Chevron U.S.A. Inc.
2410 Camino Ramon, San Ramon, California • Phone (415) 842-9500
Mail Address: P.O. Box 5004, San Ramon, CA 94583-0804

91 MAR 20 AM 10:51

Marketing Operations

R. B. Bellinger
Manager, Operations
S. L. Patterson
Area, Manager, Operations
C. G. Trimbach
Manager, Engineering

March 14, 1991

Mr. Larry Seto/Lowell Miller
Alameda County Health Agency
Hazmat Section
470 27th Street, Room 324
Oakland, California 94612

Re: Chevron Service Station #9-8139
16304 Foothill Boulevard
San Leandro, California 94578

Dear Mr. Seto,

Please find attached the most recent quarterly groundwater monitoring report and remedial investigation report for the above site. As of January 1991 Chevron has seven on-site g.w. monitoring wells, one on-site g.w. extraction well and one off-site g.w. monitoring well. Depth-to-water is between 14.40 and 18.87 feet. The approximate groundwater flow direction is to the south at a gradient of 0.03 ft/ft.

As you already know, Chevron has a groundwater remediation system on-site. We have already sent you a workplan for an additional phase of work involving installing one additional off-site monitoring well, two additional on-site extraction wells and adding an oil/water separator to the existing system as well as keeping tabs on the phase-separated-hydrocarbons in well MW-5. We will send you a copy of the results of the next phase of work and continue to monitor groundwater quality.

I declare under penalty of perjury that the information contained in the attached reports is true and correct, and that any recommended actions are appropriate under the current circumstance to the best of my knowledge.

If I can be of further assistance, please feel free to call me at (415) 842-9040.

Sincerely,

Walter F. Posluszny Jr.
Environmental Engineer
Chevron U.S.A

cc: Ms. Penny Silzer/Rich Hiett, RWQCB, Oakland, Ca.
File(MAC 9-8139R9)

QUARTERLY MONITORING REPORT
FOURTH QUARTER, 1990

CHEVRON SERVICE STATION NO. 9-8139
16304 Foothill Boulevard
San Leandro, California

January 1991

Prepared for

CHEVRON USA, INC.

Prepared by

CHEMICAL PROCESSORS, INC.

950 B Gilman Street
Berkeley, California 94710

Project No. 1158

CHEMPRO
A Burlington Environmental Inc. Company

CHEMICAL PROCESSORS, INC.
Northern California Division

January 11, 1991
Project No. 1158

Mr. Walt Posluszny
Chevron USA, Inc.
2410 Camino Ramon
San Ramon, CA 94583-0804

Re: **QUARTERLY MONITORING REPORT**
Fourth Quarter, 1990
Chevron Service Station No. 9-8139
16304 Foothill Boulevard
San Leandro, California

Dear Mr. Posluszny:

Chemical Processors, Inc. (Chempro) is pleased to submit the following quarterly monitoring report for Chevron USA, Inc. (Chevron) Service Station No. 9-8139, located at 16304 Foothill Boulevard in San Leandro, California. The groundwater monitoring and sampling was conducted by Chempro on November 29, 1990.

MONITORING ACTIVITIES

The site is occupied by an operating service station located on Foothill Boulevard in southern San Leandro, California (see Figure 1). The service station is located approximately 250 feet east of Highway 580, and 6,000 feet south of Lake Chabot. There are currently seven groundwater monitoring wells located onsite and one located offsite (see Figure 2). In each well, the depth to groundwater and the presence and thickness of phase-separated hydrocarbons (PSH) were determined. Groundwater samples were collected and analyzed according to Chevron guidelines to determine the concentrations of total petroleum hydrocarbons as gasoline (TPH), benzene, toluene, ethylbenzene and total xylenes (BTEX). The monitoring and sampling procedures are presented in Appendix A. Field data sheets are presented in Appendix B.

Superior Precision Analytical, Inc., located in San Francisco, California, performed the analyses. The analytical results, techniques, and detection limits are presented in Table 1.

950 Gilman Street, Suite B
Berkeley, California 94710
(415) 524-9372

RESULTS

The groundwater elevation beneath the site on November 29, 1990 ranged from 107.31 to 112.27 feet above mean sea level (see Table 2). A contour map of these data is presented in Figure 3. As shown on the contour map, the approximate groundwater flow direction is to the south, with an approximate gradient of 0.03 ft/ft.

The results of the chemical analyses are presented in Table 1. PSH was detected in monitoring well MW-5 during quarterly sampling on November 29, 1990, at a thickness of 0.71 feet. A semi-weekly bailing schedule for removal of phase-separated hydrocarbons from well MW-5 was initiated on October 22, 1990. Figures 4 and 5 show isoconcentration contours for TPH and benzene, respectively. Chain-of-custody documentation is presented in Appendix C. Certified analytical results are presented in Appendix D.

A remediation system was installed to extract and treat the contaminated groundwater beneath the site. The system is scheduled to begin operation during the second week of January 1991.

Chempro appreciates the opportunity to provide Chevron with this information. Please feel free to contact us if we can provide further assistance.

Very truly yours,
CHEMICAL PROCESSORS, INC.

Felicia A Rein
Environmental Scientist

David C. Tight
Site Remediation Manager

FR/DT:ms

Attachments:
Table 1 - Groundwater Analyses and Analytical Techniques
Table 2 - Groundwater Elevation Data
Figure 1 - Site Location Map
Figure 2 - Site Vicinity Map
Figure 3 - Groundwater Elevation Contours
Figure 4 - TPH Isoconcentration Contours
Figure 5 - Benzene Isoconcentration Contours
Appendix A - Groundwater Sampling and Analysis Procedures
Appendix B - Water Sample Field Data Sheets
Appendix C - Chain-of-Custody Records
Appendix D - Certified Analytical Results

Table 1
GROUNDWATER ANALYSES AND ANALYTICAL TECHNIQUES
Chevron Service Station No. 9-8139
16304 Foothill Blvd, San Leandro , California

