LOP 768

Weiss Associates Environmental and Geologic Services

5500 Shellmound Street, Emeryville, CA 94608-2411 Fax: 510-547-5043 Phone: **510-547-5420**

Reviewed 8/12/92 SJC

April 27, 1992

Dan Kirk
Shell Oil Company
P.O. Box 5278
Concord, California 94520-9998

Re: Subsurface Investigation
Shell Service Station
WIC #204-6852-1404
1784 150th Avenue
San Leandro, California
WA Job #81-422-02

Dear Mr. Kirk:

This letter presents the results of Weiss Associates' (WA) subsurface investigation at the Shell service station referenced above (Figure 1). The investigation objectives were to assess whether hydrocarbons are in soil and ground water downgradient of the existing underground fuel storage tanks and to determine the ground water flow direction and gradient beneath the site, as outlined in WA's September 23, 1991 workplan.[1]

SCOPE OF WORK

WA's scope of work for this investigation was to:

- Drill and sample one boring within 10 ft of the anticipated downgradient side of the underground fuel storage tanks and install a ground water monitoring well in the boring to assess whether hydrocarbons are in soil or ground water downgradient of the tanks (Figure 2),

- Install a ground water monitoring well on the anticipated upgradient side of the site to assess water quality upgradient of the tanks, and

[1] WA, September 23, 1991, Consultant's letter-workplan regarding the proposed installation of two ground water monitoring wells at the Shell service station at 1784 150th Avenue in San Leandro, California, 4 pages.

- Assess the ground water flow direction and gradient using data from the two newly installed wells and one existing ground water monitoring well.

INVESTIGATION RESULTS

Site Setting

Topography: The site is at the base of the San Leandro Hills, which are northeast of the site across Highway 580 (Figure 1). Local topography slopes westward and the site is about 50 ft above mean sea level.

Surroundings: Mixed commercial and residential development

Adjacent Hydrocarbon Sources: An Arco service station is located southeast and upgradient of the site (Figure 3). However, according to California Regional Water Quality Control Board-San Francisco Bay Region (RWQCB) records and the Alameda County Department of Environmental Health,[2] no soil or ground water investigation report is on file for this site. RWQCB records indicate a fuel leak investigation was conducted at Fairmont Hospital, up- and crossgradient of the site.

Wells in the Site Vicinity: 21 wells are within one-half mile of the site; one domestic supply well was identified at Fairmont Hospital, about 0.5 mile east-southeast (upgradient) of the site (Figure 4, Table 1)

Site Geology: Sediments in the site vicinity are Quaternary alluvial deposits derived from Mesozoic marine and Pliocene and Mesozoic intrusive rocks of the Diablo Range. The site is within 0.25 miles of the Hayward Fault Zone.

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2 Telephone conversation between Alameda County Department of Environmental Health hazardous materials specialist Scott Seery and WA Geologist Thomas Fojut regarding fuel leak investigations in the vicinity of the Shell service station at 1784 150th Avenue in San, Leandro, California, February 26, 1992.

Previous Investigations

1986 Waste Oil Tank Removal: In November 1986, Petroleum Engineering of Santa Rosa, California removed a 550-gallon waste oil tank and installed a new 550-gallon fiberglass tank in the former tank pit. Immediately following the tank removal, Blaine Tech Services (BTS) of San Jose, California collected a soil sample beneath the former tank location at 8 ft depth. The soil sample contained 196 parts per million (ppm) petroleum oil and grease (POG).[3] BTS collected another soil sample at 11 ft depth while excavating the tank pit to a total depth of 16 ft. The 11 ft depth sample contained 167 ppm POG. BTS did not collect a soil sample from 16 ft depth. No ground water was encountered in the tank excavation.[4]

1990 Well Installation: In March 1990, WA installed ground water monitoring well MW-1 adjacent to the waste oil tank.[5] The boring log for well MW-1 is included in Attachment B. Analytic results for soil from this boring are compiled in Table 2. WA has sampled well MW-1 quarterly since March 1990. Previous ground water analytic and elevation data are compiled in Tables 3 and 4, respectively.

Drilling

Drilling Dates:	February 5 and 6, 1992
Drilling Geologist:	Tom Fojut
Drilling Method:	CME-55 hollow-stem auger drill rig. (Drilling and sampling procedures are presented in Attachmet A.)
Number or Borings:	2 (BH-B and BH-C, Figure 2)
Boring Depths:	42 and 45 ft

3 BTS, November 21, 1986, Sampling Report 86311-F4, Shell Service Station, 1784 150th Avenue, San Leandro, California, Consultant's letter-report prepared for Shell Oil Company, 3 pages and 2 attachments.

4 BTS, November 21, 1986, Sampling Report 86315-M2, Shell Service Station, 1784 150th Avenue, San Leandro, California, Consultant's letter-report prepared for Shell Oil Company, 3 pages and 2 attachments.

5 WA, July 31, 1990, Consultant's letter-report prepared for the Alameda County Department of Environmental Health (ACDEH) regarding second quarter 1990 activities at the Shell service station located at 1784 150th Avenue in San, Leandro, California, 10 pages and 2 attachments.

Number of Wells:	2 (MW-2 and MW-3, Figure 2)
Sediments Encountered:	Silty clay to about 14 ft depth; sandy silt and silty sand between about 14 and 45 ft depth. The boring logs and well construction details are presented in Attachment B.
Waste Disposal:	Soil cuttings were disposed at the Browning-Ferris, Inc. (BFI) landfill in Livermore, California as Class III waste; steam clean rinsate and purge water were recycled at the Shell Refinery in Martinez, California.

Well Construction

Well Materials:	4-inch diameter Schedule 40 PVC well casing with 0.010-inch slotted screen; Monterey #1/20 sand
Screened Interval:	About 25 to 45 ft depth for well MW-2 and 22 to 42 ft depth for well MW-3
Well Development Method:	Surge block agitation and airlift evacuation
Flow Rate:	2 to 3 gallons per minute during well development
Ground Water Depth:	20 to 26 ft below grade (Table 4)
Ground Water Flow Direction:	West-northwestward with a gradient of about 0.0012 ft/ft (Figure 2)

HYDROCARBON DISTRIBUTION IN SOIL

Boring BH-B was drilled immediately west-northwest and downgradient of the existing underground fuel storage tanks to assess whether hydrocarbons were in soil and to install a ground water monitoring well within 10 ft of the tanks. Boring BH-C was drilled near the eastern corner of the site to install a ground water monitoring well upgradient of the tanks and pump islands. Soil samples from near the water table from the two borings contained up to 79 ppm total petroleum hydrocarbons as gasoline (TPH-G) (Table 2, Attachment C). Although

boring BH-C is over 100 ft upgradient of the tanks, up to 68 ppm TPH-G were detected in soil near the water table. Based on these results, hydrocarbons in soil are generally within a few ft of the water table.

HYDROCARBON DISTRIBUTION IN GROUND WATER

Monitoring wells MW-2 and MW-3 were installed in borings BH-B and BH-C, respectively. Hydrocarbons have been detected in water samples from the one pre-existing and two new wells, at up to 17 ppm TPH-G and 6.2 ppm benzene from well MW-2 (Table 3, Attachment D). Since the BETX to TPH-G ratio is lower in samples from well MW-3 than in samples from well MW-2, the source of the hydrocarbons detected in well MW-3 may not be the same as the source of the hydrocarbons in wells MW-1 and MW-2. **Given the west-northwestward ground water flow direction, the hydrocarbons detected in ground water from well MW-3 may have migrated onto the Shell site from an offsite source, possibly the upgradient Arco station.**

This needs to be confirmed through monthly GW gradient determinations for 12 conseq. months. Because of nearly "stagnant" conditions (e.g. [illegible]), MW-3 may be impacted by fluctuating gradient directions seasonally or in part, as flat gradient allowing plume to "pancake."

We appreciate this opportunity to provide hydrogeologic consulting services to Shell and trust this submittal meets your needs. Please call if you have any questions or comments.

Sincerely,
Weiss Associates

Thomas Fojut
Staff Geologist

N. Scott MacLeod
Project Geologist

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

REGISTERED GEOLOGIST
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TF/NSM/JPT:fcr

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Attachments: Figures
Tables
A - Sampling Procedures
B - Boring Logs
C - Analytic Results for Ground Water
D - Analytic Results for Soil

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

1/9/92

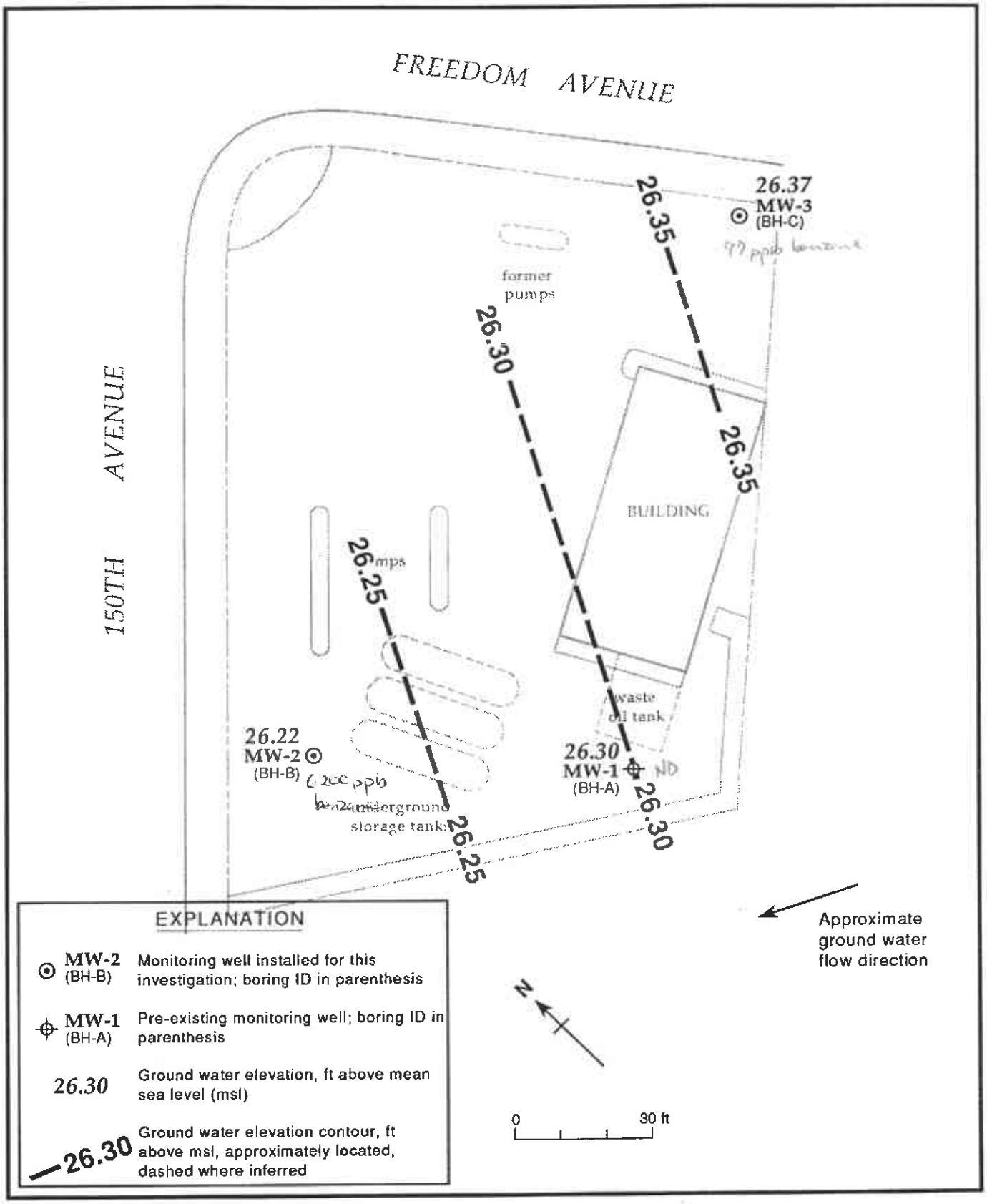


Figure 2. Monitoring Well Locations and Ground Water Elevations - [illegible] Shell Service Station
WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

