received 1/24/92
SAS LOP # 768

Weiss Associates
Environmental and Geologic Services
5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: 510-547-5420

January 15, 1992

Mr. Scott Seery
Alameda County Department
of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, CA 94621-1426

Re: Shell Service Station
WIC #204-6852-1404
1784 150th Avenue
San Leandro, California 94578
WA Job #81-422-01

Dear Mr. Seery:

This letter describes Weiss Associates' (WA) fourth quarter 1991 activities at the Shell service station referenced above (Figure 1). This status report satisfies the quarterly reporting requirements outlined in our February 23, 1990 workplan, and prescribed by California Administrative Code Title 23 Waters, Chapter 3, Subchapter 16, Article 5, Section 265.d. Included below are:

- Descriptions and results of activities performed in the fourth quarter 1991, and
- Proposed work for the first quarter 1992.

FOURTH QUARTER 1991 ACTIVITIES

During this quarter, WA:

- Collected ground water samples from the one site well,
- Measured the ground water depth and determined the ground water elevation, and
- Analyzed the ground water samples and tabulated the analytic results.

These activities are described below.

Ground Water Sampling

WA collected ground water samples from monitoring well MW-1 (Figure 2) on December 9, 1991, as part of the quarterly ground water monitoring program at Shell Service Station WIC #204-6852-1404 in San Leandro, California.

Sampling Personnel: WA Environmental Technician Bruce Beale

Method of Purging Well: Dedicated PVC bailer

Volume of Water Purged Prior to Sampling:

- Well MW-1 was purged of four well-casing volumes, about 45 gallons.

Method of Collecting Ground Water Samples:

- Drawn through the sampling port on the side of the dedicated PVC bailer

Methods of Containing Ground Water Samples:

- 40 ml glass volatile organic analysis vials, preserved with hydrochloric acid and packed in protective foam sleeves
- 1000 ml amber glass bottles

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, and were received on December 11, 1991

Quality Assurance / Quality Control:

- A travel blank was submitted for analysis.
- An equipment blank was not necessary because the bailer is dedicated to well MW-1.

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

Ground Water Elevation

The water depth was measured in well MW-1 on December 9, 1991. The ground water elevation decreased 0.28 ft from the previous quarter. Depth to water measurements and ground water elevations are presented in Table 1.

Chemical Analyses

The Ground Water Samples were Analyzed for:

- Total petroleum hydrocarbons as gasoline (TPH-G) by modified EPA Method 8015,
- Total petroleum hydrocarbons as diesel (TPH-D) by modified EPA Method 8015,
- Benzene, ethylbenzene, toluene, and xylenes (BETX) by EPA Method 8020, and
- Halogenated volatile organic compounds (HVOCs) by EPA Method 601.

The laboratory analyzed the samples on December 16 and 17, 1991. The results are presented in Table 2 and the analytic reports are included in Attachment B.

Discussion of Ground Water Analytic Results for this Quarter:

- Although 0.14 parts per million (ppm) TPH-G were detected in the ground water sample, the laboratory indicated that the result did not appear to be from gasoline.
- 1,2-Dichloroethane was detected at 0.0054 ppm, which is above the DHS MCL for drinking water of 0.0005 ppm.

Workplan for Additional Wells

On September 23, 1991, WA submitted a subsurface investigation workplan to the Alameda County Department of Environmental Health (ACDEH). The scope of work for the

subsurface investigation is to install two additional wells to assess the horizontal extent of hydrocarbons in soil and ground water, and to assess the ground water gradient and flow direction. WA will begin drilling once the ACDEH approves the workplan. We will submit the investigation results to the ACDEH within about 60 days after drilling.

ANTICIPATED WORK FOR FIRST QUARTER 1992

During the first quarter 1992, on behalf of Shell Oil, WA plans to:

- Install two additional ground water monitoring wells as outlined in WA's workplan,
- Prepare a quarterly status report presenting the results of the well installation, monthly water depths and ground water analytic results.

Please call if you have any questions.