WELL DESIGNATION	SAMPLE DATE	SAMPLE NO.	TPH Gasoline	TPH Diesel	TOTAL OIL & GREASE	BENZENE	TOLUENE	ETHYL-BENZENE	XYLENES	Pb	TOTAL Cr	METALS Cd	Zn	ETHYLENE DIBROMIDE
MW-1	12/5/89	WS-1SL	ND	ND	ND	ND	ND	ND	ND	ND	ND	20	20	ND
	5/24/90	WS-1SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA
	9/6/90	1WSSL	ND	NA	NA	ND	0.8	ND	0.5	NA	NA	NA	NA	ND
	11/29/90	WS13SL	ND	NA	NA	0.7	0.9	ND	1.0	NA	NA	NA	NA	NA
MW-2	12/5/89	WS-2SL	ND	ND	ND	ND	ND	ND	0.9	ND	ND	ND	10	ND
	5/24/90	WS-2SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA
	9/6/90	2WSSL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND
	11/29/90	WS10SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA
MW-3	12/5/89	WS-3SL	24000	NA	NA	2400	1800	360	2600	NA	NA	NA	NA	ND
	12/5/89	WS-5SL	24000	NA	ND	2500	1900	390	2600	ND	ND	ND	40	ND
	5/24/90	WS-3SL	9000	NA	NA	2600	1700	250	1500	NA	NA	NA	NA	NA
	5/24/90	WS-4SL	10000	NA	NA	2600	1800	260	1600	NA	NA	NA	NA	NA
	9/6/90	3WSSL	3500	NA	NA	900	550	110	460	NA	NA	NA	NA	ND
	11/29/90	WS15SL	9200	NA	NA	1100	1100	210	1100	NA	NA	NA	NA	NA
MW-4	12/5/89	WS-4SL	19000	NA	NA	390	1300	460	1800	NA	NA	NA	NA	ND
	5/24/90	WS-5SL	4500	NA	NA	210	440	140	480	NA	NA	NA	NA	NA
	9/6/90	4WSSL	6000	NA	NA	680	520	170	580	NA	NA	NA	NA	ND
	11/29/90	WS16SL	15000	NA	NA	800	1000	430	1700	NA	NA	NA	NA	NA
MW-5	5/25/90	WS-6SL	28000	NA	NA	920	1100	460	1300	NA	NA	NA	NA	2.40
	9/7/90	NA	<- - - - - - - - - - - - - PSH (approx. 0.04'), NOT SAMPLED- - - - - - - - - - - - - - - - - >											
	11/29/90	NA	<- - - - - - - - - - - - - PSH (approx. 0.71'), NOT SAMPLED- - - - - - - - - - - - - - - - - >											
MW-6	5/25/90	WS-7SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND
	9/7/90	6WSSL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND
	11/29/90	WS17SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA
MW-7	5/25/90	WS-8SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND
	9/7/90	7WSSL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND
	9/7/90	8WSSL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND
	11/29/90	WS14SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA
MW-8	9/7/90	9WSSL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND
	11/29/90	WS11SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA
	11/29/90	WS12SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA
E-1***	5/25/90	WS-9SL	3900	NA	NA	260	430	64	340	NA	NA	NA	NA	0.03
RINSATE	12/5/89	RS-4SL	ND	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
	5/24/90	RS-1SL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	NA
	9/7/90	1RSSL	ND	NA	NA	ND	ND	ND	ND	NA	NA	NA	NA	ND
	11/29/90	RS2SL	ND	NA	NA	ND	0.6	ND	0.7	NA	NA	NA	NA	NA
12/89	Detection Method		8015	8015	413.2	602	602	602	602	7420	7190	7130	7950	504
	Detection Limit (ppb)		500	1000	5000	0.5	0.5	0.5	0.5	500	100	10	10	0.05
5/90	Detection Method		8015	NA	NA	602/624*	602/624*	602/624*	602/624*	NA	NA	NA	NA	504
	Detection Limit (ppb)		50			0.5/2**	0.5/3**	0.5/3**	0.5/3**					0.02
9/90	Detection Method		8015	NA	NA	602	602	602	602	NA	NA	NA	NA	504
	Detection Limit (ppb)		50			0.5	0.5	0.5	0.5					0.05
11/90	Detection Method		8015	NA	NA	602	602	602	602	NA	NA	NA	NA	NA
	Detection Limit (ppb)		50			0.5	0.5	0.5	0.5					

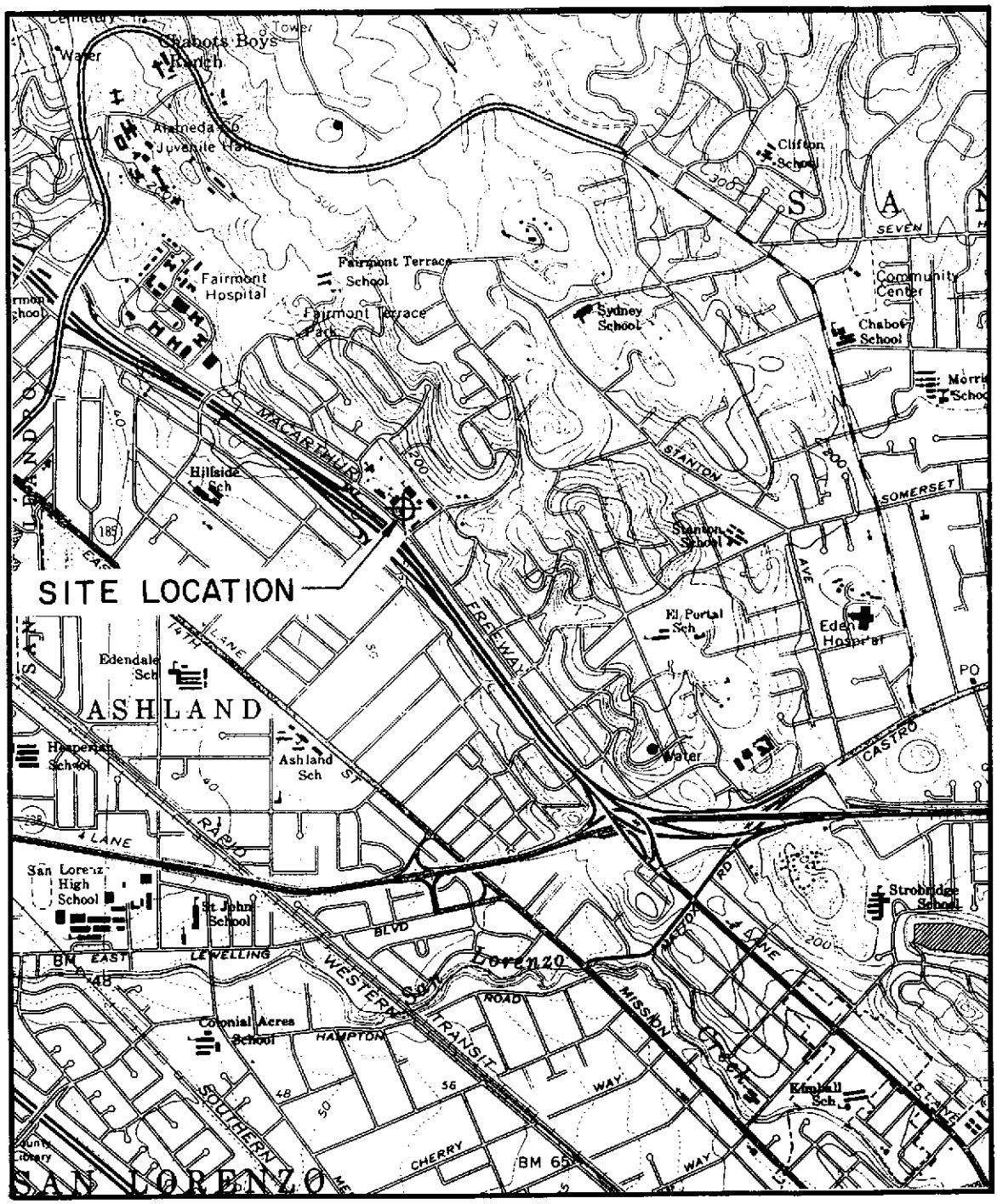
Groundwater chemistry values presented in parts per billion (ppb)
ND = Less than method detection limit
NA = No Analysis

* MW-5, MW-6, MW-7 & E-1 were analyzed for Volatile Organics using EPA Method 8240 (624); other samples were analyzed using EPA Method 8020 (602).
** Method Detection Limits: (602)MDL = 0.5 ppb, (624)MDL = 2, 3, 3, 3 ppb for benzene, toluene, ethylbenzene, & xylenes, respectively.
*** E-1 will not be monitored in future quarterly monitoring activities.

Table 2
GROUNDWATER ELEVATION DATA
Chevron Service Station No. 9-8139
16304 Foothill Blvd., San Leandro, California

Well Number	Date Sampled	TOC Elevation (ft-MSL)	Depth to Water (ft-BTOC)	PSH (ft)	Water Elevation (ft-MSL)
MW-1	3/23/90	127.09	12.92	ND	114.17
	9/6/90	127.09	14.68	ND	112.41
	9/25/90	127.09	15.01	ND	112.08
	11/29/90	127.09	14.82	ND	112.27
MW-2	3/23/90	125.98	12.40	ND	113.58
	9/6/90	125.98	14.85	ND	111.13
	9/25/90	125.98	14.80	ND	111.18
	11/29/90	125.98	14.40	ND	111.58
MW-3*	3/23/90	127.84	17.50	ND	110.34
	9/6/90	126.77	18.72	ND	108.05
	9/25/90	126.77	18.40	ND	108.37
	11/29/90	126.77	18.97	ND	107.8
MW-4	3/23/90	125.22	16.02	ND	109.2
	9/6/90	125.22	17.35	ND	107.87
	9/25/90	125.22	17.48	ND	107.74
	11/29/90	125.22	17.61	ND	107.61
MW-5	3/23/90	125.85	16.89	ND	108.96
	9/7/90	125.85	18.46	0.04	107.39
	9/25/90	125.85	19.30	1.3	106.55
	11/29/90	125.85	18.87	0.71	106.98
MW-6	3/23/90	124.18	18.51	ND	105.67
	9/7/90	124.18	16.18	ND	108.00
	9/25/90	124.18	16.42	ND	107.76
	11/29/90	124.18	16.11	ND	108.07
MW-7	3/23/90	126.86	21.40	ND	105.46
	9/7/90	126.86	18.38	ND	108.48
	9/25/90	126.86	19.25	ND	107.61
	11/29/90	126.86	18.55	ND	108.31
MW-8	9/7/90	123.61	16.07	ND	107.54
	9/25/90	123.61	16.20	ND	107.41
	11/29/90	123.61	16.30	ND	107.31

