QUARTERLY GROUNDWATER MONITORING REPORT
Fourth Quarter 1994

JOE SIO CHEVROLET
914-916 San Pablo Avenue
Albany, California
STID-3808

January 13, 1995

Prepared for:

MS. FLORENCE ANN CONNORS
Executor for the Estate of Josephine A. Dibble
1658 Del Dayo Drive
Carmichael, California 95608

Prepared by:

BURLINGTON ENVIRONMENTAL INC.
A Philip Environmental Company
5901 Christie Avenue, Suite 501
Emeryville, California 94608

SIO101/12104

BURLINGTON
ENVIRONMENTAL
A Philip Environmental Company

January 13, 1995
SIO101/12104

Ms. Florence Ann Connors
Executor for the Estate of Josephine A. Dibble
1658 Del Dayo Drive
Carmichael, California 95608

Subject: **QUARTERLY GROUNDWATER MONITORING REPORT**
Fourth Quarter 1994
Joe Sio Chevrolet
914-916 San Pablo Avenue, Albany, California

Dear Ms. Connors:

Burlington Environmental Inc. (Burlington) is pleased to submit the following quarterly monitoring report for Joe Sio Chevrolet, located at 914-916 San Pablo Avenue in Albany, California (see Figure 1, Site Location Map). The groundwater monitoring and sampling was conducted by Burlington in October 1994.

BACKGROUND

Two 550-gallon underground storage tanks (USTs) were removed from the site on March 20, 1989 by Petroleum Engineering, Inc. One UST contained gasoline and was located under the sidewalk between the former building and San Pablo Avenue. The other UST contained waste oil and was located adjacent to the southwest corner of the former building (see Figure 2, Site Plan). Soil samples collected from beneath the former gasoline UST contained concentrations of total petroleum hydrocarbons (TPH) ranging between 270 and 1,300 milligrams per kilogram (mg/kg). As a result of the TPH in the soil samples from beneath the former gasoline UST, Alameda County Department of Environmental Health (ACDEH) requested that additional excavation be conducted in the vicinity of the former gasoline UST, and groundwater monitoring wells be installed and sampled to determine groundwater quality, flow direction, and gradient.

On July 24 and 25, 1991, Aqua Terra Technologies (ATT) of Walnut Creek, California, installed three groundwater monitoring wells (MW-1, MW-2, and MW-3) at the site (see Figure 2, Site Plan). The three groundwater monitoring wells were developed on July 31, 1991 and sampled on August 7, 1991. Elevated concentrations of TPH and benzene, toluene, ethylbenzene and total xylenes (BTEX) were found in the groundwater sample collected from well MW-1 (see Table 1). At the time the wells were sampled,

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ATT determined that the groundwater flow direction was to the west-northwest with an approximate hydraulic gradient of 0.01 feet/foot.

In a letter dated November 9, 1993, Ms. Juliet Shin (ACDEH) directed that quarterly groundwater monitoring be resumed at the site. In April 1994, Burlington received authority to proceed with quarterly groundwater monitoring at the site.

MONITORING ACTIVITIES

The fourth quarter 1994 monitoring event was conducted on October 14, 1994. In each well, the depth to groundwater and the presence or absence of phase-separated hydrocarbons (PSH) were determined. Groundwater samples were collected and analyzed according to U. S. Environmental Protection Agency (EPA) guidelines to determine the concentrations of TPH as gasoline (TPHg), BTEX, and total lead. In addition, groundwater from monitoring well MW-3 was analyzed for cadmium, chromium, zinc, and nickel. The monitoring and sampling procedures are presented in Appendix A. Field data sheets are presented in Appendix B.

Western Environmental Science & Technology, located in Davis, California, performed the analysis. The analytical results and detection limits are presented in Table 1.

RESULTS

The groundwater elevation in the monitoring wells beneath the site on October 14, 1994 ranged from 30.13 to 31.73 feet above mean sea level (see Table 2, Groundwater Elevation Data). A contour map of these data is presented in Figure 3. The approximate groundwater flow direction is to the west with an approximate hydraulic gradient of 0.009 feet/foot.

The results of the chemical analyses are presented in Table 1. No PSH were detected in any of the groundwater monitoring wells. No detectable concentrations of TPHg or BTEX were found in the groundwater samples collected from well MW-2 or MW-3. However, elevated concentrations of petroleum hydrocarbons were found in the groundwater sample collected from well MW-1, including 380 micrograms per liter (µg/l) of TPHg and 86 µg/l of benzene. The groundwater sample collected from well MW-3 contained 0.14 milligrams per liter (mg/l) of total lead, in addition to low levels of cadmium, chromium, nickel, and zinc (see Table 1).

The certified analytical data for well MW-2 indicates that an external standard quantitation was used with the sample due to matrix interference. According to Mitra Sarkhosh (WEST Technician) during a conversation on November 2, 1994, the interference is due to the presence of tetrachloroethylene (PCE) in the groundwater

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sample. A similar interference was noted during the third quarter 1994 groundwater monitoring of MW-2.

Chain-of-custody documentation and certified analytical results are presented in Appendix C. Purge and rinsate water was stored on the site in 55-gallon drums. The drums were labeled by the field sampling technician. Purge and rinsate water disposal will be arranged in the future.

CONCLUSIONS

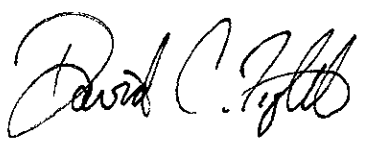
Although the ATT Groundwater Sampling Report dated November 15, 1991 states that the source of hydrocarbons has been removed from the area of the former gasoline UST, the continued presence of TPHg and BTEX in the sample collected from well MW-1 suggests that the groundwater below the former gasoline UST continues to be impacted.

A letter was sent to you on November 2, 1994 from Ms. Juliet Shin (ACDEH) regarding the potential impact of PCE to the groundwater at well MW-2 and the elevated levels of lead found in the well MW-3. In response to Ms. Shin's comments, during the first quarter 1995 monitoring event well MW-2 will be analyzed for halogenated volatile organics using EPA Method 8010. If no halogenateds are found, the analysis of halogenateds in future monitoring events will be discontinued. Additionally, the groundwater collected from well MW-3 during the first quarter 1995 monitoring event that is to be analyzed for the five metals will be field filtered prior to submittal to the laboratory to provide a more representative particulate-free groundwater sample. A 0.45 µm filter will be used, manufactured by Gelman Science, of Ann Arbor, Michigan.

Burlington appreciates the opportunity to provide you with quality consulting and environmental services. Please feel free to contact me if I can provide further assistance.

Sincerely,

BURLINGTON ENVIRONMENTAL INC.



