil and pieces of dried ink present in the wall of the excavation into a brass sample tube with a spade.

The bioassay was performed by placing a measured amount of the dried ink into the tank to produce a specific dilution. The material was allowed to remain in the tank with fathead minnows for a 96-hour period. All specimens survived the bioassay at both the 250 and 750 milligrams per liter dilution. Laboratory reports for both samples are included in Appendix E.

Table 3–2 Analytical Results - Pipeline Verification Samples

Sample ID	Concentration, milligrams per kilogram		
	Trichloroethene	Toluene	Total Xylenes
PL-1	<0.01	<0.01	<0.01
PL-2	0.03	0.05	<0.01
PL-3	<0.01	0.04	0.01
PL-4	<0.01	0.03	<0.01
PL-5	<0.01	0.02	<0.01
PL-6	<0.01	0.01	<0.01
PL-7	<0.01	0.01	0.01
PL-8	<0.01	0.01	0.01
PL-9	<0.01	<0.01	<0.01
PL-10	<0.01	<0.01	<0.01
PL-11	<0.01	<0.01	<0.01
PL-12	<0.01	0.15	0.04
PL-13	<0.01	<0.01	<0.01

Samples analyzed by EPA Methods 8010/8020.
Constituents not detected shown as less than the reporting detection limit.

CHAPTER 4

BOREHOLE DRILLING AND MONITORING WELL INSTALLATION

This chapter describes borehole drilling and the installation of one additional monitoring well at the site. A description of previous well installation and groundwater monitoring activities is included.

Background

In 1983, Harding-Lawson Associates (HLA), a consultant to the previous property owner Crown-Zellerbach, began an investigation of groundwater quality in the vicinity of the underground storage tank location. Between 1983 and 1986, HLA installed 10 monitoring wells at the site as shown on Figure 4-1. Nine monitoring wells (W-1 to W-9) were constructed with perforated intervals from approximately 15 to 40 feet below grade. The predominant water-bearing unit intercepted by these wells is a gravelly sand encountered at a depth of approximately 25 feet below grade. One well (B-1) was drilled using double-cased methods and was perforated in a gravelly sand encountered from a depth of 45 to 50 feet. Groundwater level measurements indicated that shallow groundwater beneath the site flowed to the southwest.

During their investigations, HLA collected groundwater samples for laboratory analyses for acetone, acetates, alcohols, and acids. These analyses were performed at the Crown-Zellerbach laboratory. Duplicate samples were submitted to Analytical Science Associates for analysis of only isopropyl acetate, isopropyl alcohol, and acetone. Analytical results indicated that isopropyl alcohol, acetone, and acetic acid were present in Well W-8. However, none of the constituents analyzed had migrated as far down-gradient as Wells W-7 and W-9. This information is documented in HLA's April 10, 1986, report titled "Hydrogeologic Investigation, Flexible Packaging Division Facility, San Leandro, California".

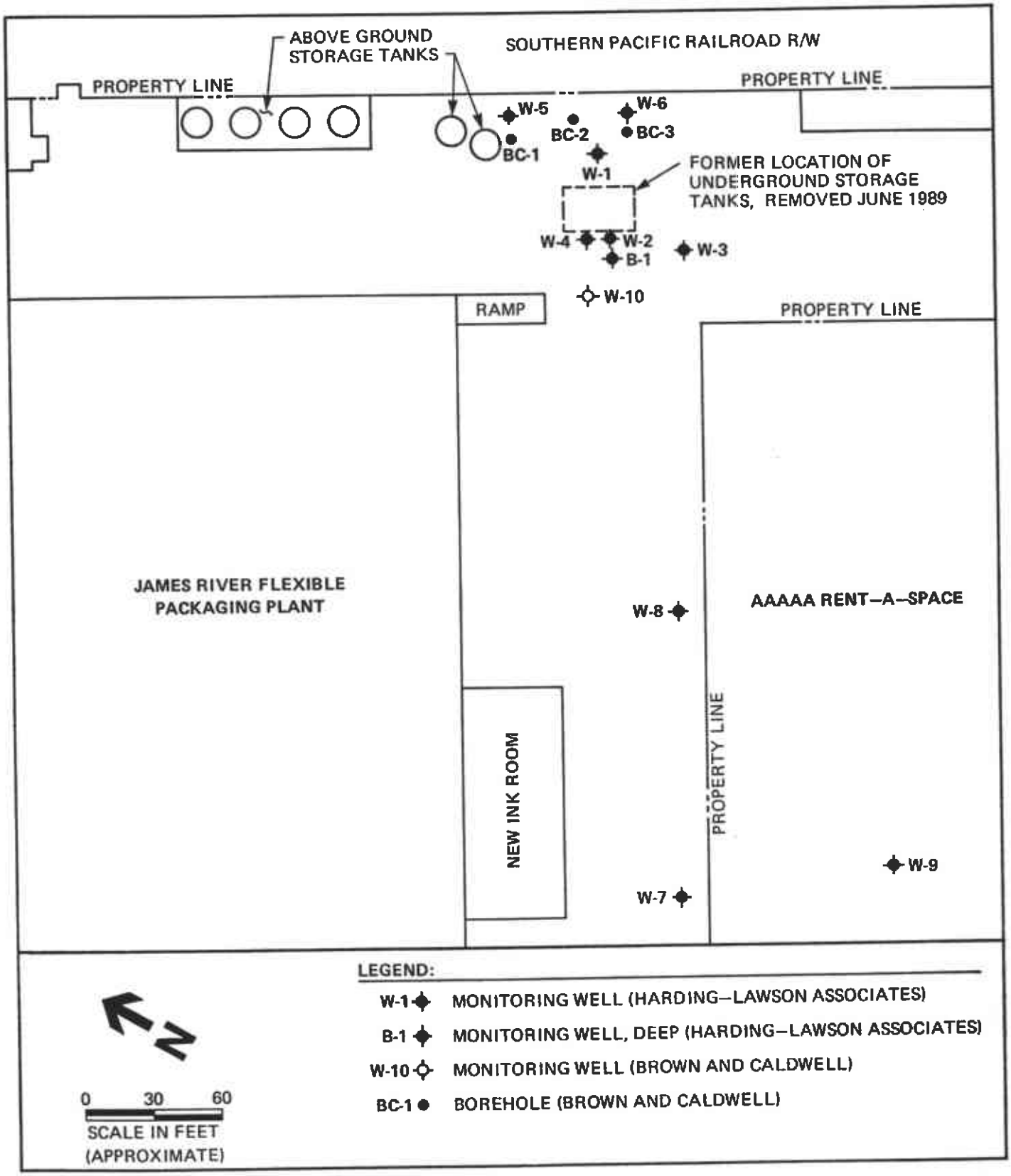

Figure 4–1 Monitoring Well and Borehole Locations

HLA also conducted aquifer testing and prepared preliminary designs for a groundwater extraction system to remove groundwater impacted by reported losses from the USTs used at the site (see Chapter 3). This extraction system was not installed prior to Crown-Zellerbach's sale of the property to James River in 1987. Following purchase of the property James River pursued implementation of the groundwater remediation program.

On April 15, 1988, James River was granted a permit by the City of San Leandro (City) to discharge extracted and aerated groundwater to the sanitary sewer. Brown and Caldwell Consultants (BCC) was contracted to assist James River in initiating extraction and treatment of this groundwater. To ensure that treated groundwater would comply with the discharge limits outlined in the City permit, groundwater samples were collected by BCC on April 20, 1989, and analyzed for parameters specified in the permit. Results of this sampling are summarized in Table 4-1. Analytical reports are included in Appendix G. This analysis indicated that chlorinated hydrocarbon compounds in excess of discharge limits were present in on-site shallow groundwater. Because the presence of chlorinated hydrocarbons had not been previously reported, the groundwater extraction and treatment program was placed on hold while other options were evaluated.

In August, 1989, BCC performed a second groundwater sampling to verify the presence of chlorinated compounds identified in the April sampling. Results of the August analyses are also included in Table 4-1. Chlorinated compounds were identified in the second sampling performed by BCC.

Figure 4-2 illustrates the groundwater flow direction based on measurements made by BCC in November 1989. Groundwater flow was west-southwestward, consistent with previous flow directions reported by HLA.

Table 4–1 Groundwater Analytical Results

Well Identification	W 1		W 2		W 3		W 4		W5		
Sampling Date	Apr-89	Aug-89	Apr-89	Aug-89	Apr-89	Aug-89	Apr-89	Aug-89	Apr-89	Aug-89	Aug-89*
PARAMETER											
Purgeable Organic Compounds, ug/l				NS							
Benzene	<100	<500	<50		<10	<50	<100	<2000	<1	<50	<50
Tetrachloroethene	300	<500	1,000		1,200	100	140	<2000	5,000	1,300	1,100
Trichloroethene	<100	<500	<50		230	<50	<100	<2000	600	450	450
Toluene	<100	<500	920		<10	<50	2,900	8,000	7	<50	<50
Vinyl Chloride	300	<500	450		39	<50	<100	<2000	1,000	690	620
1,2-Dichloroethene	730	<500	1,400		170	<50	720	<2000	6,000	5,000	4,000
1,1,1-Trichloroethane	<100	<500	<50		<10	<50	<100	<2000	2	<50	<50
1,1-Dichloroethene	<100	<500	<50		<10	<50	<100	<2000	10	<50	<50
Semi-Quantified Results, ug/l											
Acetone	68,000	370,000	66,000		25,000	3,000	760,000	560,000	77	-	-
2-Butanone	-	-	-		-	-	-	-	-	-	-
2-Hexanone	-	-	1,700		540	-	8,200	-	9	-	-
C3H602 Ester	-	-	-		-	-	-	40,000	-	-	-
C5H1002 Ester	-	-	1,000		-	-	60,000	100,000	-	-	-
C6H140 Alcohol	-	-	500		80	-	1,000	-	-	-	-
C6H140 Ether	-	-	-		-	-	-	-	20	-	-
C7H1402 Ester	-	-	-		-	-	-	-	-	-	-
Ethanol	-	-	500		-	-	-	-	-	-	-
Isopropanol	-	-	6,000		500	-	30,000	-	-	-	-
Methyl Acetate	-	-	200		-	-	-	-	-	-	-
N-Butyl Acetate	-	-	440		-	-	-	-	-	-	-
Propyl Acetate	-	-	900		-	-	-	-	-	-	-
Propylfuran	-	-	-		-	-	-	-	-	-	-
Total Xylene Isomers	-	-	-		-	-	400	-	-	-	-
Methyl Ethyl Ketone	-	-	-		-	-	-	-	-	-	-

Notes:

1. Parameters listed above include purgeable organic compounds identified above detection limits.
2. ug/l = micrograms per liter
3. * denotes duplicate sample
4. NS indicates well not sampled
5. - indicates semi-quantified result not available

Table 4–1 Groundwater Analytical Results (continued)

Well Identification	W 6		W 7		W 8		W 9		B 1	
Sampling Date	Apr-89	Aug-89	Apr-89	Aug-89	Apr-89	Aug-89	Apr-89	Aug-89	Apr-89	Aug-89
PARAMETER										
Purgeable Organic Compounds, ug/l										
Benzene	<1	<5	1	<5	<5	<50	2	<1	<1	<1
Tetrachloroethene	1,400	920	1,100	940	120	<50	33	37	12	6
Trichloroethene	240	240	260	240	<5	<50	34	37	<1	<1
Toluene	<1	<5	4	<5	200	<50	7	<1	10	<1
Vinyl Chloride	<1	<5	43	<5	15	<50	3	<1	<1	<1
1,2-Dichloroethene	12	<5	140	60	35	<50	16	<1	7	<1
1,1,1-Trichloroethane	<1	5	2	<5	<5	<50	3	2	<1	6
1,1-Dichloroethene	<1	<5	<1	<5	<5	<50	<1	<1	<1	<1
Semi-Quantified Results										
Acetone	-	-	2,100	-	780,000	8,300	1,400	-	4,500	-
2-Butanone	-	-	-	-	-	2,600	-	-	-	-
2-Hexanone	-	-	150	-	6,400	-	36	-	38	-
C3H6O2 Ester	-	-	-	-	-	-	-	-	-	-
C5H10O2 Ester	-	-	-	-	1,000	-	-	-	200	-
C6H14O Alcohol	-	-	-	-	-	-	10	-	-	-
C6H14O Ether	-	-	-	-	100	-	-	-	-	-
C7H14O2 Ester	-	-	-	-	10	-	-	-	-	-
Ethanol	-	-	20	-	200	-	10	-	-	-
Isopropanol	-	-	200	-	5,000	-	100	-	60	-
Methyl Acetate	-	-	-	-	-	-	-	-	-	-
N-Butyl Acetate	-	-	-	-	40	-	-	-	-	-
Propyl Acetate	-	-	-	-	100	-	-	-	-	-
Propylfuran	-	-	-	-	80	-	-	-	-	-
Total Xylene Isomers	-	-	-	-	-	-	-	-	-	-
Methyl Ethyl Ketone	-	-	79	-	3,300	-	-	-	-	-

Notes:

1. Parameters listed above include purgeable organic compounds identified above detection limits.
2. ug/l = micrograms per liter
3. * denotes duplicate sample
4. NS indicates well not sampled
5. - indicates semi-quantified result not available

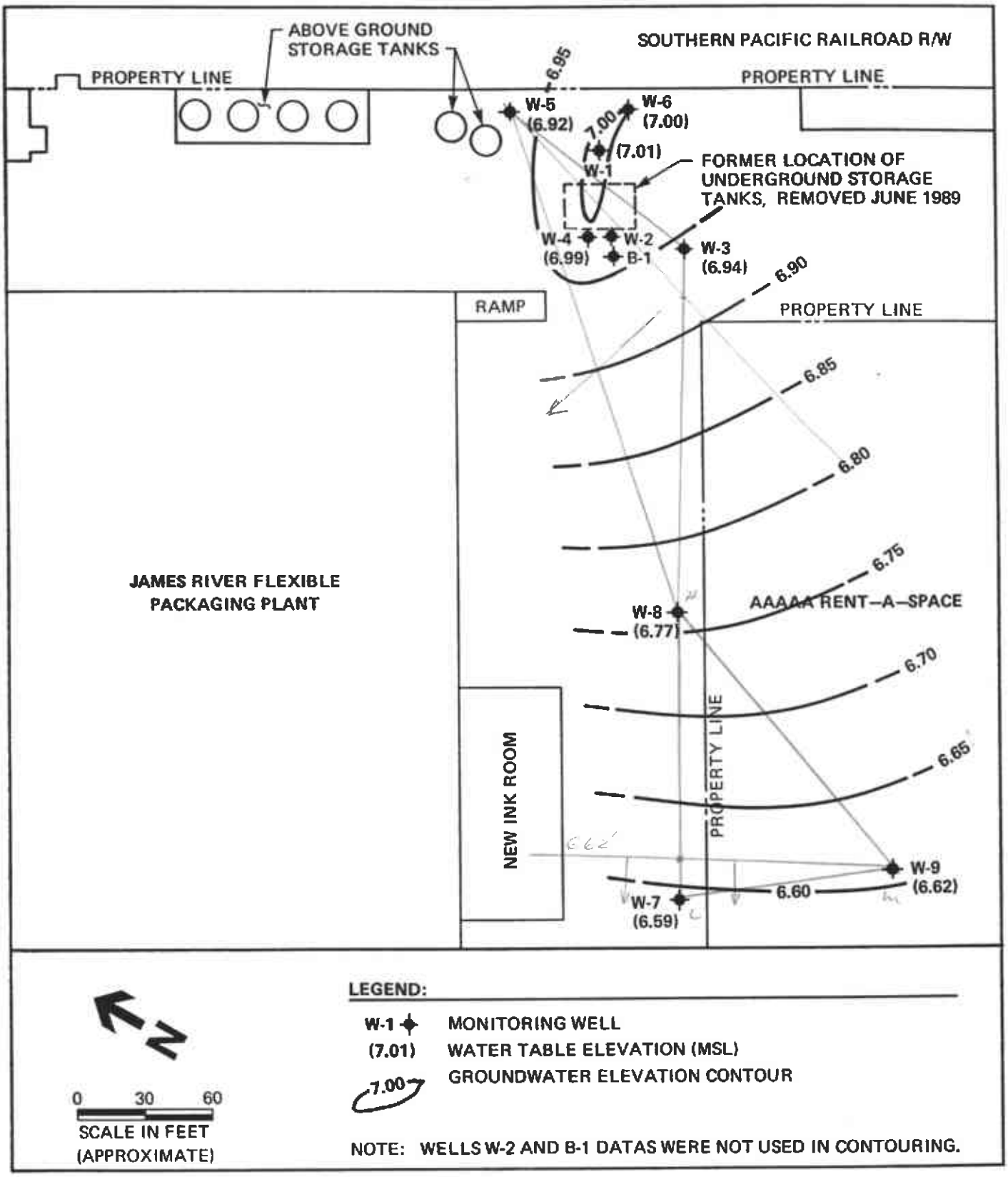

Figure 4–2 Potentiometric Surface in Vicinity of Site, November 12, 1989

At the time of both the August and April 1989 groundwater sampling events, the highest concentrations of chlorinated compounds were identified in the groundwater monitoring wells located immediately adjacent to the hydraulically upgradient property boundary (Wells W-5, W-6). Based on this distribution of organic compounds and James River's statement that neither they nor Crown-Zellerbach had used chlorinated solvents at the site, an off-site groundwater survey was performed by BCC.

The groundwater survey was conducted in July 1990, by Western Geo-Engineers, Inc., as a subcontractor to BCC. Our September 11, 1990, report of this survey, titled "Results of Off-Site Groundwater Survey, James River Corporation, Flexible Packaging Plant, San Leandro, California" was submitted to Alameda County (County) by James River. The groundwater survey indicated that chlorinated compounds were present in shallow groundwater hydraulically upgradient of the James River site. The determination of the hydraulic gradient was based on measurements made in the 10 existing monitoring wells on the James River site.

In March 1990, James River initiated a quarterly groundwater monitoring program in order to track the concentrations of organic constituents identified in the April and August 1989 sampling events. Analytical results for the first three quarterly monitoring events are summarized in Table 4-2. Laboratory reports are included in Appendix G. Quarterly monitoring has indicated that, in general, concentrations of organic compounds are declining with time.

Current Work

In the March 1, 1990 meeting between James River and Alameda County, the County requested that one additional monitoring well be installed in the verified downgradient direction, and within 10 feet of, an area where ink stained soil was known to exist. Also, to obtain information on soil quality in the vicinity of the wells containing the highest identified levels of chlorinated compounds, three additional exploratory boreholes were drilled.

Table 4–2 Quarterly Monitoring Results

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-Dichloroethane	<500	<2000	<1	<5	<2	<1	<500	<200	<1
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 4—2 Quarterly Monitoring Results (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-Dichloroethane	<20	<50	<20	<20	<5	<5	<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 4–2 Quarterly Monitoring Results (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-Dichloroethane	<1000	<1000	<1	<1	<1	<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	<10	<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.

Borehole Drilling and Well Installation. On November 13 and 14, 1990, four boreholes (BC-1, BC-2, BC-3, and W-10) were drilled in the locations illustrated on Figure 4-1. Boreholes were drilled using methods described in the approved work plan (Appendix A). Copies of the borehole logs are included as Appendix H. The additional monitoring well required under the work plan was installed in Borehole W-10, which is located approximately 6 feet southwest of the dried ink present underneath the rail spur. The location of Well W-10 is hydraulically downgradient of the dried ink based on groundwater level measurements in existing wells. The monitoring well is 17.5 feet deep and monitors the first groundwater encountered during drilling.

Boreholes BC-1, BC-2, and BC-3 were located in the vicinity of existing Wells W-5 and W-6. These wells have consistently contained the highest concentrations of chlorinated hydrocarbons identified during monitoring performed by BCC.

Well Development and Sampling. Well W-10 was developed and sampled on November 16, 1990. The well was developed by surging and bailing until relatively clear water was produced. The pH, temperature, and conductivity of the purged water was monitored, and development continued until these parameters had stabilized. The well was evacuated and allowed to recover 8 times, and approximately 70 gallons of water was produced during well development. Upon the completion of development, a groundwater sample was collected from the well. The sample was collected with a disposable bailer equipped with a bottom emptying device. The sample was appropriately labeled and stored on ice until delivery to BC Analytical in Emeryville, California.

The groundwater sample was analyzed for purgeable and aromatic halocarbons by EPA Methods 8010/8020. This analysis was selected because the purpose of the well was to determine whether inks known to be buried immediately up-gradient of the well location had impacted shallow groundwater. Analyses by EPA Method 8240, which will identify constituents formerly stored in the underground storage tanks, was performed on the sample obtained in the fourth quarterly monitoring. The fourth quarter sampling was conducted in mid-December 1990. The results of the fourth quarterly sampling was submitted in March 1991.

Site Stratigraphy. The site, in the vicinity of the ink room and underground storage tank area, is underlain by silty clay to a depth of approximately 7 feet. The silty clay is dark gray to black and contains root material, open root traces, and a small amount of scattered gravel. The silty clay is underlain by approximately 7 feet of sandy clay. The sandy clay is dark to light gray in color and contains approximately 30 percent fine-grained sand. The sand content increases with depth as the unit grades to a clayey to silty sand unit at a depth of approximately 15 feet. Groundwater was first encountered in this clayey to silty sand unit. The clayey to silty sand unit at the location of Well W-10 is approximately 3 feet thick. The unit at this location is underlain by a minimum of 5 feet of slightly moist, black clay. Drilling was halted after 5 feet of this clay was penetrated. The portion of the borehole drilled in the clay was backfilled with bentonite pellets and a well was constructed in the clayey to silty sand. The new well monitors only groundwater contained within the first water-bearing unit encountered. Well construction details are included on the borehole log in Appendix H.

A review of well construction for Wells W-1 through W-9 indicates that the perforated interval of these wells intercepts the water bearing zone monitored by Well W-10 and another water-bearing zone present beneath the black clay unit. This deeper water-bearing zone is described as a gravelly sand that occurs from approximately 25 to 40 feet below ground level.

Soil Quality. Analytical results for soil samples collected during borehole drilling are summarized in Table 4-3 and the laboratory report is included in Appendix I. The hydrocarbons benzene, ethylbenzene, toluene, xylenes, (BETX) and cis-1,2-dichloroethene (cis-1,2-DCE) were identified at low concentrations in soil samples collected during this investigation. At the location of Well W-10, ethylbenzene and toluene were identified at concentrations ranging from 0.02 to 0.07 milligrams per kilogram (mg/kg). Samples from Boreholes BC-1 through BC-3 contained BETX compounds at concentrations ranging from 0.03 to 1.1 mg/kg. Cis-1,2-DCE was identified in the 5-foot sample from Borehole BC-1 at a concentration of 0.16 mg/kg.

Table 4—3 Analytical Results - Soil Samples Borehole Drilling and Additional Well Installation

Borehole I.D.	W- 10		BC -1		BC -2		BC -3	
Sample Depth	5.5 - 6.0	10.0 - 10.5	5.0 - 5.5	9.5 - 10.0	5.0 - 5.5	9.5 - 10.0	5.5 - 6.0	10.0 - 10.5
PARAMETER								
Purgeable Halocarbons, ug/kg EPA Method 8010								
Cis-1,2-Dichloroethene	<0.01	<0.01	0.16	<0.01	<0.01	<0.01	<0.01	<0.01
Aromatic Halocarbons, ug/kg EPA Method 8020								
Benzene	<0.1	<0.1	0.9	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	<0.01	0.07	0.03	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene	0.02	0.06	1.1	0.1	0.03	0.03	0.04	0.08
Total Xylenes	<0.01	<0.01	0.13	0.08	<0.01	<0.01	<0.01	<0.01

Notes:
ug/kg - micrograms per kilogram
Constituents not detected shown as less than the reporting limit.

Source of BTEX unknown? It appears it's from
onsite source.

The analytical results indicate that soil located near the up-gradient property boundary contains very low concentrations of chlorinated hydrocarbons. Further, chlorinated hydrocarbons were not detected in soil at the location of new Well W-10, approximately 6 feet down gradient of known ink stained soils. Groundwater in this portion of the site contains the highest concentrations of chlorinated hydrocarbons identified in existing wells. This indicates that an on-site source of chlorinated hydrocarbons does not appear to exist in the vicinity of the former UST site.

Groundwater Quality - Well W-10. Four hydrocarbon compounds were identified in Well W-10. The laboratory report is included in Appendix I. Cis-1,2-DCE was identified at a concentration of 2,400 micrograms per liter (ug/l). Ethylbenzene, toluene, and total xylene isomers were identified at concentrations of 440, 22,000, and 2,100 ug/l, respectively. The source of these compounds has not been identified.

CHAPTER 5

CONCLUSIONS AND RECOMMENDATIONS

This chapter presents a summary of the conclusions of this investigation and recommendations for future actions at the site.

Conclusions

The major findings resulting from the recent work are described below.

Ink Room Excavation Area

Based upon visual observations at the time of additional soil excavation, the inks or ink constituents at this location have migrated downward through root traces to a depth of at least 13 feet below ground level, the total depth excavated. Verification samples indicate that purgeable aromatic and volatile chlorinated hydrocarbons were present in soils remaining in the excavation bottom. Sidewall samples indicate that hydrocarbons remain along the sidewalls of the final excavation. No additional material could be removed from the western and southwestern sidewalls due to the presence of utilities and underground storage tanks.

Former Pipeline Location

Toluene, xylenes, and trichloroethene (TCE) were identified at trace levels close to reporting detection limits of 0.01 milligram per kilogram in pipeline verification samples. Toluene was identified in eight samples; xylenes in four samples; and TCE in one sample. The source of these compounds has not been determined.

Groundwater Quality

Monitoring Well W-10, located downgradient of an area known to contain buried inks, contained cis-1,2-dichloroethene (cis-1,2-DCE), ethylbenzene, toluene, and xylenes at concentrations of 2,400, 440, 22,000, and 2,100 micrograms per liter, respectively. The source of these compounds has not been determined. Based on the distribution of these compounds in existing wells, and the results of an upgradient groundwater survey, an off-site source probably exists.

Hydrogeologic Setting

Drilling at the location of Well W-10 indicated that the first water-bearing zone underneath the site occurs at a depth of 15 feet in a clayey to silty sand unit. Review of borehole logs for the existing Wells W-1 to W-9 indicates that they are perforated in both the first water-bearing zone and a second zone encountered at a depth of approximately 25 feet. The black clay encountered at a depth of 17 feet at the location of Well W-10 appears to be present in other boreholes drilled by Harding-Lawson Associates. However, based on the limited amount of data available it is not known whether the clay is laterally continuous and acts as an aquitard between two distinct water-bearing zones.

Should there be two distinct water-bearing zones present, the results of the off-site groundwater survey cannot be conclusively taken as correlative with on-site groundwater present in existing Wells W-1 through W-9. The off-site groundwater survey examined only the first water encountered. The on-site wells may indicate conditions representative of both the first and second water-bearing zones.

Additional Boreholes

Soil samples collected from three boreholes in the vicinity of Wells W-5 and W-6 did not contain levels of chlorinated compounds above reporting detection limits. The purpose of this

sampling was to investigate whether an on-site source of chlorinated hydrocarbons to the groundwater was present in shallow soils in the vicinity of wells containing the highest levels of chlorinated compounds. The results of the additional borehole soil sample analyses shows that a source of chlorinated compounds does not exist in the vicinity of the former UST site.

Recommendations

Based on the results of the recent work and a review of historical information, the following additional work is recommended.

- A review of the history of up-gradient property use should be undertaken. This review may indicate whether industrial activities that involved the use of chlorinated hydrocarbons were performed on up-gradient properties. This information could then be brought to the attention of the County and San Francisco Bay Regional Water Quality Control Board as a possible off-site source of the chlorinated hydrocarbons identified in on-site groundwater.

- Close the ink room and pipeline excavations.

APPENDIX A

WORK PLAN/

ALAMEDA COUNTY APPROVAL LETTER

Brown and Caldwell
Consultants

3480 Buskirk Avenue
Pleasant Hill, CA 94523-4342
P.O. Box 8045
Walnut Creek, CA 94596-1220
(415) 937-9010
FAX (415) 937-9026

April 6, 1990

Mr. Larry Seto
Alameda County Health Agency
Department of Environmental Health
Division of Hazardous Materials
80 Swan Way, Room 200
Oakland, California 94621

11-5081-01/1

Subject: Work Plan, James River Corporation, Flexible Packaging Plant, San Leandro, California

Dear Mr. Seto:

The enclosed work plan describes our approach to complete the work requested by you during our meeting of March 1, 1990. We have proposed a phased approach for performing the additional work. Phase I consists of work required to complete tank and excavation closures currently underway at the site. This work will be performed immediately upon your approval in order to return the areas to a safe and useable condition.

Phase II work will consist of an off-site groundwater survey. The groundwater survey will aid in determining whether an upgradient source of chlorinated hydrocarbons to the shallow groundwater exists. Groundwater analytical results from on-site wells have indicated levels are highest near the up-gradient property boundary, Should an up-gradient source be identified, you will be notified of our findings immediately. Phase II work will be initiated upon authorization for site access from Southern Pacific Railroad, the up-gradient property owner.

Should no up-gradient source be identified in the Phase II work, Phase III will be implemented. Phase III work will consist of delineation of the downgradient extent of groundwater contamination, and the design and implementation of a groundwater remediation system. A work plan describing the Phase III work will be prepared and submitted for your review should no up-gradient source of chlorinated hydrocarbons to the shallow groundwater be identified by the Phase II work.

Please contact me should you have questions or comments regarding the enclosed work plan.

Very truly yours,

BROWN AND CALDWELL

Donna Courington

Donna Courington
Project Manager

DLC:dc
Enclosure

PHASE I WORK PLAN

The work described below is intended to satisfy Alameda County Health Department (County) requirements for tank and excavation closure. Based upon work performed to date, three areas at the site requiring additional work have been identified. The areas, located as shown on Figure 1, are the ink room excavation, the rail spur area, and additional pipelines to be removed.

BACKGROUND

This section summarizes work performed to date in each of the three areas identified above.

Ink Room Excavation

During installation of an underground runoff containment tank adjacent to a new ink room, stained soil exhibiting odors was noted (Figure 1). Brown and Caldwell (BC) was contacted to perform an investigation to delineate the extent of the stained soil. Sixteen boreholes were drilled in the locations shown on Figure 2. Sampling and analysis of soils surrounding the stained area was conducted. Based on the results of the drilling and analysis performed by BC, James River excavated all stained soil and some surrounding native soil. Stained soil was transported to a Class I disposal facility under proper manifest. Verification samples were collected from the excavation in the locations shown on Figure 3. The samples were analyzed for metals by appropriate EPA methods, purgeable halocarbons by EPA Method 8010, and purgeable aromatics by EPA Method 8020. Analytical results are summarized in Table 1. Laboratory reports are included as Attachment A. Toluene, benzene, and ethylbenzene were present in the verification samples at concentrations ranging from 180 to 39,000 micrograms per kilogram (ug/kg). Low levels of tetrachloroethylene and chloroform were detected in sample 12. The excavation is currently open.

Underground Storage Tank (UST) and Piping Excavation

James River began removal of three USTs in June 1989. The tanks were removed and permission to backfill the tank excavation was granted by Alameda County.

Piping associated with the tanks, located as shown on Figure 1, was removed. Verification samples collected from this piping trench contained elevated levels of solvents formerly stored in the tanks. Alameda County requested additional excavation in the piping trench area. During this additional excavation, stained soils were identified. James River

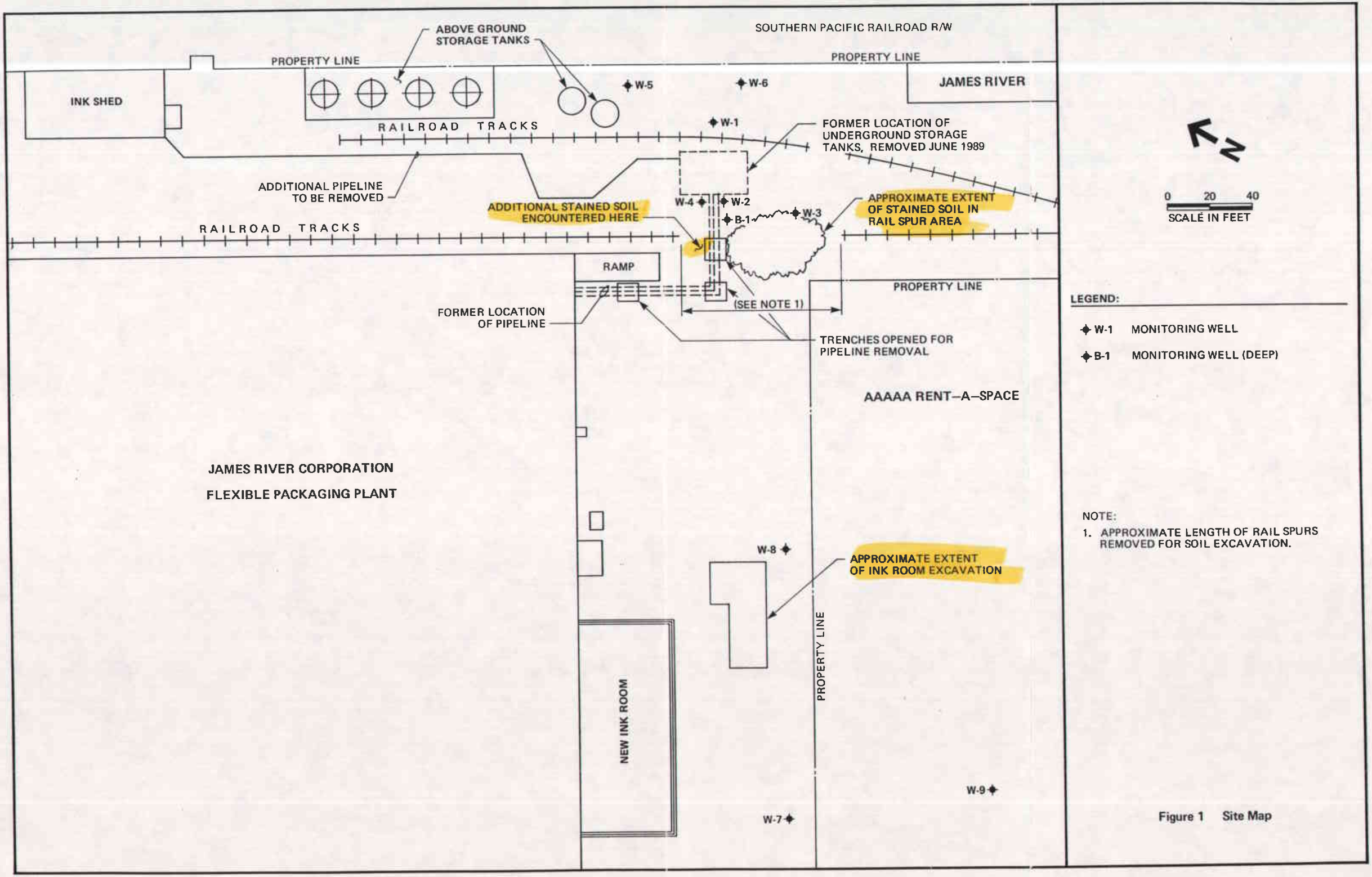

Figure 1 Site Map

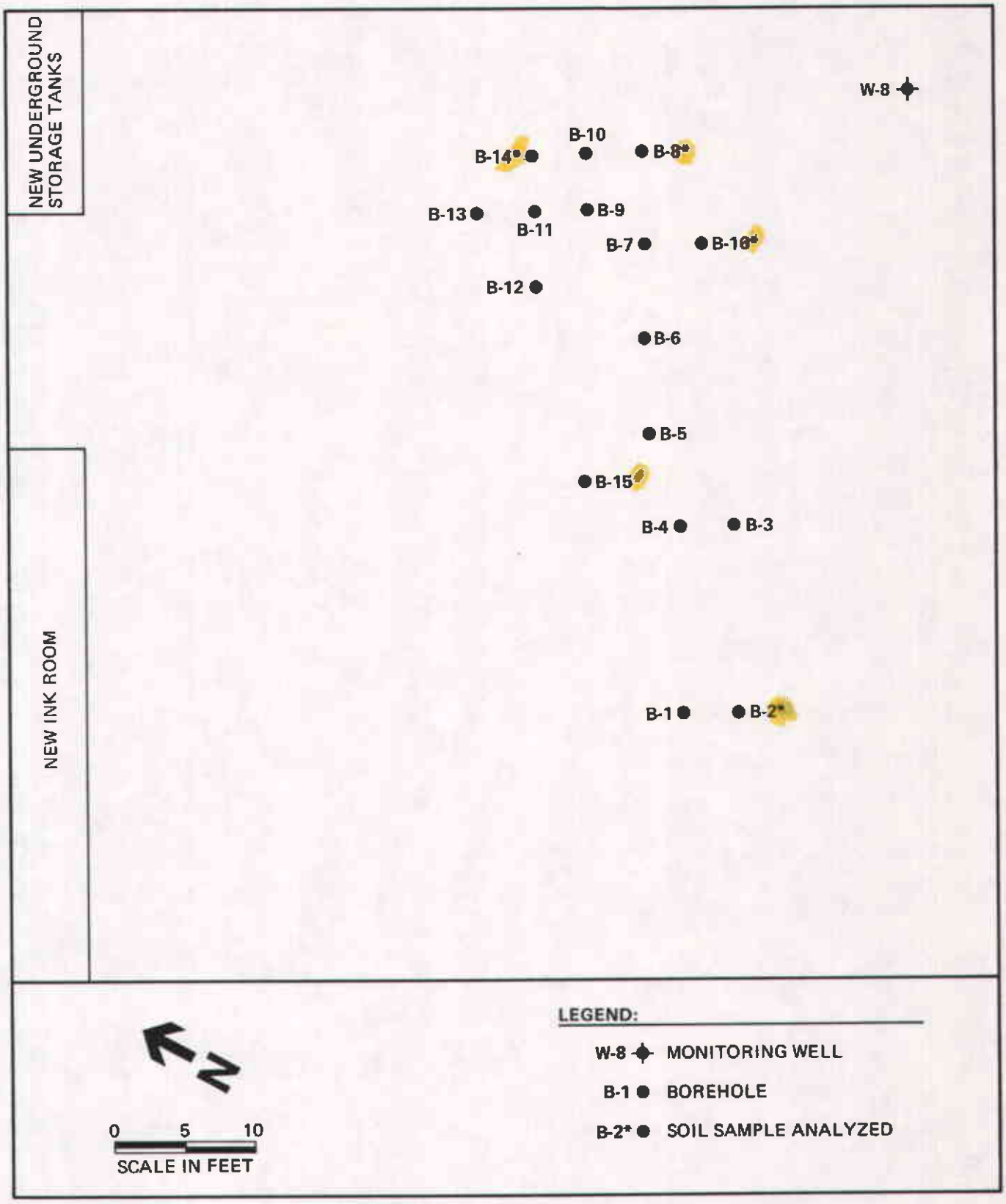

Figure 2 Borehole Locations Detail

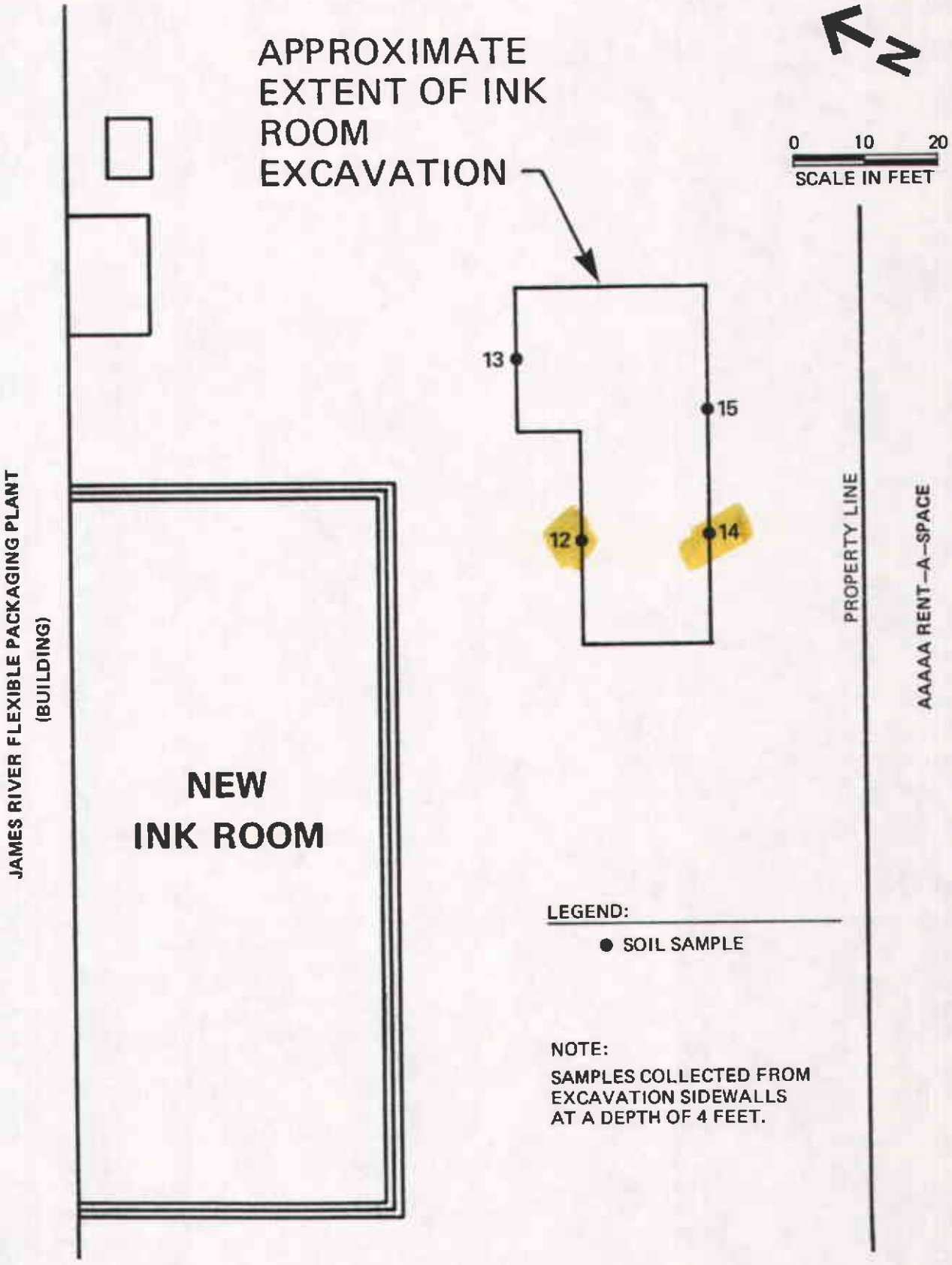

Figure 3 Verification Sample Locations, Ink Room Excavation

Table 1. Summary of Analytical Results,
Verification Samples,
Ink Room Excavation

Concentration, micrograms per kilogram

Sample I.D. / Constituent	12	13	14	15
EPA Method 8010				
Chloroform	64	<50	<50	<50
Tetrachloroethylene	180	<50	50	<50
EPA Method 8020				
Benzene	<200	<100	<50	720
Ethylbenzene	<200	<100	490	180
Toluene	39,000	3,800	16,000	2,100
Metals				
Arsenic	1,600	2,000	1,900	1,700
Chromium	31,000	36,000	21	26,000
Copper	29,000	21,000	19,000	14,000
Mercury	17	26	19	23
Nickel	39,000	42,000	37,000	33,000
Selenium	<40	40	<40	<40
Zinc	37,000	40,000	36,000	38,000

retained Chem-Tech, Inc., to conduct an investigation into the extent of these stained soils. Chem-Tech identified an approximate extent of stained soils, as shown on Figure 1. The area outlined on Figure 1 was excavated to a depth of approximately 2 feet to remove all stained soil. Excavation of this soil required removal of a portion of a rail spur. Upon removal of this rail spur, additional stained soils were encountered. Excavation in this area was then halted. The piping trench has been temporarily backfilled with pea gravel. No further work has been performed in the former UST location.