TOC: Top of casing
ft-MSL: Feet above mean sea level
ft-BTOC: Feet below top of casing
ND: Not detected
* MW-3 wellhead modified and resurveyed on 9/6/90



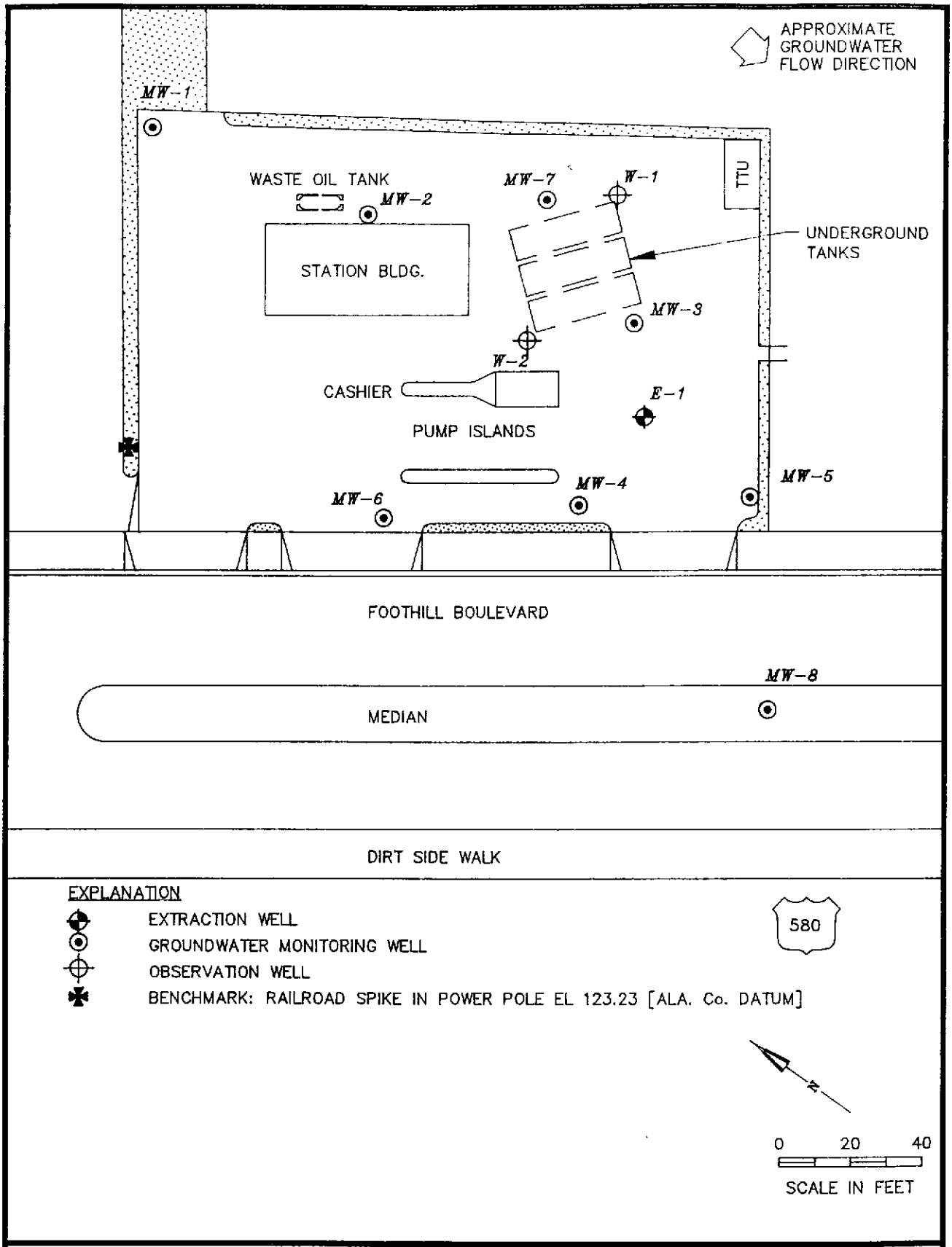
NOTE: (MAP ADAPTED FROM USGS HAYWARD 7.5' QUADRANGLE)

CHEMICAL PROCESSORS, INC.
950-B GILMAN STREET
BERKELEY, CALIFORNIA

SITE LOCATION MAP
Chevron Service Station #9-8139
16304 Foothill Boulevard
San Leandro, California