Sincerely,
Weiss Associates

David C. Elias
Staff Geologist

Joseph P. Theisen, C.E.G.
Senior Hydrogeologist

DCE/JPT:fcr

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Attachments: Figures
Tables
A - Water Sample Collection Records
B - Analytic Report and Chain-of-Custody Form

Figure 1. Site Location Map - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

1/9/92

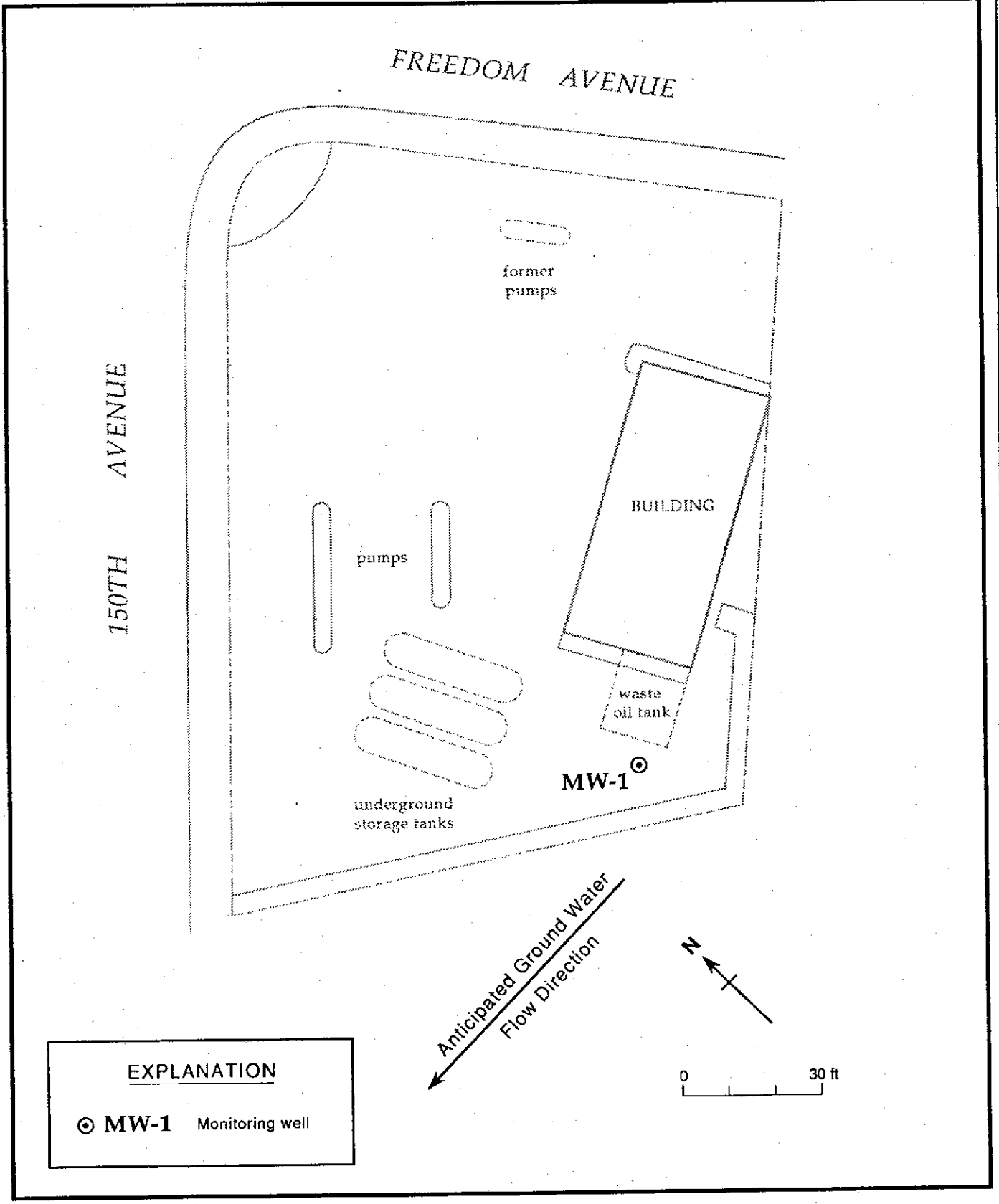

Figure 2. Monitoring Well Location - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

TABLE 1. Ground Water Elevation Data, 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
	12/18/90		27.41	21.72
	03/07/91		25.79	23.34
	06/07/91		25.64	23.49
	09/17/91		27.54	21.59
	12/09/91		27.81	21.32

TABLE 2. Analytic Results for Ground Water - Shell Service Station WIC #204-6852-0703, 1784 150th Avenue, San Leandro, California