Additional Piping

Additional piping related to the former USTs is located as shown on Figure 1. This piping will be removed as a part of the tank closure. No work related to removal of this piping has been performed.

PROPOSED ADDITIONAL WORK

Based upon discussions with Alameda County, the following work is needed to finalize tank and piping removal and comply with groundwater monitoring requirements.

Ink Room Excavation

Based upon the results of verification samples, additional excavation will be performed. A photoionization detector (PID) will be used to screen soil removed from the excavation bottom. Excavation will continue until no organic vapors are detected by the PID in soils removed from the excavation, or until a depth of approximately 12 feet, the groundwater interface, is reached. Limited excavation of soil from the sidewalls will be performed. Approximately 1 foot of additional soil will be removed from the sidewalls of the excavation. All excavated soil will be stockpiled on site and covered with plastic, in compliance with Bay Area Air Quality Management District (BAAQMD) guidelines. Prior to excavation, proper written notification will be submitted to the BAAQMD.

Four verification samples will be collected from the excavation sidewalls and two from the excavation bottom. Final sampling locations will be based upon the extent of excavation.

In addition, one composite sample will be collected from each 50 cubic yards of stockpiled soil. Samples will be analyzed for purgeable halocarbons by EPA Method 8010 and for

purgeable aromatics by EPA Method 8020. Analytical results of the composite sample will be used to determine disposal and/or remediation methods for excavated soil. Should levels exceed those acceptable to Class III disposal facilities, on-site soil aeration will be performed. Soil aeration will be conducted in accordance with Regulation 8, Rule 40 of the BAAQMD.

Underground Storage Tank and Piping Excavation

One verification sample will be collected from the northeastern end of the excavated area around the rail spur (Figure 4). The sample will be analyzed for purgeable priority pollutants by EPA Method 8240. This analysis will detect chlorinated solvents that may be related to the stained soil formerly located there.

Additional Piping Removal

The additional piping will be removed by opening trenches at 20-foot intervals along the length of the pipeline, and cutting and pulling the pipe through the trench. The 20-foot interval is required for verification sampling purposes. One verification sample will be collected from each trench. We estimate a maximum of 13 samples will be collected (Figure 4). Samples will be analyzed by EPA Methods 8240.

Excavation and piping removal will be performed by Atlas Hydraulic, the contractor who began the work.

If stained soils are encountered in trenches opened for piping removal, their presence will be noted and located on a site map. No excavation of stained soils along the pipeline will be performed.

Additional Monitoring Well Installation

Upon completion of piping removal, described above, one additional monitoring well will be installed in the verified downgradient location of the area known to contain buried pigment-stained soils. The well location will be determined based upon whether additional pigment-stained soils are encountered during pipeline removal. The downgradient direction will be determined from water level measurements in existing wells at the site. A groundwater sample from the additional well will be analyzed for purgeable priority pollutants by EPA Method 8240.

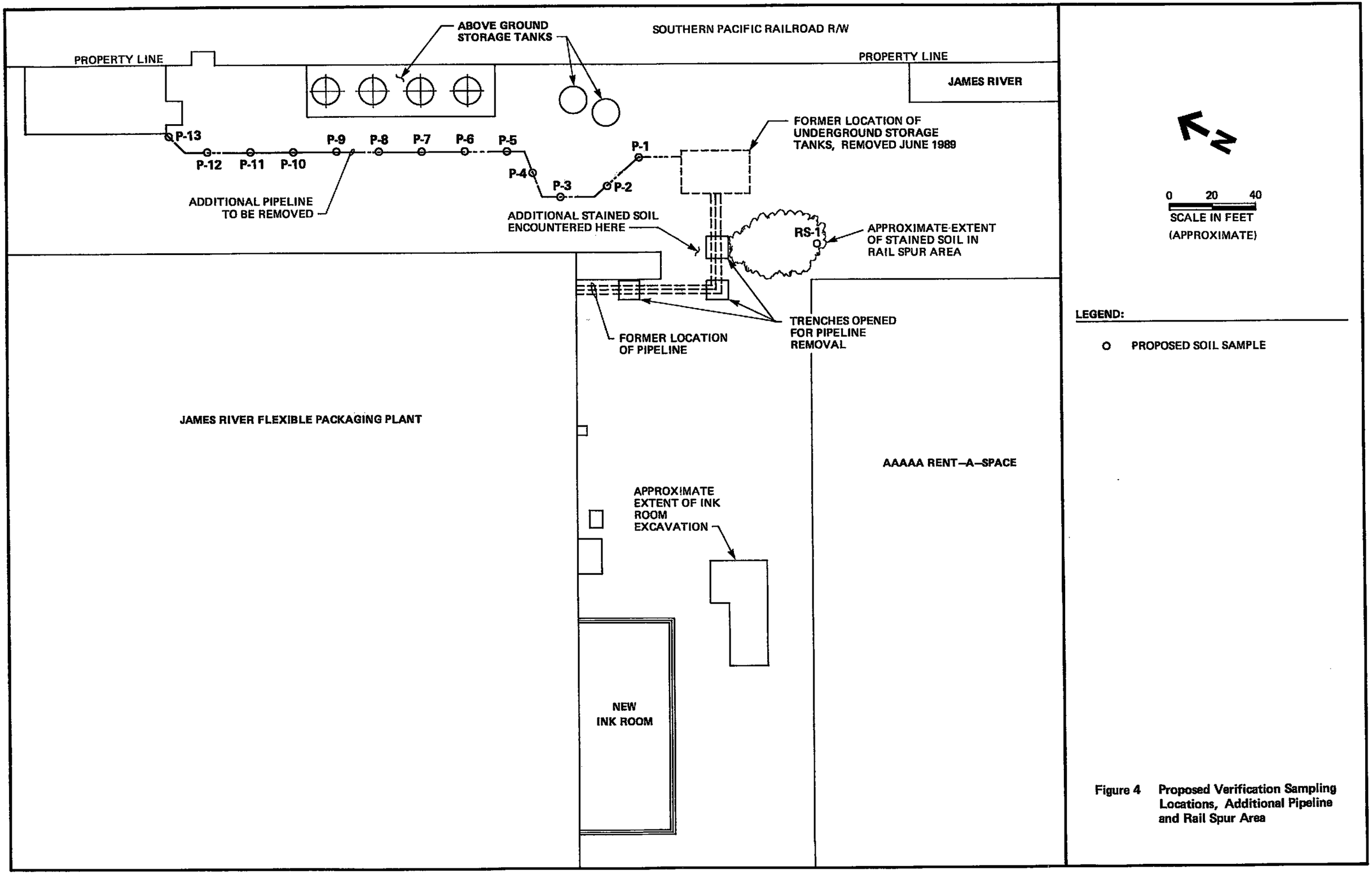

Figure 4 Proposed Verification Sampling Locations, Additional Pipeline and Rail Spur Area

Field Methods

The following methods will be implemented during performance of field work described above.

Verification Sampling. Verification samples will be collected using a hand driven sampler lined with a 2-inch diameter by 6-inch long brass sleeve. Samples collected from the ink room excavation will be taken from a backhoe bucket of soil collected from the designated sample location. At other sampling locations, approximately 6 inches of surface soil will be removed and the sampler driven into the underlying soil. The brass sleeve will be removed from the sampler, the ends covered with foil, and plastic caps taped on. The sample will be labeled with appropriate identification, the date and depth of collection, the sampler's initials, and the required analyses. All samples will be stored on ice until delivery to the BC Analytical Laboratory in Emeryville, California. Proper chain-of-custody will be maintained during sample handling.

Well Installation. A groundwater monitoring well will be installed in a boring advanced with a truck-mounted drilling rig equipped with 10-inch outside diameter hollow-stem augers. The boring will be continuously sampled for logging purposes. Soil samples will be collected using a 5-foot core barrel advanced concurrently with the augers. No soil samples from the boring will be retained for potential laboratory analysis. Soil will be described on the borehole log using the Unified Soil Classification System and a Munsell Soil Color Chart.

The boring will be drilled to a depth of approximately 35 feet. This depth is estimated to be 10 feet below the top of a gravelly sand encountered during previous drilling at the site. This gravelly sand interval is monitored by existing wells at the site.

The monitoring well will be installed by inserting 4-inch diameter polyvinyl chloride casing directly through the hollow-stem augers. The lower 15 feet of the casing will consist of screen with 0.020-inch slots. The slotted interval will extend approximately 5 feet above the top of the gravelly sand unit. A gravel pack composed of #3 Lonestar sand, or equivalent, will be poured around the slotted interval as the augers are incrementally removed from the borehole. The gravel pack will extend from the bottom of the borehole to approximately 2 feet above the slotted interval. A 2-foot thick annular seal composed of bentonite pellets will be placed immediately above the gravel pack. The remainder of the annular space will be backfilled with a cement grout containing approximately 5 percent powdered bentonite. The well will be completed at the surface with a flush-mounted, traffic-proof box and a water-tight locking cap.

All borehole cuttings will be stockpiled on-site with soil removed from the ink room excavation. The soil will be sampled and aerated, if necessary, prior to proper disposal by James River.

Well Development and Sampling. The well will be developed by surging and pumping until relatively sediment-free water is produced. Throughout development, the pH, conductivity, and temperature of purged water will be monitored. Development will continue until these parameters have stabilized.

At least 24 hours after development, a groundwater sample will be collected. The well will be purged of a minimum of three well volumes prior to sampling. The pH, conductivity, and temperature of purged water will be monitored. If, after removal of three well volumes these parameters have not stabilized, purging will continue. A sample will be collected after these parameters have stabilized. The groundwater sample will be collected with a Teflon bailer and decanted into two 40-milliliter vials. The sample will be appropriately labeled and stored on ice until delivery to the BC Analytical Laboratory in Emeryville, California. Proper chain of custody will be maintained during sample handling. The sample will be analyzed for purgeable priority pollutants by EPA Method 8240. All purged water will be placed in 55-gallon drums for proper disposal by James River.

Report Preparation

Upon the completion of field work, a draft report of Phase I work will be prepared. The report will describe all field activities conducted under this investigation. The report will include all analytical results and figures illustrating all sampling locations. Upon review by James River, the report will be finalized and submitted to appropriate regulatory agencies.

PHASE II WORK PLAN

Phase II work will consist of performance of an off-site groundwater survey. The purpose of the survey is to evaluate whether an off-site source of chlorinated hydrocarbons to the shallow groundwater exists. Groundwater samples collected from existing on-site wells have indicated levels of chlorinated hydrocarbons are highest near the up-gradient property boundary. This situation implies a possible off-site source in the upgradient direction.

Groundwater Survey

A grid of 18 sampling points will be established on the northeast portion of the site and on the adjacent Southern Pacific property to the northeast of the site (Figure 5). James River will be responsible for contacting Southern Pacific to obtain site access.

Groundwater samples will be collected from temporary boreholes which will be pushed hydraulically into subsurface soils to a depth of approximately 20 feet or until refusal. Groundwater samples will be collected with a syringe, through flexible tubing placed down the borehole. Temporary boreholes will be backfilled with bentonite pellets hydrated with tap water.

The groundwater samples will undergo a headspace chromatographic analysis for the following organic compounds:

1,2-dichloroethene	methyl acetate
trichloroethene	n-butyl acetate
perchloroethene	n-propyl acetate
vinyl chloride	n-propyl alcohol
toluene	ethyl alcohol
	acetone

The survey will be conducted by a subcontractor with a four man field crew. The survey will take 2 days. At the end of the first day, data will be contoured to determine the most likely locations for additional data collection on the second day.

At the close of survey day 2 we will assess if further work is needed in order to identify an offsite source. James River will be informed of our findings and recommendations at that time.

During the survey a mobile laboratory will be stationed on-site. In order to most efficiently conduct the survey, two

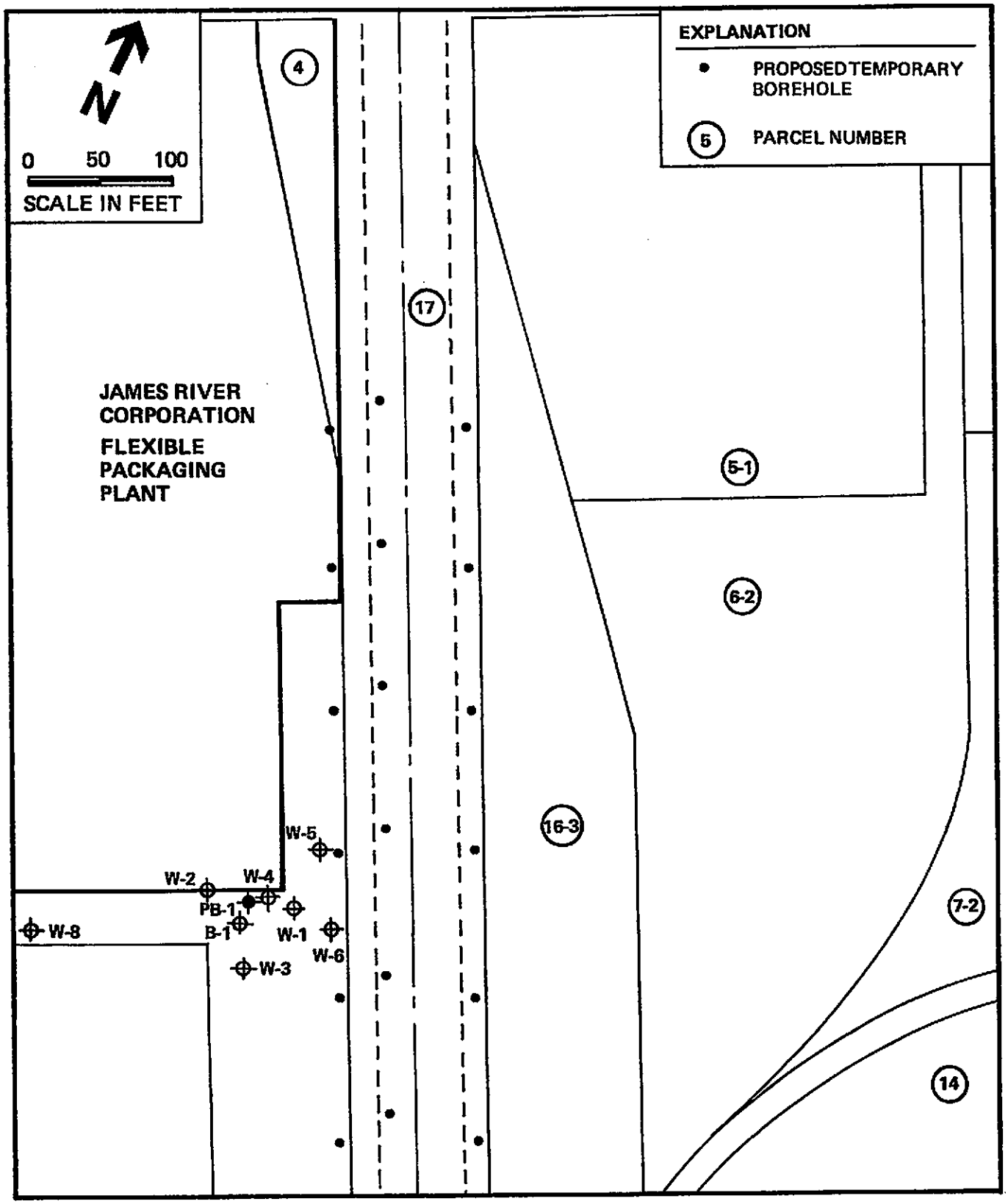

Figure 5 On and Off-Site Proposed Temporary Borehole Locations

Photovac 10S50 gas chromatographs will be used. One chromatograph will be set up for the fast eluting compounds, the other for the slower compounds.

The results will be presented in a brief report which will include sample collection procedures and methods, results in tabular form, work sheets, contour maps of chlorinated hydrocarbons, interpretation of results, and recommendations for further action (if necessary).

At the completion of this investigation, a review of all data will be conducted by Brown and Caldwell. If data indicate a possible off-site source for chlorinated hydrocarbons, we will prepare a notification for James River to submit to both Alameda County and the RWQCB. We will request that the regulatory agencies inquire into the past use and handling of solvents containing chlorinated hydrocarbons at up-gradient properties.

If results do not indicate a possible off-site source, additional work will be required to determine the downgradient extent of the plume. Design and implementation of a groundwater remediation program will necessitate determination of the extent and nature of the plume.

SCHEDULE

A schedule to implement this work is included as Figure 6. We have estimated two weeks for receipt of work plan approval from Alameda County. The start date will be contingent upon receipt of County approval.

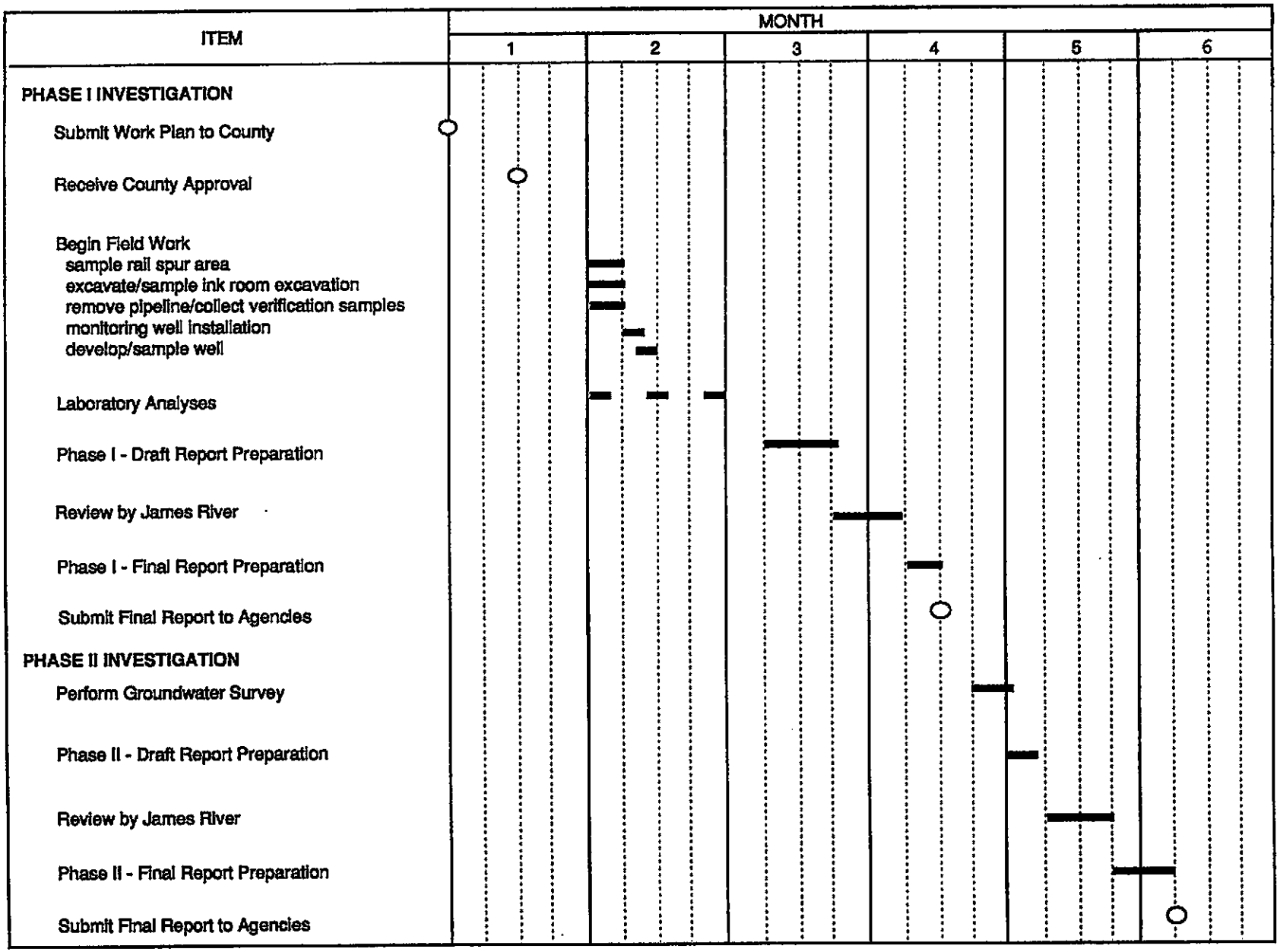

Figure 6 Project Schedule

ATTACHMENT A

Laboratory Reports
Ink Room Verification Samples

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545 (415) 783-6960

TAL

DATE: 1/18/90
LOG NO.: 8191
DATE SAMPLED: 12/19/89
DATE RECEIVED: 12/19/89

CUSTOMER: Atlas Hydraulic Corporation
REQUESTER: Jim Givens
PROJECT: James River Corporation, 2011 Williams St., San Leandro, CA

Sample Type: Soil

Method and Constituent	Units	No. 12 Concentration	No. 12 Detection Limit	No. 13 Concentration	No. 13 Detection Limit	No. 14 Concentration	No. 14 Detection Limit
EPA Method 8010:							
Benzyl Chloride	ug/kg	< 50	50	< 50	50	< 50	50
Bis (2-Chloroethoxy) Methane	ug/kg	< 50	50	< 50	50	< 50	50
Bis (2-Chloroisopropyl) Ether	ug/kg	< 50	50	< 50	50	< 50	50
Bromobenzene	ug/kg	< 50	50	< 50	50	< 50	50
Bromodichloromethane	ug/kg	< 50	50	< 50	50	< 50	50
Bromoform	ug/kg	< 50	50	< 50	50	< 50	50
Bromomethane	ug/kg	< 50	50	< 50	50	< 50	50
Carbon Tetrachloride	ug/kg	< 50	50	< 50	50	< 50	50
Chloracetaldehyde	ug/kg	< 50	50	< 50	50	< 50	50
Chloral	ug/kg	< 50	50	< 50	50	< 50	50
Chlorobenzene	ug/kg	< 50	50	< 50	50	< 50	50
Chloroethane	ug/kg	< 50	50	< 50	50	< 50	50
Chloroform	ug/kg	64	50	< 50	50	< 50	50
1-Chlorohexane	ug/kg	< 50	50	< 50	50	< 50	50
2-Chloroethyl Vinyl Ether	ug/kg	< 50	50	< 50	50	< 50	50
Chloromethane	ug/kg	< 50	50	< 50	50	< 50	50
Chloromethyl Methyl Ether	ug/kg	< 50	50	< 50	50	< 50	50
Chlorotoluene	ug/kg	< 50	50	< 50	50	< 50	50
Dibromochloromethane	ug/kg	< 50	50	< 50	50	< 50	50

DATE: 1/18/90
LOG NO.: 8191
DATE SAMPLED: 12/19/89
DATE RECEIVED: 12/19/89
PAGE: Two

Sample Type: Soil

Method and Constituent	Units	No. 12 Concentration	No. 12 Detection Limit	No. 13 Concentration	No. 13 Detection Limit	No. 14 Concentration	No. 14 Detection Limit
EPA Method 8010 (Continued):							
Dibromomethane	ug/kg	< 50	50	< 50	50	< 50	50
1,2-Dichlorobenzene	ug/kg	< 50	50	< 50	50	< 50	50
1,3-Dichlorobenzene	ug/kg	< 50	50	< 50	50	< 50	50
1,4-Dichlorobenzene	ug/kg	< 50	50	< 50	50	< 50	50
Dichlorodifluoromethane	ug/kg	< 50	50	< 50	50	< 50	50
1,1-Dichloroethane	ug/kg	< 50	50	< 50	50	< 50	50
1,2-Dichloroethane	ug/kg	< 50	50	< 50	50	< 50	50
1,1-Dichloroethylene	ug/kg	< 50	50	< 50	50	< 50	50
Trans-1,2-Dichloroethylene	ug/kg	< 50	50	< 50	50	< 50	50
Dichloromethane	ug/kg	< 600	600	< 600	600	< 600	600
1,2-Dichloropropane	ug/kg	< 50	50	< 50	50	< 50	50
1,3-Dichloropropylene	ug/kg	< 50	50	< 50	50	< 50	50
1,1,2,2-Tetrachloroethane	ug/kg	< 50	50	< 50	50	< 50	50
1,1,1,2-Tetrachloroethane	ug/kg	< 50	50	< 50	50	< 50	50
Tetrachloroethylene	ug/kg	180	50	< 50	50	50	50
1,1,1-Trichloroethane	ug/kg	< 50	50	< 50	50	< 50	50
1,1,2-Trichloroethane	ug/kg	< 50	50	< 50	50	< 50	50
Trichloroethylene	ug/kg	< 50	50	< 50	50	< 50	50
Trichlorofluoromethane	ug/kg	< 50	50	< 50	50	< 50	50
Trichloropropane	ug/kg	< 50	50	< 50	50	< 50	50
Vinyl Chloride	ug/kg	< 50	50	< 50	50	< 50	50

DATE: 1/18/90
LOG NO.: 8191
DATE SAMPLED: 12/19/89
DATE RECEIVED: 12/19/89
PAGE: Three

Sample Type: Soil

Method and Constituent	Units	No. 15 Concentration	No. 15 Detection Limit
EPA Method 8010:			
Benzyl-Chloride	ug/kg	< 50	50
Bis (2-Chloroethoxy) Methane	ug/kg	< 50	50
Bis (2-Chloroisopropyl) Ether	ug/kg	< 50	50
Bromobenzene	ug/kg	< 50	50
Bromodichloromethane	ug/kg	< 50	50
Bromoform	ug/kg	< 50	50
Bromomethane	ug/kg	< 50	50
Carbon Tetrachloride	ug/kg	< 50	50
Chloracetaldehyde	ug/kg	< 50	50
Chloral	ug/kg	< 50	50
Chlorobenzene	ug/kg	< 50	50
Chloroethane	ug/kg	< 50	50
Chloroform	ug/kg	< 50	50
1-Chlorohexane	ug/kg	< 50	50
2-Chloroethyl Vinyl Ether	ug/kg	< 50	50
Chloromethane	ug/kg	< 50	50
Chloromethyl Methyl Ether	ug/kg	< 50	50
Chlorotoluene	ug/kg	< 50	50
Dibromochloromethane	ug/kg	< 50	50
Dibromomethane	ug/kg	< 50	50
1,2-Dichlorobenzene	ug/kg	< 50	50
1,3-Dichlorobenzene	ug/kg	< 50	50
1,4-Dichlorobenzene	ug/kg	< 50	50
Dichlorodifluoromethane	ug/kg	< 50	50
1,1-Dichloroethane	ug/kg	< 50	50

DATE: 1/18/90
LOG NO.: 8191
DATE SAMPLED: 12/19/89
DATE RECEIVED: 12/19/89
PAGE: Four

Sample Type: Soil

Method and Constituent	Units	No. 15 Concentration	No. 15 Detection Limit
EPA Method 8010 (Continued):			
1,2-Dichloroethane	ug/kg	< 50	50
1,1-Dichloroethylene	ug/kg	< 50	50
Trans-1,2-Dichloroethylene	ug/kg	< 50	50
Dichloromethane	ug/kg	< 600	600
1,2-Dichloropropane	ug/kg	< 50	50
1,3-Dichloropropylene	ug/kg	< 50	50
1,1,2,2-Tetrachloroethane	ug/kg	< 50	50
1,1,1,2-Tetrachloroethane	ug/kg	< 50	50
Tetrachloroethylene	ug/kg	< 50	50
1,1,1-Trichloroethane	ug/kg	< 50	50
1,1,2-Trichloroethane	ug/kg	< 50	50
Trichloroethylene	ug/kg	< 50	50
Trichlorofluoromethane	ug/kg	< 50	50
Trichloropropane	ug/kg	< 50	50
Vinyl Chloride	ug/kg	< 50	50

DATE: 1/18/90
LOG NO.: 8191
DATE SAMPLED: 12/19/89
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PAGE: Five

Sample Type: Soil

Method and Constituent	Units	No. 12 Concentration	No. 12 Detection Limit	No. 13 Concentration	No. 13 Detection Limit	No. 14 Concentration	No. 14 Detection Limit
EPA Method 8020:							
Benzene	ug/kg	< 200	200	< 100	100	< 50	50
Chlorobenzene	ug/kg	< 100	100	< 100	100	< 50	50
1,2-Dichlorobenzene	ug/kg	< 200	200	< 100	100	< 50	50
1,3-Dichlorobenzene	ug/kg	< 100	100	< 100	100	< 50	50
1,4-Dichlorobenzene	ug/kg	< 200	200	< 100	100	< 50	50
Ethylbenzene	ug/kg	< 200	200	< 100	100	490	50
Toluene	ug/kg	39,000	200	3,800	100	16,000	50
Xylenes	ug/kg	1,200	500	< 300	300	270	200

Method and Constituent	Units	No. 15 Concentration	No. 15 Detection Limit
EPA Method 8020:			
Benzene	ug/kg	720	20
Chlorobenzene	ug/kg	< 10	10
1,2-Dichlorobenzene	ug/kg	< 20	20
1,3-Dichlorobenzene	ug/kg	< 10	10
1,4-Dichlorobenzene	ug/kg	< 20	20
Ethylbenzene	ug/kg	180	20
Toluene	ug/kg	2,100	20
Xylenes	ug/kg	< 50	50

TAL Trace Analysis Laboratory, Inc.

DATE: 1/18/90
LOG NO.: 8191
DATE SAMPLED: 12/19/89
DATE RECEIVED: 12/19/89
PAGE: Six

Sample Type: Soil

Method and Constituent	Units	No. 12 Concentration	No. 12 Detection Limit	No. 13 Concentration	No. 13 Detection Limit	No. 14 Concentration	No. 14 Detection Limit
EPA Method 7041: Antimony	ug/kg	< 200	200	< 200	200	< 200	200
EPA Method 7061: Arsenic	ug/kg	1,600	8	2,000	8	1,900	8
EPA Method 7090: Beryllium	ug/kg	< 300	300	< 300	300	< 300	300
EPA Method 7130: Cadmium	ug/kg	< 800	800	< 800	800	< 800	800
EPA Method 7190: Chromium	ug/kg	31,000	10,000	36,000	10,000	24,000	10,000
EPA Method 7210: Copper	ug/kg	19,000	2,000	21,000	2,000	19,000	2,000
EPA Method 7420: Lead	ug/kg	< 5,000	5,000	< 5,000	5,000	< 5,000	5,000
EPA Method 7471: Mercury	ug/kg	17	2	26	2	19	2
EPA Method 7520: Nickel	ug/kg	39,000	3,000	42,000	3,000	37,000	3,000
EPA Method 7741: Selenium	ug/kg	< 40	40	40	40	< 40	40

DATE: 1/18/90
LOG NO.: 8191
DATE SAMPLED: 12/19/89
DATE RECEIVED: 12/19/89
PAGE: Seven

Sample Type: Soil

Method and Constituent	Units	No. 12 Concentration	No. 12 Detection Limit	No. 13 Concentration	No. 13 Detection Limit	No. 14 Concentration	No. 14 Detection Limit
EPA Method 7760:							
Silver	ug/kg	< 3,000	3,000	< 3,000	3,000	< 3,000	3,000
EPA Method 7841:							
Thallium	ug/kg	< 100	100	< 100	100	< 100	100
EPA Method 7950:							
Zinc	ug/kg	37,000	600	40,000	600	36,000	600

DATE: 1/18/90
LOG NO.: 8191
DATE SAMPLED: 12/19/89
DATE RECEIVED: 12/19/89
PAGE: Eight

Sample Type: Soil

Method and Constituent	Units	No. 15 Concentration	No. 15 Detection Limit
EPA Method 7041: Antimony	ug/kg	< 200	200
EPA Method 7061: Arsenic	ug/kg	1,700	8
EPA Method 7090: Beryllium	ug/kg	< 300	300
EPA Method 7130: Cadmium	ug/kg	< 800	800
EPA Method 7190: Chromium	ug/kg	26,000	10,000
EPA Method 7210: Copper	ug/kg	14,000	2,000
EPA Method 7420: Lead	ug/kg	< 5,000	5,000
EPA Method 7471: Mercury	ug/kg	23	2
EPA Method 7520: Nickel	ug/kg	33,000	3,000
EPA Method 7741: Selenium	ug/kg	< 40	40

DATE: 1/18/90
LOG NO.: 8191
DATE SAMPLED: 12/19/89
DATE RECEIVED: 12/19/89
PAGE: Nine

Sample Type: Soil

Method and Constituent	Units	No. 15 Concentration	No. 15 Detection Limit
EPA Method 7760:			
Silver	ug/kg	< 3,000	3,000
EPA Method 7841:			
Thallium	ug/kg	< 100	100
EPA Method 7950:			
Zinc	ug/kg	38,000	600

Louis W. DuPuis
Quality Control/Quality Assurance Manager

LWD:dmg

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545 *(415) 783-6960*

8191

TAL

CHAIN OF CUSTODY RECORD

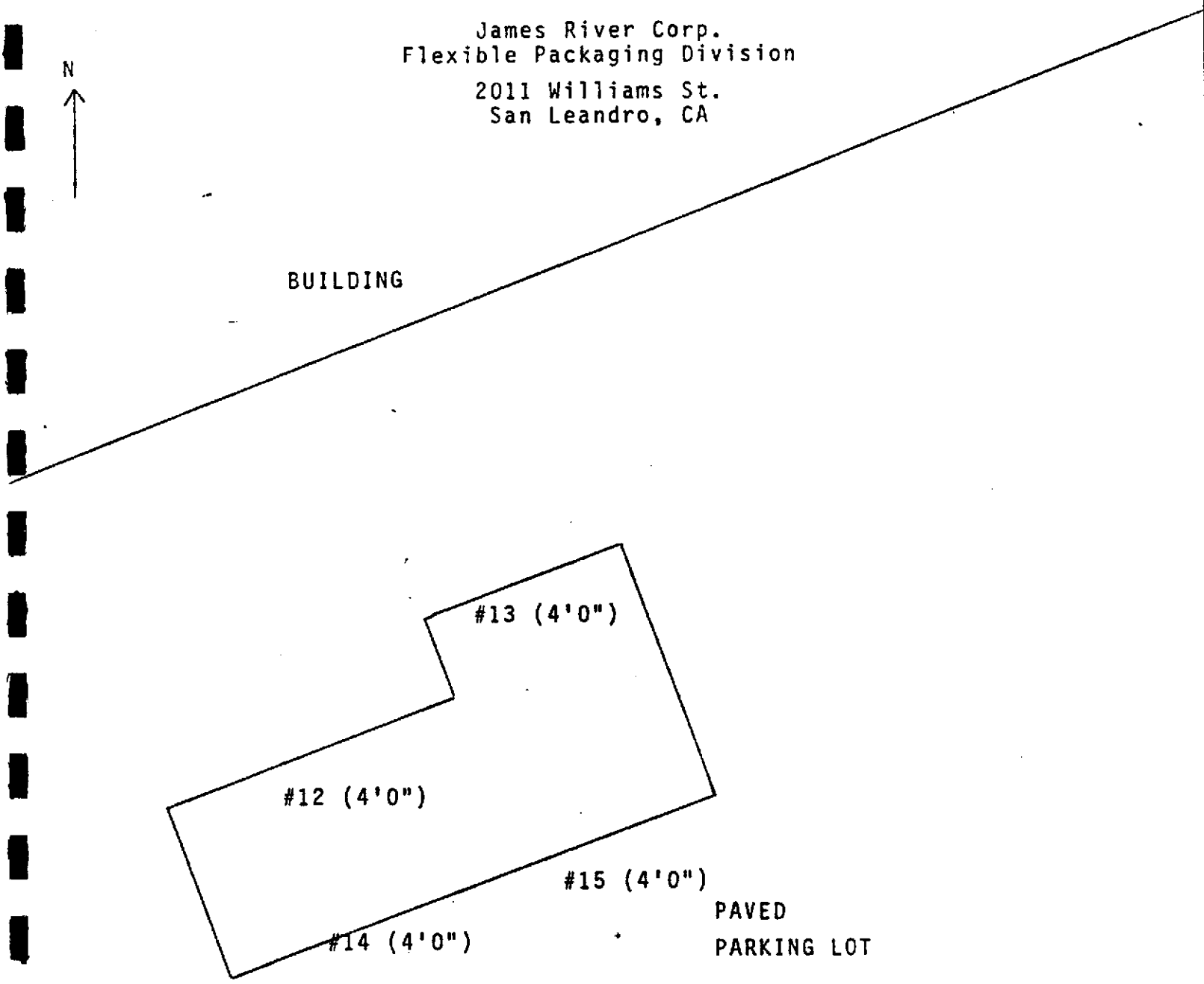
PROJ. NO. | PROJECT NAME: James River Corporation 2011 Williams St San Leandro CA

SAMPLERS: (Signature)

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	EPA 13 Metals 6010 8020	Reg TAT	REMARKS
#12	12/19	2:45		X	Soil (1 BT) (4-oz)	2	X X		
#13	"			X	Soil (1 BT) (4-oz)	2	X X		
#14	"			X	Soil (1 BT) (4-oz)	2	X X		
#15	89			X	Soil (1 BT) (4-oz)	2	X X		

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks: Bob Wenning	

James River Corp.
Flexible Packaging Division
2011 Williams St.
San Leandro, CA



Brown and Caldwell
Consultants

3480 Buskirk Avenue
Pleasant Hill, CA 94523-4342
P.O. Box 8045
Walnut Creek, CA 94596-1220
(415) 937-9010
FAX (415) 937-9026

July 5, 1990

Mr. Larry Seto
Alameda County Health Agency
Division of Hazardous Materials
80 Swan Way, Rm. 200
Oakland, California 94621

11-42-5081-01/1

Subject: Addendum to Work Plan for James River Corporation Flexible Packaging Plant, San Leandro, California

Dear Mr. Seto:

This addendum to the April 6, 1990 "Work Plan for James River Corporation, Flexible Packaging Plant, San Leandro, California" has been prepared in response to our discussion of May 14, 1990. A revised site map is included as Figure 1. Additions and/or changes to the investigation described in our April 6, 1990 "Work Plan, James River Corporation, Flexible Packaging Plant, San Leandro, California" are as follows:

Verification Sampling, Ink Room Excavation. Our April 6, 1990 work plan stated that two soil samples would be collected from the excavation bottom and one from each sidewall at the completion of additional excavation, for a total of 6 samples. The samples were to be analyzed for purgeable halocarbons by EPA Method 8010 and purgeable aromatics by EPA Method 8020.

