Quarterly Ground-Water Monitoring Report
January 1 through March 31, 1994
Polvorosa Business Park
1555 Doolittle Drive
San Leandro, California

April 27, 1995
1204.00-001

Prepared for
Chamberlin Associates

LEVINE·FRICKE

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

April 27, 1995 LF 1204.00-001

Mr. Scott Seery
Senior Hazardous Materials Specialist
Alameda County Health Care Services Agency
Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94501

Subject: Quarterly Ground-Water Monitoring Report, January 1 through March 31, 1995, Polvorosa Business Park, 1555 Doolittle Drive, San Leandro, California

Dear Scott:

Enclosed is one copy of the subject report for your review and files. The report details ground-water monitoring at the subject site for the period from January 1 through March 31, 1995, and is submitted on behalf of Chamberlin Associates, in accordance with your May 20, 1994 letter to Stephen Chamberlin.

The next quarterly sampling event is tentatively scheduled for late May or early June. Results from that event will be reported in our July 31, 1995 quarterly monitoring report.

Please call either of the undersigned if you have questions or comments at (510) 652-4500.

Sincerely,

Adam Klein
Senior Project Hydrologist

Adam Klein for
Ted Splitter, P.E.
Principal Engineer

cc: Stephen Chamberlin, Chamberlin Associates

1900 Powell Street, 12th Floor
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CERTIFICATION

All engineering information, conclusions, and recommendations in this document have been prepared under the supervision of and reviewed by a Levine•Fricke California Professional Engineer.

Theodore Splitter
Principal Engineer
Professional Engineer (29718)

4/26/95
Date

April 27, 1995 LF 1204.00-001

**Quarterly Ground-Water Monitoring Report
for January 1 through March 31, 1995
Polvorosa Business Park
1555 Doolittle Drive, San Leandro, California**

1.0 SCOPE OF THIS REPORT

On behalf of Chamberlin Associates, Levine•Fricke, Inc. ("Levine•Fricke") is submitting this quarterly ground-water monitoring report for the Polvorosa Business Park, located at 1555 Doolittle Drive in San Leandro, California ("the Site"; Figure 1). This report is submitted pursuant to Section 2652 (d) of Title 23, California Code of Regulations, and in accordance with the Alameda County Department of Environmental Health's May 20, 1994 letter to Stephen Chamberlin of Chamberlin Associates. This report presents a summary of ground-water monitoring at the Site from January 1 to March 31, 1995 ("the reporting period").

2.0 TECHNICAL PROGRESS

On March 1, 1995, the following site work was completed:

- Water levels were measured in wells MW-3, MW-8, MW-10, LF-12, LF-13, LF-14, and LF-15.
- Free-product thickness was measured in well LF-12.
- Ground-water samples were collected from monitoring wells MW-3, MW-8, MW-10, LF-13, LF-14, and LF-15.

3.0 QUARTERLY GROUND-WATER MONITORING

On March 1, 1995, the depth to ground water was measured and ground-water samples were collected from the monitoring wells noted above. Ground-water elevations are summarized in Table 1 and Figure 2. Product thickness measurements are presented in Table 1. Field parameters measured during well sampling are presented in Table 2, and field data sheets are presented in Appendix A.

3.1 Ground-Water Elevation and Flow Direction

Ground-water levels measured in site monitoring wells on March 1, 1995 ranged from approximately 6 to 12 feet below ground surface (bgs). This is consistent with ground-water levels measured during the November 22, 1994 sampling event. As shown in Figure 2, the general direction of ground-water flow at the Site is to the north under a horizontal hydraulic gradient of approximately 0.001 feet/foot (ft/ft). The direction of the horizontal hydraulic gradient has not changed significantly from the direction previously reported.

Approximately 0.01 feet of free product was measured in well LF-12. This is consistent with the free-product measurement during the November 1994 sampling event, which was 0.06 feet. The water-level measurement collected from this well was used to plot the ground-water flow contours presented in Figure 2. However, the surface of the ground water in LF-12 may have been slightly depressed because of the presence of free product.

3.2 Ground-Water Sampling

Ground-water samples were collected from monitoring wells MW-3, MW-8, MW-10, LF-13, LF-14, and LF-15 on March 1, 1995. A ground-water sample was not collected from well LF-12, because of the presence of free product in the well. Samples were collected from each well using the following procedure:

- Depth to ground water was measured in the well using an electric water-level indicator.
- Approximately three well volumes were purged from the well using a clean Teflon bailer disposable plastic bailer. Field parameters (temperature, pH, and conductivity) were measured during purging, to obtain representative sample collection.
- After purging and before sample collection, depth to water was measured in the well to verify that the well had recovered to at least 80 percent of the original water level.
- Ground-water samples were collected using a clean Teflon bailer (in well MW-10, a clean disposable plastic bailer was used because of the narrow diameter of the well head). Samples to be analyzed for total petroleum hydrocarbons (TPH) as gasoline (TPHg) and for benzene, toluene, ethylbenzene, and total xylenes (BTEX) were

decanted into 40-milliliter volatile organic analysis (VOA) vials. Samples to be analyzed for TPH as diesel (TPHd) were decanted into 1-liter amber bottles.

3.3 Ground-Water Sample Analysis

Ground-water samples were analyzed by American Environmental Network (AEN), of Pleasant Hill, California, a state-certified laboratory. Samples were analyzed for TPHd and TPHg using modified EPA Method 8015, and for BTEX using EPA Method 8020. The resulting ground-water quality data are presented in Table 3 and Figure 3, and are summarized briefly below. Laboratory data reports are presented in Appendix B.

BTEX. No BTEX compounds were detected above laboratory detection limits in the ground-water samples from wells MW-3, MW-8, MW-10, LF-13, and LF-15. Benzene was detected in the sample collected from well LF-14. Benzene was present at a concentration of 0.0007 parts per million (ppm) in this sample.

