BACE Environmental
A Division Of
Brunsing Associates, Inc.

May 24, 1993 Project No. 29.9

Ms. Jennifer Eberle
Alameda County Health Care Services
Department of Environmental Health, Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621

93 MAY 26 AM 11:25

TRANSMITTAL: 1. SOIL INVESTIGATION REPORT
2. VAPOR EXTRACTION REMEDIAL DESIGN REPORT
PACIFIC SUPPLY COMPANY, OAKLAND, CALIFORNIA

Dear Ms. Eberle:

Enclosed please find one original copy of the *Soil Investigation Report* and one original copy of the *Vapor Extraction Remedial Design Report and Specifications* prepared by BACE Environmental on behalf of the Pacific Supply Company, located at 1735 24th Street, Oakland, California. These two reports have been prepared for the Pacific Supply Company site to comply with the December 1, 1992 request by the Alameda County Health Care Services Agency to delineate the zero line of soils containing hydrocarbons, and to prepare a remediation system design predicated on the limits of soil contamination.

If you have any questions please contact Normita Callison, Environmental Specialist for the Pacific Supply Company, a division of Pacific Coast Building Products, at (916) 971-2390 or Mike Velzy at (415) 364-9030.

Respectively submitted,

Michael E. Velzy
Project Manager

Enclosures

cc: Rich Hiett, San Francisco Bay Regional Water Quality Control Board
Normita Callison, Pacific Coast Building Products
Tony Dejon, Pacific Supply Company

1735 East Bayshore Road, Suite 2A, Redwood City, CA 94063 Ph (415) 364-9030 Fax (415) 364-9032

PACIFIC SUPPLY COMPANY
SOIL INVESTIGATION REPORT
OAKLAND, CALIFORNIA

5/24/93

1735 24TH STREET
OAKLAND CALIFORNIA

MAY 24, 1993

PACIFIC SUPPLY COMPANY
SOIL INVESTIGATION REPORT
OAKLAND, CALIFORNIA

1735 24TH STREET
OAKLAND CALIFORNIA

MAY 24, 1993

prepared for:

Pacific Supply Company
1735 24TH Street
Oakland, California

prepared by:

BRUNSING ASSOCIATES, INC.
1735 East Bayshore Road, Ste. 2A
Redwood City, CA 94063

Author:
Joel B. Bruxvoort
Staff Geologist

Reviewer:
Thomas P. Brunsing Ph.D., R.E.A, P.E. (Civil)
Principal

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1.0 INTRODUCTION

This Report of Findings has been prepared to document additional soil investigation activities performed by BACE Environmental, a Division of Brunsing Associates, Inc. (BAI) on behalf of Pacific Supply Company for the site located at 1735 24TH Street, Oakland, California. This work was performed at the request of the Alameda County Health Care Services Agency (ACHCSA) in correspondence addressed to Ms. Normita Callison on December 1, 1992.

1.1 SCOPE OF WORK

On March 5, 1993, BAI placed seven soil borings at the site and three soil borings in the adjacent street and obtained soil samples for chemical analysis. These soil samples were obtained to quantify the lateral extent of petroleum hydrocarbons remaining in the soil adjacent to the location of a former Underground Storage Tank (UST) which stored gasoline.

The investigation was completed prior to the design of a soil vapor extraction remediation program at the site. The remediation design has been prepared under separate cover for submittal to the ACHCSA.

1.2 BACKGROUND

Monitoring wells MW-1 through MW-5 were constructed by BAI staff on Sept 13, 1988 as the first phase of a soil and groundwater investigation. Monitoring wells MW-6 and MW-7 were constructed by BAI on December 19, 1989 as Phase II of the same investigation. The construction and sampling of these wells are documented in the Report of Findings dated March 23, 1990. Quarterly groundwater monitoring of the wells is ongoing and reports have been submitted to the ACHCSA. BAI performed a Vapor Extraction Pilot Study in June 1992 at the site which is documented in a report dated November 18, 1992. The pilot study indicated the feasibility of soil remediation by vapor extraction at this site.

2.0 SOIL INVESTIGATION METHODS AND RESULTS

2.1 SOIL SAMPLING METHODS

On March 5, 1993, BAI advanced ten borings (B-1 through B-10) at locations shown on Figure 1. These locations were chosen to determine the zero line of soil contamination at the site. An encroachment permit was obtained from the City of Oakland prior to the placement of borings B-1, B-2 and B-3.