As you requested, the verification sampling plan in the ink room excavation will be modified such that one verification sample will be collected for every 200 square feet of surface area of the excavation sidewalls and bottom. The actual number of samples, and sampling locations, will be determined after excavation is complete. However, at this time, we estimate that 10 discrete samples will be collected from this excavation.

Verification samples collected from the ink room excavation will be analyzed for the CAM metals arsenic, barium, chromium, cobalt, copper, mercury, molybdenum, nickel, selenium, vanadium, and zinc, in addition to the EPA 8010/8020 analyses proposed in the April 6, 1990 work plan. Only selected CAM metals analyses will be performed on samples from the ink room excavation because previous sampling in the excavation indicated that the remaining CAM metals

(antimony, beryllium, cadmium, lead, silver, thallium) were not present above detection levels.

Additional Piping Removal. If stained soils are encountered during removal of additional piping related to the former underground storage tanks (USTs), the stained soils will be sampled and analyzed for the seventeen CAM metals listed above. If no stained soils are encountered during pipeline removal, the verification samples collected along the length of the pipeline will be analyzed by EPA Methods 8010 and 8020. Our April 6, 1990 work plan proposed only analysis by EPA Method 8240.

Rail Spur Area. Our work plan proposed collecting one soil sample for analysis of purgeable priority pollutants by EPA Method 8240.

No additional samples will be collected from this area. However, the sample collected from the rail spur area will be analyzed for organics by EPA Methods 8010 and 8020 and for the seventeen CAM metals listed above.

Additional Well Installation. Our work plan did not contain provisions for sampling and analysis of soils encountered during borehole drilling and well installation. As requested, the work plan will now include collection of soil samples at 5-foot intervals above the water table during installation of the additional monitoring well. We estimate 3 soil samples will be retained for laboratory analysis by EPA Method 8010 and 8020.

These samples may also be analyzed for the seventeen CAM metals listed above. The metals analyses will be contingent upon the identification of stained soils up-gradient of the well location during removal of the additional piping. If stained soils are present up-gradient of the well location, the three soil samples collected from the borehole will be analyzed for CAM metals.

As stated in the April 6, 1990 work plan, should pigment-stained soils be encountered during removal of the additional piping (Figure 1), the stain location will be noted on a site map and the soils will be left in place. Sampling and analysis for metals, purgeable halocarbons, and purgeable aromatics will be performed as described above. Should pigment-stained soils be encountered, removal will not be undertaken due to the proximity of the area to the rail spurs and high traffic work areas (Figure 1). The extent of the stained soils, if present, will be unknown. Excavation in the area of the pipeline could

require removal and replacement of the rail spurs, as well as disruption of work at the facility. In addition, the stained soils, if present, will be covered by relatively impermeable asphalt which will limit potential leaching of constituents into underlying soils and groundwater.

We are prepared to begin implementation of this amended work plan upon your approval. Please call should you have further questions or comments.

Very truly yours,

BROWN AND CALDWELL

Donna Courington

Donna L. Courington
Project Manager

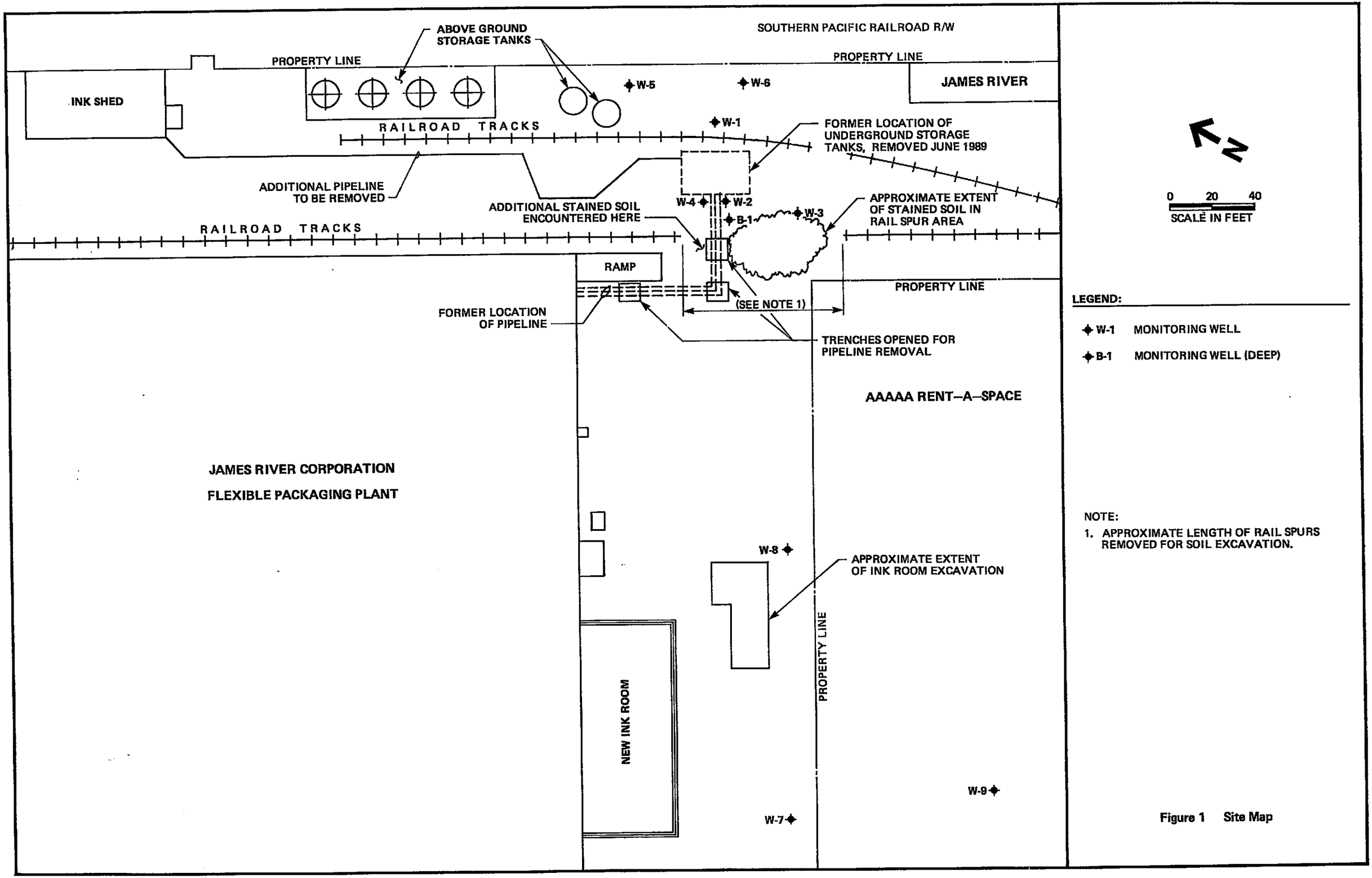


Figure 1 Site Map

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Program
80 Swan Way, Rm. 200
Oakland, CA 94621
(415)

August 8, 1990

Mr. Bob Wenning, Engineering Manager
James River Corporation
Flexible Packaging Division
2101 Williams St.
San Leandro, CA 94577

Dear Mr. Wenning:

I have reviewed your workplan dated April 6, 1990 and your addendum dated July 5, 1990, that was prepared by Brown and Caldwell. Your workplan is acceptable with the following conditions:

1. A bioassay must be run on the stained soil sample taken from the pipe trench, in addition to 8010 and 8020 and the CAM metals.

2. If detectable amounts of contaminants are found in the stained soil, additional sampling maybe required and the extent of contamination defined.

3. A minimum of one monitoring well must be installed in the verified downgradient direction of the stained soil area.

Please submit to this office, an additional deposit/refund check for $558.00, made payable to the County of Alameda. Your project has a current negative account balance of -$102.00.

If you have any questions, please contact me at (415) 271-4320.

Sincerely,

Larry Seto, Senior,
Hazardous Materials Specialist

LS:mnc

cc: San Leandro Fire
San Leandro Wastewater Treatment Plant
Gil Jensen, Alameda County District Attorney, Consumer and Environmental Protection Agency
RWQCB
Charlene Williams, DOHS
Rafat A. Shahid, Assistant Agency Director, Environmental Health
Donna Covington, Brown and Caldwell
Files

APPENDIX B

JUNE 6, 1989 BROWN AND CALDWELL

REPORT OF LIMITED INVESTIGATION OF STAINED SOIL

BROWN AND CALDWELL
CONSULTING ENGINEERS

June 6, 1989

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

11-4305-06/2

Subject: Soil Sample Results for James River Corporation, San Leandro Facility

Dear Mr. Wenning:

This letter report summarizes the investigation of stained soil observed during the installation of a runoff containment tank at the James River Corporation facility located at 2101 Williams Street, San Leandro, California. The investigation was performed under the terms and conditions of our agreement for engineering services dated December 8, 1988, and James River Corporation Purchase Order Number SL2535-EE. Included in this report is the following: background information which lead to this investigation; field methods used to drill sixteen shallow boreholes and collect five soil samples; observations made during drilling of the boreholes; analytical results of the five soil samples collected; and estimates of the volume of soil which may have to be disposed of at a Class I hazardous waste disposal facility.

Background

Stained soil containing organic solvent odors was observed during excavation activities for the installation of a 20,000 gallon capacity runoff containment tank. At the time of excavation, stained soil was observed from approximately 3- to 5-feet below grade and appeared to fill a 3- to 4-foot wide, east-west trending trench located to the northeast of the runoff tank (Figure 1). The limits of the stained soil were not identified during the installation of the tank. The purpose of this investigation was to locate the limits of the stained soil, and provide estimates as to the volume of soil to be disposed of at a Class I waste disposal facility and the volume of soil which may be aerated on site.

MAILING: POST OFFICE BOX 8045 WALNUT CREEK, CALIFORNIA 94596-1220
STREET: 3480 BUSKIRK AVENUE PLEASANT HILL, CALIFORNIA 94523-4342 • (415) 937-9010 • FAX: (415) 937-9026

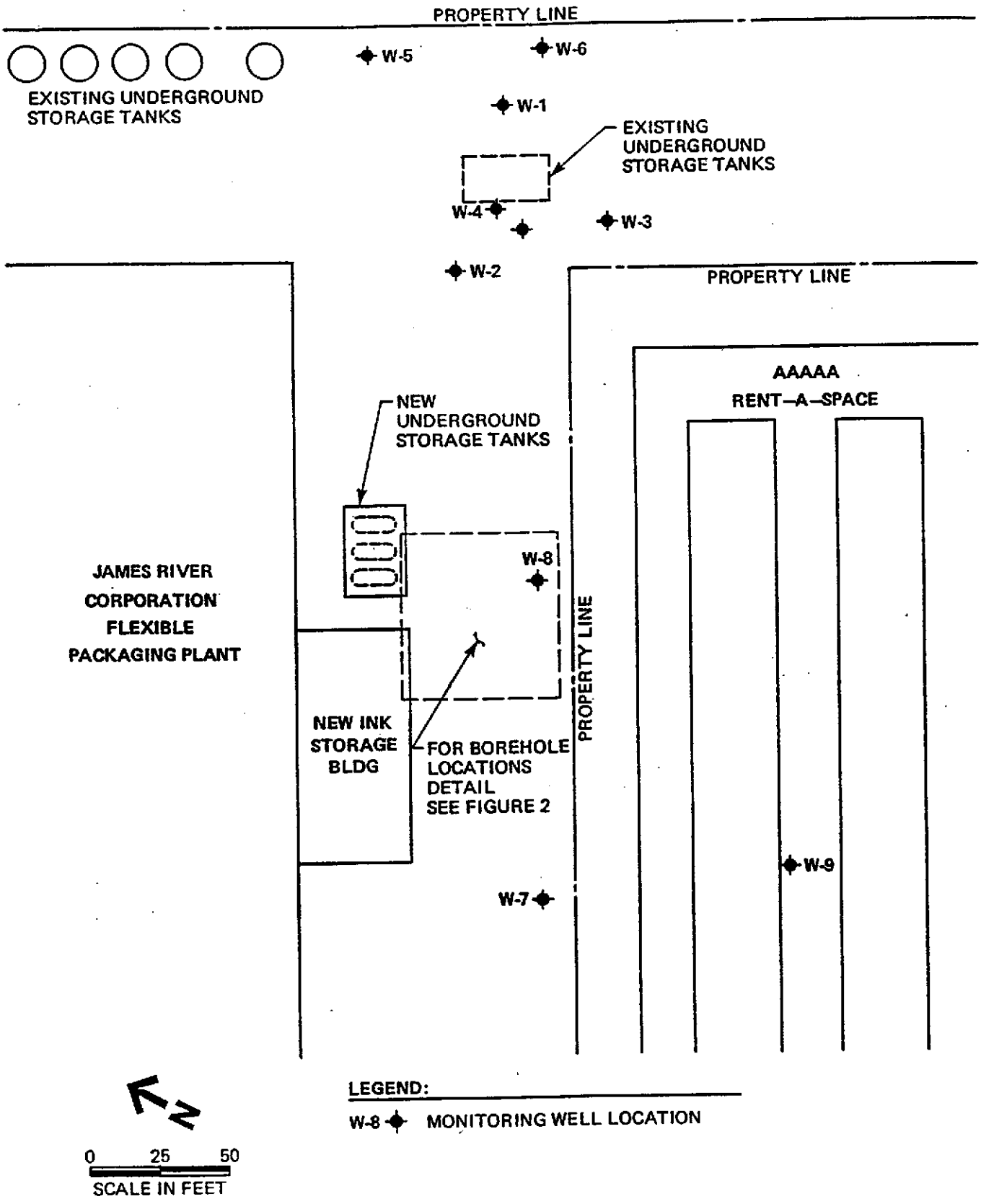


Figure 1 Site Location Map

Brown and Caldwell Laboratory Field Services personnel performed a soil vapor survey to characterize the vapors in the soil on August 24 and 25, 1988. In general, vapor concentrations over 1,000 parts per million (ppm) were observed in several vapor samples collected from soil probes installed 3-feet below grade, located to the north of the runoff containment vault. The results of the vapor survey were summarized in a letter dated September 28, 1988.

Field Methods

Sixteen shallow boreholes were drilled using hand-auguring equipment at locations illustrated on Figure 2. Five soil samples were collected for chemical analyses from selected boreholes illustrated on Figure 2. Soil samples were collected by driving 2-inch-diameter by 6-inch-long, brass sampling tubes into undisturbed soil approximately 5.5- to 6.0-feet below grade. The brass tubes were driven by hand using a slide-hammer. Upon withdrawal from the borehole, the ends of the brass tubes were covered with a plastic cap, sealed with plastic tape, and stored in a chilled ice chest until delivery to the Brown and Caldwell Laboratory in Emeryville, California.

Field Observations

Seven of the sixteen shallow boreholes identified stained soil. Table 1 summarizes the type of material observed at each borehole. The stained soil consisted of sandy and clayey fill, stained with red, blue, and green colors. This soil/fill was observed at the greatest depth at 5.5-feet below grade at boreholes B-1, B-6, and B-7. At boreholes B-5, B-6 and B-7 rags, and pieces of plastic were observed in the soil cuttings. At borehole B-5, the auger could not be advanced past 4.2-feet below grade

The native soil was observed from approximately 2.0- to 5.0-feet below grade at nine of the boreholes. The soil consisted of stiff, plastic, dark olive green clay.

Organic Vapor Screening. During borehole drilling, soil cuttings, and boreholes were screened for total organic vapors using a Bacharach TLV Sniffer. In general, soil cuttings from boreholes drilled in to the stained soil/fill exhibited concentrations of organic vapors ranging from 1,000 to 10,000 ppm. Soil cuttings from boreholes drilled into the undisturbed soil exhibited concentrations of organic vapors ranging from 500 to 1,000 ppm.

Analytical Results

Soil samples were submitted for analysis of EPA priority pollutant purgeable organic chemicals and selected metals. The results of the analyses are summarized in Table 2 and the laboratory reports are included as Enclosure 1.

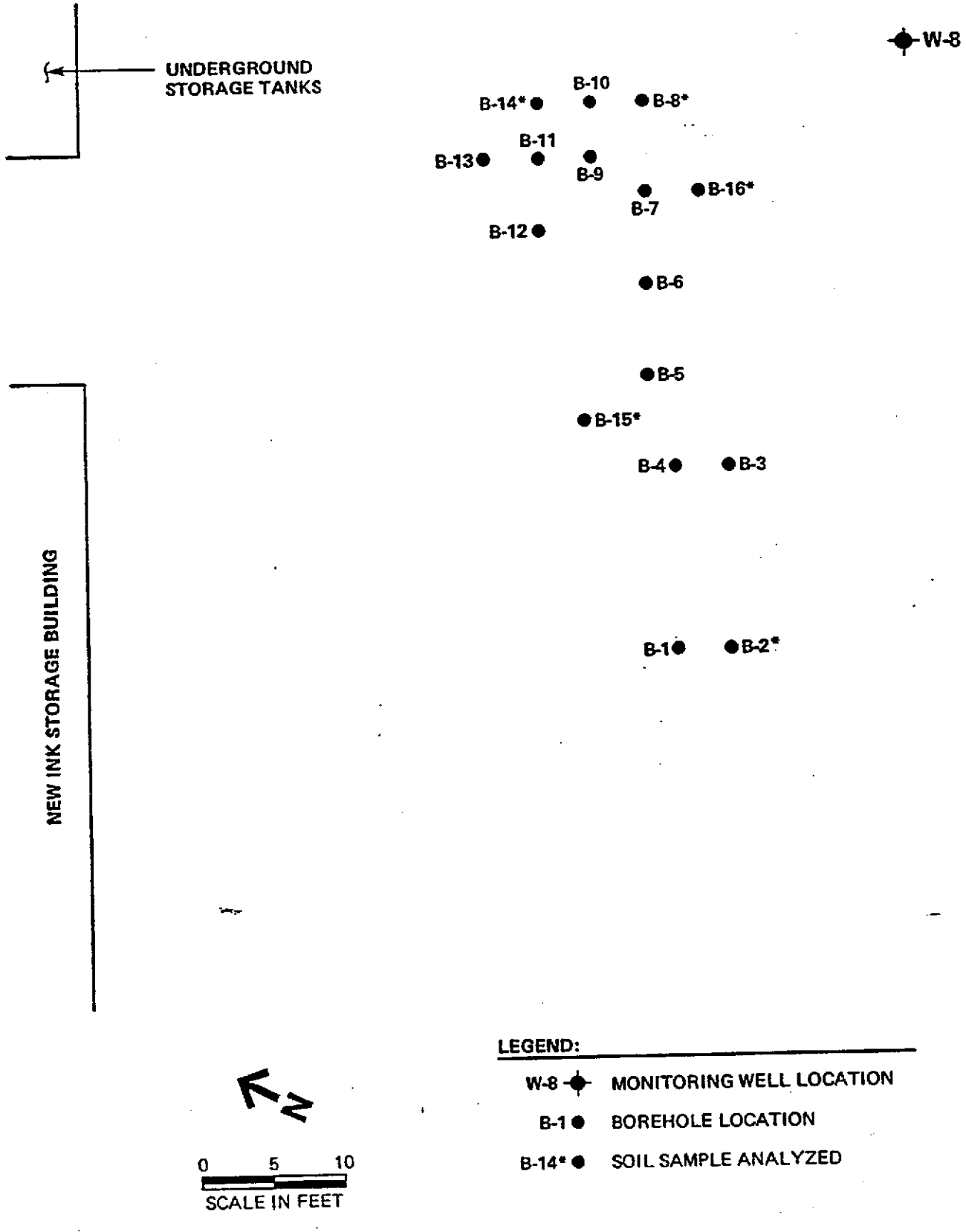


Figure 2 Borehole Locations Detail

Table 1 Borehole Summary

Borehole Identification	Total Depth	Stained Soil/ Fill Interval
B-1	7.0	2.5-5.5
B-2	7.0	none
B-3	6.0	none
B-4	6.0	2.5-3.5
B-5	4.2	1.9-4.2
B-6	6.0	2.0-5.5
B-7	7.0	2.0-5.5
B-8	6.0	none
B-9	5.0	1.5-2.5
B-10	5.0	none
B-11	6.0	1.5-2.5
B-12	5.0	none
B-13	5.0	none
B-14	6.0	none
B-15	6.0	none
B-16	6.0	none

Notes:
Borehole locations are illustrated on Figure 2.
All measurements are in feet below grade.

Table 2, Analytical Results for Soil Samples

Borehole Identification Depth Interval, (feet below grade)	B-2 (5.5-6.0)	B-8 (5.5-6.0)	B-14 (5.5-6.0)	B-15 (5.5-6.0)	B-16 (5.5-6.0)	TTLC
PARAMETERS milligrams per kilogram (mg/kg)						
Metals						
Antimony	4	3	NA	NA	NA	500
Arsenic	0.219	3.8	NA	NA	NA	500
Barium	220	180	140	170	38	10,000
Berylium	<0.2	<0.2	NA	NA	NA	75
Cadmium	6.2	6.1	<2	<2	<2	100
Chromium	100	57	47	35	50	2,500
Cobalt	13	14	NA	NA	NA	8,000
Copper	30	23	21	38	19	2,500
Lead	130	<6	<2	4	10	1,000
Mercury	<0.01	<0.01	NA	NA	NA	20
Molybdenum	<1.6	<1.6	NA	NA	NA	3,500
Nickel	62	67	NA	NA	NA	2,000
Selenium	0.2	<0.2	NA	NA	NA	100
Silver	<0.4	<0.4	NA	NA	NA	500
Thallium	<4	<4	NA	NA	NA	700
Vanadium	56	53	54	40	54	2,400
Zinc	65	57	NA	NA	NA	5,000
Purgeable Organic Chemicals						
Toluene	170	3.2	0.4	15	0.6	NE
2-Hexanone	<2	<2	0.4	17	1.1	NE
Acetone	<20	<1	3.2	29	<1	NE
Total Purgeable Organic Chemicals	170	3.2	4	61	1.7	
Semi-Quantified Results						
Butanol	-	-	-	0.8	-	NE
C5H12O2 (Ester)	-	-	-	2	-	NE
Ethanol	-	-	-	50	-	NE
Isopropanol	-	-	-	8	-	NE
Methyl Acetate	-	-	-	0.8	-	NE
N-Butyl acetate	5	-	-	-	0.8	NE
N-Butyl Actate	-	-	-	13	-	NE

Notes: 1. TTLC is the concentration above which a material is considered hazardous under Title 22 of the California Code of Regulations.
2. NE dentes no TTLC established.
3. NA denotes parameter not analyzed.

Organic Analyses. The soil samples contained concentrations of total purgeable organic compounds (POCs) ranging from 1.7 milligrams per kilogram (mg/kg) at borehole B-16, to 170 mg/kg at B-2. The total POC concentration of the sample from B-16 was comprised of two POCs, toluene and 2-hexanone. Toluene was the only POC identified in the sample from B-2. All five soil samples contained a detectable concentration of toluene. The soil sample from B-15 contained three quantified, and six semi-quantified POCs. The quantified POCs in the B-15 sample include toluene, acetone, and 2-hexanone.

Metals Analyses. Based on the concentrations of the metals identified in samples B-2 and B-8, the list of metals analyzed in the remaining three samples was reduced. Concentrations of metals detected in the five soil samples were all below the Total Threshold Limit Concentration (TTLC) for each metal. The TTLC is the concentration above which a material is classified as hazardous under Title 22 of the California Code of Regulations. Four of the five samples contained barium in the highest concentration relative to the other metals analyzed. The soil sample from B-16 contained vanadium in the highest concentration relative to the other metals analyzed.

Estimated Volume of Contaminated Soil

Figure 3 illustrates the limit of the stained soil. The limits illustrated are based on observations made during the installation of the runoff containment tank and the drilling of the sixteen boreholes. Assuming the stained soil is 3-feet thick over the outlined area illustrated on Figure 3, the estimated volume of stained soil is approximately 25 cubic yards. This soil must be disposed of at a Class I disposal facility.

Soil two feet below the bottom of the stained soil should be excavated and aerated on site. The volume of the soil to be aerated is estimated to be approximately 16 cubic yards. Permits from the Bay Area Air Quality Management District (BAAQMD) are needed prior to aeration. After aeration, verification samples will be collected and analyzed for POCs. Based on the results of the verification samples, the soil may be disposed of at a Class III disposal facility.

Conclusions and Recommendations

This section describes the conclusions derived from this investigation and recommendations to dispose and/or remediate the contaminated soil.

Conclusions. Stained and odorous soil extend from approximately 2.5- to 5.5-feet below grade at four of the sixteen boreholes drilled for this investigation. Based on a thickness of 3-feet, the total estimated volume of stained soil is approximately 25

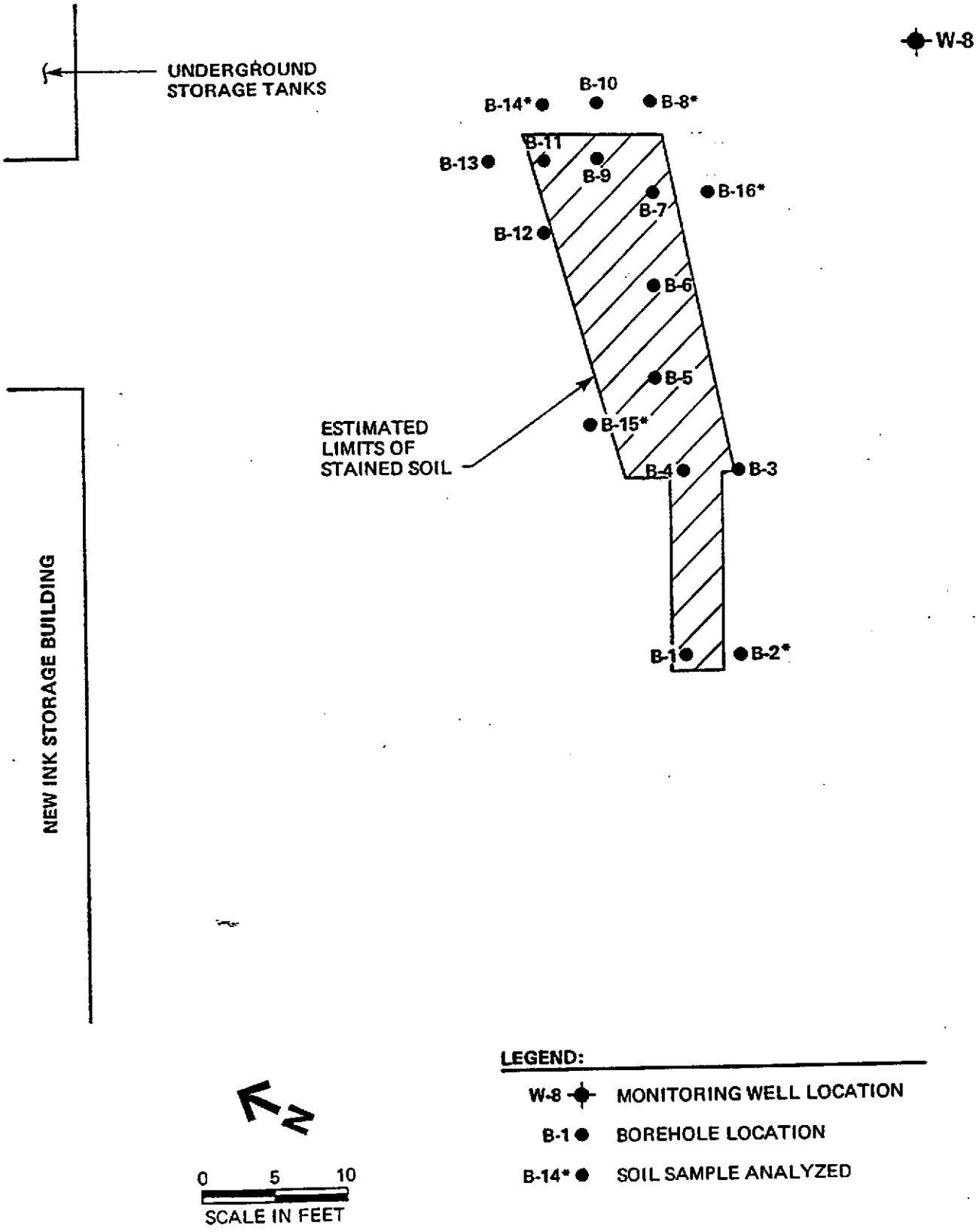


Figure 3 Stained Soil Location

cubic yards. This soil will need to be disposed of as a hazardous waste at a Class I disposal site.

Soil 2-feet below the bottom of the stained soil interval, approximately 5.5- to 7.5-feet below grade, can be aerated on site after proper BAAQMD permits are obtained. Based on verification samples, this soil may then be eligible for disposal at a Class III disposal facility after aeration .

EPA priority pollutant purgeable organic chemicals (POCs) were detected in the shallow soil samples collected from undisturbed soil near the area of stained soil/fill. Toluene was detected at the highest concentration of all the POCs identified. Sample B-2 contained the highest concentration of toluene, 170 mg/kg. Sample B-15 contained three quantifiable POCs and six semi-quantified compounds. This sample contained the most POCs of the five samples analyzed. Each soil sample contained low concentrations of trace metals relative to TTLC regulatory standards.

Based on the concentrations of POCs and metals detected in the soil samples, wide spread soil contamination does not appear to exist below the interval of stained soil.

Recommendations. Based on conversations with the James River Corporation and the volume of stained soil estimated to be present, we recommend that the stained soil be excavated and transported to a Class I disposal facility. Soil two feet beneath the stained interval should be excavated, and aerated on-site. Although the area is paved, and the potential impact on shallow groundwater appears minimal, it has been our experience that this type of soil contamination can present problems in the future if the James River Corporation decides to sell the property.

Brown and Caldwell appreciates the opportunity to provide environmental services for you and we look forward to more successful projects in the future. If you have any questions or comments regarding this letter, please call me.

Very truly yours,

BROWN AND CALDWELL

R Goloub

Ron Goloubow
Project Manager

REG:rg
Enclosure

ENCLOSURE 1
LABORATORY REPORTS

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-296

Received: 11 APR 89
Reported: 27 APR 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4365

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
04-296-1	B-2 (5.5-6.0)	11 APR 89
04-296-2	B-8 (5.5-6.0)	11 APR 89

PARAMETER	04-296-1	04-296-2
Fourteen CAM Metals by ICAP		
Silver, mg/kg	<0.4	<0.4
Barium, mg/kg	220	180
Beryllium, mg/kg	<0.2	<0.2
Cadmium, mg/kg	6.2	6.1
Cobalt, mg/kg	13	14
Chromium, mg/kg	100	57
Copper, mg/kg	30	23
Molybdenum, mg/kg	<1.6	<1.6
Nickel, mg/kg	62	67
Lead, mg/kg	130	<6
Antimony, mg/kg	4	3
Thallium, mg/kg	<4	<4
Vanadium, mg/kg	56	53
Zinc, mg/kg	65	57
Arsenic, mg/kg	0.219	3.8
Mercury, mg/kg	<0.01	<0.01
Selenium, mg/kg	0.2	<0.2
CAM Digestions, Date	04.20.89	04.20.89

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-296

Received: 11 APR 89
Reported: 27 APR 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4365

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
04-296-1	B-2 (5.5-6.0)	11 APR 89
04-296-2	B-8 (5.5-6.0)	11 APR 89

PARAMETER	04-296-1	04-296-2
Purgeable Priority Pollutants		
Date Extracted	04.20.89	04.20.89
1,1,2-Trichloroethane, mg/kg	<2	<0.1
1,1-Dichloroethane, mg/kg	<2	<0.1
1,1-Dichloroethylene, mg/kg	<2	<0.1
1,2-Dichloroethane, mg/kg	<2	<0.1
1,2-Dichloropropane, mg/kg	<2	<0.1
1,3-Dichloropropene, mg/kg	<2	<0.1
2-Chloroethylvinylether, mg/kg	<2	<0.1
Acrolein, mg/kg	<20	<1
Acrylonitrile, mg/kg	<20	<1
Bromodichloromethane, mg/kg	<2	<0.1
Bromomethane, mg/kg	<2	<0.1
Benzene, mg/kg	<2	<0.1
Chlorobenzene, mg/kg	<2	<0.1
Carbon Tetrachloride, mg/kg	<2	<0.1
Chloroethane, mg/kg	<2	<0.1
Bromoform, mg/kg	<2	<0.1
Chloroform, mg/kg	<2	<0.1
Chloromethane, mg/kg	<2	<0.1
Dibromochloromethane, mg/kg	<2	<0.1
Ethylbenzene, mg/kg	<2	<0.1
Methylene chloride, mg/kg	4	<0.1
Tetrachloroethylene, mg/kg	<2	<0.1
Trichloroethylene, mg/kg	<2	<0.1
Trichlorofluoromethane, mg/kg		

BROWN AND CALDWELL LABORATORIES
1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-296

Received: 11 APR 89
Reported: 27 APR 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4365

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
04-296-1	B-2 (5.5-6.0)	11 APR 89
04-296-2	B-8 (5.5-6.0)	11 APR 89

PARAMETER	04-296-1	04-296-2
Toluene, mg/kg	170	3.2
Vinyl chloride, mg/kg	<2	<0.1
1,2-Dichloroethene (Total), mg/kg	<2	<0.1
trans-1,3-Dichloropropene, mg/kg	<2	<0.1
1,1,1-Trichloroethane, mg/kg	<2	<0.1
1,1,2,2-Tetrachloroethane, mg/kg	<2	<0.1
2-Hexanone, mg/kg	<2	<0.1
Acetone, mg/kg	<20	<1
Carbon Disulfide, mg/kg	<2	<0.1
Freon 113, mg/kg	<2	<0.1
Methyl ethyl ketone, mg/kg	<40	<2
Methyl isobutyl ketone, mg/kg	<2	<0.1
Styrene, mg/kg	<2	<0.1
Vinyl acetate, mg/kg	<2	<0.1
Total Xylene Isomers, mg/kg	<2	<0.1
Semi-Quantified Results **		
N-Butyl acetate, mg/kg	5	---

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

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

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-05-101

Received: 03 MAY 89
Reported: 19 MAY 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4305-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
05-101-1	B-14 (5.0-5.5)	02 MAY 89
05-101-2	B-15 (5.0-5.5)	02 MAY 89
05-101-3	B-16 (5.0-5.5)	02 MAY 89

PARAMETER	05-101-1	05-101-2	05-101-3
Barium, mg/kg	140	170	38
Cadmium, mg/kg	<2	<2	<2
Chromium, mg/kg	47	35	50
Copper, mg/kg	21	38	19
Lead, mg/kg	<2	4	10
Nickel, mg/kg	57	56	59
Vanadium, mg/kg	54	40	54
Nitric Acid Digestion, Date	05.05.89	05.05.89	05.05.89

BROWN AND CALDWELL LABORATORIES

1256 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-05-101

Received: 03 MAY 89
Reported: 19 MAY 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4305-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
05-101-1	B-14 (5.0-5.5)	02 MAY 89
05-101-2	B-15 (5.0-5.5)	02 MAY 89
05-101-3	B-16 (5.0-5.5)	02 MAY 89

PARAMETER	05-101-1	05-101-2	05-101-3
Purgeable Priority Pollutants			
Date Extracted	05.05.89	05.05.89	05.05.89
1,1,2-Trichloroethane, mg/kg	<0.1	<0.1	<0.1
1,1-Dichloroethane, mg/kg	<0.1	<0.1	<0.1
1,1-Dichloroethylene, mg/kg	<0.1	<0.1	<0.1
1,2-Dichloroethane, mg/kg	<0.1	<0.1	<0.1
1,2-Dichloropropane, mg/kg	<0.1	<0.1	<0.1
1,3-Dichloropropene, mg/kg	<0.1	<0.1	<0.1
2-Chloroethylvinylether, mg/kg	<0.1	<0.1	<0.1
Acrolein, mg/kg	<1	<1	<1
Acrylonitrile, mg/kg	<1	<1	<1
Bromodichloromethane, mg/kg	<0.1	<0.1	<0.1
Bromomethane, mg/kg	<0.1	<0.1	<0.1
Benzene, mg/kg	<0.1	<0.1	<0.1
Chlorobenzene, mg/kg	<0.1	<0.1	<0.1
Carbon Tetrachloride, mg/kg	<0.1	<0.1	<0.1
Chloroethane, mg/kg	<0.1	<0.1	<0.1
Bromoform, mg/kg	<0.1	<0.1	<0.1
Chloroform, mg/kg	<0.1	<0.1	<0.1
Chloromethane, mg/kg	<0.1	<0.1	<0.1
Dibromochloromethane, mg/kg	<0.1	<0.1	<0.1
Ethylbenzene, mg/kg	<0.1	<0.1	<0.1
Methylene chloride, mg/kg	<0.1	<0.1	<0.1
Tetrachloroethylene, mg/kg	<0.1	<0.1	<0.1
Trichloroethylene, mg/kg	<0.1	<0.1	<0.1

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-05-101

Received: 03 MAY 89
Reported: 19 MAY 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4305-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
05-101-1	B-14 (5.0-5.5)	02 MAY 89
05-101-2	B-15 (5.0-5.5)	02 MAY 89
05-101-3	B-16 (5.0-5.5)	02 MAY 89

PARAMETER	05-101-1	05-101-2	05-101-3
Trichlorofluoromethane, mg/kg	<0.1	<0.1	<0.1
Toluene, mg/kg	0.4	15	0.6
Vinyl chloride, mg/kg	<0.1	<0.1	<0.1
1,2-Dichloroethene (Total), mg/kg	<0.1	<0.1	<0.1
trans-1,3-Dichloropropene, mg/kg	<0.1	<0.1	<0.1
1,1,1-Trichloroethane, mg/kg	<0.1	<0.1	<0.1
1,1,2,2-Tetrachloroethane, mg/kg	<0.1	<0.1	<0.1
2-Hexanone, mg/kg	0.4	17	1.1
Acetone, mg/kg	3.2	29	<1
Carbon Disulfide, mg/kg	<0.1	<0.1	<0.1
Freon 113, mg/kg	<0.1	<0.1	<0.1
Methyl ethyl ketone, mg/kg	<2	<20	<2
Methyl isobutyl ketone, mg/kg	<0.1	<0.1	<0.1
Styrene, mg/kg	<0.1	<0.1	<0.1
Vinyl acetate, mg/kg	<0.1	<0.1	<0.1
Total Xylene Isomers, mg/kg	<0.1	<0.1	<0.1
Semi-Quantified Results **			
Butanol, mg/kg	---	0.8	---
C5H12O2(Ester), mg/kg	---	2	---
Ethanol, mg/kg	---	50	---
Isopropanol, mg/kg	---	8	---
Methyl Acetate, mg/kg	---	0.8	---
N-Butyl acetate, mg/kg	---	---	0.8
N-Buytl Actate, mg/kg	---	13	---

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-05-101

Received: 03 MAY 89
Reported: 19 MAY 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4305-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
05-101-1	B-14 (5.0-5.5)	02 MAY 89
05-101-2	B-15 (5.0-5.5)	02 MAY 89
05-101-3	B-16 (5.0-5.5)	02 MAY 89

PARAMETER	05-101-1	05-101-2	05-101-3
Propylfuran, mg/kg	---	20	1

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

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

APPENDIX C

LABORATORY REPORTS - INK ROOM EXCAVATION

TCLP EXTRACT SAMPLES

BCC JUNE 1989 LIMITED INVESTIGATION

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-07-320

Received: 18 JUL 89
Reported: 11 AUG 89

REVISED 8/16/89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Requisition: 4305

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, TCLP EXTRACT SAMPLES	DATE SAMPLED
07-320-1	Sample #1 & #2 Composite	18 JUL 89

PARAMETER	07-320-1
Zero Headspace Extraction	07.24.89

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-07-320

Received: 18 JUL 89
Reported: 11 AUG 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Requisition: 4305

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, TCLP EXTRACT SAMPLES	DATE SAMPLED
07-320-1	Sample #1 & #2 Composite	18 JUL 89

PARAMETER	07-320-1
Purgeable Priority Pollutants	
Date Extracted	07.24.89
1,1,1-Trichloroethane, ug/L	<10
1,1,2,2-Tetrachloroethane, ug/L	<10
1,1,2-Trichloroethane, ug/L	<10
1,1-Dichloroethane, ug/L	<10
1,1-Dichloroethene, ug/L	<10
1,2-Dichloroethane, ug/L	<10
1,2-Dichloroethene (Total), ug/L	<10
1,2-Dichloropropane, ug/L	<10
1,3-Dichloropropene, ug/L	<10
2-Chloroethylvinylether, ug/L	<10
2-Hexanone, ug/L	6000
Acetone, ug/L	650
Acrolein, ug/L	<100
Acrylonitrile, ug/L	<100
Bromodichloromethane, ug/L	<10
Bromomethane, ug/L	<10
Benzene, ug/L	200
Bromoform, ug/L	<10
Chlorobenzene, ug/L	<10
Carbon Tetrachloride, ug/L	<10
Chloroethane, ug/L	<10
Chloroform, ug/L	<10
Chloromethane, ug/L	<10
Carbon Disulfide, ug/L	<10
Dibromochloromethane, ug/L	<10