TPHg and TPHd. Neither TPHg nor TPHd were detected above laboratory detection limits in the ground-water samples collected from wells MW-10 and LF-13. The maximum concentrations of TPHg and TPHd detected at the Site were in the ground-water sample collected from MW-3, in which TPHg was detected at 4.3 ppm and TPHd was detected at 110 ppm.

According to AEN, the TPHg detected in the analyzed sample from MW-3 was not typical of a gasoline chromatogram. This information, together with the absence of BTEX compounds in this sample, suggests that the reported TPHg may have been the lighter fraction hydrocarbons present in diesel. This is consistent with previous sampling results at the Site.

4.0 NEXT QUARTERLY SAMPLING EVENT

The next quarterly sampling event is tentatively scheduled for late May or early June 1995.

TABLE 1

GROUND-WATER ELEVATION DATA
POLVOROSA BUSINESS PARK
1555 DOOLITTLE DRIVE
SAN LEANDRO, CALIFORNIA

(all measurements in feet above mean sea level)

Well Number	Well Elevation	Ground-Water Elevation 28-Sep-94	DTW	Product Thickness 28-Sep-94 (feet)	Ground-Water Elevation 22-Nov-94	DTW	Product Thickness 22-Nov-94 (feet)	Ground-Water Elevation 01-Mar-95	DTW	Product Thickness 01-Mar-95 (feet)
MW-3	12.18	3.15	9.03	NP	4.06	8.12	NP	4.10	8.08	NP
MW-8	12.83	3.24		NP	3.97		NP	4.10		NP
MW-10	14.22	3.17		NP	4.08		NP	4.14		NP
LF-12	14.89	2.57	(1)	0.05	2.43	(1)	0.06	3.73	(1)	0.01
LF-13	14.58	3.10		NP	3.92		NP	3.97		NP
LF-14	10.76	2.98		NP	3.84		NP	4.04		NP
LF-15	11.20	NM		NM	NM		NM	4.00		NP

Data input by KAC/21 Mar 95. Data proofed by BCC.

Notes:

NP - No product detected
NM - Not measured

(1) Ground-water surface may be depressed due to the presence of floating product

TABLE 2

WATER-QUALITY PARAMETERS MEASURED DURING PURGING AND SAMPLING
MARCH 1995
POLVOROSA BUSINESS PARK
1555 DOOLITTLE DRIVE
SAN LEANDRO, CALIFORNIA

Well Number	Date Sampled	Time Sampled	Well Volume (gallons)	Water Extracted (gallons)	Depth to Water (feet)	pH	Temperature (degrees C)	Specific Conductance (micromhos/cm)	Remarks
MW-3	01-Mar-95	16:05	1.63	6.0	8.17	6.45	19.9	420	black, turbid
MW-8	01-Mar-95	15:00	1.44	4.5	8.87	7.02	20.0	933	turbid
MW-10	01-Mar-95	15:30	2.18	7.5	10.17	7.17	18.7	878	turbid
LF-13	01-Mar-95	13:35	1.13	4.5	10.72	7.13	19.2	1,219	turbid
LF-14	01-Mar-95	14:15	1.81	6.0	7.20	6.96	16.7	1,157	turbid
LF-15	01-Mar-95	12:15	1.57	6.0	7.27	7.03	19.9	1,099	turbid

Data input by KAC/21 Mar 95. Data proofed by BCC.

TABLE 3

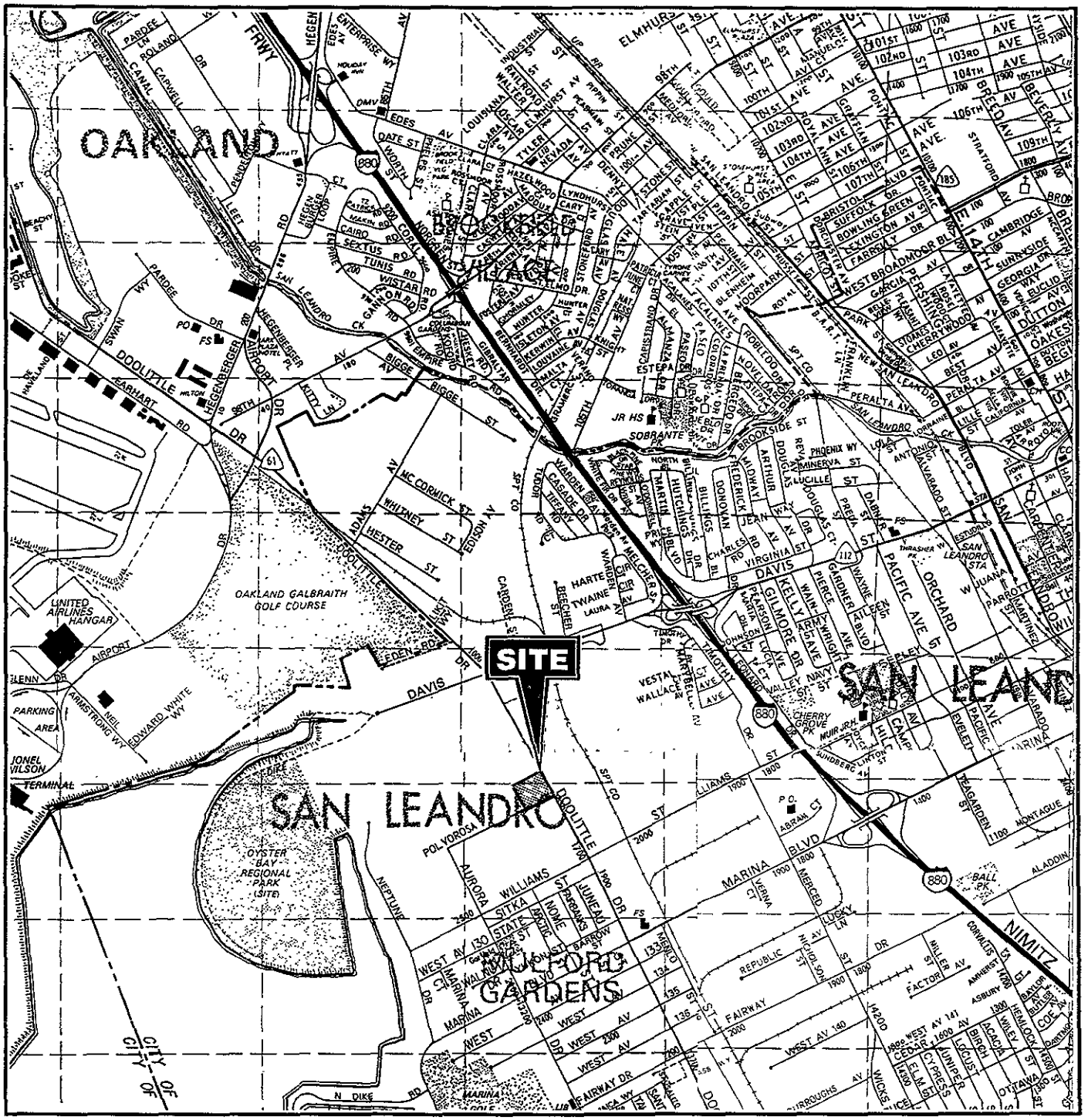
GROUND-WATER SAMPLE ANALYTICAL RESULTS
PETROLEUM HYDROCARBON COMPOUNDS
POLVOROSA BUSINESS PARK
1555 DOOLITTLE DRIVE
SAN LEANDRO, CALIFORNIA
(results expressed in ppm)

