WEISS ASSOCIATES
Geologic and Environmental Services
Fax: 415-547-5043 Phone: 415-547-5420
500 Shellmound Street, Emeryville, CA 94608

90 OCT 11 AM 10: 49

TRANSMITTAL LETTER

FROM: Tom Fojut

DATE: October 9, 1990

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

VIA: __X__ First Class Mail
_____ Fax _____ pages
_____ UPS (Surface)
_____ Federal Express
_____ Courier

SUBJECT: Shell Service Station WIC# 204-6852-1404
1784 150th Avenue
San Leandro, California

JOB: 81-422-01

AS: _____ We dicussed on the telephone on _____
_____ You requested _____
_____ We believe you may be interested
__X__ Is required

WE ARE SENDING: __X__ Enclosed
_____ Under Separate Cover Via _____

Quarterly ground water monitoring report for the subject site

FOR: _____ Your information
__X__ Your use
_____ Your review & comments
_____ Return to you

PLEASE: __X__ Keep this material
_____ Return within 2 weeks
_____ Acknowledge receipt

MESSAGE: Please call if you have any questions

WEISS ASSOCIATES
Geologic and Environmental Services
Fax: 415-547-5043 Phone: 415-547-5420
5500 Shellmound Street, Emeryville, CA 94608

October 8, 1990

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

Re: Shell Service Station
WIC #204-6852-1404
1784 150th Avenue
San Leandro, California
WA Job #81-422-01

Dear Mr. Seto:

This letter describes Weiss Associates' (WA) third quarter 1990 ground water monitoring activities at the Shell service station referenced above. This status report satisfies the quarterly reporting requirements outlined in our workplan dated February 23, 1990, and prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 265.d. A description of WA's proposed activities for the fourth quarter 1990 is also included below.

GROUND WATER SAMPLING

WA collected ground water samples from one monitoring well on September 13, 1990, as part of the quarterly ground water monitoring program at Shell Service Station WIC #204-6852-1404 in San Leandro, California (Figure 1). **Ground water samples from monitoring well MW-1 contained benzene and tetrachloroethylene (PCE) above the California Department of Health Services (DHS) maximum contaminant levels (MCLs) for drinking water.**