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-07-320

Received: 18 JUL 89
Reported: 11 AUG 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Requisition: 4305

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, TCLP EXTRACT SAMPLES	DATE SAMPLED
07-320-1	Sample #1 & #2 Composite	18 JUL 89

PARAMETER	07-320-1
Ethylbenzene, ug/L	260
Freon 113, ug/L	<10
Methyl ethyl ketone, ug/L	<200
Methyl isobutyl ketone, ug/L	<10
Methylene chloride, ug/L	<10
Styrene, ug/L	<10
Trichloroethene, ug/L	190
Trichlorofluoromethane, ug/L	<10
Toluene, ug/L	180000
Tetrachloroethene, ug/L	4000
Vinyl acetate, ug/L	<10
Vinyl chloride, ug/L	<10
Total Xylene Isomers, ug/L	1200
trans-1,3-Dichloropropene, ug/L	<10
Semi-Quantified Results **	
N-Butyl acetate, ug/L	6000

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

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-07-320

Received: 18 JUL 89
Reported: 11 AUG 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Requisition: 4305

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, TCLP EXTRACT SAMPLES	DATE SAMPLED
07-320-2	Sample #1 & #2 Composite	18 JUL 89

PARAMETER	07-320-2
TCLP Extract, DATE	07.25.89

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-07-320

Received: 18 JUL 89
Reported: 11 AUG 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Requisition: 4305

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, TCLP EXTRACT SAMPLES	DATE SAMPLED
07-320-2	Sample #1 & #2 Composite	18 JUL 89

PARAMETER	07-320-2
B/N,A Ext.Pri.Poll. (EPA-8270)	
Date Analyzed	08.09.89
Date Extracted	07.26.89
Dilution Factor, Times	10
1,2,4-Trichlorobenzene, ug/L	<20
1,2-Dichlorobenzene, ug/L	<20
1,2-Diphenylhydrazine, ug/L	<50
1,3-Dichlorobenzene, ug/L	<20
1,4-Dichlorobenzene, ug/L	<20
2,4,5-Trichlorophenol, ug/L	<100
2,4,6-Trichlorophenol, ug/L	<100
2,4-Dichlorophenol, ug/L	<50
2,4-Dimethylphenol, ug/L	100
2,4-Dinitrophenol, ug/L	<200
2,4-Dinitrotoluene, ug/L	<200
2,6-Dinitrotoluene, ug/L	<50
2-Chloronaphthalene, ug/L	<20
2-Chlorophenol, ug/L	<50
2-Methyl-4,6-dinitrophenol, ug/L	<200
2-Methylnaphthalene, ug/L	<20
2-Methylphenol, ug/L	870
2-Nitroaniline, ug/L	<200
2-Nitrophenol, ug/L	<50
3,3'-Dichlorobenzidine, ug/L	<200
3-Nitroaniline, ug/L	<200
4-Bromophenylphenylether, ug/L	<50
4-Chloro-3-methylphenol, ug/L	<100

BROWN AND CALDWELL LABORATORIES

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ANALYTICAL REPORT

LOG NO: E89-07-320

Received: 18 JUL 89
Reported: 11 AUG 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Requisition: 4305

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, TCLP EXTRACT SAMPLES	DATE SAMPLED
07-320-2	Sample #1 & #2 Composite	18 JUL 89

PARAMETER	07-320-2
4-Chloroaniline, ug/L	<100
4-Chlorophenylphenylether, ug/L	<50
4-Methylphenol, ug/L	1100
4-Nitroaniline, ug/L	<200
4-Nitrophenol, ug/L	<500
Aniline, ug/L	<200
Acenaphthene, ug/L	<20
Acenaphthylene, ug/L	<20
Anthracene, ug/L	<20
Benzoic Acid, ug/L	740
Benzyl Alcohol, ug/L	<100
Benzidine, ug/L	<2000
Benzo(a)anthracene, ug/L	<20
Benzo(a)pyrene, ug/L	<20
Benzo(b)fluoranthene, ug/L	<20
Benzo(g,h,i)perylene, ug/L	<20
Benzo(k)fluoranthene, ug/L	<20
Butylbenzylphthalate, ug/L	<100
Chrysene, ug/L	<20
Di-n-octylphthalate, ug/L	<100
Dibenzo(a,h)anthracene, ug/L	<20
Dibutylphthalate, ug/L	270
Diethylphthalate, ug/L	350
Dibenzofuran, ug/L	<50
Dimethylphthalate, ug/L	40
Fluoranthene, ug/L	<20
Fluorene, ug/L	<20

BROWN AND CALDWELL LABORATORIES

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ANALYTICAL REPORT

LOG NO: E89-07-320

Received: 18 JUL 89
Reported: 11 AUG 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Requisition: 4305

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, TCLP EXTRACT SAMPLES	DATE SAMPLED
07-320-2	Sample #1 & #2 Composite	18 JUL 89

PARAMETER	07-320-2
Hexachlorobenzene, ug/L	<20
Hexachlorobutadiene, ug/L	<50
Hexachlorocyclopentadiene, ug/L	<500
Hexachloroethane, ug/L	<100
Indeno(1,2,3-c,d)pyrene, ug/L	<20
Isophorone, ug/L	<50
N-Nitrosodimethylamine, ug/L	<50
N-Nitrosodiphenylamine, ug/L	<100
N-Nitrosodi-n-propylamine, ug/L	<50
Nitrobenzene, ug/L	<20
Naphthalene, ug/L	<20
Phenanthrene, ug/L	<20
Phenol, ug/L	1100
Pentachlorophenol, ug/L	<200
Pyrene, ug/L	<20
Bis(2-chloroethoxy)methane, ug/L	<50
Bis(2-chloroethyl)ether, ug/L	<20
Bis(2-chloroisopropyl)ether, ug/L	<50
Bis(2-ethylhexyl)phthalate, ug/L	<200
Semi-Quantified Results **	
Benzaldehyde, ug/L	100
Butoxy Butanoic Acid, ug/L	70
C11H12O2 (Acid), ug/L	100
C2 Phenol, ug/L	300
C3 Phenol, ug/L	200
C6H12O2 (Acid), ug/L	300

BROWN AND CALDWELL LABORATORIES

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ANALYTICAL REPORT

LOG NO: E89-07-320

Received: 18 JUL 89
Reported: 11 AUG 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Requisition: 4305

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, TCLP EXTRACT SAMPLES	DATE SAMPLED
07-320-2	Sample #1 & #2 Composite	18 JUL 89

PARAMETER	07-320-2
C7H902NS, ug/L	400
C8H1602 Ester, ug/L	200
C9H1302NS, ug/L	2000
Di-n-butylphthalate, ug/L	270
Ethoxy Ethanol Acetate, ug/L	2000

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

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-07-320

Received: 18 JUL 89
Reported: 11 AUG 89

Mr. Ron Goloubow
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Requisition: 4305

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, EP LEACH, WASTE SAMPLES	DATE SAMPLED
07-320-3	Sample #1 & #2 Composite	18 JUL 89

PARAMETER	07-320-3
EP TOX by Emission Spectro	
Silver, mg/L	<0.02
Barium, mg/L	0.98
Cadmium, mg/L	<0.04
Chromium, mg/L	0.06
Lead, mg/L	1.1
Mercury, mg/L	<0.0002
Arsenic, mg/L	<0.02
Selenium, mg/L	<0.02
EP Extraction	07.24.89

This report was revised to include finalized semi-quantified compounds data for EPA 8270 analysis. C. Ho 08.16.89

Hedy J. Ficklin for
Sim D. Lessley, Ph.D., Laboratory Director

CHAIN OF CUSTODY RECORD

BC Log Number 8907320

Client name: BC - Goloubow	Project or PO#: 4305
Address:	Phone #:
City, State, Zip:	Report attention: Ron Goloubow

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: Ron Goloubow — Sample description	Number of containers	TCLP zero (8240)	TCLP (8270)	TCLP CAM metals	TCLP 8240	Hazardous sample Special handling required	Remarks
	7/18		So	#1	1						Composite into one
	7/18		So	#2	1						

Composite Sample

	Signature	Print Name	Company	Date	Time
Relinquished by		Ron Goloubow	B+C	7/18/89	1035
Received by		KATHI FLORES	BCAL	7/18/89	10:40
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

BROWN AND CALDWELL LABORATORIES

☒ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553
☐ 1200 Pacifico Avenue, Anaheim, CA 92805

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 expense.

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

INK ROOM EXCAVATION VERIFICATION SAMPLES

SEPTEMBER 1990 ADDITIONAL EXCAVATION

Analytical Report

LOG NO: E90-09-498

Received: 25 SEP 90
Reported: 17 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-498-1	RS-BA	25 SEP 90
09-498-2	RS-1	25 SEP 90
09-498-3	IR-1	25 SEP 90
09-498-4	IR-2	25 SEP 90
09-498-5	IR-3	25 SEP 90

PARAMETER	09-498-1	09-498-2	09-498-3	09-498-4	09-498-5
Bioassay Set Up Date	10.09.90	---	---	---	---
CA Haz Waste Bioassay, Screen, mg/L	>750	---	---	---	---
Arsenic, mg/kg	---	4.6	4.6	3.5	5.6
Selenium, mg/kg	---	<0.4	<0.4	<0.4	<0.4
Barium, mg/kg	---	380	140	140	180
Chromium, mg/kg	---	91	76	49	55
Cobalt, mg/kg	---	13	9	9	17
Copper, mg/kg	---	54	22	18	28
Lead, mg/kg	---	390	130	11	10
Mercury, mg/kg	---	0.07	0.06	<0.05	0.05
Molybdenum, mg/kg	---	19	<4	<4	<4
Nickel, mg/kg	---	28	49	45	71
Vanadium, mg/kg	---	62	48	40	47
Zinc, mg/kg	---	150	56	45	64
Nitric Acid Digestion, Date	---	10.01.90	10.01.90	10.01.90	10.01.90
Nitric Acid Digestion, Date	---	10.01.90	10.01.90	10.01.90	10.01.90

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-09-498

Received: 25 SEP 90
Reported: 17 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-498-1	RS-BA	25 SEP 90
09-498-2	RS-1	25 SEP 90
09-498-3	IR-1	25 SEP 90
09-498-4	IR-2	25 SEP 90
09-498-5	IR-3	25 SEP 90

PARAMETER	09-498-1	09-498-2	09-498-3	09-498-4	09-498-5
Purgeable Priority Pollutants					
Date Analyzed	---	10.01.90	09.28.90	09.28.90	10.01.90
Date Extracted	---	09.27.90	09.27.90	09.27.90	09.27.90
Dilution Factor, Times	---	1	200	1	50
1,1,1-Trichloroethane, mg/kg	---	<0.2	<40	<0.2	<6
1,1,2,2-Tetrachloroethane, mg/kg	---	<0.2	<40	<0.2	<6
1,1,2-Trichloroethane, mg/kg	---	<0.2	<40	<0.2	<6
1,1-Dichloroethane, mg/kg	---	<0.2	<40	<0.2	<6
1,1-Dichloroethene, mg/kg	---	<0.2	<40	<0.2	<6
1,2-Dichloroethane, mg/kg	---	<0.2	<40	<0.2	<6
1,2-Dichlorobenzene, mg/kg	---	<0.2	<40	<0.2	<6
1,2-Dichloropropane, mg/kg	---	<0.2	<40	<0.2	<6
1,3-Dichlorobenzene, mg/kg	---	<0.2	<40	<0.2	<6
1,4-Dichlorobenzene, mg/kg	---	<0.2	<40	<0.2	<6
2-Chloroethylvinylether, mg/kg	---	<0.2	<40	<0.2	<6
2-Hexanone, mg/kg	---	<2	<400	3	<60
4-Methyl-2-Pentanone, mg/kg	---	<2	<400	<2	<60
Acetone, mg/kg	---	<5	<1000	<5	<200
Acrolein, mg/kg	---	<5	<1000	<5	<200
Acrylonitrile, mg/kg	---	<2	<400	<2	<60
Bromodichloromethane, mg/kg	---	<0.2	<40	<0.2	<6
Bromomethane, mg/kg	---	<0.2	<40	<0.2	<6
Benzene, mg/kg	---	<0.2	<40	<0.2	<6

Analytical Report

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Ms. Donna Courington
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Pleasant Hill, California 94523

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-498-1	RS-BA	25 SEP 90
09-498-2	RS-1	25 SEP 90
09-498-3	IR-1	25 SEP 90
09-498-4	IR-2	25 SEP 90
09-498-5	IR-3	25 SEP 90

PARAMETER	09-498-1	09-498-2	09-498-3	09-498-4	09-498-5
Bromoform, mg/kg	---	<0.2	<40	<0.2	<6
Chlorobenzene, mg/kg	---	<0.2	<40	<0.2	<6
Carbon Tetrachloride, mg/kg	---	<0.2	<40	<0.2	<6
Chloroethane, mg/kg	---	<0.2	<40	<0.2	<6
Chloroform, mg/kg	---	<0.2	<40	<0.2	<6
Chloromethane, mg/kg	---	<0.2	<40	<0.2	<6
Carbon Disulfide, mg/kg	---	<0.2	<40	<0.2	<6
Dibromochloromethane, mg/kg	---	<0.2	<40	<0.2	<6
Ethylbenzene, mg/kg	---	<0.2	<40	1.1	<6
Freon 113, mg/kg	---	<0.2	<40	<0.2	<6
Methyl ethyl ketone, mg/kg	---	<2	<400	7.7	<60
Methylene chloride, mg/kg	---	<1	<200	<1	<30
Styrene, mg/kg	---	<0.2	<40	<0.2	<6
Trichloroethene, mg/kg	---	<0.2	<40	0.2	<6
Trichlorofluoromethane, mg/kg	---	<0.2	<40	<0.2	<6
Toluene, mg/kg	---	<0.2	15000	630	600
Tetrachloroethene, mg/kg	---	<0.2	160	23	16
Vinyl acetate, mg/kg	---	<0.2	<40	<0.2	<6
Vinyl chloride, mg/kg	---	<0.2	<40	<0.2	<6
Total Xylene Isomers, mg/kg	---	<0.2	<40	7.4	<6
cis-1,2-Dichloroethene, mg/kg	---	<0.2	<40	0.9	<6
cis-1,3-Dichloropropene, mg/kg	---	<0.2	<40	<0.2	<6
trans-1,2-Dichloroethene, mg/kg	---	<0.2	<40	<0.2	<6

Brown and Caldwell
Analytical

1255 Powell Street
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Analytical Report

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Reported: 17 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-498-1	RS-BA	25 SEP 90
09-498-2	RS-1	25 SEP 90
09-498-3	IR-1	25 SEP 90
09-498-4	IR-2	25 SEP 90
09-498-5	IR-3	25 SEP 90

PARAMETER	09-498-1	09-498-2	09-498-3	09-498-4	09-498-5
trans-1,3-Dichloropropene, mg/kg	---	<0.2	<40	<0.2	<6
Semi-Quantified Results **					
C7-C11 Hydrocarbons, mg/kg	---	---	100	30	---

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

Brown and Caldwell
Analytical

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Analytical Report

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Reported: 17 OCT 90

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Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-498-6	IR-4	25 SEP 90
09-498-7	IR-5	25 SEP 90
09-498-8	IR-6	25 SEP 90
09-498-9	IR-7	25 SEP 90
09-498-10	IR-8	25 SEP 90

PARAMETER	09-498-6	09-498-7	09-498-8	09-498-9	09-498-10
Arsenic, mg/kg	5.4	4.2	5.6	5.9	4.7
Selenium, mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Barium, mg/kg	190	180	180	180	170
Chromium, mg/kg	55	54	56	60	56
Cobalt, mg/kg	12	11	11	12	12
Copper, mg/kg	22	25	25	28	24
Lead, mg/kg	5	<4	4	<4	<4
Mercury, mg/kg	0.08	0.05	0.05	0.05	<0.05
Molybdenum, mg/kg	<4	<4	<4	<4	<4
Nickel, mg/kg	60	58	58	63	61
Vanadium, mg/kg	46	47	51	54	49
Zinc, mg/kg	58	55	56	59	59
Nitric Acid Digestion, Date	10.01.90	10.01.90	10.01.90	10.01.90	10.01.90
Nitric Acid Digestion, Date	10.01.90	10.01.90	10.01.90	10.01.90	10.01.90

Brown and Caldwell
Analytical

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Analytical Report

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Brown and Caldwell
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Pleasant Hill, California 94523

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-498-6	IR-4	25 SEP 90
09-498-7	IR-5	25 SEP 90
09-498-8	IR-6	25 SEP 90
09-498-9	IR-7	25 SEP 90
09-498-10	IR-8	25 SEP 90

PARAMETER	09-498-6	09-498-7	09-498-8	09-498-9	09-498-10
Purgeable Priority Pollutants					
Date Analyzed	10.01.90	10.01.90	10.01.90	10.01.90	10.01.90
Date Extracted	09.27.90	09.27.90	09.27.90	09.27.90	09.27.90
Dilution Factor, Times	1	1	1	1	1
1,1,1-Trichloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2,2-Tetrachloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
1,1,2-Trichloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
1,1-Dichloroethene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichlorobenzene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
1,2-Dichloropropane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
1,3-Dichlorobenzene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
1,4-Dichlorobenzene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
2-Chloroethylvinylether, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
2-Hexanone, mg/kg	<2	<2	<2	<2	16
4-Methyl-2-Pentanone, mg/kg	<2	<2	<2	<2	<2
Acetone, mg/kg	<5	14	7.4	<5	24
Acrolein, mg/kg	<5	<5	<5	<5	<5
Acrylonitrile, mg/kg	<0.2	<2	<2	<2	<2
Bromodichloromethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Bromomethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

Analytical Report

LOG NO: E90-09-498

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Reported: 17 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-498-6	IR-4	25 SEP 90
09-498-7	IR-5	25 SEP 90
09-498-8	IR-6	25 SEP 90
09-498-9	IR-7	25 SEP 90
09-498-10	IR-8	25 SEP 90

PARAMETER	09-498-6	09-498-7	09-498-8	09-498-9	09-498-10
Bromoform, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorobenzene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Carbon Tetrachloride, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Chloroform, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Chloromethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Carbon Disulfide, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Dibromochloromethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Ethylbenzene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Freon 113, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Methyl ethyl ketone, mg/kg	<2	<2	<2	<2	30
Methylene chloride, mg/kg	<1	<1	<1	<1	<1
Styrene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Trichloroethene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Trichlorofluoromethane, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene, mg/kg	<0.2	4.0	4.2	1.6	83
Tetrachloroethene, mg/kg	<0.2	<0.2	<0.2	<0.2	1.1
Vinyl acetate, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Vinyl chloride, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Total Xylene Isomers, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,2-Dichloroethene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
cis-1,3-Dichloropropene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
trans-1,2-Dichloroethene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2

Brown and Caldwell
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1255 Powell Street
Emeryville CA 94608
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Analytical Report

LOG NO: E90-09-498

Received: 25 SEP 90
Reported: 17 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-498-6	IR-4	25 SEP 90
09-498-7	IR-5	25 SEP 90
09-498-8	IR-6	25 SEP 90
09-498-9	IR-7	25 SEP 90
09-498-10	IR-8	25 SEP 90

PARAMETER	09-498-6	09-498-7	09-498-8	09-498-9	09-498-10
trans-1,3-Dichloropropene, mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Semi-Quantified Results **					
C6H1002, mg/kg	---	---	---	---	7
C7H100, mg/kg	---	---	---	---	2
N-Butyl acetate, mg/kg	---	---	---	---	1

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

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Analytical Report

LOG NO: E90-09-498

Received: 25 SEP 90
Reported: 17 OCT 90

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Pleasant Hill, California 94523

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, NON-SALINE WATER SAMPLES	DATE SAMPLED
09-498-11	Control Tank	

PARAMETER	09-498-11
Total Hardness, mg/L	40

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

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

CHAIN OF CUSTODY RECORD

BCA Log Number 9009498

Client name	BC-PH	Project or PO#	5081
Address		Phone #	
City, State, Zip	Pleasant Hill	Report attention	D. Courington

Sampled by: D. Courington

Analyses required: 8240 | Bio.Haz. scr. | 10 metals | | | | | Hazardous sample Special handling required

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	8240	Bio.Haz. scr.	10 metals					Hazardous sample Special handling required	Remarks
	9/25/90		SO	RS-1 -2	1	X		X						
				RS-BA -1			X							metals are:
				IR-1 -3		X		X						arsenic As
				IR-2 -4		X		X						barium Ba, Chrom.
				IR-3 -5		X		X						cobalt copper
				IR-4 -6		X		X						mercury, molybd.
				IR-5 -7		X		X						nickel, selenium
				IR-6 -8		X		X						vanadium, zinc
				IR-7 -9		X		X						lead
				IR-8 -10		X		X						DI, NAE / DI, NAE, HFA

	Signature	Print Name	Company	Date	Time
Relinquished by	D. Courington	D. Courington	BC PH	9/25/90	1515
Received by	P. Thongkham	P. Thongkham	BCA	9/25/90	1515
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

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: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

WET RESULTS -

STOCKPILED SOIL REMOVED DURING

SEPTEMBER 1990 ADDITIONAL EXCAVATION

Analytical Report

LOG NO: E90-10-016

Received: 01 OCT 90
Reported: 18 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, CALIF WASTE EXTRACT SAMPLES	DATE SAMPLED
10-016-1	SP-1, SP-2, SP-3, SP-4 Comp.	01 OCT 90
10-016-2	SP-5, SP-6, SP-7, SP-8 Comp.	01 OCT 90
10-016-3	SP-9, SP-10, SP-11, SP-12 Comp.	01 OCT 90

PARAMETER	10-016-1	10-016-2	10-016-3
Fourteen CAM Metals by ICAP			
Silver, mg/L	<0.05	<0.05	<0.05
Barium, mg/L	7.8	6.8	6.9
Beryllium, mg/L	<0.01	<0.01	<0.01
Cadmium, mg/L	<0.05	0.05	<0.05
Cobalt, mg/L	0.22	0.34	0.28
Chromium, mg/L	1.4	3.6	0.82
Copper, mg/L	0.37	0.56	0.47
Molybdenum, mg/L	0.4	0.7	0.3
Nickel, mg/L	0.7	0.7	0.8
Lead, mg/L	6.7	14	3.3
Antimony, mg/L	<0.2	<0.2	<0.2
Thallium, mg/L	<0.2	<0.2	0.2
Vanadium, mg/L	0.29	0.39	0.42
Zinc, mg/L	0.52	0.37	0.33
Arsenic, mg/L	0.06	0.08	0.08
Selenium, mg/L	<0.02	<0.02	<0.02
Mercury, mg/L	<0.005	<0.005	<0.005
CAM WET Extraction, Date	10.08.90	10.08.90	10.08.90

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

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

CHAIN OF CUSTODY RECORD

BCA Log Number 9010016

Client name	BC-PH	Project or PO#	5131
Address		Phone #	
City, State, Zip		Report attention	D. Courington

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: D Courington Sample description	Number of containers	Analyses required: Holy	Hazardous sample Special handling required	Remarks
	9/10		SO	SP-1	1	X		
				SP-2		X		
				SP-3		X		
				SP-4		X		
				SP-5		X		
				SP-6		X		
				SP-7		X		
				SP-8		X		
				SP-9		X		
				SP-10		X		
				SP-11		X		
				SP-12		X		

	Signature	Print Name	Company	Date	Time
Relinquished by	Donna Courington	D Courington	BC-PH	9/1/90	1515
Received by	R Thong/Cham	R. Thong/Cham	BCA	9/1/90	1575
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

BC 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: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

APPENDIX D

BAAQMD NOTIFICATION FORM

BAY AREA AIR QUALITY MANAGEMENT DISTRICT
939 ELLIS STREET
SAN FRANCISCO, CALIFORNIA 94109
(415) 771-6000

REGULATION 8, RULE 40
Aeration of Contaminanted Soil and
Removal of Underground Storage Tanks

NOTIFICATION FORM

☐ Removal or Replacement of Tanks
☒ Excavation of Contaminated Soil

SITE INFORMATION

SITE ADDRESS 2101 Williams St
CITY, STATE, ZIP San Leandro, CA 94577
OWNER NAME James River Corp
SPECIFIC LOCATION OF PROJECT

TANK REMOVAL

SCHEDULED STARTUP DATE
VAPORS REMOVED BY:
[ ] WATER WASH
[ ] VAPOR FREEING (CO^2)
[ ] VENTILATION

CONTAMINATED SOIL EXCAVATION

SCHEDULED STARTUP DATE 9/24/90
STOCKPILES WILL BE COVERED? YES X NO
ALTERNATIVE METHOD OF AERATION (DESCRIBE BELOW):
(MAY REQUIRE PERMIT)

CONTRACTOR INFORMATION

NAME Diablo Tank & E. CONTACT Pat McShane
ADDRESS 4030 Pacheco Blvd PHONE (415) 372-3342
CITY, STATE, ZIP Martinez CA 94553

CONSULTANT INFORMATION
(IF APPLICABLE)

NAME Brown & Caldwell Consultants CONTACT Donna Covington
ADDRESS P.O. Box 8045 PHONE (415) 937-9010
CITY, STATE, ZIP Walnut Creek CA 94596

FOR OFFICE USE ONLY

DATE RECEIVED BY (INIT.)
CC: INSPECTOR NO. DATE BY (INIT.)
TELEPHONE UPDATE: CALLER CHANGE MADE
BAAQMD N #

3/89

APPENDIX E

LABORATORY REPORTS -

UST AND PIPELINE VERIFICATION SAMPLES

TANK AND PIPELINE VERIFICATION SAMPLES -
JUNE 1989 UST AND PIPELINE REMOVAL

TAL

DATE: 7/14/89

LOG NO.: 7561

DATE SAMPLED: 6/27/89

DATE RECEIVED: 6/27/89

CUSTOMER: Atlas Hydraulic Corporation

REQUESTER: Jim Givens

PROJECT: Flexible Packaging Division, 2101 Williams St., San Leandro, CA

Sample Type: Soil

Method and Constituent	Units	No. 1 Concentration	No. 1 Detection Limit	No. 2 Concentration	No. 2 Detection Limit	No. 3 Concentration	No. 3 Detection Limit
Supelco Method:							
Ethyl Alcohol	ug/kg	< 40,000	40,000	< 40,000	40,000		
N-Propanol	ug/kg	< 20,000	20,000	< 20,000	20,000	< 20,000	20,000
N-Proptlacetate	ug/kg	< 400	400	< 400	400		

Method and Constituent	Units	No. 4 Concentration	No. 4 Detection Limit	No. 5 Concentration	No. 5 Detection Limit	No. 6 Concentration	No. 6 Detection Limit
Supelco Method:							
Ethyl Alcohol	ug/kg			< 40,000	40,000	< 40,000	40,000
N-Propanol	ug/kg	< 20,000	20,000	< 20,000	20,000	< 20,000	20,000
N-Propylacetate	ug/kg			< 400	400	< 400	400

Dan Farah

Dan Farah, Ph.D.

DATE: 7/14/89
LOG NO.: 7561
DATE SAMPLED: 6/27/89
DATE RECEIVED: 6/27/89
PAGE: Two

Sample Type: Soil

Method and Constituent	Units	No. 7 Concentration	No. 7 Detection Limit	No. 8 Concentration	No. 8 Detection Limit
Supelco Method:					
Ethyl Alcohol	ug/kg	< 40,000	40,000	< 40,000	40,000
N-Propanol	ug/kg	< 20,000	20,000	< 20,000	20,000
N-Propylacetate	ug/kg	< 400	400	< 400	400

Dan Farah

Dan Farah, Ph.D.
Supervisory Chemist

DF:sam

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545 *(415) 783-6960*

TAL

DATE REVISED: 8/3/89

LOG NO.: 7567

DATE SAMPLED: 6/28/89

DATE RECEIVED: 6/28/89

CUSTOMER: Atlas Hydraulic Corporation

REQUESTER: Jim Givens

PROJECT: Flexible Packaging Division, 2101 Williams Street, San Leandro, CA

Sample Type: Soil

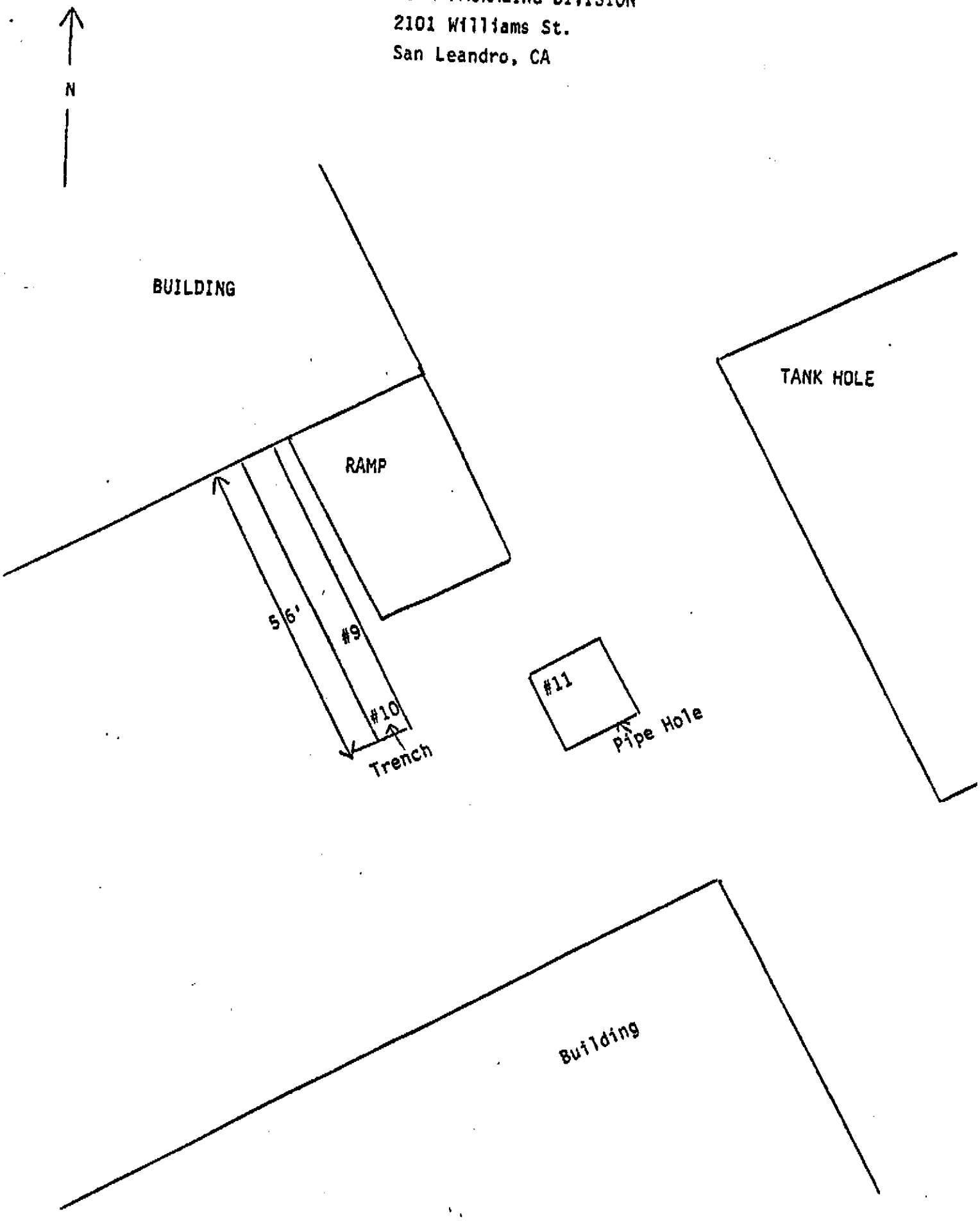
Method and Constituent	Units	No. 9 Concentration	No. 9 Detection Limit	No. 10 Concentration	No. 10 Detection Limit	No. 11 Concentration	No. 11 Detection Limit
Supelco Method:							
Ethyl Alcohol	ug/kg	<10,000,000	10,000,000	<40,000	40,000	55,000,000	1,000,0
N-Propanol	ug/kg	<5,000,000	5,000,000	<20,000	20,000	5,700,000	400,0
N-Propyl Acetate	ug/kg	390,000	100,000	2,900	400	60,000	7,0

This report is revised to correct an error in calculation for Sample No. 11. The results for Sample No. 11 are lower than previously reported.

Dan Farah

Dan Farah, Ph.D.
Supervisory Chemist

FLEXIBLE PACKAGING DIVISION
2101 Williams St.
San Leandro, CA



Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545 (415) 783-6960

7561

CHAIN OF CUSTODY RECORD

PROJ. NO. | PROJECT NAME 2101 Williams St - San Leandro CA. FLEXIBLE PACKAGING DIVISION | NO. OF CONTAINERS

SAMPLERS: (Signature) Manuel Flores Jr.

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Ethyl Alcohol	N Propanol	Acetate	(N-Propyl Acetate)	REMARKS
											10 DAY TAT
1	6/7	9:50	✓		FILL END TANK #1	1	✓	✓	✓		
2		9:55	✓		VENT END TANK #1	1	✓	✓	✓		
3		10:00	✓		FILL END TANK # 2	1		✓			
4		10:05	✓		VENT END - TANK # 2	1		✓			
5		10:10	✓		FILL END TANK # 3	1	✓	✓	✓		
6		10:15	✓		VENT END TANK # 3	1	✓	✓	✓		
7		10:20	✓		TRENCH	1	✓	✓	✓		
8	↓	10:26	✓		↓	1	✓	✓	✓		
	19:9										

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	
				Duane G. Pohl	

Trace Analysis Laboratory, Inc.
3423 Investment Boulevard, #8 • Hayward, California 94545 (415) 785-6960

7567

CHAIN OF CUSTODY RECORD

PROJ. NO. | PROJECT NAME: FLEXIBLE PACKAGING DIV. 2101 WILLIAMS ST. SAN LEANDRO CA.

SAMPLERS: (Signature) Manuel Rios

STA. NO.	DATE	TIME	COMP.	GRAB	STATION LOCATION	NO. OF CONTAINERS	Ethyl Alcohol	N Propanol	Acetate (U-Pump Kit)	REMARKS
9	6/28	9:15		✓	TRENCH (40')	1	✓	✓	✓	10 DAY
10		9:40		✓	TRENCH (54')	1	✓	✓	✓	
11	↓	9:50		✓	PIPE HOLE	1	✓	✓	✓	
	1989									

Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received by: (Signature)	Relinquished by: (Signature)	Date / Time	Received by: (Signature)
Relinquished by: (Signature)	Date / Time	Received for Laboratory by: (Signature)	Date / Time	Remarks	

PIPELINE VERIFICATION SAMPLES -
SEPTEMBER 1990 PIPELINE REMOVAL

Analytical Report

LOG NO: E90-09-599

Received: 28 SEP 90
Reported: 10 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-599-1	PL-1	27 SEP 90
09-599-2	PL-2	27 SEP 90
09-599-3	PL-3	27 SEP 90
09-599-4	PL-4	27 SEP 90
09-599-5	PL-5	28 SEP 90

PARAMETER	09-599-1	09-599-2	09-599-3	09-599-4	09-599-5
EPA Method 8010					
Date Analyzed	10.05.90	10.05.90	10.05.90	10.05.90	10.05.90
Date Extracted	10.05.90	10.05.90	10.05.90	10.05.90	10.05.90
Confirmation Date	---	10.07.90	---	---	---
Dilution Factor, Times	1	1	1	1	1
1,1,1-Trichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2,2-Tetrachloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloroethene (Total), mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloropropane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
2-Chloroethylvinylether, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Bromodichloromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Bromomethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Bromoform, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Tetrachloride, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-09-599

Received: 28 SEP 90
Reported: 10 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-599-1	PL-1	27 SEP 90
09-599-2	PL-2	27 SEP 90
09-599-3	PL-3	27 SEP 90
09-599-4	PL-4	27 SEP 90
09-599-5	PL-5	28 SEP 90

PARAMETER	09-599-1	09-599-2	09-599-3	09-599-4	09-599-5
Chloroform, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Chloromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Dibromochloromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorodifluoromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Freon 113, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Methylene chloride, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Trichloroethene, mg/kg	<0.01	0.03	<0.01	<0.01	<0.01
Trichlorofluoromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Vinyl chloride, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
cis-1,2-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
cis-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
trans-1,2-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
trans-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

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Analytical Report

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Pleasant Hill, California 94523

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-599-1	PL-1	27 SEP 90
09-599-2	PL-2	27 SEP 90
09-599-3	PL-3	27 SEP 90
09-599-4	PL-4	27 SEP 90
09-599-5	PL-5	28 SEP 90

PARAMETER	09-599-1	09-599-2	09-599-3	09-599-4	09-599-5
EPA Method 8020					
Date Analyzed	10.05.90	10.05.90	10.05.90	10.05.90	10.05.90
Date Extracted	10.05.90	10.05.90	10.05.90	10.05.90	10.05.90
Confirmation Date	---	10.07.90	10.07.90	10.07.90	10.07.90
Dilution Factor, Times	1	1	1	1	1
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Benzene, mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Ethylbenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene, mg/kg	<0.01	0.05	0.04	0.03	0.02
Total Xylene Isomers, mg/kg	<0.01	<0.01	0.01	<0.01	<0.01

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-09-599

Received: 28 SEP 90
Reported: 10 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-599-6	PL-6	28 SEP 90
09-599-7	PL-7	28 SEP 90
09-599-8	PL-8	28 SEP 90

PARAMETER	09-599-6	09-599-7	09-599-8
EPA Method 8010			
Date Analyzed	10.05.90	10.05.90	10.05.90
Date Extracted	10.05.90	10.05.90	10.05.90
Dilution Factor, Times	1	1	1
1,1,1-Trichloroethane, mg/kg	<0.01	<0.01	<0.01
1,1,2,2-Tetrachloroethane, mg/kg	<0.01	<0.01	<0.01
1,1,2-Trichloroethane, mg/kg	<0.01	<0.01	<0.01
1,1-Dichloroethane, mg/kg	<0.01	<0.01	<0.01
1,1-Dichloroethene, mg/kg	<0.01	<0.01	<0.01
1,2-Dichloroethane, mg/kg	<0.01	<0.01	<0.01
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01
1,2-Dichloroethene (Total), mg/kg	<0.01	<0.01	<0.01
1,2-Dichloropropane, mg/kg	<0.01	<0.01	<0.01
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01
2-Chloroethylvinylether, mg/kg	<0.01	<0.01	<0.01
Bromodichloromethane, mg/kg	<0.01	<0.01	<0.01
Bromomethane, mg/kg	<0.01	<0.01	<0.01
Bromoform, mg/kg	<0.01	<0.01	<0.01
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01
Carbon Tetrachloride, mg/kg	<0.01	<0.01	<0.01
Chloroethane, mg/kg	<0.01	<0.01	<0.01
Chloroform, mg/kg	<0.01	<0.01	<0.01
Chloromethane, mg/kg	<0.01	<0.01	<0.01
Dibromochloromethane, mg/kg	<0.01	<0.01	<0.01

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
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Analytical Report

LOG NO: E90-09-599

Received: 28 SEP 90
Reported: 10 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-599-6	PL-6	28 SEP 90
09-599-7	PL-7	28 SEP 90
09-599-8	PL-8	28 SEP 90

PARAMETER	09-599-6	09-599-7	09-599-8
Dichlorodifluoromethane, mg/kg	<0.01	<0.01	<0.01
Freon 113, mg/kg	<0.01	<0.01	<0.01
Methylene chloride, mg/kg	<0.01	<0.01	<0.01
Trichloroethene, mg/kg	<0.01	<0.01	<0.01
Trichlorofluoromethane, mg/kg	<0.01	<0.01	<0.01
Tetrachloroethene, mg/kg	<0.01	<0.01	<0.01
Vinyl chloride, mg/kg	<0.01	<0.01	<0.01
cis-1,2-Dichloroethene, mg/kg	<0.01	<0.01	<0.01
cis-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01
trans-1,2-Dichloroethene, mg/kg	<0.01	<0.01	<0.01
trans-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01
Other EPA Method 8010	---	---	---

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-09-599

Received: 28 SEP 90
Reported: 10 OCT 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
09-599-6	PL-6	28 SEP 90
09-599-7	PL-7	28 SEP 90
09-599-8	PL-8	28 SEP 90