Sample ID	Date	Benzene	Toluene	Ethyl-benzene	Xylenes Total	TPHg	TPHd
MW-3	28-Sep-94	<0.010	<0.010	<0.010	<0.040	58	87
	22-Nov-94	0.0005	0.001	0.0008	0.003	7.8	56
duplicate	22-Nov-94	0.0006	0.001	<0.0005	<0.002	2.6	67
	01-Mar-95	<0.005	<0.005	<0.005	<0.020	4.3	110
MW-8	28-Sep-94	<0.0005	<0.0005	<0.0005	<0.002	0.1	2.1
duplicate	28-Sep-94	<0.0005	<0.0005	<0.0005	<0.002	1.6	1.5
	22-Nov-94	<0.0005	<0.0005	<0.0005	<0.002	0.7	8.0
	01-Mar-95	<0.0005	<0.0005	<0.0005	<0.002	1.9	8.7
MW-10	28-Sep-94	<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	23-Nov-94	<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	01-Mar-95	<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
LF-13	28-Sep-94	<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	22-Nov-94	<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
	01-Mar-95	<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
LF-14	28-Sep-94	0.0006	<0.0005	<0.0005	<0.002	1.7	13
	22-Nov-94	0.0008	<0.0005	<0.0005	<0.002	1.0	9.2
	01-Mar-95	0.0007	<0.0005	<0.0005	<0.002	0.7	7.8
LF-15	01-Mar-95	<0.0005	<0.0005	<0.0005	<0.002	<0.05	0.05
Blanks:							
MW-8-FB	28-Sep-94	<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05
MW-8-FB	22-Nov-94	<0.0005	<0.0005	<0.0005	<0.002	<0.05	<0.05

Data entered by KAC/21 Mar 95. Proofed by BCC.

NOTES:

TPHd = total petroleum hydrocarbons as diesel
TPHg = total petroleum hydrocarbons as gasoline



1204SV001.LPL:RYL 102694

Modified from:
Thomas Brothers Map
Alameda and Contra Costa Counties
1994 Edition