Soil borings were advanced using a hydraulic press rig. Sampling was conducted by driving a double wall sampler lined with 1.5 inch diameter stainless steel tubes into the soil. The sampler was driven continuously into the soil in order to obtain maximum soil core retrieval.

Soil borings were logged by a qualified geologist according to the Unified Soil Classification System (USCS) and completed boring logs are included as Appendix A. Selected soils obtained from the coring were screened for petroleum hydrocarbon (HC) vapors by the use of a MicroTIP™ photoionization detector. The results of this screening are indicated on the boring logs.

Samples were collected for chemical analysis by a state certified analytical laboratory in the borings at a depth defined by the first groundwater which occurs at 6.0 to 8.0 feet below existing grade. The stainless steel sample tubes containing the soil samples were sealed with aluminum foil, capped, labelled and placed in sealable plastic bags. The soil samples were placed in an insulated container maintained at a temperature of 4°C with blue ice. After completion of the soil sampling, the borings were sealed using a bentonite grout mix containing approximately five percent bentonite by weight. Holes placed in the street were finished with asphalt patch in the upper six inches to match existing street surface. All down-hole drilling equipment was steam cleaned before use and between borings. Sampling equipment was decontaminated before each use by the following triple rinse procedure:

- Water and detergent wash;
- Water rinse;
- Deionized water final rinse.

Additional soil from the borings are stored on-site. Water generated during steam cleaning and sampling equipment decontamination is stored on site with the monitoring well purge water generated during the on-going groundwater investigation.

follow up

The soil samples were transported under chain-of-custody procedures to BACE Analytical and Field Services (BAFS), a California-EPA certified analytical laboratory. The Chain-of-Custody form is attached to analytical data reports which are included in Appendix B.

2.2 SOIL SAMPLE ANALYTICAL AND RESULTS

Soil samples were analyzed by BAFS for the following:

Analysis	Method
TPH as gasoline (TPHg)	EPA 5030/GC FID

Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX)	EPA 5030/8020

A summary of the analytical data is contained in Table 1.

2.3 EXTENT OF PETROLEUM HYDROCARBONS

Based on the soil analytical data reported from the analysis of perimeter samples obtained during remedial excavation, elevated hydrocarbons concentrations were determined to remain at the site. Figure 2 shows the concentrations of TPHg at the site and includes inferred concentrations contours.

The horizontal limits of the highest concentrations of TPHg are controlled by borings B-1, B-2 and B-3 on the north side; borings B-10 and B-7 on the east side; and boring B-6 on the south side. The concentrations of TPHg reported by the laboratory in soil samples obtained from these borings were either not detectable or 10 mg/kg as summarized in Table 1. There were detectable concentrations of TPHg reported in boring B-9 located directly to the west of the former UST location.

Vertical limits of the soil contamination appear to be bounded by the shallow depth to water at approximately seven feet below the ground surface at the site and four feet below the road surface north of the site.

2.4 INTERPRETATION OF THE SITE GEOLOGY

Soils at the site consisted generally of medium stiff fill material and road base (with gravel) overlying soft fine sands and wet organic clays. The borings at the site indicated approximately three additional feet of fill material than the borings located in the street. This corresponds with a three foot higher surface elevation at the site than in the street.

Soil sample recovery was poor due in part to the softness of the soils and the presence of the saturated conditions.

3.0 CONCLUSIONS

On the basis of the data obtained during this investigation, BAI has reached the following conclusions:

- The extent of the highest concentrations of TPHg have been found on the north, east and south sides of the former UST location;

- Significant quantities of petroleum hydrocarbons exist within the zone of soft soils situated directly above the groundwater in the vicinity of the former UST location.

4.0 STATEMENT OF QUALIFICATIONS

This project was managed by Michael Velzy under the direct supervision of Tom Brunsing, a Professional Engineer (Civil) in the State of California. The final report of findings is signed and stamped by Dr. Brunsing.