Sampling personnel: WA Environmental Technician David Charles

Monitoring well sampled: MW-1

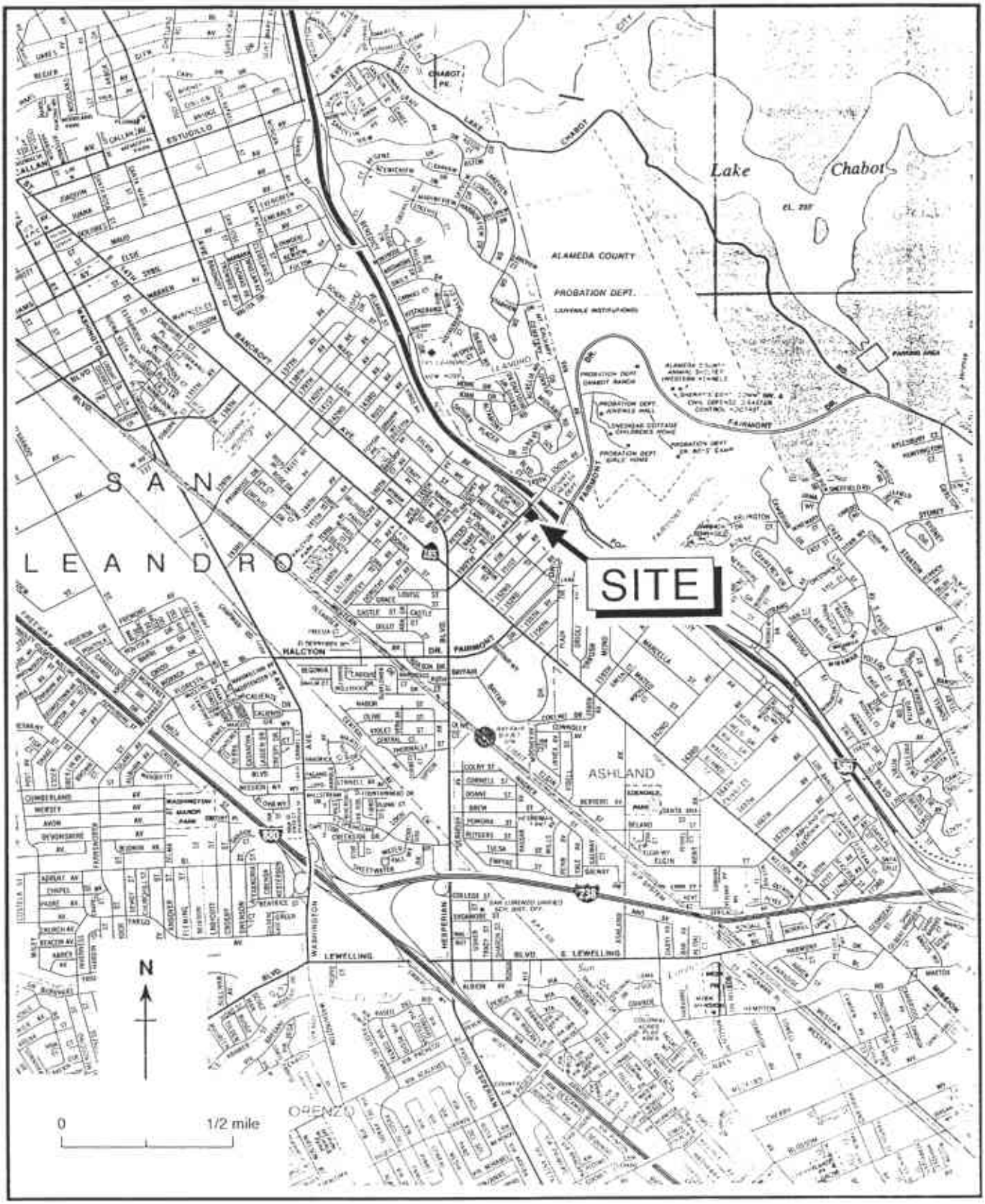


Figure 1. Site Location Map - Shell Service Station WIC #204685214, 1784 150th Avenue, San Leandro, California