David C. Tight, R.G. No. 4603
Investigation/Remediation Manager

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Attachments:

Figure 1 - Site Location Map
Figure 2 - Site Plan
Figure 3 - Groundwater Elevation Contours

Table 1 - Groundwater Analytical Data
Table 2 - Groundwater Elevation Data

Appendix A - Groundwater Sampling and Analysis Procedures
Appendix B - Water Sample Field Data Sheets
Appendix C - Chain-of-Custody Records and Certified Analytical Reports

cc: Ms. Juliet Shin (ACDEH)

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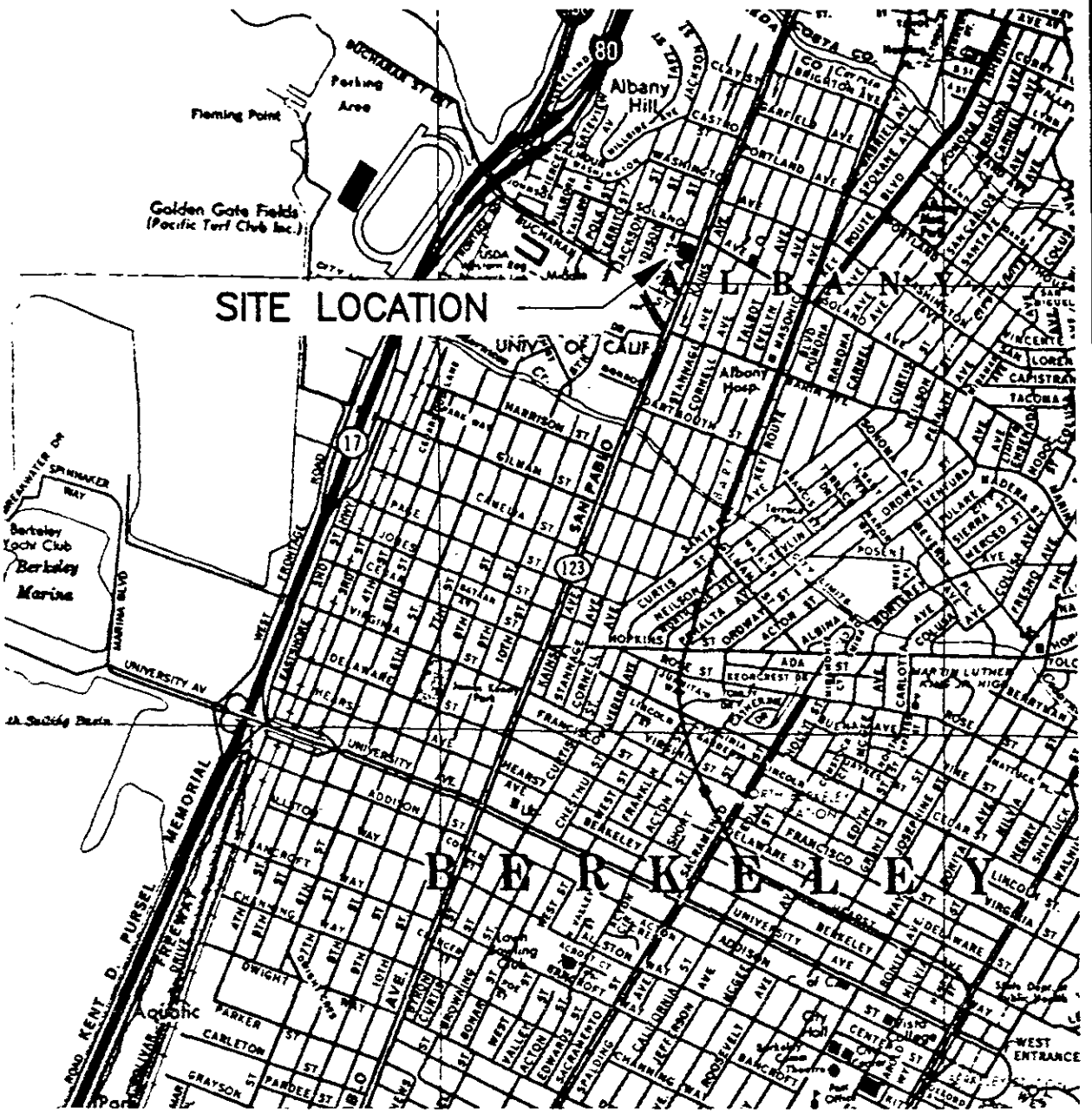
FIGURES 1 - 3



BURLINGTON ENVIRONMENTAL INC.

SITE LOCATION MAP
Joe Sio Chevrolet
914 – 916 San Pablo Avenue
Albany, California