3/5/92

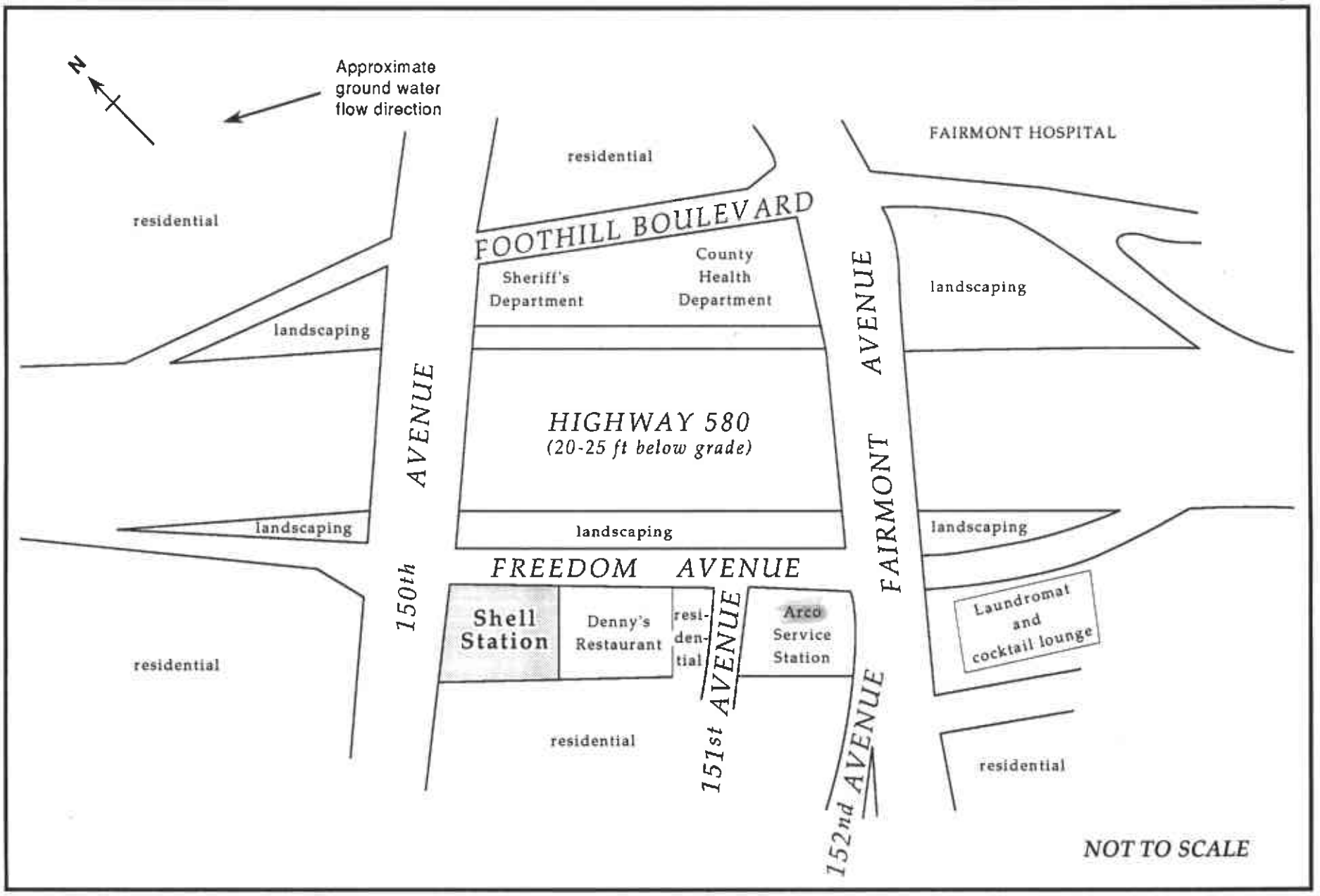
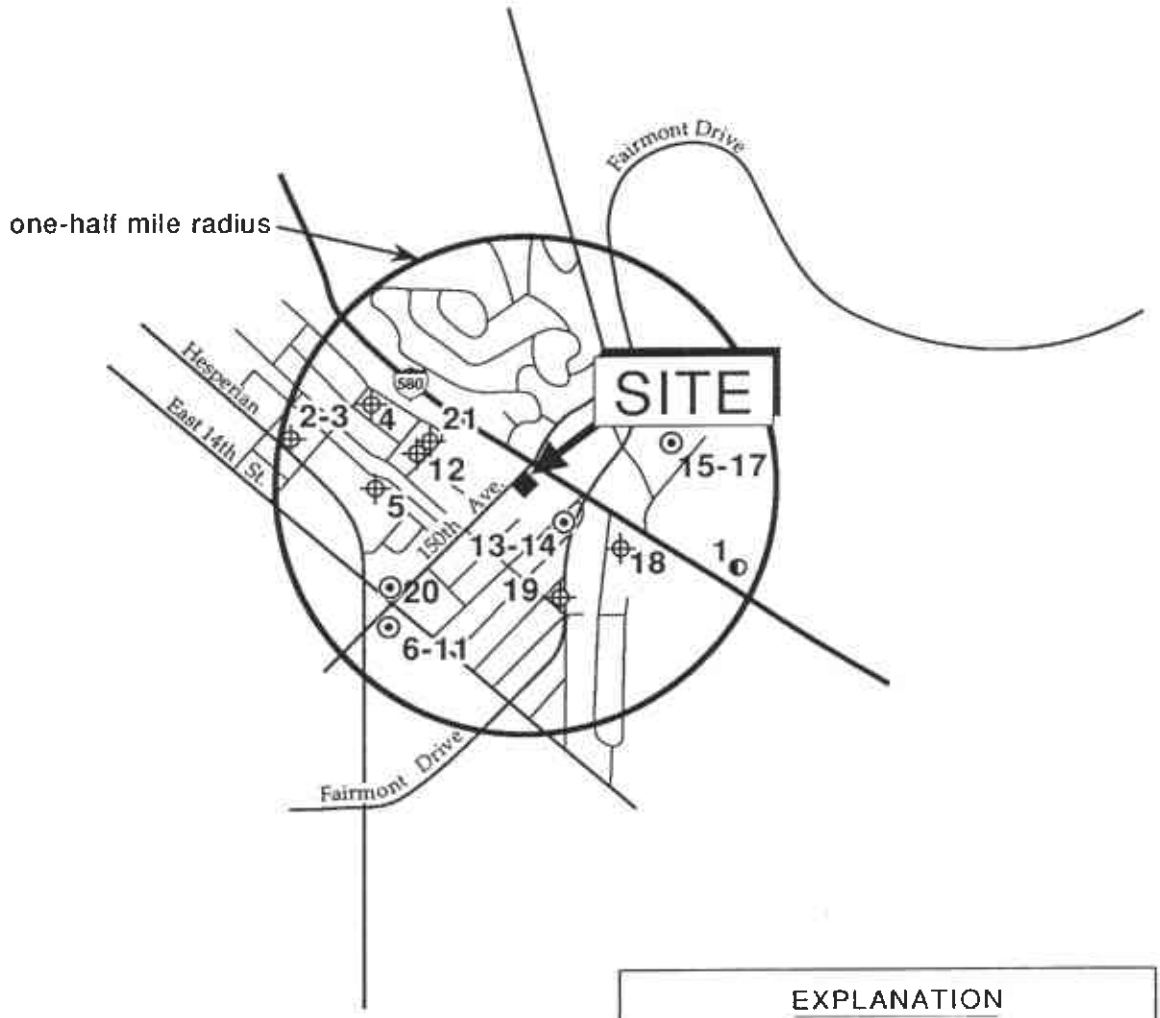
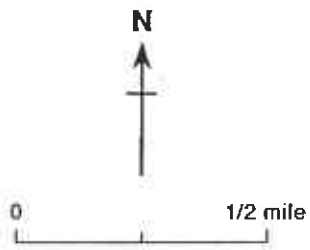


Figure 3. Businesses and Properties in the Site Vicinity - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

4/1/92





EXPLANATION

⊙13	Approximate location and number of monitoring well listed in Table 1
⊕ 2	Approximate location and number of irrigation well listed in Table 1
◐ 1	Approximate location and number of domestic supply well listed in Table 1

Figure 4. Wells Within One-Half Mile of Shell Service Station WIC #204-6852-1404, 150th Avenue, San Leandro, California

4/10/92

Table 1. Wells Within One-Half Mile of Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

ID	Owner	Location	Use	Year Drilled
1	Fairmont Hospital	15400 Foothill Bl	Domestic	1952
2-3	Howard E. Green	14753 Craft Ave	Irrigation	1977
4	Robert W. Bennett, Jr.	14830 Sylvia Wy	Irrigation	1977
5	Carl C. McEbcoy	14852 Towers St	Irrigation	1977
6-11	Triequity	15035 E 14th St	Monitoring	1990
12	John Deburn	1614 Halsey	Irrigation	1977
13-14	Mohammad A. Washhoon	15101 Freedom Ave Arco Service Station	Monitoring	1989
15-17	Fairmont Hospital	15400 Foothill Bl	Monitoring	1989
18	Phillip Gonsales	Oriole & Liberty	Irrigation	1977
19	Paul M. Fearon	1573 153rd Ave	Irrigation	1977
20	C&H Development Co.	150th Av & E 14th St	Monitoring	1988
21	August Farias	1725 Halsey	Irrigation	1977

Table 2. Analytic Results for [redacted] - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

Boring ID (Well ID)	Sample Depth (ft)	Date Sampled	Ground Water Depth (ft)	TPH-G	TPH-D	POG[a]	B	E	T	X	HVOCs
				<----------parts per million (mg/kg)---------->							
BH-A	5.0	03/05/90	34.1	<1	---	<100	<0.0025	<0.0025	<0.0025	<0.0025	b
(MW-1)	15.7			<1	---	<100	<0.0025	<0.0025	<0.0025	<0.0025	b
	24.7			<1	<1[c]	<100	0.020	<0.0025	<0.0025	<0.0025	b
	29.2			35	---	<100	0.23	0.20	<0.025	0.64	d
	41.2			<1	---	<100	<0.0025	<0.0025	<0.0025	<0.0025	b
BH-B	11.5	02/04/92	23.8	<1	---	---	0.0026	<0.0025	<0.0025	<0.0025	b
(MW-2)	16.5			<1	---	---	0.0058	<0.0025	<0.0025	<0.0025	---
	21.5			79	23[e]	---	0.20	0.60	1.0	4.1	b
	26.5			74	---	---	0.59	0.91	1.5	3.9	---
BH-C	11.5	02/05/92	28.8	<1	---	---	0.0042	0.0029	0.0039	<0.0025	b
(MW-3)	21.5			<1	---	---	<0.0025	<0.0025	<0.0025	<0.0025	b
	26.5			3.9	4.9[e]	---	<0.0025	<0.0025	<0.0025	0.0054	b
	31.5			68	---	---	<0.05	<0.05	<0.05	0.17	---