FIGURE
1

1158

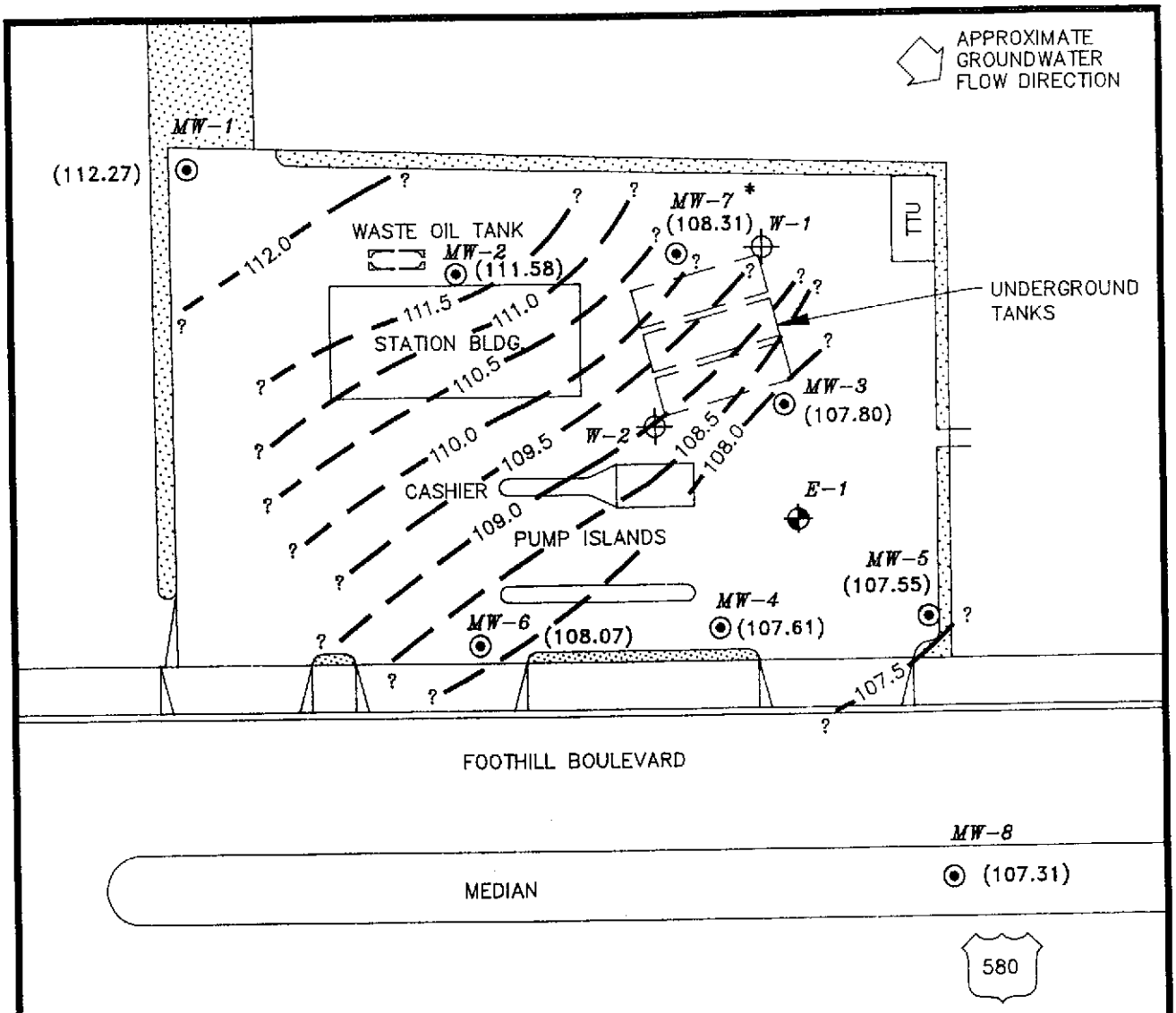


CHEMICAL PROCESSORS INC.
950 "B" Gilman Street
Berkeley, CA 94710

SITE VICINITY MAP
CHEVRON SERVICE STATION No. 9-8139
16304 FOOTHILL BOULEVARD
SAN LEANDRO, CALIFORNIA

PROJECT No. 1158

FIGURE 2



EXPLANATION

- EXTRACTION WELL
- GROUNDWATER MONITORING WELL
- (112.27) GROUNDWATER ELEVATION (FT-MSL) SAMPLES COLLECTED ON: 11/29/90
- 109.5 GROUNDWATER CONTOUR (FT-MSL) GROUNDWATER GRADIENT 0.03 ft/ft
- * *MW-7* DATA NOT USED IN CONTOURING
- NOTE: *MW-5* ADJUSTED FOR PRODUCT THICKNESS

0 20 40

SCALE IN FEET

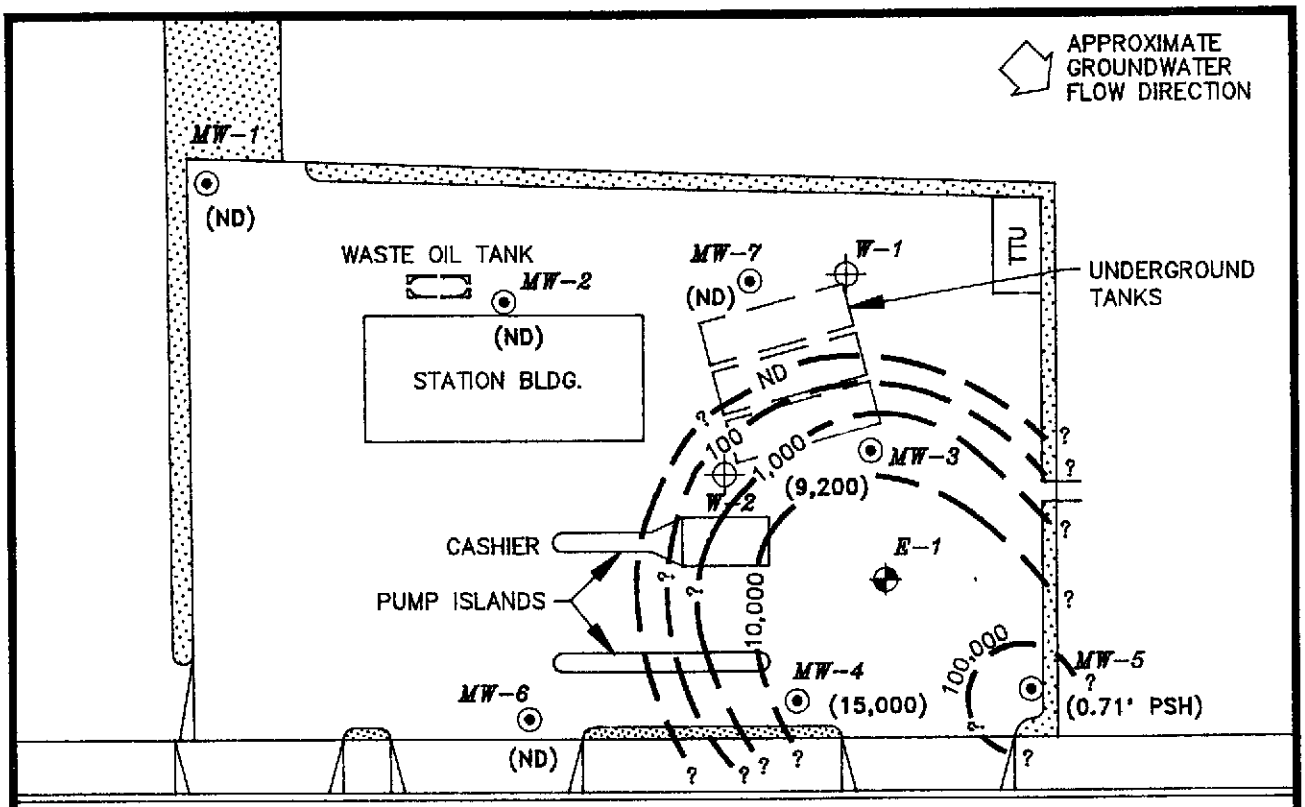
FOURTH QUARTER 1990

CHEMICAL PROCESSORS INC.
950 "B" Gilman Street
Berkeley, CA 94710

GROUNDWATER ELEVATION CONTOURS
CHEVRON SERVICE STATION No. 9-8139
16304 FOOTHILL BOULEVARD
SAN LEANDRO, CALIFORNIA

PROJECT No. 1158

FIGURE 3



EXPLANATION

- EXTRACTION WELL
- GROUNDWATER MONITORING WELL
- 100 — BENZENE CONCENTRATION IN GROUNDWATER CONTOUR SAMPLES COLLECTED ON: 11/29/90
- (9,200) — TPH CONCENTRATION IN PARTS PER BILLION METHOD DETECTION LIMIT = 50 (ppb)
- ND — NOT DETECTED
- PSH — PHASE SEPARATED HYDROCARBONS (ft)

