Chevron U.S.A. Inc.
2410 Camino Ramon, San Ramon, California • Phone (510) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

Marketing Department

92 JAN 23 AM 11:05

January 22, 1992

Mr. Paul Smith
Alameda County Health Care Services
80 Swan Way, Room 200
Oakland, CA 94621

Re: Former Chevron Service Station #9-0020
1633 Harrison, Oakland

Dear Mr. Smith:

Enclosed we are forwarding the Subsurface Investigation Report dated January 14, 1992, prepared by our consultant Pacific Environmental Group, Inc. (PEG) for the above referenced site. This report documents the installation of two (2) additional off-site ground water monitor wells designated MW-13 and MW-14 and a discussion of potential off-site volatile organic compound (VOC) sources. As indicated in the report, monitor well MW-13 is located in the downgradient direction of the site and MW-14 is located in the upgradient direction of the site. These locations were chosen to delineate the extent of the petroleum hydrocarbon plume and to assess if the solvents detected in the ground water are emanating from an upgradient source. In addition, four (4) soil borings were drilled to assess the extent of hydrocarbon contamination in the subsurface in the vicinity of monitor well MW-7.

Soil samples collected from the drill cuttings were analyzed for total petroleum hydrocarbons as gasoline (TPH-G), BTEX and halogenated volatile organics from MW-14 only. All samples reported non-detectable concentrations of TPH-G with the exception of boring B-D which detected TPH-G at a concentration of 120 ppm at approximately 26-feet below grade. Ground water samples were collected during the routine quarterly monitoring event and were documented in the report submitted to you on December 18, 1991. To summarize the findings of the ground water sampling event, negligible concentrations of VOC's were detected in all monitor wells with the exception of MW-13 which reported non-detectable concentrations. Based on the uneven distribution of VOC's and the higher concentrations being detected in the upgradient and cross-gradient wells, it is surmised that the solvents are emanating from an off-site source.

Pacific Environmental Group, Inc. has been instructed to further assess the distribution pattern of the solvents from the data collected to date to assist in determining VOC responsibility. We would like to schedule a meeting with you in the near future to discuss the VOC assessment. Chevron will continue to sample this site and report findings on a quarterly basis.

The Phase I Corrective Action Work Plan forwarded to you on December 18, 1991, was implemented on January 6, 1992, as per your verbal approval to Mr. Jerry Mitchell of Pacific Environmental Group. As you are aware, all impacted soils have been excavated in the vicinity of monitor well MW-4 and confirmatory samples collected within the excavation. The soils excavated were transported off-site to an appropriate disposal facility. Backfilling of the excavation will take place the week of January 27, 1992. A report documenting this work will be forwarded to you when all work has been completed.

In addition, a soil vapor extraction pilot test has been performed to assess the feasibility of this

technology for mitigating the impacted soils in the vicinity of monitor well MW-7. These soils are at a depth of approximately 18-feet below grade and attempting to excavate these would be impractical. The results of the pilot test will be forwarded to you in February, 1992, along with our corrective action work plan to mitigate these soils.

If you have any questions or comments, please do not hesitate to contact me at (510) 842-9581.

Very truly yours,
CHEVRON U.S.A. INC.

Nancy Vukelich
Environmental Engineer

Enclosure

cc: Mr. Eddy So, RWQCB-Bay Area
Mr. Jerry Mitchell, PEG-Pleasant Hill
Mr. B.C. Owen
File (9-0020A3)

PACIFIC
ENVIRONMENTAL
GROUP, INC.

92 T.C.H.

Date January 16, 1992
Project 320-90.01

To: Ms. Nancy Vukelich
Chevron USA, Inc.
P.O. Box 5004
San Ramon, CA 94583-0804

We have enclosed:

Copies	Description
3	Report documenting the findings of a subsurface investigation conducted at, Former Chevron USA Service Station 9-0020, 1633 Harrison and 17th Street, Oakland, California.

For your:
- X Use
- ____ Approval
- ____ Review
- ____ Information

Comments: Please call me if you have any questions or comments.

Jerry Mitchell

1601 Civic Center Drive, Suite 202, Santa Clara, California 95050 (408) 984-6536 FAX: (408) 243-3911
620 Contra Costa Boulevard, Suite 209, Pleasant Hill, California 94523 (415) 825-0855 FAX: (415) 825-0882

PACIFIC
ENVIRONMENTAL
GROUP, INC.

January 14, 1992
Project 320-90.01

Ms. Nancy Vukelich
Chevron USA, Inc.
P.O. Box 5004
San Ramon, California 94583-0804

Re: Former Chevron USA Station 9-0020
1633 Harrison and 17th Street
Oakland, California

Dear Ms. Vukelich:

This letter presents the findings of a subsurface investigation conducted by Pacific Environmental Group, Inc. (PACIFIC) at the former Chevron USA service station referenced above. The investigation was designed to further assess the possible impact of petroleum hydrocarbons and halogenated volatile organics to soil and groundwater upgradient and downgradient of the site. This letter includes a discussion of site background, the scope of work, a summary of findings and a discussion of potential off-site sources of volatile organic compounds.

BACKGROUND

Site Description

The site is a former Chevron USA service station located at 1633 Harrison Street and 17th Street in Oakland, California (Figure 1). The site is located in a mixed retail, office, residential, and light industrial region of downtown Oakland. The former service station layout, including station building, product island, and underground storage tank locations are presented on Figure 2.

According to Chevron USA records, the service station facilities including underground storage tanks and lines were removed prior to 1972. Information regarding the number or volume of underground storage tanks was not available at

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620 Contra Costa Boulevard, Suite 209, Pleasant Hill, California 94523 (415) 825-0855 FAX: (415) 825-0882

the time of this report. The site has apparently been occupied and operated as a parking lot since December 1, 1975.

Regional Hydrogeologic Setting

The area is underlain by Quaternary marine and non-marine alluvial deposits consisting of layers of sand and gravel interspersed with thick sections of sand and clay. The uppermost of the strata in this area is the Merritt Sand, which underlies the site. The aquifers in the area are predominantly unconfined. **Groundwater flow direction at the site is northeastward toward Lake Merritt**, a lagoon on the eastern edge of the San Francisco Bay. Lake Merritt and the tidal inlet connecting the lake to the Alameda Estuary are the nearest surface drainages to the site, with Lake Merritt located less than 1,500 feet east of the site.

Summary of Previous Site Investigations

EA Engineering, Science and Technology of Lafayette, California, performed a soil vapor survey at the site in December 1987. Soil vapor samples were collected from eleven on-site locations at various depths between 3 and 13 feet below ground surface. Benzene was not present at detectable concentrations in the soil vapor, and toluene was only detected in the vapor samples collected from the vicinity of the underground storage tanks. A maximum concentration of 140 parts per million (ppm) of Total Volatile Hydrocarbons (TVH) was detected in the vapor samples collected from the vicinity of the waste oil tank.

Western Geologic Resources (WGR) of San Rafael, California drilled Exploratory Soil Borings B-1 through B-16 and installed Groundwater Monitoring Wells MW-1 through MW-12 during investigations that took place in October 1988, April 1989, and June 1990. Monitoring well locations are indicated on Figure 2. Total fuel hydrocarbons were only detected at 12 ppm in the soil sample collected from Well MW-2 at 19 feet below grade. Total purgeable petroleum hydrocarbons (TPPH) were detected only in soil samples from Well MW-4 collected at 4.5 feet and 9.6 feet at 600 ppm, and from Well MW-7 at 680 ppm (19.25 foot sample) and 50,000 ppm (23.5 foot sample). Toluene, ethylbenzene and xylenes were detected at concentrations up to 4.1 ppm, 5 ppm, and 20 ppm, respectively, in the 23.5 foot sample from Well MW-7. Benzene was not detected in any of the soil samples.