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
POG = Petroleum Oil and Grease by American Public Health Association (APHA) Standard Method 503E
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
HVOCs = Halogenated volatile organic compounds by EPA Method 8010
--- = Not analyzed
<n = Not detected above method detection limit of n ppm

Analytical Laboratory:

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

Notes:

a = No total oil and grease detected above APHA Standard Method 503D detection limit of 50 ppm in any soil samples from boring BH-A
b = No HVOCs detected
c = No total petroleum hydrocarbons as motor oil detected above Modified EPA Method 8015 detection limit of 10 ppm
d = 0.0064 ppm 1,2-dichloroethane detected
e = NET reported that detected compounds are hydrocarbons lighter than diesel

TABLE 3. 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	POG	B	E	T	X	1,2-DCA
			<----------parts per million (mg/l)---------->							
MW-1	03/08/90	25.29	0.51	0.12[a]	<10	0.0015	<0.0005	0.0008	0.0054	0.012
	06/12/90	25.85	0.39	0.10[a]	<10	0.086	0.0007	0.0013	0.0062	<0.0004
	09/13/90	27.49	0.10	0.13[a]	<10	0.056	0.0024	0.00075	0.0028	<0.0004[b]
	12/18/90	27.41	0.48	<0.05[a]	<10	0.054	0.0033	0.0017	0.0037	0.0053
	03/07/91	25.79	0.08	<0.05[a]	---	0.026	0.0012	<0.0005	<0.0015	0.0067
	06/07/91	25.64	0.51	<0.05[a]	---	0.13	0.0061	0.0038	0.011	0.0079
	09/17/91	27.54	0.33	0.12[ac]	---	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
MW-2	02/24/92	19.61	17	2.7[c]	---	6.2	0.55	1.6	1.9	0.20
MW-3	02/24/92	25.60	4.5	1.3[c]	---	0.097	0.078	<0.005	0.018	0.0091
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	---
	02/24/92		<0.05	---	---	<0.0005	0.0006	0.0025	0.0022	---
DTSC MCLs			NE	NE	NE	0.001	0.680	0.10[e]	1.750	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
POG = Petroleum oil and grease by American Public Health Association Standard Method 503E or 5520F
B = Benzene by EPA Method 8020
E = Ethylbenzene by EPA Method 8020
T = Toluene by EPA Method 8020
X = Xylenes by EPA Method 8020
1,2-DCA = 1,2-Dichloroethane by EPA Method 601
--- = Not analyzed
<n = Not detected above method detection limit of n ppm
DTSC MCLs = California Department of Toxic Substances Control maximum contaminant levels for drinking water
NE = Not established

Analytical Laboratory:

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

Notes:

a = No total petroleum hydrocarbons as motor oil detected by modified EPA Method 8015 with a detection limit of 0.5 ppm.
b = Tetrachloroethene (PCE) detected at 0.024 ppm by EPA Method 601; DTSC MCL for PCE = 0.005 ppm.
c = NET reported that detected compounds are lighter than diesel
d = NET reported that detected compound is a non-gasoline hydrocarbon
e = DTSC recommended action level for drinking water; MCL not established

STANDARD FIELD PROCEDURES

WA has developed standard procedures for drilling and sampling soil borings and installing, developing and sampling ground water monitoring wells. These procedures comply with Federal, State and local regulatory guidelines. Specific procedures are summarized below.

SOIL BORING AND SAMPLING

Objectives/Supervision

Soil sampling objectives include characterizing subsurface lithology, assessing whether the soils exhibit obvious hydrocarbon or other compound vapor or staining, and collecting samples for analysis at a State-certified laboratory. All borings are logged using the Unified Soil Classification System by a trained geologist working under the supervision of a California Registered Geologist (RG) or a Certified Engineering Geologist (CEG).

Soil Boring and Sampling

Deep soil borings or borings for well installation are typically drilled using hollow-stem augers. Split-barrel samplers lined with steam-cleaned brass or stainless steel tubes are driven through the hollow auger stem into undisturbed sediments at the bottom of the borehole using a 140 pound hammer dropped 30 inches. Soil samples can also be collected without using hollow-stem augers by progressively driving split-barrel soil samplers to depths of up to 30 ft.

Soil samples are collected at least every five ft to characterize the subsurface sediments and for possible chemical analysis. Near the water table and at lithologic changes, the sampling interval may be less than five ft.

Drilling and sampling equipment is steam-cleaned prior to drilling and between borings to prevent cross-contamination. Sampling equipment is washed between samples with trisodium phosphate or an equivalent EPA-approved detergent.

Sample Analysis

After noting the lithology at each end of the sampling tubes, the tube chosen for analysis is immediately trimmed of excess soil and capped with teflon tape and plastic end

caps. The sample is labelled, stored at or below 4°C, and transported under chain-of-custody to a State-certified analytic laboratory.

Screening

One of the remaining tubes is partially emptied leaving about one-third of the soil in the tube. The tube is capped with plastic end caps and set aside to allow hydrocarbons to volatilize from the soil. After ten to fifteen minutes, a portable photoionization detector (PID) measures volatile hydrocarbon vapor concentrations in the tube headspace, extracting the vapor through a slit in the cap. PID measurements are used along with the stratigraphy and ground water depth to select soil samples for analysis.

Grouting

If the borings are not completed as wells, the borings are filled to the ground surface with cement grout poured or pumped through a tremie pipe. If wells are completed in the borings, the well installation, development and sampling procedures summarized below are followed.

MONITORING WELL INSTALLATION, DEVELOPMENT AND SAMPLING

Well Construction and Surveying

Wells are installed to monitor ground water quality and determine the ground water elevation, flow direction and gradient. Well depths and screen lengths are based on ground water depth, occurrence of hydrocarbons or other compounds in the borehole, stratigraphy and State and local regulatory guidelines. Well screens typically extend 15 ft below and 5 ft above the static water level at the time of drilling. However, the well screen will generally not extend into or through a clay layer that is at least three ft thick.

Well casing and screen are flush-threaded, Schedule 40 PVC. Screen slot size varies according to the sediments screened, but slots are generally 0.010 or 0.020 inches wide. A rinsed and graded sand occupies the annular space between the boring and the well screen to about one to two ft above the well screen. A two ft thick hydrated bentonite seal separates the sand from the overlying sanitary surface seal composed of cement with 3-5% bentonite.

Well-heads are secured by locking well-caps inside traffic-rated vaults finished flush with the ground surface. A stovepipe may be installed between the well-head and the vault cap for additional security.

The well top-of-casing elevation is surveyed with respect to mean sea level and the well is surveyed for horizontal location with respect to an onsite or nearby offsite landmark.

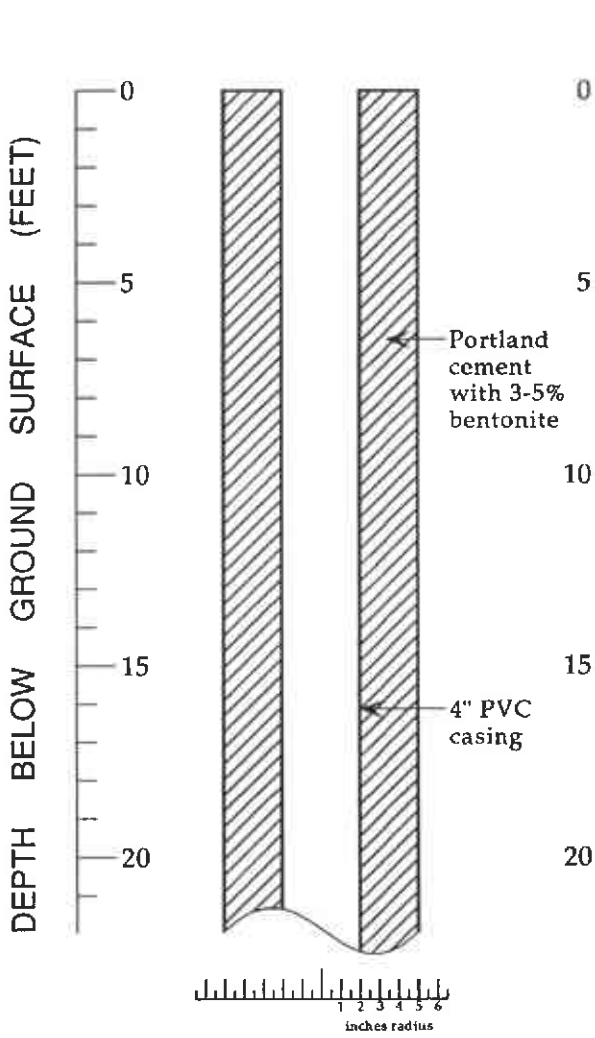
Well Development

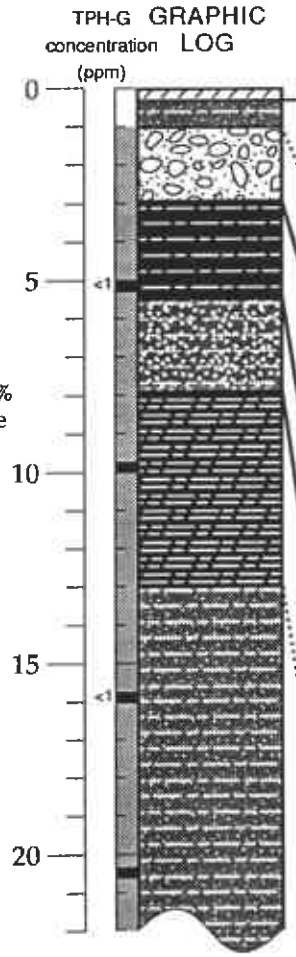
After 24 hours, the wells are developed using a combination of ground water surging and extraction. Surging agitates the ground water and dislodges fine sediments from the sand pack. After about ten minutes of surging, ground water is extracted from the well using bailing, pumping and/or reverse air-lifting through an eductor pipe to remove the sediments from the well. Surging and extraction continue until at least ten well-casing volumes of ground water are extracted and the sediment volume in the ground water is negligible. All equipment is steam-cleaned prior to use and air used for air-lifting is filtered to prevent oil entrained in the compressed air from entering the well. Wells that are developed using air-lift evacuation are not sampled until at least 24 hours after they are developed.

Ground Water Sampling

Depending on local regulatory guidelines, three to four well-casing volumes of ground water are purged prior to sampling. Purging continues until ground water pH, conductivity, and temperature have stabilized. Ground water samples are collected using bailers or pumps and are decanted into the appropriate containers supplied by the analytic laboratory. Samples are labelled, placed in protective foam sleeves, stored at 4°C, and transported under chain-of-custody to the laboratory. Laboratory-supplied trip blanks accompany the samples and are analyzed to check for cross-contamination. An equipment blank may be analyzed if non-dedicated sampling equipment is used.