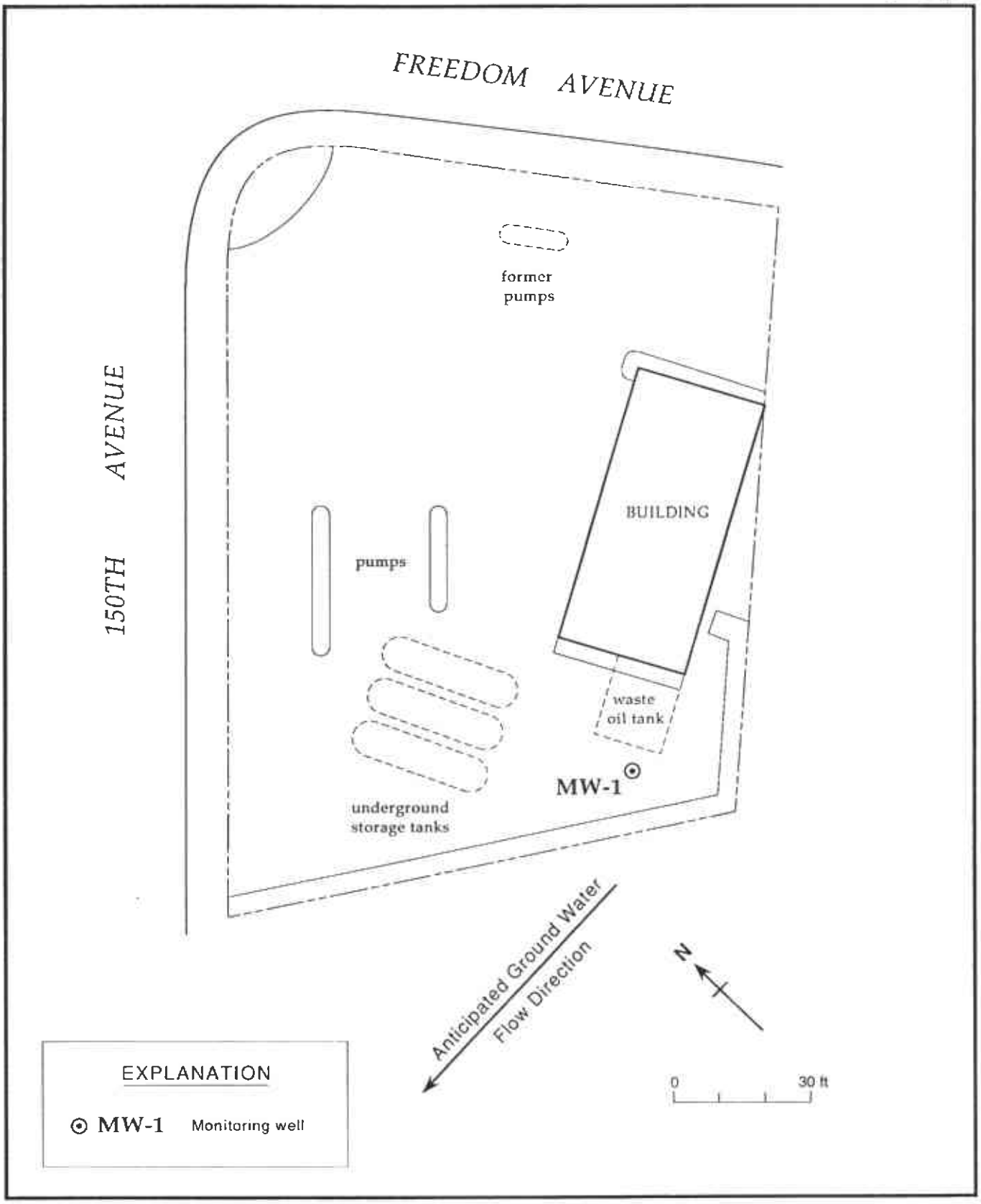


Figure 2. Monitoring Well Location - Shell Service Station WIC #204-685-214, 1784 150th Avenue, San Leandro, California

Method of purging well:

- Dedicated PVC bailer

Volume of water purged prior to sampling:

- MW-1 was purged of about four well-casing volumes, approximately 46 gallons

Method of collecting ground water samples:

- Drawn through sampling port on side of dedicated PVC bailer

Method of containing ground water samples:

- 40 ml glass, volatile organic analysis (VOA) vials, packed in protective foam sleeves for total petroleum hydrocarbons as gasoline (TPH-G), benzene, ethylbenzene, toluene, and xylenes (BETX), and halogenated volatile organic compounds (HVOC) analyses.
- 1000 ml amber glass bottles for total petroleum hydrocarbons as diesel (TPH-D) analysis.
- 1000 ml amber glass bottles preserved with sulfuric acid for total oil and grease (TOG) analysis.

All samples were refrigerated and transported under chain-of-custody to the analytical laboratory.

Water samples transported to:

- National Environmental Testing (NET) Pacific, Inc., Santa Rosa, California.

The laboratory received the samples on September 13, 1990.

Quality assurance/quality control:

- An equipment blank was not necessary because all bailers are dedicated to specific wells.

Water sample collection records and chain-of-custody forms are included as Attachments A and B, respectively.