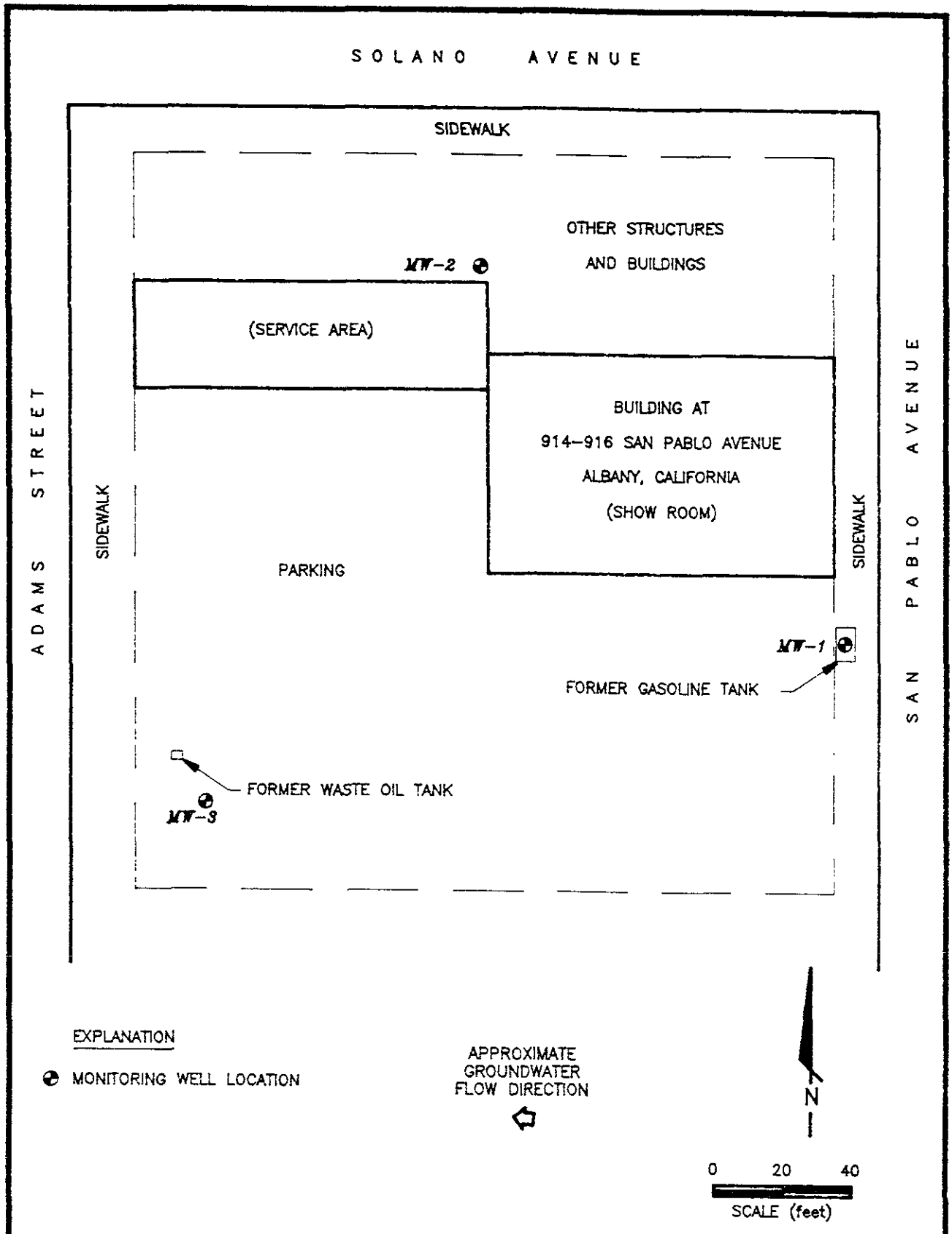
Figure 1

Project No. 12104

Drawn By SBW | Date 5/27/94

Reviewed By : | Date : 11/4/94

Drawing No. AS100101

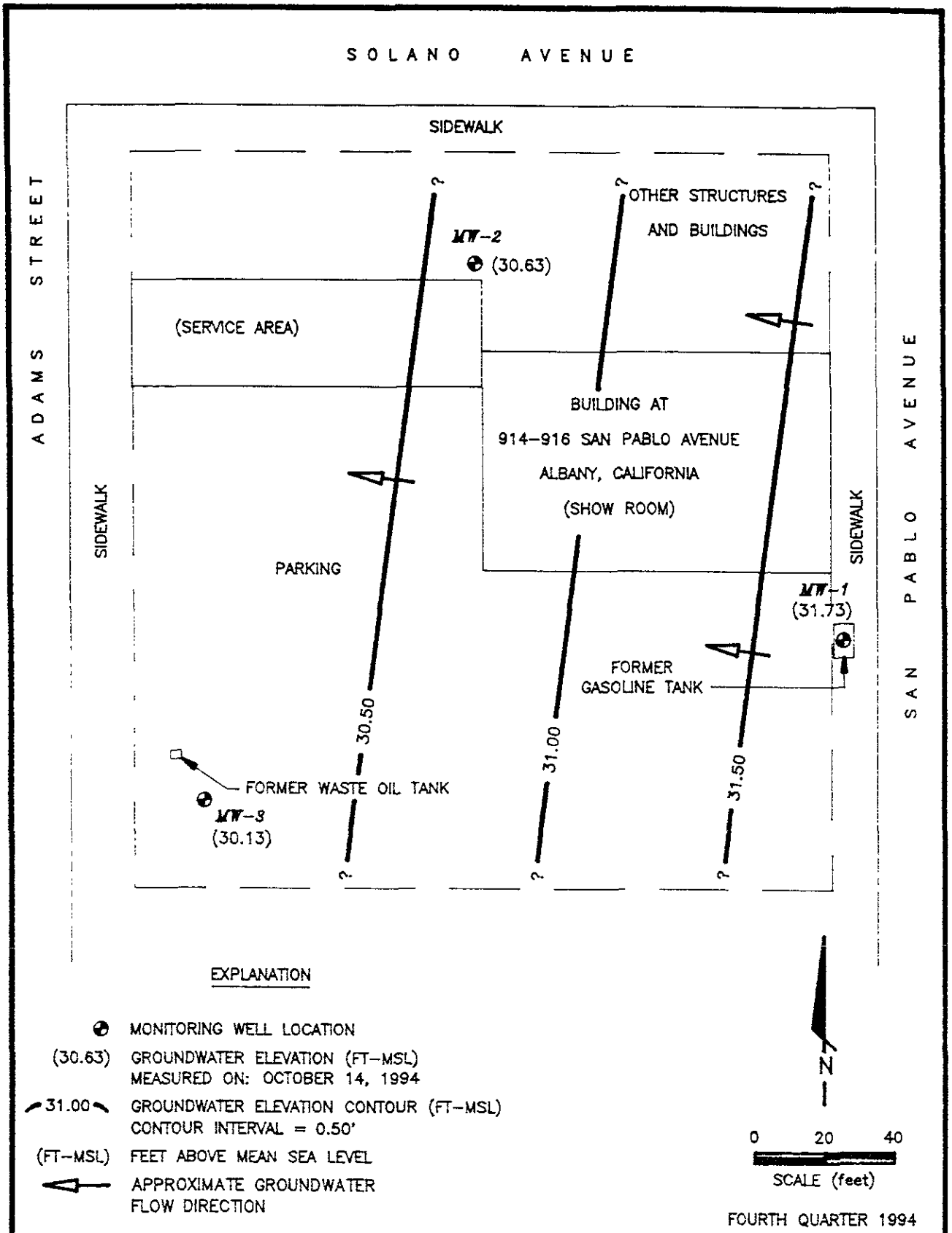


BURLINGTON ENVIRONMENTAL INC.

SITE PLAN
Joe Sio Chevrolet
914 – 916 San Pablo Avenue
Albany, California

Figure 2

Project No.	12104
Drawn By	SBW
Date	11/2/94
Reviewed By :	
Date :	11/4/94
Drawing No.	AS100102



BURLINGTON ENVIRONMENTAL INC.

GROUNDWATER ELEVATION CONTOURS
Joe Sio Chevrolet
914 – 916 San Pablo Avenue
Albany, California

Figure 3

Project No.	12104
Drawn By SBW	Date 11/2/94
Reviewed By :	Date :
Drawing No.	ASI00105

