Environmental
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TO: Alameda County Health Care Services Agency
Department of Environmental Health
1130 Harbor Bay Parkway, Suite 250
Alameda, California 94502-6577

DATE: June 27, 1996

ATTN: Mr. Dale Klettke, CHMM

JOB NUMBER: 65-96-044/7000

SUBJECT: JAMES RIVER FLEXIBLE PACKAGING FACILITY

WE ARE TRANSMITTING THE FOLLOWING:

Enclosed you will find one revised copy of the Spring 1966 Ground Water Monitoring Report for the James River Flexible Packaging Facility. This document includes a revised Figure 4. If you have any questions or comments regarding this matter please contact me at (510) 685-4053.

CC: Ms. Regina Colbert (2 copies)

DIST:
LB
FILE
ORIGINATOR

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

BY _____
David Blunt
Senior Geologist

f:\6596044\spr96.trn

Environmental
Science &
Engineering, Inc.
A CILCORP Company

June 26, 1996

Mr. Dale Klettke, CHMM
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

SUBJECT: **REVISED SPRING 1996**
GROUND WATER MONITORING REPORT
JAMES RIVER FLEXIBLE PACKAGING FACILITY
2101 WILLIAMS STREET
SAN LEANDRO, CALIFORNIA
ESE PROJECT NO. 65-96-044

Dear Mr. Klettke:

This report presents the results of the ground water monitoring activities conducted during the Spring of 1996 by Environmental Science & Engineering, Inc. (ESE). The ground water monitoring activities were conducted on behalf of the James River Flexible Packaging Facility located at 2101 Williams Street, San Leandro, California (Figure 1). This document was prepared under the supervision of a California Registered Geologist and for the exclusive use of the James River Corporation and the Alameda County Health Care Services Agency (ACHCSA), the only intended beneficiaries of our work. No other party may rely on the information contained in this report without prior written consent of ESE.

SPRING 1996 GROUND WATER MONITORING

Field Investigation

On April 11, 1996, ground water samples were collected from monitoring wells W-7, W-8, W-10, TW-2 and TW-3 for chemical analyses (well locations are shown on Figure 2 - Site Map). All ground water sampling was performed according to the ACHCSA. Field parameters are recorded on ESE's ground water sample collection logs which are presented in Appendix A.

Prior to purging and sampling, water-level measurements were obtained by an ESE representative using an electronic ground water well sounder with an accuracy of 0.01 foot. Ground water samples were collected from monitoring wells W-7, W-8, W-10, TW-2 and TW-3 after at least three well volumes of water was removed from each well using a vacuum extraction system. Vacuum extraction services were provided by Automated Environmental Services (AES) located in Modesto, California. Class 2000 PVC "stingers" have been designated to each of the site wells and are utilized by AES to purge each well prior to sampling. The use of a vacuum based system eliminates the possibility of cross contamination between wells, and thus does not require the decontamination. Ground water samples were collected using new disposable polyethylene bailers lowered into the wells with a new nylon cord. A new bailer and new cord were used for each well. Ground water from the second bailer volume removed from each well was decanted into laboratory supplied containers. The sample containers were sealed, labeled, placed on ice in a cooler and placed under chain-of-custody for transportation to McCampbell Analytical (MAL), a State-certified analytical laboratory of Pacheco, California. A laboratory- supplied trip blank, consisting

of deionized water, was transported with the other samples and analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons as hydraulic fluid (TPH-HF) using U.S. Environmental Protection Agency (EPA) Methods 8020 and 8015M, respectively. The purpose of the trip blank was to identify the presence of artifact laboratory chemicals in the sample bottles or contamination of volatile chemicals during transport. This sample was entered on the chain-of-custody form and delivered to the laboratory on ice in the cooler containing the ground water samples. ESE performed the fieldwork in accordance with ACHCSA and Tri-Regional Water Quality Control Board guidelines.

Ground water samples collected from wells W-7 and W-8 were analyzed for total petroleum hydrocarbons as diesel (TPH-D) and as hydraulic fluid (TPH-HF) using EPA Method 8015M. MAL routinely uses the direct injection method for analyzing hydraulic fluid oil-range constituents under EPA method 8015M and can achieve a lower minimum detection limit of 250 µg/L. Ground water samples collected from W-10 were analyzed for acetone, methyl isobutyl ketone (MIBK) using EPA Method 8260 and BTEX using EPA Method 8020. Ground water samples collected from monitoring wells TW-1 and TW-2 were analyzed for TPH-D and TPH-HF.

Depth to Ground Water, Gradient and Flow Direction

Water-level measurements collected in 1996 are presented in Table 1. The depth to ground water ranged from 10.28 feet in W-1 to 14.89 feet in TW-2. The direction of ground water flow on April 11, 1996 was to the west at a gradient of approximately 0.0045 ft/ft (Figure 3). Ground water flow direction and gradient data are consistent with data collected from previous monitoring periods.

Chemical Analyses

Monitoring well locations and their respective concentrations of analytes detected in samples collected from each well are illustrated in Figure 4. Table 2 presents a summary of reported ground water sample analytical results for the period of December 1995 to April 1996. Concentrations of chemical analytes reported during this event are consistent with results reported during the previous sampling event, with the exception of the reduced concentrations of hydraulic fluid reported in monitoring well TW-2.

Concentrations of TPH-D of ground water samples collected from monitoring wells W-7 and W-8 were reported as below the method detection limit. Concentrations of TPH-HF of ground water samples collected from monitoring wells TW-2, TW-3, W-7 and W-8 were reported as below the method detection limit. Concentrations of BTEX of ground water samples collected from monitoring wells TW-2 and TW-3 were reported as below the method detection limit. Concentrations of acetone and MIBK were detected in the ground water sample collected from monitoring well W-10 at 14,000 µg/L and 690 µg/L, respectively. BTEX was detected in ground water samples collected from W-10 at concentrations of 2.2 µg/L for benzene, 100 µg/L for toluene, 12 µg/L for ethylbenzene, and 62 µg/L for xylenes, respectively. A copy of the laboratory report and chain-of-custody documentation are presented in Appendix B.