GROUND WATER ELEVATIONS

The water level was measured in: MW-1 on September 13, 1990

Anticipated direction of ground water flow: westward

Water levels and ground water elevations are presented in Table 1. The ground water elevation was 21.64 ft before sampling, a drop of 1.64 ft since the previous quarter.

TABLE 1. Ground Water Elevation Data, Active Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

Well ID	Date	Top-of-Casing Elevation (ft above msl)	Depth to Water (ft)	Ground Water Elevation (ft above msl)
MW-1	03/08/90	49.13	25.29	23.84
	06/12/90		25.85	23.28
	09/13/90		27.49	21.64

CHEMICAL ANALYSES

The ground water samples were analyzed for:

- TPH-G by modified EPA Method 8015,
- TPH-D by modified EPA Method 8015,
- BETX by EPA Method 602,
- TOG by American Public Health Association Standard Method 503E, and
- HVOC by EPA Method 601.

The laboratory analyzed the samples September 15-20, 1990. The results are presented in Table 2 and the analytic reports are included as Attachment C.

Discussion of analytic results of ground water for this quarter:

- PCE was detected for the first time.
- PCE and benzene concentrations exceeded the DHS MCLs for drinking water.

ANTICIPATED WORK FOR FOURTH QUARTER 1990

During the fourth quarter 1990, on behalf of Shell Oil, WA plans to:

- Continue quarterly monitoring at this site, and
- Prepare a quarterly status report presenting all data generated during the previous quarter including the results of water sampling and analysis.

TABLE 2. Analytic Results for Ground Water - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

Well ID	Date Sampled	Analytic Method	TPH-G	TPH-D	B	E	T	X	TOG	HVOCs
			<----------µg/ℓ (ppb)---------->							
MW-1	03/08/90	8015/602/503/601	290	120	1.5	<0.5	0.8	5.4	<10,000	12[a]
	06/12/90	8015/602/503/601	510	100	86	0.7	1.3	6.2	<10,000	ND
	09/13/90	8015/602/503/601	270	130	56	2.4	0.75	2.8	<10,000	24[b]
Trip Blank	03/08/90	8015/602	<50	---	<0.5	<0.5	<0.5	<0.5	---	---
	06/12/90	8015/602	<50	---	<0.5	<0.5	<0.5	<0.5	---	---
Bailer Blank	03/08/90	8015/602	<50	---	<0.5	<0.5	<0.5	<0.5	---	---
DHS MCLs			NE	NE	1	680	100[c]	1,750	NE	[d]

Abbreviations:

TPH-G = Total Petroleum Hydrocarbons as Gasoline
TPH-D = Total Petroleum Hydrocarbons as Diesel
B = Benzene
E = Ethylbenzene
T = Toluene
X = Xylenes
TOG = Total hydrocarbon (non-polar) oil and grease
HVOCs = Halogenated Volatile Organic Compounds
--- = Not analyzed
<n = Not detected at detection limit of n ppb
ND = Not detected at detection limits between 0.4 and 10 ppb
DHS MCLs = California Department of Health Services Maximum Contaminant Levels
ppb = parts per billion
NE = Not established by DHS

Notes:

[a] = 1,2-dichloroethane (DCA) detected at 12 ppb
[b] = tetrachloroethylene (PCE) detected at 24 ppb
[c] = DHS recommended action level, MCL not established
[d] = DHS MCL for 1,2-dichloroethane: 0.5 ppb; DHS MCL for PCE: 5 ppb

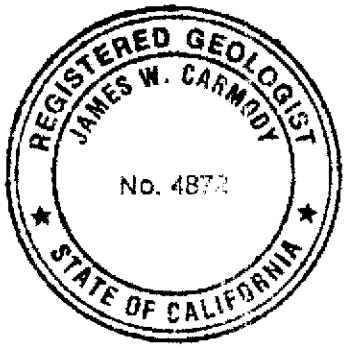
Analytical Laboratory:

National Environmental Testing, Inc. (NET), Santa Rosa, California

Analytic Methods:

503 = American Public Health Association Standard Methods 503A&E for TOG
601 = EPA Method 601 for HVOCs
602 = EPA Method 602 for BETX
8015 = Modified EPA Method 8015 for TPH-G and TPH-D

We are pleased to provide hydrogeologic consulting services to Shell and trust that this submittal satisfies your requirements. If you have any questions, please call Tom Fojut or Karen Sixt.