WELL MW-1 (BH-A)





DESCRIPTION

Asphaltic concrete

Sandy SILT (ML); dark brown; soft; damp; <5% clay; 75% silt; 25% fine to medium sand; low plasticity; low to moderate K

Gravelly SAND (SW); brown; medium dense; dry; 15% silt; 60% sand; 25% weathered gravel to 2" diameter; moderate to high K

Silty CLAY (CL); dark brown mottled orange and green; stiff; damp; 45% clay; 30% silt; 25% sand; medium to high plasticity; very low K

Gravelly sand lens at 5.3'

Silty SAND (SM); dark brown; loose; moist; <5% clay; 35% silt; 45% fine to coarse sand; 20% gravel to 1" diameter; moderate to high K

Clayey SILT/Silty CLAY (OH); black; medium stiff; 40% clay; 40% silt; 20% very fine sand; roots and grasses; high plasticity; very low K

Tile shard at 9.7'

Sandy SILT/Clayey SILT (ML); green-gray; very stiff; damp; 20% clay; 60% silt; 20% fine to coarse sand; medium to high plasticity; low K

3" sandy GRAVEL lens at 18.0'

Rootlets at 18.7'

Light brown-gray from 19.5'

6" sand lens at 22'

EXPLANATION

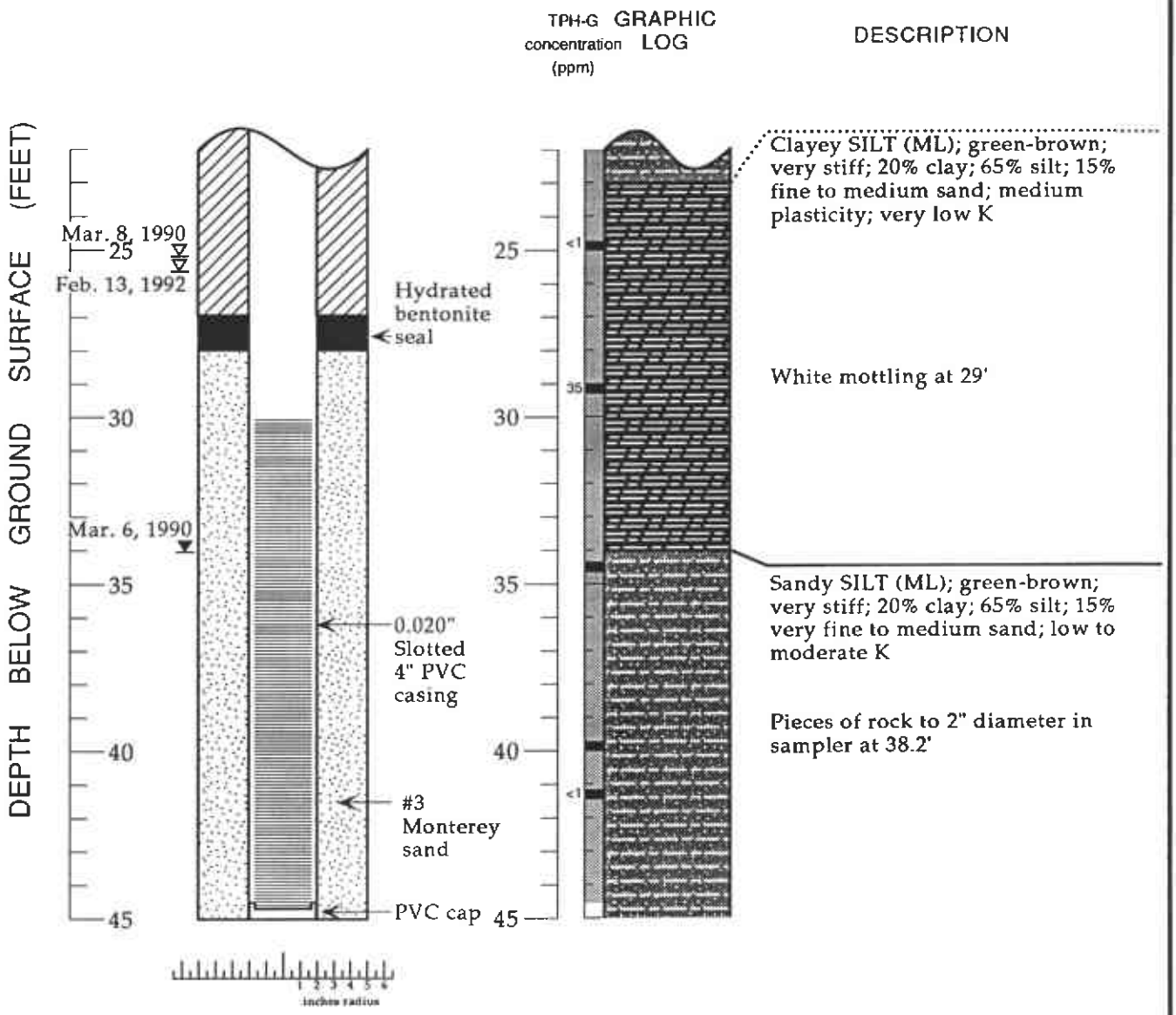
- ▼ Water level during drilling (date)
- ⧖ Water level (date)
- ——····—— Contact (dotted where approximate)
- —?—?— Uncertain contact
- ////////// Gradational contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Cutting sample
- K = Estimated hydraulic conductivity

Logged By: Karen Sixt
Supervisor: Richard Weiss; CEG 1112
Drilling Company: HEW Drilling, East Palo Alto, CA
License Number: Lic. #C57-61384167
Driller: Casto Pineda
Drilling Method: Hollow-stem auger
Date Drilled: March 6, 1990
Well Head Completion: 4" locking well-plug, traffic-rated vault
Type of Sampler: Split barrel (2" ID)
Ground Surface Elevation: 49.48 feet above mean sea level
TPH-G: Total petroleum hydrocarbon as gasoline in soil by modified EPA Method 8015

Boring Log and Well Construction Details - Well MW-1 (BH-A) - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

2/26/92

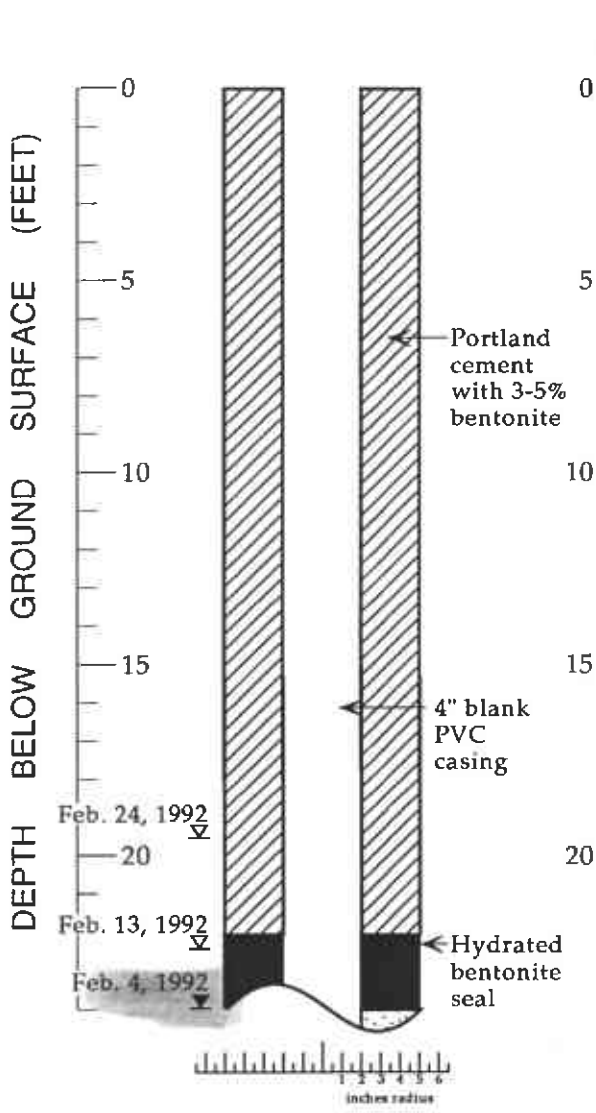
WELL MW-1 (BH-A) (cont.)

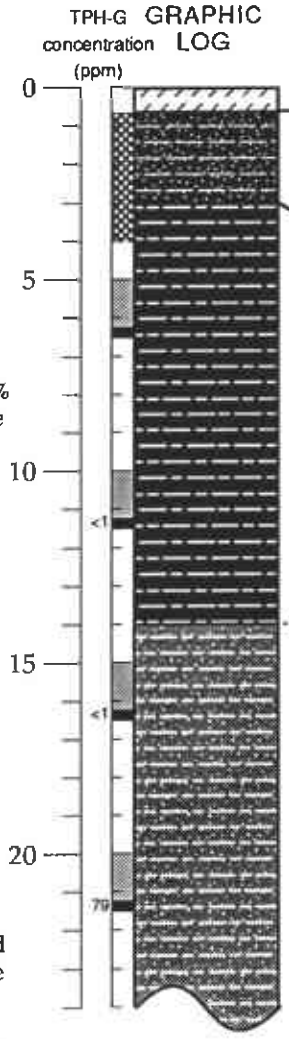


Boring Log and Well Construction Details - Well MW-1 (BH-A) - Shell Service Station WIC #204-6852-1404, 1784 150th Avenue, San Leandro, California

2/26/92

WELL MW-2 (BH-B)





DESCRIPTION

Asphaltic concrete

Sandy CLAY (CL); dark brown; soft; damp; 45% clay; 20% silt; 30% sand; 5% gravel to 0.25" diameter; low plasticity; low K

Silty CLAY (CH); black; soft; damp; 60% clay; 35% silt; 5% fine sand; high plasticity; very low K

1.5" diameter gravel at 6'

gray from 10'

Sandy SILT (ML); green-gray; very stiff; damp; 10% clay; 70% silt; 20% sand; low plasticity; low K

10% clay; 60% silt; 30% fine to coarse sand from 20.0'

Well constructed properly ??