Well ID	Date Sampled	Depth to Water (ft)	TPH-G	TPH-D[a]	B	E	T	X	TOG	1,2-DCA
			<----------parts per million (mg/L)---------->							
MW-1	03/08/90	25.29	0.51	0.12	0.0015	<0.0005	0.0008	0.0054	<10	0.012
	06/12/90	25.85	0.39	0.10	0.086	0.0007	0.0013	0.0062	<10	<0.0004
	09/13/90	27.49	0.10	0.13	0.056	0.0024	0.00075	0.0028	<10	<0.0004[b]
	12/18/90	27.41	0.48	<0.05	0.054	0.0033	0.0017	0.0037	<10	0.0053
	03/07/91	25.79	0.08	<0.05	0.026	0.0012	<0.0005	<0.0015	---	0.0067
	06/07/91	25.64	0.51	<0.05	0.130	0.0061	0.0038	0.011	---	0.0079
	09/17/91	27.54	0.33	0.12[c]	0.067	0.0030	<0.0005	0.0022	---	0.0060
	12/09/91	**27.81**	**0.14[d]**	**0.08**	**<0.0005**	**0.0017**	**<0.0005**	**0.0047**	**---**	**0.0054**
Trip Blank	03/08/90		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	06/12/90		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	12/18/90		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	03/07/91		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	06/07/91		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	09/17/91		<0.05	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
	12/09/91		**<0.05**	**---**	**<0.0005**	**<0.0005**	**<0.0005**	**<0.0005**	**---**	**---**
Bailer Blank	03/08/90		<0.050	---	<0.0005	<0.0005	<0.0005	<0.0005	---	---
DHS MCLs			NE	NE	0.001	0.680	0.10[e]	1.750	NE	0.0005

Abbreviations:

TPH-G = Total Petroleum Hydrocarbons as Gasoline by Modified EPA Method 8015
TPH-D = Total Petroleum Hydrocarbons as Diesel by Modified EPA Method 8015
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
TOG = Total non-polar oil and grease by American Public Health Association Standard Methods 5520F
1,2-DCA = 1,2-Dichloroethane by EPA Method 601
--- = Not analyzed
<n = Not detected above detection limit of n ppm
DHS MCLs = California Department of Health Services maximum contaminant levels for drinking water
NE = Not established

Analytical Laboratory:

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

Notes:

a = Samples were also analyzed for total petroleum hydrocarbons as motor oil (TPH-MO). No TPH-MO has been detected above detection limit of 0.5 ppm.
b = Tetrachloroethene (PCE) detected at 0.024 ppm by EPA Method 601; DHS MCL for PCE = 0.005 ppm.
c = Result is due to a non-diesel hydrocarbon compound
d = Result due to a non-gasoline hydrocarbon compound
e = DHS recommended action level for drinking water; MCL not established

ATTACHMENT A

WATER SAMPLE COLLECTION RECORDS

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name MW-1 Date 12/9/91 Time of Sampling 12:45
Job Name Shell San Leandro I Job Number 81-422-01 Initials BDB
Sample Point Description M (M = Monitoring Well)
Location Southern Corner of Site

WELL DATA: Depth to Water 27.81 ft (static) pumping) @ 11:50 Depth to Product — ft.
Product Thickness — Well Depth — ft (spec) Well Depth 44.76 ft(sounded) Well Diameter 4 in
Initial Height of Water in Casing 16.95 ft. = volume 11.07 gal.
4 Casing Volumes to be Evacuated. Total to be evacuated 44.27 gal.

EVACUATION METHOD: Pump # and type — Hose # and type —
Bailer# and type 3"x36" PVC Dedicated yes (Y/N)
Other —

Evacuation Time: Stop 12:43 — —
Start 12:04 — —
Total Evacation Time 39
Total Evacuated Prior to Sampling 45.0 gal.
Evacuation Rate 1.15 gal. per minute
Depth to Water during Evacuation — ft. — time
Depth to Water at Sampling 27.87 ft. 12:50 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.)
			N/A		

SAMPLE: Color Grey Odor None
Description of matter in sample: Silty Suspended Sediment
Sampling Method: DE: BDB Sampled from a port on a ded. PVC bailer
Sample Port: Rate 1.15 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	121-01	w/cv	40ml	No	yes	None	EPA 8015/602	N	NET
3	121-01	w/cv	40ml	↓	↓	↓	EPA 601	N	NET
3	121-01	w/BC-PT	1l	↓	↓	↓	↓	↓	↓

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:

* Distilled water: Arrowhead MIL EXP 10/16/93
1A 09:37

WEISS ASSOCIATES

WATER SAMPLING DATA

Well Name Trip Blanks Date 12/9/91 Time of Sampling 07:45

Job Name Shell San Leandro I Job Number 81-422-01 Initials JDB

Sample Point Description N/A (M = Monitoring Well)

Location

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

Product Thickness _____ Well Depth ____ ft (spec) Well Depth _____ ft(sounded) Well Diameter ____ in

Initial Height of Water in Casing _____ ft. = volume _____ gal.