Sincerely,
Weiss Associates

Thomas J. Fojut
Staff Geologist

James W. Carmody
Senior Project Hydrogeologist

TJF/JWC:jg

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Attachments:
A - Water Sample Collection Records
B - Chain-of-Custody Form
C - Analytic Reports

cc: E. Paul Hayes, Shell Oil Company, P.O. Box 4848, Anaheim, California 92803

Diane Lundquist, Shell Oil Company, P.O. Box 4023, Concord, California 94524

Lester Feldman, California Regional Water Quality Control Board - San Francisco Bay Region, 1800 Harrison Street, Oakland, California 94612

ATTACHMENT A

WATER SAMPLE COLLECTION RECORDS

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-1 Date 9/17/90 Time of Sampling 1345

Job Name SHELL SAN LEAN. I Job Number 81-422-01 Initials OC

Sample Point Description M (M = Monitoring Well)

Location BY CORNER OF STATION NEAR pump PIER

WELL DATA: Depth to Water 27.49 ft (static, pumping) Depth to Product 0 ft.

Product Thickness 0 Well Depth 45 ft (spec) Well Depth 44.68 ft (sounded) Well Diameter 4 in

Initial Height of Water in Casing 17.19 ft. = volume 11.22 gal.

4 Casing Volumes to be Evacuated. Total to be evacuated 44.9 gal.

EVACUATION METHOD: Pump # and type — Hose # and type —

Bailer# and type 3"x36" PVC Dedicated YES (Y/N)

Other —

Evacuation Time: Stop 1338

Start 1258

Total Evacation Time 40 min.

Total Evacuated Prior to Sampling 46 gal.

Evacuation Rate 1.1 gal. per minute

Depth to Water during Evacuation — ft. — time

Depth to Water at Sampling 27.57 ft. 1401 time

Evacuated Dry? NO After — gal. Time —

80% Recovery = —

% Recovery at Sample Time — Time —

Formulas/Conversions

r = well radius in ft.

h = ht of water col in ft.

vol. in cyl. = $\pi r^2 h$

7.48 gal/ft^3

V_2" casing = 0.163 gal/ft

V_3" casing = 0.367 gal/ft

V_4" casing = 0.653 gal/ft

$V_{4.5}$" casing = 0.826 gal/ft

V_6" casing = 1.47 gal/ft

V8 casing = 2.61 gal/ft

CHEMICAL DATA: Meter Brand/Number

Calibration: 4.0 7.0 10.0

Measured:	SC/µmhos	pH	T°C	Time	Volume Evacuated (gal)

SAMPLE: Color NONE Odor LIGHT

Description of matter in sample: VERY LIGHT SUSPENDED SILT PARTICLES

Sampling Method: FROM DEP. BLR. PORT

Sample Port: Rate — gpm Totalizer — gal.

Time —

# of Cont.	Sample ID	Cont. Type[1]	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analytic Method	Turn[5]	LAB
3	090-1	W/CV	40mL	N	Y	NONE	8015/8020	N	NET
3		"	"				601		
3		W/BPY	1L			↓	8015-DIESEL		
3		"	"	↓	↓	H_2SO_4	TOG 5030	↓	↓

1 Sample Type Codes: W = Water, S = Soil, Describe Other
Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B = Clear/Brown Glass, Describe Other
Cap Codes: PT = Plastic, Teflon lined;
2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 week, R = 24 hour, HOLD (spell)]

ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

2 COOLERS

WEISS ASSOCIATES
5500 Shellmound St., Emeryville, CA 94608
Phone: 415-547-5420 FAX: 415-547-5043

Shell Service Station Address: 1784 150th Ave. San Leandro, CA
Shell Contact: E. Paul Hayes
WIC #: 204-6852-1404
AFE #: 086710

Please send analytic results and a copy of the signed chain of custody form to:
~~Eric Anderson~~ KAREN SIXT (3821)

Project ID: 81-422-01

CHAIN-OF-CUSTODY RECORD AND ANALYTIC INSTRUCTIONS

Sampled by: D. CHARLES

Laboratory Name: NET PACIFIC

Lab Personnel: 1) Specify analytic method and detection limit in report.
2) Notify us if there are any anomalous peaks on GC or other scans.
3) ANY QUESTIONS/CLARIFICATIONS: CALL US.

No. of Containers	Sample ID	Container Type[1]	Sample Date	Vol[2]	Fil[3]	Ref[4]	Preservative (specify)	Analyze for	Analytic Method	Turn[5]	COMMENTS
3	D90-1	W/CV	9/13	40ml	N	Y	NONE	GAS/BETX	8015/8020	N	
↓	↓	"	↓	"	↓	↓	↓	HVOC'S	601	↓	NO 624 METHOD, SUBSTITUTE
↓	↓	W/BPY	↓	1L.	↓	↓	↓	TPH-DIESEL	8015-DIESEL	↓	
↓	↓	"	↓	1L.	↓	↓	H_2SO_4	TOTAL OIL & GREASE	503 E	↓	5 ppm DETEC. LIMIT ON NON POLAR T.O.G.

601 10 day TAT per NP to JS 9/14 12:15

custody seal 9/13/90 @ 19:00

1 [signature] 9/13/90 Released by (Signature), Date
1 WEISS ASSOC Affiliation
2 [signature] 9/13/90 16:35 Received by (Signature), Date
2 NET Affiliation

3 [signature] 9/13 Released by (Signature), Date
3 NET Affiliation
4 Shipping Carrier, Method, Date
4 Affiliation

5 Released by (Signature), Date
5 Affiliation
6 [signature] 9/14/90 Received by Lab Personnel, Date
6 NET Pacific 0800 Affiliation, Telephone

x yes [initials] Seal intact?

1 Sample Type Codes: W = Water, S = Soil, Describe Other; Container Type Codes: V = VOA/Teflon Septa, P = Plastic, C or B - Clear/Brown Glass, Describe Other; Cap Codes: PT = Plastic, Teflon Lined 2 = Volume per container; 3 = Filtered (Y/N); 4 = Refrigerated (Y/N)
5 Turnaround [N = Normal, W = 1 Week, R = 24 Hour, HOLD (write out)]
ADDITIONAL COMMENTS, CONDITIONS, PROBLEMS:

NET NATIONAL ENVIRONMENTAL TESTING, INC.

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

Karen Sixt
Weiss Associates
5500 Shell Mound Rd.
Emeryville, CA 94524

Date: 09-25-90
NET Client Acct. No: 18.09
NET Pacific Log No: 3821
Received: 09-14-90 0800

Client Reference Information

SHELL, 1784 150th Ave., San Leandro; Project: 81-422-01

Sample analysis in support of the project referenced above has been completed and results are presented on following pages. Please refer to the enclosed "Key to Abbreviations" for definition of terms. Should you have questions regarding procedures or results, please feel welcome to contact Client Services.

