Converse Environmental Consultants California

55 Hawthorne Street, Suite 500
San Francisco, California 94105

Telephone **415 543-4200**
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6/26/89

ALAMEDA COUNTY
DEPT. OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS

June 26, 1989
88-44-359-01-112

Ms. Leslie Ferguson
Water Resource Control Engineer
San Francisco Bay Regional Water Quality Control Board
1111 Jackson Street, Sixth Floor
Oakland, California 94621

Subject: Shell Oil Company - Quarterly Report
285 Hegenberger Road
Oakland, California

Dear Ms. Ferguson:

Enclosed please find one copy of the Shell Oil Company Quarterly Report of Activities for Quarter 2, 1989 prepared by Converse Environmental Consultants California - (San Francisco).

Please call if you have any questions.

Very truly yours,

Converse Environmental Consultants California

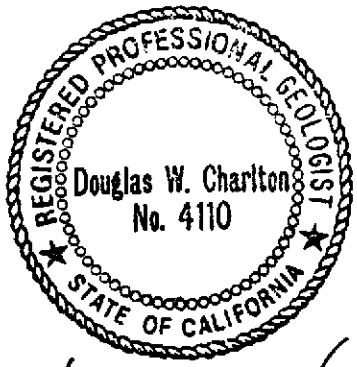
REGISTERED PROFESSIONAL GEOLOGIST
Douglas W. Charlton
No. 4110
STATE OF CALIFORNIA

Douglas W. Charlton
California Registered Geologist #4110
DWC:fs
enclosure

cc: Ms. Diane Lundquist - Shell Oil Company - (w/encl.)
Mr. Rafat Shahid - Alameda County Health - (w/encl.)
Ms. Robin Breuer - CECC - (w/encl.)

HEGENBERGER\FERGUSON.LTR

Converse Environmental Consultants California



REPORT OF ACTIVITIES

SHELL OIL COMPANY FACILITY
285 Hegenberger Road
Oakland, California

For Quarter 2, 1989
Submitted: June 26, 1989

RWQCB Representative:	Ms. Leslie Ferguson Water Resource Control Engineer
LIA Representative:	Mr. Rafat Shahid Alameda County Health Care Services Agency
Shell Engineer:	Ms. Diane Lundquist Environmental Engineer
Converse Project Manager:	Ms. Robin Breuer, Project Manager 55 Hawthorne Street, Suite 500 San Francisco, California 94105 (415) 543-4200
Registered Geologist in Charge:	Douglas W. Charlton, Principal Geologist 55 Hawthorne Street, Suite 500 San Francisco, California 94105 (415) 543-4200
Site Owner:	Shell Oil Company

1. SITE DESCRIPTION

1.1 Maps

Vicinity Map: See Drawing 1
Plot Plan: See Drawing 2

1.2 Neighborhood Topography

Relatively flat. Most of neighborhood appears to be comprised of reclaimed marshlands.

1.3 Primary Surface Waters Nearby

San Leandro Creek, approximately 500 feet northwest, and San Francisco Bay, approximately one mile northwest of site.

1.4 Water Table Information

Q1/89: Water table elevation ranged between 2.80 and 2.34 feet MSL, with a gradient of 0.007 ft/ft. Highest high water by redox boundary in soil is ~4 feet MSL.

Q2/89: Water table elevation was approximately 2 feet MSL, with a gradient of .008 ft/ft. to the south.

2. INVESTIGATION HISTORY

2.1 Soil Borings Drilled to Period Start

SB-1 and SB-2.

2.2 Soil Borings Abandoned to Period Start

None.

2.3 Groundwater Wells Drilled to Period Start

MW-1, MW-2, MW-3.

2.4 Groundwater Wells Abandoned to Period Start

None.

2.5 Investigative History Summary

TABLE 1: Chronological Summary

Date	Description of Activity
1984	Underground storage tanks replaced with single-wall fiberglass tanks
01/1989	Shell transferred this case to CECC.
02/15/89	CECC drilled and sampled three wells and two borings.
04/01/89	CECC reported results of Quarter 1, 1989 activities to agencies of jurisdiction.
04/28/89	**CECC installed MW-4 through MW-8.**
05/26/89	**CECC drilled and sampled SB-3, SB-4 and SB-5.**

3. WORK COMPLETED THIS PERIOD

3.1 Introduction

Work initiated and completed during the quarter followed the task descriptions and modifications of the site Work Plan dated February 10, 1989. The relative timing and schedule of these activities is shown in summary in the Revised Critical Path (May 24, 1989) for the project (Drawing 3).

3.2 Soil Boring Drilling/Sampling

In accordance with Task Modification 1 (Attachment 4) three soil borings were drilled, sampled, and abandoned following the protocols described in Appendices A and B. Soil cuttings were handled by CECC and Shell Oil Company, following task procedures described in Appendix G. Boring logs are enclosed as Attachment 1. A summary of CECC soil boring activities is presented in Table 2.

TABLE 2: Summary of Soil Borings Drilled

Boring No.	Date	Diameter (inches)	T.D. (ft. bgs)	Unsaturated Soil Samples	Saturated Soil Samples
SB-1	02/89	4	6.5	4 ft.	None
SB-2	02/89	4	6.0	5 ft.	None
SB-3	**5/24/89**	**4**	**5.0**	**2,4 ft.**	**None**
SB-4	**5/24/89**	**4**	**4.0**	**2,4 ft.**	**None**
SB-5	**5/24/89**	**4**	**5.0**	**2 ft.**	**None**

3.3 Well Installations

In accordance with Task Modification 1 (Attachment 4), five groundwater monitoring wells were installed, developed and sampled following the protocols in Appendices C, D and E. All wells were installed as 4-inch diameter filter-packed PVC wells through hollow-stem auger drilling equipment. Boring logs and as-built well construction diagrams of these and prior CECC wells are included as Attachment 1. A summary of CECC well installations is provided in Table 3.

TABLE 3: Summary of Groundwater Monitoring Well Installations

Well No.	Date Inst.	Diameter Well (in.)	Initial Water Table (ft. bgs)	Static Water Table (ft. bgs)	T.D. (ft. bgs)	Screen (ft. bgs)	Bentonite Seal (ft. bgs)	Grout Seal (ft. bgs)
MW-1	2/14/89	4	-6.0	3.83	16.5	10-5.5	4.0-3.0	3.0-0
MW-2	2/15/89	4	-5.0	5.33	16.5	10-5.0	4.0-3.0	3.0-0
MW-3	2/15/89	4	-6.0	6.0	16.5	10-5.0	4.0-3.0	3.0-0
MW-4	**4/28/89**	**4**	**7.5**	**9.60**	**14.0**	**10-5.0**	**5.0-4.0**	**4.0-0**
MW-5	**4/27/89**	**4**	**-7.0**	**5.47**	**14.0**	**10-4.5**	**4.5-3.5**	**3.5-0**
MW-6	**4/28/89**	**4**	**-6.0**	**6.47**	**12.0**	**11.0-5.0**	**5.0-4.0**	**4.0-0**
MW-7	**4/27/89**	**4**	**-6.0**	**5.48**	**14.0**	**10.0-5.0**	**5.0-4.0**	**4.0-0**
MW-8	**4/28/89**	**4**	**-7.0**	**8.62**	**12.0**	**10.0-5.0**	**5.0-4.0**	**4.0-0**

3.4 Soil Analysis/Results

Soil samples were properly packaged and transferred to a California State-certified analytical laboratory under proper chain-of-custody and preservation (see Appendix E). The samples were analyzed for TPH (as gasoline and diesel) and BTEX using EPA Methods 3550, 5030, 8015 and 8020, and for Pb using EPA Methods 3050 and 7421. Analytical results are summarized in Table 4, and certified sheets from all analyses are enclosed as Attachment 2.

TABLE 4: Soil Analytical Results (ppm)

Boring No.	Composite Depth (ft. bgs)	Moisture	TPH-g	TPH-d	Total Oil & Grease*	Benzene	Toluene	Ethyl-benzene	Xylene	Total Lead
SB-1	4.0	Damp	140	NA	NA	0.3	0.8	1.4	0.6	14.7
SB-2	5.0	Moist	3700	NA	NA	<8	120	110	530	9.17
SB-3	**4.0**	**Wet**	**1300**	**180**	**89**	**0.54**	**8.4**	**18**	**24**	**0.2**
SB-3	**2,4**	**Wet**	**250**	**100**	**67**	**<0.25**	**1.1**	**1.9**	**3.2**	**<0.2**
SB-4	**2,4**	**Moist**	**1300**	**12**	**<10**	**0.54**	**0.4**	**18**	**24**	
SB-4	**4.0**	**V.Moist**	**50**	**20**	**13**	**0.12**	**0.43**	**0.45**	**0.18**	**<0.2**
SB-5	**2.0**	**Moist**	**31000**	**370**	**26**	**4.7**	**18**	**66**	**150**	**<0.2**
MW-1	5.5	Wet	1100	NA	NA	12	36	27	120	12.7
MW-2	6.0	Wet	2	NA	NA	0.1	<0.1	<0.1	<0.1	3.31
MW-3	5.0	Moist	3	NA	<30	<0.1	<0.1	<0.1	<0.1	1.42
MW-4	**5.0**	**Moist**	**<10**	**<10**	**<10**	**<0.025**	**0.056**	**<0.075**	**<0.075**	**34**
MW-4	**10.0**	**Wet**	**<10**	**<10**	**<10**	**<0.025**	**0.052**	**<0.075**	**<0.075**	**2.3**
MW-5	**5.0**	**Damp**	**<10**	**<10**	**<10**	**<0.025**	**<0.025**	**<0.075**	**<0.075**	**5.3**
MW-5	**10.0**	**Moist**	**<10**	**<10**	**<10**	**<0.025**	**0.037**	**<0.075**	**<0.075**	**4.3**
MW-6	**5.0**	**Moist**	**<10**	**<10**	**<10**	**0.033**	**0.079**	**<0.075**	**<0.075**	**8.2**
MW-6	**10.0**	**Wet**	**<10**	**<10**	**<10**	**<0.025**	**0.12**	**<0.075**	**<0.075**	**7.0**
MW-7	**5.0**	**Moist**	**4100**	**84**	**<10**	**14**	**92**	**14**	**190**	**14**
MW-7	**10.0**	**Wet**	**<10**	**18**	**<10**	**0.11**	**0.045**	**<0.075**	**<0.075**	**14**
MW-8	**5.0**	**Moist**	**<10**	**<10**	**<10**	**<0.025**	**0.089**	**<0.075**	**<0.075**	**3.4**
MW-8	**10.0**	**Wet**	**<10**	**160**	**460**	**<0.025**	**0.087**	**<0.075**	**<0.075**	**22**

* Extractable as motor oil.

3.5 Groundwater Analysis and Results

Groundwater samples were properly packaged and transferred to a California State-certified analytical laboratory under proper chain-of-custody and preservation (see Appendix E). The samples were analyzed for TPH (as gasoline and diesel) and BTEX using EPA Methods 5030, 3510, 8015 and 602. Analytical results are summarized in Table 5, and certified sheets from all analyses are enclosed as Attachment 3.

3.6 Physical Monitoring Results

Eight wells were physically monitored for depth to water table, and measurement of floating product, if any, once during the quarter. A summary of these results is presented in Table 6.

TABLE 5: Groundwater Analytical Results (ppm)

Well No.	Date Sampled	TPH-g	TPH-d	Benzene	Toluene	Ethyl-benzene	Xylene
MW-1	02/16/89	99	NA	20	23	5.7	23
MW-1	**05/23/89**	**48**	**11**	**4.2**	**5.2**	**1.2**	**7.7**
MW-2	02/16/89	20	NA	0.2	0.9	2.7	9.6
MW-2	**05/23/89**	**1.5**	**1.6**	**0.0043**	**0.0029**	**0.011**	**0.15**
MW-3	02/16/89	60	NA	5.5	0.2	3.2	5.2
MW-3*	**05/23/89**	**<0.05**	**1.5**	**<0.0005**	**<0.0005**	**<0.0015**	**<0.0015**
MW-4	**05/23/89**	**<0.05**	**NA**	**<0.0005**	**<0.0005**	**<0.0015**	**<0.0015**
MW-5	**05/23/89**	**26**	**7.0**	**1.5**	**0.28**	**<0.0015**	**8.1**
MW-6	**05/23/89**	**22**	**7.0**	**0.016**	**0.0065**	**0.0066**	**3.4**
MW-7	**05/23/89**	**47**	**11**	**3.5**	**5.0**	**1.5**	**7.8**
MW-8	**05/23/89**	**<0.05**	**0.10**	**<0.0005**	**<0.0005**	**<0.0015**	**<0.0015**

*MW-3 analysis 601 was ND for all compounds.
Note: Oil and grease (as motor oil) was <5 ppm for all samples taken 5/23/89.

TABLE 6: Physical Monitoring Results: Evidence of Contamination[1]

Well No.	Date	Depth to Water (ft.)	Petroleum Water Odor	Thickness Floating Product (inches)	Notes
MW-1	02/16/89	3.83	Slight	0	None
MW-1	**05/23/89**	**3.59**	**Slight**	**0**	**No sheen**
MW-2	02/16/89	5.33	Slight	0	None
MW-2	**05/23/89**	**5.23**	**Slight**	**0**	**None**
MW-3	02/16/89	5.17	None	0	None
MW-3	**05/23/89**	**5.09**	**None**	**0**	**None**
MW-4	**05/23/89**	**9.60**	**None**	**0**	**None**
MW-5	**05/23/89**	**5.47**	**Moderate**	**0**	**No sheen**
MW-6	**05/23/89**	**5.47**	**Strong**	**0**	**Sheen**
MW-7	**05/23/89**	**5.48**	**Moderate**	**0**	**Slight sheen**
MW-8	**05/23/89**	**8.62**	**None**	**0**	**None**

[1] Sheen; odor; FID; color; PID (opened/odor trapped in casing)

3.7 Hydrologic Tests and Research

Certain public files and records were researched, and conversations were held with authorities on local water conditions to provide background on the location and thickness of saturated zone, soil stratigraphy, groundwater flow patterns, seasonal variation of water tables, beneficial uses, etc. This information is included in the interpretive diagrams presented in Section 4 of this report.

3.8 Neighborhood Assessment

In accordance with Task Modification 1 (Attachment 4), a site walk and interview of Pacific Bell, a neighborhood business (at 295 Hegenberger Road) was conducted to locate prior soil borings near the subject property. The borings were not found. A neighborhood field walk was conducted to identify nearby business and uses (Drawing 1a).

3.9 Regulatory File Review

Review of the SFBRWQCB files revealed that 295 Hegenberger is not listed as a fuel or toxics case. The Alameda County Health Care Services Agency provided CECC with available file information that one tank was tested for tightness on June 6, 1988 and found to be tight. CECC will continue to review the LIA's list and file updates.

4. REVIEW OF DATA AND INTERPRETATIONS

4.1 Geologic Cross Section, Showing Groundwater (See Drawing 13 and 14)

- The site appears to be constructed on fill overlying Bay Mud.

4.2 Distribution of MVF Contamination in Soil (Drawings 5, 6, 7, 8 and 9).

- At -5 feet bgs, contaminated soil adjacent to current tank backfill exceeds 1,000 ppm TPH-g.
- Soil at (-5') bgs is contaminated with >3000 ppm TPH-g from MW-7 to (and across?) the tank complex. The source of this contamination is unknown.
- Locally the soil at (-5') bgs shows a "hot spot" of TPH-g contamination in the east corner of the property. The source of this gasoline contamination and its geometric relation to the task backfill, are unknown.
- Soil TPH-g contamination appears to extend offsite, onto the PacBell property, which lies northeast of the Shell property. The source of this contamination is not necessarily, or exclusively, from Shell. (Drawing 8)

- TPH-d plus TPH-mo exceed TPH-g significantly in soil from (-5') bgs at MW-3. (Drawing 9)

- Pb at (-5') bgs shows highest concentrations in the south part of the site, for unexplained reasons. (Drawing 10)

- Pb and TPH-g concentrations at (-5') bgs are not coincident. (Drawing 10)

4.3 Distribution of Dissolved MVF Contamination in Groundwater (Drawings 10, 11 and 12)

- Significant TPH-g and BTEX exist in groundwater at the downgradient site boundary.

- Upgradient water quality and lateral water quality have not been established. Further onsite investigation is needed to define onsite water quality.

- TPH-g in groundwater is significant. (Drawing 11)

- TPH-g in groundwater shows an anomaly possibly centered on the tanks, and extending offsite to the southeast (downgradient).

- TPH-d in groundwater is significant. (Drawing 11)

- The TPH-d plume mimics the TPH-g plume, and extends offsite.

- Benzene in groundwater is locally present in concentrations exceeding 1 ppm, coincident with the TPH-g and TPH-d plumes, and extending offsite. (Drawing 12)

4.4 Distribution of Floating Product on Groundwater: None

4.5 Groundwater Elevation and Gradient (See Drawing 4)

5. STATUS OF SCHEDULE

Task time lines established on the Revised Critical Path were met (see Drawing 3).

6. TASK MODIFICATIONS

Soil borings SB-3, SB-4, SB-5 and groundwater monitoring well MW-6 were installed to assess the potential of contamination extending offsite to the northeast.