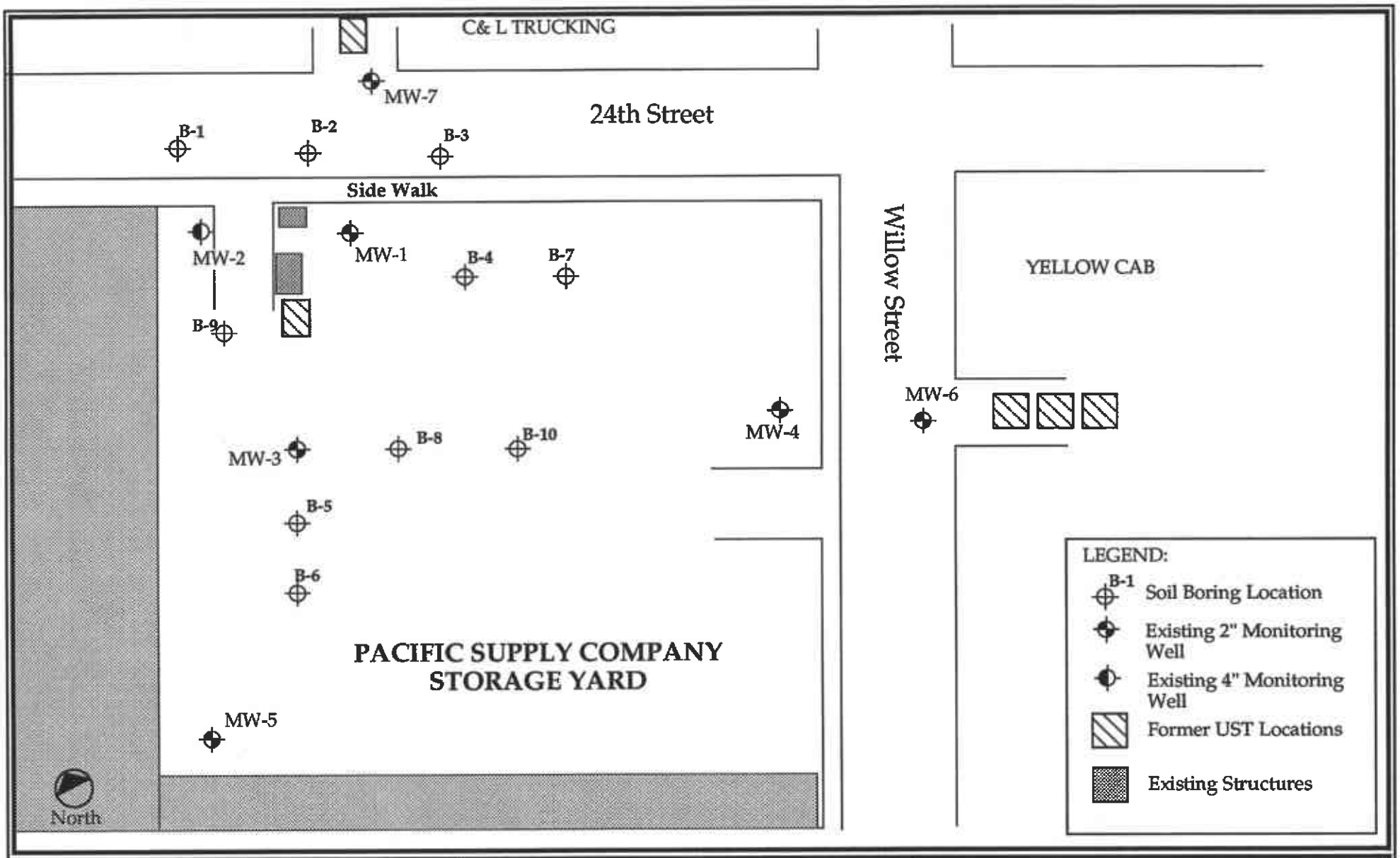
soil samples collected at 1st gw (6-8' bgs)

SUMMARY OF LABORATORY RESULTS *

Pacific Supply Company - Project No. 29.9

Sampling Date	Lab Number	Descriptor	Benzene µg/kg	Toluene µg/kg	Ethylbenzene µg/kg	Xylene µg/kg	TPH (gasoline) mg/kg
3/5/93	1691-1	B1	ND	ND	ND	ND	ND
3/5/93	1691-2	B2	ND	ND	ND	ND	ND
3/5/93	1691-3	B3	ND	ND	ND	ND	ND
3/5/93	1691-4	B4	28000	17000	73000	43000	7000
3/5/93	1691-5	B5	1600	2400	10000	6200	900
3/5/93	1691-6	B6	71	38	78	100	10
3/5/93	1691-7	B7	30	42	30	110	10
3/5/93	1691-8	B8	10000	41000	21000	94000	2200
3/5/93	1691-9	B9	1200	1500	3700	6700	910
3/5/93	1691-10	B10	ND	5.0	ND	ND	ND