PARAMETER	09-599-6	09-599-7	09-599-8
EPA Method 8020			
Date Analyzed	10.05.90	10.05.90	10.05.90
Date Extracted	10.05.90	10.05.90	10.05.90
Confirmation Date	10.09.90	10.07.90	10.07.90
Dilution Factor, Times	1	1	1
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01
Benzene, mg/kg	<0.1	<0.1	<0.1
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01
Ethylbenzene, mg/kg	<0.01	<0.01	<0.01
Toluene, mg/kg	0.01	0.01	0.01
Total Xylene Isomers, mg/kg	<0.01	0.01	0.01

Hedy J. Ficklin for
Sim D. Lessley, Ph.D., Laboratory Director

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

CHAIN OF CUSTODY RECORD

BCA Log Number 10059-1

Client name: BC-PH	Project or PO#: 5081
Address:	Phone #:
City, State, Zip:	Report attention: D. Courington

Sampled by: D Courington

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	Analyses required: 8010/8020	Hazardous sample Special handling required	Remarks
	9/27		SO	PL-1	1	X		
	"		"	PL-2	"	X		
	"		"	PL-3	"	X		
	"		"	PL-4	"	X		
	9/28		SO	PL-5	1	X		
	"		"	PL-6	"	X		
	"		"	PL-7	"	X		
	"		"	PL-8	"	X		

	Signature	Print Name	Company	Date	Time
Relinquished by	Donna Courington	D. Courington	BC-PH	9/28/90	1525
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory	M Scott	M Scott	BCA	9-28-90	15:25

ANALYTICAL

Powell Street, Emeryville, CA 94608 (415) 428-2300

Western Avenue, Glendale, CA 91201 (818) 247-5737

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: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

Analytical Report

LOG NO: E90-10-015

Received: 01 OCT 90
Reported: 16 OCT 90

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

Project: 5081-05

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-015-1	PL-9	01 OCT 90
10-015-2	PL-10	01 OCT 90
10-015-3	PL-11	01 OCT 90
10-015-4	PL-12	01 OCT 90
10-015-5	PL-13	01 OCT 90

PARAMETER	10-015-1	10-015-2	10-015-3	10-015-4	10-015-5
Arsenic, mg/kg	4.0	4.0	3.8	4.9	4.9
Selenium, mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Barium, mg/kg	170	170	160	150	160
Chromium, mg/kg	52	54	54	51	57
Cobalt, mg/kg	12	11	11	10	11
Copper, mg/kg	20	23	22	23	24
Lead, mg/kg	4	5	<4	4	<4
Mercury, mg/kg	<0.05	<0.05	<0.05	<0.05	0.06
Molybdenum, mg/kg	<4	<4	<4	<4	<4
Nickel, mg/kg	52	58	53	51	56
Vanadium, mg/kg	42	46	44	36	44
Zinc, mg/kg	70	64	57	63	60
Nitric Acid Digestion, Date	10.05.90	10.05.90	10.05.90	10.05.90	10.05.90
Nitric Acid Digestion, Date	10.05.90	10.05.90	10.05.90	10.05.90	10.05.90

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-10-015

Received: 01 OCT 90
Reported: 16 OCT 90

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

Project: 5081-05

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-015-1	PL-9	01 OCT 90
10-015-2	PL-10	01 OCT 90
10-015-3	PL-11	01 OCT 90
10-015-4	PL-12	01 OCT 90
10-015-5	PL-13	01 OCT 90

PARAMETER	10-015-1	10-015-2	10-015-3	10-015-4	10-015-5
EPA Method 8010					
Date Analyzed	10.09.90	10.09.90	10.09.90	10.09.90	10.09.90
Date Extracted	10.09.90	10.09.90	10.09.90	10.09.90	10.09.90
Dilution Factor, Times	1	1	1	1	1
1,1,1-Trichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2,2-Tetrachloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloroethene (Total), mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloropropane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
2-Chloroethylvinylether, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Bromodichloromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Bromomethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Bromoform, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Tetrachloride, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroform, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Analytical Report

LOG NO: E90-10-015

Received: 01 OCT 90
Reported: 16 OCT 90

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

Project: 5081-05

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-015-1	PL-9	01 OCT 90
10-015-2	PL-10	01 OCT 90
10-015-3	PL-11	01 OCT 90
10-015-4	PL-12	01 OCT 90
10-015-5	PL-13	01 OCT 90

PARAMETER	10-015-1	10-015-2	10-015-3	10-015-4	10-015-5
Chloromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Dibromochloromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorodifluoromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Freon 113, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Methylene chloride, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Trichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Trichlorofluoromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Vinyl chloride, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
cis-1,2-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
cis-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
trans-1,2-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
trans-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Other EPA Method 8010	---	---	---	---	---

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-10-015

Received: 01 OCT 90
Reported: 16 OCT 90

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

Project: 5081-05

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
10-015-1	PL-9	01 OCT 90
10-015-2	PL-10	01 OCT 90
10-015-3	PL-11	01 OCT 90
10-015-4	PL-12	01 OCT 90
10-015-5	PL-13	01 OCT 90

PARAMETER	10-015-1	10-015-2	10-015-3	10-015-4	10-015-5
EPA Method 8020					
Date Analyzed	10.09.90	10.09.90	10.09.90	10.09.90	10.09.90
Date Extracted	10.09.90	10.09.90	10.09.90	10.09.90	10.09.90
Confirmation Date	---	---	---	10.10.90	10.10.90
Dilution Factor, Times	1	1	1	1	1
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Benzene, mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Ethylbenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Toluene, mg/kg	<0.01	<0.01	<0.01	0.15	<0.01
Total Xylene Isomers, mg/kg	<0.01	<0.01	<0.01	0.04	<0.01

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

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

CHAIN OF CUSTODY RECORD

BCA Log Number 90 10015

Client name	Project or PO#
BC-PN	5081-05
Address	**Phone #**
City, State, Zip	**Report attention**
	D. Covington

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by / Sample description	Number of containers	8010/8020	12 metals	Hazardous sample Special handling required	Remarks
	10/3		SO	PL-9	1	X	X		Metals are:
	"		"	PL-10	"	X	X		Arsenic, barium
	"		"	PL-11	"	X	X		Chromium,
	"		"	PL-12	"	X	X		cobalt,
	"		"	PL-13	"	X	X		copper
									mercury
									molybdenum
									nickel
									selenium vanad
									zinc
									lead

	Signature	Print Name	Company	Date	Time
Relinquished by		D. Covington	BCA	10/4/90	1515
Received by		P. Thongkham	BCA	10/4/90	1515
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

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: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

BIOASSAY AND RAIL SPUR AREA SAMPLES - SEPTEMBER 1990 ADDITIONAL WORK

B C Analytical
1255 POWELL STREET • EMERYVILLE, CA 94608 • (415) 428-2300 • Fax (415) 547-3643

TOXICITY BIOASSAY

Log No.: E90-09-498-1

Report To:
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, CA 94523

ATTN: Ms. Donna Courington

Date Sampled: 09/25/90
Date Received: 09/25/90
Date Reported: 10/18/90

Laboratory Director

cc:

CALIFORNIA HAZARDOUS WASTE ASSESSMENT BIOASSAY: SCREEN

Sample Description RS-BA
Test Organism Pimephales promelas, fathead minnow Source Thomas Fish Company
Dilution Water Fresh Source Emeryville Dechlorinated Tap Water with Matrix Modifiers Temperature Range 19.5 - 19.9 °C
Aeration: Air X Oxygen ___ None ___

Bioassay Conditions	Time, Hrs	Control		Dilution 250 mg/L		250 mg/L		750mg/L		750 mg/L							
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Organisms Surviving	Start	10	100	10	100	10	100	10	100	10	100						
	24	10	100	10	100	10	100	10	100	10	100						
	48	10	100	10	100	10	100	10	100	10	100						
	72	10	100	10	100	10	100	10	100	10	100						
	96	10	100	10	100	10	100	10	100	10	100						
Dissolved Oxygen mg/L	Start	8.9		8.8		8.9		8.9		8.8							
	24	9.0		8.5		8.9		8.8		8.8							
	48	8.6		8.8		8.8		8.4		8.0							
	72	8.7		8.7		8.7		8.5		8.3							
	96	8.5		8.6		8.6		8.3		8.4							
pH	Start	8.0		8.1		8.1		8.1		8.1							
	24	7.9		7.9		8.0		8.0		8.0							
	48	8.2		8.2		8.2		8.2		8.2							
	72	8.3		8.1		8.1		8.2		8.1							
	96	8.1		8.0		8.0		8.1		8.1							

RESULTS: 96 hr TL_m >750 mg/L Toxicity Units Not Established Percent survival in undiluted sample Not Applicable

Length of fish, cm: Max. 4.5 Min. 3.7 Mean 4.1
Weight of fish, g.: Max. 1.11 Min. 0.59 Mean 0.87

*In cases where 96 hour mortality does not equal or exceed 50% in at least one dilution of the sample, no TL_m value is established.

Analyst M.L. Parris

KF

APPENDIX F

TANK EXCAVATION BACKFILL AUTHORIZATION LETTER

ALAMEDA COUNTY
HEALTH CARE SERVICES
AGENCY
DAVID J. KEARS, Agency Director

RECD OCT 03 1989

DEPARTMENT OF ENVIRONMENTAL HEALTH
Hazardous Materials Program
80 Swan Way, Rm. 200
Oakland, CA 94621
(415)

Certified Mail #P 062 127 653

September 26, 1989

Mr. Bob Wenning, Engineering Manager
James River Corporation
Flexible Packaging Division
2101 Williams Street
San Leandro, CA 94577

Dear Mr. Wenning:

The excavation that previous housed three underground tanks at the above address may be backfilled.

Certain areas under the pipelines were found to have contamination up to 55,000 ppm of ethyl alcohol, 5,700 ppm n-propanol and 390 ppm N-Propyl Acetate. Please submit to this office within thirty (30) days of the receipt of this letter, your plan of correction. Your plan must include, but shall not be limited to the following:

1. Method that will be used to determine the vertical and horizontal extent of contamination
2. Name of your hauler
3. Name of disposal facility
4. Expected date of completion

As per your conversation with Larry Seto from our office on September 25, 1989, please submit all documents and laboratory reports concerning the water quality at the above site.

If you have any questions, please contact Larry Seto, Sr. Hazardous Materials Specialist, at (415) 271-4320.

Sincerely,

R/C A. SW

Rafat A. Shahid, Chief,
Hazardous Materials Program

RAS:LS:mnc

cc: San Leandro Fire
Eric Staedicke, San Leandro Wastewater Treatment Plant
Gil Jensen, Alameda County District Attorney, Consumer and Environmental Protection Agency
RWQCB
Howard Hatayama, DOHS
Larry Seto, Alameda County Hazardous Materials Program
Files

APPENDIX G

LABORATORY REPORTS - GROUNDWATER SAMPLES

GROUNDWATER ANALYTICAL RESULTS - APRIL AND AUGUST 1989

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-609

Received: 20 APR 89
Reported: 08 MAY 89

Ms. Paula Diepolder
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-01

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-1	W-2	20 APR 89
04-609-2	W-3	20 APR 89
04-609-3	W-1	20 APR 89
04-609-4	W-4	20 APR 89
04-609-5	W-5	20 APR 89

PARAMETER	04-609-1	04-609-2	04-609-3	04-609-4	04-609-5
Biochemical Oxygen Demand, mg/L	1900	14	---	---	---
Flash Point, deg F	NI	NI	---	---	---
Non-filterable Residue (TSS), mg/L	52	20	---	---	---

Not ignitable according to the criterion stated within 66702 Division 4, Title 22, California Administrative Code 16 March 1985.

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-1	W-2	20 APR 89
04-609-2	W-3	20 APR 89
04-609-3	W-1	20 APR 89
04-609-4	W-4	20 APR 89
04-609-5	W-5	20 APR 89

PARAMETER	04-609-1	04-609-2	04-609-3	04-609-4	04-609-5
Purgeable Priority Pollutants					
Date Extracted	05.03.89	05.03.89	05.03.89	05.03.89	05.04.89
1,1,1-Trichloroethane, ug/L	<50	<10	<100	<100	2
1,1,2,2-Tetrachloroethane, ug/L	<50	<10	<100	<100	<1
1,1,2-Trichloroethane, ug/L	<50	<10	<100	<100	<1
1,1-Dichloroethane, ug/L	<50	<10	<100	<100	<1
1,1-Dichloroethene, ug/L	<50	<10	<100	<100	10
1,2-Dichloroethane, ug/L	<50	<10	<100	<100	<1
1,2-Dichloroethene (Total), ug/L	1400	170	730	720	6000
1,2-Dichloropropane, ug/L	<50	<10	<100	<100	<1
1,3-Dichloropropene, ug/L	<50	<10	<100	<100	<1
2-Chloroethylvinylether, ug/L	<50	<10	<100	<100	<1
Acrolein, ug/L	<500	<100	<1000	<1000	<10
Acrylonitrile, ug/L	<500	<100	<1000	<1000	<10
Bromodichloromethane, ug/L	<50	<10	<100	<100	<1
Benzene, ug/L	<50	<10	<100	<100	<1
Bromomethane, ug/L	<50	<10	<100	<100	<1
Bromoform, ug/L	<50	<10	<100	<100	<1
Chlorobenzene, ug/L	<50	<10	<100	<100	<1
Carbon Tetrachloride, ug/L	<50	<10	<100	<100	<1
Chloroethane, ug/L	<50	<10	<100	<100	<1
Chloroform, ug/L	<50	<10	<100	<100	<1
Chloromethane, ug/L	<50	<10	<100	<100	<1

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-1	W-2	20 APR 89
04-609-2	W-3	20 APR 89
04-609-3	W-1	20 APR 89
04-609-4	W-4	20 APR 89
04-609-5	W-5	20 APR 89

PARAMETER	04-609-1	04-609-2	04-609-3	04-609-4	04-609-5
Dibromochloromethane, ug/L	<50	<10	<100	<100	<1
Ethylbenzene, ug/L	<50	<10	<100	<100	<1
Methylene chloride, ug/L	<50	<10	<100	<100	<1
Trichloroethene, ug/L	<50	230	<100	<100	600
Trichlorofluoromethane, ug/L	<50	<10	<100	<100	<1
Toluene, ug/L	920	<10	<100	2900	7
Tetrachloroethene, ug/L	1000	1200	300	140	5000
Vinyl chloride, ug/L	450	39	300	<100	1000
trans-1,3-Dichloropropene, ug/L	<50	<10	<100	<100	<1
Semi-Quantified Results **					
2-Hexanone, ug/L	1700	540	---	8200	9
Acetone, ug/L	66000	25000	68000	760000	77
C5H1002 (Ester), ug/L	1000	---	---	60000	---
C6H140 (Alcohol), ug/L	500	80	---	1000	---
C6H140 (Ether), ug/L	---	---	---	---	20
Ethanol, ug/L	500	---	---	---	---
Isopropanol, ug/L	6000	500	---	30000	---
Methyl acetate, ug/L	200	---	---	---	---
N-Butyl acetate, ug/L	440	---	---	---	---
Propyl Acetate, ug/L	900	---	---	---	---
Total Xylene Isomers, ug/L	---	---	---	400	---

BROWN AND CALDWELL LABORATORIES

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LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-1	W-2	20 APR 89
04-609-2	W-3	20 APR 89
04-609-3	W-1	20 APR 89
04-609-4	W-4	20 APR 89
04-609-5	W-5	20 APR 89

PARAMETER	04-609-1	04-609-2	04-609-3	04-609-4	04-609-5

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

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

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Ms. Paula Diepolder
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-01

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-6	W-6	20 APR 89
04-609-7	W-7	20 APR 89
04-609-8	W-8	20 APR 89
04-609-9	W-9	20 APR 89
04-609-10	B-1	20 APR 89

PARAMETER	04-609-6	04-609-7	04-609-8	04-609-9	04-609-10
Purgeable Priority Pollutants					
Date Extracted	05.03.89	05.03.89	05.03.89	05.03.89	05.03.89
1,1,1-Trichloroethane, ug/L	<1	2	<5	3	<1
1,1,2,2-Tetrachloroethane, ug/L	<1	<1	<5	<1	<1
1,1,2-Trichloroethane, ug/L	<1	<1	<5	<1	<1
1,1-Dichloroethane, ug/L	<1	<1	<5	<1	<1
1,1-Dichloroethene, ug/L	<1	<1	<5	<1	<1
1,2-Dichloroethane, ug/L	<1	<1	<5	<1	<1
1,2-Dichloroethene (Total), ug/L	12	140	35	16	7
1,2-Dichloropropane, ug/L	<1	<1	<5	<1	<1
1,3-Dichloropropene, ug/L	<1	<1	<5	<1	<1
2-Chloroethylvinylether, ug/L	<1	<1	<5	<1	<1
Acrolein, ug/L	<10	<10	<50	<10	<10
Acrylonitrile, ug/L	<10	<10	<50	<10	<10
Bromodichloromethane, ug/L	<1	<1	<5	<1	<1
Benzene, ug/L	<1	1	<5	2	<1
Bromomethane, ug/L	<1	<1	<5	<1	<1
Bromoform, ug/L	<1	<1	<5	<1	<1
Chlorobenzene, ug/L	<1	<1	<5	<1	<1
Carbon Tetrachloride, ug/L	<1	<1	<5	<1	<1
Chloroethane, ug/L	<1	<1	<5	<1	<1
Chloroform, ug/L	<1	<1	<5	<1	<1
Chloromethane, ug/L	<1	<1	<5	<1	<1

BROWN AND CALDWELL LABORATORIES

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-6	W-6	20 APR 89
04-609-7	W-7	20 APR 89
04-609-8	W-8	20 APR 89
04-609-9	W-9	20 APR 89
04-609-10	B-1	20 APR 89

PARAMETER	04-609-6	04-609-7	04-609-8	04-609-9	04-609-10
Dibromochloromethane, ug/L	<1	<1	<5	<1	<1
Ethylbenzene, ug/L	<1	<1	<5	<1	<1
Methylene chloride, ug/L	<1	<1	<5	<1	<1
Trichloroethene, ug/L	240	260	<5	34	<1
Trichlorofluoromethane, ug/L	<1	<1	<5	<1	<1
Toluene, ug/L	<1	4	200	7	10
Tetrachloroethene, ug/L	1400	1100	120	33	12
Vinyl chloride, ug/L	<1	43	15	3	<1
trans-1,3-Dichloropropene, ug/L	<1	<1	<5	<1	<1
Semi-Quantified Results **					
2-Hexanone, ug/l	---	150	6400	36	38
Acetone, ug/l	---	2100	780000	1400	4500
C5H1002 (Ester), ug/l	---	---	1000	---	200
C6H140 (Alcohol), ug/L	---	---	---	10	---
C6H140 (Ether), ug/L	---	---	100	---	---
C7H1402 (Ester), ug/L	---	---	10	---	---
Ethanol, ug/L	---	20	200	10	---
Isopropanol, ug/l	---	200	5000	100	60
Methyl ethyl ketone, ug/L	---	79	3300	---	---
N-Butyl acetate, ug/L	---	---	40	---	---
Propyl Acetate, ug/L	---	---	100	---	---
Propylfuran, ug/L	---	---	80	---	---

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-609

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Ms. Paula Diepolder
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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-6	W-6	20 APR 89
04-609-7	W-7	20 APR 89
04-609-8	W-8	20 APR 89
04-609-9	W-9	20 APR 89
04-609-10	B-1	20 APR 89

PARAMETER	04-609-6	04-609-7	04-609-8	04-609-9	04-609-10

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

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

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-609

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-1	W-2	20 APR 89
04-609-2	W-3	20 APR 89

PARAMETER	04-609-1	04-609-2
BOD, mg/L	1900	14
Flash Point, deg F	NI	NI
Non-filterable Residue (TSS), mg/L	52	20

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-609

Received: 20 APR 89
Reported: 08 MAY 89

Ms. Paula Diepolder
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-01

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-1	W-2	20 APR 89
04-609-2	W-3	20 APR 89

PARAMETER	04-609-1	04-609-2
Purgeable Priority Pollutants		
Date Extracted	05.03.89	05.03.89
1,1,2-Trichloroethane, ug/L	<50	<10
1,1-Dichloroethane, ug/L	<50	<10
1,1-Dichloroethylene, ug/L	<50	<10
1,2-Dichloroethane, ug/L	<50	<10
1,2-Dichloropropane, ug/L	<50	<10
1,3-Dichloropropene, ug/L	<50	<10
2-Chloroethylvinylether, ug/L	<50	<10
Acrolein, ug/L	<500	<100
Acrylonitrile, ug/L	<500	<100
Bromodichloromethane, ug/L	<50	<10
Bromomethane, ug/L	<50	<10
Benzene, ug/L	<50	<10
Chlorobenzene, ug/L	<50	<10
Carbon Tetrachloride, ug/L	<50	<10
Chloroethane, ug/L	<50	<10
Bromoform, ug/L	<50	<10
Chloroform, ug/L	<50	<10
Chloromethane, ug/L	<50	<10
Dibromochloromethane, ug/L	<50	<10
Ethylbenzene, ug/L	<50	<10
Methylene chloride, ug/L	<50	<10
Tetrachloroethylene, ug/L	1000	1200
Trichloroethylene, ug/L	<50	230
Trichlorofluoromethane, ug/L	<50	<10

BROWN AND CALDWELL LABORATORIES

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ANALYTICAL REPORT

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Received: 20 APR 89
Reported: 08 MAY 89

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Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-01

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-1	W-2	20 APR 89
04-609-2	W-3	20 APR 89

PARAMETER	04-609-1	04-609-2
Toluene, ug/L	920	<10
Vinyl chloride, ug/L	450	39
1,2-Dichloroethene (Total), ug/L	1400	170
trans-1,3-Dichloropropene, ug/L	<50	<10
1,1,1-Trichloroethane, ug/L	<50	<10
1,1,2,2-Tetrachloroethane, ug/L	<50	<10
Semi-Quantified Results **		
2-Hexanone, ug/L	1700	540
Acetone, ug/L	66000	---
Aetone, ug/L	---	25000
C5H1002 (Ester), ug/L	1000	---
C6H140 (Alcohol), ug/L	500	80
Ethanol, ug/L	500	---
Isopropanol, ug/L	6000	500
Methyl Acetate, ug/L	200	---
N-Butyl acetate, ug/L	440	---
Propyl Acetate, ug/L	900	---

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

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-609

Received: 20 APR 89
Reported: 08 MAY 89

Ms. Paula Diepolder
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Pleasant Hill, California 94523

Project: 4459-01

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-3	W-1	20 APR 89
04-609-4	W-4	20 APR 89
04-609-5	W-5	20 APR 89
04-609-6	W-6	20 APR 89
04-609-7	W-7	20 APR 89

PARAMETER	04-609-3	04-609-4	04-609-5	04-609-6	04-609-7
Purgeable Priority Pollutants					
Date Extracted	05.03.89	05.03.89	05.04.89	05.03.89	05.03.89
1,1,2-Trichloroethane, ug/L	<100	<100	<1	<1	<1
1,1-Dichloroethane, ug/L	<100	<100	<1	<1	<1
1,1-Dichloroethylene, ug/L	<100	<100	10	<1	<1
1,2-Dichloroethane, ug/L	<100	<100	<1	<1	<1
1,2-Dichloropropane, ug/L	<100	<100	<1	<1	<1
1,3-Dichloropropene, ug/L	<100	<100	<1	<1	<1
2-Chloroethylvinylether, ug/L	<100	<100	<1	<1	<1
Acrolein, ug/L	<1000	<1000	<10	<10	<10
Acrylonitrile, ug/L	<1000	<1000	<10	<10	<10
Bromodichloromethane, ug/L	<100	<100	<1	<1	<1
Bromomethane, ug/L	<100	<100	<1	<1	<1
Benzene, ug/L	<100	<100	<1	<1	1
Chlorobenzene, ug/L	<100	<100	<1	<1	<1
Carbon Tetrachloride, ug/L	<100	<100	<1	<1	<1
Chloroethane, ug/L	<100	<100	<1	<1	<1
Bromoform, ug/L	<100	<100	<1	<1	<1
Chloroform, ug/L	<100	<100	<1	<1	<1
Chloromethane, ug/L	<100	<100	<1	<1	<1
Dibromochloromethane, ug/L	<100	<100	<1	<1	<1
Ethylbenzene, ug/L	<100	<100	<1	<1	<1
Methylene chloride, ug/L	<100	<100	<1	<1	<1

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-609

Received: 20 APR 89
Reported: 08 MAY 89

Ms. Paula Diepolder
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-01

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-3	W-1	20 APR 89
04-609-4	W-4	20 APR 89
04-609-5	W-5	20 APR 89
04-609-6	W-6	20 APR 89
04-609-7	W-7	20 APR 89

PARAMETER	04-609-3	04-609-4	04-609-5	04-609-6	04-609-7
Tetrachloroethylene, ug/L	300	140	5000	1400	1100
Trichloroethylene, ug/L	<100	<100	600	240	260
Trichlorofluoromethane, ug/L	<100	<100	<1	<1	<1
Toluene, ug/L	<100	2900	7	<1	4
Vinyl chloride, ug/L	300	<100	1000	<1	43
1,2-Dichloroethene (Total), ug/L	730	720	6000	12	140
trans-1,3-Dichloropropene, ug/L	<100	<100	<1	<1	<1
1,1,1-Trichloroethane, ug/L	<100	<100	2	<1	2
1,1,2,2-Tetrachloroethane, ug/L	<100	<100	<1	<1	<1
Semi-Quantified Results **					
2-Hexanone, ug/L	---	8200	9	---	150
Acetone, ug/L	68000	760000	77	---	2100
C5H1002 (Ester), ug/L	---	60000	---	---	---
C6H140 (Alcohol), ug/L	---	1000	---	---	---
C6H140 (Ether), ug/L	---	---	20	---	---
Ethanol, ug/L	---	---	---	---	20
Isopropanol, ug/L	---	30000	---	---	200
Methyl ethyl ketone, ug/L	---	---	---	---	79
Total Xylene Isomers, ug/L	---	400	---	---	---

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

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-04-609

Received: 20 APR 89
Reported: 08 MAY 89

Ms. Paula Diepolder
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-01

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-8	W-8	20 APR 89
04-609-9	W-9	20 APR 89
04-609-10	B-1	20 APR 89

PARAMETER	04-609-8	04-609-9	04-609-10
Purgeable Priority Pollutants			
Date Extracted	05.03.89	05.03.89	05.03.89
1,1,2-Trichloroethane, ug/L	<5	<1	<1
1,1-Dichloroethane, ug/L	<5	<1	<1
1,1-Dichloroethylene, ug/L	<5	<1	<1
1,2-Dichloroethane, ug/L	<5	<1	<1
1,2-Dichloropropane, ug/L	<5	<1	<1
1,3-Dichloropropene, ug/L	<5	<1	<1
2-Chloroethylvinylether, ug/L	<5	<1	<1
Acrolein, ug/L	<50	<10	<10
Acrylonitrile, ug/L	<50	<10	<10
Bromodichloromethane, ug/L	<5	<1	<1
Bromomethane, ug/L	<5	<1	<1
Benzene, ug/L	<5	2	<1
Chlorobenzene, ug/L	<5	<1	<1
Carbon Tetrachloride, ug/L	<5	<1	<1
Chloroethane, ug/L	<5	<1	<1
Bromoform, ug/L	<5	<1	<1
Chloroform, ug/L	<5	<1	<1
Chloromethane, ug/L	<5	<1	<1
Dibromochloromethane, ug/L	<5	<1	<1
Ethylbenzene, ug/L	<5	<1	<1
Methylene chloride, ug/L	<5	<1	<1
Tetrachloroethylene, ug/L	120	33	12
Trichloroethylene, ug/L	<5	34	<1

BROWN AND CALDWELL LABORATORIES

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ANALYTICAL REPORT

LOG NO: E89-04-609

Received: 20 APR 89
Reported: 08 MAY 89

Ms. Paula Diepolder
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-01

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, AQUEOUS SAMPLES	DATE SAMPLED
04-609-8	W-8	20 APR 89
04-609-9	W-9	20 APR 89
04-609-10	B-1	20 APR 89

PARAMETER	04-609-8	04-609-9	04-609-10
Trichlorofluoromethane, ug/L	<5	<1	<1
Toluene, ug/L	200	7	10
Vinyl chloride, ug/L	15	3	<1
1,2-Dichloroethene (Total), ug/L	35	16	7
trans-1,3-Dichloropropene, ug/L	<5	<1	<1
1,1,1-Trichloroethane, ug/L	<5	3	<1
1,1,2,2-Tetrachloroethane, ug/L	<5	<1	<1
Semi-Quantified Results **			
2-Hexanone, ug/L	6400	36	38
Acetone, ug/L	780000	1400	4500
C5H1002 (Ester), ug/L	1000	---	200
C6H140 (Alcohol), ug/L	---	10	---
C6H140 (Ether), ug/L	100	---	---
C7H1402 (Ester), ug/L	10	---	---
Ethanol, ug/L	200	10	---
Isopropanol, ug/L	5000	100	60
Methyl ethyl ketone, ug/L	3300	---	---
N-Butyl acetate, ug/L	40	---	---
Propyl Acetate, ug/L	100	---	---
Propylfuran, ug/L	80	---	---

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

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

CHAIN OF CUSTODY RECORD

BC Log Number 8904609

Client name	Project or PO#	Analyses required
BC PH	4459-01	
Address	Phone #	
City, State, Zip	Report attention	
	P. DIEPOLDER	

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by K. CHIANG / Sample description	Number of containers	624 (8240 per client req)	BOD	TSS	FLASH POINT			Hazardous sample Special handling required	Remarks
	4-20-89		AQ	W-2	5	✓	✓	✓	✓				
				W-3	5	✓	✓	✓	✓				
				W-1	2	✓							
				W-4	2	✓							
				W-5	2	✓							
				W-6	2	✓							
				W-7	2	✓							
				W-8	2	✓							
				W-9	2	✓							
				B-1	2	✓							

	Signature	Print Name	Company	Date	Time
Relinquished by	[signature]	KENNETH CHIANG	B&C	4-20-89	7:20 pm
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory	Ulysses J. Bellon	Ulysses Bellon	B&C	4/20/89	1920

BROWN AND CALDWELL LABORATORIES

☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

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 expense.

*KEY: AQ – Aqueous, NA – Nonaqueous, SL – Sludge, GW – Groundwater, SO – Soil, OT – Other, PE – Petroleum

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-08-375

Received: 16 AUG 89
Reported: 25 AUG 89

Mr. Tim Cook
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-375-1	W1	16 AUG 89
08-375-2	W3	16 AUG 89
08-375-3	W4	16 AUG 89
08-375-4	W5	16 AUG 89
08-375-5	W6	16 AUG 89

PARAMETER	08-375-1	08-375-2	08-375-3	08-375-4	08-375-5
Purgeable Priority Pollutants					
Date Analyzed	08.23.89	08.24.89	08.23.89	08.24.89	08.23.89
Date Extracted	08.23.89	08.24.89	08.23.89	08.24.89	08.23.89
Dilution Factor, Times	500	50	2000	50	5
1,1,1-Trichloroethane, ug/L	<500	<50	<2000	<50	5
1,1,2,2-Tetrachloroethane, ug/L	<500	<50	<2000	<50	<5
1,1,2-Trichloroethane, ug/L	<500	<50	<2000	<50	<5
1,1-Dichloroethane, ug/L	<500	<50	<2000	<50	<5
1,1-Dichloroethene, ug/L	<500	<50	<2000	<50	<5
1,2-Dichloroethane, ug/L	<500	<50	<2000	<50	<5
1,2-Dichloroethene (Total), ug/L	<500	<50	<2000	5000	<5
1,2-Dichloropropane, ug/L	<500	<50	<2000	<50	<5
1,3-Dichloropropene, ug/L	<500	<50	<2000	<50	<5
2-Chloroethylvinylether, ug/L	<500	<50	<2000	<50	<5
Acrolein, ug/L	<5000	<500	<20000	<500	<50
Acrylonitrile, ug/L	<5000	<500	<20000	<500	<50
Bromodichloromethane, ug/L	<500	<50	<2000	<50	<5
Bromomethane, ug/L	<500	<50	<2000	<50	<5
Benzene, ug/L	<500	<50	<2000	<50	<5
Bromoform, ug/L	<500	<50	<2000	<50	<5
Chlorobenzene, ug/L	<500	<50	<2000	<50	<5
Carbon Tetrachloride, ug/L	<500	<50	<2000	<50	<5
Chloroethane, ug/L	<500	<50	<2000	<50	<5

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-08-375

Received: 16 AUG 89
Reported: 25 AUG 89

Mr. Tim Cook
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-375-1	W1	16 AUG 89
08-375-2	W3	16 AUG 89
08-375-3	W4	16 AUG 89
08-375-4	W5	16 AUG 89
08-375-5	W6	16 AUG 89

PARAMETER	08-375-1	08-375-2	08-375-3	08-375-4	08-375-5
Chloroform, ug/L	<500	<50	<2000	<50	<5
Chloromethane, ug/L	<500	<50	<2000	<50	<5
Dibromochloromethane, ug/L	<500	<50	<2000	<50	<5
Ethylbenzene, ug/L	<500	<50	<2000	<50	<5
Methylene chloride, ug/L	<500	<50	<2000	<50	<5
Trichloroethene, ug/L	<500	<50	<2000	450	240
Trichlorofluoromethane, ug/L	<500	<50	<2000	<50	<5
Toluene, ug/L	<500	<50	8000	<50	<5
Tetrachloroethene, ug/L	<500	100	<2000	1300	920
Vinyl chloride, ug/L	<500	<50	<2000	690	<5
trans-1,3-Dichloropropene, ug/L	<500	<50	<2000	<50	<5
Semi-Quantified Results **					
Acetone, ug/L	370000	3000	560000	---	---
C3H6O2 Ester, ug/L	---	---	40000	---	---
C5H10O2 Ester, ug/L	---	---	100000	---	---

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

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-08-375

Received: 16 AUG 89
Reported: 25 AUG 89

Mr. Tim Cook
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-375-6	W7	16 AUG 89
08-375-7	W8	16 AUG 89
08-375-8	W9	16 AUG 89
08-375-9	B1	16 AUG 89
08-375-10	W5D	16 AUG 89

PARAMETER	08-375-6	08-375-7	08-375-8	08-375-9	08-375-10
Purgeable Priority Pollutants					
Date Analyzed	08.24.89	08.24.89	08.23.89	08.23.89	08.24.89
Date Extracted	08.24.89	08.24.89	08.23.89	08.23.89	08.24.89
Dilution Factor, Times	5	50	1	1	50
1,1,1-Trichloroethane, ug/L	<5	<50	2	6	<50
1,1,2,2-Tetrachloroethane, ug/L	<5	<50	<1	<1	<50
1,1,2-Trichloroethane, ug/L	<5	<50	<1	<1	<50
1,1-Dichloroethane, ug/L	<5	<50	<1	<1	<50
1,1-Dichloroethene, ug/L	<5	<50	<1	<1	<50
1,2-Dichloroethane, ug/L	<5	<50	<1	<1	<50
1,2-Dichloroethene (Total), ug/L	60	<50	<1	<1	4000
1,2-Dichloropropane, ug/L	<5	<50	<1	<1	<50
1,3-Dichloropropene, ug/L	<5	<50	<1	<1	<50
2-Chloroethylvinylether, ug/L	<5	<50	<1	<1	<50
Acrolein, ug/L	<50	<500	<10	<10	<500
Acrylonitrile, ug/L	<50	<500	<10	<10	<500
Bromodichloromethane, ug/L	<5	<50	<1	<1	<50
Bromomethane, ug/L	<5	<50	<1	<1	<50
Benzene, ug/L	<5	<50	<1	<1	<50
Bromoform, ug/L	<5	<50	<1	<1	<50
Chlorobenzene, ug/L	<5	<50	<1	<1	<50
Carbon Tetrachloride, ug/L	<5	<50	<1	<1	<50
Chloroethane, ug/L	<5	<50	<1	<1	<50

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-08-375

Received: 16 AUG 89
Reported: 25 AUG 89

Mr. Tim Cook
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
08-375-6	W7	16 AUG 89
08-375-7	W8	16 AUG 89
08-375-8	W9	16 AUG 89
08-375-9	B1	16 AUG 89
08-375-10	W5D	16 AUG 89

PARAMETER	08-375-6	08-375-7	08-375-8	08-375-9	08-375-10
Chloroform, ug/L	<5	<50	<1	<1	<50
Chloromethane, ug/L	<5	<50	<1	<1	<50
Dibromochloromethane, ug/L	<5	<50	<1	<1	<50
Ethylbenzene, ug/L	<5	<50	<1	<1	<50
Methylene chloride, ug/L	<5	<50	<1	<1	<50
Trichloroethene, ug/L	240	<50	37	<1	450
Trichlorofluoromethane, ug/L	<5	<50	<1	<1	<50
Toluene, ug/L	<5	<50	<1	<1	<50
Tetrachloroethene, ug/L	940	<50	37	6	1100
Vinyl chloride, ug/L	<5	<50	<1	<1	620
trans-1,3-Dichloropropene, ug/L	<5	<50	<1	<1	<50
Semi-Quantified Results **					
2-Butanone, ug/L	---	2600	---	---	---
Acetone, ug/L	---	8300	---	---	---

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

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-08-375

Received: 16 AUG 89
Reported: 25 AUG 89

Mr. Tim Cook
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-375-11	Trip Blank	16 AUG 89

PARAMETER	08-375-11
Purgeable Priority Pollutants	
Date Analyzed	08.23.89
Date Extracted	08.23.89
Dilution Factor, Times	1
1,1,1-Trichloroethane, ug/L	<1
1,1,2,2-Tetrachloroethane, ug/L	<1
1,1,2-Trichloroethane, ug/L	<1
1,1-Dichloroethane, ug/L	<1
1,1-Dichloroethene, ug/L	<1
1,2-Dichloroethane, ug/L	<1
1,2-Dichloroethene (Total), ug/L	<1
1,2-Dichloropropane, ug/L	<1
1,3-Dichloropropene, ug/L	<1
2-Chloroethylvinylether, ug/L	<1
Acrolein, ug/L	<10
Acrylonitrile, ug/L	<10
Bromodichloromethane, ug/L	<1
Bromomethane, ug/L	<1
Benzene, ug/L	<1
Bromoform, ug/L	<1
Chlorobenzene, ug/L	<1
Carbon Tetrachloride, ug/L	<1
Chloroethane, ug/L	<1
Chloroform, ug/L	<1
Chloromethane, ug/L	<1
Dibromochloromethane, ug/L	<1
Ethylbenzene, ug/L	<1

BROWN AND CALDWELL LABORATORIES

1255 POWELL STREET EMERYVILLE, CA 94608 • (415) 428-2300

ANALYTICAL REPORT

LOG NO: E89-08-375

Received: 16 AUG 89
Reported: 25 AUG 89

Mr. Tim Cook
Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 4459-02

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, BLANK WATER SAMPLES	DATE SAMPLED
08-375-11	Trip Blank	16 AUG 89

PARAMETER	08-375-11
Methylene chloride, ug/L	<1
Trichloroethene, ug/L	<1
Trichlorofluoromethane, ug/L	<1
Toluene, ug/L	<1
Tetrachloroethene, ug/L	<1
Vinyl chloride, ug/L	<1
trans-1,3-Dichloropropene, ug/L	<1

Holly J. Ficklin for
Sim D. Lessley, Ph.D., Laboratory Director

CHAIN OF CUSTODY RECORD

BC Log Number 8908375

Client name BC - Cook	Project or PO# 4459-02
Address	Phone #
City, State, Zip	Report attention Tim Cook

Sampled by Ron Golonbow

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	8240	Hazardous sample Special handling required	Remarks
	8-16		GW	W1	2			
				W3	2			
				W4	2			
				W5	2			
				W6	2			
				W7	2			
				W8	2			
				W9	2			
				B1	2			
				WSD	2			
				Trip Blank	2			

Analyses required

	Signature	Print Name	Company	Date	Time
Relinquished by	R Golonbow	Ron Golonbow	B+C	8/16/89	1705
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory	Ulysses J Bellon	Ulysses Bellon	BCA	8/16/89	1705

BROWN AND CALDWELL LABORATORIES

☒ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553

☐ 1200 Pacifico Avenue, Anaheim, CA 92805

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 expense.