Soil samples were also analyzed for volatile organic compounds. 1,1,1-Trichloroethane (TCA) was detected at 0.1 ppm in the sample from Well MW-4 (9.6 foot depth), and 0.2 ppm in the sample from Well MW-7 (23.5 foot

depth). Chlorobenzene was the only other volatile organic detected in soil samples, at 0.07 ppm in the sample from Well MW-7 collected at 19.25 feet below grade.

Groundwater samples from the site have been collected, analyzed and reported quarterly since November 1988, and are summarized in the most recent quarterly report dated September 20, 1991, prepared by Sierra Environmental Services (SES) of Martinez, California. Concentrations of benzene, toluene, ethylbenzene, and xylenes (BTEX compounds) in groundwater have consistently been detected only in Wells MW-7 and MW-9. Highest concentrations of BTEX compounds have been detected in samples collected from Well MW-7. The most recent sampling results include benzene detected at 220 parts per billion (ppb), toluene at 53 ppb, ethylbenzene at 63 ppb, and xylenes at 340 ppb.

Values for TPPH in groundwater have not correlated well with BTEX compound concentrations and may be due to the occurrence of halogenated volatile organics which are also detected in the TPPH analysis. Laboratory analytical reports generally indicate which TPPH chromatograms do not match typical gasoline patterns, and this has been noted in the analyses of samples from Wells MW-1, MW-2, MW-3, MW-8, MW-11, and MW-12. The presence of halogenated volatile organics in groundwater has been well established since sampling began at the site in November 1988. Generally, the highest concentrations of halogenated volatile organics have been detected in Wells MW-2, MW-3, and MW-4. Concentrations and sampling dates are documented in quarterly SES reports.

SCOPE OF WORK

The purpose of this investigation was to further evaluate the vertical and horizontal extent of petroleum hydrocarbons and halogenated volatile organics in soil and groundwater beneath and in the vicinity of the site. The Scope of Work performed for this assessment includes the following:

- Drilled and installed two off-site groundwater monitoring wells (MW-13 and MW-14) on October 3, 1991, to a depth of approximately 28 feet below ground surface. Well MW-13 was installed downgradient of the site to evaluate the extent of petroleum hydrocarbons in the groundwater and Well MW-14 was installed upgradient of the site to investigate suspected sources of halogenated volatile organics. To evaluate the extent of TPPH previously detected in soil samples from Well MW-7, four soil borings, B-A through B-D, were drilled on October 5, 1991, to a depth of approximately 30 feet. Boring and monitoring well

locations are shown on Figure 2. Investigative procedures are described in Attachment A.

- Collected soil samples from each of the borings in depth increments of 5 feet or less, prepared and stored the soil samples following EPA and DHS procedures, and submitted selected samples to a California State-certified laboratory for analysis. Soil samples selected for analysis were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) by EPA Method 8015/5030, BTEX compounds by EPA Method 8020, and samples from Well MW-14 were analyzed for halogenated volatile organics by EPA Method 8010. Sampling procedures are described in Attachment A.
- Surveyed the new wells for elevation above mean sea level.
- Developed the newly installed groundwater monitoring wells using a combination of surge-block and bailing techniques until relatively silt-free groundwater was obtained.
- Performed a reconnaissance of possible upgradient sources for halogenated volatile organics.
- Reviewed all analytical data and prepared a technical report of the investigation.

FINDINGS

Subsurface Conditions

Soils encountered during this investigation consist mainly of sand to silty sand from the surface to about 26 to 30 feet in depth. A silt underlying the sands was encountered in all borings at depths ranging from approximately 26 feet to the maximum depth explored of 31.5 feet below ground surface. Unconfined groundwater was encountered during drilling at depths ranging between 21 and 23 feet. Boring logs with more detailed geology and well construction information are presented in Attachment B.

Analytical Results

Soil samples from Wells MW-13 and MW-14 did not contain detectable concentrations of TPH-g, BTEX compounds, or halocarbons. TPH-g, toluene, ethylbenzene, and xylenes were only detected in the soil sample from Boring B-D,

collected at the 25 to 26.5 foot depth interval, at 120 ppm, 0.16 ppm, 0.14 ppm, and 1.8 ppm., respectively. Tables 1 and 2 present a summary of the soil analytical results for petroleum hydrocarbons and halogenated volatile organics, respectively. Certified analytical reports and chain-of-custody documentation are presented in Attachment C.

UPGRADIENT SOURCE INVESTIGATION

Hallmark Cleaners, a dry cleaning business located approximately 60 feet upgradient of the former Chevron service station was identified in a previous WGR report as a possible source for carbon tetrachloride and the other various halocarbons detected in the on- and off-site monitoring wells. According to the Oakland Fire Marshalls Office records, no permits are on file for an above or below-ground storage tank at Hallmark Cleaners, but it was mentioned that permits are required only for the storage of flammable substances; carbon tetrachloride is not a flammable substance. The City of Oakland Building Department does not maintain records of storage tank installations, which they say is the Fire Marshalls jurisdiction. During a pre-field site inspection on September 30, 1991, PACIFIC personnel visited Hallmark Cleaners and spoke to an employee of the business. It was determined that presently, there are no above-ground storage tanks, and the dry cleaning does not occur at the site but that the clothes are sent to another location to be cleaned.

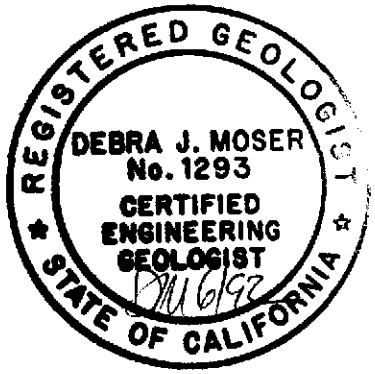
Other businesses in the immediate vicinity which may use or store halocarbons (industrial inks, solvents and degreasers commonly contain halocarbons) include printers, dry-cleaners, machine shops and manufacturers. A large number of printers are found in the immediate vicinity of the site, a knitwear manufacturer is located upgradient a short distance, and various automobile repair facilities are located nearby. The number of businesses in the immediate vicinity upgradient of the site which may be potential sources of halogenated volatile organics appears to be extensive.

If you have any questions or comments regarding the contents of this letter, please do not hesitate to call.

Sincerely,

Pacific Environmental Group, Inc.