EXPLANATION

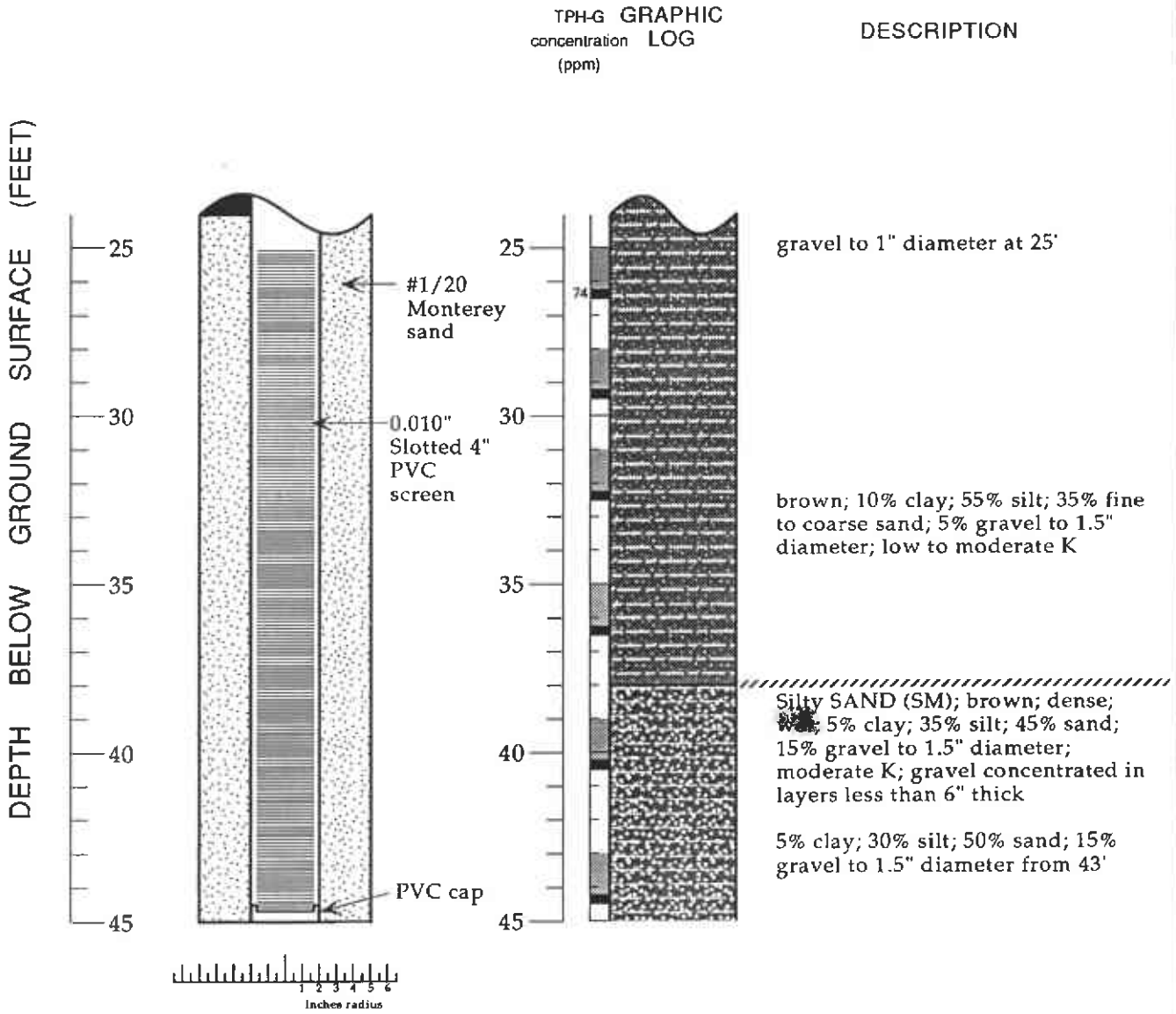
- Water level during drilling (date)
- Water level (date)
- Contact (dotted where approximate)
- Uncertain contact
- Gradational contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Cutting sample
- K = Estimated hydraulic conductivity

Logged By: Tom Fojut
Supervisor: Joseph P. Theisen; CEG 1645
Drilling Company: Soils Exploration Services, Benicia, CA
License Number: Lic. #C57-582696
Driller: Courtney Mossman
Drilling Method: Hollow-stem auger
Date Drilled: February 4 , 1992
Well Head Completion: 4" locking well-plug, traffic-rated vault
Type of Sampler: Split barrel (2" ID)
Ground Surface Elevation: 46.18 feet above mean sea level
TPH-G: Total petroleum hydrocarbon as gasoline in soil by modified EPA Method 8015

Boring Log and Well Construction Details - Well MW-2 (BH-B) - Shell Service Station WIC #204-6852-1404 - 1784 150th Avenue, San Leandro, California

2/26/92

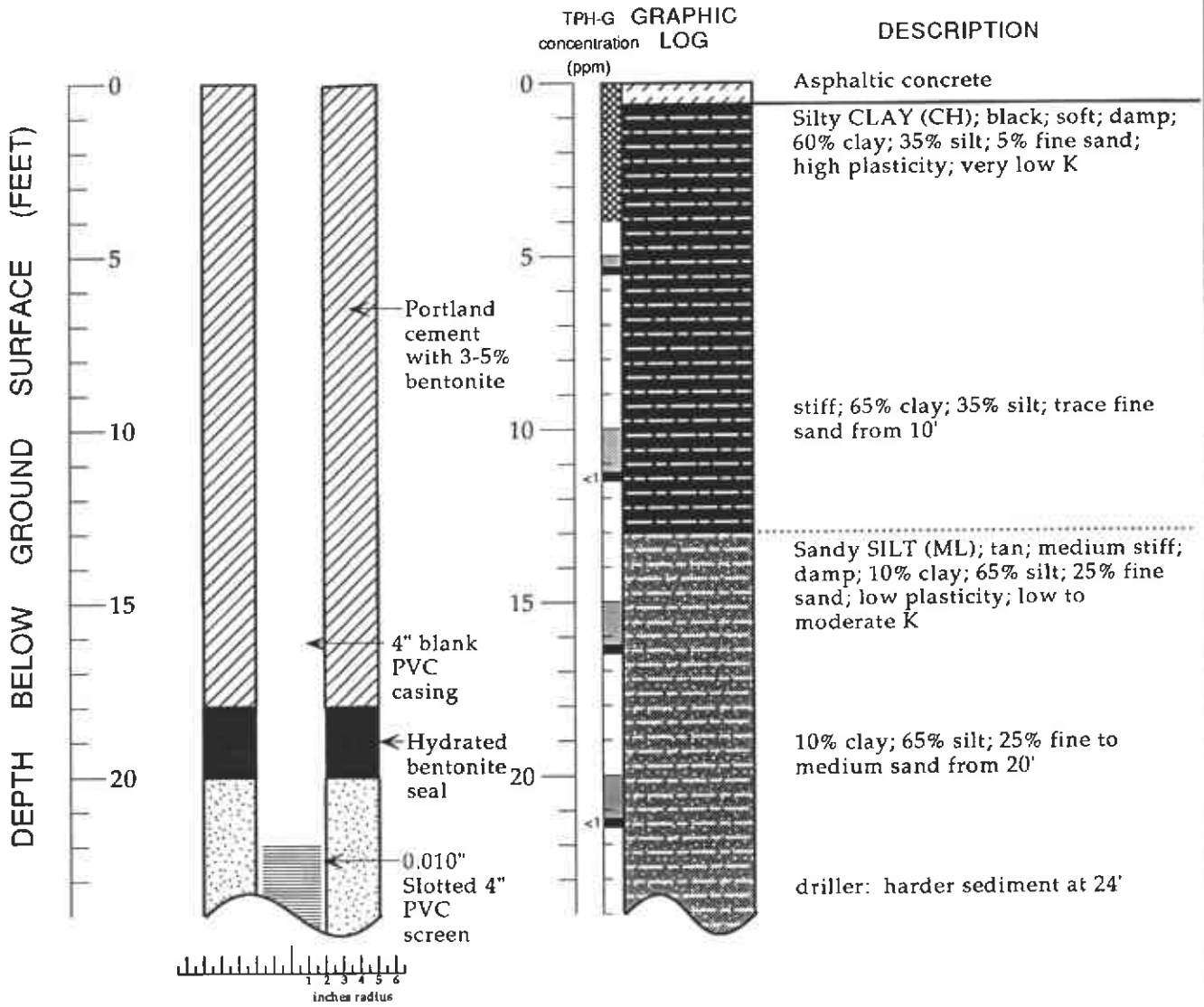
WELL MW-2 (BH-B) (cont.)



Boring Log and Well Construction Details - Well MW-2 (BH-B) - Shell Servie Station WIC #204-6852-1404 - 1784 150th Avenue, San Leandro, California

2/26/92

WELL MW-3 (BH-C)



EXPLANATION

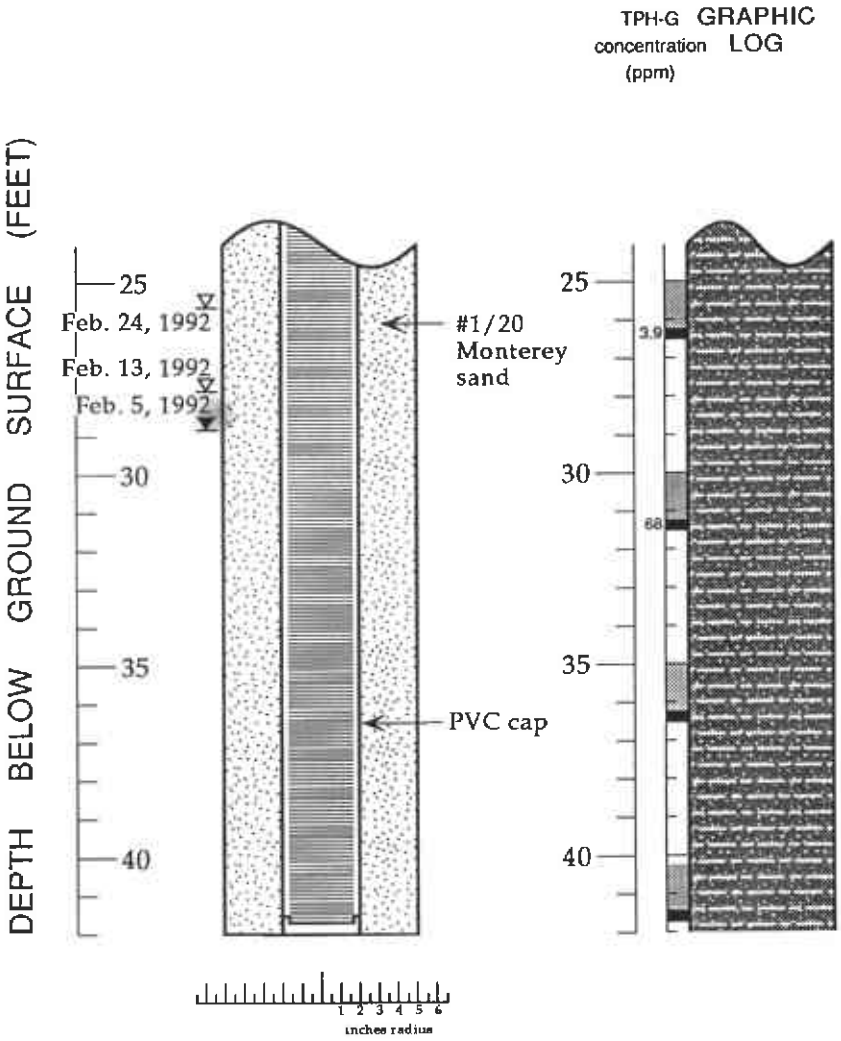
- ▼ Water level during drilling (date)
- ▽ Water level (date)
- ——····—— Contact (dotted where approximate)
- —?—?— Uncertain contact
- ////////// Gradational contact
- Location of recovered drive sample
- Location of drive sample sealed for chemical analysis
- Cutting sample
- K = Estimated hydraulic conductivity

Logged By: Tom Fojut
Supervisor: Joseph P. Theisen; CEG 1645
Drilling Company: Soils Exploration Services, Benicia, CA
License Number: Lic. #C57-582696
Driller: Courtney Mossman
Drilling Method: Hollow-stem auger
Date Drilled: February 5, 1992
Well Head Completion: 4" locking well-plug, traffic-rated vault
Type of Sampler: Split barrel (2" ID)
Ground Surface Elevation: 52.35 feet above mean sea level
TPH-G: Total petroleum hydrocarbon as gasoline in soil by modified EPA Method 8015

Boring Log and Well Construction Details - Well MW-3 (BH-C) - Shell Service Station WIC #204-6852-1404 - 1784 150th Avenue, San Leandro, California

4/1/92

WELL MW-3 (BH-C) (cont.)