Conclusions

Based on the results of the Spring 1996 ground water monitoring event, ESE presents the following conclusions:

- Depth to ground water ranged from 10.28 feet in W-1 to 14.89 feet in TW-2;
- The direction of ground water flow on April 11, 1996 was to the west at a gradient of approximately 0.0045 ft/ft (Figure 2);
- TPH-D in ground water samples collected from monitoring wells W-7 and W-8 were reported as below the method detection limit;
- TPH-HF in ground water samples collected from monitoring wells TW-2, TW-3, W-7 and W-8 were reported as below the method detection limit;
- Free-phase hydraulic fluid floating on ground water was encountered in monitoring well TW-1 and remediation of free-phase product by passive skimming is currently in progress;
- BTEX in ground water samples collected from monitoring wells TW-2 and TW-3 were reported as below the method detection limit;
- Acetone is reported in the ground water sample collected from monitoring well W-10 at a concentration of 14,000 μg/L, which is above the EPA Preliminary Remediation Goal (PRG) in tap water of 770 μg/L; and
- MIBK was detected in the ground water sample collected from monitoring well W-10 at 690 μg/L, which is below the PRG in tap water of 1,800 μg/L.

Results of annual ground water sampling and analysis performed during the Spring of 1966 indicate that TPH-HF concentrations are no longer being detected in the tested on-site monitoring wells. ESE believes, based on conversations with the ACHCSA, that monitoring for HF should be discontinued based on information presented by the State Water Resources Control Board memorandum LG-141: Permanent Hydraulic Fuel Tank Exemption. ESE also believes that monitoring should be discontinued and no further action be issued according to guidelines presented by both the State Water Board's - Interim Guidance on Required Cleanup at Low-Risk Fuel Sites, dated December 8, 1995 and by the California Regional Water Quality Control Board's memorandum concerning Supplemental Instructions to the aforementioned Interim Guidance. Accordingly, the James River Facility has satisfied these guidelines as outlined by the following:

- The point source of the hydraulic fluid leak has been removed and the free phase product is being removed;
- The site soils and ground water have been adequately characterized;
- Ground water impact by chemicals of concern from the James River Site is now minimal and no human toxicity is reported for hydraulic fluid;
- No drinking water wells or other sensitive receptors are likely to be impacted; and
- The low levels and limited extent of the chemicals of concern do not pose a significant risk to human health and the environment.

Review of internal documents and interviews with on-site personnel by Ms. Regina Colbert of the James River Corporation has not revealed an on-site source for the acetone impact to ground water beneath the site. Acetone used by the facility at the on-site laboratory is estimated at a few gallons.

Recommendations

With continued decrease in the levels of the chemicals of concern, it is anticipated that levels below environmental concern will continue to be found in the monitoring wells. ESE thus suggests that the James River Facility case be closed upon review of these findings and that no further action be issued by the ACHCSA.

Should you have any questions pertaining to this report, please contact Eric Garcia at (510) 685-4053.

Respectfully submitted,

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

FOR 6.26.96

Eric W. Garcia — Date
Senior Staff Geologist

6-26-96

David J. Blunt, R.G. 4516 — Date
Senior Geologist

Attachments:

	Table 1	Summary of Ground Water Elevation Data
	Table 2	Summary of Ground Water Sample Analytical Results
	Figure 1	Location Map
	Figure 2	Site Map
	Figure 3	Ground Water Elevation Contour Map, April 11, 1996
	Figure 4	Ground Water Quality Analytical Results, April 11, 1996
	Appendix A	Sample Collection Logs
	Appendix B	Analytical Reports with Chain-of-Custody Documentation

TABLE 1
SUMMARY OF GROUND WATER ELEVATION DATA
JAMES RIVER FLEXIBLE PRODUCT FACILITY
SAN LEANDRO, CALIFORNIA

Monitoring Well Number	Date Measured	Top of Casing Elevation (feet MSL*)	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Ground Water Elevation (feet MSL*)
W-6	May 1995	21.05	10.30	--	--	10.75
	July 1995		13.75	--	--	7.30
	Oct. 1995		12.47	--	--	8.58
	Jan. 1996	24.72*	11.48	--	--	13.24
	April 1996		11.30	--	--	13.42
W-7	May 1995	20.41	10.30	--	--	10.11
	July 1995		11.70	--	--	8.71
	Oct. 1995		12.39	--	--	8.02
	Jan. 1996	24.04*	11.60	--	--	12.44
	April 1996		10.86	--	--	13.18
W-8	May 1995	20.50	10.55	--	--	9.95
	July 1995		11.14	--	--	9.36
	Oct. 1995		11.81	--	--	8.69
	Jan. 1996	23.83*	11.01	--	--	12.82
	April 1996		10.23	--	--	13.60
W-10	May 1995	20.22	10.95	--	--	9.27
	July 1995		11.84	--	--	8.38
	Oct. 1995		12.54	--	--	7.68
	Jan. 1996	24.77*	11.67	--	--	13.10
	April 1996		10.88	--	--	13.89
B-1	May 1995	20.59	10.34	--	--	10.25
	July 1995		11.25	--	--	9.34
	Oct. 1995		11.98	--	--	8.61
	Jan. 1996	24.25*	11.12	--	--	13.13
	April 1996		10.30	--	--	13.95

Notes:
*Elevation based on an arbitrary datum of 25 feet above Mean Sea Level (MSL) at southwest corner of aboveground storage tank pad.
--=no product measured