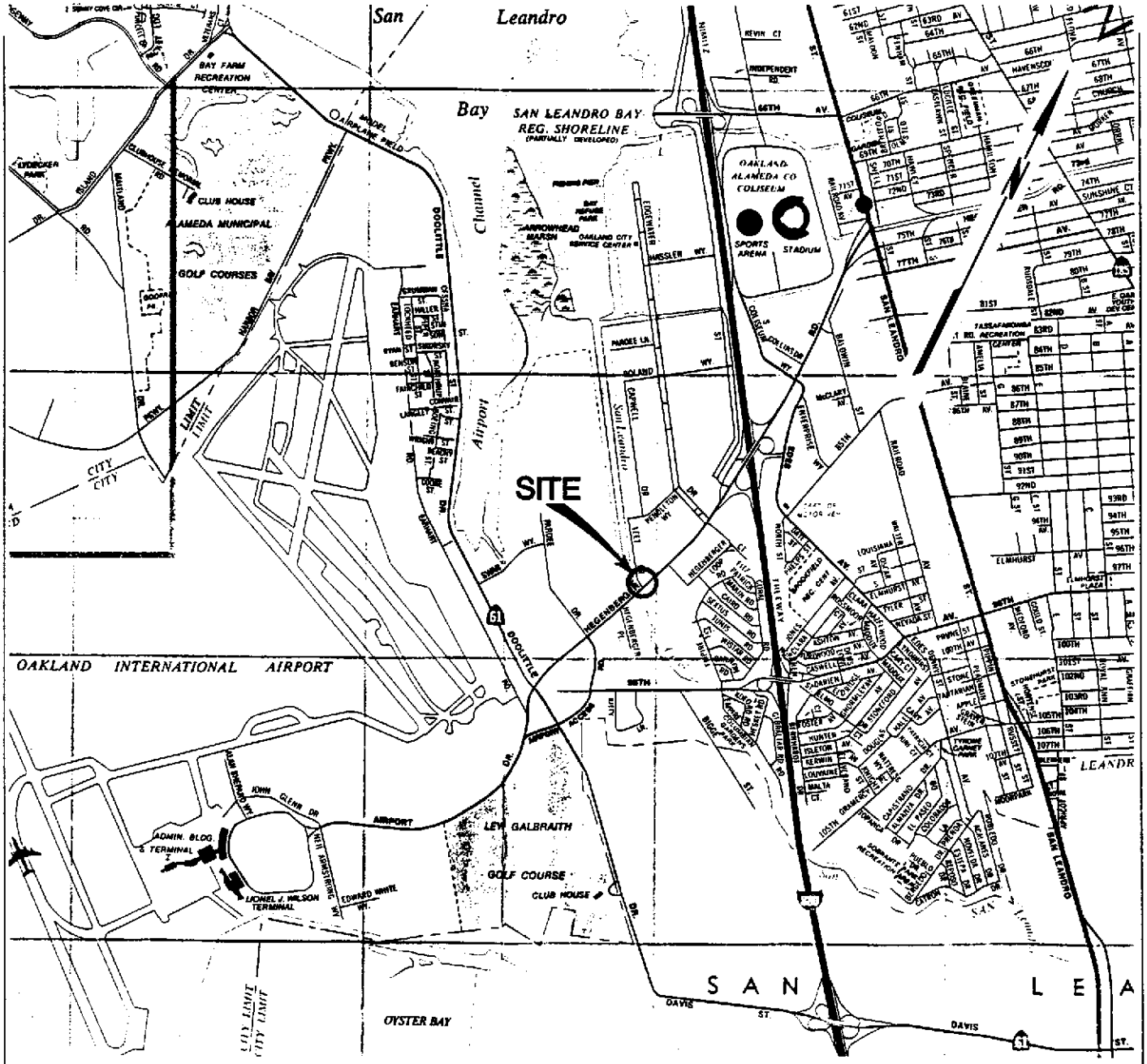
7. TASKS PLANNED BUT NOT COMPLETED

None.

8. PLANNED WORK

Tasks 1b, 5b and 6b will be continued next quarter, with the installation of soil borings SB-6 through SB-11, and one well, MW-9. These installations will supply soil and groundwater samples that will indicate whether soil and groundwater contamination are centered on the tank complex (see Attachment IV and Drawing 15).

No offsite wells or borings are planned. However, permission for rights of entry to drill borings or install offsite, downgradient wells will be initiated.



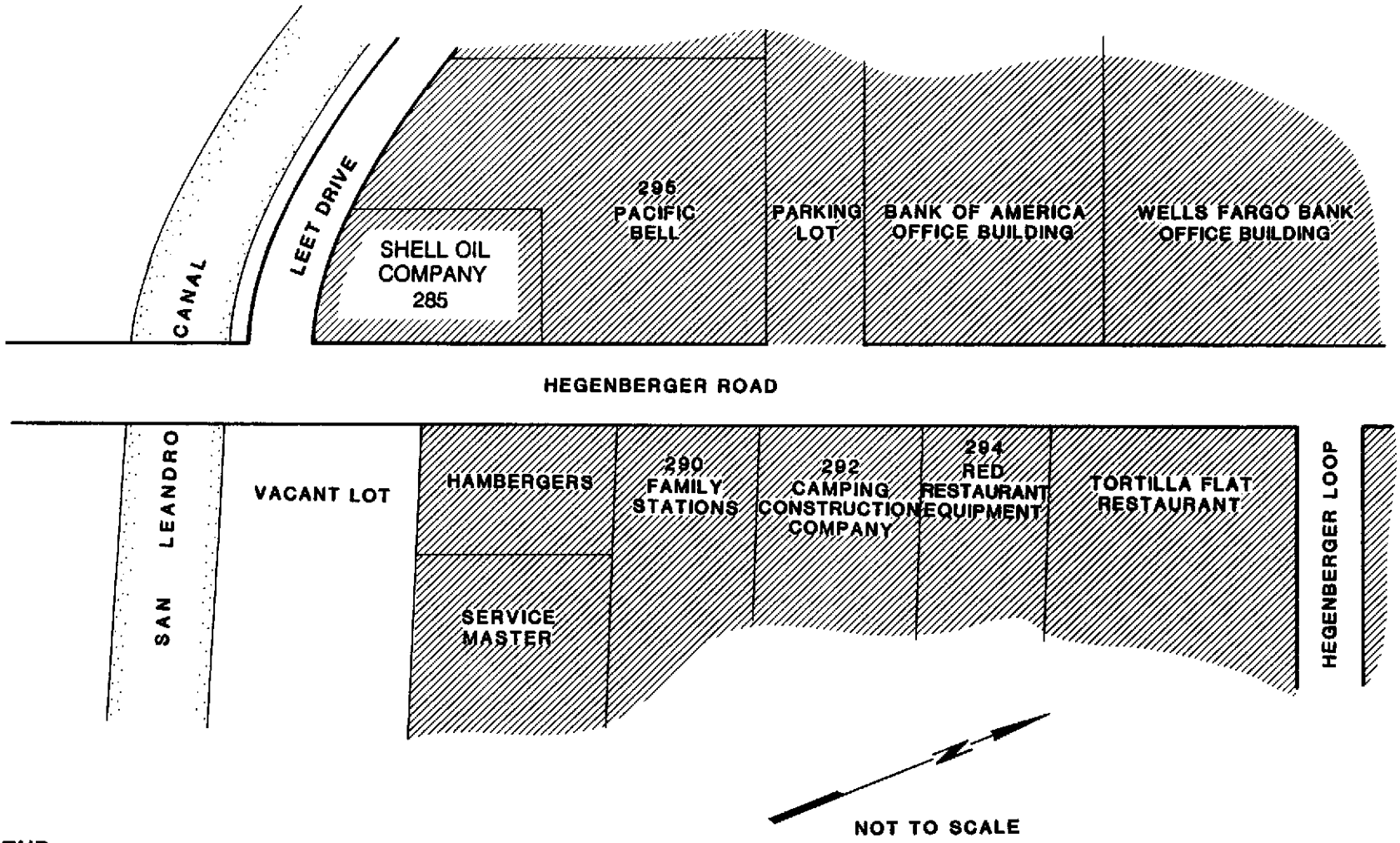
SOURCE: California State Automobile Association

SITE LOCATION

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale: AS SHOWN	Project No.: 88-44-359-01
Prepared by: KGC	Date: 3/21/89
Checked by: RMB	Drawing No.: 1
Approved by: DWC	



LEGEND

COMMERCIAL

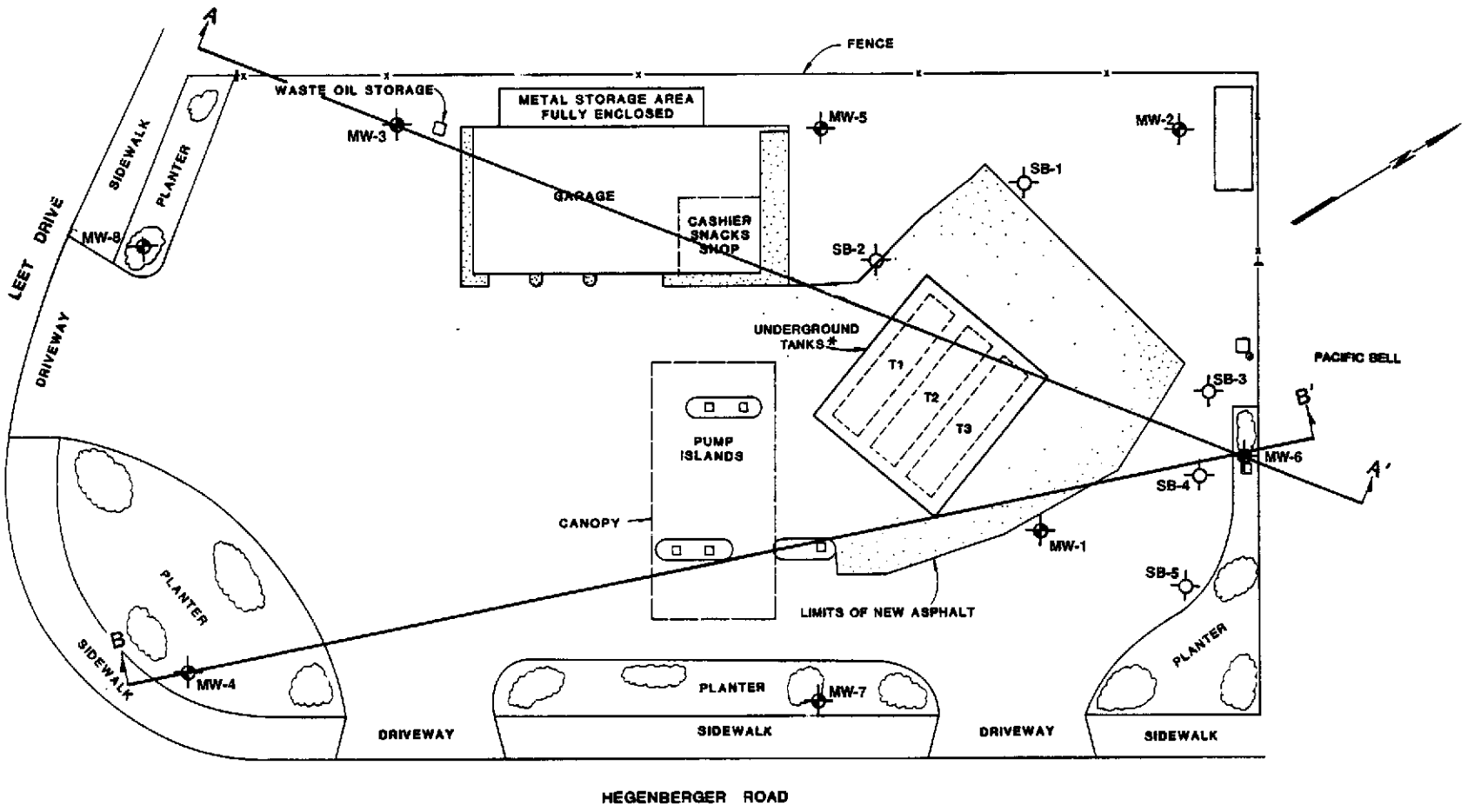
OPEN SPACE

AREA LAND USE

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	5/16/89
Prepared By	KGC
Checked By	RMB
Approved By	DWC
Project No.	88-44-359-01
Drawing No.	1a



LEGEND

SB-1 SOIL BORING

MW-1 GROUNDWATER MONITORING WELL

A A' LINE OF GEOLOGIC CROSS SECTION

* T1 = REGULAR UNLEADED, 10,000 GALLONS

T2 = REGULAR LEADED, 10,000 GALLONS

T3 = SUPER UNLEADED, 100,000 GALLONS

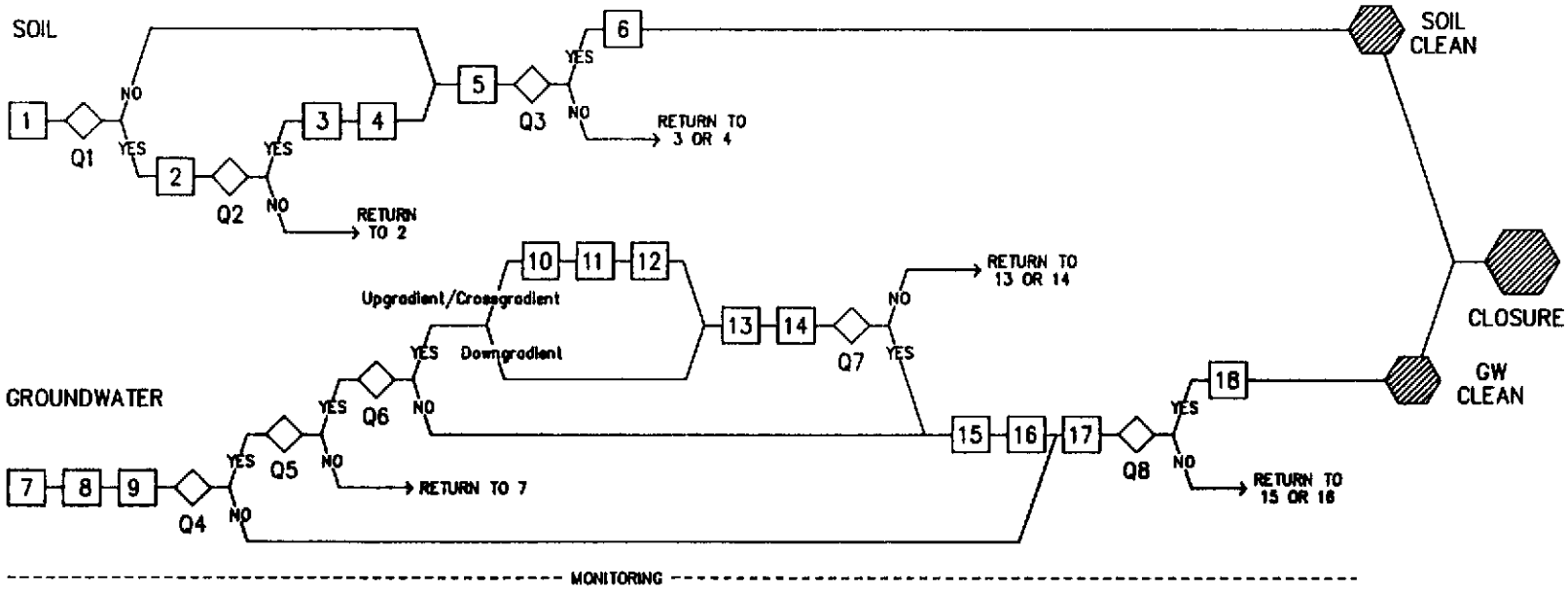
Base Map: Surveyed with EDM, Converse 1989.

PLOT PLAN

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	6/13/89
Prepared By	LQL
Checked By	RMB
Approved By	DWC
Project No.	88-44-359-02
Drawing No.	2



TASKS

Program 1: Onsite Soil Investigation/Remediation

Task 1 Drill and Sample Soil Borings
Task 2 Drill Step-Out Borings
Task 3 Prepare Soil Remedial Action Plan (if needed)
Task 4 Remediate Soil (if needed)
Task 5 Establish Clean Standards - Soil
Task 6 Confirm Remediated Soil

Program 2: Onsite Groundwater Investigation

Task 7 Install/Develop Groundwater Monitoring Wells
Task 8 Sample/Analyze Groundwater
Task 9 Conduct Hydrology Tests and Research

Program 3: Offsite Groundwater Investigation (if needed)

Task 10 Perform Neighborhood Assessment
Task 11 Refer to Legal Counsel
Task 12 Inform RWQCB
Task 13 Prepare Offsite Groundwater Investigation Plan
Task 14 Install Offsite Wells, Sample/Analyze

Program 4: Groundwater Remediation (if needed)

Task 15 Prepare Groundwater Remedial Action Plan
Task 16 Implement Remedial Action Plan
Task 17 Establish Cleanup Standards - Groundwater
Task 18 Confirm Groundwater Remediation

QUESTIONS

Q1: Are there concentrations of TPH greater than 100 ppm in any soil?

Q2: Is soil characterized?

Q3: Is the leaching potential acceptably low for contaminants proposed to be left in place?

Q4: Is groundwater actionable?

Q5: Is groundwater characterized onsite?

Q6: Does groundwater pollution extend offsite?

Q7: Is groundwater characterized offsite?

Q8: Is the environmental risk acceptably low for contaminants proposed to be left in groundwater?

SUMMARY OF PROGRESS - QUARTER 2, 1989

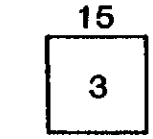
SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

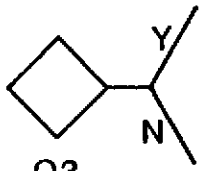
Scale	N/A
Date	6-24-89
Prepared By	LQL
Checked By	RMB
Approved By	DWC
Project No	88-44-359-01
Drawing No	3

KEY TO CRITICAL PATH DIAGRAMS

Time proceeds from left to right, with Tasks shown in relative order of succession.

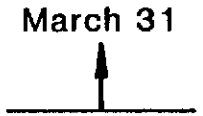


Task, showing Task number (inside) and anticipated number of days to completion (above), including preparatory activities, report preparation and review, and other related actions.



Question to be answered based on information from prior tasks.

Solid symbols indicate Letter Reports or formal Completion Reports coincident with question response.