N

0 1/2 1 MILE

Figure 1 : SITE LOCATION MAP
POLVOROSA BUSINESS PARK, 1555 DOOLITTLE DRIVE, SAN LEANDRO, CALIFORNIA

Project No. 1204

LEVINE•FRICKE
ENGINEERS HYDROGEOLOGISTS, & APPLIED SCIENTISTS

1204GG01.AIK:DAT 042495

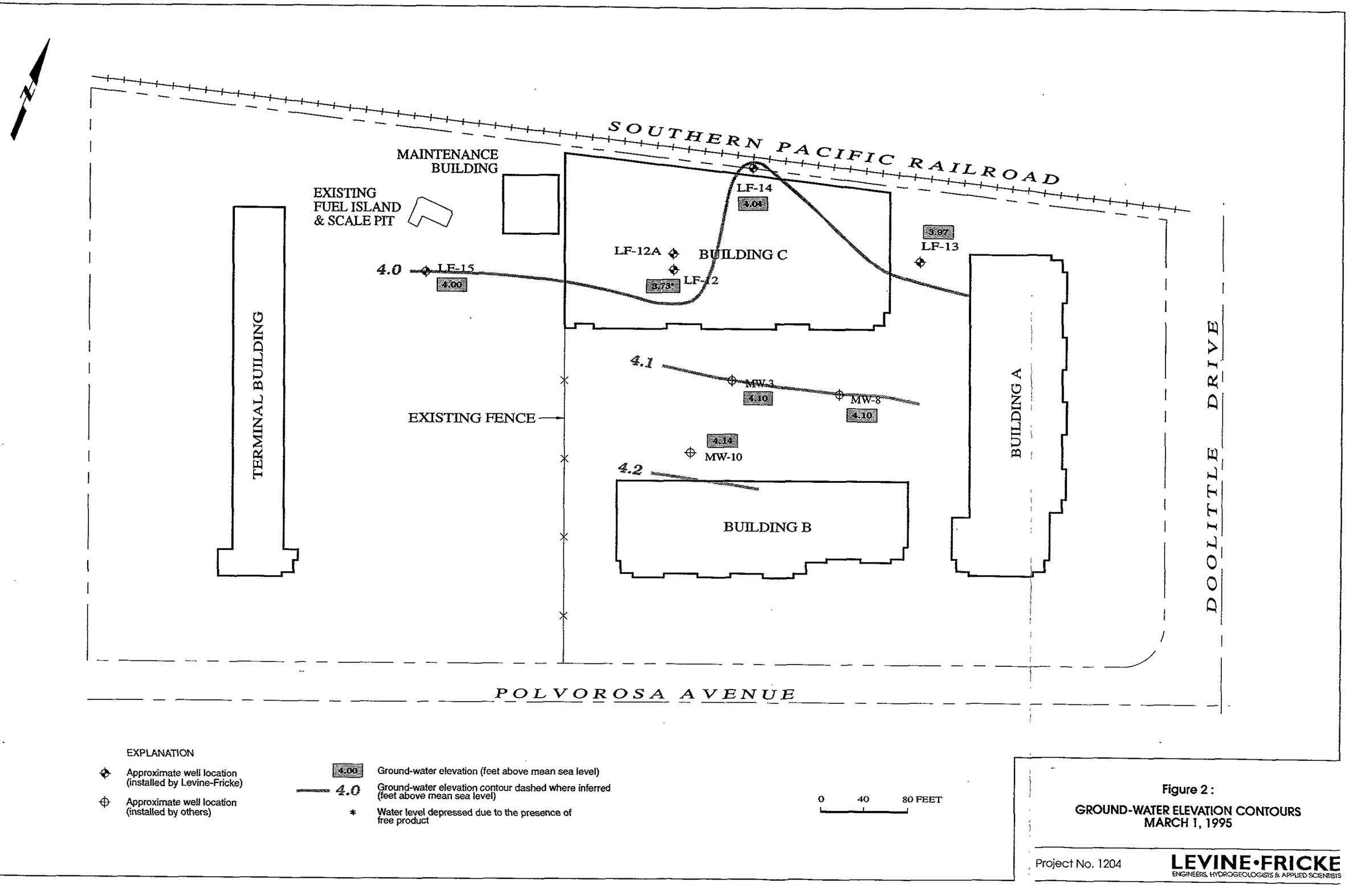


Figure 2 :

GROUND-WATER ELEVATION CONTOURS MARCH 1, 1995

Project No. 1204

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

1204B002.AIK:EM 122394

1204GC01.AIK:DAT 040395

N

SOUTHERN PACIFIC RAILROAD

MAINTENANCE BUILDING

EXISTING FUEL ISLAND & SCALE PIT

LF-14
7.8 TPHd
0.7 TPHg
<0.0007 B
<0.0005 T
<0.0005 E
<0.002 X

LF-12A
LF-12
BUILDING C

LF-13
<0.05 TPHd
<0.05 TPHg
<0.0005 B
<0.0005 T
<0.0005 E
<0.002 X

LF-15
0.05 TPHd
<0.05 TPHg
<0.0005 B
<0.0005 T
<0.0005 E
<0.002 X

110 TPHd
4.3 TPHg
<0.005 B
<0.005 T
<0.005 E
<0.020 X
MW-3

MW-8
8.7 TPHd
1.9 TPHg
<0.0005 B
<0.0005 T
<0.005 E
<0.002 X

EXISTING FENCE

<0.05 TPHd
<0.05 TPHg
<0.0005 B
<0.0005 T
<0.0005 E
<0.002 X
MW-10

BUILDING B

TERMINAL BUILDING

BUILDING A

DOOLITTLE DRIVE

POLVOROSA AVENUE

EXPLANATION

- Approximate well location (installed by Levine-Fricke)
- Approximate well location (installed by others)

4.3 TPHg
- Chemical compound
- Sample concentration (ppm)

KEY TO ABBREVIATIONS

TPHd	Total petroleum hydrocarbons as diesel
TPHg	Total petroleum hydrocarbons as gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Xylene

0 40 80 FEET

Figure 3 :

PETROLEUM HYDROCARBON CONCENTRATIONS IN GROUND WATER (ppm) MARCH 1, 1995

Project No. 1204

LEVINE•FRICKE
ENGINEERS, HYDROGEOLOGISTS & APPLIED SCIENTISTS

1204B002.AIK:EM 122394

APPENDIX A

WATER-QUALITY SAMPLING FIELD LOGS
MARCH 1995 SAMPLING EVENT

WATER-QUALITY SAMPLING INFORMATION

Project No.: 1204.01
Project Name: POLVOROSA
Sample Location: MW-3
Samplers Name: JCK
Sampling Plan Prepared By: AIK
Sampling Method:

Date: 3/1/95
Sample No.: MW-3
☐ FB:
☐ DUP:

☐ Centrifugal Pump ☐ Disposable Bailer
☐ Submersible Pump ☒ Teflon Bailer
☒ Hand Bail ☐ _____ (Other)

Analyses Requested	Number and Types of Bottle used
TPHg BTEX	3 VOA
TPHd	2 1L G.