TABLES 1 - 2

TABLE 1
GROUNDWATER ANALYTICAL DATA

Joe Sio Chevrolet
914-916 San Pablo Avenue, Albany, California

Monitoring Well No.	Date Sampled	Sample No.	TPH Gasoline (ug/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl-benzene (ug/l)	Total Xylenes (ug/l)	Total Oil and Grease (mg/l)	Cadmium (mg/l)	Chromium (mg/l)	Lead (mg/l)	Nickel (mg/l)	Zinc (mg/l)
	EPA Analytical Method:		8015m	602	602	602	602	9070	AA	AA	AA	AA	AA
Groundwater Analyses:													
MW-1	8/7/91	MW-1	110	16	2	0.7	15	NA	NA	NA	NA	NA	NA
	4/15/94	MW01-041594	2,500	880	22	79	47	NA	NA	NA	0.009	NA	NA
	7/14/94	MW01-071494	470	110	22	21	87	NA	NA	NA	0.006	NA	NA
	10/14/94	MW01-101494	380	86	17	24	77	NA	NA	NA	0.008	NA	NA
MW-2	8/7/91	MW-2	NA(<50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	NA	NA	NA	NA	NA	NA
	4/15/94	MW02-041494	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	NA	NA	0.022	NA	NA
	7/14/94	MW02-071494	ND(<50) *	ND(<0.30) *	0.73 *	ND(<0.30) *	0.71 *	NA	NA	NA	0.023	NA	NA
	10/14/94	MW02-101494	ND(<50) *	ND(<0.30) *	ND(<0.30) *	ND(<0.30) *	ND(<0.50) *	NA	NA	NA	0.021	NA	NA
MW-3	8/7/91	MW-3	NA(<50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<0.50)	ND(<5)	NA	NA	NA	NA	NA
	4/15/94	MW03-041594	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	0.012	0.25	0.22	0.34	0.49
	4/15/94 d	DW01-041494	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	NA	NA	NA	NA	NA
	7/14/94	MW03-071494	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	0.60	NA	0.017	0.55	0.22	0.73	0.84
	7/14/94 d	DW01-071494	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	0.53	NA	NA	NA	NA	NA	NA
	10/14/94	MW03-101494	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	0.019	0.64	0.14	0.86	0.90 b
	10/14/94 d	DW01-101494	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	NA	NA	NA	NA	NA
Rinsate Analyses:													
	4/15/94	RS01-041594	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	NA	NA	NA	NA	NA
	7/14/94	RS01-071494	ND(<50)	ND(<0.30)	0.33	ND(<0.30)	0.65	NA	NA	NA	NA	NA	NA
	10/14/94	RS01-101494	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	NA	NA	NA	NA	NA
Trip Blank Analyses:													
	4/15/94	TB01-041594	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	NA	NA	NA	NA	NA
	7/14/94	TB01-071494	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	NA	NA	NA	NA	NA
	10/14/94	TB01-101494	ND(<50)	ND(<0.30)	ND(<0.30)	ND(<0.30)	ND(<0.50)	NA	NA	NA	NA	NA	NA
DRINKING WATER STANDARDS: California Maximum Contaminant Levels:			-	1	-	680	1750	-	0.01	0.05	0.05	-	5

Results above detection limit are bolded for emphasis.

*	An external standard quantitation was used on this sample due to matrix interference
b	Analyte found in method blank
d	Duplicate sample
mg/l	Milligrams per liter (parts per million)
NA	Not analyzed
ND	Concentration below detection limit presented in parentheses
ug/l	Micrograms per liter (parts per billion)

TABLE 2
GROUNDWATER ELEVATION DATA

Joe Sio Chevrolet
914-916 San Pablo Avenue, Albany, California

Monitoring Well No.	Date Measured	Total Depth (ft-BTOC)	TOC Elevation (ft-MSL)	Depth to Water (ft-BTOC)	Water Elevation (ft-MSL)
MW-1	8/7/91	NM	42.61	10.49	32.12
	8/12/91	NM	42.61	10.37	32.24
	4/15/94	29.80	42.61	10.60	32.01
	7/14/94	29.70	42.61	10.55	32.06
	10/14/94	29.75	42.61	10.88	31.73
MW-2	8/7/91	NM	42.73	11.64	31.09
	8/12/91	NM	42.73	11.69	31.04
	4/15/94	26.88	42.73	10.16	32.57
	7/14/94	26.85	42.73	10.91	31.82
	10/14/94	26.88	42.73	12.10	30.63
MW-3	8/7/91	NM	39.44	8.94	30.50
	8/12/91	NM	39.44	8.94	30.50
	4/15/94	25.58	39.44	7.68	31.76
	7/14/94	25.62	39.44	8.40	31.04
	10/14/94	25.61	39.44	9.31	30.13

Water levels measured on 8/7/91 and 8/12/91 by Aqua Terra Technologies (ATT) of Walnut Creek, California.

TOC elevations obtained from survey data provided in the ATT Groundwater Monitoring Report dated 11/11/91.

ft-BTOC	Feet below top of casing
ft-MSL	Feet above mean sea level
NM	Not measured
TOC	Top of casing

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 DHS-certified laboratory. All sampling containers were used only once and discarded after analysis was 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 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 all equipment used in the well was washed with detergent, steam-cleaned, and rinsed with distilled water before purging or sampling the next well. The rinsate water was contained for temporary storage in 55-gallon drums and disposal

will be arranged by the client. The 55-gallon drums were stored onsite and labeled by the field technician.

Quality Assurance Samples

A trip blank was analyzed 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 monitoring well. A low current circuit is completed when the sensor contacts the water, which serves as a conductor. 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. 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.

No phase-separated hydrocarbons were detected in any of the monitoring wells. When PSH is 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 monitoring 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 0.01 foot in the field log book.

WELL PURGING

Before sampling, standing water in the casing was purged from the monitoring wells using a PVC hand bailer. Samples were collected from the monitoring 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 monitoring 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. The sampler recorded 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.

The purge water will be disposed of by the client.

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.

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. At the time of sampling, each sample was logged on a chain-of-custody record which accompanied the sample to the Western Environmental, Science, and Technology.

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:

- field log books to document sampling activities in the field
- labels to identify individual samples; and

- chain-of-custody record sheets for documenting possession and transfer of samples.

Field Log Book

In the field, the sampler recorded 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:

- 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.: 12104 LOCATION: 914 SAN PABLO AVE., ALBANY SAMPLER: D.LAMB
STATION NO.: JOE SIO CHEVROLET DATE: 10·14·94 TIME AND DATE OF SYSTEM START-UP: N/A

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	27.75	2	10.88	-	-	0837	
MW·2	26.88	2	12.10	-	-	0827	
MW·3	25.61	2	9.31	-	-	0817	

WATER DATA SHEET

PROJECT NO.: 1210A

SAMPLE ID.: MW01-101494

LOCATION: 914 San Pablo Ave, Albany

DATE: 10-14-94

STATION NO.: SIO-101

WELL/SAMPLE

SAMPLER: D. LAMB

POINT DESIGNATION: MW-1

[X] SAMPLING [ ] DEVELOPING [ ] BAILING FLOATING PRODUCT

Casing Diameter:
2 inch X
3 inch ___
4 inch ___
6 inch ___
other ___

Casing Elev. (ft.): ___

TD (Actual) (ft.): 30

Screened Int. (ft.): 10-30

Initial DTW (ft.): 10.88 @ 0837

Initial TD (ft.): 29.75

Water Column Height (ft.): 18.87

80 % Recovery (ft.): 14.65

Calc. Casing Vol. (gal.): 3.21
(2" = .17) (3" = .38) (4" = .66) (6" = 1.5)

Calc. Purge Vol. (gal.): 12.83

Final DTW (ft.): 14.53 @ 0902

Final TD (ft.): 29.74

Product Bailed (gal.): Ø

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	TEMP. (degrees F)	E.C. (umhos/cm)	COLOR	DTW (if dry)
0848	3	6.89	64.7	1.93×10^2	GRN. / BRN.	
0852	6	6.76	65.3	1.87×10^2	YELLOW / BRN.	
0856	9	6.43	65.7	1.87×10^2	YELLOW / BRN.	
0901	13	6.39	65.7	1.90×10^2	YELLOW / BRN.	