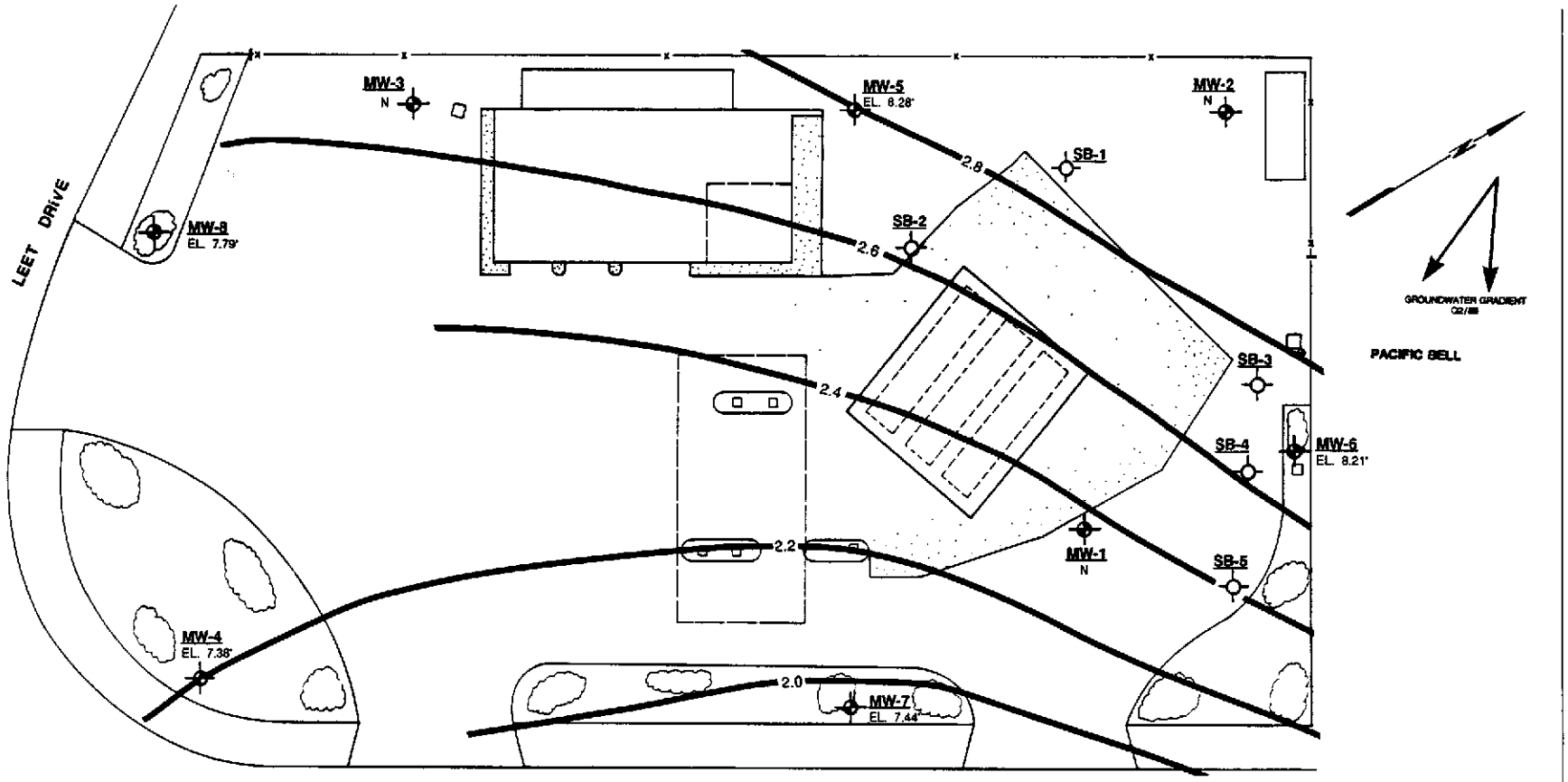
Relative calendar dates and dates of quarterly program reports to regulatory agencies.

KEY TO CRITICAL PATH DIAGRAM

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	N/A
Date	2/9/89
Prepared By	LQL
Checked By	RMB
Approved By	DWC
Project No	88-44-359-01
Drawing No	3a



LEGEND

SB-1 — SOIL BORING

MW-1 — GROUNDWATER MONITORING WELL

NOTES: ELEVATION OF WATER TABLE IN FEET ABOVE MEAN SEA LEVEL.

N = NOT AVAILABLE. SUBJECT TO RESURVEY.

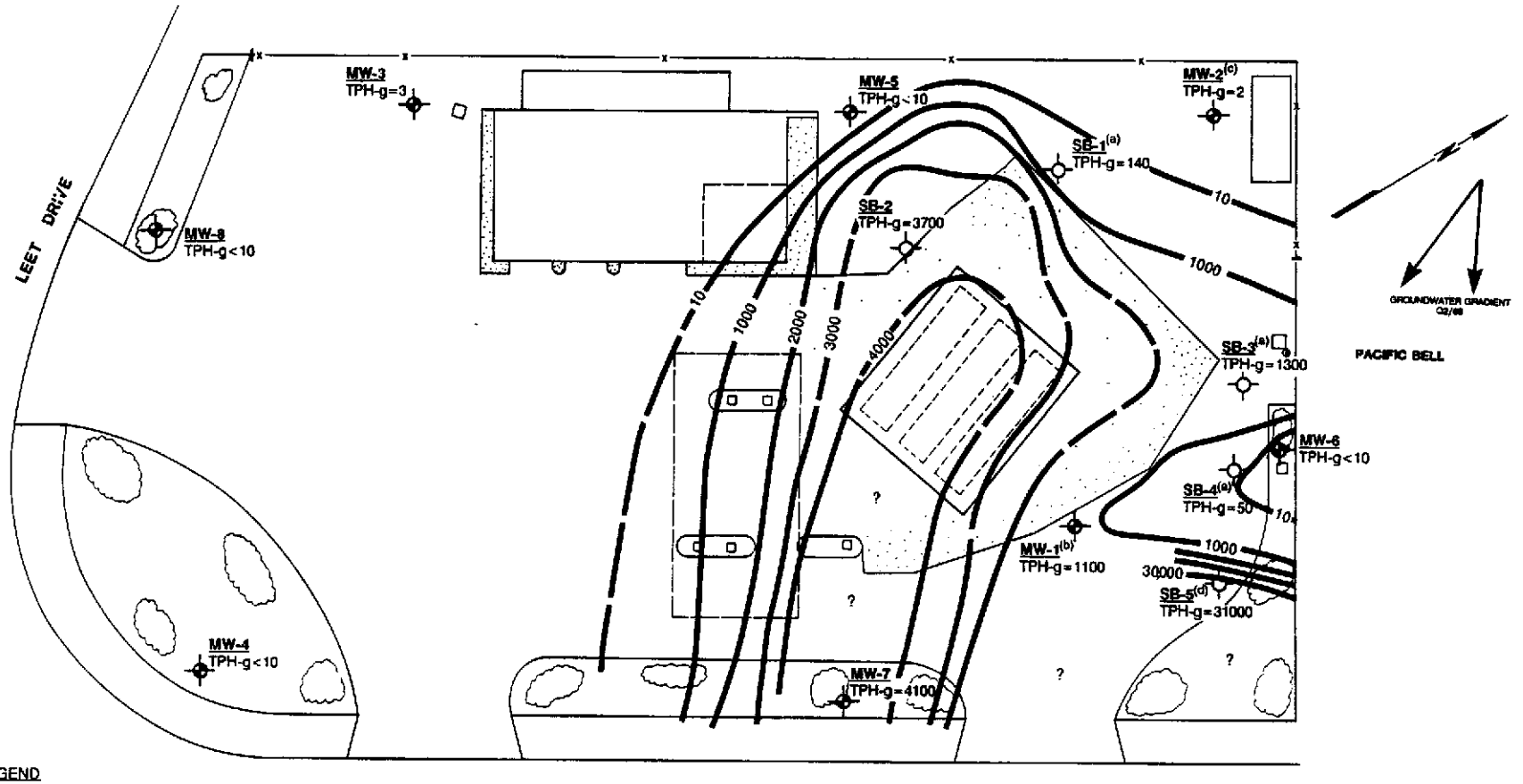
Base Map: Surveyed with EDM, Converse 1989.

GROUNDWATER GRADIENT

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	6/23/89
Prepared By	KGC/CRB
Checked By	RMB
Approved By	DWC
Project No.	88-44-359-01
Drawing No.	4



LEGEND

TPH-g = GASOLINE (ppm)

ISOCONCENTRATION CONTOURS OF GASOLINE (ppm)

SB-1 SOIL BORING

MW-1 GROUNDWATER MONITORING WELL

NOTES:
(a) SAMPLE TAKEN AT -4' BGS.
(b) SAMPLE TAKEN AT -5.5' BGS.
(c) SAMPLE TAKEN AT -6' BGS.
(d) SAMPLE TAKEN AT -2' BGS.

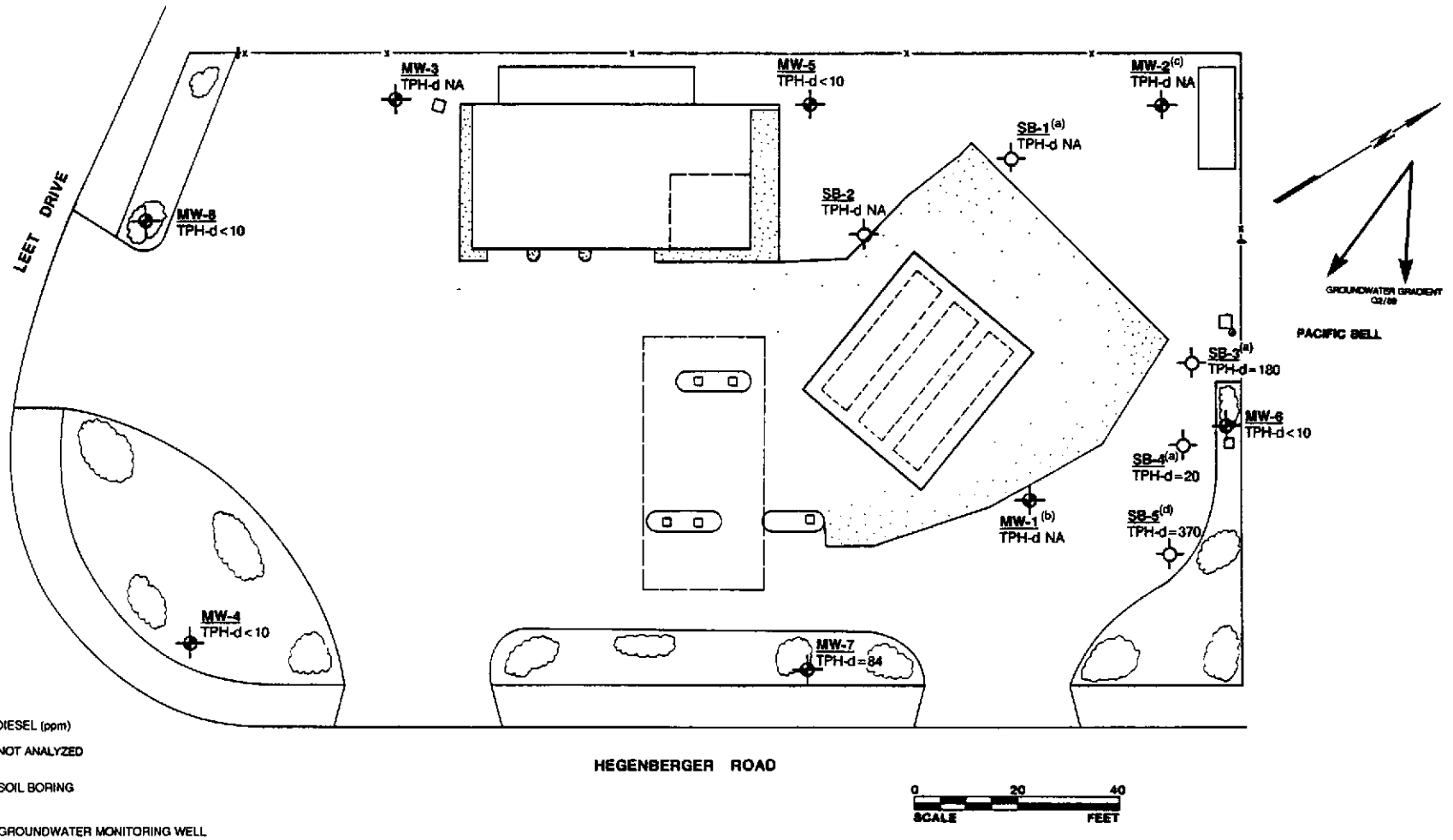
Base Map: Surveyed with EDM, Converse 1989.

PLAN: SOIL TPH-g AT (-5') Q2/89

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	6/23/89
Prepared By	KGC/CRB
Checked By	RMB
Approved By	DWC
Project No.	88-44-359-01
Drawing No.	5



LEGEND

TPH-d = DIESEL (ppm)

NA = NOT ANALYZED

SB-1 SOIL BORING

MW-1 GROUNDWATER MONITORING WELL

NOTES: (a) SAMPLE TAKEN AT -4' BGS.
(b) SAMPLE TAKEN AT -5.5' BGS.
(c) SAMPLE TAKEN AT -6' BGS.
(d) SAMPLE TAKEN AT -2' BGS.

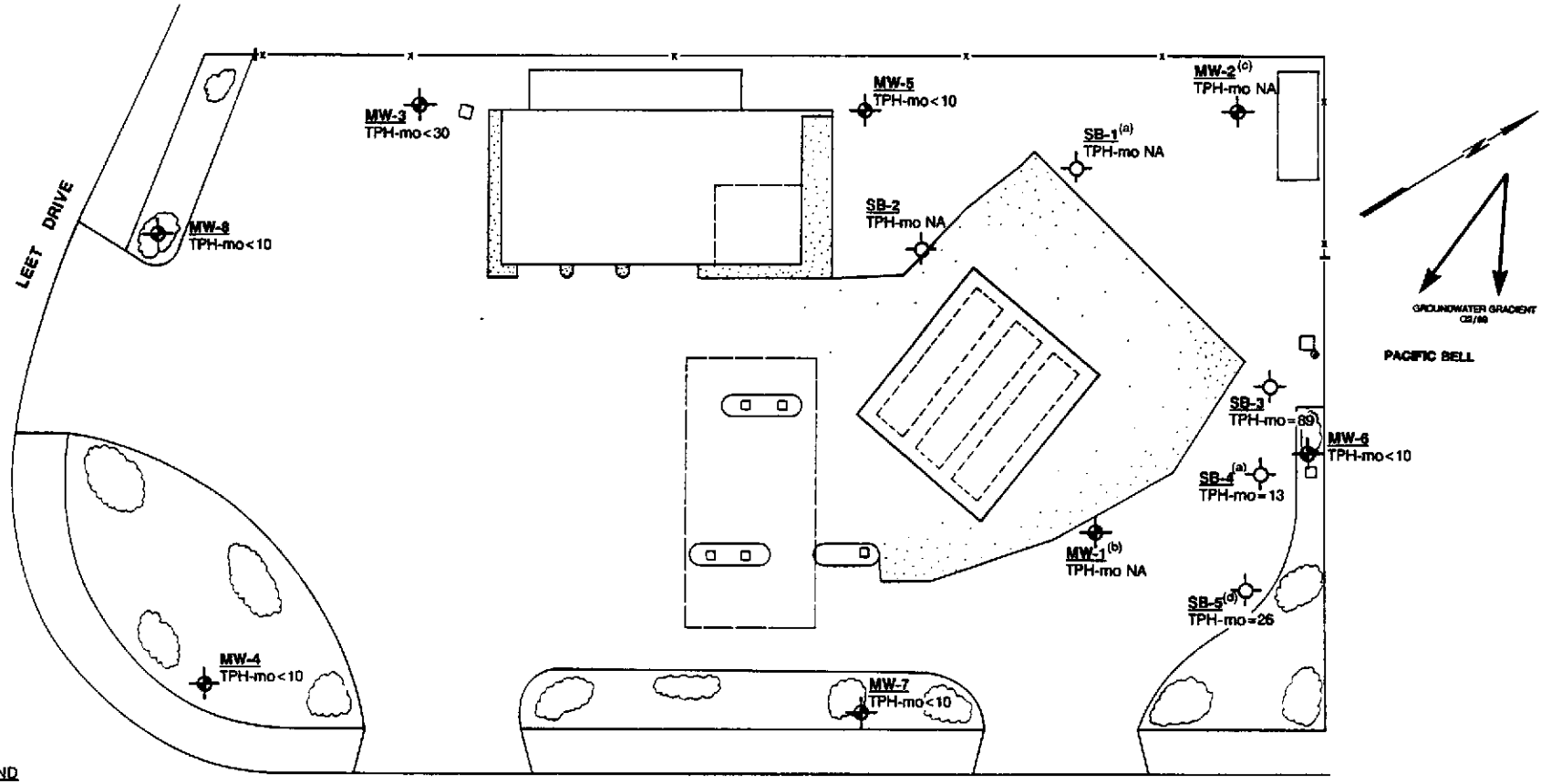
Base Map: Surveyed with EDM, Converse 1989.

PLAN: SOIL TPH-d AT (-5') Q2/89

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	6/23/89
Prepared By	KGC / CRB
Checked By	RMB
Approved By	DWC
Project No.	88-44-359-01
Drawing No.	6



LEGEND

TPH-mo = MOTOR OIL (ppm)

SB-1 SOIL BORING

MW-1 GROUNDWATER MONITORING WELL

NOTES:
(a) SAMPLE TAKEN AT -4' BGS.
(b) SAMPLE TAKEN AT -5.5' BGS.
(c) SAMPLE TAKEN AT -6' BGS.
(d) SAMPLE TAKEN AT -2' BGS.

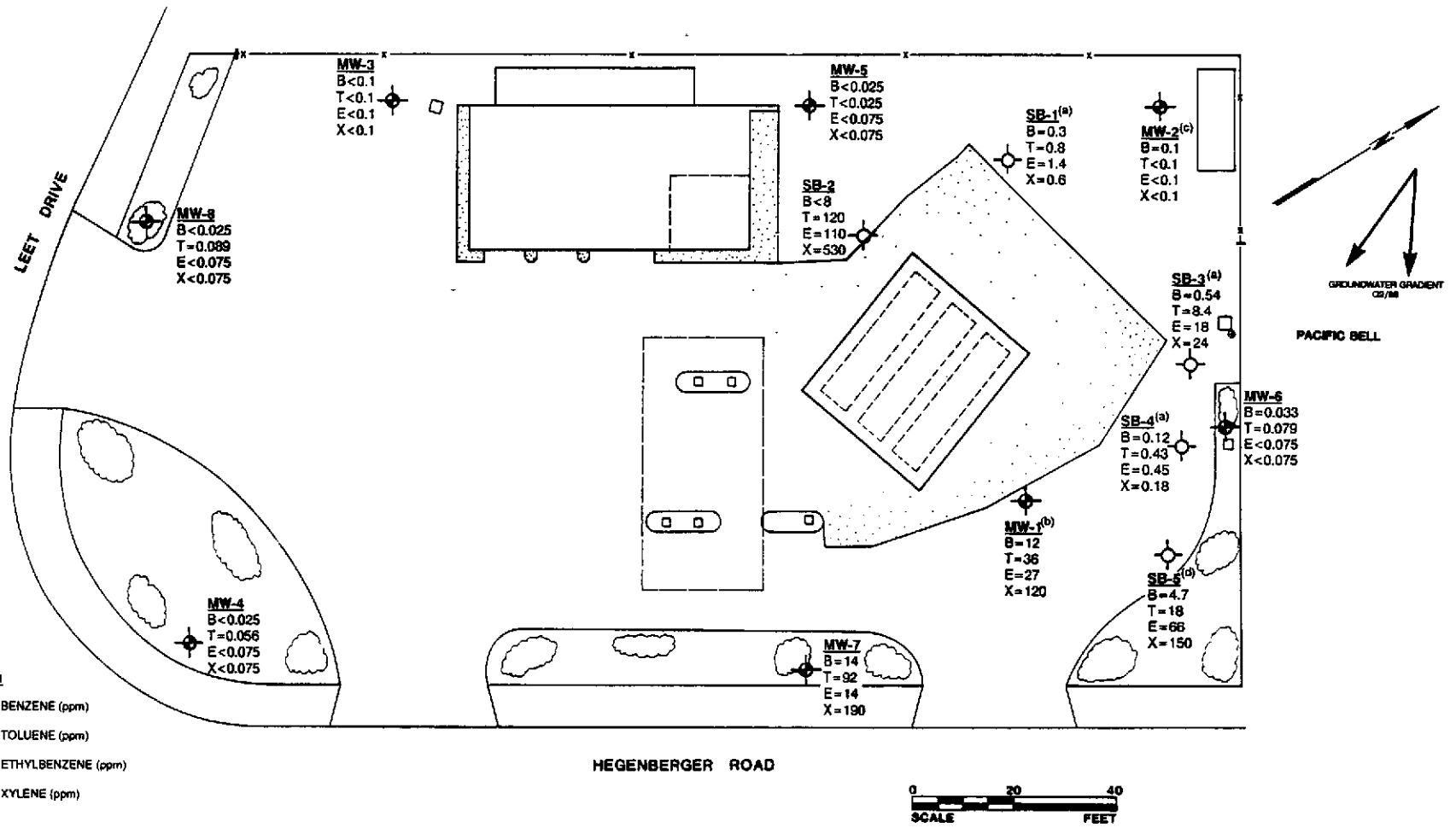
Base Map: Surveyed with EDM, Converse 1989.