Approved by:

Jules Skamarack
Laboratory Manager

Enclosure(s)

Ref: SHELL, 1784 150th Ave., San Leandro; Project: 81-422-01

SAMPLE DESCRIPTION: 090-1 09-13-90
LAB Job No: (-62845)

Parameter	Method	Reporting Limit	Results	Units
Oil & Grease(Total)	413.1	5	ND	mg/L
Oil & Grease(Non-Polar)	SM503A/E	10	ND	mg/L
METHOD 601				
DATE ANALYZED			09-20-90	
DILUTION FACTOR*			1	
Bromodichloromethane		0.4	ND	ug/L
Bromoform		0.4	ND	ug/L
Bromomethane		0.4	ND	ug/L
Carbon tetrachloride		0.4	ND	ug/L
Chlorobenzene		0.4	ND	ug/L
Chloroethane		0.4	ND	ug/L
2-Chloroethylvinyl ether		1.0	ND	ug/L
Chloroform		0.4	ND	ug/L
Chloromethane		0.4	ND	ug/L
Dibromochloromethane		0.4	ND	ug/L
1,2-Dichlorobenzene		0.4	ND	ug/L
1,3-Dichlorobenzene		0.4	ND	ug/L
1,4-Dichlorobenzene		0.4	ND	ug/L
Dichlorodifluoromethane		0.4	ND	ug/L
1,1-Dichloroethane		0.4	ND	ug/L
1,2-Dichloroethane		0.4	ND	ug/L
1,1-Dichloroethene		0.4	ND	ug/L
trans-1,2-Dichloroethene		0.4	ND	ug/L
1,2-Dichloropropane		0.4	ND	ug/L
cis-1,3-Dichloropropene		0.4	ND	ug/L
trans-1,3-Dichloropropene		0.4	ND	ug/L
Methylene Chloride		10	ND	ug/L
1,1,2,2-Tetrachloroethane		0.4	ND	ug/L
Tetrachloroethene		0.4	24	ug/L
1,1,1-Trichloroethane		0.4	ND	ug/L
1,1,2-Trichloroethane		0.4	ND	ug/L
Trichloroethene		0.4	ND	ug/L
Trichlorofluoromethane		0.4	ND	ug/L
Vinyl chloride		2.0	ND	ug/L

Ref: SHELL, 1784 150th Ave., San Leandro; Project: 81-422-01

SAMPLE DESCRIPTION: 090-1 09-13-90
LAB Job No: (-62845)

Parameter	Method	Reporting Limit	Results	Units
PETROLEUM HYDROCARBONS			--	
VOLATILE (WATER)			--	
DILUTION FACTOR *			1	
DATE ANALYZED			09-15-90	
METHOD GC FID/5030			--	
as Gasoline		0.05	0.27	mg/L
METHOD 602			--	
DILUTION FACTOR *			1	
DATE ANALYZED			09-15-90	
Benzene		0.5	56	ug/L
Ethylbenzene		0.5	2.4	ug/L
Toluene		0.5	0.75	ug/L
Xylenes, total		0.5	2.8	ug/L
PETROLEUM HYDROCARBONS			--	
EXTRACTABLE (WATER)			--	
DILUTION FACTOR *			1	
DATE EXTRACTED			09-18-90	
DATE ANALYZED			09-19-90	
METHOD GC FID/3510			--	
as Diesel		0.05	0.13	mg/L
as Motor Oil		0.5	ND	mg/L

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following, which supercedes the listed reporting limit.
mean	:	Average; sum of measurements divided by number of measurements.
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.
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.
ND	:	Not detected; the analyte concentration is less than applicable listed reporting limit.
NTU	:	Nephelometric turbidity units.
RPD	:	Relative percent difference, 100 [Value 1 - Value 2]/mean value.
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.
umhos/cm	:	Micromhos per centimeter.

Method References

Methods 601 through 625: see "Guidelines Establishing Test Procedures for the Analysis of Pollutants" U.S. EPA, 40 CFR, Part 136, rev. 1988.

Methods 1000 through 9999: see "Test Methods for Evaluating Solid Waste", U.S. EPA SW-846, 3rd edition, 1986.

* Reporting Limits are a function of the dilution factor for any given sample. To obtain the actual reporting limits for this sample, multiply the stated reporting limits by the dilution factor.