Jerry W. Mitchell
Project Geologist



Debra J. Moser
Senior Geologist
CEG 1293

Attachments: Table 1 - Soil Analytical Results - Petroleum Hydrocarbons
Table 2 - Soil Analytical Results - Halogenated Volatile Organics

Figure 1 - Site Location Map
Figure 2 - Site Map

Attachment A - Drilling and Analytical Procedures
Attachment B - Boring Logs and Well Elevations
Attachment C - Certified Analytical Reports and Chain-of-Custody Documentation

Table 1
Soil Analytical Results - Petroleum Hydrocarbons

Former Chevron Service Station 9-0020
1633 Harrison Street at 17th Street
Oakland, California

Boring Number	Sample Depth (feet)	Sample Date	TPH-Gasoline (ppm)	Benzene (ppm)	Toluene (ppm)	Ethylbenzene (ppm)	Xylenes (ppm)
MW-13	15 - 16.5	10/03/91	ND	ND	ND	ND	ND
	20 - 21.5	10/03/91	ND	ND	ND	ND	ND
	25 - 26.5	10/03/91	ND	ND	ND	ND	ND
MW-14	10 - 11.5	10/03/91	ND	ND	ND	ND	ND
	20 - 21.5	10/03/91	ND	ND	ND	ND	ND
	25 - 26.5	10/03/91	ND	ND	ND	ND	ND
B-A	10 - 11.5	10/05/91	ND	ND	ND	ND	ND
	15 - 16.5	10/05/91	ND	ND	ND	ND	ND
	20 - 21.5	10/05/91	ND	ND	ND	ND	ND
	25 - 26.5	10/05/91	ND	ND	ND	ND	ND
	30 - 31.5	10/05/91	ND	ND	ND	ND	ND
B-B	10 - 11.5	10/05/91	ND	ND	ND	ND	ND
	15 - 16.5	10/05/91	ND	ND	ND	ND	ND
	20 - 21.5	10/05/91	ND	ND	ND	ND	ND
	25 - 26.5	10/05/91	ND	ND	ND	ND	ND
B-C	10 - 11.5	10/05/91	ND	ND	ND	ND	ND
	15 - 16.5	10/05/91	ND	ND	ND	ND	ND
	20 - 21.5	10/05/91	ND	ND	ND	ND	ND
	25 - 26.5	10/05/91	ND	ND	ND	ND	ND
	28.5 - 30	10/05/91	ND	ND	ND	ND	ND
B-D	10 - 11.5	10/05/91	ND	ND	ND	ND	ND
	15 - 16.5	10/05/91	ND	ND	ND	ND	ND
	20 - 21.5	10/05/91	ND	ND	ND	ND	ND
	25 - 26.5	10/05/91	120	ND	0.16	0.14	1.8
	28.5 - 30	10/05/91	ND	ND	ND	ND	ND

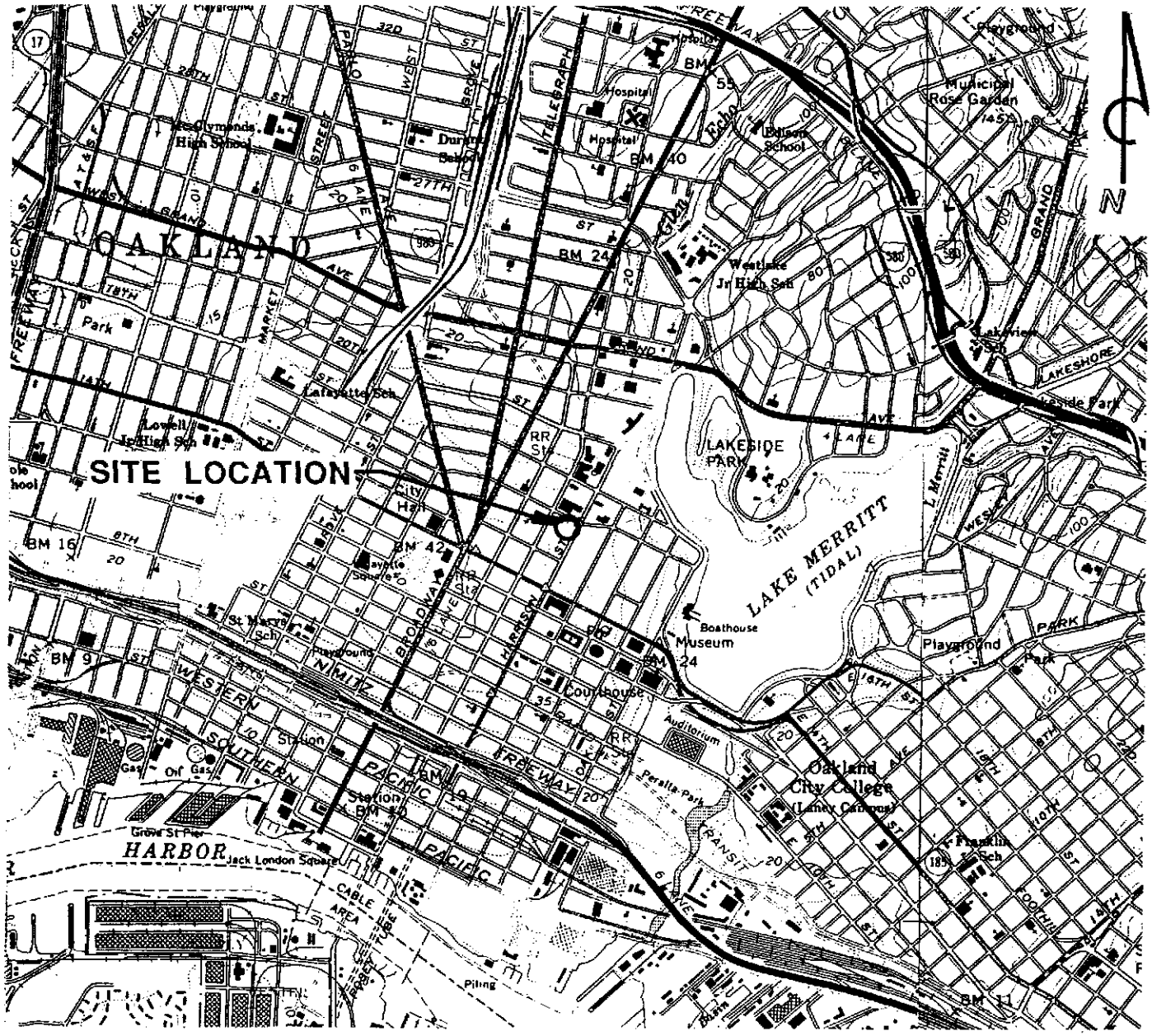
TPH = total petroleum hydrocarbons
ppm = parts per million
ND = not detected

Table 2
Soil Analytical Results - Halogenated Volatile Organics

Former Chevron Service Station 9-0020
1633 Harrison Street at 17th Street
Oakland, California

Well Number	Sample Depth (feet)	Sample Date	Halogenated Volatile Organics (ppb)
MW-14	10 - 11.5	10/03/91	All ND
	20 - 21.5	10/03/91	All ND
	25 - 26.5	10/03/91	All ND

ND = Not detected



QUADRANGLE LOCATION

REFERENCES:

USGS 7.5 MIN. TOPOGRAPHIC MAP
TITLED: OAKLAND WEST, CALIFORNIA
DATED: 1959 REVISED: 1980
TITLED: OAKLAND EAST, CALIFORNIA
DATED: 1959 REVISED: 1980