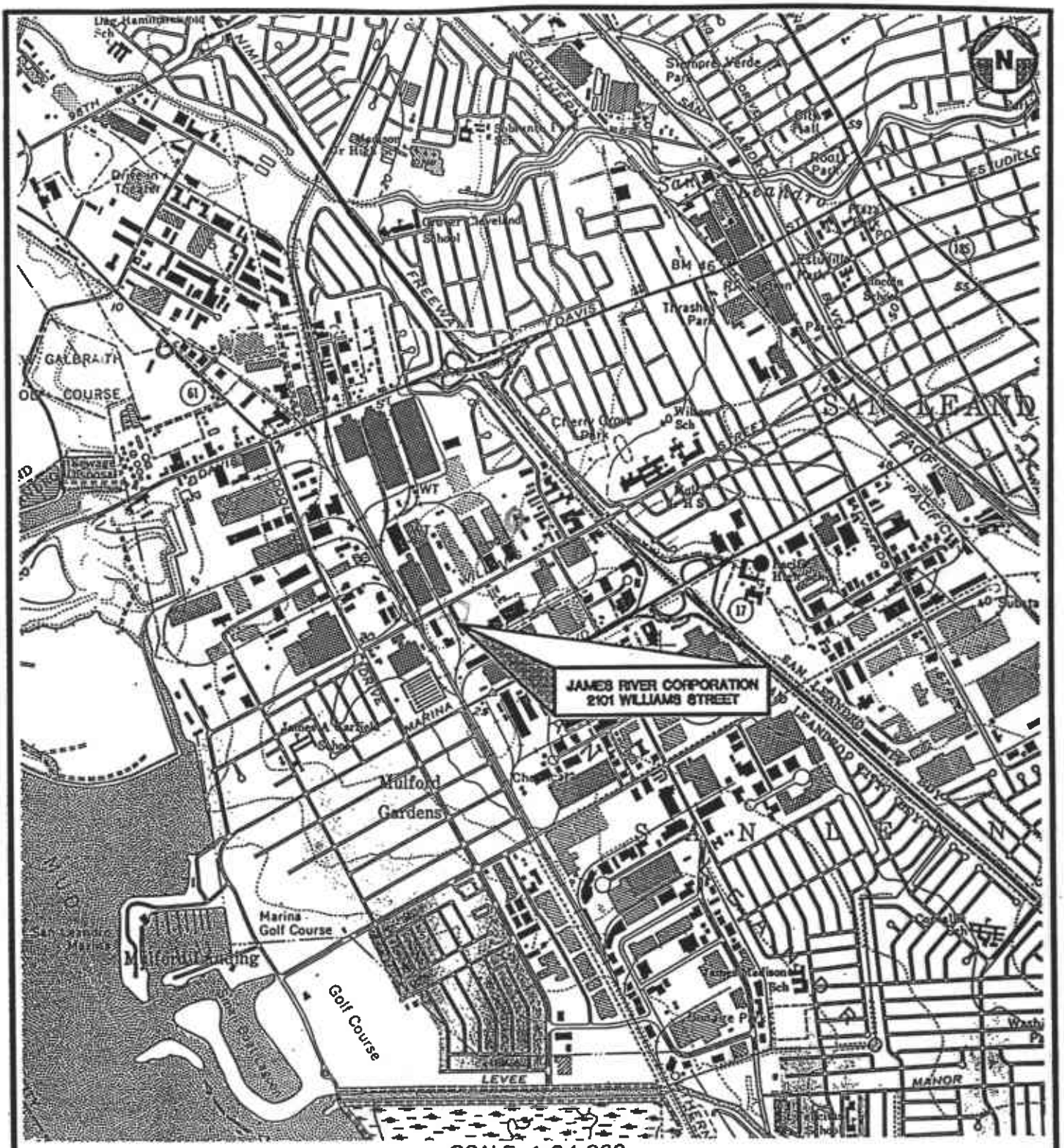
TABLE 1
SUMMARY OF GROUND WATER ELEVATION DATA
JAMES RIVER FLEXIBLE PRODUCT FACILITY
SAN LEANDRO, CALIFORNIA

Monitoring Well ID	Date Measured	Top of Casing Elevation (feet MSL*)	Depth to Water (feet)	Depth to Product (feet)	Product Thickness (feet)	Ground Water Elevation (feet MSL*)
TW-1	01/11/96	28.61	15.73	15.68	0.05	12.88
	04/11/96		14.85	ND	ND	ND
TW-2	01/11/96	25.79	15.29	--	--	10.50
	04/11/96		14.89	--	--	10.90
TW-3	01/11/96	25.29	13.82	--	--	11.47
	04/11/96		13.25	--	--	12.04

Notes:
*Elevation based on an arbitrary datum of 25 feet above Mean Sea Level (MSL) at southwest corner of aboveground storage tank pad.
ND =Not determined - Product present, but unable to measure thickness and calculate ground water elevation.
--=no product measured

TABLE 2
SUMMARY OF GROUND WATER SAMPLE ANALYTICAL RESULTS
JAMES RIVER FLEXIBLE PRODUCT FACILITY
SAN LEANDRO, CALIFORNIA

Sample ID	Sample Date	TPH-D (µg/L)	TPH-HF (µg/L)	Benzene (µg/L)	Toluene (µg/L)	Ethylbenzene (µg/L)	Total Xylenes (µg/L)	Acetone (µg/L)	MIBK (µg/L)
TW-2	12/28/95	NA	2,200	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	NA
	4/11/96	NA	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	NA
DUP	4/11/96	NA	ND<250	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	NA
TW-3	12/28/95	NA .	ND<1,400	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	NA
DUP	12/28/95	NA	ND<1,400	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	NA
	4/11/96	NA	ND<250	0.58	ND<0.5	ND<0.5	ND<0.5	NA	NA
W-7	12/28/95	ND<60	ND<1,500	ND<0.5	ND<0.5	ND<0.5	ND<0.5	NA	NA
	4/11/96	ND<50	ND<250	NA	NA	NA	NA	NA	NA
W-8	4/11/96	ND<50	ND<250	NA	NA	NA	NA	NA	NA
W-10	12/28/95	1,700	2,500	1.8	91	11	64	NA	NA
	4/11/96	NA	NA	2.2	100	12	62	14,000	690