Method of Shipment
AEN (Lab Name)
☒ Courier
☐ Hand Deliver:

Well Number: MW-3
Depth of Water: 8.08
Well Depth: 18.26
Height of Water Column: 10.18
Volume in Well: 1.63

Well Diameter:
☒ 2" (0.16 Gallon/Feet)
☐ 4" (0.65 Gallon/Feet
☐ 5" (1.02 Gallon/Feet)
☐ 6" (1.47 Gallon/Feet)

18.26
8.08
10.18
.16
6108
1018
1.6288

80% DTW _____

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temparture °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
15:48								START
15:51		2		19.6	6.64	373		BLACK, TURBID, AK IND OF SHEEN ?
15:54		4		19.8	6.52	377		" "
15:58		6		19.9	6.45	420		BLACK TURBID
:05	9.17							SAMPLE
								S

Inlet Depth: _____

Comments: _____
(Recommended Method For Purging Well)

WTR.QLTY.SMPLNG.INFO.22JUL94RYL

WATER-QUALITY SAMPLING INFORMATION

Project No.: 1204.01
Project Name: POLVOROSA
Sample Location: MW-8
Samplers Name: JCK
Sampling Plan Prepared By: AIK
Sampling Method:

- [ ] Centrifugal Pump
- [ ] Submersible Pump
- [x] Hand Bail
- [ ] Disposable Bailer
- [x] Teflon Bailer
- [ ] ____ (Other)

Date: 3/1/95
Sample No.: MW-8
- [ ] FB:
- [ ] DUP:

17.75
8.73
9.02
.16
5412
902
1.4432

80% DTW

Analyses Requested	Number and Types of Bottle used
TPH-d	2 L Gl.
TPH-g BTEX	3 VOA

Method of Shipment
AEN (Lab Name)
- [x] Courier
- [ ] Hand Deliver:

Well Number: MW-8
Depth of Water: 8.73
Well Depth: 17.75
Height of Water Column: 9.02
Volume in Well: 1.44

Well Diameter:
- [ ] 2" (0.16 Gallon/Feet)
- [ ] 4" (0.65 Gallon/Feet
- [ ] 5" (1.02 Gallon/Feet)
- [ ] 6" (1.47 Gallon/Feet)

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temparture °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
14:46								START
14:48		1.5		19.9	7.10	935		TURBID; GOOD SHEEN
14:51		3.0		19.9	7.08	892		" "
14:54		4.5		20.0	7.02	933		TURBID SHEEN
15:00	8.87							SAMPLE

WTR.QLTY.SMPLNG.INFO.22JUL94RYL

Inlet Depth:

Comments:
(Recommended Method For Purging Well)

WATER-QUALITY SAMPLING INFORMATION

Project No.: 1204.01
Project Name: POLVOROSA
Sample Location: MW-10
Samplers Name: JCK
Sampling Plan Prepared By: AIK
Sampling Method:

Date: 3/1/95
Sample No.: MW-10
☐ FB:
☐ DUP:

☐ Centrifugal Pump
☐ Submersible Pump
☒ Hand Bail
☒ Disposable Bailer
☒ Teflon Bailer
☐ _____ (Other)

Analyses Requested
TPH-g BTEX
TPH-d

Number and Types of Bottle used
3 VOA
2 L. Glass

23.70
10.08
13.62
.16
8172
1362
21792

Method of Shipment
AEN (Lab Name)
☒ Courier
☐ Hand Deliver:

Well Number: MW-10
Depth of Water: 10.08
Well Depth: 23.70
Height of Water Column: 13.62
Volume in Well: 2.18

Well Diameter:
☐ 2" (0.16 Gallon/Feet)
☐ 4" (0.65 Gallon/Feet
☐ 5" (1.02 Gallon/Feet)
☐ 6" (1.47 Gallon/Feet)

80% DTW _____

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temparture °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
15:12								START
15:16		2.5		18.3	7.09	887		TURBID
15:20		5.0		18.7	7.13	878		TURBID
15:26		7.5		18.7	7.17	878		TURBID
15:30	10.17							SAMPLE

Inlet Depth: _____

Comments: _____
(Recommended Method For Purging Well)

WTR.QLTY.SMPLNG.INFO.22/JUL94/RYL

WATER-QUALITY SAMPLING INFORMATION

Project No.: 1204.01
Project Name: FOLUOROSA
Sample Location: LF-13
Samplers Name: JCK
Sampling Plan Prepared By: AIK
Sampling Method:

Date: 3/1/95
Sample No.: LF-13
☐ FB:
☐ DUP:

☐ Centrifugal Pump
☐ Submersible Pump
☑ Hand Bail
☐ Disposable Bailer
☒ Teflon Bailer
☐ _____ (Other)

Analyses Requested	Number and Types of Bottle used
TPH-D	2 L. GLASS
TPHg BTEX	3 VOA

Method of Shipment
AEN (Lab Name)
☒ Courier
☐ Hand Deliver:

Well Number: LF-13
Depth of Water: 10.61
Well Depth: 17.67
Height of Water Column: 7.06
Volume in Well: 1.13

Well Diameter:
☐ 2" (0.16 Gallon/Feet)
☐ 4" (0.65 Gallon/Feet
☐ 5" (1.02 Gallon/Feet)
☐ 6" (1.47 Gallon/Feet)

17.67
10.61
7.06
.16
4236
706
1.1296

80% DTW _____

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temparture °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
13:20								START
13:23		1.5		19.5	7.26	1236		TURBID
13:26		3.0		19.4	7.17	1258		TURBID
13:30		4.5		19.2	7.13	1219		TURBID
13:35	10.72							SAMPLE

Inlet Depth:

Comments: (Recommended Method For Purging Well) CONDUCTOR CASING BOX - LID WON'T CLOSE BECAUSE WELL CASING IS TO HIGH - NEED INNER LOCKING CAP

WTR.QLTY.SMP.LNG.INFO.222/JUL94/RYL

WATER-QUALITY SAMPLING INFORMATION

Project No.: 1204.01
Project Name: POLYFROST
Sample Location: LF-14
Samplers Name: JCK
Sampling Plan Prepared By: AIK
Sampling Method:

Date: 3/1/95
Sample No.: LF-14
☐ FB:
☐ DUP:

☐ Centrifugal Pump ☐ Disposable Bailer
☐ Submersible Pump ☐ Teflon Bailer
☒ Hand Bail ☐ _____ (Other)

Analyses Requested
TPHg BTEX
TPHd

Number and Types of Bottle used
3 VOA
2L. GL

Method of Shipment
AEN (Lab Name)
☒ Courier
☐ Hand Deliver:

Well Number: LF-14
Depth of Water: 6.72
Well Depth: 18.06
Height of Water Column: 11.34
Volume in Well: 1.81

Well Diameter:
☐ 2" (0.16 Gallon/Feet)
☐ 4" (0.65 Gallon/Feet
☐ 5" (1.02 Gallon/Feet)
☐ 6" (1.47 Gallon/Feet)

18.06
6.72
11.34
.16
6804
1134
1.8144

11.34 × .8 = 9.072
18.06 − 9.07 = 8.99

80% DTW 8.99

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temparture °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
13:55								START
13:58		2	2	16.3	7.02	1166		TURBID; LT SHEEN
14:00		4	4	16.5	7.00	1158		TURBID; LT SHEEN
14:06		6	6	16.7	6.96	1157		TURBID; LT SHEEN
14:15	7.20							SAMPLE
	7.22							

Inlet Depth:

Comments:
(Recommended Method For Purging Well)

WTR.QLTY.SMPLNG.INFO.22JUL94RYL

WATER-QUALITY SAMPLING INFORMATION

Project No.: 1204.01
Project Name: POLAROSA
Sample Location: LF-15
Samplers Name: JCK
Sampling Plan Prepared By: AIK
Sampling Method:

Date: 3/1/95
Sample No.: LF-15
☒ FB: LF-15-BB
☒ DUP: LF115

☒ Centrifugal Pump ☐ Disposable Bailer
☐ Submersible Pump ☒ Teflon Bailer
☐ Hand Bail ☐ _____ (Other)

Analyses Requested	Number and Types of Bottle used
TPH-d	2 x 2L. GL
TPHg BTEX	3 x 3 VOA

17.00
7.20
9.80
.16
5880
980
15680

Method of Shipment
AEN (Lab Name)
☒ Courier
☐ Hand Deliver:

Well Number: LF-15
Depth of Water: 7.20
Well Depth: 17.00
Height of Water Column: 9.80
Volume in Well: 1.57

Well Diameter:
☒ 2" (0.16 Gallon/Feet)
☒ 4" (0.65 Gallon/Feet
☐ 5" (1.02 Gallon/Feet)
☐ 6" (1.47 Gallon/Feet)

80% DTW _____

TIME	Depth to Water	Volume Purged (Gallons)	Totalizer Reading	Temparture °C	pH (SU)	Cond (mohs)	Turbidity (NTU)	Remarks
11:55								~~START~~ BAILER BLANK
11:58								START
12:01		2		20.5	7.12	1110		TURBID
12:04		4		20.0	7.06	1134		TURBID
12:10		6		19.9	7.03	1099		TURBID
12:15	7.27							SAMPLE
13:15								DUPLICATE

Inlet Depth: _____
Comments: LF LOCK APPLIED TO COND. CASING BOX
(Recommended Method For Purging Well)

WTR.QLTY.SMPLNG.INFO.22JUL94RYL

APPENDIX B

LABORATORY CERTIFICATES FOR GROUND-WATER SAMPLES MARCH 1995 SAMPLING EVENT

American Environmental Network

Certificate of Analysis

DOHS Certification: 1172 AIHA Accreditation: 11134

LEVINE-FRICKE
1900 POWELL ST. 12TH FL.
EMERYVILLE, CA 94608

ATTN: ADAM KLEIN
CLIENT PROJ. ID: 1204.01
CLIENT PROJ. NAME: POLVOROSA
C.O.C. NUMBER: 013436

REPORT DATE: 03/23/95
DATE(S) SAMPLED: 03/01/95
DATE RECEIVED: 03/02/95
AEN WORK ORDER: 9503028

PROJECT SUMMARY:

On March 2, 1995, this laboratory received 9 water sample(s).

Client requested seven sample(s) be analyzed for organic parameters; two samples were placed on hold. Results of analysis are summarized on the following page(s). Please see quality control report for a summary of QC data pertaining to this project.

Samples will be stored for 30 days after completion of analysis, then disposed of in accordance with State and Federal regulations. Samples may be archived by prior arrangement.

If you have any questions, please contact Client Services at (510) 930-9090.

Larry Klein
Laboratory Director

LEVINE-FRICKE

SAMPLE ID: LF-15
AEN LAB NO: 9503028-02
AEN WORK ORDER: 9503028
CLIENT PROJ. ID: 1204.01

DATE SAMPLED: 03/01/95
DATE RECEIVED: 03/02/95
REPORT DATE: 03/23/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	03/11/95
Toluene	108-88-3	ND	0.5	ug/L	03/11/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	03/11/95
Xylenes, Total	1330-20-7	ND	2	ug/L	03/11/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	03/11/95
#Extraction for TPH	EPA 3510	-		Extrn Date	03/09/95
TPH as Diesel	GC-FID	0.05 *	0.05	mg/L	03/11/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

LEVINE-FRICKE

SAMPLE ID: LF-13
AEN LAB NO: 9503028-04
AEN WORK ORDER: 9503028
CLIENT PROJ. ID: 1204.01

DATE SAMPLED: 03/01/95
DATE RECEIVED: 03/02/95
REPORT DATE: 03/23/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	03/11/95
Toluene	108-88-3	ND	0.5	ug/L	03/11/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	03/11/95
Xylenes, Total	1330-20-7	ND	2	ug/L	03/11/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	03/11/95
#Extraction for TPH	EPA 3510	-		Extrn Date	03/09/95
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/11/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