0 20 40

SCALE IN FEET

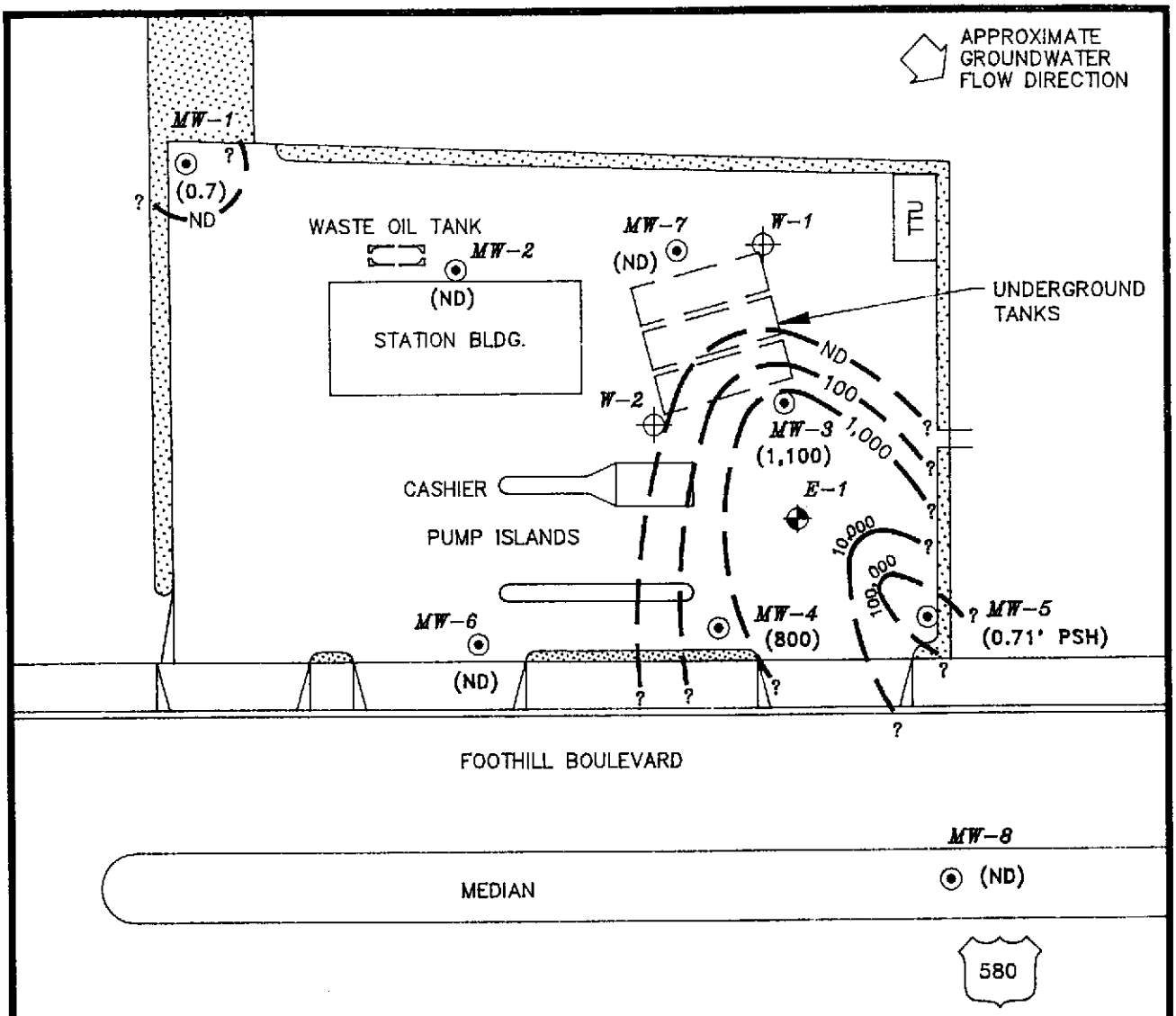
FOURTH QUARTER 1990

CHEMICAL PROCESSORS INC.
950 "B" Gilman Street
Berkeley, CA 94710

TPH ISOCONCENTRATION CONTOURS
CHEVRON SERVICE STATION No. 9-8139
16304 FOOTHILL BOULEVARD
SAN LEANDRO, CALIFORNIA

PROJECT No. 1158

FIGURE 4



EXPLANATION

- EXTRACTION WELL
- GROUNDWATER MONITORING WELL
- 100 — BENZENE CONCENTRATION IN GROUNDWATER CONTOUR SAMPLES COLLECTED ON: 11/29/90
- (1,100) — BENZENE CONCENTRATION IN PARTS PER BILLION METHOD DETECTION LIMIT = 0.5 (ppb)
- ND — NOT DETECTED
- PSH — PHASE SEPARATED HYDROCARBONS (ft)

0 20 40

SCALE IN FEET

FOURTH QUARTER 1990

CHEMICAL PROCESSORS INC.
950 "B" Gilman Street
Berkeley, CA 94710

BENZENE ISOCONCENTRATION CONTOURS
CHEVRON SERVICE STATION No. 9-8139
16304 FOOTHILL BOULEVARD
SAN LEANDRO, CALIFORNIA

PROJECT No. 1158

FIGURE 5

Appendix A

GROUNDWATER SAMPLING and ANALYSIS PROCEDURES

Appendix A

GROUNDWATER SAMPLING AND ANALYSIS PROCEDURES

INTRODUCTION

The sampling and analysis procedures for water-quality monitoring programs are contained in this Appendix. These procedures ensure that consistent and reproducible sampling methods are used, proper analytical methods are applied, analytical results are accurate, precise, and complete, and the overall objectives of the monitoring program are achieved.

SAMPLE COLLECTION

Sample collection procedures include equipment cleaning, water-level and total well-depth measurements, and well purging and sampling.

Equipment Cleaning

Sample bottles, caps, and septa were precleaned and provided by a Chevron-approved laboratory. All sampling containers were used only once and discarded after analysis is complete.

Before starting the sampling event, all equipment to be placed in the well or come in contact with groundwater was disassembled and cleaned thoroughly with detergent water, then steam cleaned with service station tap water, and rinsed with distilled water. Any parts that may absorb contaminants, such as plastic pump valves or bladders, were cleaned as described above or replaced.

During the sampling event the equipment used in the well was washed with detergent, steam-cleaned, and rinsed with distilled water before purging or sampling the next well. The water level sounder was washed with detergent and rinsed with distilled water before use in the each well. The rinse water is stored in 55-gallon drums onsite and will be disposed of by Chevron.

Quality Assurance Samples

A rinsate sample was collected after MW-8 to insure that contamination did not result from the sampling equipment. All sample bailers were steam cleaned first, and washed with TSP before being used in the monitoring well. A trip blank was taken to insure contamination did not result from travel exposure.

Water-Level, Floating-Hydrocarbon, and Total Well-Depth Measurements

Before purging and sampling, the depth to water, floating hydrocarbon thickness, and the well total depth were measured using an oil water interface probe and an electric sounder. The electric sounder, manufactured by Slope-Indicator, Inc., is a transistorized instrument that uses a reel-mounted, two conductor, coaxial cable that connects the control panel to the sensor. Cable markings are stamped at 1-foot intervals. An engineers rule was used to measure the depths to the closest 0.01 foot. The water level was measured by lowering the sensor into the monitor well. A low current circuit is completed when the sensor contacts the water, which serves as an electrolyte. The current is amplified and fed across an indicator light and audible buzzer, signaling when water has been contacted. A sensitivity control compensates for very saline or conductive water, or tri-sodium phosphate (TSP). The oil water interface probe signals with a solid sound when it contacts phase-separated hydrocarbons. When the probe detects water, the sound changes to a beeping sound.

Phase separated hydrocarbons were encountered in well MW-5. When phase-separated hydrocarbons are detected at greater than 1/32-inch in thickness, a sample is not collected.

All liquid measurements were recorded to the nearest 0.01 foot in the field logbook. The groundwater elevation at each monitor well was calculated by subtracting the measured depth to water from the surveyed well-casing elevation. Well total depth was then measured by lowering the sensor to the bottom of the well. Well total depth, used to calculate purge volumes and to determine whether the well screen is partially obstructed by silt, was recorded to the nearest 0.5 foot in the field logbook.

Well Purging

Before sampling, standing water in the casing was purged from the monitor wells using a PVC hand bailer. Samples were collected from the monitor wells after a minimum of four casing volumes had been evacuated or the pH, electrical conductivity, and temperature had stabilized. In the case that the monitor well was purged until dry, the well was allowed to recover to within 80% of its static water level and sampled.

The pH, electrical conductivity, and temperature meter were calibrated each day before beginning field activities. After every well volume of groundwater removed from the monitoring well, field measurements were taken. The data is presented on the water sample field data sheets. The calibration was checked once each day to verify meter performance. All field meter calibrations were recorded in the field log book.

Groundwater generated from well-purging operations were contained for temporary storage in 55-gallon drums. All drums were labeled and stored onsite in a location designated by the station manager. The sampler recorded the following information on the drum label for each drum generated:

* Drum content (i.e., groundwater)
* Source (i.e., well identification code)
* Date generated
* Client contact
* Project number
* Name of sampler

Well Sampling

A Teflon bailer was used for well sampling. Glass bottles of at least 40 milliliters volume and fitted with Teflon-lined septa were used in sampling for volatile organics. These bottles were filled completely to prevent air from remaining in the bottle. A positive meniscus forms when the bottle is completely full. A convex Teflon septum is placed over the meniscus to eliminate air. After capping, the bottle was inverted and tapped to verify that it did not contain air bubbles. The sample containers for other parameters were filled, and capped. Duplicate sample analysis was performed on groundwater samples taken from monitor well 8 and were analyzed for the same chemical analyses.