SCALE 1:24,000

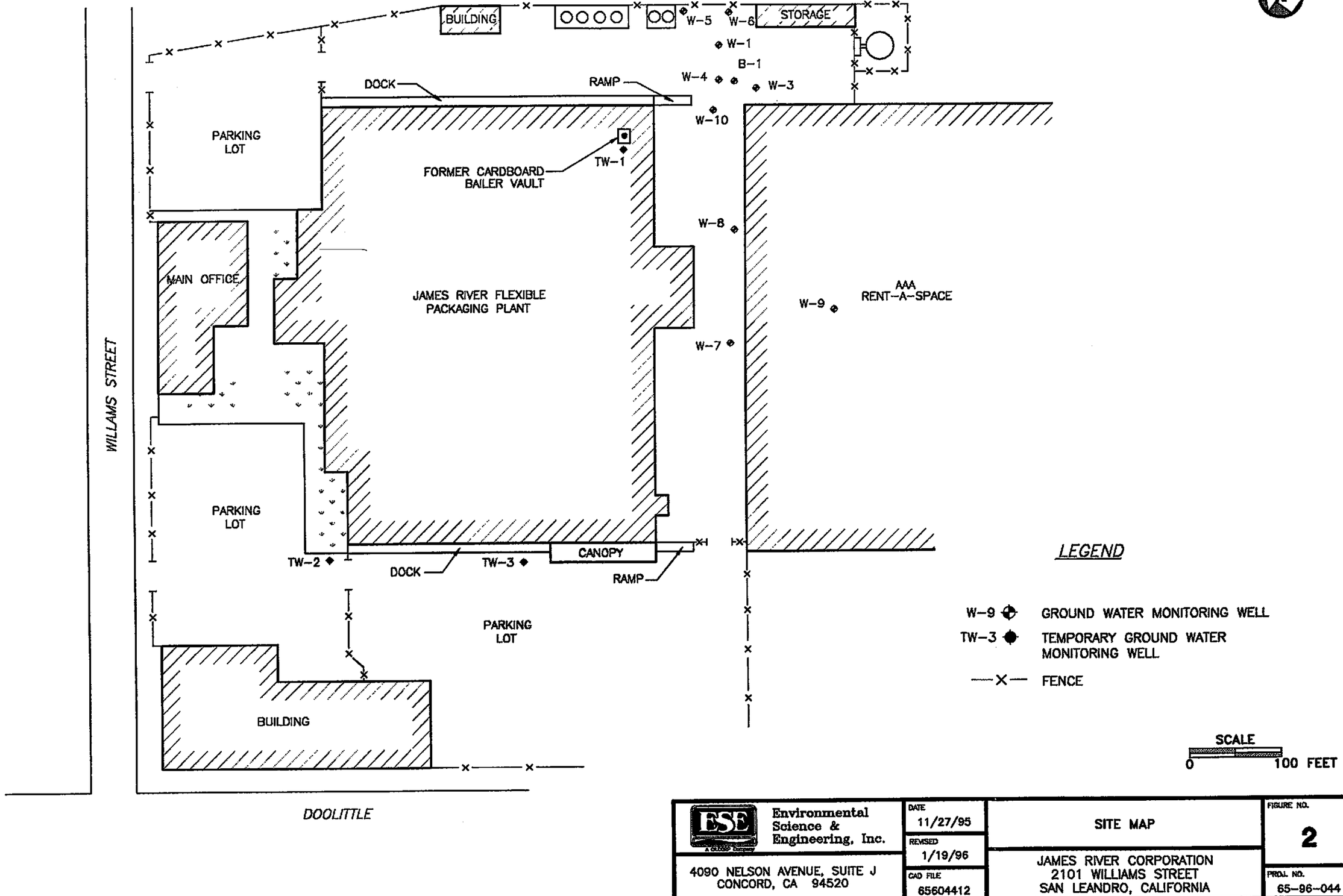
1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