LEVINE-FRICKE

SAMPLE ID: LF-14
AEN LAB NO: 9503028-05
AEN WORK ORDER: 9503028
CLIENT PROJ. ID: 1204.01

DATE SAMPLED: 03/01/95
DATE RECEIVED: 03/02/95
REPORT DATE: 03/23/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	0.7 *	0.5	ug/L	03/13/95
Toluene	108-88-3	ND	0.5	ug/L	03/13/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	03/13/95
Xylenes, Total	1330-20-7	ND	2	ug/L	03/13/95
Purgeable HCs as Gasoline	5030/GCFID	0.7 *	0.05	mg/L	03/13/95
#Extraction for TPH	EPA 3510	-		Extrn Date	03/09/95
TPH as Diesel	GC-FID	7.8 *	0.05	mg/L	03/11/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

LEVINE-FRICKE

SAMPLE ID: MW-8
AEN LAB NO: 9503028-06
AEN WORK ORDER: 9503028
CLIENT PROJ. ID: 1204.01

DATE SAMPLED: 03/01/95
DATE RECEIVED: 03/02/95
REPORT DATE: 03/23/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	03/11/95
Toluene	108-88-3	ND	0.5	ug/L	03/11/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	03/11/95
Xylenes, Total	1330-20-7	ND	2	ug/L	03/11/95
Purgeable HCs as Gasoline	5030/GCFID	1.9 *	0.05	mg/L	03/11/95
#Extraction for TPH	EPA 3510	-		Extrn Date	03/09/95
TPH as Diesel	GC-FID	8.7 *	0.05	mg/L	03/11/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

LEVINE-FRICKE

SAMPLE ID: MW-10
AEN LAB NO: 9503028-07
AEN WORK ORDER: 9503028
CLIENT PROJ. ID: 1204.01

DATE SAMPLED: 03/01/95
DATE RECEIVED: 03/02/95
REPORT DATE: 03/23/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	03/11/95
Toluene	108-88-3	ND	0.5	ug/L	03/11/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	03/11/95
Xylenes, Total	1330-20-7	ND	2	ug/L	03/11/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	03/11/95
#Extraction for TPH	EPA 3510	-		Extrn Date	03/10/95
TPH as Diesel	GC-FID	ND	0.05	mg/L	03/11/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

LEVINE-FRICKE

SAMPLE ID: MW-3
AEN LAB NO: 9503028-08
AEN WORK ORDER: 9503028
CLIENT PROJ. ID: 1204.01

DATE SAMPLED: 03/01/95
DATE RECEIVED: 03/02/95
REPORT DATE: 03/23/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	5	ug/L	03/13/95
Toluene	108-88-3	ND	5	ug/L	03/13/95
Ethylbenzene	100-41-4	ND	5	ug/L	03/13/95
Xylenes, Total	1330-20-7	ND	20	ug/L	03/13/95
Purgeable HCs as Gasoline	5030/GCFID	4.3 *	0.5	mg/L	03/13/95
#Extraction for TPH	EPA 3510	-		Extrn Date	03/10/95
TPH as Diesel	GC-FID	110 *	1	mg/L	03/11/95

Reporting limits elevated for diesel due to high levels of target compounds; gas/BTEX due to high levels of diesel range hydrocarbons.

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

LEVINE-FRICKE

SAMPLE ID: TRIP3195
AEN LAB NO: 9503028-09
AEN WORK ORDER: 9503028
CLIENT PROJ. ID: 1204.01

DATE SAMPLED:
DATE RECEIVED: 03/02/95
REPORT DATE: 03/23/95

ANALYTE	METHOD/ CAS#	RESULT	REPORTING LIMIT	UNITS	DATE ANALYZED
BTEX & Gasoline HCs	EPA 8020				
Benzene	71-43-2	ND	0.5	ug/L	03/11/95
Toluene	108-88-3	ND	0.5	ug/L	03/11/95
Ethylbenzene	100-41-4	ND	0.5	ug/L	03/11/95
Xylenes, Total	1330-20-7	ND	2	ug/L	03/11/95
Purgeable HCs as Gasoline	5030/GCFID	ND	0.05	mg/L	03/11/95

ND = Not detected at or above the reporting limit
* = Value at or above reporting limit

AEN (CALIFORNIA)
QUALITY CONTROL REPORT

AEN JOB NUMBER: 9503028

CLIENT PROJECT ID: 1204.01

Quality Control Summary

Surrogate recovery for sample MW-3 for diesel had matrix interference.

All other laboratory quality control parameters were found to be within established limits.

Definitions

Laboratory Control Sample (LCS)/Method Spike(s): Control samples of known composition. LCS and Method Spike data are used to validate batch analytical results.

Matrix Spike(s): Aliquot of a sample (aqueous or solid) with added quantities of specific compounds and subjected to the entire analytical procedure. Matrix spike and matrix spike duplicate QC data are advisory.

Method Blank: An analytical control consisting of all reagents, internal standards, and surrogate standards carried through the entire analytical process. Used to monitor laboratory background and reagent contamination.

Not Detected (ND): Not detected at or above the reporting limit.

Relative Percent Difference (RPD): An indication of method precision based on duplicate analysis.

Reporting Limit (RL): The lowest concentration routinely determined during laboratory operations. The RL is generally 1 to 10 times the Method Detection Limit (MDL). Reporting limits are matrix, method, and analyte dependent and take into account any dilutions performed as part of the analysis.

Surrogates: Organic compounds which are similar to analytes of interest in chemical behavior, but are not found in environmental samples. Surrogates are added to all blanks, calibration and check standards, samples, and spiked samples. Surrogate recovery is monitored as an indication of acceptable sample preparation and instrumental performance.