_____ Casing Volumes to be Evacuated. Total to be evacuated _____ gal.

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

Bailer# and type _____ Dedicated _____ (Y/N)

Other _____

Evacuation Time: Stop _____ _____ _____

Start _____ _____ _____

Total Evacation Time _____

Total Evacuated Prior to Sampling N/A gal.

Evacuation Rate _____ gal. per minute

Depth to Water during Evacuation _____ ft. _____ time

Depth to Water at Sampling _____ ft. _____ time

Evacuated Dry? _____ 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 Clear Odor None

Description of matter in sample: None

Sampling Method: distilled water

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	121-21	W/cv	40ml	No	yes	None	EPA 8015/602	N	NET

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:

ATTACHMENT B

ANALYTIC REPORT AND CHAIN-OF-CUSTODY FORM

NATIONAL
ENVIRONMENTAL
TESTING, INC.

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

David Elias
Weiss Associates
5500 Shellmound St.
Emeryville, CA 94608

Date: 12/22/1991
NET Client Acct. No: 1809
NET Pacific Log No: 91.1156
Received: 12/11/1991

Client Reference Information

SHELL, 1784 150th Ave., San Leandro, Job: 81-442-01

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, Job: 81-442-01

SAMPLE DESCRIPTION: 121-01
Date Taken: 12/09/1991
Time Taken:
LAB Job No: (-107491)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Liquid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			12-17-91	
DILUTION FACTOR*			1	
as Gasoline		0.05	0.14 **	mg/L
METHOD 8020 (GC,Liquid)			--	
DATE ANALYZED			12-17-91	
DILUTION FACTOR*			1	
Benzene		0.0005	ND	mg/L
Ethylbenzene		0.0005	0.0017	mg/L
Toluene		0.0005	ND	mg/L
Xylenes (Total)		0.0005	0.0047	mg/L
METHOD 3510 (GC,FID)				
DILUTION FACTOR*			1	
DATE EXTRACTED			12-13-91	
DATE ANALYZED			12-17-91	
as Diesel		0.05	0.08	mg/L
as Motor Oil		0.5	ND	mg/L

** NOTE: Petroleum hydrocarbon as gasoline result is due to a petroleum hydrocarbon that does not appear to be gasoline.

Ref: SHELL, 1784 150th Ave., San Leandro, Job: 81-442-01

SAMPLE DESCRIPTION: 121-01
Date Taken: 12/09/1991
Time Taken:
LAB Job No: (-107491)

Parameter	Method	Reporting Limit	Results	Units
METHOD 601 (GC,Liquid)				
DATE ANALYZED			12-16-91	
DILUTION FACTOR*			1	
Bromodichloromethane		0.0004	ND	mg/L
Bromoform		0.0004	ND	mg/L
Bromomethane		0.0004	ND	mg/L
Carbon tetrachloride		0.0004	ND	mg/L
Chlorobenzene		0.0004	ND	mg/L
Chloroethane		0.0004	ND	mg/L
2-Chloroethylvinyl ether		0.001	ND	mg/L
Chloroform		0.0004	ND	mg/L
Chloromethane		0.0004	ND	mg/L
Dibromochloromethane		0.0004	ND	mg/L
1,2-Dichlorobenzene		0.0004	ND	mg/L
1,3-Dichlorobenzene		0.0004	ND	mg/L
1,4-Dichlorobenzene		0.0004	ND	mg/L
Dichlorodifluoromethane		0.0004	ND	mg/L
1,1-Dichloroethane		0.0004	ND	mg/L
1,2-Dichloroethane		0.0004	0.0054	mg/L
1,1-Dichloroethene		0.0004	ND	mg/L
trans-1,2-Dichloroethene		0.0004	ND	mg/L
1,2-Dichloropropane		0.0004	ND	mg/L
cis-1,3-Dichloropropene		0.0004	ND	mg/L
trans-1,3-Dichloropropene		0.0004	ND	mg/L
Methylene chloride		0.010	ND	mg/L
1,1,2,2-Tetrachloroethane		0.0004	ND	mg/L
Tetrachloroethene		0.0004	ND	mg/L
1,1,1-Trichloroethane		0.0004	ND	mg/L
1,1,2-Trichloroethane		0.0004	ND	mg/L
Trichloroethene		0.0004	ND	mg/L
Trichlorofluoromethane		0.0004	ND	mg/L
Vinyl chloride		0.0004	ND	mg/L