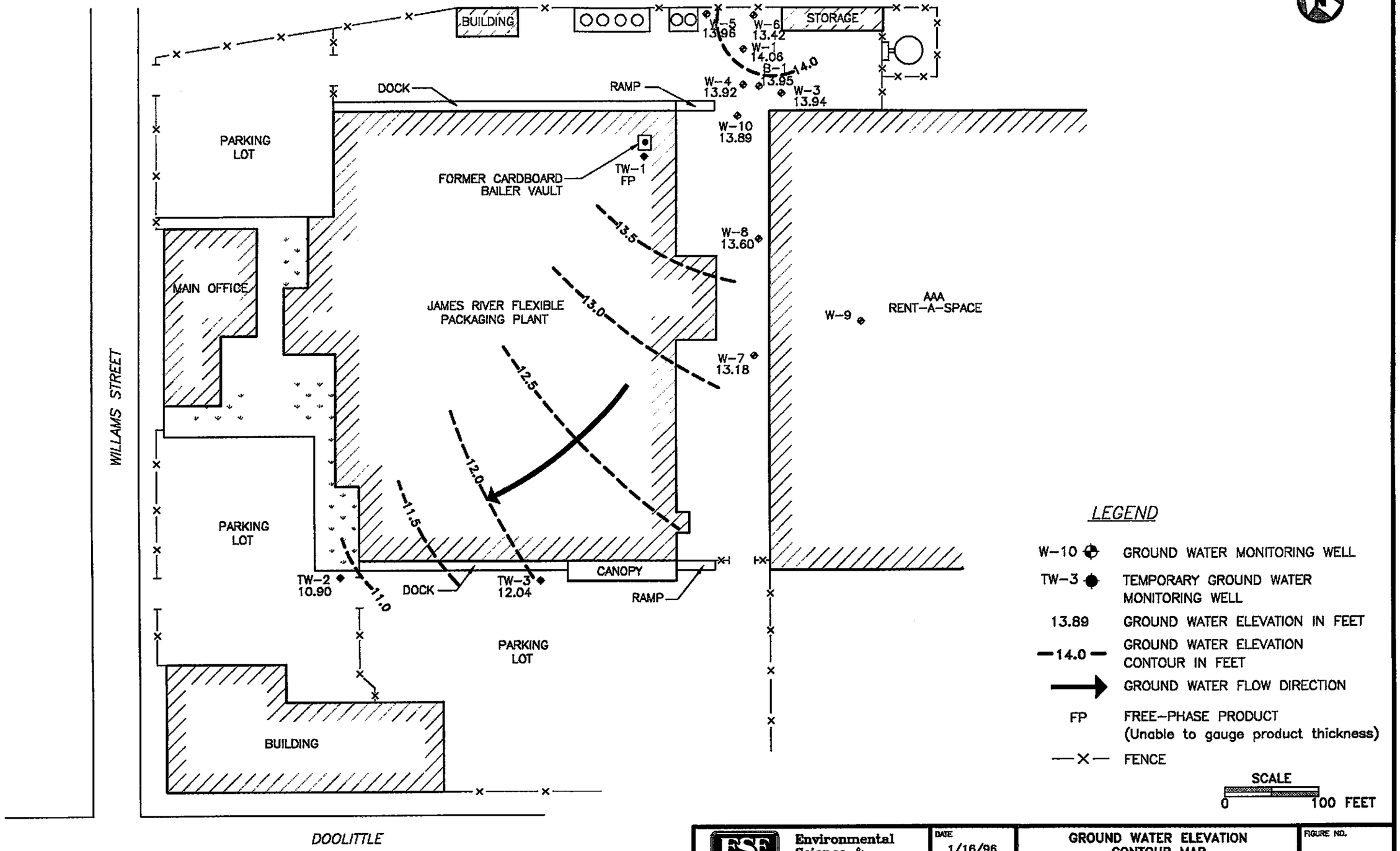
1 .5 0 1 KILOMETER

ADAPTED FROM U.S.G.S. SAN LEANDRO, CA. 7.5 MINUTE TOPOGRAPHIC QUADRANGLE MAP 1959, PHOTOREVISED 1980.

Environmental Science & Engineering, Inc. 4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DATE 3/10/95 REVISED CAD FILE 50220003	LOCATION MAP JAMES RIVER CORPORATION 2101 WILLIAMS STREET SAN LEANDRO, CALIFORNIA	FIGURE NO. 1 PROJ. NO. 6595022



Environmental Science & Engineering, Inc. 4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DATE 11/27/95 REVISED 1/19/96 CAD FILE 65604412	SITE MAP JAMES RIVER CORPORATION 2101 WILLIAMS STREET SAN LEANDRO, CALIFORNIA	FIGURE NO. 2 PROJ. NO. 65-96-044



LEGEND

W-10 ⊕	GROUND WATER MONITORING WELL
TW-3 ●	TEMPORARY GROUND WATER MONITORING WELL
13.89	GROUND WATER ELEVATION IN FEET
—14.0—	GROUND WATER ELEVATION CONTOUR IN FEET
→	GROUND WATER FLOW DIRECTION
FP	FREE-PHASE PRODUCT (Unable to gauge product thickness)
—X—	FENCE

SCALE
0 100 FEET

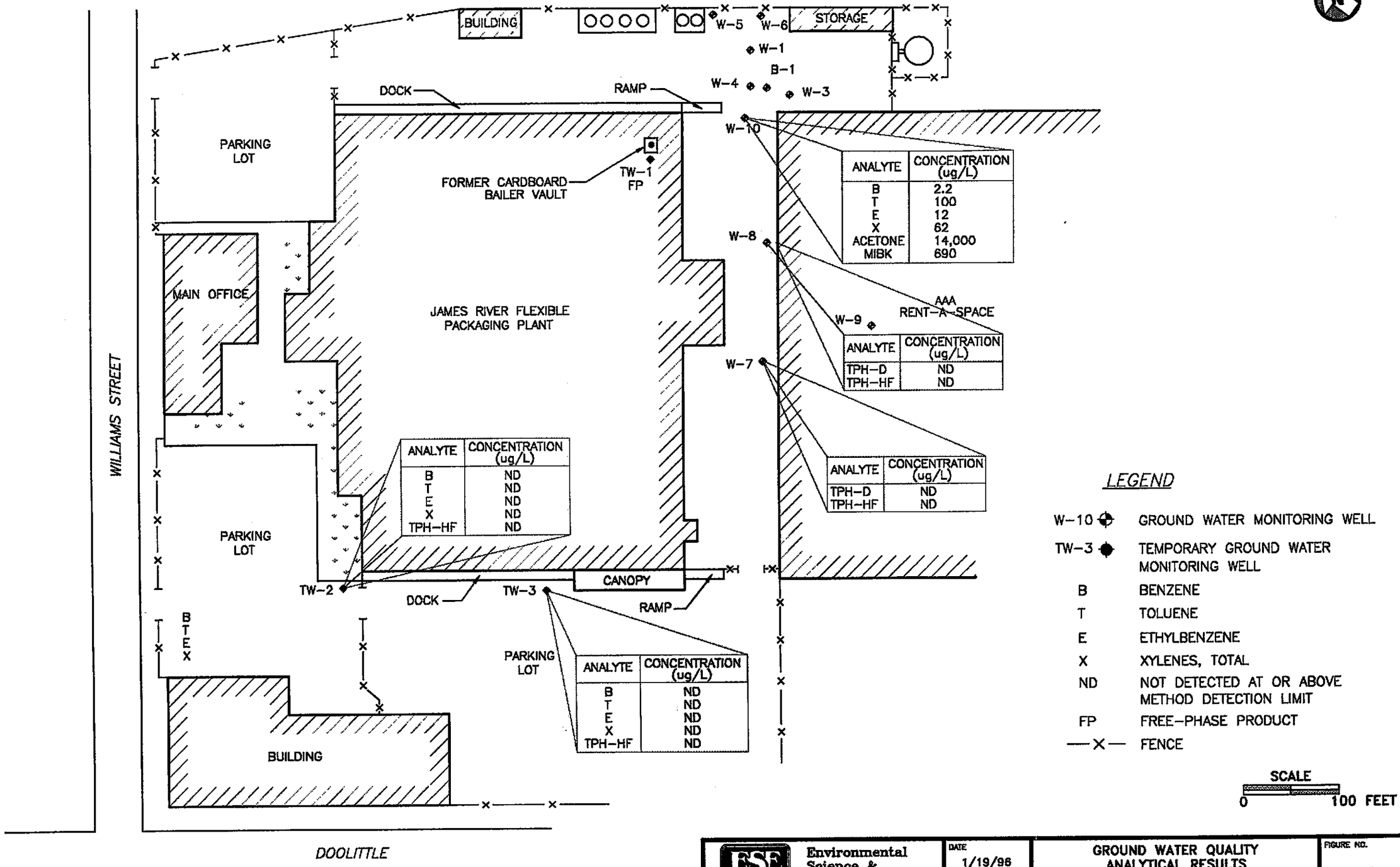
Environmental Science & Engineering, Inc.
4090 NELSON AVENUE, SUITE J
CONCORD, CA 94520