SAMPLE HANDLING AND DOCUMENTATION

The following section specifies the procedures and documentation used during sample handling.

Sample Handling

All sample containers were labeled immediately following sample collection. Samples were kept cool with ice cubes until received by the laboratory. Ice cubes were replaced each day to maintain refrigeration. At the time of sampling, each sample was logged on a chain-of-custody record which accompanied the sample to the Superior Laboratory.

Sample Documentation

The following procedures were used during sampling and analysis to provide chain-of-custody control during sample handling from collection through storage. Sample documentation included the use of the following:

* Field logbooks to document sampling activities in the field
* Labels to identify individual samples
* Chain-of-custody record sheets for documenting possession and transfer of samples

Field Logbook

In the field, the sampler recorded the following information on the Water Sample Field Data Sheet for each sample collected:

* Project number
* Client name
* Location
* Name of sampler
* Date and time
* Pertinent well data (e.g., casing diameter, depth to water, well depth)
* Calculated and actual purge volumes
* Purging equipment used
* Sampling equipment used
* Appearance of each sample (e.g., color, turbidity, sediment)
* Results of field analyses (i.e., temperature, pH, electrical conductivity)
* General comments

The field logbooks were signed by the sampler.

Labels

Sample labels contained the following information:

* Project number
* Sample number (i.e., well designation)
* Sampler's initials
* Date and time of collection
* Type of preservative used (if any)

Sampling and Analysis Chain-of-Custody Record

The Sampling and Analysis Chain-of-Custody record, initiated at the time of sampling, contains, but is not limited to, the well number, sample type, analytical request, date of sampling, and the name of the sampler. The record sheet was signed, timed, and dated by the sampler when transferring the samples. The number of custodians in the chain of possessions were kept to a minimum. A copy of the Sampling and Analysis Chain-of-Custody record is included in Appendix C.

Appendix B

WATER SAMPLE FIELD DATA SHEETS

FIELD REPORT
WATER LEVEL / FLOATING PRODUCT SURVEY

PROJECT NO.: 1158 LOCATION: SAN LEANDRO SAMPLER: RR-DL

STATION NO.: 9.8139 DATE: 11.29.90 TIME AND DATE OF SYSTEM START-UP:

WELL ID	TOTAL DEPTH (Feet)	WELL DIAMETER (in)	DEPTH TO WATER (Feet)	DEPTH TO FLOATING PRODUCT (Feet)	FLOATING PRODUCT THICKNESS (Feet)	TIME	COMMENTS
mw-1	27.44'	2	14.82'	NA	NA	8:30	
mw-2	30.29'	2	14.40'	NA	NA	8:45	
mw-3	25.56'	2	18.97'	NA	NA	9:00	
mw-4	22.04'	2	17.61'	NA	NA	9:15	
mw-5	NM	2	18.87'	18.16'	.71'	9:00	Purged 5 gallons
mw-6	29.02'	2	16.11'	NA	NA	9:45	
mw-7	25.90'	2	18.55'	NA	NA	10:00	
mw-8	31.15'	2	16.30'	NA	NA	9:30	

NM: NOT MEASURED
NA: NOT APPLICABLE

WATER DATA SHEET

PROJECT NO.: 1158

LOCATION: SAN LEANDRO

STATION NO.: 9-8139

SAMPLER: RR-DL

SAMPLE ID.: RS - 2 - SL

DATE: NOV 29, 1990

WELL/SAMPLE

POINT DESIGNATION: Rinsate Sample

☐ SAMPLING ☐ DEVELOPING ☐ BAILING FLOATING PRODUCT

Casing Diameter:
2 Inch ____
3 Inch ____
4 Inch ____
6 Inch ____
other ____

Casing Elev. (ft.): ____

TD (Actual) (ft.): ____

Screened Int. (ft.): ____

Initial DTW (ft.): ____

Initial TD (ft.): ____

Water Column Height (ft.): ____

80 % Recovery (ft.): ____

Calc. Casing Vol. (gal.): ____
(2" = .17) (3' = .38) (4" = .66) (6" = 1.5)

Calc. Purge Vol. (gal.): ____

Final DTW (ft.): ____

Final TD (ft.): ____

Product Bailed (gal.): ____

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	E.C. (umhos/cm)	TEMP. (degrees F)	COLOR	DTW (if dry)

Odor ? ____

Actual Purge Vol. (gal.): ____

Purge Method:
- ___ Bailer (Teflon)
- ✓ Bailer (PVC)
- ___ Well Wizard
- ___ Dedicated Bailer
- ___ Other ____

Sample Method:
- ✓ Bailer (Teflon)
- ___ Bailer (PVC)
- ___ Dedicated Bailer
- ___ Other ____

REMARKS: ____

WEATHER: ____

WATER DATA SHEET

PROJECT NO.: 1158 | SAMPLE ID.: WS - 13 - SL

LOCATION: SAN LEANDRO | DATE: NOV 29, 1990

STATION NO.: 9-8139 | WELL/SAMPLE

SAMPLER: RR-DL | POINT DESIGNATION: MW-1

[✓] SAMPLING [ ] DEVELOPING [ ] BAILING FLOATING PRODUCT

Casing Diameter:
2 inch ✓
3 inch
4 inch
6 inch
other

Screened Int. (ft.):

Initial DTW (ft.): 14.82'

Initial TD (ft.): 27.44'

Water Column Height (ft.): 12.62

80 % Recovery (ft.): 17.34 DTW

Calc. Casing Vol. (gal.): 2.15 gal
(2" = .17) (3" = .38) (4" = .66) (6" = 1.5)

Calc. Purge Vol. (gal.): 8.6 gal

Final DTW (ft.): 14.97 @ 3:55 PM

Final TD (ft.):

Casing Elev. (ft.):

TD (Actual) (ft.):

Product Bailed (gal.):

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	E.C. (umhos/cm)	TEMP. (degrees F)	COLOR	DTW (if dry)
NOON	2.2	12.25	3570	67.0	LT. GREY CHALKY	
12:05	4.4	12.44	4070	65.7		26.62
	6.6				@ 1 PM →	20.41
	8.8				@ 1:30	17.81

Odor ?

Actual Purge Vol. (gal.):

Purge Method:
- [ ] Bailer (Teflon)
- [✓] Bailer (PVC)
- [ ] Well Wizard
- [ ] Dedicated Bailer
- [ ] Other

Sample Method:
- [✓] Bailer (Teflon)
- [ ] Bailer (PVC)
- [ ] Dedicated Bailer
- [ ] Other

REMARKS: SOFT BOTTOM — WELL DE-WATERED

WEATHER: 55° FAIR SKY

CHEMICAL PROCESSORS, INC.

WATER DATA SHEET

PROJECT NO.: 1158
SAMPLE ID.: WS - 10 - SL
LOCATION: SAN LEANDRO
DATE: NOV 29, 1990
STATION NO.: 9-8139
WELL/SAMPLE
SAMPLER: RR-DL
POINT DESIGNATION: MW-2

☑ SAMPLING ☐ DEVELOPING ☐ BAILING FLOATING PRODUCT

Casing Diameter:
2 inch ✓
3 inch
4 inch
6 inch
other
Casing Elev. (ft.):
TD (Actual) (ft.):

Screened Int. (ft.):
Initial DTW (ft.): 14.40'
Initial TD (ft.): 30.29'
Water Column Height (ft.): 15.89
80 % Recovery (ft.): 17.59 DTW

Calc. Casing Vol. (gal.): 2.7
(2" = .17) (3' = .38) (4" = .66) (6" = 1.5)
Calc. Purge Vol. (gal.): 10.8
Final DTW (ft.):
Final TD (ft.):
Product Bailed (gal.):

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	E.C. (umhos/cm)	TEMP. (degrees F)	COLOR	DTW (If dry)
	3	9.48	643	62.5	CLEARISH	
	6	9.22	582	62.6	CLOUDY BRN	
	9	8.57	710	61.5	"	
	12	8.45	608	61.6	"	

Odor ? —

Actual Purge Vol. (gal.): 12

Purge Method:
___ Bailer (Teflon)
✓ Bailer (PVC)
___ Well Wizard
___ Dedicated Bailer
___ Other

Sample Method:
✓ Bailer (Teflon)
___ Bailer (PVC)
___ Dedicated Bailer
___ Other

REMARKS: SOFT BOTTOM

WEATHER: 55° FAIR SKY

CHEMICAL PROCESSORS, INC.