Ref: SHELL, 1784 150th Ave., San Leandro, Job: 81-442-01

SAMPLE DESCRIPTION: 121-21
Date Taken: 12/09/1991
Time Taken:
LAB Job No: (-107492)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Liquid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			12-17-91	
DILUTION FACTOR*			1	
as Gasoline		0.05	ND	mg/L
METHOD 8020 (GC,Liquid)			--	
DATE ANALYZED			12-17-91	
DILUTION FACTOR*			1	
Benzene		0.0005	ND	mg/L
Ethylbenzene		0.0005	ND	mg/L
Toluene		0.0005	ND	mg/L
Xylenes (Total)		0.0005	ND	mg/L

Ref: SHELL, 1784 150th Ave., San Leandro, Job: 81-442-01

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Diesel	0.05	mg/L	88	ND	54	56	2.5
Motor Oil	0.5	mg/L	91	ND	N/A	N/A	N/A
Gasoline	0.05	mg/L	97	ND	89	101	13
Benzene	0.0005	mg/L	88	ND	89	95	6.5
Toluene	0.00005	mg/L	97	ND	91	98	7.4

COMMENT: Blank Results were ND on other analytes tested.

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Chlorobenzene	0.0004	mg/L	97	ND	89	93	4.4
1,1-Dichloroethene	0.0004	mg/L	89	ND	73	96	27
Trichloroethene	0.0004	mg/L	101	ND	98	99	1.0

COMMENT: Blank Results were ND on other analytes tested.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: 2612

Date:
Page 1 of 1

Site Address: 1784 150th Av
San Leandro, CA

WIC#: 204-6852-1404

Shell Engineer: Kurt Miller
Phone No. (510) 685-3853
Fax #:

Consultant Name & Address: Weiss Associates
5500 Shellmound St. Emeryville, CA 94608

Consultant Contact: David Elias
Phone No. (510) 547-5420
Fax #:

Job Number: 81-422-01

Comments:

Sampled By:
Printed Name: Bruce Beale

LAB: NET PACIFIC

CHECK ONE (1) BOX ONLY	CT/DT	TURN AROUND TIME
Quarterly Monitoring	X 5461	24 hours ☐
Site Investigation	☐ 5441	48 hours ☐
Soil for disposal	☐ 5442	15 days X (Normal)
Water for disposal	☐ 5443	Other ☐ ____
Air Sample- Sys O&M	☐ 5452	NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.
Water Sample - Sys O&M	☐ 5453	
Other	☐	

Analysis Required

Sample ID	Date	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	TPH + BTEX (EPA 8015/8020 combined)	HVOCs (EPA 601)	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
121-01	12/9/91		X		3	X		X			X		40ml				
121-01	↓		↓		↓							X	40ml				
121-01							X						1l				
* 121-21						X		X			X		40ml				Analyze only if other Sample Test positive for BTEX
																SEALED AT WEISS	

Relinquished By (signature): Bruce Beale	Printed name: Bruce Beale	Date: 12/9/91 Time: 15:45	Received (signature): Ronald C. Jensen	Printed name: RONALD C. JENSEN	Date: 12/10/91 Time: 08:15
Relinquished By (signature): Ronald C. Jensen	Printed name: RONALD C JENSEN	Date: 12/10/91 Time: 12:40	Received (signature): Mike Tavani	Printed name: MIKE TAVANI	Date: 12/10/91 Time: 12:40
Relinquished By (signature): Mike Tavani	Printed name: MIKE TAVANI	Date: 12/10/91 Time: 1400	Received (signature): A. Lopez	Printed name: A. Lopez	Date: 12/11/91 Time: 0830

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Last Revision Date: 10/15/91

RECEIVED FROM SECURE AREA

→ Stored overnight in a locked secure place 12/9/91 → 12/10/91