DATE 1/16/96
REVISED 6/11/96
CAD FILE 65604413

GROUND WATER ELEVATION CONTOUR MAP APRIL 11, 1996

JAMES RIVER CORPORATION
2101 WILLIAMS STREET
SAN LEANDRO, CALIFORNIA

FIGURE NO. 3
PROJ. NO. 65-96-044



LEGEND

W-10 ⊕	GROUND WATER MONITORING WELL
TW-3 ⊕	TEMPORARY GROUND WATER MONITORING WELL
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	XYLENES, TOTAL
ND	NOT DETECTED AT OR ABOVE METHOD DETECTION LIMIT
FP	FREE-PHASE PRODUCT
—X—	FENCE

SCALE
0 100 FEET

Environmental Science & Engineering, Inc. 4090 NELSON AVENUE, SUITE J CONCORD, CA 94520	DATE 1/19/96 REVISED 6/25/96 CAD FILE 65604414	GROUND WATER QUALITY ANALYTICAL RESULTS APRIL 11, 1996 JAMES RIVER CORPORATION 2101 WILLIAMS STREET SAN LEANDRO, CALIFORNIA	FIGURE NO. 4 PROJ. NO. 65-96-044

Appendix A

Sample Collection Logs

WELL MEASUREMENTS

PROJECT NO. 6596044

LOCATION 2101 Williams St.
San Leandro, CA

STAFF EWG

DATE AND TIME 4.11.96 0800

WELL NO	PRODUCT LEVEL (FT)	WATER LEVEL (FT)	COMMENTS
W-1		10.28	
W-3		10.55	
W-4		10.70	
W-5		11.43	
W-6		11.30	
W-7		10.86	
W-8		10.23	
W-9		10.30	
W-10		10.88	
B-1		10.30	
TW-1	*	14.85	*Product Present unable to determine thickness
TW-2		14.89	
TW-3		13.25	

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SAMPLE COLLECTION LOG

PROJECT NAME: James Riva
PROJECT NO.: 6596044
DATE: 4.11.96

SAMPLE LOCATION I.D.: W-7
SAMPLER: [signature]
PROJECT MANAGER: EWG

CASING DIAMETER

2" ___
4" ✓
Other ___

SAMPLE TYPE

Ground Water ✓
Surface Water ___
Treat. Influent ___
Treat. Effluent ___
Other ___

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: ___ (ft.)
DEPTH TO WATER: 10.86 (ft.)
DEPTH OF WELL: 36.50 (ft.)

PRODUCT THICKNESS: ___ (ft.)
WATER COLUMN: 25.64 (ft.)
WELL CASING VOLUME: 4.1 (gal)

MINIMUM PURGE VOLUME (3 or 4 WCV): 50.2 (gal)
ACTUAL VOLUME PURGED: ___ (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other
0845	0	8.18	770	58.8	—	cloudy
0849	25	8.11	796	61.3	—	clear
0851	55	8.20	778	61.3	—	clear

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE Pen UNIT# 16581 DATE: 4.11.96 TIME: 0800 BY: [signature]
TURBIDITY: TYPE ___ UNIT# ___ DATE: ___ TIME: ___ BY: ___

PURGE METHOD

___ Displacement Pump
___ Bailer (Teflon/PVC/SS)
✓ Other Vac Truck
___ Submersible Pump

SAMPLE METHOD

___ Bailer (Teflon/PVC/SS)
✓ Bailer (Disposable)
___ Dedicated
___ Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	W-7	0855	4.11.96	McCampbell	TPH-D/TPH-HF
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS: ___

SAMPLER: [signature] PROJECT MANAGER [signature]

4090 Nelson Avenue, Suite J Concord, CA 94520 Phone (510) 685-4053 Fax (510) 685-5323

Environmental Science & Engineering, Inc.
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SAMPLE COLLECTION LOG

PROJECT NAME: James River
PROJECT NO.: 6596044
DATE: 4.11.96

SAMPLE LOCATION I.D.: W-8
SAMPLER: [illegible]
PROJECT MANAGER: EWG

CASING DIAMETER

2"
4" ✓
Other

SAMPLE TYPE

Ground Water ✓
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: ~ (ft.) PRODUCT THICKNESS: ~ (ft.) MINIMUM PURGE VOLUME
DEPTH TO WATER: 10.23 (ft.) WATER COLUMN: 25.67 (ft.) (3 or 4 WCV): 50.3 (gal)
DEPTH OF WELL: 35.90 (ft.) WELL CASING VOLUME: 16.8 (gal) ACTUAL VOLUME PURGED: (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other
1010	0	8.07	650	56.7	—	cloudy
1012	25	8.03	672	60.3	—	cloudy
1014	55	7.92	677	62.4	—	cloudy

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE Pen UNIT# 6581 DATE: 4.11.96 TIME: 0800 BY:
TURBIDITY: TYPE UNIT# DATE: TIME: BY:

PURGE METHOD

___Displacement Pump ✓Other Vac Truck
___Bailer (Teflon/PVC/SS) ___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS) ___Dedicated
✓Bailer (Disposable) ___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	W-8	1015	4.11.96	McCampbell	TPH-D/TPH-HF
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS:

SAMPLER: PROJECT MANAGER

4090 Nelson Avenue, Suite J Concord, CA 94520 Phone (510) 685-4053 Fax (510) 685-5323

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A CELCORP Company

SAMPLE COLLECTION LOG

PROJECT NAME: James River
PROJECT NO.: 0596044
DATE: 4.11.96

SAMPLE LOCATION I.D.: W-10
SAMPLER: G
PROJECT MANAGER: EJG

CASING DIAMETER

2" ___
4" ✓
Other ___

SAMPLE TYPE

Ground Water ✓
Surface Water ___
Treat. Influent ___
Treat. Effluent ___
Other ___

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: — (ft.) PRODUCT THICKNESS: — (ft.) MINIMUM PURGE VOLUME
DEPTH TO WATER: 10.88 (ft.) WATER COLUMN: 5.62 (ft.) (3 or 4 WCV): 17.7 (gal)
DEPTH OF WELL: 16.5 (ft.) WELL CASING VOLUME: 3.7 (gal) ACTUAL VOLUME PURGED: 20 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other
1030	0	7.93	353	62.8	—	cloudy
1025	10	7.8	771	64.0	—	cloudy
	20	7.57	929	63.3	—	cloudy