* *See original laboratory report dated 3/22/93 for complete results.*

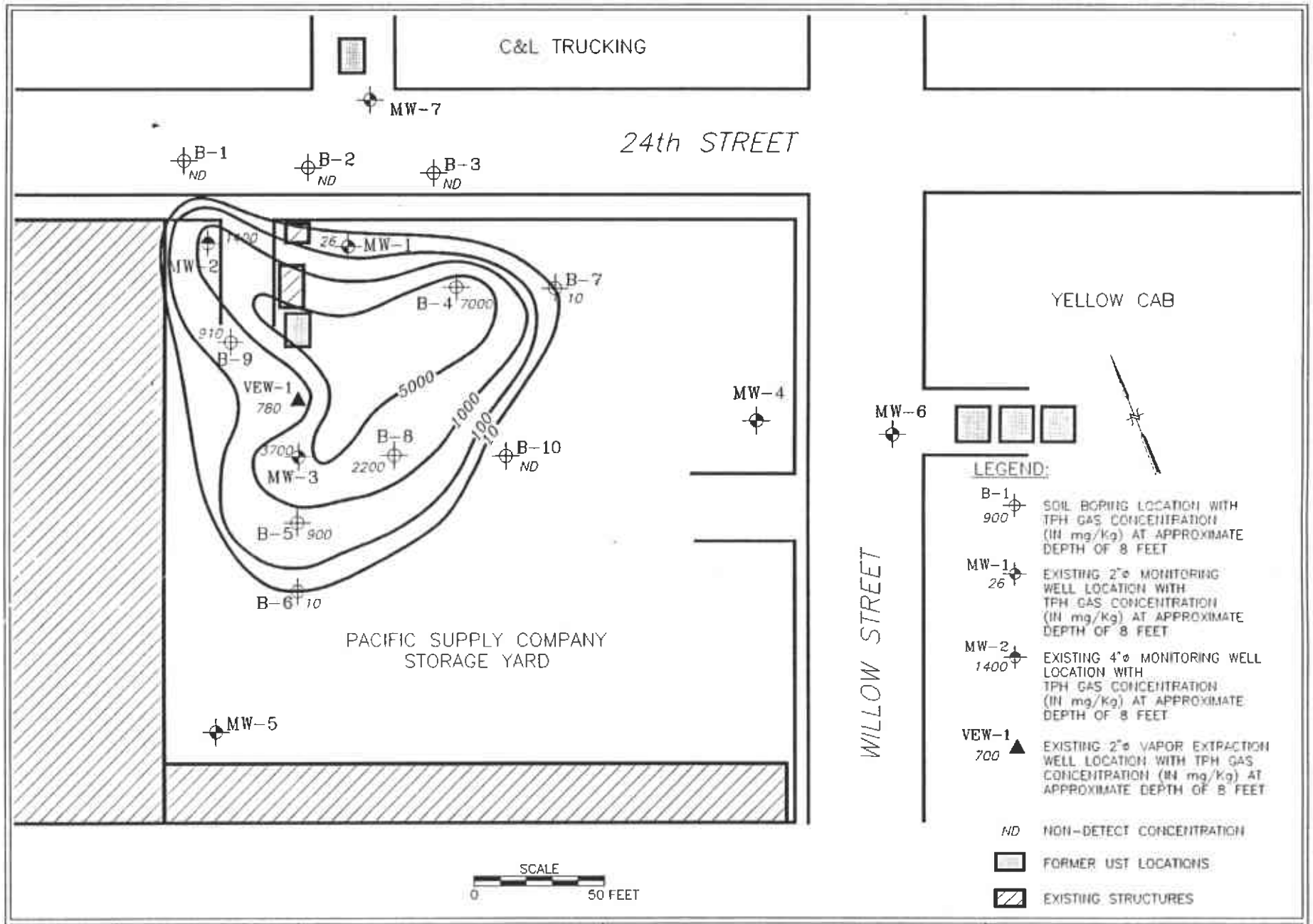


PROJECT NUMBER: 29.9 PACIFIC SUPPLY COMPANY OAKLAND, CALIFORNIA		
DRAWING NUMBER: 29.9-01		
DRAWN BY:	JBB	4/14/93
APPROVED BY:		
SCALE: 1 Inch = 50 Feet		