Boring Log and Well Construction Details - Well MW-3 (BH-C) - Shell Servie Station WIC #204-6852-1404 - 1784 150th Avenue, San Leandro, California

NATIONAL
ENVIRONMENTAL
TESTING, INC.

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

Tom Fojut
Weiss Associates
5500 Shellmound St.
Emeryville, CA 94608

Date: 02/17/1992
NET Client Acct. No: 1809
NET Pacific Log No: 92.0645
Received: 02/07/1992

Client Reference Information

Shell, 1784 150th Ave., San Leandro

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

SAMPLE DESCRIPTION: BH-B 11.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113237)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	ND	mg/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		69 OK	% Rec
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			1	
Benzene	8020	0.0025	0.0026	mg/Kg
Ethylbenzene	8020	0.0025	ND	mg/Kg
Toluene	8020	0.0025	ND	mg/Kg
Xylenes (Total)	8020	0.0025	ND	mg/Kg

** OK Sample analyzed twice to confirm surrogate recovery.

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-B 11.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113237)

Parameter	Method	Reporting Limit	Results	Units
METHOD 8010 (GC,Solid)				
DATE ANALYZED			02-10-92	
DILUTION FACTOR*			1	
Bromodichloromethane	8010	0.002	ND	mg/Kg
Bromoform	8010	0.002	ND	mg/Kg
Bromomethane	8010	0.002	ND	mg/Kg
Carbon tetrachloride	8010	0.002	ND	mg/Kg
Chlorobenzene	8010	0.002	ND	mg/Kg
Chloroethane	8010	0.002	ND	mg/Kg
2-Chloroethylvinyl ether	8010	0.005	ND	mg/Kg
Chloroform	8010	0.002	ND	mg/Kg
Chloromethane	8010	0.002	ND	mg/Kg
Dibromochloromethane	8010	0.002	ND	mg/Kg
1,2-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,3-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,4-Dichlorobenzene	8010	0.002	ND	mg/Kg
Dichlorodifluoromethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethane	8010	0.002	ND	mg/Kg
1,2-Dichloroethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethene	8010	0.002	ND	mg/Kg
trans-1,2-Dichloroethene	8010	0.002	ND	mg/Kg
1,2-Dichloropropane	8010	0.002	ND	mg/Kg
cis-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
trans-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
Methylene chloride	8010	0.050	ND	mg/Kg
1,1,2,2-Tetrachloroethane	8010	0.002	ND	mg/Kg
Tetrachloroethene	8010	0.002	ND	mg/Kg
1,1,1-Trichloroethane	8010	0.002	ND	mg/Kg
1,1,2-Trichloroethane	8010	0.002	ND	mg/Kg
Trichloroethene	8010	0.002	ND	mg/Kg
Trichlorofluoromethane	8010	0.002	ND	mg/Kg
Vinyl chloride	8010	0.002	ND	mg/Kg
SURROGATE RESULTS			--	
1,4-Difluorobenzene			76.1	% Rec
Bromochloromethane			88.7	% Rec

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-C 11.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113238)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-10-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	ND	mg/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		78	% Rec
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			02-10-92	
DILUTION FACTOR*			1	
Benzene	8020	0.0025	0.0042	mg/Kg
Ethylbenzene	8020	0.0025	0.0029	mg/Kg
Toluene	8020	0.0025	0.0039	mg/Kg
Xylenes (Total)	8020	0.0025	ND	mg/Kg

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-C 11.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113238)

Parameter	Method	Reporting Limit	Results	Units
METHOD 8010 (GC,Solid)				
DATE ANALYZED			02-10-92	
DILUTION FACTOR*			1	
Bromodichloromethane	8010	0.002	ND	mg/Kg
Bromoform	8010	0.002	ND	mg/Kg
Bromomethane	8010	0.002	ND	mg/Kg
Carbon tetrachloride	8010	0.002	ND	mg/Kg
Chlorobenzene	8010	0.002	ND	mg/Kg
Chloroethane	8010	0.002	ND	mg/Kg
2-Chloroethylvinyl ether	8010	0.005	ND	mg/Kg
Chloroform	8010	0.002	ND	mg/Kg
Chloromethane	8010	0.002	ND	mg/Kg
Dibromochloromethane	8010	0.002	ND	mg/Kg
1,2-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,3-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,4-Dichlorobenzene	8010	0.002	ND	mg/Kg
Dichlorodifluoromethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethane	8010	0.002	ND	mg/Kg
1,2-Dichloroethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethene	8010	0.002	ND	mg/Kg
trans-1,2-Dichloroethene	8010	0.002	ND	mg/Kg
1,2-Dichloropropane	8010	0.002	ND	mg/Kg
cis-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
trans-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
Methylene chloride	8010	0.050	ND	mg/Kg
1,1,2,2-Tetrachloroethane	8010	0.002	ND	mg/Kg
Tetrachloroethene	8010	0.002	ND	mg/Kg
1,1,1-Trichloroethane	8010	0.002	ND	mg/Kg
1,1,2-Trichloroethane	8010	0.002	ND	mg/Kg
Trichloroethene	8010	0.002	ND	mg/Kg
Trichlorofluoromethane	8010	0.002	ND	mg/Kg
Vinyl chloride	8010	0.002	ND	mg/Kg
SURROGATE RESULTS			--	
1,4-Difluorobenzene			79.2	% Rec
Bromochloromethane			98.2	% Rec

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-C 21.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113239)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	ND	mg/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		74	% Rec
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			1	
Benzene	8020	0.0025	ND	mg/Kg
Ethylbenzene	8020	0.0025	ND	mg/Kg
Toluene	8020	0.0025	ND	mg/Kg
Xylenes (Total)	8020	0.0025	ND	mg/Kg

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-C 21.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113239)

Parameter	Method	Reporting Limit	Results	Units
METHOD 8010 (GC,Solid)				
DATE ANALYZED			02-10-92	
DILUTION FACTOR*			1	
Bromodichloromethane	8010	0.002	ND	mg/Kg
Bromoform	8010	0.002	ND	mg/Kg
Bromomethane	8010	0.002	ND	mg/Kg
Carbon tetrachloride	8010	0.002	ND	mg/Kg
Chlorobenzene	8010	0.002	ND	mg/Kg
Chloroethane	8010	0.002	ND	mg/Kg
2-Chloroethylvinyl ether	8010	0.005	ND	mg/Kg
Chloroform	8010	0.002	ND	mg/Kg
Chloromethane	8010	0.002	ND	mg/Kg
Dibromochloromethane	8010	0.002	ND	mg/Kg
1,2-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,3-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,4-Dichlorobenzene	8010	0.002	ND	mg/Kg
Dichlorodifluoromethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethane	8010	0.002	ND	mg/Kg
1,2-Dichloroethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethene	8010	0.002	ND	mg/Kg
trans-1,2-Dichloroethene	8010	0.002	ND	mg/Kg
1,2-Dichloropropane	8010	0.002	ND	mg/Kg
cis-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
trans-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
Methylene chloride	8010	0.050	ND	mg/Kg
1,1,2,2-Tetrachloroethane	8010	0.002	ND	mg/Kg
Tetrachloroethene	8010	0.002	ND	mg/Kg
1,1,1-Trichloroethane	8010	0.002	ND	mg/Kg
1,1,2-Trichloroethane	8010	0.002	ND	mg/Kg
Trichloroethene	8010	0.002	ND	mg/Kg
Trichlorofluoromethane	8010	0.002	ND	mg/Kg
Vinyl chloride	8010	0.002	ND	mg/Kg
SURROGATE RESULTS			--	
1,4-Difluorobenzene			76.1	% Rec
Bromochloromethane			93.9	% Rec

NET Pacific, Inc.

Client Acct: 1809
Client Name: Weiss Associates
NET Log No: 92.0645

Date: 02/17/1992
Page: 8

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-B 16.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113240)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	ND	mg/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		77	% Rec
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			1	
Benzene	8020	0.0025	0.0058	mg/Kg
Ethylbenzene	8020	0.0025	ND	mg/Kg
Toluene	8020	0.0025	ND	mg/Kg
Xylenes (Total)	8020	0.0025	ND	mg/Kg

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-B 26.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113241)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			10	
as Gasoline	5030	1	74	mg/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		115	% Rec
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			10	
Benzene	8020	0.0025	0.59	mg/Kg
Ethylbenzene	8020	0.0025	0.91	mg/Kg
Toluene	8020	0.0025	1.5	mg/Kg
Xylenes (Total)	8020	0.0025	3.9	mg/Kg

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-B 21.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113242)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			10	
as Gasoline	5030	1	79	mg/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		106	% Rec
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			10	
Benzene	8020	0.0025	0.20	mg/Kg
Ethylbenzene	8020	0.0025	0.60	mg/Kg
Toluene	8020	0.0025	1.0	mg/Kg
Xylenes (Total)	8020	0.0025	4.1	mg/Kg
METHOD 3550 (GC,FID)				
DILUTION FACTOR*			1	
DATE EXTRACTED			02-08-92	
DATE ANALYZED			02-14-92	
as Diesel	3550	1	23 **	mg/Kg

** NOTE: Petroleum hydrocarbon as diesel result is due to a petroleum hydrocarbon that is lighter than diesel.

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-B 21.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113242)

Parameter	Method	Reporting Limit	Results	Units
METHOD 8010 (GC,Solid)				
DATE ANALYZED			02-12-92	
DILUTION FACTOR*			1	
Bromodichloromethane	8010	0.002	ND	mg/Kg
Bromoform	8010	0.002	ND	mg/Kg
Bromomethane	8010	0.002	ND	mg/Kg
Carbon tetrachloride	8010	0.002	ND	mg/Kg
Chlorobenzene	8010	0.002	ND	mg/Kg
Chloroethane	8010	0.002	ND	mg/Kg
2-Chloroethylvinyl ether	8010	0.005	ND	mg/Kg
Chloroform	8010	0.002	ND	mg/Kg
Chloromethane	8010	0.002	ND	mg/Kg
Dibromochloromethane	8010	0.002	ND	mg/Kg
1,2-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,3-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,4-Dichlorobenzene	8010	0.002	ND	mg/Kg
Dichlorodifluoromethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethane	8010	0.002	ND	mg/Kg
1,2-Dichloroethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethene	8010	0.002	ND	mg/Kg
trans-1,2-Dichloroethene	8010	0.002	ND	mg/Kg
1,2-Dichloropropane	8010	0.002	ND	mg/Kg
cis-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
trans-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
Methylene chloride	8010	0.050	ND	mg/Kg
1,1,2,2-Tetrachloroethane	8010	0.002	ND	mg/Kg
Tetrachloroethene	8010	0.002	ND	mg/Kg
1,1,1-Trichloroethane	8010	0.002	ND	mg/Kg
1,1,2-Trichloroethane	8010	0.002	ND	mg/Kg
Trichloroethene	8010	0.002	ND	mg/Kg
Trichlorofluoromethane	8010	0.002	ND	mg/Kg
Vinyl chloride	8010	0.002	ND	mg/Kg
SURROGATE RESULTS			--	
1,4-Difluorobenzene			55.7 **	% Rec
1,4-Dichlorobutane			102	% Rec