PLAN: SOIL TPH-mo AT (-5') Q2/89

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	8/23/89
Prepared By	CRB
Checked By	RMB
Approved By	DWC
Project No.	88-44-359-01
Drawing No.	7



LEGEND

B = BENZENE (ppm)

T = TOLUENE (ppm)

E = ETHYLBENZENE (ppm)

X = XYLENE (ppm)

SB-1 SOIL BORING

MW-1 GROUNDWATER MONITORING WELL

NOTES: (a) SAMPLE TAKEN AT -4' BGS.
(b) SAMPLE TAKEN AT -5.5' BGS.
(c) SAMPLE TAKEN AT -6' BGS.
(d) SAMPLE TAKEN AT (-2') BGS.

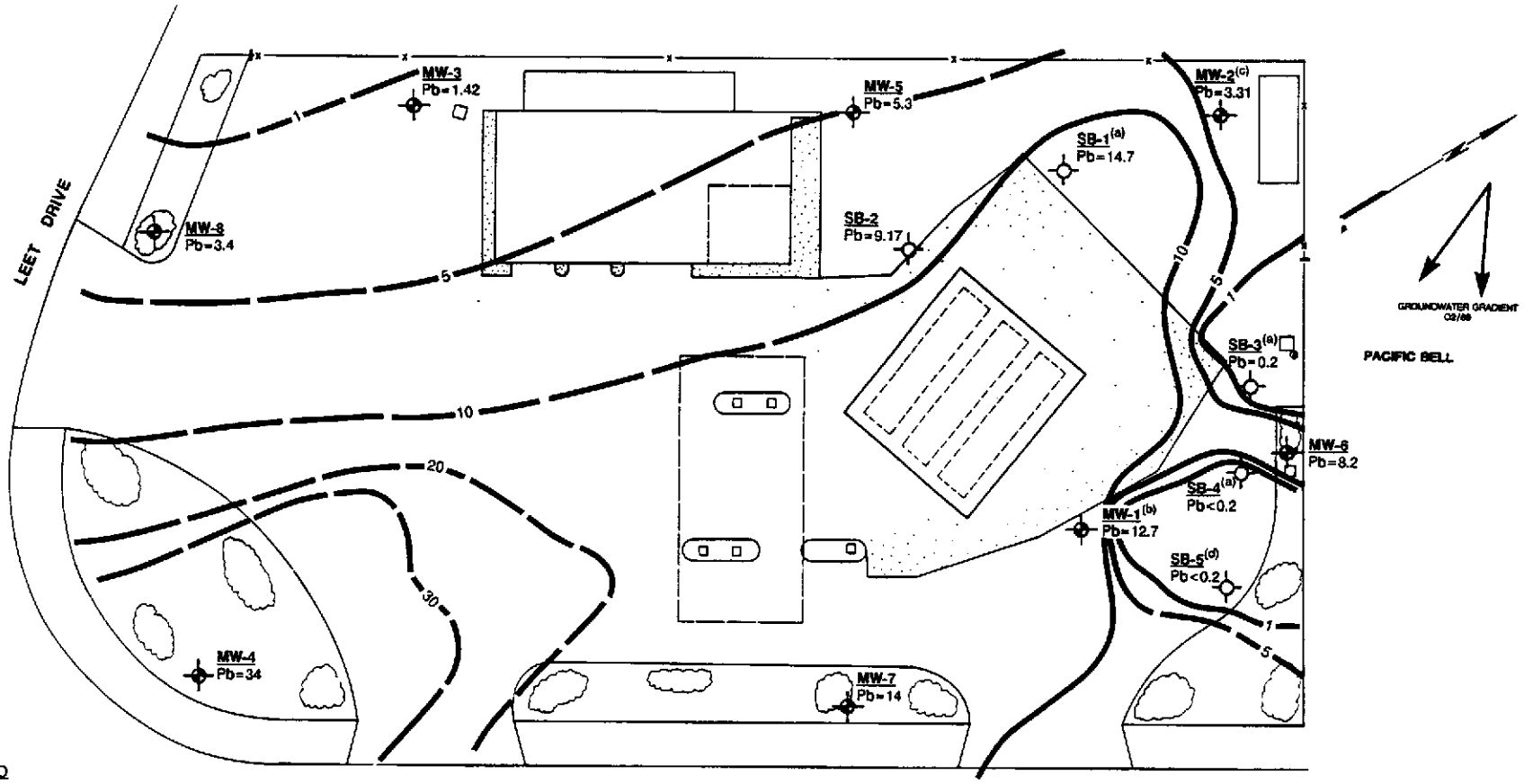
Base Map: Surveyed with EDM, Converse 1989.

PLAN: SOIL BTEX AT (-5') Q2/89

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	6/23/89
Prepared By	KGC/CRB
Checked By	RMB
Approved By	DWC
Project No	88-44-359-01
Drawing No.	8



LEGEND

Pb = LEAD (ppm)

ISOCONCENTRATION CONTOURS OF LEAD (ppm)

SB-1 SOIL BORING

MW-1 GROUNDWATER MONITORING WELL

NOTES:
(a) SAMPLE TAKEN AT -4' BGS.
(b) SAMPLE TAKEN AT -5.5' BGS.
(c) SAMPLE TAKEN AT -6' BGS.
(d) SAMPLE TAKEN AT (-2') BGS.

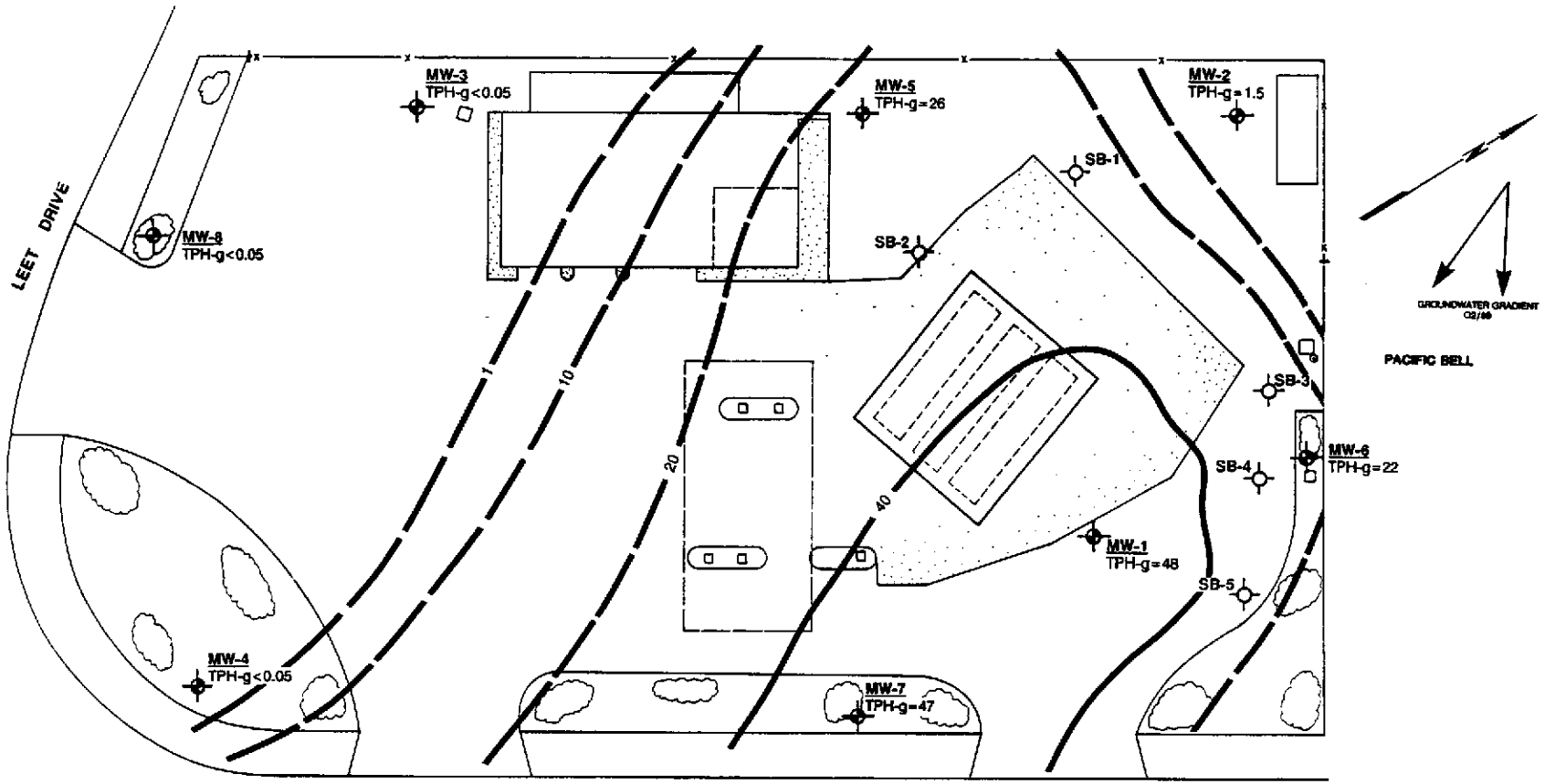
Base Map: Surveyed with EDM, Converse 1989.

PLAN: SOIL Pb AT (-5') Q2/89

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	2/23/89
Prepared By	KGC/CRB
Checked By	RMB
Approved By	DWC
Project No.	88-44-359-01
Drawing No.	9



LEGEND

TPH-g = GASOLINE (ppm)

SB-1 SOIL BORING

MW-1 GROUNDWATER MONITORING WELL

ISOCONCENTRATION CONTOURS OF GASOLINE (ppm)

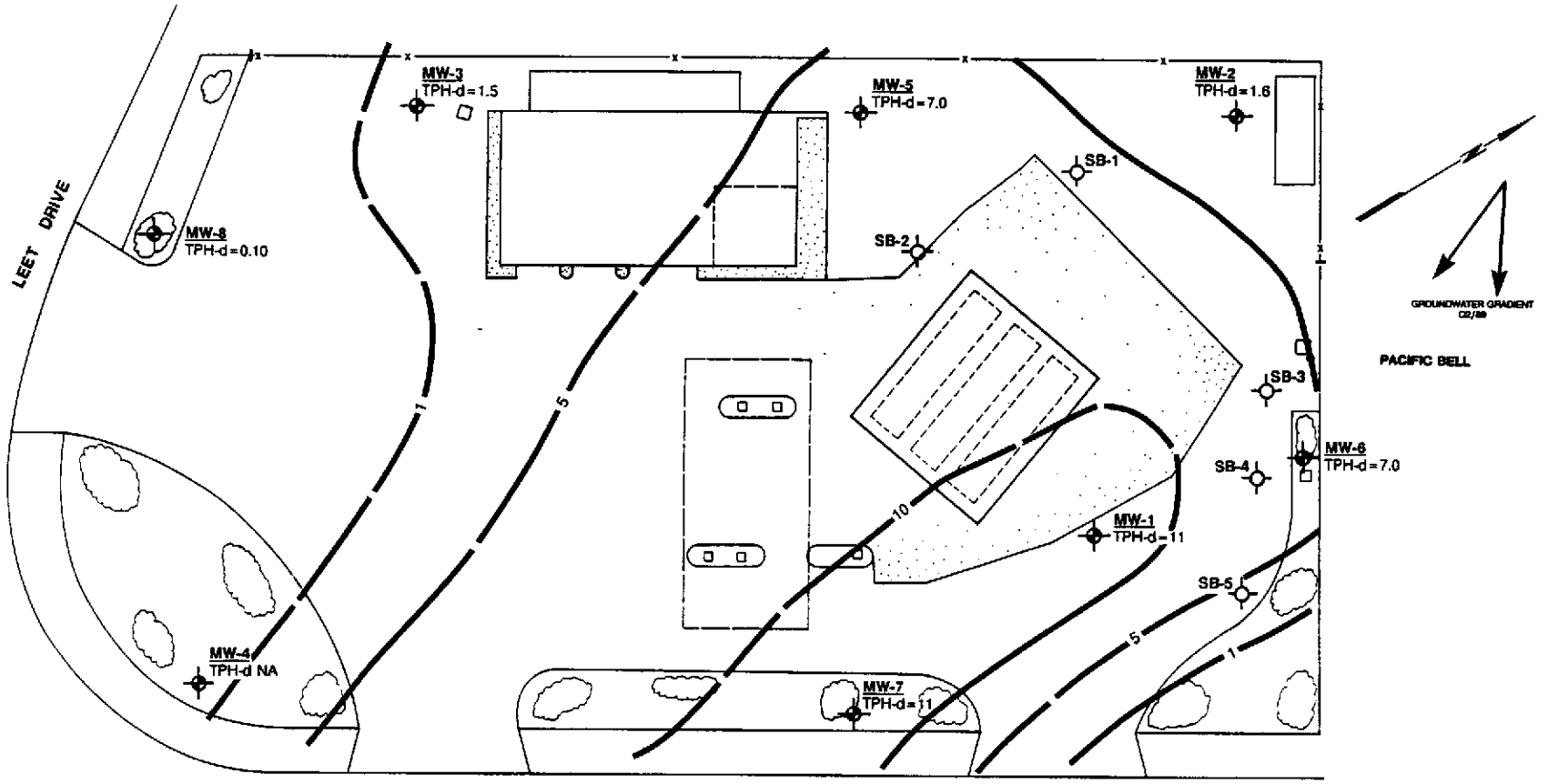
Base Map: Surveyed with EDM, Converse 1989.

PLAN: GROUNDWATER TPH-g Q2/89

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	6/23/89
Prepared By	KGC/CRB
Checked By	RMB
Approved By	DWC
Project No	88-44-359-01
Drawing No	10



LEGEND

TPH-d = DIESEL (ppm)

ISOCONCENTRATION CONTOURS OF DIESEL (ppm)

SB-1 SOIL BORING

MW-1 GROUNDWATER MONITORING WELL

SCALE 0 20 40 FEET

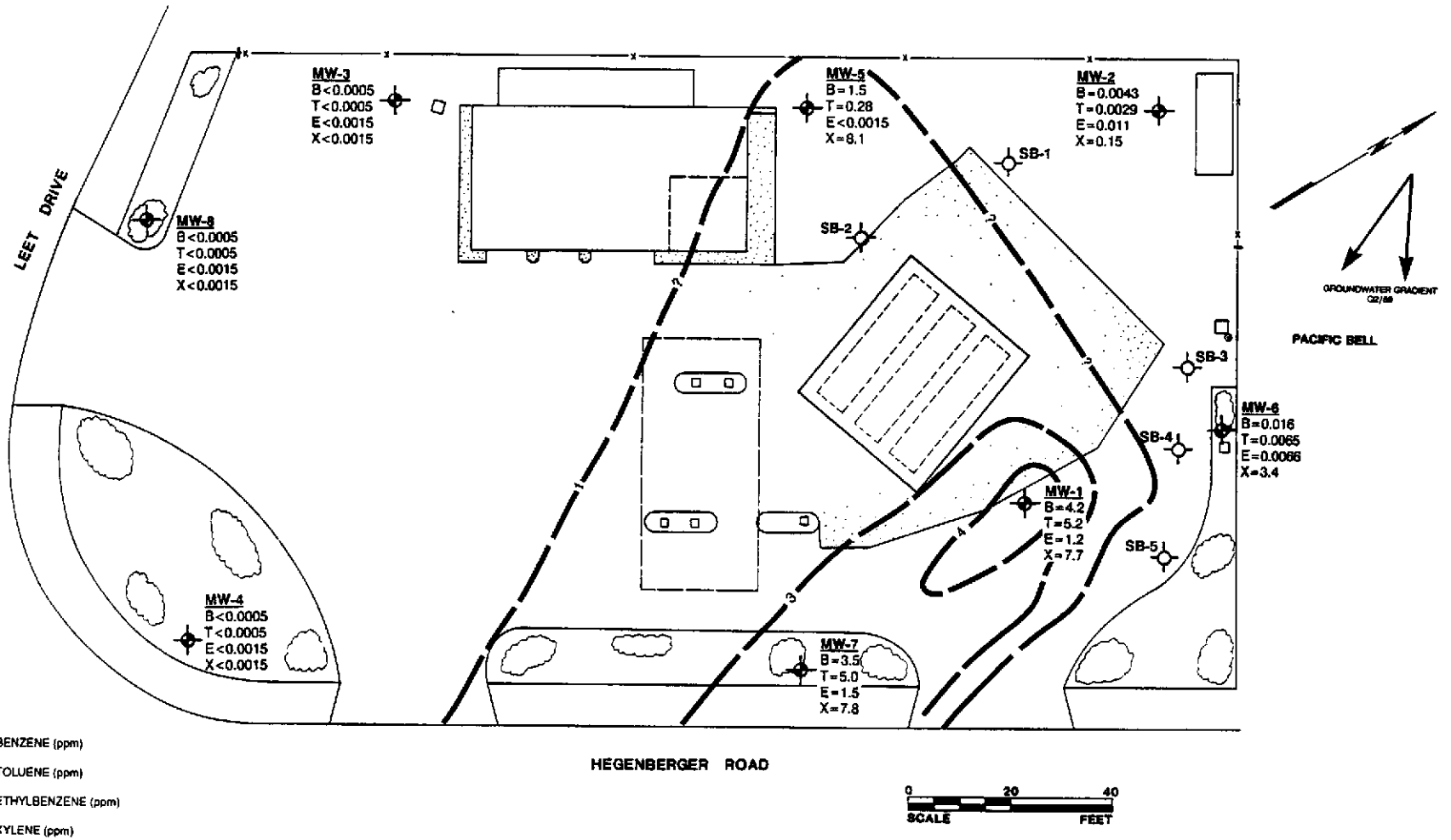
Base Map: Surveyed with EDM, Converse 1989.