BACE ENVIRONMENTAL

FIGURE 1

SITE PLAN



DATE: 5-6-93	PROJECT NO.	29.9
CHECKED BY	MEV	5-7-93
APPROVED BY	MEV	5-7-93
DRAWN BY	-NG-	5-6-93
REV. △		

PACIFIC SUPPLY CO.
1735 24TH STREET
OAKLAND, CALIFORNIA

BACE ENVIRONMENTAL

FIGURE 2

ISOPLETH MAP OF TPH GAS CONCENTRATIONS IN SOIL

199305.211601 BA122

APPENDIX A
BORING LOGS

OH = high plasticity org. silts + clays

SP = sands

inconsistent soil horizons

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 21' North and 13' West of NW corner of driveway

Surface Elevation: 5 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0–6	BLOW COUNT 6–12	BLOW COUNT 12–18	Recovery In Inches	Piezometer
0'	Asphalt													
9"	Soft grey fine sand with gravel. Dry.		SP		1									
2'	Grades to medium stiff grey silty clay. Dry.		CL		2	1	CR	2.5	3.0	—	—	—		
3'	Very soft black organic clay. Moist to wet.		OH		3									
3.5'	No Recovery				▼ 4									
	where was the sample collected?				5									
					6									
7'	Bottom of Boring				7									
					8									
					9									
	Note: Boring continuously cored with a driven double wall sampler													

Field Log of Boring No. B-1 By: Joel Bruxvoort Page 1 of 1

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 21.5' North and 42.5' East of NW corner of driveway

Surface Elevation: 5 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0–6	BLOW COUNT 6–12	BLOW COUNT 12–18	Recovery In Inches	Piezometer
0'	Asphalt													
9"	Soft to medium stiff grey silty clay with some gravel. Dry.		CL		1									
2'	Very soft black organic clay. Moist.		OH		2									
3'	No Recovery				3									
					▼4									
					5									
5.5'	Soft grey clay. Moist.		CL		6	1	CR	6.0	6.5	—	—	—		
7'	Bottom of Boring				7									
	Note: Boring continuously cored with a driven double wall sampler				8									
					9									

Field Log of Boring No. B-2 By: Joel Bruxvoort Page 1 of 1

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 21' North and 88' East of NW corner of driveway

Surface Elevation: 5 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	Recovery In Inches	Piezometer
0'	Asphalt													
6"	Soft to medium stiff dark grey silty clay with sand. Slightly moist. Gravel layer observed.		CL		1									
2'	Medium stiff dark grey clay and organic material. Slightly moist.		OH		2									
3'	Very soft to soft grey clay. Moist.		CL		3									
4'	No Recovery				4									
					5 ▼									
					6									
6.5'	Soft dark grey to black clay and organic material. Wet.		OH											
7'	No Recovery				7									
8'	Soft to Medium stiff grey clay. Moist.		CL		8	1	CR	8.0	8.5	—	—	—		
9'	Bottom of Boring Note: Boring continuously cored with a driven double wall sampler				9									

Field Log of Boring No. B-3 By: Joel Bruxvoort Page 1 of 1

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 27' South and 93' East of NW corner of driveway

Surface Elevation: 8 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	Recovery In Inches	Piezometer
0'	Asphalt													
6"	Medium stiff silty clay with trace gravel (base rock). Dry		CL		1									
2'	No Recovery. Gravel blocked sampler.				2									
4'	Medium stiff to soft grey-green clay. Gravel at top of core. Mottled patches of silt and sand. Slightly moist.		CL		4									
5'	Loose to medium dense green fine sand with HC odor (1,000 ppm PID). Slightly Moist.		SP		5									
5.5'	No Recovery				6									
7'	Soft grey-green clay with black silt and organic material at bottom of core. Slightly moist.		CL		7	1	CR	7.0	7.5	—	—	—		
8'	No Recovery				8									
10'	Bottom of Boring				9									

Note: Boring continuously cored with a driven double wall sampler

Field Log of Boring No. B-4 By: Joel Bruxvoort Page 1 of 1

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 99' South and 32' East of NW corner of driveway