Odor? Slight

Actual Purge Vol. (gal.): 13

PURGE METHOD:
___ Bailer (Teflon)
X Bailer (PVC)
___ Well Wizard
___ Dedicated Bailer
___ Other ___

SAMPLE METHOD:
X Bailer (Teflon)
___ Bailer (PVC)
___ Dedicated Bailer
___ Other ___

REMARKS: MW01-101494 sampled @ 0925 on 10.14.94

WEATHER: Fog, overcast, ~60°.

WATER DATA SHEET

PROJECT NO.: 1210A

SAMPLE ID.: MW02 · 101494

LOCATION: 914 SAN PABLO AVE., ALBANY

DATE: 10·14·94

STATION NO.: 510·101

WELL/SAMPLE

SAMPLER: O.LAMB

POINT DESIGNATION: MW-2

[X] SAMPLING [ ] DEVELOPING [ ] BAILING FLOATING PRODUCT

Casing Diameter:
2 inch X
3 inch ___
4 inch ___
6 inch ___
other ___

Screened Int. (ft.): 8-28

Initial DTW (ft.): 12.10 @ 0827

Initial TD (ft.): 26.88

Water Column Height (ft.): 14.78

80 % Recovery (ft.): 15.06

Calc. Casing Vol. (gal.): 2.51
(2" = .17) (3" = .38) (4" = .66) (6" = 1.5)

Calc. Purge Vol. (gal.): 10.05

Final DTW (ft.): 13.49 @ 1000

Final TD (ft.): 26.87

Product Bailed (gal.): Ø

Casing Elev. (ft.): ___

TD (Actual) (ft.): 28

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	TEMP. (degrees F)	E.C. (umhos/cm)	COLOR	DTW (if dry)
0946	2.5	6.81	64.0	2.07×10^2	YELLOW/BRN.	
0950	5.0	6.74	63.8	2.03×10^2	YELLOW/TAN	
0954	7.5	6.69	64.0	2.04×10^2	YELLOW/TAN	
0958	10.25	6.67	64.0	2.02×10^2	YELLOW/TAN	

Odor? NONE

Actual Purge Vol. (gal.): 10.25

PURGE METHOD:
___ Bailer (Teflon)
X Bailer (PVC)
___ Well Wizard
___ Dedicated Bailer
___ Other ___

SAMPLE METHOD:
X Bailer (Teflon)
___ Bailer (PVC)
___ Dedicated Bailer
___ Other ___

REMARKS: MW02 · 101494 SAMPLED @ 1015 ON 10·14·94

WEATHER: OVERCAST, ~ 60°.

WATER DATA SHEET

DW01 · 101494 (DUPLICATE)

PROJECT NO.: 12109 SAMPLE ID.: MW03 · 101494

LOCATION: 914 SAN PABLO AVE., ALBANY DATE: 10·14·94

STATION NO.: SIO · 101 WELL/SAMPLE

SAMPLER: D. LAMB POINT DESIGNATION: MW · 3

[X] SAMPLING [ ] DEVELOPING [ ] BAILING FLOATING PRODUCT

Casing Diameter:
2 inch X
3 inch ___
4 inch ___
6 inch ___
other ___

Casing Elev. (ft.): ___

TD (Actual) (ft.): 27

Screened Int. (ft.): 7-27

Initial DTW (ft.): 9.31 @ 0817

Initial TD (ft.): 25.61

Water Column Height (ft.): 16.30

80 % Recovery (ft.): 12.57

Calc. Casing Vol. (gal.): 2.77
(2" = .17) (3" = .38) (4" = .66) (6" = 1.5)

Calc. Purge Vol. (gal.): 11.08

Final DTW (ft.): 9.52 @ 1040

Final TD (ft.): 25.80

Product Bailed (gal.): Ø

FIELD MEASUREMENTS

TIME	VOLUME (gal.)	pH (units)	TEMP. (degrees F)	E.C. (umhos/cm)	COLOR	DTW (if dry)
1025	2.5	7.18	66.3	2.03×10^2	YELLOW/ BRN.	
1029	5.0	7.13	66.5	1.99×10^2	YELLOW/ BRN.	
1033	7.5	7.09	66.4	1.98×10^2	YELLOW/ BRN.	
1038	11.25	7.07	66.4	1.97×10^2	YELLOW/ BRN.	

Odor? NONE

Actual Purge Vol. (gal.): 11.25

PURGE METHOD:
___ Bailer (Teflon)
X Bailer (PVC)
___ Well Wizard
___ Dedicated Bailer
___ Other ___

SAMPLE METHOD:
X Bailer (Teflon)
___ Bailer (PVC)
___ Dedicated Bailer
___ Other ___

REMARKS: MW03 · 101494 Samples @ 1050 ON 10·14·94
DW01 · 101494 Samples @ 1105 ON 10·14·94