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE Ion UNIT# 1581 DATE: 4.11.96 TIME: 0800 BY: G
TURBIDITY: TYPE ___ UNIT# ___ DATE: ___ TIME: ___ BY: ___

PURGE METHOD

___Displacement Pump ✓Other Vac Truck
___Baller (Teflon/PVC/SS) ___Submersible Pump

SAMPLE METHOD

___Baller (Teflon/PVC/SS) ___Dedicated
✓Baller (Disposable) ___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	W-10	1035	4.11.96	McCampbell	8260
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS:

SAMPLER: _____ PROJECT MANAGER _____

4090 Nelson Avenue, Suite J Concord, CA 94520 Phone (510) 685-4053 Fax (510) 685-5323

Environmental Science & Engineering, Inc.

A CH2M HILL Company

SAMPLE COLLECTION LOG

PROJECT NAME: James River
PROJECT NO.: 65560 44
DATE: 4.11.96

SAMPLE LOCATION I.D.: TW-2
SAMPLER: G
PROJECT MANAGER: EWG

CASING DIAMETER

2"
4" ✓
Other

SAMPLE TYPE

Ground Water ✓
Surface Water
Treat. Influent
Treat. Effluent
Other

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: — (ft.) PRODUCT THICKNESS: — (ft.) MINIMUM PURGE VOLUME
DEPTH TO WATER: 14.89 (ft.) WATER COLUMN: 5.11 (ft.) (3) or 4 WCV): 10 (gal)
DEPTH OF WELL: 20.00 (ft.) WELL CASING VOLUME: 3.3 (gal) ACTUAL VOLUME PURGED: 20 (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other
0749	0	6.79	960	53.2°	—	Silty
0757	10	6.88 ~~7.46~~	716	58.3°	—	cloudy
0753	20	7.09	796	59.2°	—	Cloudy
~~0800~~						

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE Pen UNIT# 6581 DATE: 4.11.96 TIME: 0800 BY: G
TURBIDITY: TYPE ____ UNIT# ____ DATE: ____ TIME: ____ BY: ____

PURGE METHOD

___Displacement Pump ✓Other Vac Truck
___Bailer (Teflon/PVC/SS) ___Submersible Pump

SAMPLE METHOD

___Bailer (Teflon/PVC/SS) ___Dedicated
✓Bailer (Disposable) ___Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	TW-2	0800	4.11.96	McCampbell	TPH-AF/BTEX
DUPLICATE	Dup	~~0800~~	"	"	"
SPLIT					
FIELD BLANK					

COMMENTS:

SAMPLER: PROJECT MANAGER

4090 Nelson Avenue, Suite J Concord, CA 94520 Phone (510) 685-4053 Fax (510) 685-5323

Environmental Science & Engineering, Inc.
A CH2M HILL Company

SAMPLE COLLECTION LOG

PROJECT NAME: James River
PROJECT NO.: 6596 044
DATE: 4.11.96

SAMPLE LOCATION I.D.: TW-3
SAMPLER: G
PROJECT MANAGER: EWG

CASING DIAMETER

2" ___
4" ✓
Other ___

SAMPLE TYPE

Ground Water ✓
Surface Water ___
Treat. Influent ___
Treat. Effluent ___
Other ___

WELL VOLUMES PER UNIT

Well Casing I.D. (inches)	Gal/Ft.
2.0	0.1632
4.0	0.6528
6.0	1.4690

DEPTH TO PRODUCT: — (ft.)
DEPTH TO WATER: 13.85 (ft.)
DEPTH OF WELL: 20 — (ft.)

PRODUCT THICKNESS: ___ (ft.)
WATER COLUMN: 6.75 (ft.)
WELL CASING VOLUME: 4.4 (gal)

MINIMUM PURGE VOLUME (3 or 4 WCV): 15.2 (gal)
ACTUAL VOLUME PURGED: ___ (gal)

TIME	Volume (GAL)	pH (Units)	E.C. (Micromhos)	Temperature (F°)	Turbid. (NTU)	Other
0822	0	7.98	778	57.7	—	Sky
0828	10	8.04	857	59.2	—	Cloudy
0831	20	8.19	869	61.7	—	cloudy

INSTRUMENT CALIBRATION

pH/COND./TEMP.: TYPE Pen UNIT# 6581 DATE: 4.11.96 TIME: 0800 BY: G
TURBIDITY: TYPE ___ UNIT# ___ DATE: ___ TIME: ___ BY: ___

PURGE METHOD

___ Displacement Pump
___ Bailer (Teflon/PVC/SS)
✓ Other Vac Truck
___ Submersible Pump

SAMPLE METHOD

___ Bailer (Teflon/PVC/SS)
✓ Bailer (Disposable)
___ Dedicated
___ Other

SAMPLES COLLECTED

	ID	TIME	DATE	LAB	ANALYSES
SAMPLE	TW-3	0835	4.11.96	McCampbell	TPH-HF/BTEX
DUPLICATE					
SPLIT					
FIELD BLANK					

COMMENTS: ___

SAMPLER: ___ PROJECT MANAGER: ___

4090 Nelson Avenue, Suite J Concord, CA 94520 Phone (510) 685-4053 Fax (510) 685-5323

Appendix B

Analytical Reports with Chain-of-Custody Documentation

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Environmental Science & Eng. 4090 Nelson Ave., Suite J Concord, CA 94520	Client Project ID: # 6596044; James River	Date Sampled: 04/11/96
		Date Received: 04/11/96
	Client Contact: Eric Garcia	Date Extracted: 04/22/96
	Client P.O: # SMSA-C-021	Date Analyzed: 04/22/96

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g)+	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
63148	W-10	Water	---	2.2	100	12	62	---#
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		Water	50 ug/L	0.5	0.5	0.5	0.5	
		Soil	1.0 mg/kg	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

Environmental Science & Eng. 4090 Nelson Ave., Suite J Concord, CA 94520	Client Project ID: # 6596044; James River	Date Sampled: 04/11/96
		Date Received: 04/11/96
	Client Contact: Eric Garcia	Date Extracted: 04/12/96
	Client P.O: # SMSA-C-021	Date Analyzed: 04/12/96

Diesel Range (C10-C23) Hydraulic Fluid Range (C18+) Extractable Hydrocarbons as Diesel & Hydraulic Fluid *

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

Lab ID	Client ID	Matrix	TPH(d)+	TPH(hf)+	% Recovery Surrogate
63146	W-7	Water	ND	ND	100
63147	W-8	Water	ND	ND	98
63149	TW-2	Water	---	ND	97
63150	TW-3	Water	---	ND	100
63151	Dup	Water	---	ND	100
63152	Trip	Water	---	ND	99
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit		Water	50 ug/L	250 ug/L	
		Soil	10 mg/kg	10 mg/kg	

* water samples are reported in ug/L, soil samples in mg/kg, and all TCLP and STLC extracts in mg/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant); d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.