Surface Elevation: 8 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0–6	BLOW COUNT 6–12	BLOW COUNT 12–18	Recovery In Inches	Piezometer
0'	Asphalt													
6"	Medium stiff light grey sand with some gravel (base rock at top). Green mottling in places. Dry.		SP		1									
2.3'	No Recovery				2									
					3									
4'	As above.		SP		4									
4.3'	No Recovery													
					5									
					6									
7'	Loose green-grey fine sand. Slightly moist.		SP		7	1	CR	7.0	7.5	—	—	—		
7.5'	No Recovery				▼ 8									
					9									
10'	Bottom of Boring													

Note: Boring continuously cored with a driven double wall sampler

Field Log of Boring No. B-5 By: Joel Bruxvoort Page 1 of 1

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 125' South and 32' East of NW corner of driveway

Surface Elevation: 8 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0 to 6	BLOW COUNT 6 to 12	BLOW COUNT 12 to 18	Recovery In Inches	Piezometer
0'	Asphalt													
6"	Medium stiff brown sandy silt with some gravel (base rock at top). Dry		SM		1									
2'	Medium stiff grey-green silty sand and some mottled red clay. No HC odor. Dry.				2									
					3									
4'	HC odor.				4									
					5									
6'	No Recovery				6									
7'	Soft green silty clay. Black silt and organic material at the bottom. HC odor (1,000 ppm PID). Wet.		CL		7	1	CR	7.0	7.5	—	—	—		
7.8'	No Recovery				▼ 8									
					9									
10'	Bottom of Boring													

Note: Boring continuously cored with a driven double wall sampler

Field Log of Boring No. B-6 By: Joel Bruxvoort Page 1 of 1

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 27' South and 130' East of NW corner of driveway

Surface Elevation: 8 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0	BLOW COUNT 6	BLOW COUNT 12	Recovery In Inches	Piezometer
0'	Asphalt													
6"	Medium stiff brown silty clay with some gravel (base rock). Dry		CL		1									
2'	Loose green fine sand. HC odor. Dry.		SP		2									
3.5'	No Recovery				3									
4'	Soft-medium stiff black silt, organic material. Wet at bottom.		OH		4									
5.2'	No Recovery				5									
7'	Soft-medium stiff brown clayey silt with gravel. Wet.		ML		6 ▼ =7	1	CR	7.0	7.5	—	—	—		
8'	No recovery				8									
10'	Bottom of Boring				9									

Note: Boring continuously cored with a driven double wall sampler

Field Log of Boring No. B-7 By: Joel Bruxvoort Page 1 of 1

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 71' South and 69' East of NW corner of driveway

Surface Elevation: 8 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0-6	BLOW COUNT 6-12	BLOW COUNT 12-18	Recovery In Inches	Piezometer
0'	Asphalt													
6"	Medium stiff brown silty clay with some gravel (base rock at top). Dry		CL		1									
					2									
					3									
4'	Medium dense to loose green fine sand, HC odor (240 ppm PID). Dry.		SP		4									
					5									
6'	No Recovery				6									
7'	As above with soft black silt, dry. Wet organic material at bottom.		SP		7	1	CR	7.0	7.5	—	—	—		
			OH		▼									
8'	No Recovery				=8									
					9									
10'	Bottom of Boring													

Note: Boring continuously cored with a driven double wall sampler

Field Log of Boring No. B-8 By: Joel Bruxvoort Page 1 of 1

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 37.5' South and 8' East of NW corner of driveway

Surface Elevation: 8 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0	BLOW COUNT 6	BLOW COUNT 12	Recovery In Inches	Piezometer
0'	Asphalt													
6"	Medium stiff brown silt and sand with some gravel (base rock at top). Dry		SM		1									
2.5'	No Recovery				2									
4'	Soft grey clay with bands of organic material with green mottling, HC odor at 6' (1,000 ppm PID). Slightly moist.		OH		3									
6'	No Recovery				4									
7'	Soft grey organic clay, HC odor at 8' (350 ppm PID). Wet.		OH		5									
					6									
					▼ =7									
					8	1	CR	8.5	9.0	—	—	—		
9'	Soft black organic clay, wet.				9									
9.5'	No Recovery													
10'	Bottom of Boring													

Note: Boring continuously cored with a driven double wall sampler

Field Log of Boring No. B-9 By: Joel Bruxvoort Page 1 of 1

BACE Environmental
a Division of
Brunsing Associates, Inc.