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

GROUNDWATER ANALYTICAL RESULTS - QUARTERLY MONITORING

Analytical Report

LOG NO: E90-03-212

Received: 07 MAR 90
Reported: 22 MAR 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
03-212-1	W-8	06 MAR 90
03-212-2	W-7	06 MAR 90
03-212-3	W-3	06 MAR 90
03-212-4	B-1	06 MAR 90
03-212-5	W-1	06 MAR 90

PARAMETER	03-212-1	03-212-2	03-212-3	03-212-4	03-212-5
Purgeable Priority Pollutants					
Date Extracted	03.14.90	03.20.90	03.20.90	03.14.90	03.14.90
1,1,1-Trichloroethane, ug/L	<1000	<5	<5	<1	<500
1,1,2,2-Tetrachloroethane, ug/L	<1000	<5	<5	<1	<500
1,1,2-Trichloroethane, ug/L	<1000	<5	<5	<1	<500
1,1-Dichloroethane, ug/L	<1000	<5	<5	<1	<500
1,1-Dichloroethene, ug/L	<1000	<5	<5	<1	<500
1,2-Dichloroethane, ug/L	<1000	<5	<5	<1	<500
1,2-Dichloropropane, ug/L	<1000	<5	<5	<1	<500
1,3-Dichloropropene, ug/L	<1000	<5	<5	<1	<500
2-Chloroethylvinylether, ug/L	<1000	<5	<5	<1	<500
2-Hexanone, ug/L	<1000	<5	<5	<1	<500
Acetone, ug/L	870000	<50	<50	<10	290000
Acrolein, ug/L	<10000	<50	<50	<10	<5000
Acrylonitrile, ug/L	<10000	<50	<50	<10	<5000
Bromodichloromethane, ug/L	<1000	<5	<5	<1	<500
Bromomethane, ug/L	<1000	<5	<5	<1	<500
Benzene, ug/L	<1000	<5	<5	<1	<500
Bromoform, ug/L	<1000	<5	<5	<1	<500
Chlorobenzene, ug/L	<1000	<5	<5	<1	<500
Carbon Tetrachloride, ug/L	<1000	<5	<5	<1	<500
Chloroethane, ug/L	<1000	<5	<5	<1	<500
Chloroform, ug/L	<1000	<5	<5	<1	<500

1255 Powell Street
Emeryville, CA 94608

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Fax: 415/547-3643

BCA *B C Analytical*

Analytical Report

LOG NO: E90-03-212

Received: 07 MAR 90
Reported: 22 MAR 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
03-212-1	W-8	06 MAR 90
03-212-2	W-7	06 MAR 90
03-212-3	W-3	06 MAR 90
03-212-4	B-1	06 MAR 90
03-212-5	W-1	06 MAR 90

PARAMETER	03-212-1	03-212-2	03-212-3	03-212-4	03-212-5
Chloromethane, ug/L	<1000	<5	<5	<1	<500
Carbon Disulfide, ug/L	<1000	<5	<5	<1	<500
Dibromochloromethane, ug/L	<1000	<5	<5	<1	<500
Ethylbenzene, ug/L	<1000	<5	<5	<1	<500
Freon 113, ug/L	<1000	<5	<5	<1	<500
Methyl ethyl ketone, ug/L	<20000	<100	<100	<20	<10000
Methyl isobutyl ketone, ug/L	<1000	<5	<5	<1	<500
Methylene chloride, ug/L	<1000	<5	<5	<1	<500
Styrene, ug/L	<1000	<5	<5	<1	<500
Trichloroethene, ug/L	<1000	240	130	<1	<500
Trichlorofluoromethane, ug/L	<1000	<5	<5	<1	<500
Toluene, ug/L	<1000	<5	<5	<1	<500
Tetrachloroethene, ug/L	<1000	740	29	2	<500
Vinyl acetate, ug/L	<1000	<5	<5	<1	<500
Vinyl chloride, ug/L	<1000	<5	24	<1	<500
Total Xylene Isomers, ug/L	<1000	<5	<5	<1	<500
cis-1,2-Dichloroethene, ug/L	<1000	72	400	2	<500
trans-1,2-Dichloroethene, ug/L	<1000	<5	<5	<1	<500
trans-1,3-Dichloropropene, ug/L	<1000	<5	<5	<1	<500
Semi-Quantified Results **					
Diisopropyl Ether, ug/L	---	---	30	---	---

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Emeryville, CA 94608

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BCA B C Analytical

Analytical Report

LOG NO: E90-03-212

Received: 07 MAR 90
Reported: 22 MAR 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
03-212-1	W-8	06 MAR 90
03-212-2	W-7	06 MAR 90
03-212-3	W-3	06 MAR 90
03-212-4	B-1	06 MAR 90
03-212-5	W-1	06 MAR 90

PARAMETER	03-212-1	03-212-2	03-212-3	03-212-4	03-212-5

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

1255 Powell Street
Emeryville, CA 94608

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B C Analytical

Analytical Report

LOG NO: E90-03-212

Received: 07 MAR 90
Reported: 22 MAR 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
03-212-6	W-5	06 MAR 90
03-212-7	W-4	06 MAR 90
03-212-8	W-6	07 MAR 90
03-212-9	W-9	07 MAR 90

PARAMETER	03-212-6	03-212-7	03-212-8	03-212-9
Purgeable Priority Pollutants				
Date Extracted	03.14.90	03.14.90	03.14.90	03.15.90
1,1,1-Trichloroethane, ug/L	<20	<500	<20	<1
1,1,2,2-Tetrachloroethane, ug/L	<20	<500	<20	<1
1,1,2-Trichloroethane, ug/L	<20	<500	<20	<1
1,1-Dichloroethane, ug/L	<20	<500	<20	<1
1,1-Dichloroethene, ug/L	<20	<500	<20	<1
1,2-Dichloroethane, ug/L	<20	<500	<20	<1
1,2-Dichloropropane, ug/L	<20	<500	<20	<1
1,3-Dichloropropene, ug/L	<20	<500	<20	<1
2-Chloroethylvinylether, ug/L	<20	<500	<20	<1
2-Hexanone, ug/L	<20	400000	<200	<10
Acetone, ug/L	<200	<5000	<200	<10
Acrolein, ug/L	<200	<5000	<200	<10
Acrylonitrile, ug/L	<20	<500	<20	<1
Bromodichloromethane, ug/L	<20	<500	<20	<1
Bromomethane, ug/L	<20	<500	<20	<1
Benzene, ug/L	<20	<500	<20	<1
Bromoform, ug/L	<20	<500	<20	<1
Chlorobenzene, ug/L	<20	<500	<20	<1
Carbon Tetrachloride, ug/L	<20	<500	<20	<1
Chloroethane, ug/L	<20	<500	<20	2
Chloroform, ug/L	<20	<500	<20	<1
Chloromethane, ug/L				

Analytical Report

LOG NO: E90-03-212

Received: 07 MAR 90
Reported: 22 MAR 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
03-212-6	W-5	06 MAR 90
03-212-7	W-4	06 MAR 90
03-212-8	W-6	07 MAR 90
03-212-9	W-9	07 MAR 90

PARAMETER	03-212-6	03-212-7	03-212-8	03-212-9
Carbon Disulfide, ug/L	<20	<500	<20	<1
Dibromochloromethane, ug/L	<20	<500	<20	<1
Ethylbenzene, ug/L	<20	<500	<20	<1
Freon 113, ug/L	<20	<500	<20	<1
Methyl ethyl ketone, ug/L	<400	<1000	<400	<20
Methyl isobutyl ketone, ug/L	<20	<500	<20	<1
Methylene chloride, ug/L	<20	<500	<20	<1
Styrene, ug/L	<20	<500	<20	<1
Trichloroethene, ug/L	460	<500	280	21
Trichlorofluoromethane, ug/L	<20	<500	<20	<1
Toluene, ug/L	<20	1200	<20	<1
Tetrachloroethene, ug/L	5600	<500	1700	13
Vinyl acetate, ug/L	<20	<500	<20	<1
Vinyl chloride, ug/L	190	<500	<20	<1
Total Xylene Isomers, ug/L	<20	<500	<20	<1
cis-1,2-Dichloroethene, ug/L	1900	<500	<20	<1
trans-1,2-Dichloroethene, ug/L	<20	<500	<20	<1
trans-1,3-Dichloropropene, ug/L	<20	<500	<20	<1
Semi-Quantified Results **				
Methylethylacetate, ug/L	---	10000	---	---

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

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

1255 Powell Street
Emeryville, CA 94608
415/428-2300
Fax: 415/547-3643

BCA B C Analytical

CHAIN OF CUSTODY RECORD

BC Log Number _____

Client name	Project or PO#
BC-P.H.	5081-02
Address 3480 BUSKIRK AVE.	**Phone #**
City, State, Zip PLEASANT HILL, CA 94523	**Report attention** DONNA COURINGTON

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by K. McILVENNA, S. HALLOCK / Sample description	Number of containers	Analyses required: 8240	Hazardous sample / Special handling required	Remarks
1	3-6		GW	W-8	2	X		
2	"		"	W-7	"	"		
3	"		"	W-3	"	"		KEPT ON ICE
4	"		"	~~AB~~ 1	"	"		
5	"		"	W-1	"	"		
6	"		"	W-5	"	"		
7	"		"	W-4	"	"		
8	"		"	W-6	"	"		
9	3-7		"	W-9	"	"		

	Signature	Print Name	Company	Date	Time
Relinquished by		KEVIN L. McILVENNA	BC-P.H.	3-7-90	
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory		Monika Scott	BCL	3-7-90	

BROWN AND CALDWELL LABORATORIES

- ☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553
- ☐ 1200 Pacifico Avenue, Anaheim, CA 92805

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 expense.

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

Analytical Report

LOG NO: E90-06-145

Received: 07 JUN 90
Reported: 20 JUN 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
06-145-1	B-1	06 JUN 90
06-145-2	W-1	06 JUN 90
06-145-3	W-3	06 JUN 90
06-145-4	W-4	06 JUN 90
06-145-5	W-5	06 JUN 90

PARAMETER	06-145-1	06-145-2	06-145-3	06-145-4	06-145-5
Vol.Pri.Poll. (EPA-8240)					
Date Analyzed	06.15.90	06.15.90	06.15.90	06.15.90	06.15.90
Date Extracted	06.15.90	06.15.90	06.15.90	06.15.90	06.15.90
Dilution Factor, Times	1	2000	2	200	50
1,1,1-Trichloroethane, ug/L	<1	<2000	<2	<200	<50
1,1,2,2-Tetrachloroethane, ug/L	<1	<2000	<2	<200	<50
1,1,2-Trichloroethane, ug/L	<1	<2000	<2	<200	<50
1,1-Dichloroethane, ug/L	<1	<2000	2	<200	<50
1,1-Dichloroethene, ug/L	<1	<2000	<2	<200	<50
1,2-Dichloroethane, ug/L	<1	<2000	<2	<200	<50
1,2-Dichlorobenzene, ug/L	<1	<2000	<2	<200	<50
1,2-Dichloropropane, ug/L	<1	<2000	<2	<200	<50
1,3-Dichlorobenzene, ug/L	<1	<2000	<2	<200	<50
1,3-Dichloropropene, ug/L	<1	<2000	<2	<200	<50
1,4-Dichlorobenzene, ug/L	<1	<2000	<2	<200	<50
2-Chloroethylvinylether, ug/L	<1	<2000	<2	<200	<50
2-Hexanone, ug/L	<1	<2000	<2	<200	<50
4-Methyl-2-Pentanone, ug/L	<1	<2000	<2	<200	<50
Acetone, ug/L	<10	180000	<20	60000	<500
Acrolein, ug/L	<10	<20000	<20	<2000	<500
Acrylonitrile, ug/L	<10	<20000	<20	<2000	<500
Bromodichloromethane, ug/L	<1	<2000	<2	<200	<50
Bromomethane, ug/L	<1	<2000	<2	<200	<50

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-06-145

Received: 07 JUN 90
Reported: 20 JUN 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
06-145-1	B-1	06 JUN 90
06-145-2	W-1	06 JUN 90
06-145-3	W-3	06 JUN 90
06-145-4	W-4	06 JUN 90
06-145-5	W-5	06 JUN 90

PARAMETER	06-145-1	06-145-2	06-145-3	06-145-4	06-145-5
Benzene, ug/L	<1	<2000	<2	<200	<50
Bromoform, ug/L	<1	<2000	<2	<200	<50
Chlorobenzene, ug/L	<1	<2000	<2	<200	<50
Carbon Tetrachloride, ug/L	<1	<2000	<2	<200	<50
Chloroethane, ug/L	<1	<2000	<2	<200	<50
Chloroform, ug/L	<1	<2000	<2	<200	<50
Chloromethane, ug/L	<1	<2000	<2	<200	<50
Carbon Disulfide, ug/L	<1	<2000	<2	<200	<50
Dibromochloromethane, ug/L	<1	<2000	<2	<200	<50
Ethylbenzene, ug/L	<1	<2000	<2	<200	<50
Freon 113, ug/L	<1	<2000	<2	<200	<50
Methyl ethyl ketone, ug/L	<20	<40000	<40	<4000	<1000
Methylene chloride, ug/L	<5	<10000	<10	<1000	<200
Styrene, ug/L	<1	<2000	<2	<200	<50
Trichloroethene, ug/L	<1	<2000	200	<200	340
Trichlorofluoromethane, ug/L	<1	<2000	<2	<200	<50
Toluene, ug/L	<1	<2000	<2	400	<50
Tetrachloroethene, ug/L	2	<2000	340	390	2100
Vinyl acetate, ug/L	<1	<2000	<2	<200	<50
Vinyl chloride, ug/L	<1	<2000	<2	<200	300
Total Xylene Isomers, ug/L	<1	<2000	<2	<200	<50
cis-1,2-Dichloroethene, ug/L	1	<2000	140	350	4200
trans-1,2-Dichloroethene, ug/L	<1	<2000	<2	<200	<50

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-06-145

Received: 07 JUN 90
Reported: 20 JUN 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
06-145-1	B-1	06 JUN 90
06-145-2	W-1	06 JUN 90
06-145-3	W-3	06 JUN 90
06-145-4	W-4	06 JUN 90
06-145-5	W-5	06 JUN 90

PARAMETER	06-145-1	06-145-2	06-145-3	06-145-4	06-145-5
trans-1,3-Dichloropropene, ug/L	<1	<2000	<2	<200	<50
Semi-Quantified Results **					
Diisopropyl Ether, ug/L	---	---	40	---	---

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

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-06-145

Received: 07 JUN 90
Reported: 20 JUN 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
06-145-6	W-6	06 JUN 90
06-145-7	W-7	07 JUN 90
06-145-8	W-8	07 JUN 90
06-145-9	W-9	07 JUN 90

PARAMETER	06-145-6	06-145-7	06-145-8	06-145-9
Vol.Pri.Poll. (EPA-8240)				
Date Analyzed	06.15.90	06.15.90	06.15.90	06.15.90
Date Extracted	06.15.90	06.15.90	06.15.90	06.15.90
Dilution Factor, Times	5	5	1000	1
1,1,1-Trichloroethane, ug/L	<5	<5	<1000	<1
1,1,2,2-Tetrachloroethane, ug/L	<5	<5	<1000	<1
1,1,2-Trichloroethane, ug/L	<5	<5	<1000	<1
1,1-Dichloroethane, ug/L	<5	<5	<1000	<1
1,1-Dichloroethene, ug/L	<5	<5	<1000	<1
1,2-Dichloroethane, ug/L	<5	<5	<1000	<1
1,2-Dichlorobenzene, ug/L	<5	<5	<1000	<1
1,2-Dichloropropane, ug/L	<5	<5	<1000	<1
1,3-Dichlorobenzene, ug/L	<5	<5	<1000	<1
1,3-Dichloropropene, ug/L	<5	<5	<1000	<1
1,4-Dichlorobenzene, ug/L	<5	<5	<1000	<1
2-Chloroethylvinylether, ug/L	<5	<5	<1000	<1
2-Hexanone, ug/L	<5	<5	<1000	<1
4-Methyl-2-Pentanone, ug/L	<5	<5	<1000	<1
Acetone, ug/L	<50	<50	390000	<10
Acrolein, ug/L	<50	<50	<10000	<10
Acrylonitrile, ug/L	<50	<50	<10000	<10
Bromodichloromethane, ug/L	<5	<5	<1000	<1
Bromomethane, ug/L	<5	<5	<1000	<1
Benzene, ug/L	<5	<5	<1000	<1

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-06-145

Received: 07 JUN 90
Reported: 20 JUN 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
06-145-6	W-6	06 JUN 90
06-145-7	W-7	07 JUN 90
06-145-8	W-8	07 JUN 90
06-145-9	W-9	07 JUN 90

PARAMETER	06-145-6	06-145-7	06-145-8	06-145-9
Bromoform, ug/L	<5	<5	<1000	<1
Chlorobenzene, ug/L	<5	<5	<1000	<1
Carbon Tetrachloride, ug/L	<5	<5	<1000	<1
Chloroethane, ug/L	<5	<5	<1000	<1
Chloroform, ug/L	<5	<5	<1000	<1
Chloromethane, ug/L	<5	<5	<1000	<1
Carbon Disulfide, ug/L	<5	<5	<1000	<1
Dibromochloromethane, ug/L	<5	<5	<1000	<1
Ethylbenzene, ug/L	<5	<5	<1000	<1
Freon 113, ug/L	<5	<5	<1000	<1
Methyl ethyl ketone, ug/L	<100	<100	<20000	<20
Methylene chloride, ug/L	<20	<20	<5000	<5
Styrene, ug/L	<5	<5	<1000	<1
Trichloroethene, ug/L	230	210	<1000	28
Trichlorofluoromethane, ug/L	<5	<5	<1000	<1
Toluene, ug/L	<5	<5	<1000	<1
Tetrachloroethene, ug/L	940	590	<1000	23
Vinyl acetate, ug/L	<5	<5	<1000	<1
Vinyl chloride, ug/L	<5	<5	<1000	<1
Total Xylene Isomers, ug/L	<5	<5	<1000	<1
cis-1,2-Dichloroethene, ug/L	<5	81	<1000	<1
trans-1,2-Dichloroethene, ug/L	<5	<5	<1000	<1
trans-1,3-Dichloropropene, ug/L	<5	<5	<1000	<1

Hedy J. Fricklin for
Sim D. Lessley, Ph.D., Laboratory Director

BC Brown and Caldwell Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

CHAIN OF CUSTODY RECORD

BCA Log Number [redacted]

Client name	BCPH	Project or PO#	5081-02
Address		Phone #	937-9010
City, State, Zip	Pleasant Hill	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	6/6/90	1305	GW	B-1	2	X		
-2		1542		W-1				
-3		1423		W-3				
-4		1505		W-4				
-5		1110		W-5				
-6	↓	1158		W-6				
-7	6/7/90	1200		W-7				
-8		1055		W-8				
-9	↓	1312	↓	W-9	↓	↓		

	Signature	Print Name	Company	Date	Time
Relinquished by		Sandy Hallock	BCPH		
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory		KATHI FORES	BCA	6/7	14:30

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: AQ—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
Emeryville CA 94608
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Analytical Report

LOG NO: E90-09-139

Received: 07 SEP 90
Reported: 20 SEP 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
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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Analytical Report

LOG NO: E90-09-139

Received: 07 SEP 90
Reported: 20 SEP 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
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.

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
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FAX 415-547-3643

Analytical Report

LOG NO: E90-09-139

Received: 07 SEP 90
Reported: 20 SEP 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
09-139-6	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

Analytical Report

LOG NO: E90-09-139

Received: 07 SEP 90
Reported: 20 SEP 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
09-139-6	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

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
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Analytical Report

LOG NO: E90-09-139

Received: 07 SEP 90
Reported: 20 SEP 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
09-139-6	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

1255 Powell Street
Emeryville CA 94608
415-428-2300
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CHAIN OF CUSTODY RECORD

BCA Log Number 7081.1

Client name BCPH / James Ruiser	Project or PO# 5081-02
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

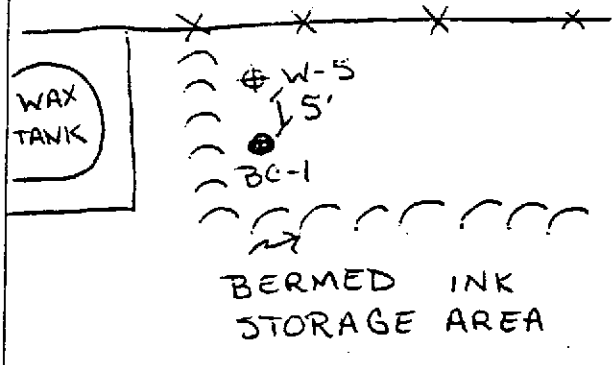
Note: Samples are discarded 30 days after results are reported unless other arrangements are made. Hazardous samples will be returned to client or disposed of at client's expense.

Disposal arrangements: _____

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

BROWN AND CALDWELL – BOREHOLE LOG

LOCATION OF BORING



CLIENT	James River
LOCATION	San Leandro
JOB NO.	5081-06
BORING NO.	BC-1
SHEET	1 OF 1
WATER LEVEL	
TIME	
DATE	
CASING DEPTH	
DRILLING CONTRACTOR	Kvilhaug
DRILLING METHOD	8" HSA
DRILLING START TIME	1350
DRILLING FINISH TIME	1500
DRILLING START DATE	11/13
DRILLING FINISH DATE	11/13
SAMPLING METHOD	2" Cal. mod., driven
N/S	
E/W	
ELEV.	
SURFACE CONDITIONS	asphalt ink storage area

DRILLER Rodney RIG Mobile Drill B-53 61

BY D. Courington DATE 11/13/90 CHK'D BY

WELL CONST. CASING	WELL CONST. ANNULUS	SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	DEPTH IN FEET	SOIL CALLOUT
						0	
					20/30	1	
					40/12	2	
					18/20	3	
					5/12	4	CL
					14/6	5	
					6/24	6	
					5/10	7	
					15/5	8	
					8/10	9	
					5/8	10	
					12/4	1	
					7/10	2	
					5/8	3	
					10/6	4	
					8/10	5	SM
					3/3	6	
					5/5	7	
					10/17	8	
						9	
						0	

Backfilled with cement/5% bentonite grout

MATERIALS ENCOUNTERED AND DRILLING CONDITIONS

0-1' – asphalt and baserock

1'-2.5' – silty clay, black (7.5 YR N2/0), dry, loose, TLV = 200 ppm

2.5'-9' – sandy clay, very dark gray (7.5 YR N 3/0), damp, 20% very fine grained sand, hard, non-plastic, TLV = 700 ppm @ 4', strong odor, vertical open root traces

TLV = 400 ppm @ 7'

9'-14.5' – silty clay, dk. greenish-gray (5 GY 4/1), root traces, moist, highly plastic, soft,

TLV @ 10' = 60 ppm
TLV @ 12' = 320 ppm
TLV @ 13' = 160 ppm

30% fine sand @ 12'
trace sand + gravel @ 14'

14.5'-16' – silty sand, dk. greenish gray, (5 GY 4/1), wet, gravel to 1", and vy. coarse sand at 15.5', well graded

16'-19' – silty clay, color as above, damp, trace very fine sand, root traces

TOTAL DEPTH = 19'

BROWN AND CALDWELL – BOREHOLE LOG

LOCATION OF BORING

CLIENT	James River
LOCATION	San Leandro
JOB NO.	5081-06
BORING NO.	BC-2
SHEET	1 OF 1
WATER LEVEL	
TIME	
DATE	
CASING DEPTH	
DRILLING START TIME	0810
DRILLING FINISH TIME	1000
DRILLING CONTRACTOR	Kvilhaug
DRILLING METHOD	8" HSA
DRILLING START DATE	11/14
DRILLING FINISH DATE	11/14
SAMPLING METHOD	2" Cal. mod., driven
N/S	
E/W	
ELEV.	
SURFACE CONDITIONS	asphalt ink storage area

DRILLER Rodney RIG mobile Drill B-61

BY D. Courington DATE 11/14 CHK'D BY

WELL CONST. CASING	WELL CONST. ANNULUS	SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	DEPTH IN FEET	SOIL CALLOUT	MATERIALS ENCOUNTERED AND DRILLING CONDITIONS
						0		0-1'- Asphalt and baserock, blue ink stains on baserock
					10/20	1	–	1'-4'- silty clay, black (5 YR 2.5/1), sl. damp, non-plastic, TLV = 60 ppm, large brick fragments coated with ink, FILL
					25/15	2	FILL	
					20/20	3		
					6/8	4	–	4'-7'- silty clay, dk. grayish brown (2.5 Y 3/2), slightly damp, highly plastic, open root traces, TLV = 110 ppm, grades to unit below
					14/4	5		
					9/11	6	CL	
					4/6	7	–	7'-14.5'- sandy clay, olive gray (5 Y 4/2), 15-20% fine sand, moist, highly plastic, $CaCO_3$ precipitate throughout, TLV = 140 ppm @ 8'
					7/3	8		
					6/8	9		
					4/7	10	CL	TLV = 140 ppm @ 10'
					8/4	11		TLV = 160 ppm @ 12'
					6/10	12		rust-colored mottling @ 12', gravel-sized $CaCO_3$ nodules,
					6/8	13		TLV = 80 ppm @ 14'
					8/4	14		
					6/8	15	▽	14.5'-17'- clayey sand, dk. greenish gray (5 GY 4/1), wet,
					5/9	16	SC	
Backfilled with cement/ 5% bentonite grout					10/6	17	–	
					10/14	18		17'-19'- silty clay, black (5Y 2.5/1), sl. damp to dry, low plasticity
						19		TOTAL DEPTH = 19'
						20		

BROWN AND CALDWELL – BOREHOLE LOG

LOCATION OF BORING

CLIENT James River

LOCATION San [illegible] JOB NO. 5081-06

BORING NO. BC-3

SHEET 1 OF 1

WATER LEVEL				
TIME				
DATE				
CASING DEPTH				

DRILLING: START TIME 0940, FINISH TIME 1025

DRILLING CONTRACTOR Kvilhaug

DRILLING METHOD 8" HSA

DRILLING: START DATE 11/14, FINISH DATE 11/14

SAMPLING METHOD 2" Cal. mod., driven

DRILLER Rodney RIG Mobile Drill B-61

BY D. Curington DATE 11/14/90 CHK'D BY

N/S E/W ELEV.

SURFACE CONDITIONS

WELL CONST. CASING	WELL CONST. ANNULUS	SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	DEPTH IN FEET	SOIL CALLOUT	MATERIALS ENCOUNTERED AND DRILLING CONDITIONS
						0		asphalt and baserock to 1', sand backfill to 2'
					8	1	FILL	
					8	2		2'-4.5' - silty to sandy clay, dk. brown (7.5 YR 3/2), slightly damp, firm, non-plastic, root material
					14	3		
					6	3	CL	
					8	4		
					12	4		
					5	5		4.5'-11.5' - sandy clay, dk. brown (7.5YR3/2) grading to dk. grey (5Y 4/1 grey) at 8', 10%-15% medium sand, firm, open root traces, scattered $CaCO_3$ nodules + as fillings in root traces, thin (1.5") clayey sand lenses at 8' and 11', sands are loose
					9	5		
					13	6		
					6	6		
					9	7		
					15	7		
					3	8		
					6	8		
					10	9		
					4	9		
					6	10		
					8	10		
					5	1		
					7	1		
					10	2	SM	11.5'-12.5' - silty sand, gray, soft, non-plastic
					3	2		12.5'-15' - silty clay, black (10YR2/1), root traces, abundant small $CaCO_3$ nodules
					5	3		
					7	3	CL	
					1	4		
					1	4		
					2	5	▽	
					3	5	SW	15'-16' - sand, gravelly, loose, wet, well graded
					3	6		
						6	CL	16'-17' - silty clay, black, sl. damp, firm
						7		
						7		TOTAL DEPTH = 17'
						8		
						8		
						9		
						9		
						0		

Backfilled with cement / 5% bentonite grout

BROWN AND CALDWELL – BOREHOLE LOG

LOCATION OF BORING

CLIENT James River			BORING NO. MW-10
LOCATION San Leandro		JOB NO. 5081-06	SHEET 1 OF 2
WATER LEVEL			DRILLING START / FINISH
TIME			TIME 0900 / 1220
DATE			DATE 11/13 / 11/13
CASING DEPTH			
DRILLING CONTRACTOR Kvilhaug			
DRILLING METHOD 8" HSA			
SAMPLING METHOD 2" Cal. mod., driven			

DRILLER Rodney RIG mobile Drill B-61

BY D. Covington DATE 11/13/90 CHK'D BY

N/S E/W ELEV.

SURFACE CONDITIONS

WELL CONST. CASING	WELL CONST. ANNULUS	SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	DEPTH IN FEET	SOIL CALLOUT	MATERIALS ENCOUNTERED AND DRILLING CONDITIONS
						0		Gravel backfill of area excavated in pipeline removal
						1		
					3/2	2		2'-4'- Gravel with minor amts. of sand and clay matrix (fill)
Blank	cement/5% bentonite grout				2/5	3	FILL	
					7/14	4		4'-7.5'- silty clay, black (5Y 2.5/1), sl. damp soft, moderately plastic, blue ink in 4'-4.5', TLV = 210 ppm; color change to dk. gray (5Y 4/1) at 6', small roots throughout, TLV = 400 ppm @ 6'
PVC	Bent. Pellets				2/12	5		
4"					16/4	6	CL	
					8/10	7		
					5/7	8		7.5'-11'- sandy clay, dk gray (5Y 4/1), moist, soft, 30% fine sand, TLV = 300 ppm @ 7.5', TLV = 220 ppm @ 9', TLV = 360 ppm @ 10', small white nodules + rust staining @ 9'-10'
1-4'					10/5	9	CL	
					7/14	10		
slots					4/6	1		
0.02"					11/4	2	SC	11'-13'- clayey sand, color as above, 60% fine sand, strong alcohol(?) odor, TLV = 420 ppm @ 12'
screen,					6/12	3		13'-15'- sandy clay, color as above, 30% fine sand, v.y. strong odors, TLV = 800 ppm @ 14'
PVC	#3 Monterey sand				5/5	4	CL	
					4/10	5	▽	15'-17.5'- clayey sand as at 11', wet at 13'
4"					12/18	6	SC	
					7/16	7		
Bentonite pellets					25/8	8	CL	17.5'-23'- clay, black (2.5Y N2/0), trace silt, dry, small white nodules ($CaCO_3$?) throughout, sharp upper contact
					16/30	9		
						20		

BROWN AND CALDWELL – BOREHOLE LOG

LOCATION OF BORING

CLIENT James River

LOCATION San Leandro

JOB NO. 5081-06

BORING NO. MW-10

SHEET 2 OF 2

WATER LEVEL

TIME

DATE

CASING DEPTH

DRILLING: START TIME / FINISH TIME / START DATE / FINISH DATE

DRILLING CONTRACTOR

DRILLING METHOD

SAMPLING METHOD

N/S E/W ELEV.

SURFACE CONDITIONS

DRILLER

RIG

BY

DATE

CHK'D BY

WELL CONST. CASING	WELL CONST. ANNULUS	SAMPLER TYPE	INCHES DRIVEN / INCHES RECOVERED	SAMPLE NO. / SAMPLE DEPTH	BLOWS/6" SAMPLER	DEPTH IN FEET	SOIL CALLOUT	MATERIALS ENCOUNTERED AND DRILLING CONDITIONS
						20		
	Backfilled w/ Bentonite pellets				10/12	1		Clay, black, dry, to total depth
					18/8	2		
					8/10	3		TOTAL DEPTH = 23.0'
						4		
						5		
						6		
						7		
						8		
						9		
						30		
						1		
						2		
						3		
						4		
						5		
						6		
						7		
						8		
						9		
						40		

Analytical Report

LOG NO: E90-11-349

Received: 15 NOV 90
Reported: 27 NOV 90

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

Project: 5081-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
11-349-1	MW-10 (5.5'-6')	13 NOV 90
11-349-2	MW-10 (10'-10.5')	13 NOV 90
11-349-3	BC-1 (5'-5.5')	13 NOV 90
11-349-4	BC-1 (9.5'-10')	13 NOV 90
11-349-5	BC-2 (5.0'-5.5')	14 NOV 90

PARAMETER	11-349-1	11-349-2	11-349-3	11-349-4	11-349-5
EPA Method 8010					
Date Analyzed	11.19.90	11.20.90	11.20.90	11.20.90	11.20.90
Date Extracted	11.19.90	11.19.90	11.19.90	11.19.90	11.19.90
Confirmation Date	---	---	11.20.90	---	---
Dilution Factor, Times	1	1	1	1	1
1,1,1-Trichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2,2-Tetrachloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1,2-Trichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,1-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,2-Dichloroethene (Total), mg/kg	<0.01	<0.01	0.16	<0.01	<0.01
1,2-Dichloropropane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
2-Chloroethylvinylether, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Bromodichloromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Bromomethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Bromoform, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Carbon Tetrachloride, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Chloroethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

Brown and Caldwell
Analytical

1255 Powell Street
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Analytical Report

LOG NO: E90-11-349

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Reported: 27 NOV 90

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

Project: 5081-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
11-349-1	MW-10 (5.5'-6')	13 NOV 90
11-349-2	MW-10 (10'-10.5')	13 NOV 90
11-349-3	BC-1 (5'-5.5')	13 NOV 90
11-349-4	BC-1 (9.5'-10')	13 NOV 90
11-349-5	BC-2 (5.0'-5.5')	14 NOV 90

PARAMETER	11-349-1	11-349-2	11-349-3	11-349-4	11-349-5
Chloroform, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Chloromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Dibromochloromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Dichlorodifluoromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Freon 113, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Methylene chloride, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Trichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Trichlorofluoromethane, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Tetrachloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Vinyl chloride, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
cis-1,2-Dichloroethene, mg/kg	<0.01	<0.01	0.16	<0.01	<0.01
cis-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
trans-1,2-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
trans-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
11-349-1	MW-10 (5.5'-6')	13 NOV 90
11-349-2	MW-10 (10'-10.5')	13 NOV 90
11-349-3	BC-1 (5'-5.5')	13 NOV 90
11-349-4	BC-1 (9.5'-10')	13 NOV 90
11-349-5	BC-2 (5.0'-5.5')	14 NOV 90

PARAMETER	11-349-1	11-349-2	11-349-3	11-349-4	11-349-5
EPA Method 8020					
Date Analyzed	11.19.90	11.20.90	11.20.90	11.20.90	11.20.90
Date Extracted	11.19.90	11.19.90	11.19.90	11.19.90	11.19.90
Confirmation Date	11.20.90	11.20.90	11.20.90	11.20.90	11.20.90
Dilution Factor, Times	1	1	1	1	1
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Benzene, mg/kg	<0.1	<0.1	0.9	<0.1	<0.1
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01	<0.01	<0.01
Ethylbenzene, mg/kg	<0.01	0.07	0.03	<0.01	<0.01
Toluene, mg/kg	0.02	0.06	1.1	0.10	0.03
Total Xylene Isomers, mg/kg	<0.01	<0.01	0.13	0.08	<0.01

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Brown and Caldwell
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Pleasant Hill, California 94523

Project: 5081-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
11-349-6	BC-2 (9.5-10')	14 NOV 90
11-349-7	BC-3 (5.5'-6')	14 NOV 90
11-349-8	BC-3 (10'-10.5')	14 NOV 90
11-349-9	MW-10 (15'-15.5')	13 NOV 90
11-349-10	BC-2 (14.5'-15')	14 NOV 90

PARAMETER	11-349-6	11-349-7	11-349-8	11-349-9	11-349-10
Sample Held, Not Analyzed	---	---	---	HELD	HELD

Brown and Caldwell
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Project: 5081-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
11-349-6	BC-2 (9.5-10')	14 NOV 90
11-349-7	BC-3 (5.5'-6')	14 NOV 90
11-349-8	BC-3 (10'-10.5')	14 NOV 90
11-349-9	MW-10 (15'-15.5')	13 NOV 90
11-349-10	BC-2 (14.5'-15')	14 NOV 90

PARAMETER	11-349-6	11-349-7	11-349-8	11-349-9	11-349-10
EPA Method 8010					
Date Analyzed	11.20.90	11.20.90	11.20.90	---	---
Date Extracted	11.19.90	11.19.90	11.19.90	---	---
Dilution Factor, Times	1	1	1	---	---
1,1,1-Trichloroethane, mg/kg	<0.01	<0.01	<0.01	---	---
1,1,2,2-Tetrachloroethane, mg/kg	<0.01	<0.01	<0.01	---	---
1,1,2-Trichloroethane, mg/kg	<0.01	<0.01	<0.01	---	---
1,1-Dichloroethane, mg/kg	<0.01	<0.01	<0.01	---	---
1,1-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	---	---
1,2-Dichloroethane, mg/kg	<0.01	<0.01	<0.01	---	---
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	---	---
1,2-Dichloroethene (Total), mg/kg	<0.01	<0.01	<0.01	---	---
1,2-Dichloropropane, mg/kg	<0.01	<0.01	<0.01	---	---
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	---	---
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	---	---
2-Chloroethylvinylether, mg/kg	<0.01	<0.01	<0.01	---	---
Bromodichloromethane, mg/kg	<0.01	<0.01	<0.01	---	---
Bromomethane, mg/kg	<0.01	<0.01	<0.01	---	---
Bromoform, mg/kg	<0.01	<0.01	<0.01	---	---
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01	---	---
Carbon Tetrachloride, mg/kg	<0.01	<0.01	<0.01	---	---
Chloroethane, mg/kg	<0.01	<0.01	<0.01	---	---
Chloroform, mg/kg	<0.01	<0.01	<0.01	---	---

Brown and Caldwell
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Analytical Report

LOG NO: E90-11-349

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Reported: 27 NOV 90

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

Project: 5081-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
11-349-6	BC-2 (9.5-10')	14 NOV 90
11-349-7	BC-3 (5.5'-6')	14 NOV 90
11-349-8	BC-3 (10'-10.5')	14 NOV 90
11-349-9	MW-10 (15'-15.5')	13 NOV 90
11-349-10	BC-2 (14.5'-15')	14 NOV 90

PARAMETER	11-349-6	11-349-7	11-349-8	11-349-9	11-349-10
Chloromethane, mg/kg	<0.01	<0.01	<0.01	---	---
Dibromochloromethane, mg/kg	<0.01	<0.01	<0.01	---	---
Dichlorodifluoromethane, mg/kg	<0.01	<0.01	<0.01	---	---
Freon 113, mg/kg	<0.01	<0.01	<0.01	---	---
Methylene chloride, mg/kg	<0.01	<0.01	<0.01	---	---
Trichloroethene, mg/kg	<0.01	<0.01	<0.01	---	---
Trichlorofluoromethane, mg/kg	<0.01	<0.01	<0.01	---	---
Tetrachloroethene, mg/kg	<0.01	<0.01	<0.01	---	---
Vinyl chloride, mg/kg	<0.01	<0.01	<0.01	---	---
cis-1,2-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	---	---
cis-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01	---	---
trans-1,2-Dichloroethene, mg/kg	<0.01	<0.01	<0.01	---	---
trans-1,3-Dichloropropene, mg/kg	<0.01	<0.01	<0.01	---	---
Other EPA Method 8010	---	---	---	---	---

Brown and Caldwell
Analytical

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Analytical Report

LOG NO: E90-11-349

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

Project: 5081-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
11-349-6	BC-2 (9.5-10')	14 NOV 90
11-349-7	BC-3 (5.5'-6')	14 NOV 90
11-349-8	BC-3 (10'-10.5')	14 NOV 90
11-349-9	MW-10 (15'-15.5')	13 NOV 90
11-349-10	BC-2 (14.5'-15')	14 NOV 90

PARAMETER	11-349-6	11-349-7	11-349-8	11-349-9	11-349-10
EPA Method 8020					
Date Analyzed	11.20.90	11.20.90	11.20.90	---	---
Date Extracted	11.16.90	11.16.90	11.19.90	---	---
Confirmation Date	11.21.90	11.21.90	11.20.90	---	---
Dilution Factor, Times	1	1	1	---	---
1,2-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	---	---
1,3-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	---	---
1,4-Dichlorobenzene, mg/kg	<0.01	<0.01	<0.01	---	---
Benzene, mg/kg	<0.1	<0.1	<0.1	---	---
Chlorobenzene, mg/kg	<0.01	<0.01	<0.01	---	---
Ethylbenzene, mg/kg	<0.01	<0.01	<0.01	---	---
Toluene, mg/kg	0.03	0.04	0.08	---	---
Total Xylene Isomers, mg/kg	<0.01	<0.01	<0.01	---	---

Brown and Caldwell
Analytical

1255 Powell Street
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Analytical Report

LOG NO: E90-11-349

Received: 15 NOV 90
Reported: 27 NOV 90

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Brown and Caldwell
3480 Buskirk Avenue
Pleasant Hill, California 94523

Project: 5081-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, SOIL SAMPLES	DATE SAMPLED
11-349-11	BC-3 (14.5'-15')	14 NOV 90

PARAMETER	11-349-11
Sample Held, Not Analyzed	HELD

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

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

CHAIN OF CUSTODY RECORD

BC Log Number [redacted]

Client name: BC-PH	Project or PO#: 5081-06
Address:	Phone #:
City, State, Zip:	Report attention: D. Courington

Sampled by: D. Courington

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	NOUS	8010/8020	Hazardous sample Special handling required	Remarks
-1	11/13		SO	MW-10 (5.5'-6')	1	X	✓		will call
-2	"		"	MW-10 (10'-10.5')	"	X	✓		Friday - 11/16
-3	"		"	MW-10 (15'-15.5')	"	X			with
-4	"		"	BC-1 (5'-5.5')	"	X	✓		analyses
-5	"		"	BC-1 (9.5'-10')	"	X	✓		
-6	11/14		"	BC-2 (5.0'-5.5')	"	X	✓		
-7	"		"	BC-2 (9.5'-10')	"	X	✓		
-8	"		"	BC-2 (14.5'-15)	"	X			+ per
-9	"		"	BC-3 (5.5'-6')	"	X	✓		D Courington
-10	"		"	BC-3 (10'-10.5')	"	X	✓		11/16
-11	"		"	BC-3 (14.5'-15')	"	X			

	Signature	Print Name	Company	Date	Time
Relinquished by	Donna Courington		BC-PH	11/15	0800
Received by	[signature]	Karen Flores	BC	11/15	—
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

BROWN AND CALDWELL LABORATORIES

- ☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300
- ☐ 373 South Fair Oaks Avenue, Pasadena, CA 91105 (818) 795-7553
- ☐ 1200 Pacifico Avenue, Anaheim, CA 92805

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 expense.