PLAN: GROUNDWATER TPH-d Q2/89

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	6/23/89
Prepared By	KGC/CRB
Checked By	RMB
Approved By	DWC
Project No	88-44-359-01
Drawing No.	11



LEGEND

B = BENZENE (ppm)

T = TOLUENE (ppm)

E = ETHYLBENZENE (ppm)

X = XYLENE (ppm)

SB-1 SOIL BORING

MW-1 GROUNDWATER MONITORING WELL

ISOCONCENTRATION CONTOURS OF BENZENE (ppm)

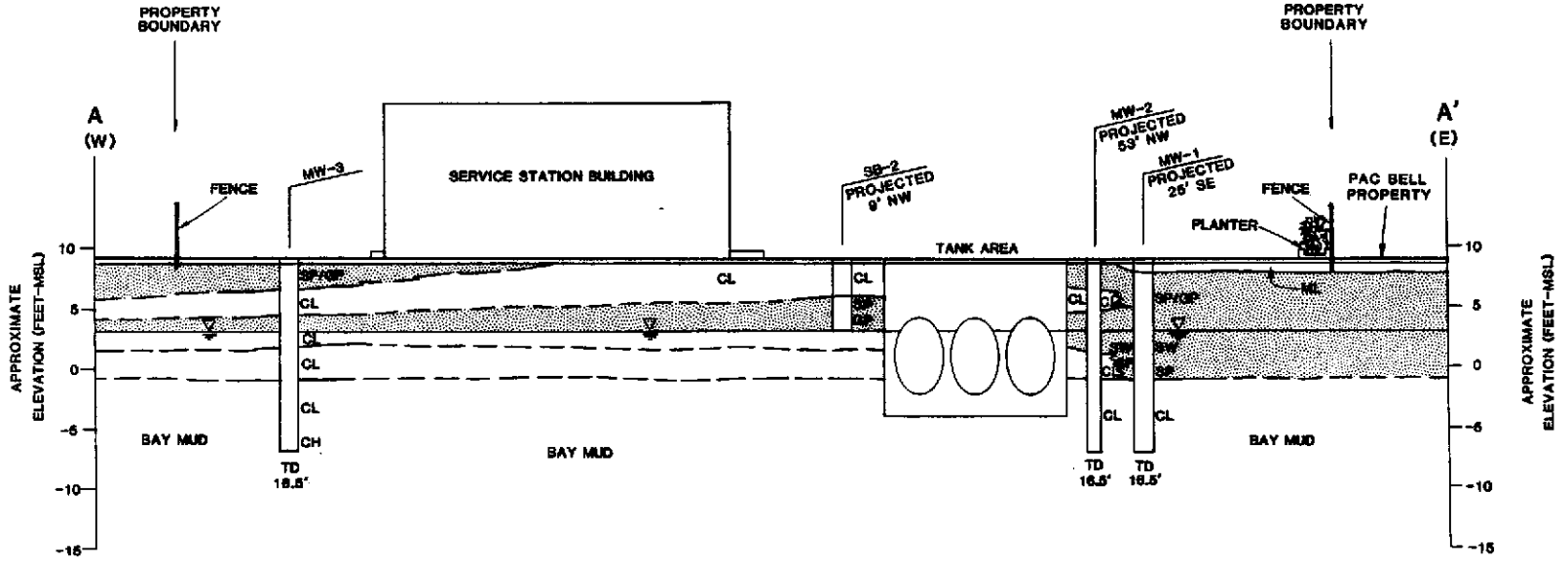
Base Map: Surveyed with EDM, Converse 1989.

PLAN: GROUNDWATER BTEX Q2/89

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	6/23/89
Prepared By	KGC/CRB
Checked By	RMB
Approved By	DWC
Project No.	88-44-359-01
Drawing No.	12



LEGEND

RELATIVELY IMPERMEABLE SEDIMENTS

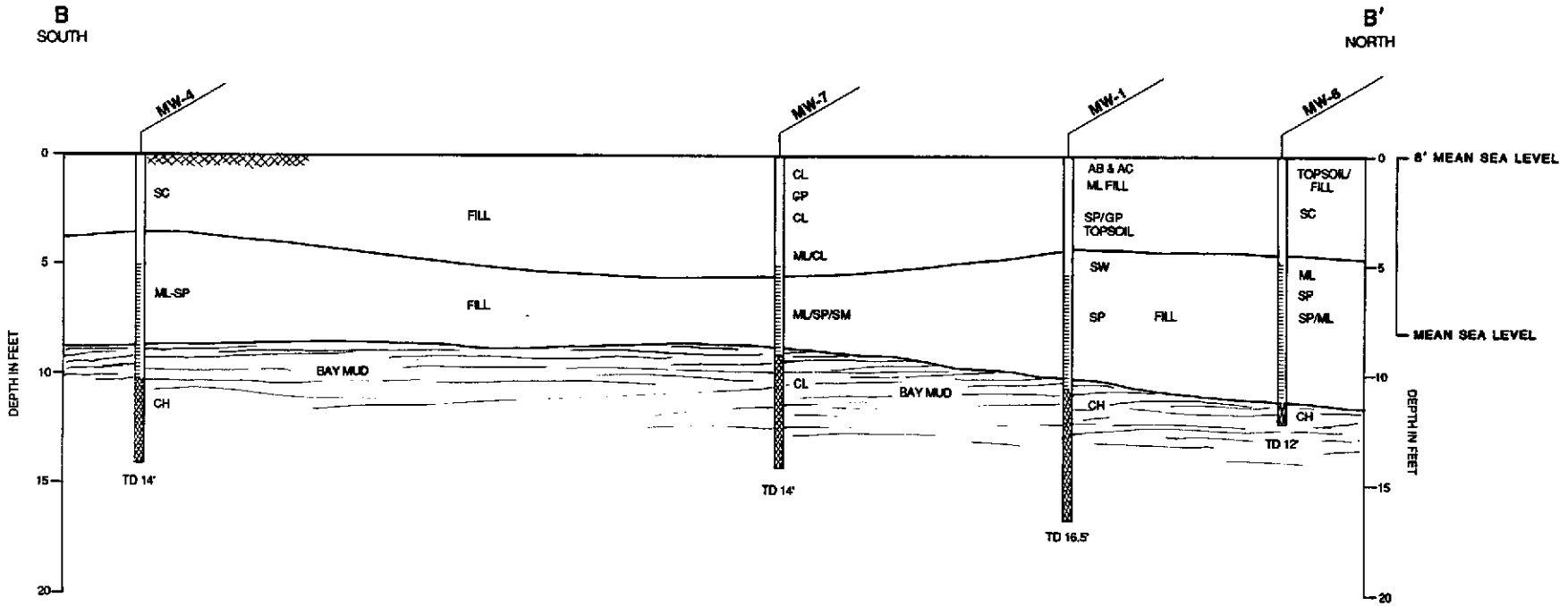
RELATIVELY PERMEABLE SEDIMENTS

CROSS SECTION A – A'

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	3/22/89
Prepared By	KGC
Checked By	REH
Approved By	DWC
Project No.	88-44-359-01
Drawing No.	13



NOTE: AIR PHOTOS SHOW THAT FILL HAS BEEN PLACED ON THE OLD MARSH AREA, SINCE ABOUT 1949. THERE MAY HAVE BEEN A FEW EPISODES OF FILL.

0 20 40
SCALE FEET

LEGEND

- ASPHALT/CONCRETE
- FILL: CL, ML, GP/SM/GC, SP/SM/SC
- BAY MUD

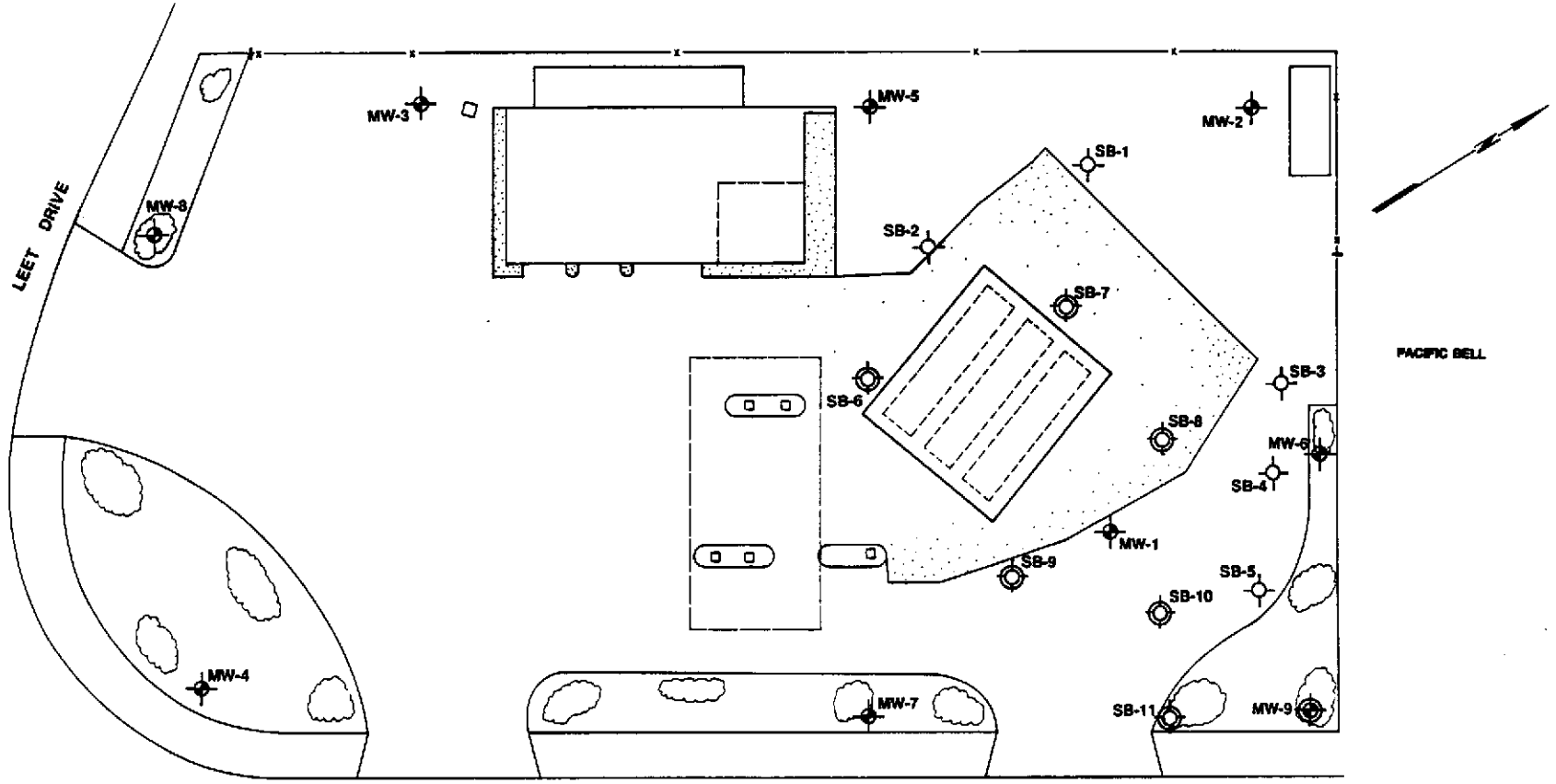
MW-4
SCREEN
BENTONITE PLUG
GROUNDWATER MONITORING WELL

CROSS SECTION B-B'

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	6/23/89
Prepared By	KGC/CRB
Checked By	RMB
Approved By	DWC
Project No.	88-44-359-01
Drawing No.	14



LEGEND

- SB-5 — PROPOSED SOIL BORING
- MW-9 — PROPOSED GROUNDWATER MONITORING WELL
- SB-1 — SOIL BORING (AS OF 6/89)
- MW-1 — GROUNDWATER MONITORING WELL (AS OF 6/89)

Base Map: Surveyed with EDM, Converse 1989.

PROPOSED GROUNDWATER MONITORING WELLS AND SOIL BORINGS

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Converse Environmental Consultants California

Scale	AS SHOWN
Date	5/16/89
Prepared By	KGC
Checked By	RMS
Approved By	DWC
Project No.	88-44-350-01
Drawing No.	15

LOG OF BORING NO. MW-4

DATE DRILLED: *4/28/89*	ELEVATION:	WL TAKEN: *4-28-89*	EQUIPMENT: *Hollow Stem Auger*

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	PLASTICITY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/FT.	T.P.H Mg/Kg	TESTS
				moist	medium	brown	Import Top Soil				
				moist	medium	brown	CLAYEY SAND and rock fragment (Fill) SC				
				moist	medium	brown-gray	Mix SILTS and SANDS Trace dry Bay Mud ML-SM				
5	D								7		
	D			very moist			Lenses and pockets silts, sand, clayey silt, trace organics		12		
					loose		Lenses and layers of silts, fine sands				
	D			wet					3		
				very moist							
					soft	light gray	BAY MUD CH				
	D								1		
10						dark gray					
	D				medium		Calcareous, trace vertical organics		8		
	D				stiff				20		
						gray	Calcareous SILTY CLAY CL				
15							Bottom of Hole at 14 ft.				
20											

REGISTERED PROFESSIONAL GEOLOGIST
Douglas W. Charlton
No. 4110
STATE OF CALIFORNIA

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Project No.
88-44-359-01

Converse Environmental Consultants California

Drawing No.
A-1

LOG OF BORING NO. MW-5

DATE DRILLED: *4/27/89*	ELEVATION: *N/A*	WL TAKEN: *4-27-89*	EQUIPMENT: *Hollow Stem Auger*

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	PLASTICITY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/FT.	T.P.H Mg/Kg	TESTS
				slightly moist			ASPHALT: 1-1/2", base: 6"				
					medium dense	light brown to yellow-brown	CLAYEY SAND SC Little rock fragments				
				slightly moist	stiff	gray	SILTY CLAY CL Pocket of bay mud				
				slightly moist	medium dense	brown	Fine to coarse SAND SP				
5	D						Layer coarse sand to pea gravels		23		
	D			wet			Lenses fine to medium sand		8		
				very moist	soft	gray	CLAYEY SILT ML				
	D			wet			Sand lens CLAYEY SILT Fine sandy silt		7		
	D						SILTY CLAY (Bay Mud) CH		1		
10	D					dark gray	Trace vertical organics		4		
	D						Trace of calcareous SILTY CLAY		10		
15							Bottom of Hole at 14 ft.				
20											

REGISTERED PROFESSIONAL GEOLOGIST
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STATE OF CALIFORNIA

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Project No.
88-44-359-01

Converse Environmental Consultants California

Drawing No.
A-2

LOG OF BORING NO.MW-6

DATE DRILLED: 4/28/89	ELEVATION: N/A	WL TAKEN: 4-28-89	EQUIPMENT: Hollow Stem Auger

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	PLASTICITY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/FT.	T.P.H Mg/Kg	TESTS
				moist	loose	brown	Import Top Soil				
				moist	loose	yellow-brown	CLAYEY SAND SC and rock fragments Trace cobble size fragments				
							Sandy clay, trace rock fragments				
	D			very moist	soft	gray	CLAYEY SILTS ML		23		
5		▽					Layer pea gravel possible floating product				
	D						Fine to medium sand		8		
							Layer coarse sand, pea gravel				
							Fine to medium SAND SP-ML		7		
	D			wet			Clayey silt, trace fine sands		1		
10							Fine sandy silts				
	D						Bay Mud, trace organics CH		4		
							Bottom of Hole at 12 ft.		10		
15											
20											

REGISTERED PROFESSIONAL GEOLOGIST
Douglas W. Charlton
No. 4110
STATE OF CALIFORNIA

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Project No.
88-44-359-01

Drawing No.
A-3

Converse Environmental Consultants California

LOG OF BORING NO. MW-7

DATE DRILLED: 4/27/89	ELEVATION: N/A	WL TAKEN: 4-27-89	EQUIPMENT: Hollow Stem Auger

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	PLASTICITY	COLOR	DESCRIPTION		WELL CONSTRUCTION	BLOWS/FT.	T.P.H Mg/Kg	TESTS
				very moist	stiff	brown	SILTY CLAY (Fill)	CL				
				wet	stiff		Zone of coarse size rock fragment	GP				
				very moist	stiff	black	SILTY CLAY Mix with sandy clays	CL				
						gray-brown						
	D			very moist	soft to medium	gray	SILT & SAND, SILTY CLAY Strong odor	ML-CL		5		
5	D	▼		wet			Fine SANDY SILT	ML		9		
				v. moist			Fine SANDY SILT to fine SAND Trace silt					
	D			wet		dark gray	CLAYEY SILT	ML				
				very moist to wet		brown	Bay Mud, some peat. Grades to Bay Mud	CH				
	D					dark gray				2		
10	D					gray	Calcareous SILTY CLAY Trace vertical organics	CL		10		
	D									12		
15							Bottom of Hole at 14 ft.					
20												

REGISTERED PROFESSIONAL GEOLOGIST
Douglas W. Charlton
No. 4110
STATE OF CALIFORNIA

SHELL OIL COMPANY
285 Hegenberger Road
Oakland, California

Project No.
88-44-359-01

Drawing No.
A-4

Converse Environmental Consultants California

LOG OF BORING NO. MW-8

DATE DRILLED: 4/28/89	ELEVATION:	WL TAKEN: 4-28-89	EQUIPMENT: Hollow Stem Auger

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	PLASTICITY	COLOR	DESCRIPTION	WELL CONSTRUCTION	BLOWS/FT.	T.P.H Mg/Kg	TESTS
				moist	medium	brown	Import Top Soil CL Silt and Clay with fine Sand				
				moist	medium dense	yellow-brown	CLAYEY SAND SC With rock fragments (Fill)				
						brown	SANDY CLAY With rock fragments (Fill)				
5	D			moist	medium dense	gray	CLAYEY SILT ML Pockets and lenses of silts, fine sands, and clayey silts		11		
	D	▼		wet	loose	dk.gray	SILTY Fine SAND SM		5		
10	D			wet	soft	gray	BAY MUD CH Trace organics		5		
						dark gray					
15							Bottom of Hole at 12 ft.				
20											

REGISTERED PROFESSIONAL GEOLOGIST
Douglas W. Charlton
No. 4110
STATE OF CALIFORNIA

SHELL OIL COMPANY
258 Hegenberger Road
Oakland, California

Project No.
88-44-359-01

Converse Environmental Consultants California

Drawing No.
A-5

LOG OF BORING NO. SB-A

DATE DRILLED: 5/24/89	ELEVATION:	WL TAKEN: 5/24/89	EQUIPMENT:

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	PLASTICITY	COLOR	DESCRIPTION	BLOWS/FT.	MOISTURE CONTENT	DRY DENSITY lb/ft³	TESTS
				slightly moist	loose	tan	SANDY GRAVEL (Fill)				
	D							12			
				moist	medium	black	SILTY CLAY CL				
	D							16			
				very moist	loose	gray	SANDY GRAVEL GM Strong odor				
5		▼		wet	loose	black	SILTY CLAY and SAND CL				
							Bottom of Hole at 6 ft.				
10											
15											
20											

REGISTERED PROFESSIONAL ENGINEER
Douglas W. Chamberlain
No. 5110

SHELL OIL COMPANY
285 Hagenberger Road
Oakland, California

Project No.
88-44-359-02

Converse Environmental Consultants California

Drawing No.
A-6

LOG OF BORING NO. SB-B

DATE DRILLED: 5/24/89	ELEVATION:	WL TAKEN: N/A	EQUIPMENT:

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	PLASTICITY	COLOR	DESCRIPTION	BLOWS/FT.	MOISTURE CONTENT	DRY DENSITY lb/ft³	TESTS
				moist	loose	brown	SANDY GRAVEL (Fill)				
	D				medium	black	SILTY CLAY and fine SAND CL	9			
							Odor				
	D			very moist			Gravelly clay and sand	5			
5							Bottom of Hole at 4 ft.				
10											
15											
20											

REGISTERED PROFESSIONAL GEOLOGIST
Douglas W. Charlton
No. 4110
STATE OF CALIFORNIA

SHELL OIL COMPANY
285 Hagenberger Road
Oakland, California

Project No.
88-44-359-02

Converse Environmental Consultants California

Drawing No.
A-7

LOG OF BORING NO. SB-C

DATE DRILLED: 5/24/89	ELEVATION:	WL TAKEN: 5/24/89	EQUIPMENT:

DEPTH (ft)	SAMPLE	WATER LEVEL	SYMBOL	MOISTURE	PLASTICITY	COLOR	DESCRIPTION	BLOWS/FT.	MOISTURE CONTENT	DRY DENSITY lb/ft³	TESTS
				very moist		black	SILTY CLAY and SAND CL				
	D					gray	SILTY fine SAND SM	13			
						black	SILTY CLAY and SAND CL Strong odor				
5	D			wet				4			
							Bottom of Hole at 6 ft.				
10											
15											
20											

REGISTERED PROFESSIONAL GEOLOGIST
Douglas W. Charlton
No. 4110
STATE OF CALIFORNIA

SHELL OIL COMPANY
285 Hagenberger Road
Oakland, California

Project No.
88-44-359-02

Converse Environmental Consultants California

Drawing No.
A-8

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Formerly: ANATEC Labs, Inc.