Project Name: Pacific Supply Company
1735 24th Street, Oakland, Ca

Project No.: 029.9

Boring Location: 71' South and 105.5' East of NW corner of driveway

Surface Elevation: 8 feet MSL (approx.) Driller: Precision Sampling Date: 3-5-93

Depth	SOIL DESCRIPTION AND REMARKS	Lithology	U.S.C.S Soil Type	qu TSF	Contact Depth	SAMPLE No.	SAMPLE Type	SAMPLE Interval From	SAMPLE Interval To	BLOW COUNT 0 to 6	BLOW COUNT 6 to 12	BLOW COUNT 12 to 18	Recovery In Inches	Piezometer
0'	Asphalt													
6"	Soft to medium stiff grey-black silty clay with some gravel (base rock at top). Dry		CL		1									
					2									
					3									
3.8'	Medium dense green fine sand. HC odor. Dry.		SP		4									
4.5'	No Recovery				5									
6'	Medium dense to loose green fine sand. Wet.		SP		6	1	CR	6.0	6.5	—	—	—		
6.8'	Soft black organic clay. Moist.		OH		▼									
7'	No Recovery				=7									
8'	Bottom of Boring				8									
					9									

Note: Boring continuously cored with a driven double wall sampler

Field Log of Boring No. B-10 By: Joel Bruxvoort Page 1 of 1

APPENDIX B
ANALYTICAL DATA REPORTS

BACE Analytical & Field Services, Inc.

P. O. Box 838, Windsor, CA 95492
707-838-8338 FAX 707-838-4420

March 22, 1993
Log No: 1691

Brunsing Associates, Inc.
1735 E. Bayshore Road, Suite 2A
Redwood City, California 94063

ATTN: Joel Bruxvoort

RE: Results of the analyses of soil samples obtained for project number 191 on March 5, 1993.

Dear Mr. Bruxvoort,

This letter serves to confirm the analytical results previously communicated to you. Should any questions arise concerning procedure or results, please feel free to contact us.

Sincerely,

William G. Rotz
Director, Mobile Analytical Services

Tami Hucke Norgrove
Laboratory Manager

Client: Brunsing Associates, Inc.
Client Contact: Joel Bruxvoort

Sample Date: 3/5/93
Analysis Date: 3/18 & 19/93

BAFS Log No: 1691

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 1691-1 (B-1)	1691-2 (B-2)
Benzene	5.0		ND	ND
Toluene	5.0		ND	ND
Ethylbenzene	5.0		ND	ND
Xylene (total)	5.0		ND	ND
Dilution Factor:	1			

METHOD: 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No: Descriptor:	Results - mg/kg 1691-1 (B-1)	1691-2 (B-2)
TPH - gasoline	1.0		ND	ND
Dilution Factor:	1			

NOTE: ND = not detected.
nr = not requested.

Client: Brunsing Associates, Inc.
Client Contact: Joel Bruxvoort

Sample Date: 3/5/93
Analysis Date: 3/18 & 19/93

BAFS Log No: 1691

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 1691-3 (B-3)	1691-4 (B-4)
Benzene	5.0		ND	28000
Toluene	5.0		ND	17000
Ethylbenzene	5.0		ND	73000
Xylene (total)	5.0		ND	43000
Dilution Factor:			1	400

METHOD: 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No: Descriptor:	Results - mg/kg 1691-3 (B-3)	1691-4 (B-4)
TPH - gasoline	1.0		ND	7000
Dilution Factor:			1	400

NOTE: ND = not detected.
nr = not requested.

Client: Brunsing Associates, Inc.
Client Contact: Joel Bruxvoort

Sample Date: 3/5/93
Analysis Date: 3/18 & 19/93

BAFS Log No: 1691

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 1691-5 (B-5)	1691-6 (B-6)
Benzene	5.0		1600	71
Toluene	5.0		2400	38
Ethylbenzene	5.0		10000	78
Xylene (total)	5.0		6200	100
Dilution Factor:			330	1

METHOD: 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No: Descriptor:	Results - mg/kg 1691-5 (B-5)	1691-6 (B-6)
TPH - gasoline	1.0		900	10
Dilution Factor:			330	1

NOTE: ND = not detected.
nr = not requested.