WATER DATA SHEET

PROJECT NO.: 1158 | SAMPLE ID.: WS - 15 - SL

LOCATION: SAN LEANDRO | DATE: NOV 29, 1990

STATION NO.: 9-8139 | WELL/SAMPLE

SAMPLER: RR-DL | POINT DESIGNATION: MW-3

☑ SAMPLING ☐ DEVELOPING ☐ BAILING FLOATING PRODUCT

Casing Diameter:
2 inch ✓
3 inch
4 inch
6 inch
other

Screened Int. (ft.):

Initial DTW (ft.): 18.97'

Initial TD (ft.): 25.56'

Water Column Height (ft.): 6.59

80 % Recovery (ft.): 20.26 DTW

Calc. Casing Vol. (gal.): 1.12
(2" = .17) (3' = .38) (4" = .66) (6" = 1.5)

Calc. Purge Vol. (gal.): 4.48

Final DTW (ft.): 20.05 @ 4:30PM

Casing Elev. (ft.):

TD (Actual) (ft.):

Final TD (ft.):

Product Bailed (gal.):

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	E.C. (umhos/cm)	TEMP. (degrees F)	COLOR	DTW (if dry)
2:10	1.5	8.30	837	66.4	GRY-BRN	
2:13	3.0	8.22	1368	65.7		
2:15	4.5	8.32	821	65.5		
2:20	6.0	8.16	787	65.4		
					@ 2:25	23.05

Odor? PRODUCT ODOR

Actual Purge Vol. (gal.):

Purge Method:
- ___ Bailer (Teflon)
- ✓ Bailer (PVC)
- ___ Well Wizard
- ___ Dedicated Bailer
- ___ Other

Sample Method:
- ✓ Bailer (Teflon)
- ___ Bailer (PVC)
- ___ Dedicated Bailer
- ___ Other

REMARKS: SUMP WAS FULL OF WATER; PULLED 5 GL. OF WATER OUT OF SUMP

WEATHER: 60° FAIR SKY

WATER DATA SHEET

PROJECT NO.: 1158

SAMPLE ID.: WS - 16 - SL

LOCATION: SAN LEANDRO

DATE: NOV 29, 1990

STATION NO.: 9-8139

WELL/SAMPLE

SAMPLER: RR-DL

POINT DESIGNATION: MW-4

☑ SAMPLING ☐ DEVELOPING ☐ BAILING FLOATING PRODUCT

Casing Diameter:
2 inch ✓
3 inch ____
4 inch ____
6 inch ____
other ____

Screened Int. (ft.): ____

Initial DTW (ft.): 17.61'

Initial TD (ft.): 22.04'

Water Column Height (ft.): 4.43

80 % Recovery (ft.): 18.49 DTW

Calc. Casing Vol. (gal.): 0.75
(2" = .17) (3' = .38) (4" = .66) (6" = 1.5)

Calc. Purge Vol. (gal.): 3.01

Final DTW (ft.): 17.58 @ 5:00pm

Final TD (ft.): ____

Product Bailed (gal.): ____

Casing Elev. (ft.): ____

TD (Actual) (ft.): ____

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	E.C. (umhos/cm)	TEMP. (degrees F)	COLOR	DTW (if dry)
2:55	1	11.38	694	64.0		
2:56	2	10.40	675	66.1		
2:57	3	9.80	570	65.7		
2:58	4	9.45	582	66.3		
					@ 3pm	20.39

Odor? ____

Actual Purge Vol. (gal.): ____

Purge Method:
- ___ Bailer (Teflon)
- ✓ Bailer (PVC)
- ___ Well Wizard
- ___ Dedicated Bailer
- ___ Other ____

Sample Method:
- ✓ Bailer (Teflon)
- ___ Bailer (PVC)
- ___ Dedicated Bailer
- ___ Other ____

REMARKS: NOT ENOUGH CLEARANCE BETWEEN CONCRETE BASE, INSIDE C. BOX & TOP OF PVC, PVC TOP LIP CHIPPED

WELL NEARLY DE-WATERED

WEATHER: 60° FAIR SKY

WATER DATA SHEET

PROJECT NO.: 1158
SAMPLE ID.: WS - 17 - SL
LOCATION: SAN LEANDRO
DATE: NOV 29, 1990
STATION NO.: 9-8139
WELL/SAMPLE
SAMPLER: RR-DL
POINT DESIGNATION: MW-6

☑ SAMPLING ☐ DEVELOPING ☐ BAILING FLOATING PRODUCT

Casing Diameter:
2 inch ✓
3 inch
4 inch
6 inch
other
Casing Elev. (ft.):
TD (Actual) (ft.):

Screened Int. (ft.):
Initial DTW (ft.): 16.11
Initial TD (ft.): 29.02
Water Column Height (ft.): 12.91
80 % Recovery (ft.): 18.72 DTW

Calc. Casing Vol. (gal.): 2.19 gal
(2" = .17) (3" = .38) (4" = .66) (6" = 1.5)
Calc. Purge Vol. (gal.): 8.8 gal
Final DTW (ft.): 17.59 @ 5:30pm
Final TD (ft.):
Product Bailed (gal.):

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	E.C. (umhos/cm)	TEMP. (degrees F)	COLOR	DTW (if dry)
	2.2	8.75	700	62.3	CLOUDY BRN	
	4.4	8.60	732	64.3	"	
	6.6	8.62	680	64.8	"	
	8.8	8.55	595	64.4	"	
					@ 2:45	24.57

Odor ?
Actual Purge Vol. (gal.):

Purge Method:
___ Bailer (Teflon)
✓ Bailer (PVC)
___ Well Wizard
___ Dedicated Bailer
___ Other

Sample Method:
✓ Bailer (Teflon)
___ Bailer (PVC)
___ Dedicated Bailer
___ Other

REMARKS: SOFT BOTTOM

WEATHER: 65° FAIR SKY

WATER DATA SHEET

PROJECT NO.: 1158 | SAMPLE ID.: WS - 14 - SC

LOCATION: SAN LEANDRO | DATE: NOV 29, 1990

STATION NO.: 9-8139 | WELL/SAMPLE

SAMPLER: RR-DL | POINT DESIGNATION: MW-7

☑ SAMPLING ☐ DEVELOPING ☐ BAILING FLOATING PRODUCT

Casing Diameter:
2 inch ✓
3 inch ____
4 inch ____
6 inch ____
other ____

Casing Elev. (ft.): ____

TD (Actual) (ft.): ____

Screened Int. (ft.): ____

Initial DTW (ft.): 18.55

Initial TD (ft.): 25.90

Water Column Height (ft.): 7.35

80 % Recovery (ft.): 20.02

Calc. Casing Vol. (gal.): 1.25
(2" = .17) (3' = .38) (4" = .66) (6" = 1.5)

Calc. Purge Vol. (gal.): 4.99

Final DTW (ft.): 18.60

Final TD (ft.): ____

Product Bailed (gal.): ____

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	E.C. (umhos/cm)	TEMP. (degrees F)	COLOR	DTW (if dry)
1:40	1.5	8.44	588	64.7	CLOUDY BRN	
1:42	3.0	8.45	1375	63.2		
1:46	4.5	8.74	587	63.7		
1:47	6.0	8.53	569	69.1		
					(1:50) →	24.82

Odor ? ____

Actual Purge Vol. (gal.): ____

Purge Method:
- ___ Bailer (Teflon)
- ✓ Bailer (PVC)
- ___ Well Wizard
- ___ Dedicated Bailer
- ___ Other ____

Sample Method:
- ✓ Bailer (Teflon)
- ___ Bailer (PVC)
- ___ Dedicated Bailer
- ___ Other ____