WEATHER: OVERCAST, ~ 60°

APPENDIX C

Chain-of-Custody Records
and
Certified Analytical Data

WEST LABORATORY

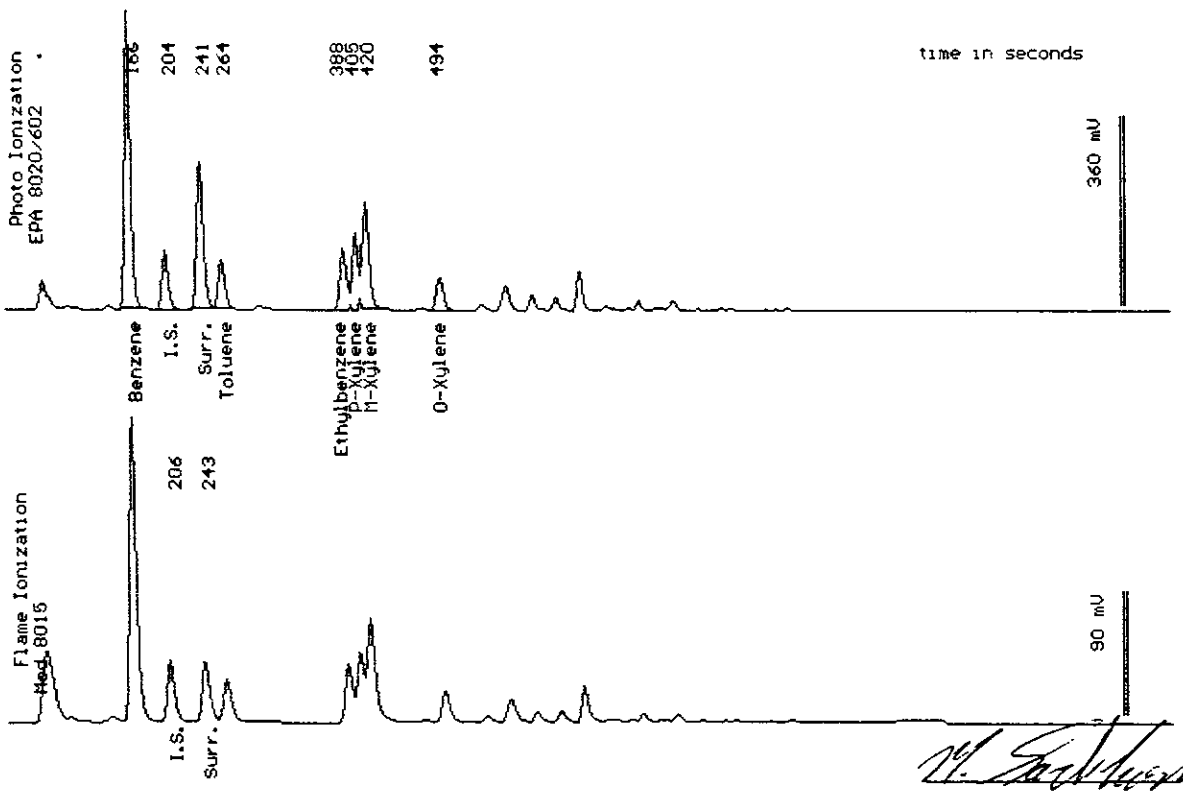
Sample Log 10498

10498-3

Sample: **MW01-101494**

From : Project # 12104 (510-101)
Sampled : 10/14/94
Dilution : 1:1 QC Batch : 2106G
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L	
Benzene	(.30)	86	
Toluene	(.30)	17	
Ethylbenzene	(.30)	24	
Total Xylenes	(.50)	77	
TPH as Gasoline	(50)	380	
Surrogate Recovery		103	%



Date Analyzed: 10-17-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

Sample Log 10498

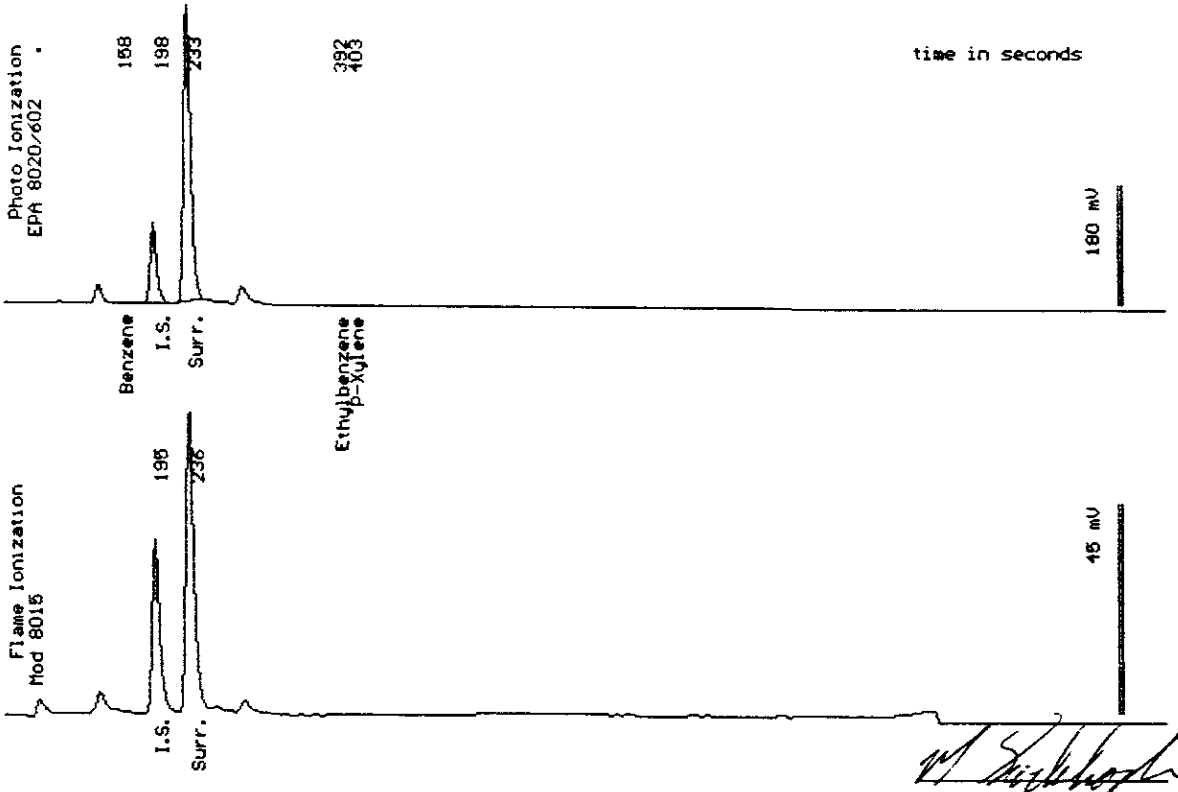
10498-4

Sample: **MW02-101494**

From : Project # 12104 (510-101)
Sampled : 10/14/94
Dilution : 1:1 QC Batch : 2106J
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		103 * %

* External standard quantitation was used due to matrix interference.