SCALE

2000 0 2000 FEET

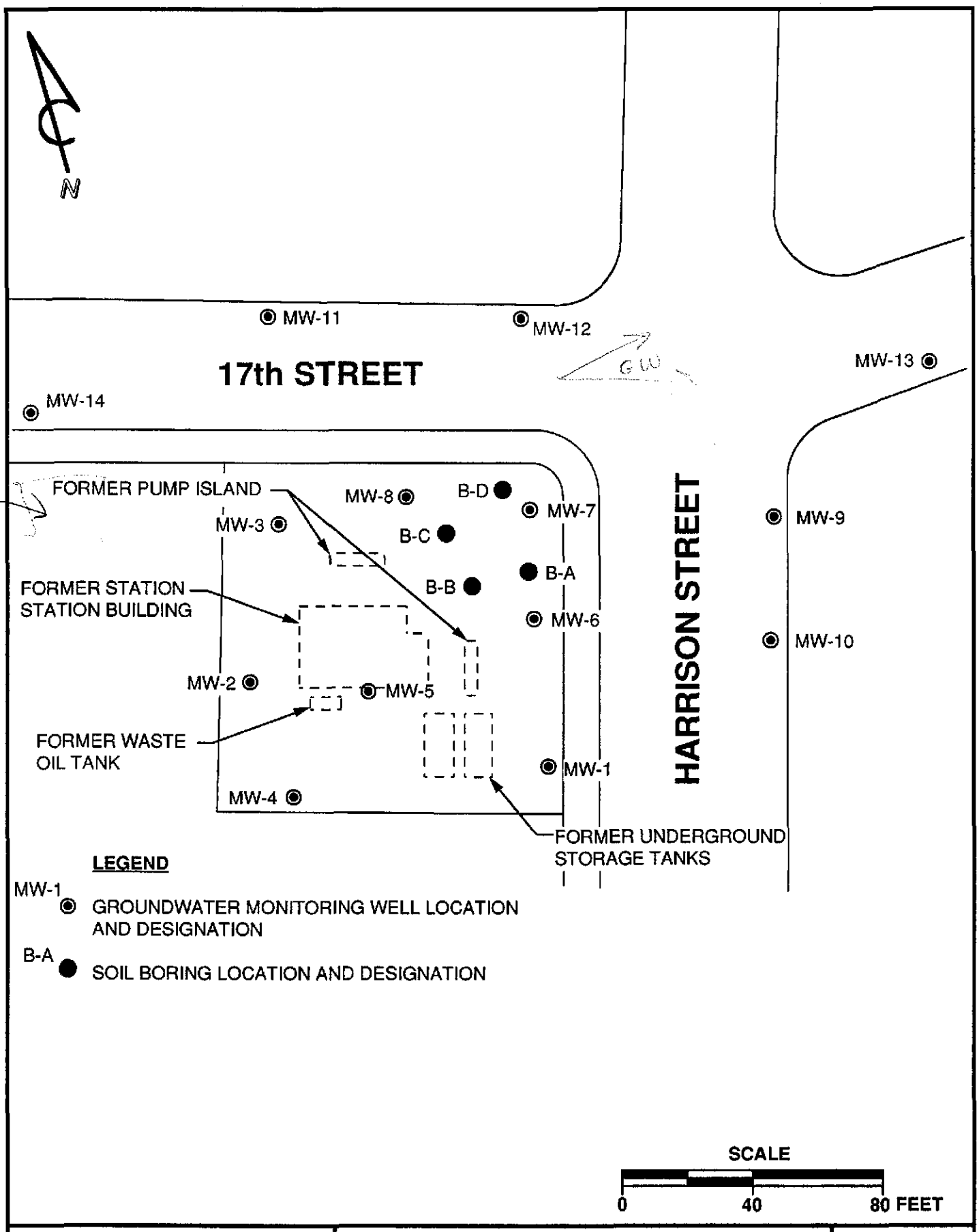
PACIFIC ENVIRONMENTAL GROUP INC.

FORMER CHEVRON USA STATION 9-0020
1633 Harrison Street at 17th Street
Oakland, California

SITE LOCATION MAP

FIGURE: 1

PROJECT: 320-90.01



PACIFIC ENVIRONMENTAL GROUP, INC.

FORMER CHEVRON USA STATION 9-0020
1633 Harrison Street at 17th Street
Oakland, California

SITE MAP

FIGURE: **2**

PROJECT: 320-90.01

ATTACHMENT A

DRILLING AND ANALYTICAL PROCEDURES

ATTACHMENT A
DRILLING AND ANALYTICAL PROCEDURES

Drilling, Sampling and Well Construction Procedures

The soil borings were drilled using 8-inch diameter hollow stem auger drilling equipment and logged by a PACIFIC geologist using the Unified Soil Classification System and standard geologic techniques. Except for the lithology samples obtained for logging from two continuously cored borings (B-C and B-D), soil samples for logging and chemical analysis were collected from each boring at maximum 5-foot depth intervals by advancing a California-modified split-spoon sampler with brass liners into undisturbed soil beyond the tip of the auger. The sampler was driven a maximum of 18 inches using a 140-pound hammer with a 30-inch drop. Soil samples for chemical analysis were retained in brass liners, capped with aluminum foil and plastic end caps, and sealed in clean glass containers. These samples were placed on ice for transport to the laboratory, accompanied by chain-of-custody documentation. All downhole drilling and sampling equipment were cleaned between samples, and steam-cleaned following the completion of each soil boring.

Upon completion, four of the soil borings (B-A through B-D) were backfilled with neat cement from depth to the ground surface. Two of the soil borings (MW-13 and MW-14) were converted to groundwater monitoring wells by the installation of 2-inch diameter, Schedule 40 PVC casing and 0.020-inch factory slotted screen. Screen was placed from the bottom of the boring, approximately 10 feet into the water-bearing zone, to approximately 5 feet above the static water level. Groundwater occurs between approximately 21 and 23 feet below ground surface at this location. The annular space was packed with Lonestar #2-12 sand across the entire screened interval, extending 1 foot above the top of the screen. The well was then sealed with approximately 1 foot of bentonite above the sand pack, and neat cement to the ground surface. A locking, water-tight cap and protective vault box was installed at the top of each well.

Organic Vapor Analysis Procedures

Selected soil samples collected in the field were analyzed using the HNU Model PI 101 photo-ionization detector (or equivalent) with a 10.2 eV lamp. The test procedure involves measuring approximately 30 grams from an undisturbed soil sample, placing this sub-sample in a clean glass jar, and sealing the jar with aluminum foil secured under a ring-type threaded lid. The jar was warmed for approximately 20 minutes, then the foil was pierced and the head-space within the jar tested for total organic vapor, measured in parts per million as benzene (ppm; volume/volume). The instrument is calibrated using a 100 ppm isobutylene standard (in air) and a sensitivity factor of 0.7 which relates the photo-ionization sensitivity of benzene to the sensitivity of isobutylene. The results of these tests were used as an aid in selecting samples to be analyzed.

Laboratory Analysis Procedures

Selected soil samples collected during drilling were analyzed for total petroleum hydrocarbons as gasoline (TPH-g) by modified EPA Method 8015/5030 and for benzene, toluene, ethylbenzene, and total xylenes (BTEX compounds) by EPA Method 8020. In addition, soil samples collected from Well MW-14 were analyzed for halogenated volatile organics by EPA Method 8010.

ATTACHMENT B

BORING LOGS AND WELL ELEVATIONS

WELL LOG
KEY TO ABBREVIATIONS

Drilling Method

HSA - Hollow stem auger
CFA - Continous flight auger
Air - Reverse air circulation

Gravel Pack

CA - Coarse aquarium sand

Sampling Method

Cal. Mod. - California modified split-spoon sampler (2" inner diameter) driven 18" by a 140-pound hammer having a 30" drop. Where penetration resistance is designated "P", sampler was instead pushed by drill rig.
Disturbed - Sample taken from drill-return materials as they surfaced.
Shelby - Shelby Tube thin-walled sampler (3" diameter), where sampler is pushed by drill-rig.