** Matrix interference.

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-C 26.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113243)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			1	
as Gasoline	5030	1	3.9	mg/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		85	% Rec
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			02-09-92	
DILUTION FACTOR*			1	
Benzene	8020	0.0025	ND	mg/Kg
Ethylbenzene	8020	0.0025	ND	mg/Kg
Toluene	8020	0.0025	ND	mg/Kg
Xylenes (Total)	8020	0.0025	0.0054	mg/Kg
METHOD 3550 (GC,FID)				
DILUTION FACTOR*			1	
DATE EXTRACTED			02-08-92	
DATE ANALYZED			02-14-92	
as Diesel	3550	1	4.9 **	mg/Kg

** NOTE: Petroleum hydrocarbon as diesel result is due to a petroleum hydrocarbon that is lighter than diesel.

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-C 26.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113243)

Parameter	Method	Reporting Limit	Results	Units
METHOD 8010 (GC,Solid)				
DATE ANALYZED			02-12-92	
DILUTION FACTOR*			1	
Bromodichloromethane	8010	0.002	ND	mg/Kg
Bromoform	8010	0.002	ND	mg/Kg
Bromomethane	8010	0.002	ND	mg/Kg
Carbon tetrachloride	8010	0.002	ND	mg/Kg
Chlorobenzene	8010	0.002	ND	mg/Kg
Chloroethane	8010	0.002	ND	mg/Kg
2-Chloroethylvinyl ether	8010	0.005	ND	mg/Kg
Chloroform	8010	0.002	ND	mg/Kg
Chloromethane	8010	0.002	ND	mg/Kg
Dibromochloromethane	8010	0.002	ND	mg/Kg
1,2-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,3-Dichlorobenzene	8010	0.002	ND	mg/Kg
1,4-Dichlorobenzene	8010	0.002	ND	mg/Kg
Dichlorodifluoromethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethane	8010	0.002	ND	mg/Kg
1,2-Dichloroethane	8010	0.002	ND	mg/Kg
1,1-Dichloroethene	8010	0.002	ND	mg/Kg
trans-1,2-Dichloroethene	8010	0.002	ND	mg/Kg
1,2-Dichloropropane	8010	0.002	ND	mg/Kg
cis-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
trans-1,3-Dichloropropene	8010	0.002	ND	mg/Kg
Methylene chloride	8010	0.050	ND	mg/Kg
1,1,2,2-Tetrachloroethane	8010	0.002	ND	mg/Kg
Tetrachloroethene	8010	0.002	ND	mg/Kg
1,1,1-Trichloroethane	8010	0.002	ND	mg/Kg
1,1,2-Trichloroethane	8010	0.002	ND	mg/Kg
Trichloroethene	8010	0.002	ND	mg/Kg
Trichlorofluoromethane	8010	0.002	ND	mg/Kg
Vinyl chloride	8010	0.002	ND	mg/Kg
SURROGATE RESULTS			--	
1,4-Difluorobenzene			91.2	% Rec
1,4-Dichlorobutane			102	% Rec

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: BH-C 31.5
Date Taken: 02/04/1992
Time Taken:
LAB Job No: (-113244)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Solid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-11-92	
DILUTION FACTOR*			20	
as Gasoline	5030	1	68	mg/Kg
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		105	% Rec
METHOD 8020 (GC,Solid)			--	
DATE ANALYZED			02-11-92	
DILUTION FACTOR*			20	
Benzene	8020	0.0025	ND	mg/Kg
Ethylbenzene	8020	0.0025	ND	mg/Kg
Toluene	8020	0.0025	ND	mg/Kg
Xylenes (Total)	8020	0.0025	0.17	mg/Kg

Ref: Shell, 1784 150th Ave., San Leandro

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Diesel	1	mg/Kg	93	ND	N/A	N/A	14
Motor Oil	10	mg/Kg	100	ND	N/A	N/A	N/A
Gasoline	1	mg/Kg	98	ND	88	93	4.4
Benzene	0.0025	mg/Kg	92	ND	93	97	3.4
Toluene	0.0025	mg/Kg	93	ND	92	95	4.0
Gasoline	1	mg/Kg	96	ND	85	90	6.2
Benzene	0.0025	mg/Kg	95	ND	89	91	1.7
Toluene	0.0025	mg/Kg	95	ND	88	94	<1
Gasoline	1	mg/Kg	90	ND	92	93	1.1
Benzene	0.0025	mg/Kg	99	ND	98	112	13
Toluene	0.0025	mg/Kg	102	ND	99	101	2.0

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Chlorobenzene	0.002	mg/Kg	103	ND	99	98	<1
1,1-Dichloroethene	0.002	mg/Kg	113	ND	108	108	<1
Trichloroethene	0.002	mg/Kg	104	ND	103	104	1.0
Chlorobenzene	0.002	mg/Kg	79	ND	98	98	<1
1,1-Dichloroethene	0.002	mg/Kg	118	ND	117	112	5.0
Trichloroethene	0.002	mg/Kg	96	ND	111	112	<1

COMMENT: Blank Results were ND on other analytes tested.

NET Pacific, Inc

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	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 (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
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 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

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.

SM: see "Standard Methods for the Examination of Water & Wastewater, 16th Edition, APHA, 1985.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: _____

Date: 2-4-92
Page 1 of 3

Site Address: 1784 150TH AV SAN LEANDRO

WIC#: 204-6852-1404

Shell Engineer: KURT MILLER
Phone No. 510-685-3853
Fax #: 510-685-3943

Consultant Name & Address: WEISS ASSOCIATES
5500 SHELLMOUND ST EMERYVILLE 94608

Consultant Contact: TOM FOJUT
Phone No. 510-547-5420
Job Number: 81-422-032
Fax #: 510-547-5043

Comments:

Sampled By: TomFojut
Printed Name: TOM FOJUT

Analysis Required

LAB: NET

CHECK ONE (1) BOX ONLY		CT/DT
Quarterly Monitoring	☐	5461
Site Investigation	☒	5441
Soil for disposal	☐	5442
Water for disposal	☐	5443
Air Sample- Sys O&M	☐	5452
Water Sample - Sys O&M	☐	5453
Other	☐	

TURN AROUND TIME
24 hours ☐
48 hours ☐
15 days ☒ (Normal)
Other ☐ _____
NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

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	HVOCs (8010)	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
BH-B 6.5	2-4-92	X			1							2" DIA	NONE	N	GW-GAS	HOLD
11.5						X		X			X					
16.5						X		X								
21.5						X	X	X			X					
26.5						X		X								
29.5																HOLD
32.5																
36.5																

Relinquished By (signature): for TOM FOJUT Ronald C. Jensen	Printed name: RONALD C. JENSEN	Date: 2/6/92 Time: 1:35	Received (signature): Mark Tavani	Printed name: M. TAVANI	Date: 2/6/92 Time: 1:30 pm
Relinquished By (signature): Mark Tavani	Printed name: M. TAVANI	Date: 2/6/92 Time: 1900	Received (signature):	Printed name:	Date: Time:
Relinquished By (signature): (VIA NCS)	Printed name:	Date: Time:	Received (signature): Kelly Temple	Printed name: Kelly Temple	Date: 2/7/92 Time: 0800

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

Last Revision Date: 10/15/91

3800

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: ______

Date: 2-4-92
Page 2 of 3

CUSTODY SEALED 2/6/92 1900 MWT (initials)

Site Address: 1784 150TH AV SAN LEANDRO

WIC#: 204-6852-1404

Shell Engineer: KURT MILLER
Phone No. 510-685-3853
Fax #: 510-685-3943

Consultant Name & Address: WEISS ASSOCIATES
5500 SHELLMOUND ST EMERYVILLE 94608

Consultant Contact: TOM FOJUT
Phone No. 510-547-5420
Job Number: 81-422-02
Fax #: 510-547-5043

Comments:

Sampled By: Tom Fojut (signature)
Printed Name: TOM FOJUT

Analysis Required

LAB: NET

CHECK ONE (1) BOX ONLY		CT/DT
Quarterly Monitoring	☐	5461
Site Investigation	☒	5441
Soil for disposal	☐	5442
Water for disposal	☐	5443
Air Sample- Sys O&M	☐	5452
Water Sample - Sys O&M	☐	5453
Other	☐	

TURN AROUND TIME	
24 hours	☐
48 hours	☐
15 days	☒ (Normal)
Other	☐ ______

NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

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	HVOCs (8010)			Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
BH-B 40.5	2-4-92	X			1									2" DIA	NONE	N	~~GW~~ SOIL N/A GAS	HOLD
BH-B 44.5	2-4-92	↓			↓									↓	↓	↓	↓	↓
BH-C 5.5	2-5-92	↓			↓									↓	↓	↓	↓	↓
11.5	2-5-92	↓			↓	X		X			X			↓	↓	↓	↓	
16.5	2-5-92	↓			↓									↓	↓	↓	↓	HOLD
21.5	2-5-92	↓			↓	X		X			X			↓	↓	↓	↓	
26.5	2-5-92	↓			↓	X	X	X			X			↓	↓	↓	↓	
31.5	2-5-92	↓			↓	X		X			~~X~~ ←	NO ANALYSIS		↓	↓	↓	↓	

Relinquished By (signature):	Printed name:	Date/Time	Received (signature):	Printed name:	Date/Time
Ronald C. Jensen for Tom Fojut	RONALD C. JENSEN	Date: 2/6/92 Time: 1:35	M. Tavani (signature)	M. TAVANI	Date: 2/6/92 Time: 135 pm
M. Tavani (signature)	M. TAVANI	Date: 2/6/92 Time: 1900			Date: Time:
(VIA NCS)		Date: Time:	K. Temple (signature)	Kelly Temple	Date: 2/7/92 Time: 0800

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

Last Revision Date: 10/15/91

3800

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: ____________

Date: 2-5-92
Page 3 of 3

Site Address: #784 150TH AV SAN LEANDRO
WIC#: 204-6852-1404

Shell Engineer: KURT MILLER
Phone No. 510-685-3853
Fax #: 510-685-3943

Consultant Name & Address: WEISS ASSOCIATES 5500 SHELLMOUND ST. EMERYVILLE, CA.

Consultant Contact: TOM FOJUT
Phone No. 510-547-5420
Job Number: 81-422-02
Fax #: 510-547-5043

Comments:

Sampled By: Tom Fojut
Printed Name: TOM FOJUT

Analysis Required

LAB: NET

CHECK ONE (1) BOX ONLY		CT/DT
Quarterly Monitoring	☐	5461
Site Investigation	☒	5441
Soil for disposal	☐	5442
Water for disposal	☐	5443
Air Sample- Sys O&M	☐	5452
Water Sample - Sys O&M	☐	5453
Other	☐	

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 15 days ☒ (Normal)
- Other ☐

NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

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				Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
BH-C 36.5		X			1									2" DI.	NONE	N	SOIL ~~GW~~ - GAS	HOLD
↓ 41.5		↓			↓									↓	↓	↓	↓	↓

(Handwritten across analysis columns: 1900 MWT ... [illegible]; stamp: CUSTODY SEALED 2/6/92)

Relinquished By (signature):	Printed name:	Date / Time	Received (signature):	Printed name:	Date / Time
Ronald C. Jensen For Tom Fojut	RONALD C. JENSEN	Date: 2/6/92 Time: 1:35	M. Tavani	M. TAVANI	Date: 2/6/92 Time: 135pm
M. Tavani	M. TAVANI	Date: 2/6/92 Time: 1900			Date: Time:
(VIA NET)		Date: Time:	K. Temple	Kelly Temple	Date: 2/7/92 Time: 0800

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

Last Revision Date: 10/15/91

ATTACHMENT D

ANALYTIC REPORT FOR GROUND WATER

NATIONAL
ENVIRONMENTAL
TESTING, INC.