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

Analytical Report

LOG NO: E90-11-410

Received: 16 NOV 90
Reported: 27 NOV 90

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

Project: 5081-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-410-1	W-10	16 NOV 90

PARAMETER	11-410-1
EPA Method 8010	
Date Analyzed	11.21.90
Confirmation Date	11.21.90
Dilution Factor, Times	200
1,1,1-Trichloroethane, ug/L	<100
1,1,2,2-Tetrachloroethane, ug/L	<100
1,1,2-Trichloroethane, ug/L	<100
1,1-Dichloroethane, ug/L	<100
1,1-Dichloroethene, ug/L	<100
1,2-Dichloroethane, ug/L	<100
1,2-Dichlorobenzene, ug/L	<100
1,2-Dichloroethene (Total), ug/L	2400
1,2-Dichloropropane, ug/L	<100
1,3-Dichlorobenzene, ug/L	<100
1,4-Dichlorobenzene, ug/L	<100
2-Chloroethylvinylether, ug/L	<100
Bromodichloromethane, ug/L	<100
Bromomethane, ug/L	<100
Bromoform, ug/L	<100
Chlorobenzene, ug/L	<100
Carbon Tetrachloride, ug/L	<100
Chloroethane, ug/L	<100
Chloroform, ug/L	<100
Chloromethane, ug/L	<100
Dibromochloromethane, ug/L	<100
Dichlorodifluoromethane, ug/L	<100
Freon 113, ug/L	<100

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

Analytical Report

LOG NO: E90-11-410

Received: 16 NOV 90
Reported: 27 NOV 90

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

Project: 5081-06

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
11-410-1	W-10	16 NOV 90

PARAMETER	11-410-1
Methylene chloride, ug/L	<100
Trichloroethene, ug/L	<100
Trichlorofluoromethane, ug/L	<100
Tetrachloroethene, ug/L	100
Vinyl chloride, ug/L	<100
cis-1,2-Dichloroethene, ug/L	2400
cis-1,3-Dichloropropene, ug/L	<100
trans-1,2-Dichloroethene, ug/L	<100
trans-1,3-Dichloropropene, ug/L	<100
EPA Method 8020	
Date Analyzed	11.21.90
Confirmation Date	11.21.90
Dilution Factor, Times	200
1,2-Dichlorobenzene, ug/L	<100
1,3-Dichlorobenzene, ug/L	<100
1,4-Dichlorobenzene, ug/L	<100
Benzene, ug/L	<100
Chlorobenzene, ug/L	<100
Ethylbenzene, ug/L	440
Toluene, ug/L	22000
Total Xylene Isomers, ug/L	2100

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

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

CHAIN OF CUSTODY RECORD

BCA Log Number 901410

Client name	Project or PO#
BCPH	5031-06
Address	**Phone #**
City, State, Zip	**Report attention**
	Donna Covington

Sampled by: John Nielsen

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sample description	Number of containers	8010/(5CL/8240)	Hazardous sample Special handling required	Remarks
	11/16	1430	GW	GW-10	4	X		

Analyses required

	Signature	Print Name	Company	Date	Time
Relinquished by		John Nielsen	BCPH	11/16/90	
Received by		KATHI FLORES	BCA	11/16/90	1500
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory					

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: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum

REVISED RESULTS OF OFF-SITE GROUNDWATER SURVEY REPORT

FOR

JAMES RIVER CORPORATION
FLEXIBLE PACKAGING PLANT
SAN LEANDRO, CALIFORNIA

Prepared by Brown and Caldwell Consultants

July 11, 1991

Brown and Caldwell
Consultants

3480 Buskirk Avenue
Pleasant Hill, CA 94523-4342
P.O. Box 8045
Walnut Creek, CA 94596-1220
(415) 937-9010
FAX (415) 937-9026

July 11, 1991

Mr. Bob Wenning
Engineering Manager
James River Corporation
Flexible Packaging Plant
2101 Williams Street
San Leandro, California 94577

5081-06/1

Subject: Transmittal of Revised Results of Off-Site Groundwater Survey Report
James River Corporation, Flexible Packaging Plant
San Leandro, California

Dear Mr. Wenning:

Please find enclosed five copies of the letter report Brown and Caldwell (BCC) originally submitted to you on September 11, 1990. This report discussed the results of the off-site groundwater survey performed on the adjacent property north-east of the James River Corporation Flexible Packaging Plant on July 2, and 3, 1990 by Western Geo-Engineers (WEGE) and BCC. During a detailed critical review of the original letter report, several typographic errors were noted on Table 1. These errors have been corrected in the attached revised report. It should be noted, however, that the conclusions and recommendations of the original report remain unchanged.

We regret any inconvenience or misunderstanding this might have caused you. Please feel free to call me at (415) 210-2203 if you have any questions regarding this revised report.

Sincerely,

BROWN AND CALDWELL CONSULTANTS

Anthony Mongero
Principal Hydrogeologist

AM:lp
Enclosure

Brown and Caldwell
Consultants

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Pleasant Hill, CA 94523-4342
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July 11, 1991

Mr. Bob Wenning
Engineering Manager
James River Corporation
Flexible Packaging Plant
2101 Williams Street
San Leandro, California 94577

11-42-5081-06/3

Subject: Results of Off-site Groundwater Survey,
James River Corporation, Flexible Packaging Plant
San Leandro, California

Dear Mr. Wenning:

On July 2 and 3, 1990, Western Geo-Engineers (WEGE), as a subcontractor to Brown and Caldwell Consultants (BCC), conducted an off-site groundwater survey near your facility at 2101 Williams Street, San Leandro, California. The work was performed under the terms and conditions of our agreement for engineering services dated December 8, 1988, and your P.O. No. SL 5642-E. The survey was performed to investigate whether chlorinated hydrocarbons identified in wells along James River's up-gradient property boundary were present up-gradient from your site. This letter presents a description of methods and analytical procedures employed during the survey, and the results of the survey. A copy of the WEGE report submitted to BCC is included as Attachment A.

Field Methods

Eighteen sampling locations were proposed in Brown and Caldwell's April 6, 1990, work plan as part of the Phase II work. These sampling locations were verbally approved by Mr. Larry Seto of the Alameda County Health Agency (County). Twelve of the proposed locations were located on the Southern Pacific Railroad (SP) right-of-way located immediately northeast of the James River property. A site access permit was negotiated between SP and James River prior to initiation of the work. A copy of the access permit is included as Attachment B. County personnel, contacted prior to initiation of the work, indicated that permits for the sampling probes were not required.

Sampling probes were hydraulically driven at fourteen of the eighteen locations. Four proposed locations were inaccessible due to SP permit restrictions and/or underground utilities (Figure 1). The sampling probes consist of a 1-inch diameter, 20-foot-long steel rod advanced to a depth of 20 feet and then removed from the ground. A silicon sampling tube was then inserted to the bottom of the hole. The portion of the tube remaining above ground was inserted, through a rubber stopper, into a glass volatile organic analysis (VOA) vial. A syringe was attached to the VOA vial through a second opening in the rubber stopper. The syringe was then pumped to produce a vacuum in the sampling tube. A groundwater sample sufficient to fill the VOA vial two-thirds full was then drawn into the vial. The stopper was removed and the vial immediately capped and placed in the WEGE portable laboratory. All holes were backfilled with powdered bentonite.

Prior to analysis, the groundwater samples were heated to about 90 degrees fahrenheit in a water bath for approximately 5 to 10 minutes to drive volatile constituents into the headspace of the VOA. A headspace sample was collected in a syringe and injected directly into a photoionization detector (PID) for analysis.

The sample preparation and analytical procedure used for the field analyses are not EPA-approved methods for laboratory analysis for chlorinated hydrocarbons. While the results of these analyses are considered to be a reliable indication that the compounds analyzed are present in the groundwater, quantification of the concentrations of compounds is not considered to be accurate. Thus, the results reported here are not indicative of concentrations that may be present in groundwater underlying the up-gradient area surveyed. However, relative differences between results reported here do indicate relative differences of concentrations in different groundwater samples.

Survey Results

Sampling locations are shown on Figure 1. Sample locations GS-1 through GS-9 are located on the SP right-of-way. Sample locations GS-10 through GS-14 are located on James River property, adjacent to the up-gradient property line. Due to difficulty in advancing the silicon sampling tube, groundwater samples could not be collected at locations GS-2, GS-6, and GS-14.

Results of the PID analyses are summarized in Table-1. Figures 2, 3, and 4 present the results for the compounds dichloroethene (DCE), trichloroethene (TCE), and perchloroethene or tetrachloroethene (PCE), respectively. Results indicate that the highest levels of both DCE and PCE are present at sampling location GS-4, which is 30 feet up-gradient from the James River property line. The highest result for TCE was present at sampling location GS-9, located approximately 100 feet up-gradient of the James River property line. A copy of the WEGE analytical report is included as Attachment A.

To confirm the TCE result at GS-9, an additional sample was collected at this location (GS-9A) and submitted to Brown and Caldwell Analytical (BCA) in Emeryville, California. The VOA vial was filled such that no headspace was present and stored on ice until delivery to BCA. The sample was analyzed for purgeable priority pollutants by EPA Method 8240. A copy of the BCA analytical report is included as Attachment C.

Analytical results for the groundwater samples are included in Table 1. TCE was identified at a concentration of 160 micrograms per liter (µg/L), PCE at a concentration of 3 µg/L, and DCE isomers at a total concentration of 5 µg/L in the GS-9A sample. These results correlate well with results for the PID analysis of sample GS-9.

Conclusions and Recommendations

Based on the results of the survey and a confirmatory analysis at a state-certified laboratory, chlorinated hydrocarbons are present in groundwater up-gradient of the James River Flexible Packaging Plant. We suggest that a copy of this report be transmitted to the Regional Water Quality Control Board with a request that the history of chlorinated solvent use by up-gradient property owners be investigated.

We appreciate this opportunity to be of continued service to you. Please call should you have questions or comments regarding this report.

Very truly yours,

BROWN AND CALDWELL CONSULTANTS

for:

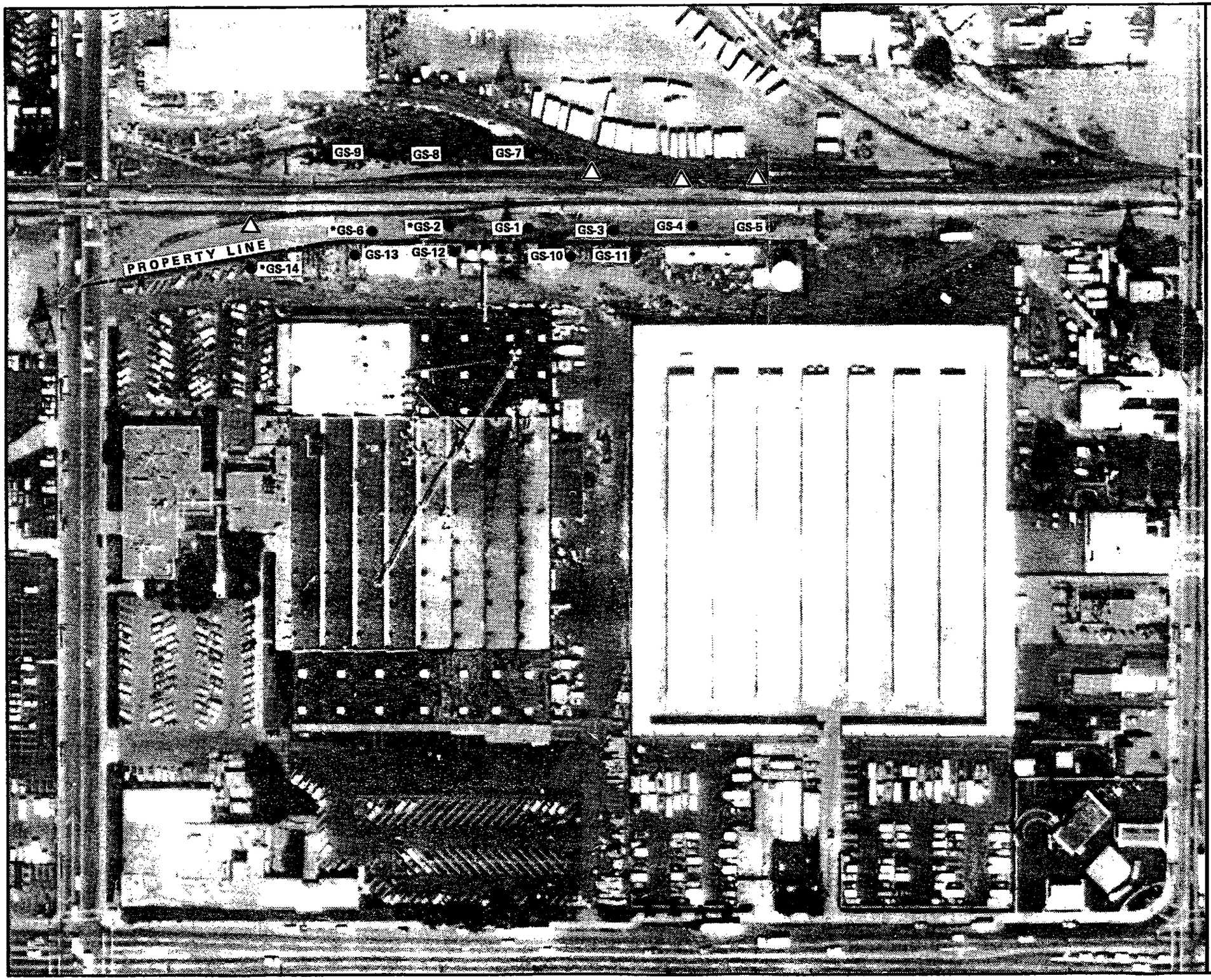
Donna Courington
Project Manager

DLC:lp
Attachments

Table 1 Results of Groundwater Analyses, µg/L

Sample I.D.	DCE	TCE	PCE
GS-1	4.0	12.7	6.2
GS-2		unable to collect sample	
GS-3	1.2	4.5	112.0
GS-4	16.2	9.9	156.0
GS-5	6.8	7.1	16.9
GS-6		unable to collect sample	
GS-7	1.0	<1.0	<1.0
GS-8	1.7	<1.0	<1.0
GS-9	2.2	176.0	5.8
GS-10	<1.0	<1.0	<1.0
GS-11	3.6	<1.0	1.8
GS-12	2.5	7.2	6.9
GS-13	1.0	16.2	1.4
GS-14		unable to collect sample	
GS-9A*	3	160	3 (cis-1,2) 2 (trans-1,2)

< Indicates compound not detected at limits noted.
* Groundwater sample analyzed at BCA.
DCE results reported for individual isomers.



N

0 50 100
SCALE IN FEET
(APPROXIMATE)

LEGEND:

GS-1● GROUNDWATER SURVEY SAMPLING LOCATION

△ INACCESSIBLE SAMPLING LOCATION

Figure 1 Groundwater Survey Sampling Locations, James River Flexible Packaging Plant, San Leandro, California

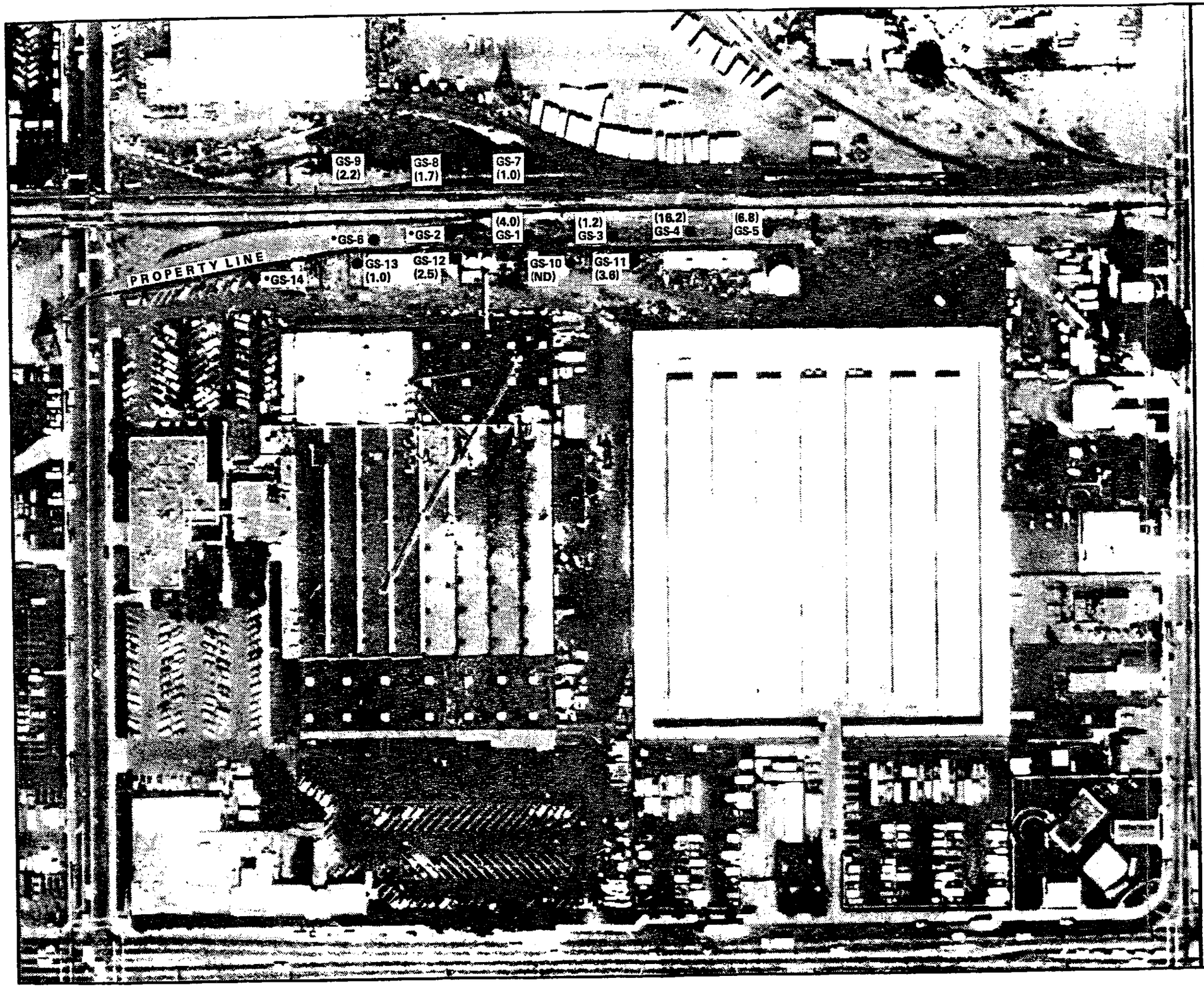
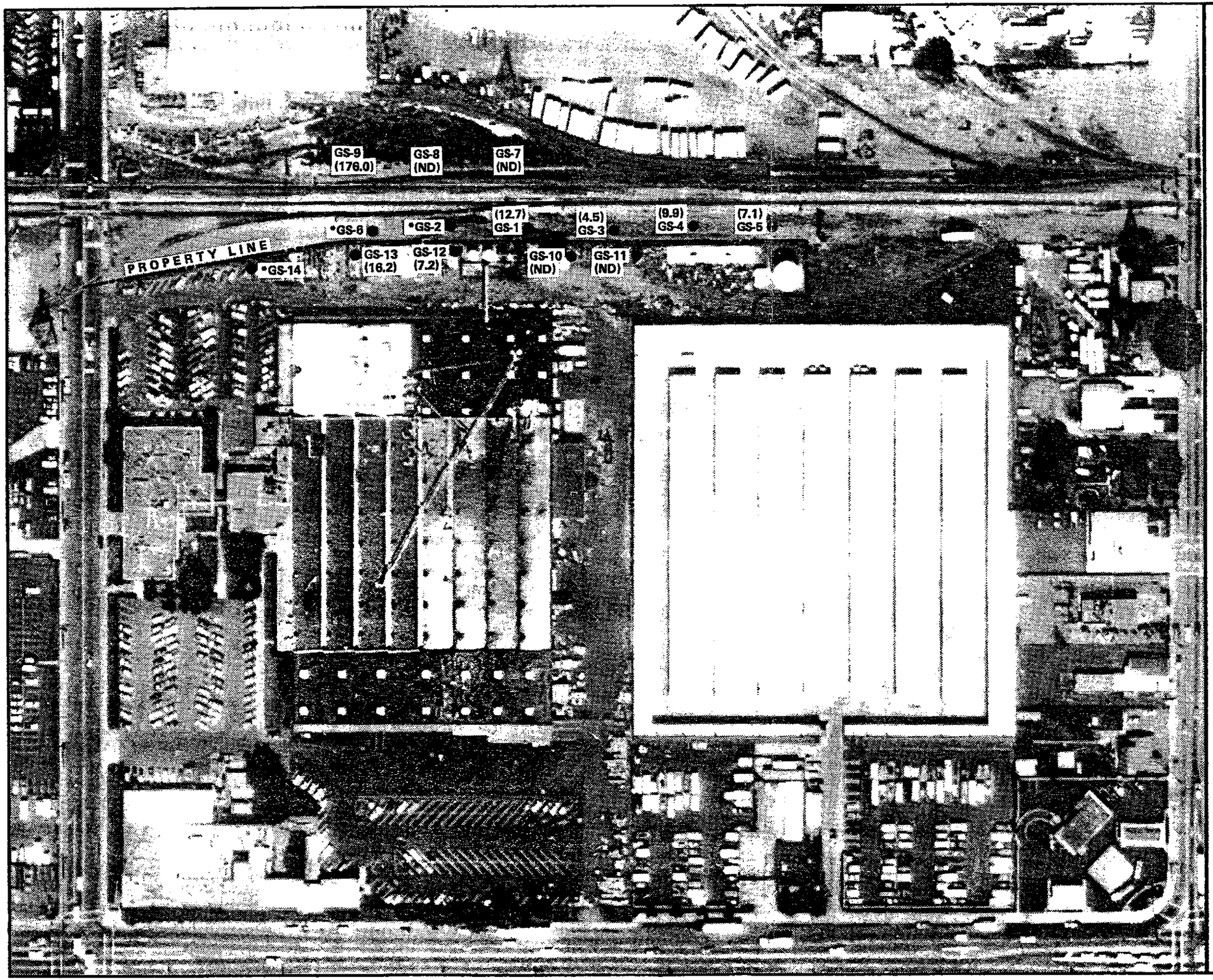


Figure 2 Distribution of DCE in Groundwater Survey Samples, James River Flexible Packaging Plant, San Leandro, California



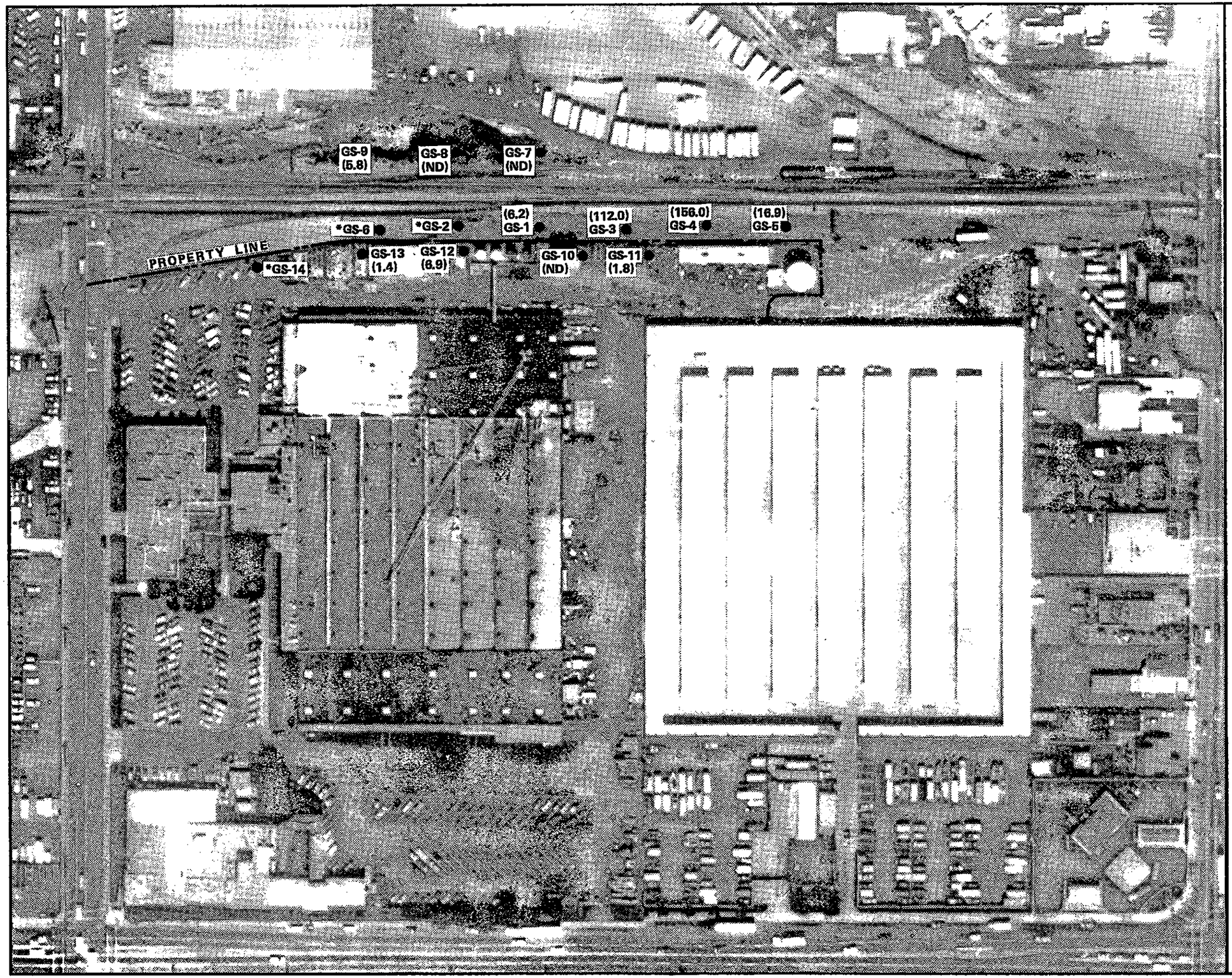
N

0 50 100
SCALE IN FEET
(APPROXIMATE)

LEGEND:

GS-1	SAMPLING LOCATION
(12.7)	RESULT OF PID ANALYSIS OF HEADSPACE SAMPLE, parts per billion
(ND)	NOT DETECTED BY HEADSPACE ANALYTICAL METHOD
*	UNABLE TO COLLECT SAMPLE

Figure 3 Distribution of TCE in Groundwater Survey Samples, James River Flexible Packaging Plant, San Leandro, California



N

0 50 100
SCALE IN FEET
(APPROXIMATE)

LEGEND:

GS-1 ●	SAMPLING LOCATION
(6.2)	RESULT OF PID ANALYSIS OF HEADSPACE SAMPLE, parts per billion
(ND)	NOT DETECTED BY HEADSPACE ANALYTICAL METHOD
*	UNABLE TO COLLECT SAMPLE

Figure 4 Distribution of PCE in Groundwater Survey Samples, James River Flexible Packaging Plant, San Leandro, California

ATTACHMENT A

WESTERN GEO-ENGINEERS REPORT

-WEGE-
WESTERN GEO-ENGINEERS
CALIF. CONTRACTOR # 513857 A CORPORATION
REGISTERED GEOLOGISTS

1386 E. BEAMER STREET
WOODLAND,CA 95695-9603
FAX (916) 662-0273
(916) 662-4541

LOCATION

The study site is the eastern edge of the James River Flexible Packaging Plant and the adjoining Southern Pacific Railroad right of way. The Plant is located at 2101 Williams Street east of the intersection of DoLittle Road, San Leandro, California. The site is in projected Sec. 34; T2S; R3W; MDB&M at approximately 20 feet above sea level.

PURPOSE and PROCEDURE

To determine the extent of ground water contamination associated with the above mentioned site.

A series of small holes were to be drilled to ground water along the railroad tracks and along the eastern edge of the Plant compound; water samples obtained from these holes were to be collected and analyzed for organic solvents.

SAMPLING PROCEDURE- SOIL PROBE SURVEY

During a Soil Probe Survey (SPS) a number of holes are drilled at selected locations in order to determine solvent contamination at certain soil depths and locations.

The holes are drilled by driving a 5/8" steel rod into the ground using an electric jack hammer. After the rod has been driven to the desired sample depth, the rod is removed using a hydraulic puller, and a vapor and a soil sample are then taken.

The vapor sample is gathered by placing a steel tube into the hole, pulling a known volume of air to evacuate the tube and then taking the vapor sample with a 1 cc syringe. The sample is then injected into a FID analyzer where a Total Volatile Organics (TVO) value is obtained. After the vapor sample has been taken the soil sample is collected.

A steel sampler with an inner plunger and a 3/8" by 2" brass sleeve fitted to the end is used to gather a small (1 to 4 grams) soil plug of the relatively undisturbed soil from the base of the hole. The sample is placed into a 40 ml VOA Vial. The soil is examined under the Ultraviolet (U.V.) scope in order to determine if any petroleum fluorescence is visible in the sample. The sample is then weighed, placed into a hot water bath and allowed to come to equilibrium. After the sample has reached equilibrium, a headspace sample is obtained and injected into a FID (flame ionizing detector) chromatograph which produces a chromatogram of the sample. The resulting chromatogram is compared with standard chromatograms to determine the levels of the volatile organics present.

If water is encountered, it is sampled by lowering 1/4" tubing into the hole and pulling the sample to the surface, under a vacuum. The sample is collected in a 40 ml VOA Vial. The water is then examined under the U.V. scope in order to determine if any petroleum fluorescence is visible in the sample. The sample is then placed into a hot water bath and allowed to come to equilibrium. After the sample has reached equilibrium, a sample of the headspace is taken and injected into a calibrated FID chromatograph; the resulting chromatograms are examined for volatile organics.

SCOPE

The Wege Soil Probe Survey by Roy Butler, Geologist, with two helpers took place on July 2 and 3, 1990. The survey was over seen by Donna Courington of Brown and Caldwell Consultants.

Over the course of the two days a total of 15 holes were drilled to collect samples of ground water. Samples were successfully collected from 12 of the holes (see table 1). One of the samples was collected for the Brown and Caldwell laboratory. The remaining samples along with a sample from monitor well W-5, were analyzed in the WEGE portable laboratory. Headspace analysis was performed on the samples with a FID chromatograph. The levels of chlorinated hydrocarbons encountered in most samples were near the lower detection limits of the FID detector; therefore, with the exception of sample from W-5, the samples were reanalyzed with a Photovac 10S50 PID chromatograph. The PID detector has a much greater sensitivity to the chlorinated hydrocarbons; PID detection limit for TCE = 1 ppb, while the FID detection limit for TCE = 40 ppb. (see table 1 for results).

TABLE 1, RESULTS SOIL PROBE SURVEY WATER SAMPLES.
JAMES RIVER FLEXIABLE PACKAGING PLANT
2101 WILLIAMS STREET
SAN LEANDRO, CALIFORNIA

HOLE	DEPTH	DATE	ACETONE	CH3CL PPM	DCE PPB	TCE PPB	PCE PPB	TOL PPB
GS-1	20	07/02/90	4	<0.01	4.0	12.7	6.2	<10
GS-2	20	07/02/90	COULD NOT COLLECT SAMPLE					
GS-3	20	07/02/90	<1.0	<0.01	1.2	4.5	112.0	<10
GS-4	15	07/02/90	<1.0	<0.01	16.2	9.9	156.0	<10
GS-5	20	07/02/90	<1.0	<0.01	6.8	7.1	16.9	<10
GS-6	20	07/02/90	COULD NOT COLLECT SAMPLE					
GS-7	20	07/02/90	<1.0	<0.01	1.0	<1.0	<1.0	<10
GS-8	20	07/02/90	<1.0	<0.01	1.7	<1.0	<1.0	<10
GS-9	20	07/02/90	<1.0	<0.01	2.2	176.0	5.8	<10
GS-10	20	07/03/90	<1.0	200.00	<1.0	<1.0	<1.0	<10
GS-11	20	07/03/90	<1.0	1.86	3.6	<1.0	1.8	<10
GS-12	20	07/03/90	<1.0	<0.01	2.5	7.2	6.9	<10
GS-13	20	07/03/90	<1.0	<0.01	1.0	16.2	1.4	<10
GS-14	20	07/03/90	COULD NOT COLLECT SAMPLE					
GS-9A	20	07/03/90	COLLECT SAMPLE FOR B&C LAB					
W-5	--	07/03/90	<1.0	242.30	<1.0	939.0	144.0	<10

CH3Cl = Chloromethane = Methyl Chloride, values approximate.
We do not carry standard for Methyl Chloride in lab.
peak values are compared to Methylene Chloride
DCE = Dichloroethylene
TCE = Trichloroethylene
PCE = Tetrachloroethylene
TOL = Toluene
PPM = parts per million = milligrams/liter
PPB = parts per billion = micrograms/liter

-WEGE-
WESTERN GE0-ENGINEERS
CALIF. CONTRACTOR # 513857 A CORPORATION
REGISTERED GEOLOGISTS

Proj. Sec. 34 , T2S; R3W; MDB&M

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JULY 19, 1990

FOR
DONNA L. COURINGTON
BROWN AND CALDWELL
P.O. BOX 8045
WALNUT CREEK, CA 94596-1220
(414) 937-9010
FAX (415) 937-9026

Jack E. Napper
Registered Geologist #3037

PROJECT
JAMES RIVER
FLEXIBLE PACKAGING PLANT
2101 WILLIAMS STREET
SAN LEANDRO, CALIFORNIA

Roy Butler
Geologist

Map source	AAA, USGS, WEGE	
Date	07/02/90	07/03/90
Geologist	ROY BUTLER	ROY BUTLER
Crew Total	3	3
Mob hours	5:30-8:15 HR = 2.75 HRS	
Hours (site)	8:15-17:00 = 8.75 HRS	7:00-14:15HR = 7.25 HRS
Demob Hours		14:15-18:00 - .5LUNCH = 3.25HRS
Unit#	3A	3A
Equipment	PID CHROMTOGRAPH, FID , FID CHROMATOGRAPH	
	RIG 2	
Steel size(s)	1/2" TO 5/8"	SAME
Bit size	9/16" T0 3/4"	SAME
Tube size	1/4"	1/4"
Weather	CLEAR	CLEAR
Temperature	85	85
Barom. Press	--	--
Total ft. drilled	195	160
Sample		
# holes	9	6
# sites	7	5
# vapor	0	0
# liquid	7	5
# soil	0	0
#.chromat	11	6
# FID	11	7
# IR	0	0
# cert. soil	0	0
# cert. liq.	0	1

METHODS; EQUIPMENT; DATA, Etc., QA&QC; NOTES: See Appendixes A through

-WEGE-
WESTERN GEO-ENGINEERS
CALIF. CONTRACTOR # 513857 A CORPORATION
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(916) 662-4541

APPENDIX A

EQUIPMENT (General 5-10-89)

Western Geo-Engineers laboratory units are specially equipped with a WEGE PRCD chromatograph; an FID analyzer and/or chromatograph; a PID chromatograph; an analyze (methane sensitive); at least one type of handheld vapor or vapor/oxygen screening detector, (depending on field situations); a computer with plotter and/or printer; a microscope; liquid test kit (resistivity, pH, chloride, nitrate, calcium, fluorescence, H2S and hydrocarbons or other organic vapors by headspace, etc.); soil or core test kit (lithology, headspace, pH, fluorescence, sieve analysis, etc.); misc. gas, soil and water collecting, sampling and storing material/equipment; a refrigerator; an air conditioner and heater; weather indicating equipment (thermometer, relative humidity meter, barometer, wind speed, and wind direction); surveying equipment (a transit, tripod, rod, chain, Brunton compass, and other miscellaneous equipment); a very stable 6.5 KW electric generator; four or more types and or sizes of "drill steel" both solid and tubular; several sizes and types of "bits" and stablizers (to maintain straight holes), x-over adapters to facilitate the use of combination "drill strings"; several sizes of conductor casing to prevent surface caving; three or four (five or six types for special problem areas) types and sizes of drilling devices ranging from hand drivers, electric hammers, vibrators, electric rotary drills, augers (hand and power) and combinations of all devices; several types of pulling equipment including hammer (pounder), cable (or rope), tripod, mechanical and hydraulic hand jacks, and gasoline or electric powered hydraulic ram pullers; fire extinguisher(s); cleaning sterilizing, and sanitizing equipment and material; spare parts, supplies, and tools; and other related equipment.

APPENDIX B

METHODS (General 5-10-89)

The special driving bars ("drill steel") are used to "drill" or to open holes to the needed diameter, usually 5/16" to less than 1 inch. Holes are usually driven to a predetermined level, most commonly between five and ten feet. The driving bar is either pulled from the hole and a sampling tube lowered, or the vapors are sampled through the driving bar with a special tubing and packer set.

Core samples of the soil are taken after the vapor sample has been taken; if maximum lithology data are required, the entire hole may be cored (in small segments one after another). The hole is then

driven/"drilled" to the next sample interval (depth) where the sampling process is repeated. Core samples are cut at each sample depth, which are usually collected on even increments to "total" depth. Deeper holes are usually sampled at five or ten foot intervals. The cores for analysis are cut and retrieved, then within seconds, are pressed into vials and capped. Normally the cores are untouched, even by the clean disposable gloves of the geologist or operator. The core sleeves for the certified laboratory are labeled and placed in a freezer or cooler and frozen. The cores are examined and noted for later stratigraphic mapping procedures as well as UV identification of "product" or "contaminant" both before and after the "solvent" dissolution and headspace stabilization process. When "undisturbed" soil samples are required the hole diameter must be enlarged before driving the core barrel.

Liquid samples (water or product) when available, are collected from the holes for on-site analysis by "headspace" methods. They may be sent to other labs for independent verification. Probes may be temporarily implanted as part of a complete hydrogeologic study. Permanent monitor wells may also be installed at this time.

Hole sites are mapped by transit and chain or by Brunton and chain methods, depending upon time allotted and accuracy required. Methods used for providing the hole vary with the depth, material being penetrated, moisture content, and purpose of the survey. These methods include: rotary, pounding, hammering, vibrating, pressing, and vacuum drilling; each usually is of greater benefit than the others under certain given circumstances and several methods are usually used on each project.

Vapor samples are screened with an FID or a PRCD or a PID analyzer to obtain a preliminary TVO (Total Volatile Organics) value before running the samples through the calibrated chromatograph(s) to determine the composition and concentration of the vapors found in the pore spaces in the soil. See APPENDIX D on Quality and Quantity Control. Some equipment can only be used once. This equipment is discarded if liquid product or high concentrations of product vapor are encountered. If contaminated, solid metal parts are sterilized before using them again. See APPENDIX D on Quality and Quantity Control.

After all data is obtained from a test hole, the hole is destroyed by filling with dry bentonite from bottom to within to 12 inches of surface, then finished with neat cement, grout, blacktop or clean native soil, whichever is appropriate for the existing surface. Neat cement is used, from bottom to top in some California counties.

APPENDIX C

DATA GATHERING AND PRESENTATION (General 5-10-89)

The hole locations (and base map data points if map is not furnished by the client) are surveyed, calculated and entered into the computer. Sample data is logged and entered into the computer as it is gathered, so that a current shaded contour map can be generated and/or plotted at any time during the survey. Having an up-to-date "contour" map helps to show the geologist where additional data points (holes) are needed.

Figures 1 and 2 are usually street or road location maps and USGS topographic maps (if available). Figure 3 is usually the actual site plan map showing test hole locations and depths. Figure 4 (etc.) is (are) stacked 3-D picture(s) of the surface map and each of the level maps to help the visulization of total plume. One or more cross sections may be presented, if warranted, to show additional information for otherwise hard to visulize data. A contour map of the groundwater level or the potentiometric surface may be included if sufficient data is available.

The Table(s) list the data points, water or product levels, vapor values, and headspace values, etc. when available.

The next set of Figures are hand drawn contours of the concentration values for the TVO/TPH (Total Volatile Organic/Total Petroleum Hydrocarbons) and for each of the compounds of interest, which were detected. There is a separate map for each of the above for all sub-surface depth levels surveyed. A computer drawn and shaded "contour" map is furnished showing the machine version of all of the above mentioned hand drawn contour maps.