Moisture Content

Dry - Dry
Dp - Damp
Mst - Moist
Wt - Wet
Sat - Saturated

Sorting

PS - Poorly sorted
MS - Moderately sorted
WS - Well sorted

Plasticity

L - Low
M - Moderate
H - High

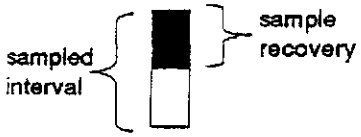
H-NU (ppm)

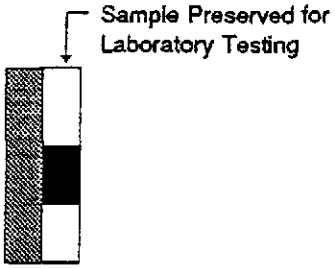
ND - No detection

Symbols

▽ - First encountered ground water

▼ - Static ground water level





Density (Blows/Foot - Cal Mod Sampler)

Sands and gravels

0 - 5	- Very Loose
5 - 13	- Loose
13 - 38	- Medium dense
38 - 63	- Dense
over 63	- Very dense

Silts and Clays

0 - 2.1	- Very Soft
2.1 - 4.3	- Soft
4.3 - 8.6	-Firm
8.6-17	- Stiff
17 - 37	- Very Stiff
37 - 72	- Hard
over 72	- Very dense

GRAIN - SIZE SCALE

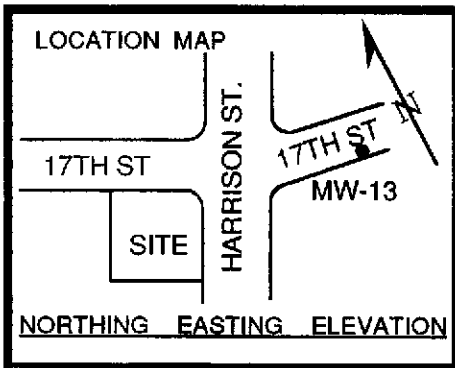
GRADE LIMITS U.S. Standard inch	sieve size	GRADE NAME
12.0		Boulders
3.0	3.0 in.	Cobbles
0.19	No. 4	Gravels
0.08	No. 10	coarse
	No. 40	medium Sand
	No. 200	fine
		Silt
		Clay Size

PACIFIC ENVIRONMENTAL GROUP, INC.

Unified Soil Classification System

Primary Divisions			Group Symbol/Graphic	Typical Names
COARSE GRAINED SOILS more than half is larger than #200 sieve	GRAVELS half of coarse fraction larger than #4 sieve	CLEAN GRAVELS (less than 5% fines)	G W	Well graded gravels, gravel-sand mixtures; little or no fines
			G P	Poorly graded gravels or gravel-sand mixtures; little or no fines
		GRAVEL WITH FINES	G M	Silty gravels, gravel-sand-silt mixtures
			G C	Clayey gravels, gravel-sand-clay mixtures
	SANDS half of coarse fraction smaller than #4 sieve	CLEAN SANDS (less than 5% fines)	S W	Well graded sands, gravelly sands, little or no fines
			S P	Poorly graded sands or gravelly sands, little or no fines
		SANDS WITH FINES	S M	Silty sands, sand-silt mixtures
			S C	Clayey sands, sand-clay mixtures, plastic fines
FINE GRAINED SOILS more than half is smaller than #200 sieve	SILTS AND CLAYS liquid limit less than 50%		M L	Inorganic silts and very fine sand, rock flour, silty or clayey fine sands or clayey silts, with slight plasticity
			C L	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			O L	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS liquid limit more than 50%		M H	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
			C H	Inorganic clays of high plasticity, fat clays
			O H	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS			P t	Peat and other highly organic soils

Pacific Environmental Group, Inc.



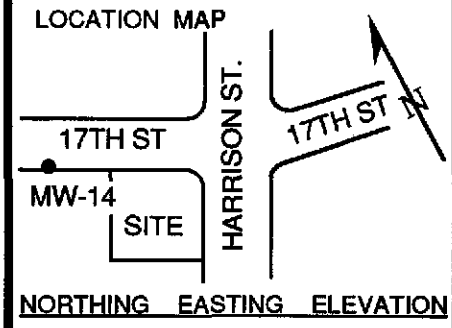
PACIFIC ENVIRONMENTAL GROUP, INC.

WELL NO. MW-13
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2 x 12 SAND

CLIENT: Chevron USA
DATE DRILLED: 10-3-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 28'
WELL DIAMETER: 2"
WELL DEPTH: 28'
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	SOIL TYPE	LITHOLOGY / REMARKS
NEAT CEMENT				0		ASPHALT CONCRETE
	Dp			2	SM	SILTY SAND; yellow brown; 15-20% silty fines; medium sand; well sorted sand; dense; no product odor. @4.5': 6" thick concrete slab
	Dp	0	push	6	ML	SANDY SILT; dark brown; low plasticity; silty fines; 20-30% fine to medium sand; stiff; no product odor.
				8	SM	SILTY SAND; yellow brown; 15-20% silty fines; medium sand; well sorted sand; very dense; no product odor.
	Dp	0	49	10		
				12		
				14		
	Dp	0	>50	16		
				18		
SAND / BENTONITE	Dp/ Wt	0	>50	20		@21': color change to light gray; no product odor.
				22		
				24		@25': increase in fines to 30-40%; faint product odor.
	Wt	1.4	45	26	ML	SANDY SILT; light brown; low plasticity; silty fines; 20-30% fine sand; stiff; no product odor.
	Dp	0		28		BOTTOM OF BORING AT 28'
				30		
				32		
				34		
				36		
				38		
				40		
				42		
				44		

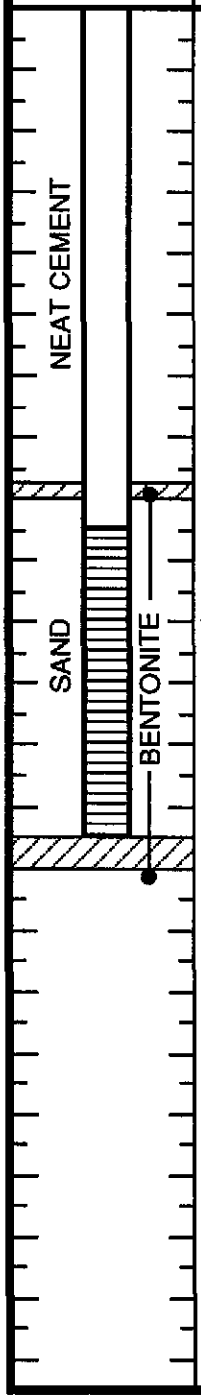


PACIFIC ENVIRONMENTAL GROUP, INC.

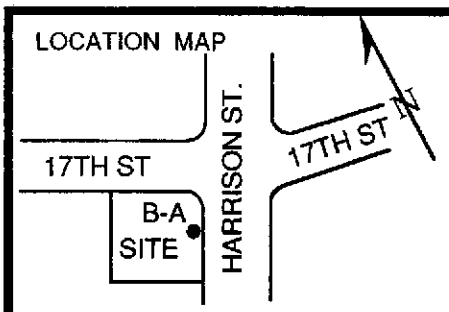
WELL NO. MW-14
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: Sch 40 PVC
SLOT SIZE: 0.020"
GRAVEL PACK: 2 x 12 SAND

CLIENT: Chevron USA
DATE DRILLED: 10-3-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 28.5'
WELL DIAMETER: 2"
WELL DEPTH: 27'
CASING STICKUP: NA



MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	SOIL TYPE	LITHOLOGY / REMARKS
			0		ASPHALT CONCRETE
			2	GM	SILTY GRAVEL - FILL; light gray; 20-30% silty fines; coarse gravel to 1"; very dense; no product odor.
			4	SM	SILTY SAND - yellowish brown; 15-20% silty fines; medium sand; well sorted sand; loose; no product odor.
Dp	0	5	6		
			8		@8': 4" thick concrete slab.
Dp	0	30	10		@10.5': change in color to light gray.
			12		
			14	SP-SM	SAND to SILTY SAND; yellowish brown; 5-10% silty fines; medium sand; well sorted sand; very dense; no product odor.
Dp/ Mst	0	>50	16		
			18		
Wt	0	>50	20		@20': wet; no product odor.
			22		
		>50	24		
Wt	0	push	26	ML	SILT; light tan; silty fines; 0-5% very fine sand; very stiff; no product odor.
Dry			28		
			30		BOTTOM OF BORING AT 28.5'
			32		
			34		
			36		
			38		
			40		
			42		
			44		