Robin Breuer
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

06-12-89
NET Pacific Log No: 6606
Series No: 212
Client Ref: Project# 88-44-359-02

Subject: Analytical Results for "285 Hegenberger Shell" Received 05-26-89

Dear Ms. Breuer:

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Submitted by:

Brian Fies
Group Leader
Atomic Spectroscopy

Approved by:

Susan Joy Griffin
Group Leader
Gas Chromatography

/ml
Enc: Sample Custody Document

KEY TO ABBREVIATIONS

mean	:	Average; the sum of the measurements divided by the total number of measurments.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample, unless noted otherwise.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
ND	:	Not detected; the analyte concentration is less than the listed reporting limit.
NR	:	Not requested.
NTU	:	Nephelometric turbidity units.
RL	:	Reporting limit.
RPD	:	Relative percent difference, $[V^1-V^2/V \text{ mean}]x100$.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
ug/filter	:	Concentration in units of micrograms of analyte per filter.
umhos/cm	:	Micromhos per centimeter.
*	:	See cover letter for details.

THE COVER LETTER AND KEY TO ABBREVIATIONS ARE AN INTEGRAL PART OF THIS REPORT

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results (ppm) SB-A-2 @ 4' 05-24-89 (-28271)	SB-B-2 @ 4' 05-24-89 (-28272)	SB-C-1 @ 2' 05-24-89 (-28273)	SB-A-1,2 Composite (-28274)	SB-B-1,2 Composite (-28275)
Lead METHOD 7421	0.2	0.2	ND	ND	ND	ND
PETROLEUM HYDROCARBONS METHOD 8015/5030						
Volatile, as Gasoline	10	1,300	50	31,000	250	32
DATE ANALYZED		6-6-89	6-6-89	6-6-89		
Extractable,						
as Motor Oil	10	89	13	26	67	ND
as Diesel Fuel	10	180[a]	20[a]	370[a]	100[a]	12[a]
DATE ANALYZED		6-2-89	6-2-89	6-2-89	6-2-89	6-2-89
DATE EXTRACTED		6-2-89	6-2-89	6-2-89	6-2-89	6-2-89
METHOD GCFID/3550						

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results (ppm) SB-A-2 @ 4' 05-24-89 (-28271)	SB-B-2 @ 4' 05-24-89 (-28272)	SB-C-1 @ 2' 05-24-89 (-28273)	SB-A-1,2 Composite (-28274)	SB-B-1,2 Composite (-28275)
Benzene	0.0025	0.54	0.12	4.7	ND	0.033
Ethylbenzene	0.0075	18	0.45	66	1.9	0.13
Toluene	0.0025	8.4	0.84	18	1.1	0.096
Xylenes, total	0.0075	24	0.18	150	3.2	0.13
METHOD 8020						

[a]Sample contains lower boiling hydrocarbons not characteristic of diesel.

5 soaked

Converse Consultants

CHAIN OF CUSTODY RECORD 6/6 6/6 6/6 6/6/6

Project No.	Project Name
87-44-369-02	285 Heggenberger

Samplers: (signature) D. Coy

Station No.	Date	Time	Comp.	Grab	Station Location	Number of Containers	TPH 8015	BTEX 8020	Pb 7421			Remarks
SB-A	5/24/89				SB-A-1 @ 2'	1						5+ turn Around
SB-A	5/24				SB-A-2 @ 4'	1	X	X	X	discreet		comp
SB-B	5/24				SB-B-1 @ 2'	1						comp
SB-B	5/24				SB-B-2 @ 4'	1	X	X	X	discreet		
SB-C	5/24				SB-C-1 @ 2'	1	X	X	X	discreet		

per Bob 5/30

Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
D. Coy	5/25 | 1350	Diane Kruger	Diane Kruger	5-26 | 7:50	GARY-A
Relinquished by: (signature)	Date/Time |	Received by: (signature)	Relinquished by: (signature)	Date/Time |	Received by: (signature)
Relinquished by Courier: (signature)	Date/Time |	Received by Mobile Lab: (signature)	Relinquished by Mobile Lab: (signature)	Date/Time |	Received by Courier: (signature)
Method of Shipment		Shipped by: (signature)	Courier from Airport: (signature) (via NCS)	Received for Laboratory: (signature) Typed	Date/Time 5/26/89 | 2116

NET NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
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Tel: (707) 526-7200
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Formerly: ANATEC Labs, Inc.

Robin Breuer
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

05-30-89 REVISED 06-20-89
NET Pacific Log No: 6378 B
Series No: 212
Client Ref: Project# 88-44-369-01

Subject: Analytical Results for "285 Hegenberger" Received 05-09-89.
REVISED 6-20-89

Dear Ms. Breuer:

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Submitted by:

Brian Fies
Group Leader
Atomic Spectroscopy

Approved by:

Susan Joy Griffin
Group Leader
Gas Chromatography

/ml

KEY TO ABBREVIATIONS

mean	:	Average; the sum of the measurements divided by the total number of measurments.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample, unless noted otherwise.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
ND	:	Not detected; the analyte concentration is less than the listed reporting limit.
NR	:	Not requested.
NTU	:	Nephelometric turbidity units.
RL	:	Reporting limit.
RPD	:	Relative percent difference, $[V^1-V^2/V$ mean$]$x100.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
ug/filter	:	Concentration in units of micrograms of analyte per filter.
umhos/cm	:	Micromhos per centimeter.
*	:	See cover letter for details.

THE COVER LETTER AND KEY TO ABBREVIATIONS ARE AN INTEGRAL PART OF THIS REPORT

ANALYTE: Organic Lead
REPORTING LIMIT: 0.05 (ppm)

Lab No.	Descriptor	Results	Units
-27233	MW-7 Comp	0.06	ppm
-27055	MW-7-1 @ 5'	0.08	ppm

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Robin Breuer
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55 Hawthorne St, Ste 500
San Francisco, CA 94105

05-26-89
NET Pacific Log No: 6424
Series No: 212
Client Ref: Project# 88-44-359-01

Subject: Analytical Results for "285 Hagenberger Shell" Received 05-11-89

Dear Ms. Breuer:

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Submitted by:

Brian Fies
Group Leader
Atomic Spectroscopy

Approved by:

Susan Griffin
Group Leader
Gas Chromatography

/ml

KEY TO ABBREVIATIONS

mean	:	Average; the sum of the measurements divided by the total number of measurments.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample, unless noted otherwise.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
ND	:	Not detected; the analyte concentration is less than the listed reporting limit.
NR	:	Not requested.
NTU	:	Nephelometric turbidity units.
RL	:	Reporting limit.
RPD	:	Relative percent difference, $[V^1-V^2/V \text{ mean}]x100$.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
ug/filter	:	Concentration in units of micrograms of analyte per filter.
umhos/cm	:	Micromhos per centimeter.
*	:	See cover letter for details.

THE COVER LETTER AND KEY TO ABBREVIATIONS ARE AN INTEGRAL PART OF THIS REPORT

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results (ppm) M-4-1 @ 5' 04-25-89 (-27268)	M-8-2 @ 10' 04-25-89 (-27269)
Organic lead	0.05	ND	ND

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Robin Brewer
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55 Hawthorne St, Ste 500
San Francisco, CA 94105

05-09-89
NET Pacific Log No: 6285
Series No: 212
Client Ref: Project# 88-44-369-01

Subject: Analytical Results for Shell-285 Hegenberger, Oakland Received 04-28-89. **REVISED 06-19-89**

Dear Robin Brewer/Fadwa Samara

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Submitted by:

Brian Fies
Group Leader
Atomic Spectroscopy

Approved by:

Susan Griffin
Group Leader
Gas Ghromatography

/ara
Enc: Sample Custody Document

KEY TO ABBREVIATIONS

mean	:	Average; the sum of the measurements divided by the total number of measurments.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample, unless noted otherwise.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
ND	:	Not detected; the analyte concentration is less than the listed reporting limit.
NR	:	Not requested.
NTU	:	Nephelometric turbidity units.
RL	:	Reporting limit.
RPD	:	Relative percent difference, $[V^1-V^2/V \text{ mean}]x100$.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
ug/filter	:	Concentration in units of micrograms of analyte per filter.
umhos/cm	:	Micromhos per centimeter.
*	:	See cover letter for details.

THE COVER LETTER AND KEY TO ABBREVIATIONS ARE AN INTEGRAL PART OF THIS REPORT

SAMPLE DESCRIPTION: MW-5-1 @ 5' 04-27-89
LAB NO.: (-26470)

Parameter	Reporting Limit	Results	Units	Method
Lead	0.2	5.3	ppm	7421
PETROLEUM HYDROCARBONS				
Volatile, as Gasoline	10	ND	ppm	GC/FID 5030
DATE ANALYZED		05-04-89		
Extractable,				
as Motor Oil soil	10	ND	ppm	8015/3550
as Diesel Fuel	10	ND	ppm	
DATE ANALYZED		05-03-89		
DATE EXTRACTED		05-02-89		
PURGEABLE AROMATICS				
Benzene	0.025	ND	ppm	8020
Ethylbenzene	0.075	ND	ppm	
Toluene	0.025	ND	ppm	
Xylenes, total	0.075	ND	ppm	

SAMPLE DESCRIPTION: MW-7-1 @ 5' 04-27-89
LAB NO.: (-26471)

Parameter	Reporting Limit	Results[a]	Units	Methods
Lead	0.2	14	ppm	7421
PETROLEUM HYDROCARBONS				
Volatile, as Gasoline	10	4,100	ppm	GC/FID 5030
DATE ANALYZED		05-04-89		
Extractable,				
as Motor Oil soil	10	ND[b]	ppm	8015/3550
as Diesel Fuel	10	84[b]	ppm	
DATE ANALYZED		05-03-89		
DATE EXTRACTED		05-02-89		
PURGEABLE AROMATICS				
Benzene	0.025	14	ppm	8020
Ethylbenzene	0.075	37	ppm	
Toluene	0.025	92	ppm	
Xylenes, total	0.075	190	ppm	

[a]Reporting limit for this sample is 100 times the listed reporting limit for gasoline and purgeable aromatics.
[b]Sample contains lower boiling hydrocarbons not characteristic for diesel.

SAMPLE DESCRIPTION: MW-5 comp 04-27-89
LAB NO.: (-26472)

Parameter	Reporting Limit	Results	Units	Method
Lead	0.2	4.3	ppm	7421
PETROLEUM HYDROCARBONS				
Volatile, as Gasoline	10	ND	ppm	GC/FID 5030
DATE ANALYZED		05-04-89		
Extractable,				
as Motor Oil soil	10	ND	ppm	8015/3550
as Diesel Fuel	10	ND	ppm	
DATE ANALYZED		05-03-89		
DATE EXTRACTED		05-02-89		
PURGEABLE AROMATICS				
Benzene	0.025	ND	ppm	8020
Ethylbenzene	0.075	ND	ppm	
Toluene	0.025	.037	ppm	
Xylenes, total	0.075	ND	ppm	

SAMPLE DESCRIPTION: MW-7 comp 04-27-89
LAB NO.: (-26473)

Parameter	Reporting Limit	Results	Units	Method
Lead	0.2	14	ppm	7421
PETROLEUM HYDROCARBONS				
Volatile, as Gasoline	10	ND	ppm	GC/FID 5030
DATE ANALYZED		05-04-89		
Extractable,				
as Motor Oil soil	10	ND	ppm	8015/3550
as Diesel Fuel	10	18[a]	ppm	
DATE ANALYSED		05-03-89		
DATE EXTRACTED		05-02-89		
PURGEABLE AROMATICS				
Benzene	0.025	0.11	ppm	8020
Ethylbenzene	0.075	ND	ppm	
Toluene	0.025	0.045	ppm	
Xylenes, total	0.075	ND	ppm	

[a]Sample contains lower boiling hydrocarbons not characteristic of diesel.

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Robin Breuer/Fadwa Samara
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

05-15-89
NET Pacific Log No: 6323
Series No: 212
Client Ref: Project# 88-44-359-01

Subject: Analytical Results for Shell - 285 Hegenberger Received 05-04-89.
REVISED 06-09-89

Dear Ms. Breuer:

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Submitted by:

Brian Fies
Group Leader
Atomic Spectroscopy

Approved by:

Judy Ridley for
Susan Griffin
Group Leader
Gas Chromatography

/sm
Enc: Sample Custody Document

KEY TO ABBREVIATIONS

mean	:	Average; the sum of the measurements divided by the total number of measurments.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample, unless noted otherwise.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
ND	:	Not detected; the analyte concentration is less than the listed reporting limit.
NR	:	Not requested.
NTU	:	Nephelometric turbidity units.
RL	:	Reporting limit.
RPD	:	Relative percent difference, $[V^1-V^2/V \text{ mean}]x100$.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
ug/filter	:	Concentration in units of micrograms of analyte per filter.
umhos/cm	:	Micromhos per centimeter.
*	:	See cover letter for details.

THE COVER LETTER AND KEY TO ABBREVIATIONS ARE AN INTEGRAL PART OF THIS REPORT

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results (mg/Kg) MW-4-1 @ 5' 04-25-89 (-26708)	MW-4-4 @ 10' 04-25-89 (-26709)	MW-6-1 @ 5' 04-25-89 (-26710)	Method
Lead (AA)	0.2	34	2.3	8.2	7421
PETROLEUM HYDROCARBONS					
Volatile, as Gasoline	10	ND	ND	ND	8015/5030
DATE ANALYZED		05-10-89	05-10-89	05-10-89	
Extractable,					
as Motor Oil soil	10	ND	ND	ND	GC/FID/3550
as Diesel Fuel	10	ND	ND	ND	
DATE ANALYZED		05-08-89	05-08-89	05-08-89	
DATE EXTRACTED		05-04-89	05-04-89	05-04-89	
PURGEABLE AROMATICS					
Benzene	0.025	ND	ND	0.033	8020
Ethylbenzene	0.075	ND	ND	ND	
Toluene	0.025	0.056	0.052	0.079	
Xylenes, total	0.075	ND	ND	ND	

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results (mg/Kg) MW-6-3 @ 10' 04-25-89 (-26711)	MW-8-1 @ 5' 04-25-89 (-26712)	MW-8-2 @ 10' 04-25-89 (-26713)	Method
Lead (AA)	0.2	7.0	3.4	22	7421
PETROLEUM HYDROCARBONS					
Volatile, as Gasoline	10	ND	ND	ND	8015/5030
DATE ANALYZED		5-10-89	5-10-89	5-10-89	
Extractable,					
as Motor Oil soil	10	ND	ND	460	GC/FID/3550
as Diesel Fuel	10	ND	ND	160	
DATE ANALYZED		05-08-89	05-08-89	05-08-89	
DATE EXTRACTED		05-04-89	05-04-89	05-04-89	
PURGEABLE AROMATICS					
Benzene	0.025	ND	ND	ND	8020
Ethylbenzene	0.075	ND	ND	ND	
Toluene	0.025	0.12	0.089	0.087	
Xylenes, total	0.075	ND	ND	ND	

NATIONAL ENVIRONMENTAL TESTING, INC.

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Ren Hodgson/Fadwa Samara
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, Ca., 94105

04-20-89
NET Pacific Log No: 6134 (1-4)
Series No: 212
Client Ref: Project# 88-44-359-02

Subject: Analytical Results for Four Soil Samples Identified as "285 Hengenberger Road" Received 04-14-89.

Dear Ren Hodgson/Fadwa Samara

Analysis of the samples referenced above has been completed. This report is written in confirmation of results telefaxed April 20, 1989. Results are presented following this page.

Please feel welcome to contact us should you have questions regarding procedures or results.

Submitted by:

Sue J. Long
Project Chemist

Approved by:

Susan Griffin
Project Manager

\ara
Enc: Sample Custody Document

KEY TO ABBREVIATIONS

mean	:	Average; the sum of the measurements divided by the total number of measurments.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample, unless noted otherwise.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
NA	:	Not analyzed; see cover letter for details.
ND	:	Not detected; the analyte concentration is less than the listed reporting limit.
NR	:	Not requested.
NTU	:	Nephelometric turbidity units.
RL	:	Reporting limit.
RPD	:	Relative percent difference, $[V^1-V^2/V \text{ mean}]x100$.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
ug/filter	:	Concentration in units of micrograms of analyte per filter.
umhos/cm	:	Micromhos per centimeter.
*	:	See cover letter for details.