D: Surrogates diluted out.

#: Indicates result outside of established laboratory QC limits.

QUALITY CONTROL DATA

METHOD: EPA 3510 GCFID

AEN JOB NO: 9503028
AEN LAB NO: 0309-BLANK
DATE EXTRACTED: 03/09/95
DATE ANALYZED: 03/011/95

Method Blank

	Result (mg/L)	Reporting Limit (mg/L)
Diesel	ND	0.05

AEN LAB NO: 0310-BLANK
DATE EXTRACTED: 03/10/95
DATE ANALYZED: 03/011/95

Method Blank

	Result (mg/L)	Reporting Limit (mg/L)
Diesel	ND	0.05

QUALITY CONTROL DATA

METHOD: EPA 3510 GCFID

AEN JOB NO: 9503028
DATE(S) EXTRACTED: 03/09-10/95
INSTRUMENT: C
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery n-Pentacosane
03/11/95	LF-15	02	104
03/11/95	LF-13	04	98
03/11/95	LF-14	05	106
03/11/95	MW-8	06	106
03/11/95	MW-10	07	98
03/11/95	MW-3	08	I
QC Limits:			73-129

I: Matrix interference

DATE EXTRACTED: 03/09/95
DATE ANALYZED: 03/10/95
SAMPLE SPIKED: DI WATER
INSTRUMENT: C

Method Spike Recovery Summary

Analyte	Spike Added (mg/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Diesel	2.02	87	11	65-103	12

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9503028
AEN LAB NO: 0311-BLANK
DATE ANALYZED: 03/11/95
MATRIX: WATER

Method Blank

	CAS #	Result (ug/L)	Reporting Limit (ug/L)
Benzene	71-43-2	ND	0.5
Toluene	108-88-3	ND	0.5
Ethylbenzene	100-41-4	ND	0.5
Xylenes, Total	1330-20-7	ND	2
HCs as Gasoline		ND mg/L	0.05 mg/L

AEN LAB NO: 0313-BLANK
DATE ANALYZED: 03/13/95

Method Blank

	CAS #	Result (ug/L)	Reporting Limit (ug/L)
Benzene	71-43-2	ND	0.5
Toluene	108-88-3	ND	0.5
Ethylbenzene	100-41-4	ND	0.5
Xylenes, Total	1330-20-7	ND	2
HCs as Gasoline		ND mg/L	0.05 mg/L

QUALITY CONTROL DATA

METHOD: EPA 8020, 5030 GCFID

AEN JOB NO: 9503028
INSTRUMENT: H
MATRIX: WATER

Surrogate Standard Recovery Summary

Date Analyzed	Client Id.	Lab Id.	Percent Recovery Fluorobenzene
03/11/95	LF-15	02	101
03/11/95	LF-13	04	101
03/13/95	LF-14	05	101
03/11/95	MW-8	06	98
03/11/95	MW-10	07	101
03/13/95	MW-3	08	101
03/11/95	TRIP3195	09	100
QC Limits:			92-109

DATE ANALYZED: 03/11/95
SAMPLE SPIKED: 9503027-08
INSTRUMENT: H

Matrix Spike Recovery Summary

Analyte	Spike Added (ug/L)	Average Percent Recovery	RPD	QC Limits Percent Recovery	QC Limits RPD
Benzene	18.2	102	2	85-109	17
Toluene	52.8	102	3	87-111	16
Hydrocarbons as Gasoline	500	115	19	66-117	19

*** END OF REPORT ***

CHAIN OF CUSTODY / ANALYSES REQUEST FORM

9-3, 5-3, R-1, 5-P

9503028

Project No.: 1204.01	Field Logbook No.:	Date: 3/1/95	Serial No.: Nº 013436
Project Name: POLVOROSA	Project Location: SAN LEANDRO, CA.		
Sampler (Signature): J. C. K.			Samplers: JCK

SAMPLES						ANALYSES								
SAMPLE NO.	DATE	TIME	LAB SAMPLE NO.	NO. OF CONTAINERS	SAMPLE TYPE	EPA 601	EPA 624	TPHd	TPHg	BTEX		HOLD	RUSH	REMARKS
LF-15-BB	3/1/95	11:55	01A-C	3	H2O				X	X		X		STD TAT
LF-15		12:15	02A-~~C~~ ~~DE~~ DE	5				X	X	X				~~2 VOA's, 2 ambers~~ DSH
LF-115		13:15	03A-E					X	X	X		X		
LF-13		13:35	04A-E					X	X	X				RESULTS TO
LF-14		14:35	05A-E					X	X	X				ADAM KLEIN
MW-8		15:00	06A-E					X	X	X				
MW-10		15:30	07A-E					X	X	X				* Fluid was rec'd on sample
MW-3		16:05	08A-E	↓				X	X	X				LF-15 @ 1735 3/2/95 - DSH
TRIP3195	↓	08:00	09AB	2	↓				X	X				

RELINQUISHED BY: (Signature)	DATE 3/2/95	TIME 11:00	RECEIVED BY: (Signature)	DATE 3/2/95	TIME 11:00
RELINQUISHED BY: (Signature)	DATE 3/2/95	TIME 11:30	RECEIVED BY: (Signature)	DATE 3-2-95	TIME 11:30
RELINQUISHED BY: (Signature)	DATE	TIME	RECEIVED BY: (Signature)	DATE	TIME
METHOD OF SHIPMENT:	DATE	TIME	LAB COMMENTS:		

Sample Collector:
LEVINE-FRICKE
1900 Powell Street, 12th Floor
Emeryville, California 94608
(510) 652-4500

Analytical Laboratory:
AEN
PLEASANT HILL, CA.

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