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

Tom Fojut
Weiss Associates
5500 Shellmound St.
Emeryville, CA 94608

Date: 03/05/1992
NET Client Acct. No: 1809
NET Pacific Log No: 92.0990
Received: 02/27/1992

Client Reference Information

Shell, 1784 150th Ave., San Leandro

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

SAMPLE DESCRIPTION: 022-02
Date Taken: 02/24/1992
Time Taken:
LAB Job No: (-114759)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Liquid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-28-92	
DILUTION FACTOR*			50	
as Gasoline	5030	0.05	17	mg/L
METHOD 8020 (GC,Liquid)			--	
DATE ANALYZED			02-28-92	
DILUTION FACTOR*			50	
Benzene	8020	0.0005	6.2	mg/L
Ethylbenzene	8020	0.0005	0.55	mg/L
Toluene	8020	0.0005	1.6	mg/L
Xylenes (Total)	8020	0.0005	1.9	mg/L
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		118	% Rec.
METHOD 3510 (GC,FID)				
DILUTION FACTOR*			1	
DATE EXTRACTED			02-28-92	
DATE ANALYZED			03-01-92	
as Diesel	3510	0.05	2.7 **	mg/L

** NOTE: Petroleum hydrocarbon as diesel result is due to a petroleum hydrocarbon that is lighter than diesel.

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: 022-02
Date Taken: 02/24/1992
Time Taken:
LAB Job No: (-114759)

Parameter	Method	Reporting Limit	Results	Units
METHOD 8010 (GC,Liquid)				
DATE ANALYZED			02-28-92	
DILUTION FACTOR*			1	
Bromodichloromethane	8010	0.0004	ND	mg/L
Bromoform	8010	0.0004	ND	mg/L
Bromomethane	8010	0.0004	ND	mg/L
Carbon tetrachloride	8010	0.0004	ND	mg/L
Chlorobenzene	8010	0.0004	ND	mg/L
Chloroethane	8010	0.0004	ND	mg/L
2-Chloroethylvinyl ether	8010	0.001	ND	mg/L
Chloroform	8010	0.0004	ND	mg/L
Chloromethane	8010	0.0004	ND	mg/L
Dibromochloromethane	8010	0.0004	ND	mg/L
1,2-Dichlorobenzene	8010	0.0004	ND	mg/L
1,3-Dichlorobenzene	8010	0.0004	ND	mg/L
1,4-Dichlorobenzene	8010	0.0004	ND	mg/L
Dichlorodifluoromethane	8010	0.0004	ND	mg/L
1,1-Dichloroethane	8010	0.0004	ND	mg/L
1,2-Dichloroethane	8010	0.0004	0.20	mg/L
1,1-Dichloroethene	8010	0.0004	ND	mg/L
trans-1,2-Dichloroethene	8010	0.0004	ND	mg/L
1,2-Dichloropropane	8010	0.0004	ND	mg/L
cis-1,3-Dichloropropene	8010	0.0004	ND	mg/L
trans-1,3-Dichloropropene	8010	0.0004	ND	mg/L
Methylene chloride	8010	0.010	ND	mg/L
1,1,2,2-Tetrachloroethane	8010	0.0004	ND	mg/L
Tetrachloroethene	8010	0.0004	ND	mg/L
1,1,1-Trichloroethane	8010	0.0004	ND	mg/L
1,1,2-Trichloroethane	8010	0.001	ND	mg/L
Trichloroethene	8010	0.0004	ND	mg/L
Trichlorofluoromethane	8010	0.0004	ND	mg/L
Vinyl chloride	8010	0.0004	ND	mg/L
SURROGATE RESULTS			--	
1,4-Difluorobenzene			NA	% Rec.
1,4-Dichlorobutane			93.6	% Rec.

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: 022-03
Date Taken: 02/24/1992
Time Taken:
LAB Job No: (-114760)

Parameter	Method	Reporting Limit	Results	Units
METHOD 8010 (GC,Liquid)				
DATE ANALYZED			02-28-92	
DILUTION FACTOR*			1	
Bromodichloromethane	8010	0.0004	ND	mg/L
Bromoform	8010	0.0004	ND	mg/L
Bromomethane	8010	0.0004	ND	mg/L
Carbon tetrachloride	8010	0.0004	ND	mg/L
Chlorobenzene	8010	0.0004	ND	mg/L
Chloroethane	8010	0.0004	ND	mg/L
2-Chloroethylvinyl ether	8010	0.001	ND	mg/L
Chloroform	8010	0.0004	ND	mg/L
Chloromethane	8010	0.0004	ND	mg/L
Dibromochloromethane	8010	0.0004	ND	mg/L
1,2-Dichlorobenzene	8010	0.0004	ND	mg/L
1,3-Dichlorobenzene	8010	0.0004	ND	mg/L
1,4-Dichlorobenzene	8010	0.0004	ND	mg/L
Dichlorodifluoromethane	8010	0.0004	ND	mg/L
1,1-Dichloroethane	8010	0.0004	ND	mg/L
1,2-Dichloroethane	8010	0.0004	0.0091	mg/L
1,1-Dichloroethene	8010	0.0004	ND	mg/L
trans-1,2-Dichloroethene	8010	0.0004	ND	mg/L
1,2-Dichloropropane	8010	0.0004	ND	mg/L
cis-1,3-Dichloropropene	8010	0.0004	ND	mg/L
trans-1,3-Dichloropropene	8010	0.0004	ND	mg/L
Methylene chloride	8010	0.010	ND	mg/L
1,1,2,2-Tetrachloroethane	8010	0.0004	ND	mg/L
Tetrachloroethene	8010	0.0004	ND	mg/L
1,1,1-Trichloroethane	8010	0.0004	ND	mg/L
1,1,2-Trichloroethane	8010	0.001	ND	mg/L
Trichloroethene	8010	0.0004	ND	mg/L
Trichlorofluoromethane	8010	0.0004	ND	mg/L
Vinyl chloride	8010	0.0004	ND	mg/L
SURROGATE RESULTS			--	
1,4-Difluorobenzene			NA	% Rec.
1,4-Dichlorobutane			92.0	% Rec.

Ref: Shell, 1784 150th Ave., San Leandro

SAMPLE DESCRIPTION: 022-21
Date Taken: 02/24/1992
Time Taken:
LAB Job No: (-114761)

Parameter	Method	Reporting Limit	Results	Units
TPH (Gas/BTXE,Liquid)				
METHOD 5030 (GC,FID)			--	
DATE ANALYZED			02-27-92	
DILUTION FACTOR*			1	
as Gasoline	5030	0.05	ND	mg/L
METHOD 8020 (GC,Liquid)			--	
DATE ANALYZED			02-27-92	
DILUTION FACTOR*			1	
Benzene	8020	0.0005	ND	mg/L
Ethylbenzene	8020	0.0005	0.0006	mg/L
Toluene	8020	0.0005	0.0025	mg/L
Xylenes (Total)	8020	0.0005	0.0022	mg/L
SURROGATE RESULTS			--	
Bromofluorobenzene	5030		88	% Rec.

Ref: Shell, 1784 150th Ave., San Leandro

QUALITY CONTROL DATA

Parameter	Reporting Limits	Units	Cal Verf Stand % Recovery	Blank Data	Spike % Recovery	Duplicate Spike % Recovery	RPD
Diesel	0.05	mg/L	115	ND	81	87	6.2
Gasoline	0.05	mg/L	104	ND	108	112	3.5
Benzene	0.0005	mg/L	116	ND	98	102	4.0
Toluene	0.0005	mg/L	120	ND	96	99	2.9
Gasoline	0.05	mg/L	111	ND	111	109	1.3
Benzene	0.0005	mg/L	112	ND	102	100	1.6
Toluene	0.0005	mg/L	117	ND	102	99	2.7

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	76	ND	100	95	5.7
1,1-Dichloroethene	0.0004	mg/L	107	ND	134	142	5.4
Trichloroethene	0.0004	mg/L	83	ND	99	96	3.6

COMMENT: Blank Results were ND on other analytes tested.

NET Pacific, Inc

KEY TO ABBREVIATIONS and METHOD REFERENCES

<	:	Less than; When appearing in results column indicates analyte not detected at the value following. This datum supercedes the listed Reporting Limit.
*	:	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 (but do not multiply reported values).
ICVS	:	Initial Calibration Verification Standard (External Standard).
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 100 through 493: see "Methods for Chemical Analysis of Water & Wastes", U.S. EPA, 600/4-79-020, rev. 1983.

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.

SM: see "Standard Methods for the Examination of Water & Wastewater, 17th Edition, APHA, 1989.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: 4144

Date:
Page 1 of 1

Site Address: 1784 150TH AVENUE SAN LEANDRO

WIC#: 204-6852-1404

Shell Engineer: KURT MILLER
Phone No. 510-685-3853
Fax #: 510-685-3943

Consultant Name & Address: WEISS ASSOCIATES 5500 SHELLMOUND ST EMERYVILLE 94608

Consultant Contact: TOM FOJUT
Phone No. 510-547-5420
Fax #: 510-547-5043

Comments: WA JOB #81-422-02

Sampled By: BRIAN BUSCH
Printed Name: BRIAN BUSCH

Analysis Required

LAB: NET

CHECK ONE (1) BOX ONLY		CT/DT
Quarterly Monitoring	☐	5461
Site Investigation	☒	5441
Soil for disposal	☐	5442
Water for disposal	☐	5443
Air Sample- Sys O&M	☐	5452
Water Sample - Sys O&M	☐	5453
Other	☐	

TURN AROUND TIME
- 24 hours ☐
- 48 hours ☐
- 15 days ☒ (Normal)
- Other ☐ ______

NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

CUSTODY SEALED 2/26/92 1900 MT

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	HVOC'S (EPA 8010)				Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
022-02	2/24/92		X		3	X		X							HCl	40ml	N	GW/GAS	
022-02	↓		X		3		X								None	1l	↓	↓	
022-02	↓		X		3						X				None	40ml	↓	↓	
022-03	↓		X		3	X		X							HCl	40ml	↓	↓	
022-03	↓		X		3		X								None	1l	↓	↓	
022-03	↓		X		3						X				None	40ml	↓	↓	
022-21	↓		X		3	X		X							HCl	40ml	↓	↓	Head Space in all 3 VOAs

Relinquished By (signature):	Printed name:	Date / Time	Received (signature):	Printed name:	Date / Time
Brian Busch	BRIAN BUSCH	Date: 2/24/92 Time: 17:30	Robyn L Brewer	Robyn L. Brewer	Date: 2/26/92 Time:
Robyn L Brewer	Robyn L. Brewer	Date: 2/26/92 Time: 1:05	M. Tavani	M. TAVANI	Date: 2/26/92 Time: 1310
M. Tavani	M. TAVANI	Date: 2/26/92 Time: 1900	K. Temple	Kelly Temple	Date: 2/27/92 Time: 0800

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

Last Revision Date: 10/15/91

STORED OVERNIGHT IN A LOCKED, SECURE PLACE.