Client: Brunsing Associates, Inc.
Client Contact: Joel Bruxvoort

Sample Date: 3/5/93
Analysis Date: 3/18 & 19/93

BAFS Log No: 1691

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 1691-7 (B-7)	1691-8 (B-8)
Benzene	5.0		30	10000
Toluene	5.0		42	41000
Ethylbenzene	5.0		30	21000
Xylene (total)	5.0		110	94000
Dilution Factor:			1	400

METHOD: 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No: Descriptor:	Results - mg/kg 1691-7 (B-7)	1691-8 (B-8)
TPH - gasoline	1.0		10	2200
Dilution Factor:			1	400

NOTE: ND = not detected.
nr = not requested.

Client: Brunsing Associates, Inc.
Client Contact: Joel Bruxvoort

Sample Date: 3/5/93
Analysis Date: 3/18 & 19/93

BAFS Log No: 1691

METHOD: EPA 5030/8020

Matrix: Soil

Parameter	Reporting Limit µg/kg	Lab No: Descriptor:	Results - µg/kg 1691-9 (B-9)	1691-10 (B-10)
Benzene	5.0		1200	ND
Toluene	5.0		1500	5.0
Ethylbenzene	5.0		3700	ND
Xylene (total)	5.0		6700	ND
Dilution Factor:			400	1

METHOD: 5030 / GC FID

Parameter	Reporting Limit mg/kg	Lab No: Descriptor:	Results - mg/kg 1691-9 (B-9)	1691-10 (B-10)
TPH - gasoline	1.0		910	ND
Dilution Factor:			400	1

NOTE: ND = not detected.
nr = not requested.

SUMMARY OF LABORATORY RESULTS *

Pacific Supply Company - Project No. 29.9

Sampling Date	Lab Number	Descriptor	Benzene µg/kg	Toluene µg/kg	Ethylbenzene µg/kg	Xylene µg/kg	TPH (gasoline) mg/kg
3/5/93	1691-1	B1	ND	ND	ND	ND	ND
3/5/93	1691-2	B2	ND	ND	ND	ND	ND
3/5/93	1691-3	B3	ND	ND	ND	ND	ND
3/5/93	1691-4	B4	28000	17000	73000	43000	7000
3/5/93	1691-5	B5	1600	2400	10000	6200	900
3/5/93	1691-6	B6	71	38	78	100	10
3/5/93	1691-7	B7	30	42	30	110	10
3/5/93	1691-8	B8	10000	41000	21000	94000	2200
3/5/93	1691-9	B9	1200	1500	3700	6700	910
3/5/93	1691-10	B10	ND	5.0	ND	ND	ND

* *See original laboratory report dated 3/22/93 for complete results.*

PROJ. NO.	PROJECT NAME
29.9	Pacific Supply Company
L.P. NO.	SAMPLERS: (Signature)

№ 1377

DATE	SAMPLE I.D.	TYPE	NO. OF CON-TAINERS	ANALYSIS: TPH-gasoline / BTEX	REMARKS
3-5-93	B-1 3'	Soil	1	X X	1691-1
	B-2 6'	Soil	1	X X	-2
	B-3 8'	Soil	1	X X	-3
	B-4 8'	Soil	1	X X	-4
	B-5 7'	Soil	1	X X	-5
	B-6 7'	Soil	1	X X	-6
	B-7 7'	Soil	1	X X	-7
	B-8 7.5'	Soil	1	X X	-8
	B-9 8.5	Soil	1	X X	-9
	B-10 6	Soil	1	X X	-10

LABORATORY: BAES

Relinquished by: (Signature)	Date/Time	Received by: (Signature)
	3-7-93 4:Am	
Relinquished by: (Signature)	Date/Time	Received by: (Signature)
Relinquished by: (Signature)	Date/Time	Received for Laboratory by: (Signature)
	3/9/93 10:45	

Remarks: Standard TAT

BRUNSING ASSOCIATES, INC.

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601 N. State Street
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QUALITY CONTROL SUMMARY

Client: Brunsing Associates, Inc.
Client Contact: Joel Bruxvoort
Sample Date: 3/5/93
Analysis Date: 3/18 & 19/93

BAFS Log No. : 1691

Parameter	% RECOVERY				
	CCV%*	Blank	Spike	Spike Dup	RPD
Benzene	96	ND	99	98	1.0
Toluene	96	ND	99	103	4.0
Ethylbenzene	98	ND	96	99	3.1
Xylene	101	ND	97	101	4.0
Gasoline	96	ND	92	92	<1

* Continuous Calibration Verification Standard