DHS Certification No. 1644

Edward Hamilton, Lab Director

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 04/22/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#63369)	MS	MSD	Amount Spiked	% Recovery MS	% Recovery MSD	RPD
TPH (gas)	0.0	104.5	102.0	100.0	104.5	102.0	2.4
Benzene	0.0	10.5	10.2	10.0	105.0	102.0	2.9
Toluene	0.0	10.0	10.5	10.0	100.0	105.0	4.9
Ethyl Benzene	0.0	11.2	10.7	10.0	112.0	107.0	4.6
Xylenes	0.0	33.4	32.2	30.0	111.3	107.3	3.7
TPH (diesel)	0	158	151	150	105	101	4.3
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC. | 110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 04/11/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#63042)	MS	MSD	Amount Spiked	% Recovery MS	% Recovery MSD	RPD
TPH (gas)	0.0	100.5	105.3	100.0	100.5	105.3	4.6
Benzene	0.0	10.4	10.6	10.0	104.0	106.0	1.9
Toluene	0.0	10.7	11.0	10.0	107.0	110.0	2.8
Ethyl Benzene	0.0	11.0	11.3	10.0	110.0	113.0	2.7
Xylenes	0.0	33.1	33.7	30.0	110.3	112.3	1.8
TPH (diesel)	N/A	N/A	N/A	N/A	N/A	N/A	N/A
TRPH (oil & grease)	N/A	N/A	N/A	N/A	N/A	N/A	N/A

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR HYDROCARBON ANALYSES

Date: 04/12/96 Matrix: Water

Analyte	Concentration (ug/L) Sample (#63168)	MS	MSD	Amount Spiked	% Recovery MS	% Recovery MSD	RPD
TPH (gas)	0.0	106.2	97.1	100.0	106.2	97.1	9.0
Benzene	0.0	9.7	9.6	10.0	97.0	96.0	1.0
Toluene	0.0	9.9	9.7	10.0	99.0	97.0	2.0
Ethyl Benzene	0.0	10.1	9.8	10.0	101.0	98.0	3.0
Xylenes	0.0	29.7	28.9	30.0	99.0	96.3	2.7
TPH (diesel)	0	165	164	150	110	109	0.5
TRPH (oil & grease)	0	24500	25500	23700	103	108	4.0

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

McCAMPBELL ANALYTICAL INC.
110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

QC REPORT FOR VOCs (EPA 624/8240/8260)

Date: 04/16/96-04/19/96 Matrix: Water

Analyte	Concentration (ug/L)			Amount Spiked	% Recovery		RPD
	Sample	MS	MSD		MS	MSD	
1,1-Dichloroethe	0.00	4.50	4.50	5.0	90	90	0.0
Trichloroethene	0.00	4.70	4.60	5.0	94	92	2.2
EDB	0.00	5.30	5.00	5.0	106	100	5.8
Chlorobenzene	0.00	5.70	5.60	5.0	114	112	1.8
Benzene	0.00	5.20	4.70	5.0	104	94	10.1
Toluene	0.00	5.50	5.20	5.0	110	104	5.6

% Rec. = (MS - Sample) / amount spiked x 100

RPD = (MS - MSD) / (MS + MSD) x 2 x 100

6192 AFSEX.316

DATE 4.11.96 PAGE 1 OF 1

CHAIN OF CUSTODY RECORD

PROJECT NAME James River

ADDRESS 7101 Williams Street
San Leandro, CA

PROJECT NO. 6596044

SAMPLED BY G

LAB NAME McCampbell

ESE Environmental Science & Engineering, Inc.
A CALCORP Company
4090 Nelson Avenue
Suite J
Concord, CA 94520
Phone (510) 685-4053
Fax (510) 685-5323

SAMPLE #	DATE	TIME	LOCATION	BTEX	TPH-D	TPH-HF	(EDB) Acetone, MTBE, BTEX	BTEX by 8020 4-23-96	MATRIX	NUMBER OF CONTAINERS	REMARKS (CONTAINER, SIZE, ETC.)	
W-7	4.11.96	0855	San Leandro	[illegible]	X	X			H_2O	1	1 Lamber	63146
W-8		1015		[illegible]	X	X				1	1 Lambs	63147
+ W-10		1035					X	X		2	2 VOAs	63148
+ TW-1		0800		X		X				3	1 Lambs 2 VOAs	63149
+ TW-3		0835		X		X				3		63150
+ Dup		0800		X		X				3		63151
Trip		—		X	X	X				3		63152

RELINQUISHED BY: (signature)	RECEIVED BY: (signature)	date	time
1.			
2.			
3.			
4.			
5.			

VOAS | O&G | METALS | OTHER

PRESERVATIVE ✓ | | | |

ICE/T ✓
GOOD CONDITION ✓
HEAD SPACE ABSENT ✓
APPROPRIATE CONTAINERS ✓

16 TOTAL NUMBER OF CONTAINERS

REPORT RESULTS TO: Eric Garcia

SPECIAL SHIPMENT REQUIREMENTS: cold ship store

INSTRUCTIONS TO LABORATORY (handling, analyses, storage, etc.):

STAT

SAMPLE RECEIPT

CHAIN OF CUSTODY SEALS	
REC'D GOOD CONDTN/COLD	HK
CONFORMS TO RECORD	HK