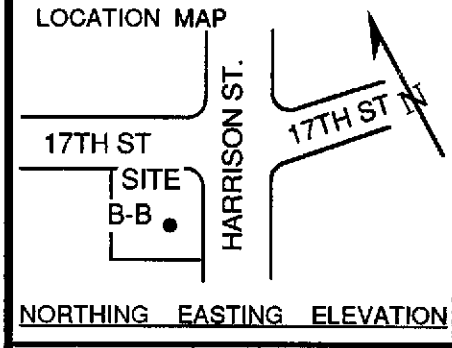
PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. B-A
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: Chevron USA
DATE DRILLED: 10-5-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 31.5'
WELL DIAMETER: NA
WELL DEPTH: NA
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	SOIL TYPE	LITHOLOGY / REMARKS
NEAT CEMENT				2	SM	ASPHALT SILTY SAND; reddish brown; 15-20% silty fines; minor clay; medium sand; very dense; no product odor.
	Dp	0	49	6		
				8	SC	CLAYEY SAND; reddish brown; 20-25% clayey fines; fine to medium sand; dense; no product odor.
	Dp	0	40	10		
				12		
				14	SW-SM	SAND to SILTY SAND; light gray; 5-10% silty fines; medium sand; very dense; moderate product odor.
	Dp	7.5	>50	16		
				18		
	Dp	18.2	>50	20		@20': moderate product odor.
▽				22		
				24		
	Wt	0	>50	26		@25': light brown; no product odor.
	Wt	0	40	28		
	Dp			30		
				32	GW	GRAVEL; reddish brown; 0-5% fines; 0-5% sand; fine gravel to 1/2"; well rounded; dense; no product odor.
				34	ML	SILT; light brown; low plasticity; 10-15% fine sand; very stiff; no product odor.
				36		BOTTOM OF BORING AT 31.5'
				38		
				40		
				42		
				44		



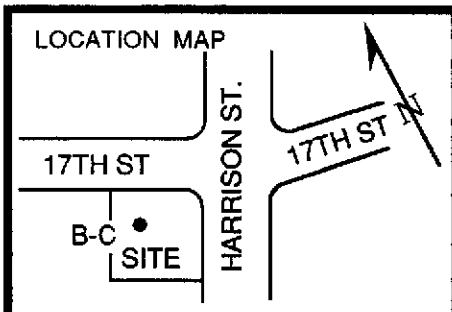
PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. B-B
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: CAL MOD
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: Chevron USA
DATE DRILLED: 10-5-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 34'
WELL DIAMETER: NA
WELL DEPTH: NA
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	SOIL TYPE	LITHOLOGY / REMARKS
NEAT CEMENT				2	SM	ASPHALT SILTY SAND; light brown; 20-30% silty fines; fine to medium sand; very dense; no product odor.
	Dp	0	49	6		
	Dp	0	40	10	SW-SM	SAND to SILTY SAND; light brown; 5-10% silty fines; medium sand; very dense; no product odor.
	Dp	1.0	>50	16		@15': change in color to light gray; faint product odor.
	Dp	1.0	>50	20		@20': change in color to light brown; no product odor.
	Wt	0	>50	26		@25': change in color to light gray; no product odor.
			20	30		@30': lost sample; hammer broke; drilled down to 34' to retrieve.
				32		?
				34		BOTTOM OF BORING AT 34'
				36		
				38		
				40		
				42		
				44		



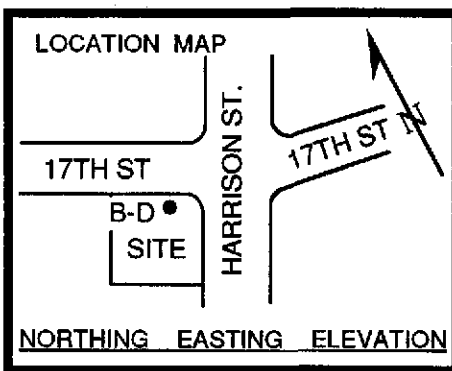
PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. B-C
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: Continuous Core
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: Chevron USA
DATE DRILLED: 10-5-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 30'
WELL DIAMETER: NA
WELL DEPTH: NA
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	RECOVERY / SAMPLE INTERVAL / GRAPHIC	SOIL TYPE	LITHOLOGY / REMARKS
NEAT CEMENT				0		SM	ASPHALT SILTY SAND; reddish brown; 15-20% silty fines; medium sand; very dense; no product odor.
	Dp			2			
				4			
	Dp	0	push	6			
				8			
	Dp	0	push	10			
				12			
	Dp	0	push	14			
				16		SW-SM	SAND to SILTY SAND; light gray; 5-10% silty fines; medium sand; very dense; no product odor.
	Dp	0	push	18			
				20			
▽				22			@21': color change to light brown.
	Wt	0	push	24			
				26			
				28		ML	SILT; light gray; low plasticity; 2-5% fine gravel; very stiff; no product odor.
				30			
				32			BOTTOM OF BORING AT 30'
				34			
				36			
				38			
				40			
				42			
				44			



PACIFIC ENVIRONMENTAL GROUP, INC.

BORING NO. B-D
PAGE 1 OF 1

PROJECT NO. 320-90.01
LOGGED BY: SVG
DRILLER: WEST HAZMAT
DRILLING METHOD: HSA
SAMPLING METHOD: Continuous Core
CASING TYPE: NA
SLOT SIZE: NA
GRAVEL PACK: NA

CLIENT: Chevron USA
DATE DRILLED: 10-5-91
LOCATION: 1633 Harrison St.
HOLE DIAMETER: 8"
HOLE DEPTH: 30'
WELL DIAMETER: NA
WELL DEPTH: NA
CASING STICKUP: NA

WELL COMPLETION	MOISTURE CONTENT	PID	PENETRATION (BLOWS/FT)	DEPTH (FEET)	SOIL TYPE	LITHOLOGY / REMARKS
				0	SM	ASPHALT SILTY SAND; reddish brown; 20-25% silty fines; medium sand; very dense; no product odor.
	Dp			2		
				4		
	Dp	0	push	6		
				8		
	Dp	0	push	10		
				12		
	Dp	0	push	14	SW-SM	SAND to SILTY SAND; light gray; 5-10% silty fines; medium sand; very dense; faint product odor.
				16		
				18		
	Dp	6.9	push	20		
▽	Wt			22		
	Wt	428	push	24		
				26		
	Wt			28	GW	GRAVEL; black; 0-5% fines; 0-5% fine sand; fine gravel to 1/2" well rounded; very dense; no product odor.
	Dp	0		30	ML	SILT; light brown; low plasticity; silty fines; 10-15% fine sand; very stiff; no product odor.
				32		
				34		BOTTOM OF BORING AT 30'
				36		
				38		
				40		
				42		
				44		

NEAT CEMENT

JOHN E. KOCH
Land Surveyor
CA. State Lic. No. LS4811
5427 Telegraph Ave., Suite A
Oakland, CA 94609
(510)655-9956
FAX(510)655-9745

LICENSED LAND SURVEYOR
JOHN E. KOCH
No. 4811
09/30/91
STATE OF CALIFORNIA

Pacific Environmental Group, INC.
620 Contra Costa Boulevard, Suite 209
Pleasant Hill, CA
(415) 825-0855
FAX (415) 825-0882

10/16/91

Tabulation of Elevations as of
11:00 AM 10/16/91

Job #91068
PEG Job #320-90.01
Project Contact: Saul Germanas
Site: Former Chevron Station #9-0020
1633 Harrison Street
@ 17th Street
Oakland, CA

Well #	Gd. El.	Orient	T.O.C. El.	Casing dia.	Orient
MW-9	29.06	NW	28.68	2"	NW
*Report dated 07/26/90. JEK #90066					
*MW-9	29.05	NW	28.67	2"	NW
MW-13	29.04	N	28.63	2"	N
MW-14	30.24	N	29.46	2"	N

NOTES:

1. Datum is City of Oakland = U.S.G.S. - 3.00'.

2. Benchmark (El. = 29.25') is a Cut square on the top of curb at the midpoint of return at the southwest corner of 17th and Harrison Streets, City of Oakland.