Date Analyzed: 10-18-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

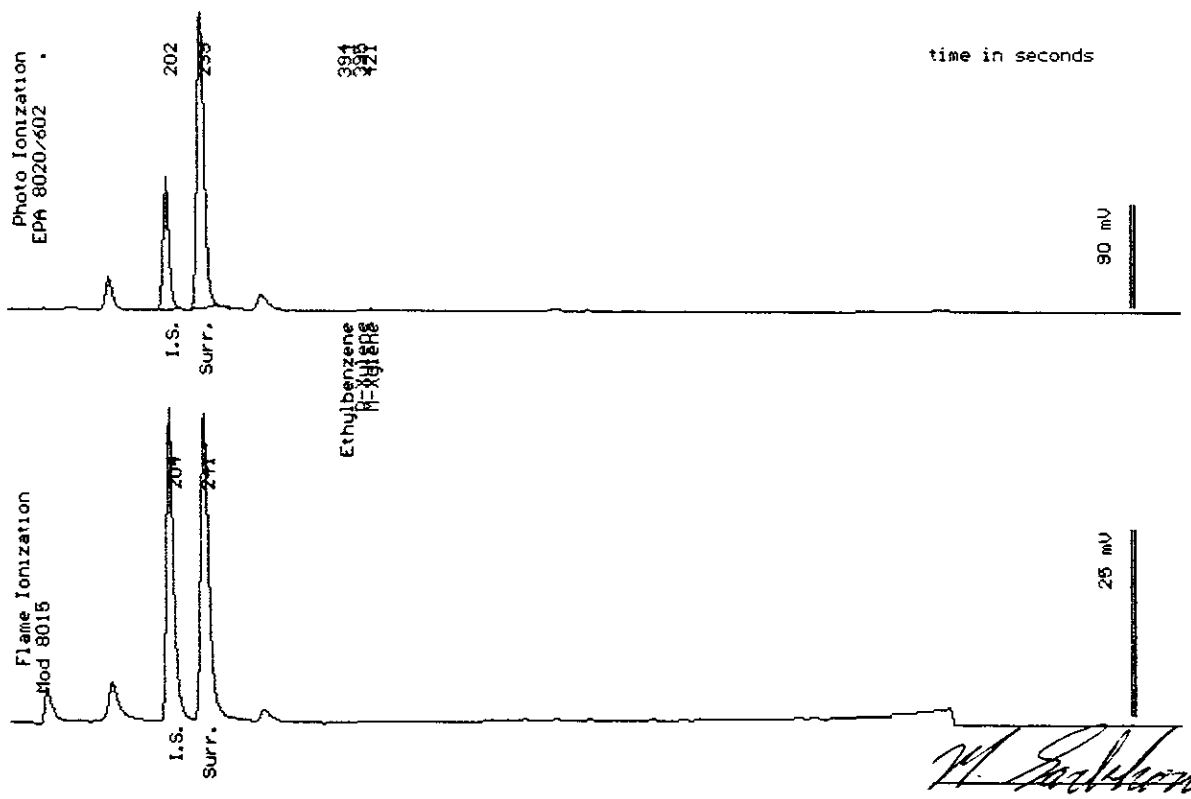
Sample Log 10498

10498-5

Sample: **MW03-101494**

From : Project # 12104 (510-101)
Sampled : 10/14/94
Dilution : 1:1 QC Batch : 2106G
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		104 %



Date Analyzed: 10-17-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

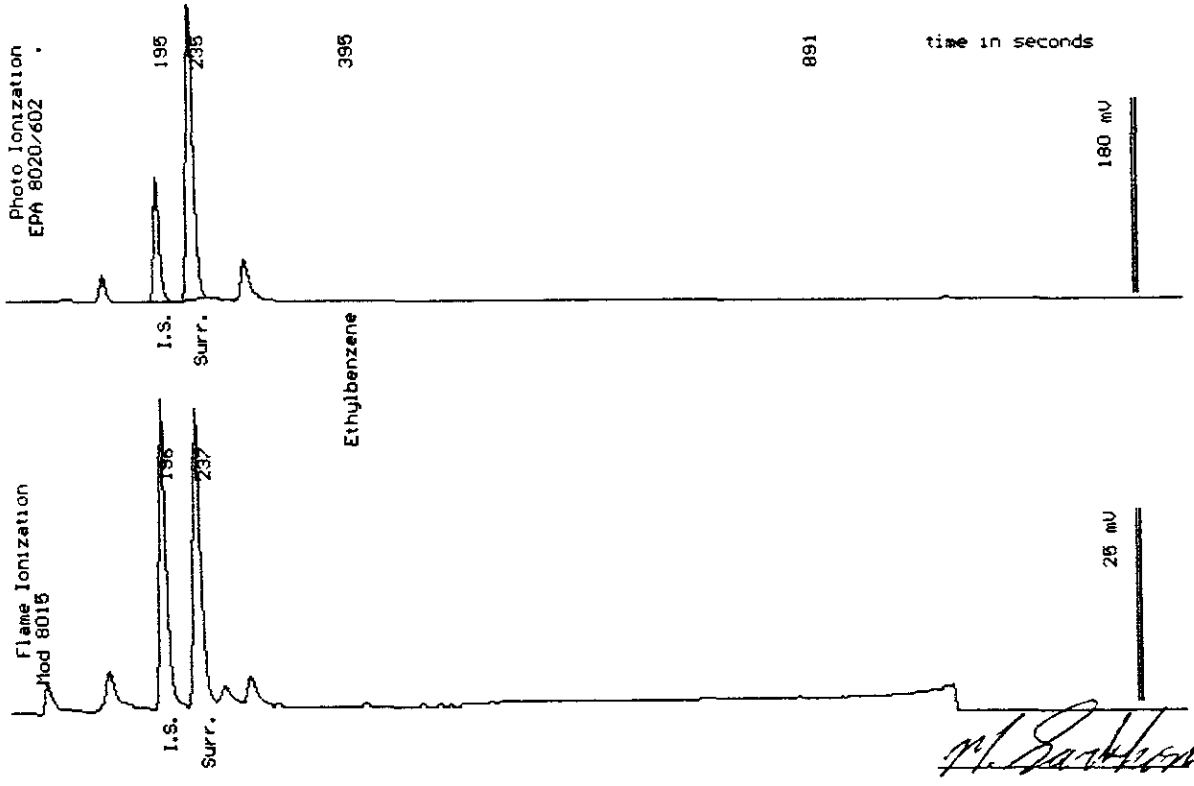
Sample Log 10498

10498-6

Sample: **DW01-101494**

From : Project # 12104 (510-101)
Sampled : 10/14/94
Dilution : 1:1 QC Batch : 2106J
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		106 %



Date Analyzed: 10-18-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

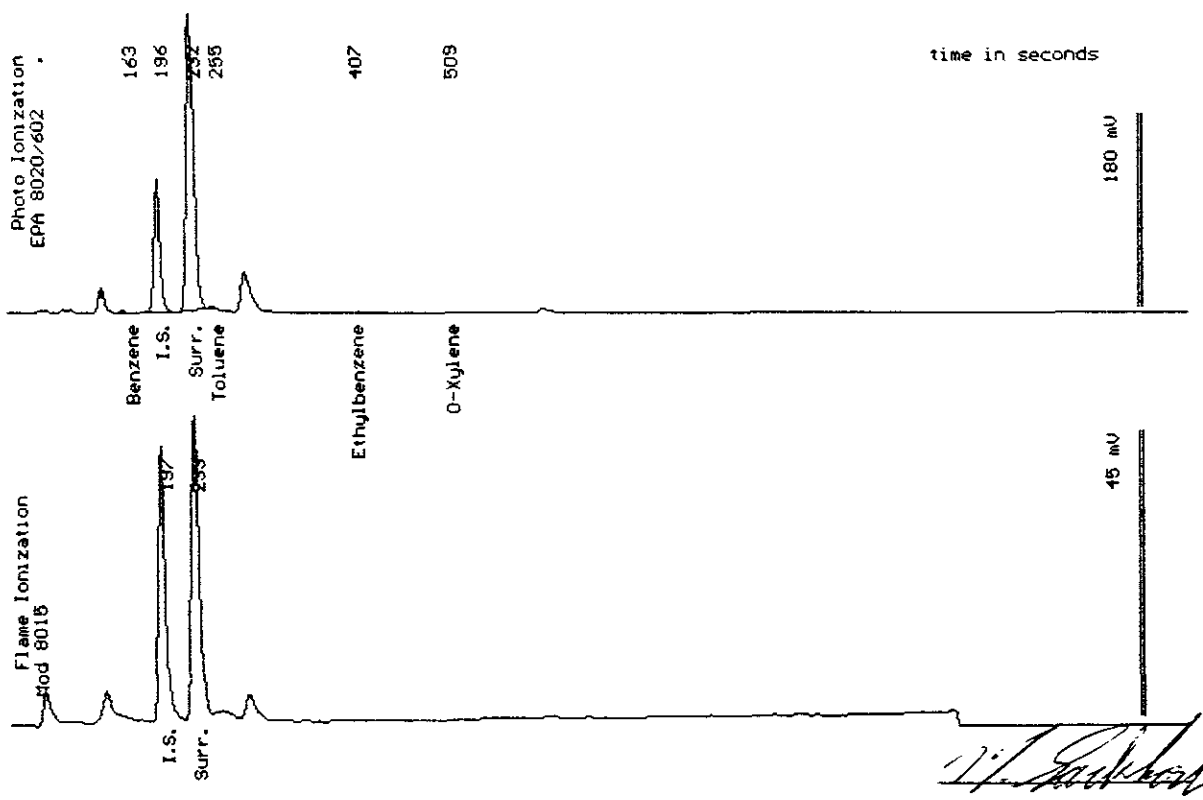
Sample Log 10498

10498-2

Sample: **RS01-101494**

From : Project # 12104 (510-101)
Sampled : 10/14/94
Dilution : 1:1 QC Batch : 2106G
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		103 %