REMARKS: ____

WEATHER: 60° FAIR SKY

WATER DATA SHEET

WS - 12 - SL (DUP)

PROJECT NO.: 1158

SAMPLE ID.: WS . 11 . SL

LOCATION: SAN LEANDRO

DATE: NOV 29, 1990

STATION NO.: 9-8139

WELL/SAMPLE

SAMPLER: RR-DL

POINT DESIGNATION: MW-8

☑ SAMPLING ☐ DEVELOPING ☐ BAILING FLOATING PRODUCT

Casing Diameter:
2 inch ✓
3 inch ____
4 inch ____
6 inch ____
other ____

Screened Int. (ft.): ____

Initial DTW (ft.): 16.30

Initial TD (ft.): 31.15

Water Column Height (ft.): 14.85

80 % Recovery (ft.): 19.27 DTW

Calc. Casing Vol. (gal.): 2.52
(2" = .17) (3" = .38) (4" = .66) (6" = 1.5)

Calc. Purge Vol. (gal.): 10.1

Final DTW (ft.): 16.41

Final TD (ft.): ____

Casing Elev. (ft.): ____

TD (Actual) (ft.): ____

Product Bailed (gal.): ____

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	E.C. (umhos/cm)	TEMP. (degrees F)	COLOR	DTW (if dry)
	2.5	8.47	762	62.8	Cloudy BRN	
	5.0	8.56	765	63.4	↓	
	7.5	8.57	656	62.4	↓	
	10.5	8.46	652	63.7	↓	

Odor ? ____

Actual Purge Vol. (gal.): ____

Purge Method:
- ___ Bailer (Teflon)
- ✓ Bailer (PVC)
- ___ Well Wizard
- ___ Dedicated Bailer
- ___ Other ____

Sample Method:
- ✓ Bailer (Teflon)
- ___ Bailer (PVC)
- ___ Dedicated Bailer
- ___ Other ____

REMARKS: FAIR Bottom

WEATHER: 65° FAIR SKY

CHEMICAL PROCESSORS, INC.

Appendix C

CHAIN-OF-CUSTODY RECORDS

#1158 Chain of Custody Record

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

Chevron Facility Number: 9-8139
Facility Address: 16304 FOOTHILL BLVD., SAN LEANDRO
Consultant Project Number: #1158
Consultant Name: CHEMPRO
Address: 950 'B' GILMAN ST, BERKELEY, CA 94710
Project Contact (Name): FELICIA REIN
(Phone) 524-9372 (Fax Number) 524-7439

Chevron Contact (Name): WALT POSLUENY
(Phone) 415.842.9040
Laboratory Name: SUPERIOR
Laboratory Release Number: 2492270
Samples Collected by (Name): DLAMB / RR
Collection Date: NOV. 29 1990
Signature:

Sample Number	Number of Containers	Matrix S = Soil W = Water A = Air 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
WS-10-SL	6	W	G	12:45	HCL/NONE	Y	4												
TB-2-SL	1	W	G	8am	HCL	Y	X												
RS-2-SL	4	W	G	1:00	HCL	Y	4												→ LAB: PRESERVE/HCl
WS-11-SL	6	W	G	~~3:35~~	HCL/NONE	Y	4												
WS-12-SL	6	W	G	~~3:45~~	HCL/NONE	Y	4												
WS-13-SL	6	W	G	~~3:55~~	HCL/NONE	Y	4												
WS-14-SL	6	W	G	4:30	HCL/NONE	Y	4												
WS-15-SL	6	W	G	4:30	HCL/NONE	Y	4												
WS-16-SL	6	W	G	5:00	HCL/NONE	Y	4												
WS-17-SL	6	W	G	5:30	HCL/NONE	Y	4												

Please initial:
Samples Stored in ice. [initials]
Appropriate containers. [initials]
Samples preserved. [initials]
VOA's without headspace. [initials]
Comments:

Relinquished By (Signature)	Organization	Date/Time	Received By (Signature)	Organization	Date/Time
[signature]	CHEMPRO	11.30.90 10:25	[signature]	EXPRESS-IT	11-30-90 10:30
[signature]	EXPRESS-IT	11-30-90 1133	[signature]	EXPRESS-IT	11-30-90 1230
[signature]	EXPRESS-IT	11/30/90 1302	[signature]		11/30/90

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

COC-1.DWG/11 90/HCH

Appendix D

CERTIFIED ANALYTICAL RESULTS

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

LABORATORY NO.: 11250
CLIENT: Chempro
CLIENT JOB NO.: 1158

DATE RECEIVED: 11/30/90
DATE REPORTED: 12/07/90

Lab Number	Customer Sample Identification	Date Sampled	Date Analyzed
11250- 1	WS-10-SL	11/29/90	12/05/90
11250- 2	TB-2-SL	11/29/90	12/05/90
11250- 3	RS-2-SL	11/29/90	12/07/90
11250- 4	WS-11-SL	11/29/90	12/05/90
11250- 5	WS-12-SL	11/29/90	12/05/90
11250- 6	WS-13-SL	11/29/90	12/07/90
11250- 7	WS-14-SL	11/29/90	12/05/90
11250- 8	WS-15-SL	11/29/90	12/06/90
11250- 9	WS-16-SL	11/29/90	12/06/90
11250-10	WS-17-SL	11/29/90	12/05/90

Laboratory Number:	11250 1	11250 2	11250 3	11250 4	11250 5
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<50	ND<50	ND<50	ND<50	ND<50
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
TOLUENE:	ND<0.5	ND<0.5	0.6	ND<0.5	ND<0.5
ETHYL BENZENE:	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5
XYLENES:	ND<0.5	ND<0.5	0.7	ND<0.5	ND<0.5

Laboratory Number:	11250 6	11250 7	11250 8	11250 9	11250 10
ANALYTE LIST	Amounts/Quantitation Limits (ug/L)				
OIL AND GREASE:	NA	NA	NA	NA	NA
TPH/GASOLINE RANGE:	ND<50	ND<50	9200	15000	ND<50
TPH/DIESEL RANGE:	NA	NA	NA	NA	NA
BENZENE:	0.7	ND<0.5	1100	800	ND<0.5
TOLUENE:	0.9	ND<0.5	1100	1000	ND<0.5
ETHYL BENZENE:	ND<0.5	ND<0.5	210	430	ND<0.5
XYLENES:	1	ND<0.5	1100	1700	ND<0.5

SUPERIOR ANALYTICAL LABORATORY, INC.
1555 BURKE, UNIT I · SAN FRANCISCO, CA 94124 · PHONE (415) 647-2081

CERTIFICATE OF ANALYSIS

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
Diesel by Modified EPA SW-846 Method 8015
Gasoline by Purge and Trap: EPA MEthod 8015/5030
ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES
by EPA SW-846 Methods 5030 and 8020

QA/QC INFORMATION
SET: 11250

NA = ANALYSIS NOT REQUESTED
ND = ANALYSIS NOT DETECTED ABOVE QUANTITATION LIMIT

ug/L = part per billion (ppb)

OIL AND GREASE ANALYSIS By Standard Methods Method 503E:
Duplicate RPD NA
Minimum Detection Limit in Water: 5000ug/L

Modified EPA Method 8015 for Extractable Hydrocarbons:
Minimum Quantitation Limit for Diesel in Water: 1000ug/L
Daily Standard run at 200mg/L; %Diff Diesel = NA
MS/MSD Average Recovery = NA: Duplicate RPD = NA

8015/5030 Total Purgable Petroleum Hydrocarbons:
Minimum Quantitation Limit for Gasoline in Water: 50ug/L
Daily Standard run at 2mg/L; %Diff Gasoline = <15
MS/MSD Average Recovery = 84%: Duplicate RPD = <4

8020/BTXE
Minimum Quantitation Limit in Water: 0.50ug/L
Daily Standard run at 20ug/L; %Diff = <15%
MS/MSD Average Recovery = 83%: Duplicate RPD = <5

Richard Srna, Ph.D.
Laboratory Director