3 Ground Elevation (Gd. El.) is at top of box.

4. Top of Casing Elevation (T.O.C. El.) is at top of PVC.

5. Reference is made to previous JEK job #90066.

ATTACHMENT C

CERTIFIED ANALYTICAL REPORTS AND CHAIN-OF-CUSTODY DOCUMENTATION

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 12425

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = part per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg
Standard Reference: 07/23/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg
Standard Reference: 06/13/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	NA	NA	NA	NA	NA
Gasoline	07/23/91	200ng	86/84	3.7	59-121
Benzene	06/13/91	200ng	84/88	4.7	70-125
Toluene	06/13/91	200ng	85/88	4.1	74-116
Ethyl Benzene	06/13/91	200ng	85/89	4.6	75-120
Total Xylene	06/13/91	600ng	87/92	5.4	75-119

Richard Srna, Ph.D.
Cecilia G. Taguiwalo (for)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 12425
CLIENT: Pacific Environmental Group
CLIENT JOB NO.: 320-90.01

DATE RECEIVED: 10/04/91
DATE REPORTED: 10/16/91

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12425- 1	MW-13-15	10/03/91	10/11/91
12425- 2	MW-13-20	10/03/91	10/10/91
12425- 3	MW-13-25	10/03/91	10/10/91
12425- 4	MW-14-10	10/03/91	10/10/91
12425- 5	MW-14-20	10/03/91	10/10/91
12425- 6	MW-14-25	10/03/91	10/11/91

Laboratory Number:	12425 1	12425 2	12425 3	12425 4	12425 5
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005

Laboratory Number:	12425 6
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)
OIL AND GREASE:	NA
TPH/GASOLINE RANGE:	ND<1
TPH/DIESEL RANGE:	NA
BENZENE:	ND<.005
TOLUENE:	ND<.005
ETHYL BENZENE:	ND<.005
XYLENES:	ND<.005

Superior Precision Analytical, Inc.
1555 Burke, Unit I ▪ San Francisco, California 94124 ▪ (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 12425-4
CLIENT: Pacific Environmental Group
JOB NO.: 320-90.01

DATE SAMPLED: 10/03/91
DATE RECEIVED: 10/04/91
DATE ANALYZED: 10/16/91

OCT 21 1991

RECEIVED

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-14-10

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND
2-Chloroethyl vinyl ether	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15
MS/MSD average recovery = 100 % :MS/MSD RPD =< 1 %

Richard Srna, Ph.D.

Cecilia G Jonsson (for)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I ▪ San Francisco, California 94124 ▪ (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 12425-5
CLIENT: Pacific Environmental Group
JOB NO.: 320-90.01

DATE SAMPLED: 10/03/91
DATE RECEIVED: 10/04/91
DATE ANALYZED: 10/16/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-14-20

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND
2-Chloroethyl vinyl ether	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15
MS/MSD average recovery = 100 % :MS/MSD RPD =< 1 %

Richard Srna, Ph.D.

Cecilia G. Tom (for)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 12425-6
CLIENT: Pacific Environmental Group
JOB NO.: 320-90.01

DATE SAMPLED: 10/03/91
DATE RECEIVED: 10/04/91
DATE ANALYZED: 10/16/91

EPA SW-846 METHOD 8010
HALOGENATED VOLATILE ORGANICS
SAMPLE: MW-14-25

Compound	MDL (ug/kg)	RESULTS (ug/kg)
Chloromethane/Vinyl Chloride	10	ND
Bromomethane/Chloroethane	10	ND
Trichlorofluoromethane	5	ND
1,1-Dichloroethene	5	ND
Methylene Chloride	5	ND
trans-1,2-Dichloroethene	5	ND
1,1-Dichloroethane	5	ND
Chloroform	5	ND
1,1,1-Trichloroethane	5	ND
Carbon tetrachloride	5	ND
1,2-Dichloroethane	5	ND
Trichloroethylene	5	ND
1,2-Dichloropropane	5	ND
Bromodichloromethane	5	ND
Cis-1,3-Dichloropropene	5	ND
trans-1,3-Dichloropropene	5	ND
1,1,2-Trichloroethane	5	ND
Tetrachloroethene	5	ND
Dibromochloromethane	5	ND
Chlorobenzene	5	ND
Bromoform	5	ND
1,1,2,2-Tetrachloroethane	5	ND
1,3-Dichlorobenzene	5	ND
1,2-Dichlorobenzene	5	ND
1,4-Dichlorobenzene	5	ND
Cis-1,2-Dichloroethene	5	ND
2-Chloroethyl vinyl ether	5	ND

MDL = Method Detection Limit
ug/kg = parts per billion (ppb)
QA/QC Summary: Daily Standard RPD = <15
MS/MSD average recovery = 100 % :MS/MSD RPD =< 1 %

Richard Srna, Ph.D.

Cecilia Gonzalez (for)
Laboratory Director

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 647-2123

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 12424
CLIENT: Pacific Environmental Group
CLIENT JOB NO.: 320-90.01

DATE RECEIVED: 10/07/91
DATE REPORTED: 10/16/91

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12424- 1	B-A-10	10/05/91	10/11/91
12424- 2	B-A-15	10/05/91	10/11/91
12424- 3	B-A-20	10/05/91	10/11/91
12424- 4	B-A-25	10/05/91	10/11/91
12424- 5	B-A-30	10/05/91	10/12/91
12424- 6	B-B-10	10/05/91	10/12/91
12424- 7	B-B-15	10/05/91	10/12/91
12424- 8	B-B-20	10/05/91	10/12/91
12424- 9	B-B-25	10/05/91	10/12/91
12424-10	B-C-10	10/05/91	10/12/91

Laboratory Number:	12424 1	12424 2	12424 3	12424 4	12424 5
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005

Laboratory Number:	12424 6	12424 7	12424 8	12424 9	12424 10
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005

Superior Precision Analytical, Inc.
1555 Burke, Unit I ▪ San Francisco, California 94124 ▪ (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 12424
CLIENT: Pacific Environmental Group
CLIENT JOB NO.: 320-90.01

DATE RECEIVED: 10/07/91
DATE REPORTED: 10/16/91

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
12424-11	B-C-15	10/05/91	10/12/91
12424-12	B-C-20	10/05/91	10/12/91
12424-13	B-C-25	10/05/91	10/12/91
12424-14	B-C-30	10/05/91	10/12/91
12424-15	B-D-10	10/05/91	10/12/91
12424-16	B-D-15	10/05/91	10/12/91
12424-17	B-D-20	10/05/91	10/12/91
12424-18	B-D-25	10/05/91	10/12/91
12424-19	B-D-30	10/05/91	10/12/91

Laboratory Number:	12424 11	12424 12	12424 13	12424 14	12424 15
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1	ND<1	ND<1	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
TOLUENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005
XYLENES:	ND<.005	ND<.005	ND<.005	ND<.005	ND<.005