THE COVER LETTER AND KEY TO ABBREVIATIONS ARE AN INTEGRAL PART OF THIS REPORT

SAMPLE DESCRIPTION: MW-3 (A) 04-14-89 1130
LAB NO.: (-25895)

Parameter	Results
Flashpoint	Negative

SAMPLE DESCRIPTION: MW-3 (B) 04-14-89 1130
LAB NO.: (-25896)

Parameter	Results
Flashpoint	Negative

SAMPLE DESCRIPTION: MW-2 04-14-89 1130
LAB NO.: (-25897)

Parameter	Results
Flashpoint	Negative

SAMPLE DESCRIPTION: MW-1 04-14-89 1130
LAB NO.: (-25898)

Parameter	Results
Flashpoint	Negative

Analysis was run by bunsen burner flame test per clients request.

(415) 543-4200

Converse Consultants

88-44 359-01

CHAIN OF CUSTODY RECORD

Project No.	Project Name
88-44-3[illegible]-01	285 HAGENBERGER

Samplers: (signature) Charles [signature]

Station No.	Date	Time	Comp.	Grab	Station Location	Number of Containers							Remarks
MW7	4/27/89				MW7-1 @ 5º								STRONG ODOR
(					MW7-4 @ 10º								BELOW WATER NO ODOR
MW5					MW5-1 @ 5º								0 PPM
}	↓				MW5-4 @ 10								0 PPM BELOW WATER
MW6	4/28/89				MW6-1 @ 5º								56 PPM
					MW6-3 @ 10º								4 PPM BELOW WATER
MW8					MW8-1 @ 5º								0
					MW8-2 @ 10º								0 BELOW WATER
MW4					MW4-1 @ 5º								0
					MW4-4 @ 10º								0 BELOW WATER

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 Courier: (signature)	Date/Time	Received by Mobile Lab: (signature)	Relinquished by Mobile Lab: (signature)	Date/Time	Received by Courier: (signature)
Method of Shipment		Shipped by: (signature)	Courier from Airport: (signature)	Received for Laboratory: (signature)	Date/Time

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Robin Breuer/Fadwa Samara
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

06-06-89
NET Pacific Log No: 6552
Series No: 212
Client Ref: Project# 88-44-359-02

Subject: Analytical Results for Shell - 285 Hegenberger Rd., Oakland Received 05-25-89.

Dear Robin Breuer/Fadwa Samara

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Submitted by:

Brian Fies
Group Leader
Atomic Spectroscopy

Approved by:

Susan Joy Griffin
Group Leader
Gas Chromatography

/sm
Enc: Sample Custody Document

KEY TO ABBREVIATIONS

mean	:	Average; the sum of the measurements divided by the total number of measurments.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample, unless noted otherwise.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
ND	:	Not detected; the analyte concentration is less than the listed reporting limit.
NR	:	Not requested.
NTU	:	Nephelometric turbidity units.
RL	:	Reporting limit.
RPD	:	Relative percent difference, $[V^1-V^2/V$ mean$]x100$.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
ug/filter	:	Concentration in units of micrograms of analyte per filter.
umhos/cm	:	Micromhos per centimeter.
*	:	See cover letter for details.

THE COVER LETTER AND KEY TO ABBREVIATIONS ARE AN INTEGRAL PART OF THIS REPORT

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results (ppm) MW-1 05-23-89 1446 (-27933)[a]	MW-2 05-23-89 1510 (-27934)[b]	MW-6 05-23-89 1530 (-27935)	Method
PETROLEUM HYDROCARBONS					
Volatile, as Gasoline	0.05	48	1.5	22	8015/5030
DATE ANALYZED		06-2-89	06-2-89	06-2-89	
Extractable,					GCFID/3510
as Motor Oil	0.05	ND	ND	ND	
as Diesel Fuel	0.05	11[c]	1.6[c]	7.0[c]	
DATE ANALYZED		05-26-89	05-26-89	05-26-89	
DATE EXTRACTED		05-25-89	05-25-89	05-25-89	

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results (ppm) MW-1 05-23-89 1446 (-27933)	MW-2 05-23-89 1510 (-27934)	MW-6 05-23-89 1530 (-27935)	Method
PURGEABLE AROMATICS					
Benzene	0.0005	4.2	0.0043	0.016	602
Ethylbenzene	0.0015	1.2	0.011	0.0066	602
Toluene	0.0005	5.2	0.0029	0.0065	602
Xylenes, total	0.0015	7.7	0.15	3.4	602

[a]The reporting limit is 50 times the listed reporting limit for gasoline and purgeable aromatics.
[b]The reporting limit is 10 times the listed reporting limit for gasolie and purgeable aromatics.
[c]Sample contains lower boiling hydrocarbons not characteristic of diesel fuel.

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results (ppm) MW-5 05-23-89 1540 (-27936)[a]	MW-7 05-23-89 1600 (-27937)[a]	MW-8 05-23-89 1700 (-27938)	Method
PETROLEUM HYDROCARBONS					
Volatile, as Gasoline	0.05	26	47	ND	GCFID/3510
DATE ANALYZED		06-02-89	06-2-89	06-2-89	
Extractable,					8015/5030
as Motor Oil	0.05	ND	ND	0.075	
as Diesel Fuel	0.05	7.0[b]	11[b]	0.10	
DATE ANALYZED		05-26-89	05-26-89	05-26-89	
DATE EXTRACTED		05-25-89	05-25-89	05-25-89	

Parameter	Reporting Limit (ppm)	Descriptor, Lab No. and Results (ppm) MW-5 05-23-89 1540 (-27936)	MW-7 05-23-89 1600 (-27937)	MW-8 05-23-89 1700 (-27938)	Method
PURGEABLE AROMATICS					
Benzene	0.0005	1.5	3.5	ND	602
Ethylbenzene	0.0015	ND	1.5	ND	602
Toluene	0.0005	0.28	5.0	ND	602
Xylenes, total	0.0015	8.1	7.8	ND	602

[a]The reporting limit is 50 times the listed reporting limit for gasoline and purgeable aromatics.

[b]Sample contains lower boiling hydrocarbons not characteristic of diesel fuel.

SAMPLE DESCRIPTION: MW-3 05-23-89 1630
LAB NO.: (-27939)

Parameter	Reporting Limit	Results	Units	Method
PETROLEUM HYDROCARBONS				
Volatile, as Gasoline	0.05	ND	ppm	8015/5030
DATE ANALYZED		06-2-89		
Extractable,				GCFID/3510
as Motor Oil	0.05	ND	ppm	
as Diesel Fuel	0.05	1.5[a]	ppm	
DATE ANALYZED		05-26-89		
DATE EXTRACTED		05-25-89		

[a]Sample contains lower boiling hydrocarbons not characteristic of diesel fuel.

SAMPLE DESCRIPTION: MW-4 05-23-89 1730
LAB NO.: (-27940)

Parameter	Reporting Limit	Results	Units	Method
PETROLEUM HYDROCARBONS				
Volatile, as Gasoline	0.05	ND	ppm	8015/5030
DATE ANALYZED		06-2-89		
PURGEABLE AROMATICS				
Benzene	0.0005	ND	ppm	602
Ethylbenzene	0.0015	ND	ppm	602
Toluene	0.0005	ND	ppm	602
Xylenes, total	0.0015	ND	ppm	602

SAMPLE DESCRIPTION: MW-3 05-23-89 1630
LAB NO.: (-27939)

Parameter	Reporting Limit	Results	Units
PURGEABLE HALOCARBONS (601)			
Bromodichloromethane	0.0004	ND	ppm
Bromoform	0.0004	ND	ppm
Bromomethane	0.0004	ND	ppm
Carbon tetrachloride	0.0004	ND	ppm
Chlorobenzene	0.0004	ND	ppm
Chloroethane	0.0004	ND	ppm
2-Chloroethylvinyl ether	0.001	ND	ppm
Chloroform	0.0004	ND	ppm
Chloromethane	0.0004	ND	ppm
Dibromochloromethane	0.0004	ND	ppm
1,2-Dichlorobenzene	0.0004	ND	ppm
1,3-Dichlorobenzene	0.0004	ND	ppm
1,4-Dichlorobenzene	0.0004	ND	ppm
Dichlorodifluoromethane	0.0004	ND	ppm
1,1-Dichloroethane	0.0004	ND	ppm
1,2-Dichloroethane	0.0004	ND	ppm
1,1-Dichloroethene	0.0004	ND	ppm
trans-1,2-Dichloroethene	0.0004	ND	ppm
1,2-Dichloropropane	0.0004	ND	ppm
cis-1,3-Dichloropropene	0.0004	ND	ppm
trans-1,3-Dichloropropene	0.0004	ND	ppm
Methylene chloride	0.010	ND	ppm
1,1,2,2-Tetrachloroethane	0.0004	ND	ppm
Tetrachloroethene	0.0004	ND	ppm
1,1,1-Trichloroethane	0.0004	ND	ppm
1,1,2-Trichloroethane	0.0004	ND	ppm
Trichloroethene	0.0004	ND	ppm
Trichlorofluoromethane	0.0004	ND	ppm
Vinyl chloride	0.002	ND	ppm
DATE ANALYZED		06-1-89	
PURGEABLE AROMATICS (602)			
Benzene	0.0005	ND	ppm
Ethylbenzene	0.0015	ND	ppm
Toluene	0.0005	ND	ppm
Xylenes, total	0.0015	ND	ppm

BOB MANSFIELD

Converse Consultants

CHAIN OF CUSTODY RECORD

Project No.	Project Name
414-359.02	2815 Hegenberger Rd - OAKLAND, CA

Samplers: (signature) Kelly Shuta

Station No.	Date	Time	Comp.	Grab	Station Location	Number of Containers	TPH-Gas (modified) BTXE	TPH-Diesel (modified)	503 A&E - Long List	601			Remarks
						18 VOA's 21-Litres 39 TOTAL							Shell (10552)
MW-1	5/23/89	14:46		✓	285 Hegenberger-Oakland	5	✓	✓					STANDARD T.A.T.
MW-2	5/23/89	15:10		✓	"	5	✓	✓					" S.T.A.T. "
MW-6	5/23/89	15:30		✓	"	5	✓	✓					" " "
MW-5	5/23/89	15:40		✓	"	5	✓	✓					" " "
MW-7	5/23/89	16:00		✓	"	5	✓	✓					" " "
MW-3	5/23/89	16:30		✓	"	8	✓	✓	✓	✓			" " "
MW-8	5/23/89	17:00		✓	"	4	✓	✓					" " "
MW-4	5/23/89	17:30		✓	"	2	✓						" " "

Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
Kelly Shuta	5/24/89 |			|	
Relinquished by: (signature)	Date/Time	Received by: (signature)	Relinquished by: (signature)	Date/Time	Received by: (signature)
	5/24/89 1505		D. Kruger	5-25 | 0215	
Relinquished by Courier: (signature)	Date/Time	Received by Mobile Lab: (signature)	Relinquished by Mobile Lab: (signature)	Date/Time	Received by Courier: (signature)
	|			|	
Method of Shipment		Shipped by: (signature)	Courier from Airport: (signature) (VIA ARCO)	Received for Laboratory: (signature)	Date/Time
					5-25-89 | 0730

NATIONAL ENVIRONMENTAL TESTING, INC.

NET Pacific, Inc.
435 Tesconi Circle
Santa Rosa, CA 95401
Tel: (707) 526-7200
Fax: (707) 526-9623

Formerly: ANATEC Labs, Inc.

RECEIVED
JUN 13 1989
CONVERSE ENVIRONMENTAL

Robin Breuer/Fadwa Samara
Converse Consultants
55 Hawthorne St, Ste 500
San Francisco, CA 94105

06-07-89
NET Pacific Log No: 6557
Series No: 212
Client Ref: Project# 88-44-359-02

Subject: Analytical Results for Shell - 285 Hegenberger Rd, Oakland Received 05-25-89.

Dear Robin Breuer/Fadwa Samara

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Submitted by:

Sue J. Long
Group Leader
Classical Chemistry

Approved by:

Susan Joy Griffin
Group Leader
Gas Chromatography

/sm
Enc: Sample Custody Document

KEY TO ABBREVIATIONS

mean	:	Average; the sum of the measurements divided by the total number of measurments.
mg/Kg (ppm)	:	Concentration in units of milligrams of analyte per kilogram of sample, wet-weight basis (parts per million).
mg/L	:	Concentration in units of milligrams of analyte per liter of sample, unless noted otherwise.
mL/L/hr	:	Milliliters per liter per hour.
MPN/100 mL	:	Most probable number of bacteria per one hundred milliliters of sample.
N/A	:	Not applicable.
ND	:	Not detected; the analyte concentration is less than the listed reporting limit.
NR	:	Not requested.
NTU	:	Nephelometric turbidity units.
RL	:	Reporting limit.
RPD	:	Relative percent difference, $[V^1-V^2/V$ mean$]x100$.
SNA	:	Standard not available.
ug/Kg (ppb)	:	Concentration in units of micrograms of analyte per kilogram of sample, wet-weight basis (parts per billion).
ug/L	:	Concentration in units of micrograms of analyte per liter of sample.
ug/filter	:	Concentration in units of micrograms of analyte per filter.
umhos/cm	:	Micromhos per centimeter.
*	:	See cover letter for details.

THE COVER LETTER AND KEY TO ABBREVIATIONS ARE AN INTEGRAL PART OF THIS REPORT

SAMPLE DESCRIPTION: MW-3 05-23-89 1630
LAB NO.: (-27941)

Parameter	Reporting Limit	Results	Units	Method No:
Oil & Grease (total)	5	ND	ppm	503A 503E
Oil & Grease (Non-polar)	10	ND	ppm	503A 503E

TASK MODIFICATION I

285 Hegenberger Road
Shell Work Plan
April 26, 1989

This amendment to the Revised Critical Path (April 26, 1989) specifies the detailed scope and cost for completion of Tasks 1a, 6a, and 9a.

Task 1 a - Drill and Sample Soil Borings:

Explanation: According to information supplied by Blymyer engineers, consultants to PacBell, "significant" soil contamination exists at the PacBell property boundary with the Shell station. PacBell alleges this contamination is from releases by Shell. Wells installed to date do not refute this allegation.

Scope: Install and sample 3 soil borings to the water table, per the protocols described in Task 1 of the original Work Plan dated February 10, 1989.

Task 6a - Install Groundwater Monitoring Wells:

Explanation: The laterally extensive TPH (as gasoline) and BTEX contamination has not been defined by the initial installation of three wells on site. Additional wells are needed to complete this characterization.

Scope: Five additional monitoring wells, MW-4 through MW-8, will be installed at locations shown on (Drawing 1, Modification 1). The drilling, well installation development, sampling, and analytical protocols described in the initial Work Plan will be followed during installation and groundwater sampling of these new wells.

Task 9a - Locate Borings and Wells on Adjacent Property:

Explanation: According to information provided by Blymyer Engineers, six soil borings exist on the adjacent PacBell property at 295 Hegenberger. Certain soil information exists for these borings but only slight oil of grease contamination was indicated. The borings should be surveyed so that the existing analytical data can be added to the information for the site, to allow for a complete compilation of soil and water quality data for these properties.

Scope: An attempt will be made to find the soil borings on the PacBell property. If found the borings will be located by surveying using Electronic Distant Meter (EDM) equipment.

TASK MODIFICATION II

285 Hegenberger Road
Shell Work Plan
June 10, 1989

This amendment to the Revised Critical Path (April 26, 1989) specifies the detailed scope and cost for completion of work.

Task 1 b - Drill and Sample Soil Borings:

Explanation: Laboratory soils data shows elevated concentrations of TPH (as gasoline) contamination that has not been defined vertically or laterally near the underground tank farm. Additional borings are needed to complete this characterization.

Scope: Two additional borings are proposed for installation near SB-2 (SB-6 and SB-7); three borings are proposed for a triangle array around MW-1, and two borings (SB-11 and SB-12) are proposed for the southeast corner of the property.

The drilling, sampling and analytical protocols described in the initial Work Plan will be followed during advancement and sampling of the borings.

TABLE 1
REVISED 6 OCTOBER 1988

RECOMMENDED MINIMUM VERIFICATION ANALYSES FOR UNDERGROUND TANK LEAKS

HYDROCARBON LEAK	SOIL ANALYSIS			WATER ANALYSIS		
		Prep	Analysis		Prep	Analysis
Unknown Fuel	TPH G	5030	8015	TPH G	5030	8015
	TPH D	3550	8015	TPH D	3510	8015
	BTX&E	5030	8020/8240	BTX&E	5030	602/624
	LEAD	3050	7421	LEAD	3050	7421
Leaded Gas	TPH G	5030	8015	TPH G	5030	8015
	BTX&E	5030	8020/8240	BTX&E	5030	602/624
	LEAD	3050	7421	LEAD	3050	7421
Unleaded Gas	TPH G	5030	8015	TPH G	5030	8015
	BTX&E	5030	8020/8240	BTX&E	5030	602/624
Diesel	TPH D	3550	8015	TPH D	3510	8015
	BTX&E	5030	8020/8240	BTX&E	5030	602/624
Waste Oil or Unknown	TPH G	5030	8015	TPH G	5030	8015
	TPH D	3550	8015	TPH D	3510	8015
	O & G	503D	503E	O & G	503A	503E
	BTX&E	5030	8020/8240	BTX&E	5030	8020/8240
	CL HC	5030	8010/8240	CL HC	5030	601/624
	ICAP or AA to detect metals: Cd, Cr, Pb, Zn					

APPENDIX A

Hollow-Stem Auger Drilling and Soil Sampling

HOLLOW-STEM AUGER DRILLING AND SOIL SAMPLING

Borings shall be drilled with a hollow-stem auger and sampled with a modified California-type split-spoon sampler. Soil samples shall be of sufficient volume to perform the analyses which may be required, including replicate analyses. Aside from deionized water or distilled water, no fluids will be used in drilling.

Undisturbed (intact) soil samples shall be recovered from soil borings without introducing liquids into the borings. Soil samples as core or cuttings shall be taken continuously from ground surface to termination depth (TD), or through the aquifer zone of interest for lithologic logging.

Soils from all borings shall be described in detail using the Unified Soil Classification System and shall be logged by a professional geologist, civil engineer, or engineering geologist who is registered or certified by the State of California and who is experienced in the use of the Unified Soil Classification System. A technician trained and experienced in the use of the Unified Soil Classification System who is working under the direct supervision of one of the aforementioned professionals shall be qualified to log borings, provided the aforementioned professional reviews the logs and assumes responsibility for the accuracy and completeness of the logs.

All wet zones above the free water zone shall be noted and accurately logged.

If evidence of contamination is detected by sight, smell, or other field analytical methods, drilling shall be halted until the responsible professional determines if drilling deeper is advisable.