The shaded contour maps are drawn by the computer using a quadranting variation of the inverse sum of the distance method, to find the average value for each location. This method takes the closest test hole in each quadrant (ie.: northeast, northwest, southeast and southwest), and finds an average value for the point being contoured. The method assumes no false zeros and therefore will bring a high value to the edge of the map if there is no data to stop it.

In the field, data is entered into the computer as the study progresses. A current picture of the project is always available, with the capability to generate shaded contour maps on demand. This allows for quick field evaluation and for the most productive placement of the next test holes.

A copy of each of the intermediate computer shaded contour maps is given to the client's field representative, on site, at the end of the field study, so that plans may be altered or remedial work planned or started immediately.

The next section usually consists of copies of the chromatograms for reference use, if needed. These are followed by a copy of the field notes (work sheets); a copy of the DWR 188 (Water Well Driller's Report) and the Appendices A, B, C, and D (Equipment, Methods, Data Gathering and Presentation, Quality and Quantity Control, respectively).

APPENDIX D

QUALITY - QUANTITY CONTROL (General 5-10-89)

Analytical laboratory standards are maintained. Field and laboratory methods are standardized to provide maximum accuracy and repeatability.

Fresh calibrant is made daily and injected into the chromatograph(s) and detector(s) at regular intervals. Calibration "checks" are made before the first samples are analyzed. Ambient air samples and blank samples (syringe blanks or internal blank(s) are run when warranted to check background quality. Syringes, needles, and sampling tubes, are new and of the disposable type and are not re-used. VOA vials, bottles, and other glassware are pre-cleaned to EPA protocols; brass sample sleeves are either cleaned to EPA protocol or steam cleaned. Other sampling equipment is either discarded or sanitized, if when gathering a sample, it comes in contact with a higher than background contaminant concentration level. Disposable sanitized rubber or plastic gloves are discarded after coming into contact with equipment or samples of higher than background contamination levels.

If solid metal parts become contaminated, they are heated and burned with a propane torch, (to sterilize them by vaporizing any product(s) before using them again. Metal "core" sampling, drilling, liquid sampling, or gas sampling equipment is sanitized on location by burning with a propane torch to remove any volatile organic contaminants. Metal tubing or hollow piping, etc. is harder to clean, as the entire inner space must be heated to remove any vapors. Circulating soap and water through the pipe, rinsing with live steam and drying with ultra clean air works well but cannot be done easily in the field. Therefore, this equipment is steam cleaned, and soap and water washed, rinsed, steamed and dried, (off location at night or between jobs). Enough sampling equipment is available so that if "live" or high concentration samples are encountered, new (sterilized) equipment can be used. All new or used pipe and tubing is sterilized and tested for contamination before it is used or re-used.

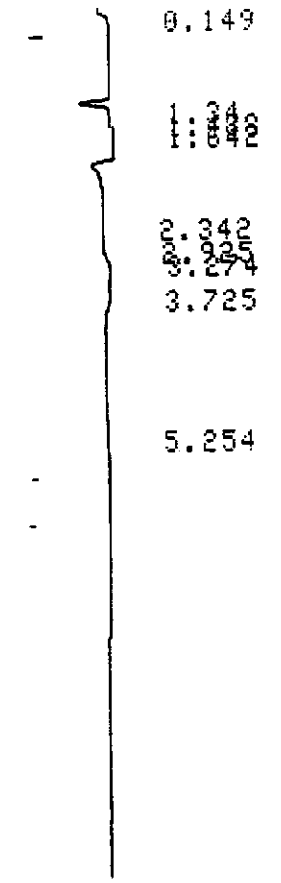
Quantity values of compounds of interest are determined by regularly re-calibrating the instruments with "known standards" in the general concentration ranges of the actual samples involved, to guarantee the linearity of the instruments. Core samples are weighed, dissolved, and allowed to reach equilibrium before the "headspace" samples are analyzed and values recorded. Water samples with headspace are also allowed to reach equilibrium, before being analyzed in the chromatograph(s). Occasionally, soil samples are collected (with as little headspace as possible) from varying depths to be sent in Volatile Organic Analysis (VOA) vials, (previously sterilized to U.S. Environmental Protection Agency standards) to Certified Analytical Laboratories for confirmation and verification of WEGE's previously reported results.

-WEGE-

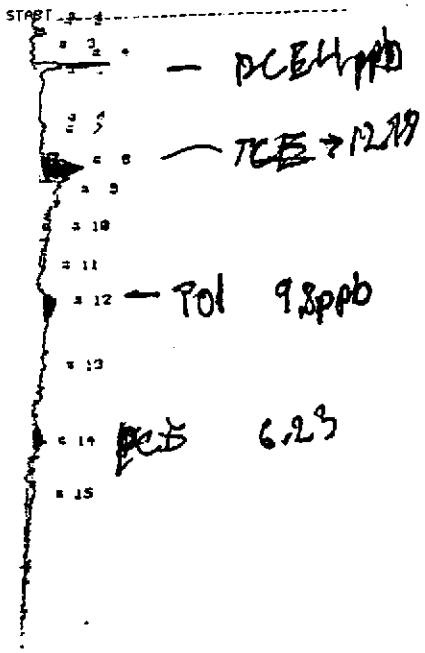
1386 E. BEAMER STRE
WOODLAND,CA 95695-9
FAX (916) 662-0
(916) 662-45

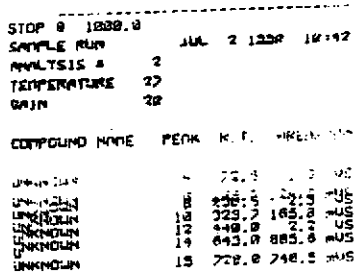
APPENDIX E
WEGE
FID
&
PID
CHROMATOGRAMS

James River = JR



GS1





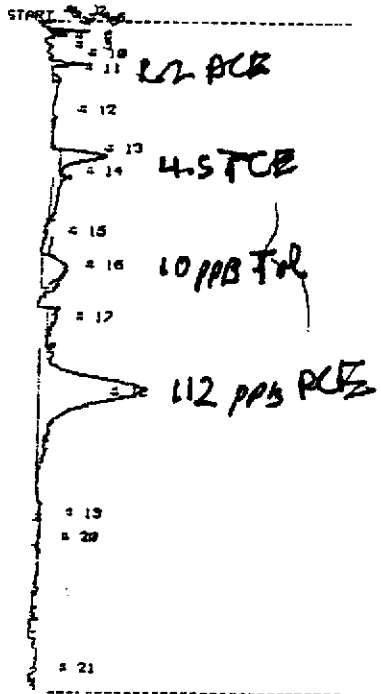
CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 8

FILE
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.149	1761				
2	1.34	4744				
3	1.488	2413	V			
4	1.642	589	V			
5	2.342	7897				
6	2.925	2588	V	3	0.0688	TCE
7	3.274	3803	V	—	4.4	
8	3.725	1787	V	4	0.0591	PCE
9	5.254	346				
	TOTAL	25919			0.1278	

JR

GC3



CHROMATOGRAM 1 MEMORIZED

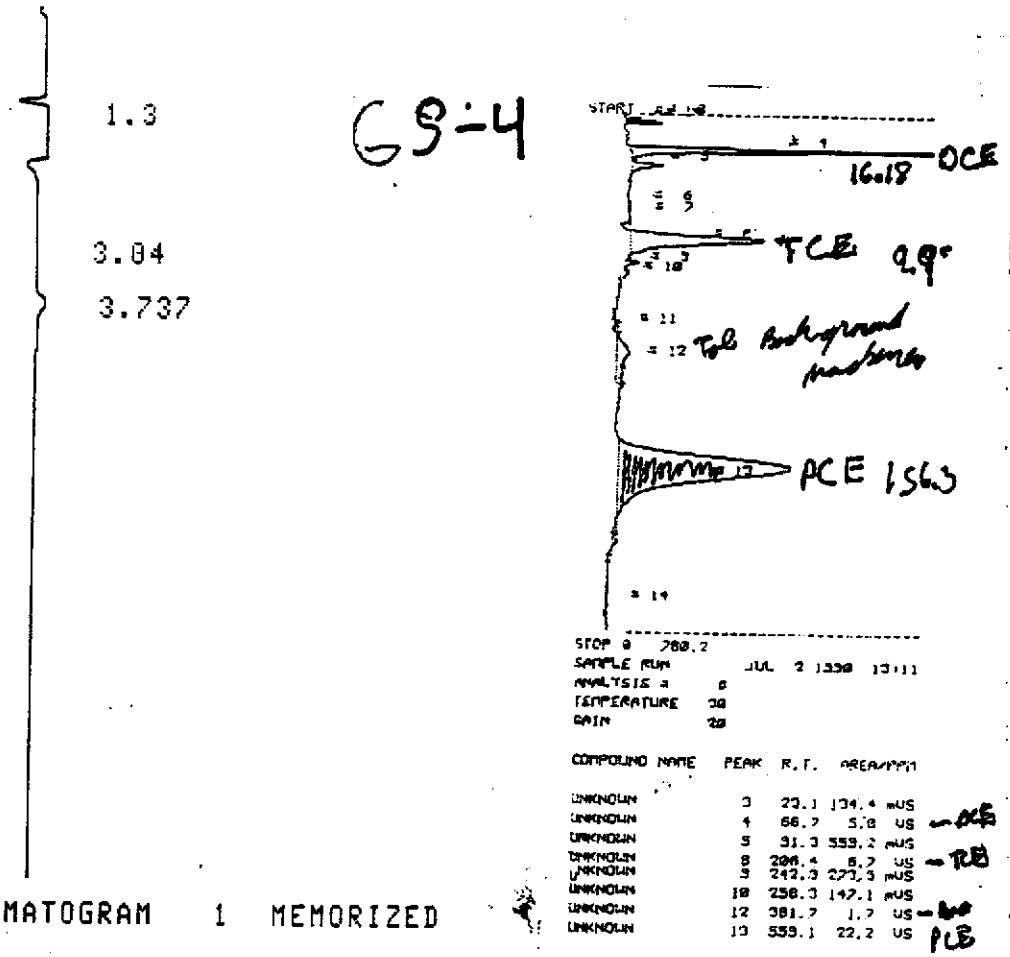
CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 15

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.311	3174				
2	3.342	261				
3	3.745	1123	V	4	0.0371	PCE
	TOTAL	4558			0.0371	

CHROMATOGRAM 101 MEMORIZED

JR

G9-4



CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0

FILE 0
METHOD 44

REPORT NO 17

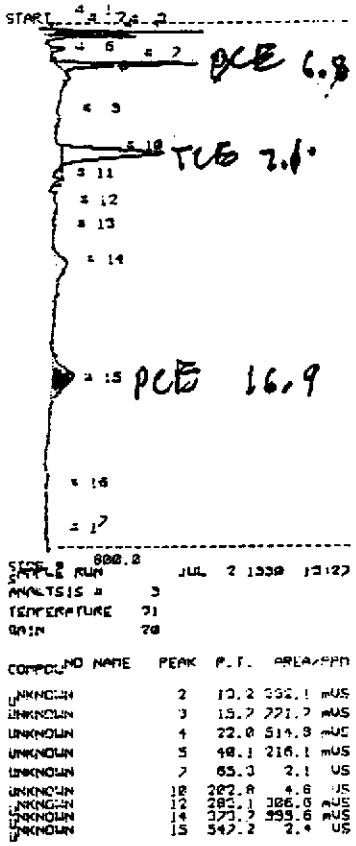
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.3	2353				
2	3.84	313		3	0.0083	TCE
3	3.737	1537		4	0.0508	PCE
	TOTAL	4202			0.0591	

JR

1.289

GS-5



CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 19

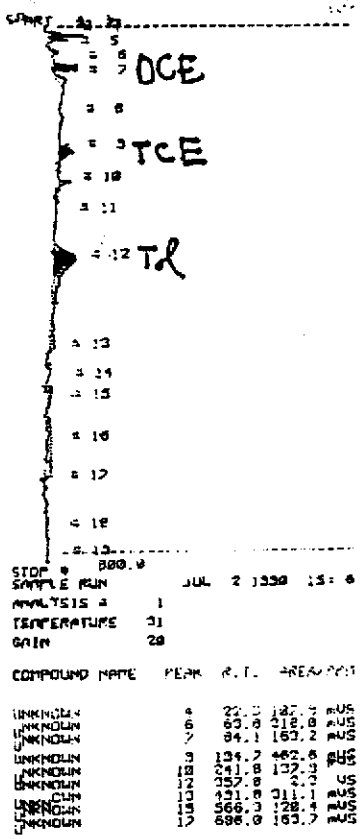
FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.289	2355				
	TOTAL	2355			0	

CHROMATOGRAM 101 MEMORIZED

JR

GS-7



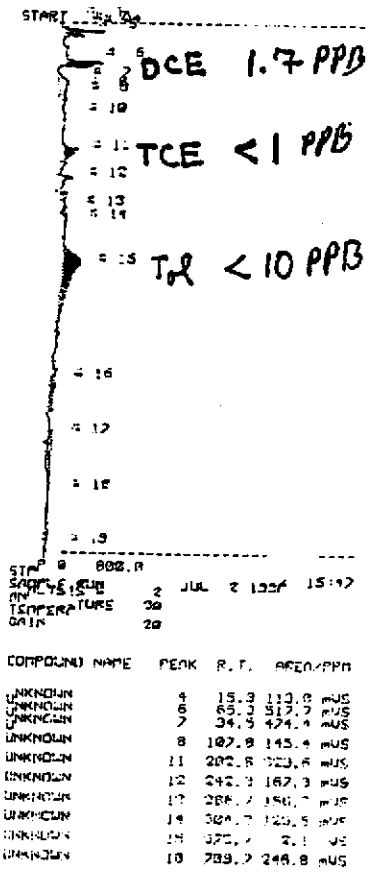
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 21

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.313	3459				
2	1.472	1748	Y			
	TOTAL	5207			0	

JR



COMPOUND NAME	PEAK	R.T.	AREA/PPB
UNKNOWN	4	15.3	113.0 mUS
UNKNOWN	6	65.3	517.7 mUS
UNKNOWN	7	84.5	474.4 mUS
UNKNOWN	8	107.8	145.4 mUS
UNKNOWN	11	202.8	523.6 mUS
UNKNOWN	12	242.3	167.3 mUS
UNKNOWN	13	288.7	158.7 mUS
UNKNOWN	14	304.7	125.5 mUS
UNKNOWN	15	325.7	2.1 mUS
UNKNOWN	16	789.2	246.8 mUS

CHROMATOGRAM 1 MEMORIZED

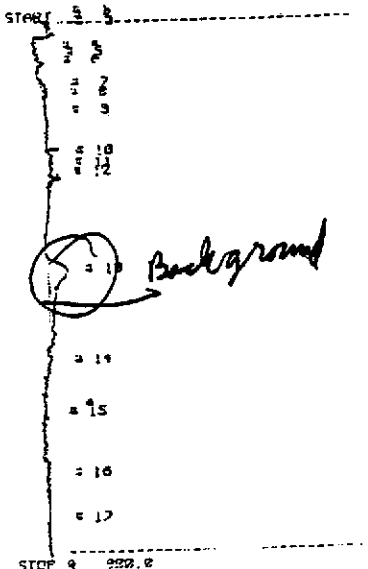
CR501 CHROMATOPAC

CHANNEL NO	1	FILE	0
SAMPLE NO	0	METHOD	44
REPORT NO	23	SAMPLE WT	100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.292	4561				
2	1.508	886	V			
3	3.382	458				Benzene
	TOTAL	5905			0	

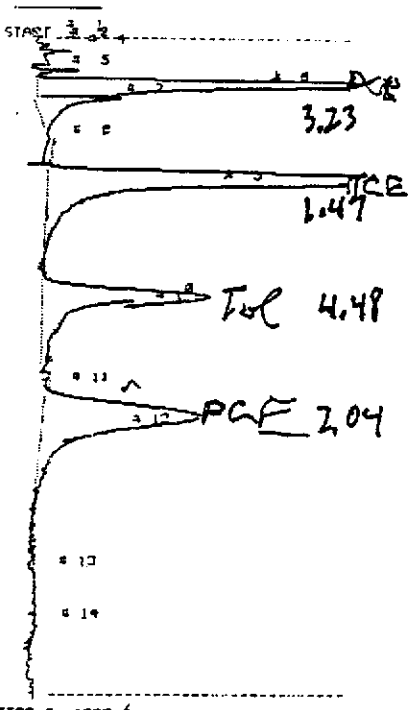
MEMORIZED

PHOTOVAC



STOP @ 900.0
SAMPLE RUN JUL 2 1330 12:52
ANALYSIS # 6
TEMPERATURE 30
GAIN 20

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	110.8	185.6 mVS
UNKNOWN	13	398.4	3.2 VS
UNKNOWN	17	758.4	177.5 mVS



STOP @ 1000.0
SAMPLE RUN JUL 2 1330 11:35
ANALYSIS # 7
TEMPERATURE 25
GAIN 60

COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	4	22.9	134.9 mVS	
UNKNOWN	5	52.4	571.2 mVS	
UNKNOWN	6	63.2	36.4 VS	DCE
UNKNOWN	7	94.1	4.1 VS	
UNKNOWN	9	215.2	31.3 VS	TCE
UNKNOWN	10	483.7	18.3 VS	Tol
UNKNOWN	12	596.5	21.3 VS	PCE
UNKNOWN	14	888.8	197.7 mVS	

7.04

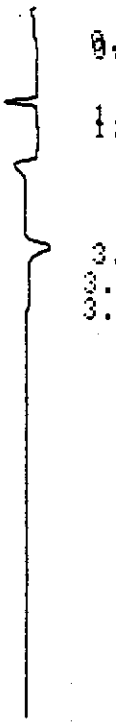
PHOTOVAC

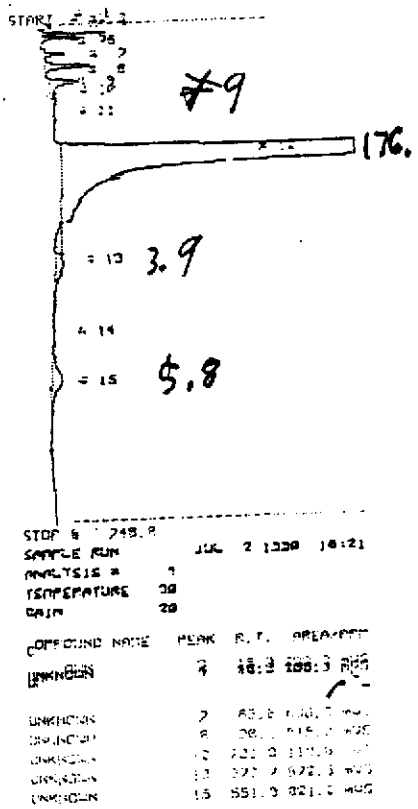
STOP @ 12.0
SAMPLE RUN JUL 2 1330 12:55
ANALYSIS # 2
TEMPERATURE 30
GAIN 20

COMPOUND NAME	PEAK	R.T.	AREA/PPM

PHOTOVAC

JR





CHROMATOGRAM 1 MEMORIZED

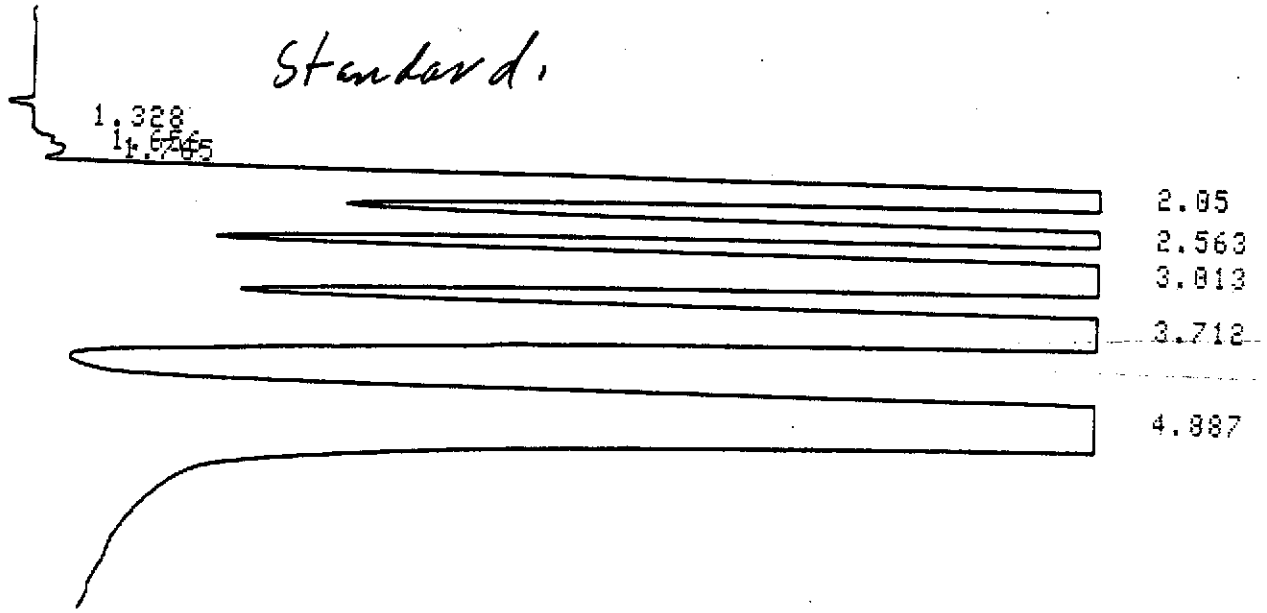
CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 26

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.173	796				
2	0.467	361	V			
3	1.294	3701				
4	1.458	1679	V			
5	3.028	3992		3	0.1064	TCE
6	3.4	447	V			
7	3.733	474	V	4	0.0157	PCE
	TOTAL	11450			0.1221	

JR

Standard



CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 8

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.328	5131				
2	1.656	8305	V			
3	1.765	8172	V			
4	2.05	4132015	V	1	118	DCE
5	2.563	1189461	V	2	126	DCM
6	3.013	3154634	V	3	138	TCE
7	3.712	2094245	V	4	150	PCE
8	4.887	5760821	V	5	82	TOL
	TOTAL	16352782			613.9998	

JR

0.155

1.723

2.283

GS-10

1.21

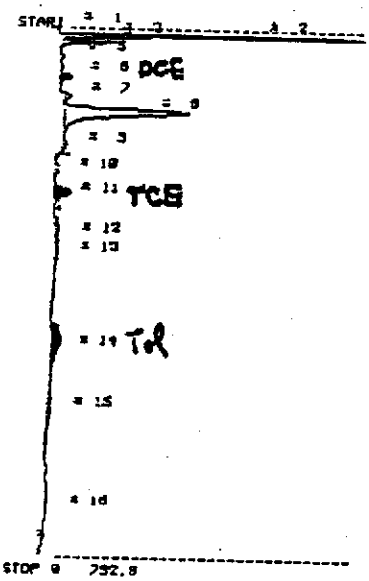
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 11

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC
1	0.155	891			
2	1.211	1959447	S	CH_2Cl_2	202.00.
3	1.723	3234	T		
4	2.283	3071			
	TOTAL	1966643			0

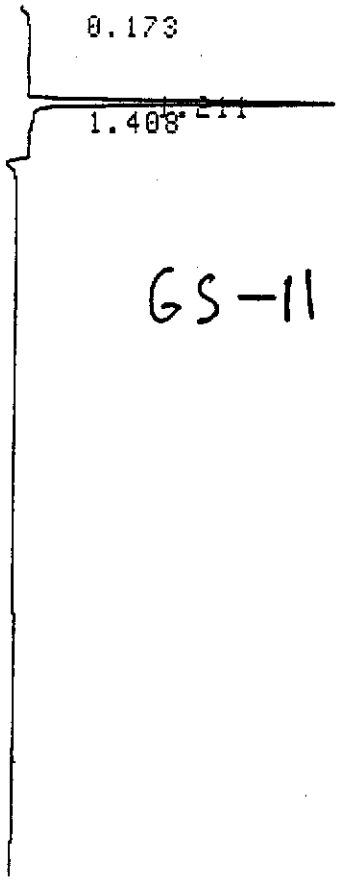
TOTAL 1.9821



STOP @ 752.8
SAMPLE RUN JUL 9 1330 10:11
ANALYSIS # 7
TEMPERATURE 24
GAIN 28

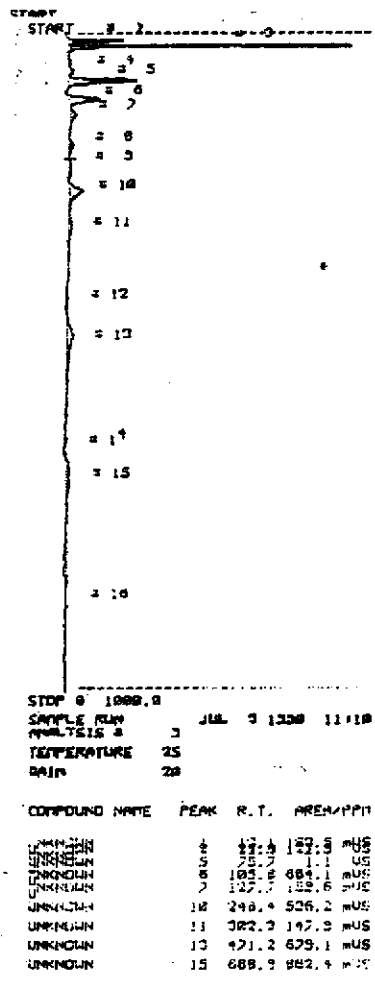
COMPOUND NAME	PEAK	R.T.	AREA/PPM	
UNKNOWN	2	12.5	2.2	VS
UNKNOWN	3	16.2	341.6	mVS
UNKNOWN	4	20.5	584.5	mVS
UNKNOWN	6	77.7	138.2	mVS
UNKNOWN	7	108.3	181.9	mVS
UNKNOWN	8	131.3	4.5	VS
UNKNOWN	9	182.3	185.8	mVS
UNKNOWN	11	252.2	485.3	mVS
UNKNOWN	12	312.1	153.5	mVS
UNKNOWN	14	487.8	1.1	VS

JR



1.86 CH_3Cl

GS-11



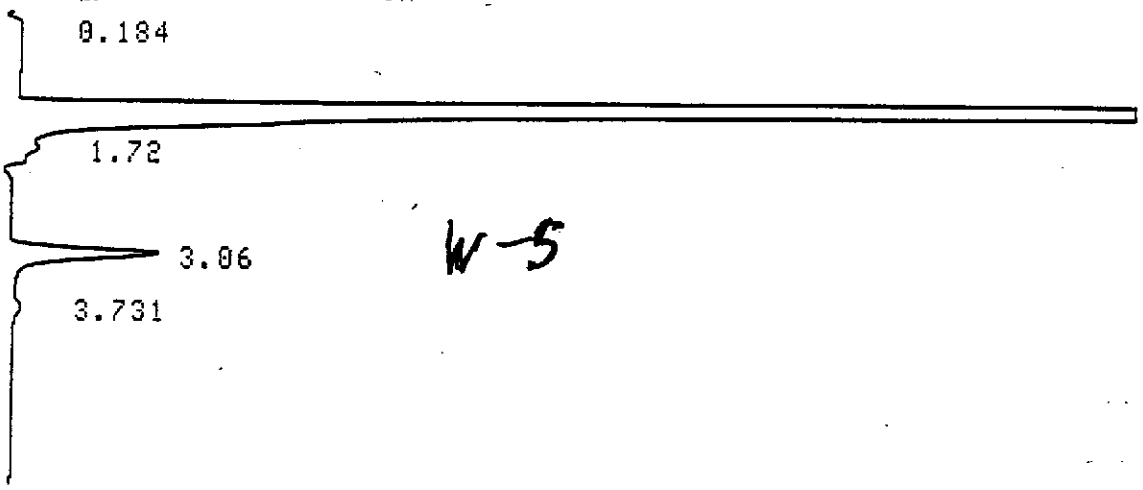
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 15

FIL
MET
SAMI

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.173	1483				
2	1.211	18160	S			
3	1.408	178	T			
	TOTAL	19821			0	

JR



W-5

CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC

CHANNEL NO	1	FILE	0
SAMPLE NO	0	METHOD	44
REPORT NO	19	SAMPLE WT	100

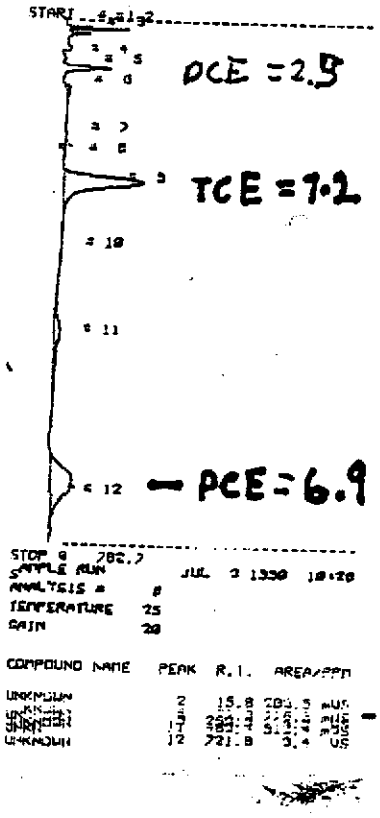
PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	0.184	2639				
2	1.215	2422979	S			
3	1.72	656	T			
4	3.06	21457		3	0.9386	TCE
5	3.731	2003	V	4	0.1435	PCE
	TOTAL	2449734			1.0821	

JR

GS-12

3.02

3.708



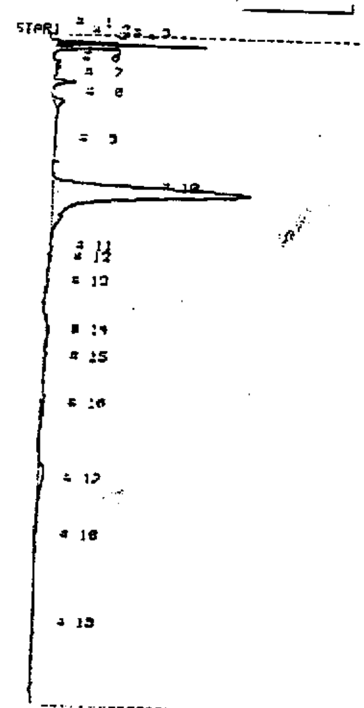
CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 21

FILE 0
METHOD 44
SAMPLE WT 100

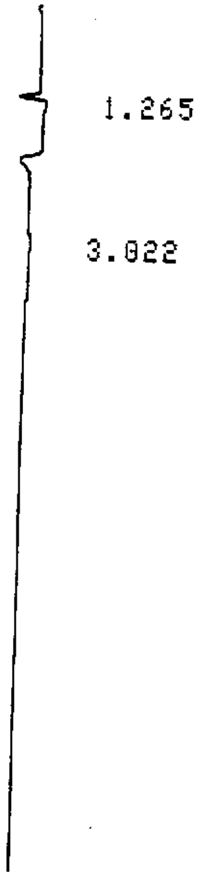
PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	3.02	198		3	0.0087	TCE
2	3.708	266		4	0.0191	PCE
	TOTAL	464			0.0277	

JR



STOP @ 1000.0
SAMPLE RUN JUL 3 1990 11:36
ANALYSIS # 10
TEMPERATURE 25
GAIN 20

COMPOUND NAME	PEAK	R.T.	AREA/PPM
UNKNOWN	2	13.1	130.4 mUS
UNKNOWN	3	15.8	640.5 mUS
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]
UNKNOWN	14	459.2	336.0 mUS
UNKNOWN	16	560.7	135.3 mUS
UNKNOWN	17	683.1	684.3 mUS
UNKNOWN	19	896.2	112.1 mUS



CHROMATOGRAM 1 MEMORIZED

CR501 CHROMATOPAC
CHANNEL NO 1
SAMPLE NO 0
REPORT NO 23

FILE 0
METHOD 44
SAMPLE WT 100

PKNO	TIME	AREA	MK	IDNO	CONC	NAME
1	1.265	3227				
2	3.022	594		3	0.026	TCE
	TOTAL	3821			0.026	

ATTACHMENT B

SITE ACCESS PERMIT BETWEEN
SOUTHERN PACIFIC RAILROAD AND JAMES RIVER CORPORATION

Southern Pacific
Transportation Company

Southern Pacific Building • One Market Plaza • San Francisco, California 94105

W. E. FOWLER
DIRECTOR-CONTRACTS AND JOINT FACILITIES
R. A. FUTRELL
MANAGER-CONTRACTS
J. E. GROTHER
MANAGER-JOINT FACILITIES

R. S. DICKINSON
JOINT FACILITY OFFICER
M. M. BROUSSARD
J. L. WAHLER
CONTRACT AGENTS

310-1
May 11, 1990

James River Corp.
c/o Brown and Caldwell
2101 William St.
San Leandro, CA 94511

Gentlemen:

Southern Pacific Transportation Company (Railroad), subject to the following terms and conditions hereby permits James River Corporation (JRC) to enter upon Railroad's property at or near Mulford, County of Alameda, State of California in the vicinity of M. P. 15.5 for the purpose of installing monitoring wells to take soil and water samples at the approximate locations shown on the attached Drawing No. L-15.5-L dated March 23, 1990.

JRC will pay Railroad partially to defray the cost of handling the sum of Five Hundred Dollars ($500.00).

In performing said work JRC and/or its contractor's forces shall use only public roadways to cross from one side of Railroad's tracks to the other.

All work shall be done in a good and workmanlike manner at the sole cost and expense of JRC and to the satisfaction of Railroad. JRC's installation plans shall be subject to approval of Railroad. The tracks, communication lines and other facilities of Railroad will not be interfered with and the work will be so prosecuted that there will be no interference with or delay to the operations of Railroad.

JRC shall obtain written consent of any lessee, licensee or grantee of Railroad at the time in possession of any of the land included hereunder.

In view of the possible existence of subsurface pipelines or other structures, JRC shall, for each test hole, explore for such structures with hand tools to a depth of at least eight (8) feet below the surface of the ground or at JRC's option utilize suitable metal detecting equipment prior to drilling or excavating with mechanized equipment. Railroad does not warrant there are no structures below said level and JRC's operations will be subject at all times to the liability provisions herein.

In addition to other provisions of this agreement requiring JRC to give notice prior to commencing work, JRC shall telephone Railroad at 1-800-283-4237 (a 24-hour number) to determine if a telecommunications system is buried anywhere on or about the premises defined or included herein. If it is, JRC will telephone the owner of the system designated by Railroad, arrange

for a cable locator and make arrangements for relocation or other protection for the system prior to beginning any work on the said premises.

JRC shall furnish Railroad with a copy of all soil and water data and analysis obtained from tests thereof. JRC shall submit to Railroad its plans for any remediation which may be necessary, direct to Railroad's Manager of Environmental Services at the above address.

Any contractors performing work on the premises of Railroad, and/or persons entering the premises to read gauges, etc. on behalf of JRC shall be deemed the agents of JRC.

Drilling operations in connection with test holes shall be no less than fifteen (15) feet from the center line of any track and at no times will cables or equipment of any nature be located less than fifteen (15) feet from the center line of any track.

All open holes will be satisfactorily covered and locked at all times when JRC's forces are not physically working in the actual vicinity thereof.

JRC agrees to reimburse Railroad for all cost and expense by Railroad in connection with said work, including but not limited to the furnishing of such inspector, watchman and flagman as Railroad deems necessary.

It is agreed and understood that upon completion of work covered hereunder, JRC will remove all equipment from Railroad's property and leave the property in a neat and safe condition satisfactory to Railroad. Without limiting the foregoing, JRC shall remove all well casings, shall fill the borings with grout, and shall take any additional action necessary to close the wells required by state or regulation or by any government agency having jurisdiction.

JRC shall, at its expense, comply with all laws, regulations rules, and orders which are applicable to work done hereunder or result from such work, regardless of when they become or became effective, including, without limitation, those relating to health, safety, noise, environmental protection, waste disposal, and water and air quality and furnish satisfactory evidence of such compliance upon request of Railroad.

JRC agrees to and shall indemnify and hold harmless Railroad, its officers, agents, and employees, from and against any and all fines, penalties, claims, demands, losses, damages, causes of action, suits, and liabilities of every kind (including reasonable attorneys' fees, court costs, and other expense related thereto) arising out of or in connection with any work done, action taken or permitted by JRC, its subcontractors, agents, or employees under this contract or arising out of JRC's failure to comply with the terms of this contract including, without

of the parties hereto, both JRC and Railroad, that the indemnity provided for in this paragraph indemnifies Railroad for its own negligence, whether that negligence is active or passive, or is the sole or a concurring cause of the injury, death or damage; provided that said indemnity shall not protect Railroad from liability for death, injury or damage, arising solely out of the criminal actions of Railroad, its officers, agents, and employees. The term Railroad as used in this paragraph shall include the assigns and affiliated companies of Railroad and any other railroad company operating on Railroad's tracks.

Permission herein given shall be effective only if accepted within one month from the date hereof and, if so accepted, shall be effective for a period of one (1) year thereafter. JRC agrees to notify Railroad's Regional Offices by letter on facsimile No. (213) 780-6959 at least five days prior to commencing any work on the premises of Railroad pursuant to this permission.

If the above terms and conditions are agreeable, please sign the enclosed duplicate original of this letter and forward same to Regional Engineer, Attn: Mr. J. W. Ivanusich, Southern Pacific Transportation Company, 1200 Corporate Center Dr., Monterey Park, CA, 91754-7605. After the notice provided for above, you may exercise permission herein given.

Yours very truly,

R. A. Futrell

AGREED TO AND ACCEPTED THIS

12 DAY OF JUNE, 1990.

JAMES RIVER CORPORATION

By Robert Wenning
(Title) ENGINEERING MANAGER

Attachment

ATTACHMENT C

BCA ANALYTICAL REPORT
SAMPLE GS-9A

Analytical Report

LOG NO: E90-07-036

Received: 03 JUL 90
Reported: 18 JUL 90

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

Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-036-1	GS-9	03 JUL 90

PARAMETER	07-036-1
Purgeable Priority Pollutants	
Date Analyzed	07.10.90
Date Extracted	07.10.90
Dilution Factor, Times	1
1,1,1-Trichloroethane, ug/L	<1
1,1,2,2-Tetrachloroethane, ug/L	<1
1,1,2-Trichloroethane, ug/L	<1
1,1-Dichloroethane, ug/L	<1
1,1-Dichloroethene, ug/L	<1
1,2-Dichloroethane, ug/L	<1
1,2-Dichloropropane, ug/L	<1
1,3-Dichloropropene, ug/L	<1
2-Chloroethylvinylether, ug/L	<1
Acrolein, ug/L	<10
Acrylonitrile, ug/L	<10
Bromodichloromethane, ug/L	<1
Bromomethane, ug/L	<1
Benzene, ug/L	<1
Bromoform, ug/L	<1
Chlorobenzene, ug/L	<1
Carbon Tetrachloride, ug/L	<1
Chloroethane, ug/L	<1
Chloroform, ug/L	<1
Chloromethane, ug/L	<1
Dibromochloromethane, ug/L	<1
Ethylbenzene, ug/L	<1
Methylene chloride, ug/L	<5

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300
FAX 415-547-3643

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Project: 5081

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
07-036-1	GS-9A (am)	03 JUL 90

PARAMETER	07-036-1
Trichloroethene, ug/L	160
Trichlorofluoromethane, ug/L	<1
Toluene, ug/L	<1
Tetrachloroethene, ug/L	3
Vinyl chloride, ug/L	<1
cis-1,2-Dichloroethene, ug/L	3
trans-1,2-Dichloroethene, ug/L	2
trans-1,3-Dichloropropene, ug/L	<1

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

Brown and Caldwell
Analytical

1255 Powell Street
Emeryville CA 94608
415-428-2300

CHAIN OF CUSTODY RECORD

BCA Number 9007036

Client name: B C - PH	Project or PO#: 5081
Address:	Phone #:
City, State, Zip:	Report attention: D. Courington

Analyses required: 8240; Hazardous sample Special handling required; Remarks

Lab Sample number	Date sampled	Time sampled	Type* See key below	Sampled by: D. Courington / Sample description	Number of containers
	7/3		GW	GS-9	2

	Signature	Print Name	Company	Date	Time
Relinquished by	DonnaCourington	D. Courington	B+C - PH	7/3/90	1415
Received by					
Relinquished by					
Received by					
Relinquished by					
Received by Laboratory	Monte Hoover	M SCOTT	BCA	7-3-90	14:15

B C ANALYTICAL

☐ 1255 Powell Street, Emeryville, CA 94608 (415) 428-2300

☐ 801 Western Avenue, Glendale, CA 91201 (818) 247-5737

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: AQ—Aqueous NA—Nonaqueous SL—Sludge GW—Groundwater SO—Soil OT—Other PE—Petroleum