Laboratory Number:	12424 16	12424 17	12424 18	12424 19
ANALYTE LIST	Amounts/Quantitation Limits (mg/kg)			
OIL AND GREASE:	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<1	ND<1	120	ND<1
TPH/DIESEL RANGE:	NA	NA	NA	NA
BENZENE:	ND<.005	ND<.005	ND<0.03	ND<.005
TOLUENE:	ND<.005	ND<.005	0.16	ND<.005
ETHYL BENZENE:	ND<.005	ND<.005	0.14	ND<.005
XYLENES:	ND<.005	ND<.005	1.8	ND<.005

Superior Precision Analytical, Inc.
1555 Burke, Unit I • San Francisco, California 94124 • (415) 647-2081 / fax (415) 821-7123

C E R T I F I C A T E O F A N A L Y S I S

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS

QA/QC INFORMATION
SET: 12424

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT
mg/kg = part per million (ppm)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Minimum Detection Limit in Soil: 50mg/kg

Modified EPA-SW846 Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Soil: 1mg/kg
Standard Reference: NA

EPA-SW846 Method 8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Soil: 1mg/kg
Standard Reference: 07/23/91

SW-846 Method 8020/BTXE
Minimum Quantitation Limit in Soil: 0.005mg/kg
Standard Reference: 06/13/91

ANALYTE	REFERENCE	SPIKE LEVEL	MS/MSD RECOVERY	RPD	CONTROL LIMIT
Oil & Grease	NA	NA	NA	NA	NA
Diesel	NA	NA	NA	NA	NA
Gasoline	07/23/91	200ng	97/98	1.3	59-121
Benzene	06/13/91	200ng	82/87	5.3	70-125
Toluene	06/13/91	200ng	88/91	4.3	74-116
Ethyl Benzene	06/13/91	200ng	88/91	3.9	75-120
Total Xylene	06/13/91	600ng	93/96	3.7	75-119

Richard Srna, Ph.D.
Cecilia G. Joaquin (for)
Laboratory Director

12425

Chain-of-Custody-Record

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number 9-0020
Facility Address 1633 HARRISON ST., OAKLAND, CA
Consultant Project Number 320-90.01
Consultant Name PACIFIC ENVIRONMENTAL GROUP
Address 620 CONTRA COSTA BLVD, STE 209, PLEASANT HILL, CA
Project Contact (Name) JERRY MITCHELL
(Phone) 510.825.0855 (Fax Number) 825-0882

Chevron Contact (Name) NANCY VUKELICH
(Phone) 510-842-9500
Laboratory Name SUPERIOR ANALYTICAL
Laboratory Release Number 4368660
Samples Collected by (Name) SAULIUS GERMANAS
Collection Date 10.3.91
Signature

Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	Analyses To Be Performed: BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Chlorinated HC (8010)	Non Chlorinated HC (8020)	Total Lead (AA)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)	Remarks
mw-13-15	1	S	D		HCNJ	Y	✓							
mw-13-20														
mw-13-25														
mw-14-10										✓				
mw-14-20														
mw-14-25														

Please initial:
Samples Stored in ice. Yes
Appropriate containers. Yes
Samples preserved. NA
VOA's without headspace. NA
Comments:

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
	PEG	10-4-91/9:15			
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
			Tsenda L OL		10/4/91 9:15

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

COC-1.DWG/11 80/HC-

12924

Chain-of-Custody-Record

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number 9-0020
Facility Address 1632 HARRISON ST., OAKLAND, CA
Consultant Project Number 320-90.01
Consultant Name PACIFIC ENVIRONMENTAL GROUP
Address 620 CONTRA COSTA BLVD, ST.209, PLEASANT HILL
Project Contact (Name) JERRY MITCHELL
(Phone) 510.825.0855 (Fax Number) 825.0882

Chevron Contact (Name) NANCY VUKELICH
(Phone) 510.842.9500
Laboratory Name SUPERIOR ANALYTICAL
Laboratory Release Number 4368660
Samples Collected by (Name) SAULIUS GERMANAS
Collection Date 10.5.91
Signature Saulius

Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Chlorinated HC (8010)	Non Chlorinated HC (8020)	Total Lead (AA)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)						Remarks
B-C-30	1	S	D		NONE	yes	✓												Consult, 80/20 per client M.P. 10/7/91
B-D-10							✓												
B-D-15							✓												
B-D-20							✓			✓									
B-D-25							✓			✓									
B-D-30							✓												

Please initial: RLB
Samples Stored in Ice. ✓
Appropriate containers. ✓
Samples preserved. ✓
VOA's without headspace. ✓
Comments:

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Saulius	PEG	10.7.91/10 AM	Brenda L. Oliver	Superior	10/07/91 10AM
Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Brenda L. Oliver	Superior	10/7/91/10AM			
Relinquished By (Signature)	Organization	Date/Time	Received For Laboratory By (Signature)		Date/Time
			Richard Rubio		10/7/91 12 noon

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
(As Contracted)

COC-1.DWG/11 90/HCH

12424

Chain-of-Custody-Record

Chevron U.S.A. Inc.
P.O. BOX 5004
San Ramon, CA 94583
FAX (415)842-9591

Chevron Facility Number 9-0020
Facility Address 1633 HARRISON ST., OAKLAND, CA
Consultant Project Number 320-90.01
Consultant Name PACIFIC ENVIRONMENTAL GROUP
Address 620 CONTRA COSTA BLVD., STE 209, PLEASANT HILL 94523
Project Contact (Name) JERRY MITCHELL
(Phone) 510-825-0855 (Fax Number) 825-0882

Chevron Contact (Name) NANCY VUKELICH
(Phone) 510-842-9500
Laboratory Name SUPERIOR ANALYTICAL
Laboratory Release Number 43686660
Samples Collected by (Name) SAULIUS GERMANAS
Collection Date 10-5-91
Signature Saulius

Sample Number	Number of Containers	Matrix S = Soil A = Air W = Water C = Charcoal	Type G = Grab C = Composite D = Discrete	Time	Sample Preservation	Iced (Yes or No)	BTEX + TPH GAS (8020 + 8015)	TPH Diesel (8015)	Oil and Grease (5520)	Chlorinated HC (8010)	Non Chlorinated HC (8020)	Total Lead (AA)	Metals Cd,Cr,Pb,Zn,Ni (ICAP or AA)	Remarks
B-A-10	1	S	G		NONE	YES	✓							TPH- VALUES
B-A-15							✓							MAY BE
B-A-20							✓			✓				HEAVIER THAN
B-A-25							✓							TYPICAL GAS.
B-A-30							✓							IF LAB FINDS
B-B-10							✓							TPH MAY
B-B-15							✓							BE DIESEL, PLEASE
B-B-20							✓			✓				CALL P.E.G. AND
B-B-25							✓							MAY REQUEST
B-B-30							✓							TPH-DIESEL
B-C-10							✓							ANALYSES.
B-C-15							✓							
B-C-20							✓			✓				
B-C-25	↓	↓	↓		↓	↓	✓							

Please initial: NK
Samples Stored in ice. ✓
Appropriate containers. ✓
Samples preserved. ✓
VOA's without headspace. ✓
Comments:

Cancel 8010 per client ML 10/7/91

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
Saulius	PEG	10-7-91/10AM	Brenda L. OC	Superior	10/7/91 10 AM
Brenda L OC	Superior	10/7/91 10:00 am			
			Received For Laboratory By (Signature)		Date/Time
			Richard Hedla		10/7/91 12 noon

Turn Around Time (Circle Choice)
24 Hrs.
48 Hrs.
5 Days
10 Days
As Contracted

COC-1.DWG/11 90/HCH