All drilling tools shall be thoroughly decontaminated with trisodium phosphate (TSP) or steam cleaner immediately before starting each boring.

Soil samples shall be taken in decontaminated brass sampling tubes in the split-spoon. The brass sleeves will be cut apart using a clean knife. The ends of the tubes will be covered tightly with teflon wrap, capped with tight-fitting plastic caps, wrapped with plastic electricians' tape, and properly labeled.

APPENDIX B

Standards for Backfilling Borings and Sealing Wells

STANDARDS FOR BACKFILLING BORINGS AND SEALING WELLS

INTRODUCTION

As standard practice, all borings and observation and monitoring wells shall be backfilled or sealed with "relatively impervious" grout to prevent surface contamination or cross-contamination between aquifers. Borings will be sealed from termination depth to the surface and observation and monitoring wells shall be backfilled and sealed above the water table. This practice will reduce liability if it is determined and proven that groundwater contamination occurred along a "vertical pathway" in an improperly sealed or filled boring or well.

In hazardous and potentially hazardous waste sites where deep borings or wells are installed, appropriate geologic information will be reviewed to determine if multiple aquifer system(s) exist(s). If such system(s) exist(s), drilling and sealing techniques will be used to prevent contamination of a lower aquifer by upper, potentially contaminated aquifer(s). Grout seals will be installed according to the following techniques through all thicknesses of impermeable zones which separate aquifer.

Borehole grouting shall consist of backfilling with bentonite pellets, cement/bentonite grout, or a thick bentonite slurry, depending upon the depth of the boring, depth to ground water, and type of drilling equipment used. Details of currently acceptable sealing methods are outlined below.

GENERAL SPECIFICATIONS

- All grouting and well construction and sealing and abandonment of borings shall be consistent with local ordinances.

- Cement/bentonite grout used to seal wells will be of a hard consistency that can resist traffic loads, but not installed to create a "concrete pile" that will obstruct further earthwork. Bentonite slurry, which does not support surface loads, will not be used for sealing wells.

GROUTING/SEALING TECHNIQUES

Dry Holes and Borings Containing Less Than 5 Feet of Water

Option 1: Backfill boring with bentonite pellets or granules in about 2-foot lifts. Add a gallon of water to hole after each lift.

Option 2: Pour in a mixture of cement/bentonite group (9 parts cement, 1 part bentonite powder plus water as needed to make mixture consistency of pancake batter).

Option 3: Pour in a thick mixture of bentonite and water. Soil cuttings can be used to bulk this mixture is soil is not contaminated and chunks are small and well-mixed in slurry.

Borings Containing More Than 5 Feet of Water

Option 1: Pump out water and use criteria for "dry hole."

Option 2: Pump cement/bentonite grout to bottom of hole or use tremie. Do not pour grout through water.

Option 3: Pump or tremie bentonite slurry. This alternative is particularly efficient if you are using rotary wash equipment since all you have to do is thicken the drilling mud and pump it through the drill rod.

Monitoring/Observation Well Sealing (Single Aquifer)

A. Place sand pack around well casing to about 2 feet above slotted interval. Anticipate fluctuation of water level so screened interval covers maximum water elevation.

B. Place 2-foot thick bentonite pellet seal above sand pack. Add a bucket of clean water to swell pellets.

C. Pour cement/bentonite grout or bentonite slurry above pellet seal to ground surface.

APPENDIX C

Groundwater Monitoring Well Construction

GROUNDWATER MONITORING WELL CONSTRUCTION

Groundwater monitoring wells shall be constructed according to the general specifications described in the EPA Technical Enforcement Guidance Document (TEGD, 1986) and shown on the attached well construction diagram.

Groundwater monitoring wells shall be installed through hollow stem augers in borings drilled and sampled per Appendix A. Groundwater monitoring wells shall extend to the base of the upper aquifer, as defined by the first consistent (>5-foot thick) clay layer below the upper aquifer, or at least 15 feet below the top of the upper aquifer, whichever is shallower. The wells shall not extend through the laterally extensive clay layer below the upper aquifer. The wells shall be terminated 1 to 2 feet into such a clay layer.

The groundwater monitoring wells shall be single-cased wells which extend to the bottom of the boring or into a bentonite plug, if one is used at the bottom of the boring as a hydraulic seal. The screens shall be factory-perforated from the bottom of the upper blank casing at least 5 feet above the top of the upper aquifer as defined by boring lithology and/or geophysics. The base of the screen shall be the bottom of the well, or above a 2-5 foot long silt trap in the bottom of the well.

Groundwater monitoring wells shall be constructed as filter-packed wells that will prevent the migration of the surrounding formation into the well. Wells shall have 4-inch diameter factory-perforated casing with slots which match formation grain size as determined by field grain-size distribution analysis. Well casings shall have a threaded bottom cap or plug, and may have a silt trap below the screened zone.

All casing and screen shall be flush threaded, and no adhesive shall be used. PVC casing screen shall be steam-cleaned prior to installation. Filter pack shall be washed, graded sand.

Filter packs shall extend at least 2 feet above the top of the perforated interval. A layer of bentonite pellets 1 to 2 feet thick shall be placed on top of the filter pack. Approximately 2 gallons of water shall be added to hydrate the bentonite pellets. The wells shall then be sealed from the top of the bentonite seal to the surface with neat cement. All sand, bentonite and cement shall be placed using a tremie pipe.

Wellheads shall be installed in flush-mounted watertight structures and provided with a watertight caps. Wellheads shall be provided with locked security devices that protect the wells from the entry of surface water, accidental damage, unauthorized access, and vandalism.

Soil and water sampling equipment and materials used to construct the wells shall not donate, capture, mask, nor alter the chemical composition of the soils and ground water.

All well casings, casing fittings, screens, and all other components that are installed in the well shall be thoroughly decontaminated immediately before starting each well installation.

APPENDIX D

Well Development

WELL DEVELOPMENT

For all newly installed groundwater monitoring wells, the well casing, filter pack and adjacent formation shall be cleared of disturbed sediment and water before representative water samples are collected. A field geologist shall supervise such development work.

Before well development begins, the grout and bentonite seals shall set at least 24 hours and one pre-development water sample will be taken for each well. These water samples will be collected and analyzed for possible contaminants present according to CECC groundwater sampling protocol and QA/QC. These samples will be stored in the laboratory pending a decision to analyze, if required. If analyzed, standard laboratory procedures will be used. Samples not analyzed will be discarded.

All well development tools shall be thoroughly cleaned immediately before each well development. Well development shall begin with bailing using either a stainless steel or teflon bailer. This procedure will remove heavy sediments from within each well casing, reducing the possibility of the well screen abrasion and pump damage during subsequent pumping. Wells shall be bailed until water samples contain only trace amounts of fine to coarse sand, as measured in sampling jars after 15 minutes of settling.

The wells will be mechanically surged with a surge or flapper block for 15 strokes or 30 minutes, whichever is less. The block will be lowered to the well plug and then carefully drawn up to the top of the well screen or until it emerges from the water. For wells in moderate soils, the rate of surging will be progressively increased with each stroke. When working in areas of loose sediments, surging will be at a constant, slow stroke rate. Areas of dense or over-compacted sediments may require more vigorous surging. Between surging episodes, the wells will be bailed and/or pumped to remove the sediment-rich water generated.

After surging, wells under development will be pumped using stainless steel 3-inch positive displacement development pumps, 2-inch bladder pumps or other appropriate equipment. In this procedure, the pumps will operate at maximum rate which is less than the recharge rate of the pumped well. For complete development, the wells will be pumped until: (1) the discharge is clear or nearly clear; and (2) the turbidity has not noticeably changed with one-half hour.

All water and sediment generated by well development shall be collected in clean, 55-gallon steel drums unless only a small volume (less than 100 gallons) is produced. Drums of this development water will be temporarily contained onsite, pending sampling and laboratory analysis. Non-hazardous development waters shall be disposed of by surface dumping (small volumes) or sewerage. Potentially hazardous development water shall be properly disposed of at a suitable hazardous waste disposal site or properly treated for non-hazardous discharge. Small volumes of development water may be disposed of by surface dumping if, in the opinion of the onsite geologist, potential contamination to the environment is minimal.

APPENDIX E

Groundwater Sampling

GROUNDWATER SAMPLING

Groundwater samples shall be collected for laboratory analysis by the following procedures:

1. Before sampling or purging begins, all bailers, pumps, cables and lines will be steam-cleaned. An established and designated cleaning area will be kept clean by lining with visqueen or using a cleaning rack.

2. A pre-purge sample shall first be obtained with a bailer from as deep in the well as possible. Standard "Water Sampling Field Survey Forms" will be filled out for this and all future samples, to include the following information:

   - Depth to water and total depth of water column, measured and recorded before purging begins;

   - Conductivity, checked and recorded for every 5 gallons of purged water (for small volumes); and

   - Purged volume (as appropriate), with stabilized readings for pH, conductivity and temperature.

The well shall then be bailed or pumped to remove four to ten well volumes prior to sampling. The well will be purged until conductivity has been stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another. A casing volume will be based on actual measurements made on the day of sampling, i.e., the total depth minus depth to water on day of sampling, time the cross-sectioned area of the casing.

If the well is emptied before four to ten well volumes are removed, the sample shall be taken when the water level in the well recovers to 80% of its initial water level or better.

Whenever possible, samples will be collected within 24 hours after purging; ideally, samples will be collected immediately after purging.

Following the required volume of evacuation from the well, the sample shall be obtained with a teflon or stainless steel bailer on a 60-pound monofilament or polypropylene (washed) line. Care will be taken to properly clean cables with braided stainless steel cable or plastic coverings, if used. Air lift sampling and bladder pumps shall not be used.

Unless specifically waived or changed by the local, prevailing regulatory agency, water samples shall be handled and preserved according to the latest EPA methods as described in the Federal Register (Volume 44, No. 233, Monday, December 3, 1979, Page 69544, Table II) for the type of analysis to be performed.

Purge water will be properly disposed of or temporarily contained in steel barrels pending chemical analysis to designate proper disposal procedure.

APPENDIX F

Chain-of-Custody

CHAIN-OF-CUSTODY

SAMPLE COLLECTION, HANDLING AND IDENTIFICATION

Sample collection, handling, and identification will follow the guidelines set by the California Department of Health Services. Field records will be completed when the sample is collected and will be signed or initialed, including the date and time, by the sample collector(s). Field records will contain the following information:

1. Unique sample or log number;
2. Date and time;
3. Source of sample (including name, location and sample type);
4. Preservative used;
5. Analyses required;
6. Name of collector(s);
7. Pertinent field data (pH, DO, C1, residual, etc.); and
8. Serial number on seals and transportation cases.

Each sample will be identified by affixing a pressure sensitive, gummed label, or standardized tag on the container(s). This label will contain the sample identification number, date and time of sample collection, source of sample preservative used, and the collector(s) initial(s). Analysis required will be identified. Where a label is not available, the same information will be affixed to the sample contained with an indelible, waterproof, marking pen.

The sample container will be placed in a transportation case along with the chain-of-custody record form, pertinent field records, and analyses request form. The transportation case will then be sealed and labeled. Records will be filled out legibly in pen.

TRANSFER OF CUSTODY AND SHIPMENT

When transferring the possession of the samples, the transferee will sign and record the date and time on the chain-of-custody record. Custody transfer, if made to a sample custodian in the field, will account for each individual sample, although samples may be transferred as a group.

The field custodian or field inspector will be responsible for properly packaging and dispatching samples to the appropriate laboratory for analysis. This responsibility includes filling out, dating, and signing the appropriate portion of the chain-of-custody record.

All packages sent to the laboratory will be accompanied by the chain-of-custody record and other pertinent forms. A copy of these forms will be retained by the originating office.

Mailed packages can be registered with return receipt requested. If packages are sent by common carrier, receipts should be retained as part of the permanent chain-of-custody documentation.

Samples to be shipped will be sealed locked so evidence of tampering may be readily detected.

LABORATORY CUSTODY PROCEDURES

Chain-of-custody procedures will be followed in the laboratory from the time of sample receipt to the time the sample is discarded.

The sample control officer (SCO) will be the designated custodian, and an alternate is designated to act as custodian in the custodian's absence. All incoming samples are received by the SCO, who shall indicate receipt by signing the accompanying custody forms and who shall retain the signed forms as permanent records.

The SCO will maintain a permanent log book to record, for each sample, the person delivering the sample, the person receiving the sample, date and time received, source of sample, sample identification or log number, how transmitted to the laboratory, and condition received (sealed, unsealed, broken container, or other pertinent remarks). A standardized format will be established for log book entries.

A clean, dry, isolated room, building, and/or refrigerated space that can be securely locked from the outside, will be designated as a "sample storage security area."

The SCO will ensure that heat-sensitive, light-sensitive samples, radioactive, or other sample materials having unusual physical characteristics, or requiring special handling, are properly stored and maintained prior to analysis.

Only the custodian will distribute samples to the section leaders who are responsible for the laboratory performing the analysis.

The laboratory area will be maintained as a secured area, restricted to authorized personnel only.

Laboratory personnel will be responsible for the care and custody of the sample once it is received by them. These personnel shall be prepared to testify that the sample was in their possession and view, or secured in the laboratory at all times, from the moment it was received from the SCO, until the time that the analyses are completed.

Once the sample analyses are completed, the unused portion of the sample, together with all identifying labels, will be returned to the SCO. The returned tagged sample will be retained in the custody room until permission to destroy the sample is received by the SCO.

Samples will be destroyed only upon the order of the Laboratory Director, in consultation with previously-designated Project Manager, and/or client, or when it is certain that the information is no longer required or the samples have deteriorated. The same procedure will apply to tags and laboratory records.

APPENDIX G

Drum Handling Procedures

OUTLINE OF DRUM HANDLING PROCEDURES

1. Complete drummed worksheets onsite, forward a copy to Shell.

2. Test material per Shell's site-specific test requirements.

3. Classify Material as: Clean/Non-Hazardous/Hazardous

4. Labeling of Drums

   - Pending Label: Used to describe material pending final analytical testing. Labels must be immediately affixed to drum during field work.

   - Non-Hazardous Label: Required within 48 hours after analytical results are received.

   - Hazardous Label: Required within 48 hours after analytical results are received.

   - For Pick-Up Label: Must be affixed to drum prior to Shell Hazardous Waste Coordinator arranged pick-up date.

5. Remove within 14 days of date of generation. Empty drums, where material was disposed in bulk, must be removed the same day they are emptied.

6. Dispose of Material:

   - Clean: Any local landfill
   - Non-Hazardous: Class III landfill. If a Class III landfill will not accept, contact Shell Hazardous Waste Coordinator for assistance
   - Hazardous: Class I landfill arranged by Shell Hazardous Waste Coordinator.

   Mail or FAX completed Hazardous Waste Pick-Up Forms to the Shell Hazardous Waste Coordinator with a copy of the analytical results and worksheets.

7. If required, contact the Shell Hazardous Waste Coordinator:

   Shell Oil Company
   Hazardous Waste Coordinator
   Anna Sampson
   P.O. Box 6249
   Carson, California 90749
   Phone: (213) 816-2037
   FAX: (213) 816-2114

8. Manifests may be signed by the onsite contractor or consultant, station dealer, or other authorized Shell Oil representatives. The transporter CAN NOT sign the manifest.

   IT IS THE RESPONSIBILITY OF THE CONTRACTOR/CONSULTANT TO ARRANGE FOR A PERSON TO SIGN THE MANIFEST ON THE DAY OF PICK-UP.

9. Reporting

   All reports must be received by the Shell Hazardous Waste Coordinator within 7 working days of disposal. Reports shall include the following:

   - Completed drummed soil and water worksheets.
   - Attach a copy of the analytical results.
   - State how and where material was disposed.
   - If drums are emptied and material was disposed in bulk, state how empty drums were handled.
   - The signed blue and yellow copies of the hazardous waste manifest.

SOIL:

1. Test Requirements and Methods: Per Shell's site-specific test requirements

   - TPH: EPA Method 8015

   - BTEX: EPA Method 8020

   - Lead:

     -One composite sample from each boring
     -See attached decision tree
     -Total Lead - EPA Method 7421
     -Inorganic (soluble) Lead - DOS Title 22, Waste Extraction Test, §22-66700

   - Ignitable:

     -One composite sample from each boring
     -Bunsen Burner Test Flame Test

2. Classification:

   - Clean: TPH, BTEX, and Lead non-detectable

   - Non-Hazardous if any are true:

     -TPH less than 1000 ppm

-Lead -Inorganic (soluble) Lead less than 5 ppm (STLC)
or less than 100 ppm (TTLC)
-Organic Lead less than 13 ppm (TTLC)

-Ignitable - If TPH < 1000 ppm do not conduct test

- Hazardous if any are true:

-TPH greater than 1000 ppm

-Lead -Inorganic (soluble) Lead greater than 5 ppm (STLC)
or greater than 1000 ppm (TTLC)
-Organic Lead greater than 13 PPM (TTLC)

-Ignitable -If TPH >1000 ppm, then conduct Bunsen Burner Test
-If soil burns vigorously and persistently, soils are RCRA D001

3. Responsibility for Disposal:
   - Clean: Consultant/Contractor
   - Non-Hazardous: Consultant/Contractor or Shell Hazardous Waste Coordinator
   - Hazardous: Shell Hazardous Waste Coordinator
4. Types of Drums: DOT-17H for a solid, solidified, or sludge material.
5. Disposal Facility:
   - Clean: Any local landfill
   - Non-Hazardous: Class III landfill. If a Class III landfill will not accept, contact Shell Hazardous Waste Coordinator for assistance
   - Hazardous: Class I landfill arranged by Shell Hazardous Waste Coordinator

WATER:

1. Test Requirements and Methods: Per Shell's site-specific test requirements.
   - TPH: EPA Method 8015
   - BTEX: EPA Method 602
2. Classification:
   - Clean Water: TPH and BTEX non-detectable

- Non-Hazardous:

  -Water with dissolved product and detectable TPH and BTEX
  -Water with free product
  -Free product only

3. Responsibility for Disposal:

   - Clean: Consultant/Contractor

   - Non-Hazardous: Consultant/Contractor or Shell Hazardous Waste Coordinator

4. Types of Drums: DOT-17C or DOT-17E for liquid or slurry

5. Disposal Facility:

   - Clean Water: Into dealer's sanitary sewer or with proper approval from Water Board to storm sewer

   - Non-Hazardous:

     Water with TPH and BTEX only -

     -Into dealer's sanitary sewer with approval from the POTW
     -Contact Shell Hazardous Waste Coordinator to arrange disposal

     Water with free product -

     -Contact Shell Hazardous Waste Coordinator to arrange disposal

   - Hazardous:

     Free product only -

     -Contact Shell Hazardous Waste Coordinator to arrange disposal