Date Analyzed: 10-17-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

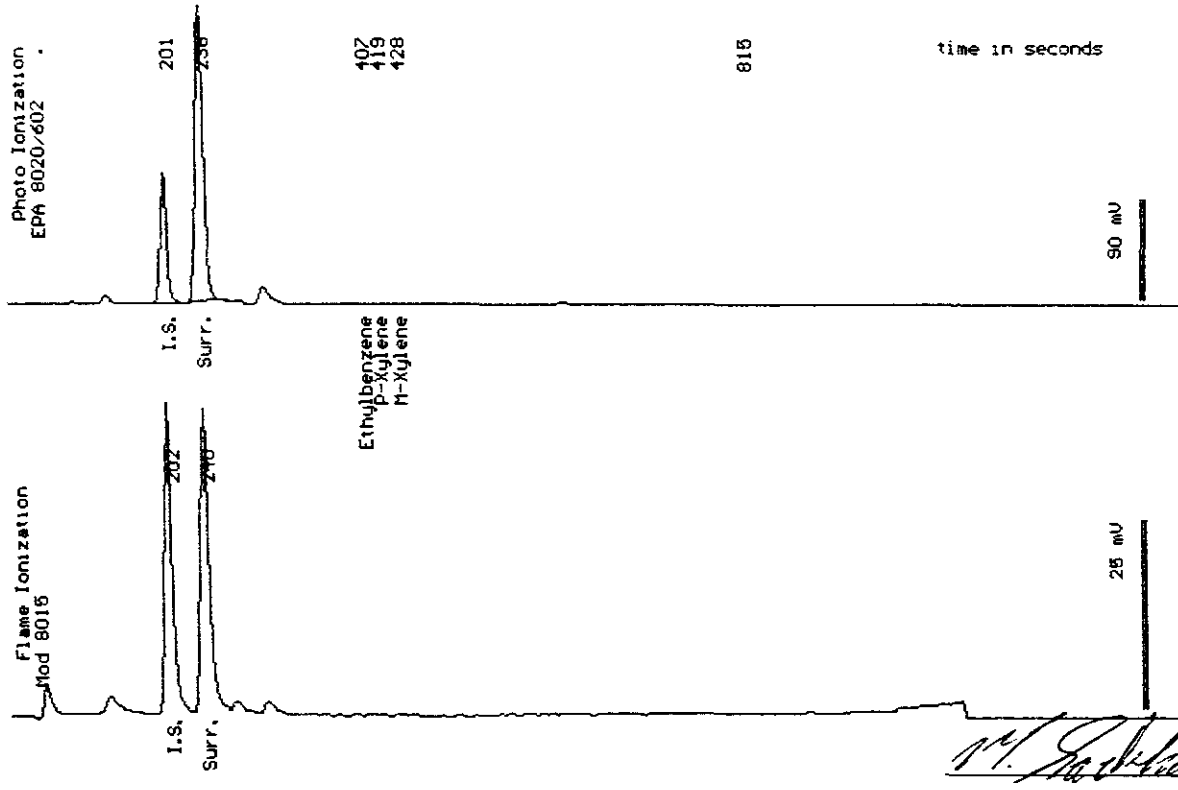
Sample Log 10498

10498-1

Sample: **TB01-101494**

From : Project # 12104 (510-101)
Sampled : 10/14/94
Dilution : 1:1 QC Batch : 2106G
Matrix : Water

Parameter	(MRL) ug/L	Measured Value ug/L
Benzene	(.30)	<.30
Toluene	(.30)	<.30
Ethylbenzene	(.30)	<.30
Total Xylenes	(.50)	<.50
TPH as Gasoline	(50)	<50
Surrogate Recovery		103 %



Date Analyzed: 10-17-94
Column : 0.53mm ID X 30m DBWAX (J&W Scientific)

Mitra Sarkhosh
Senior Chemist

WEST LABORATORY

October 19, 1994
Sample Log 10498

From : Project # 12104 (510-101)
Date Sampled : 10/14/94
Matrix : Water

Date Received : 10/14/94
Units : (mg/L)

Total Lead by GFAA by SW-846 Method 7421

WEST ID	Sample ID	Result	MRL	Date Digested	Date Analyzed
10498-3	MW01-101494	0.0080	0.003	10/17/94	10/17/94
10498-4	MW02-101494	0.021	0.003	10/17/94	10/17/94

MRL = Method Reporting Limit

Michelle L. Anderson
Inorganics Supervisor

WEST LABORATORY

October 19, 1994

Metals QC Report for Sample Log 10498

From : Project # 12104 (510-101)
Matrix : Water
Sample Spiked for MS/MSD : 10498-3

Units : (mg/L)

Method Blank

Analyte	Result	MRL	EPA Method	Date Digested	Date Analyzed
Lead (Pb)	<0.003	0.003	7421	10/17/94	10/17/94

MRL = Method Reporting Limit

Laboratory Control Sample (LCS)

Analyte	% Recovery	EPA Method	Date Digested	Date Analyzed
Lead (Pb)	92	7421	10/17/94	10/17/94

LCS Limits are 85 - 115%.

Matrix Spikes

Analyte	MS % Recov	MSD % Recov	RPD	EPA Method	Date Digested	Date Analyzed
Lead (Pb)	80	76	5	7421	10/17/94	10/17/94

MS = Matrix Spike MSD = Matrix Spike Duplicate RPD = Relative Percent Difference
Spike Recovery Limits for Matrix Spikes are 75 - 125%. The RPD Limits are ± 20%.

Michelle L. Anderson
Inorganics Supervisor

WEST LABORATORY

October 21, 1994
Sample Log 10498-5

Sample : **MW03-101494**
From : Project # 12104 (510-101)
Matrix : Water

Date Sampled : 10/14/94
Date Received : 10/14/94
Units : (mg/L)

Metals Analyses by ICP and GFAA by SW-846
5 LUFT :"Waste Oil" Metals

Analyte	Result	MRL	EPA Method	Date Digested	Date Analyzed
Cadmium (Cd)	**0.019**	0.004	6010	10/18/94	10/21/94
Chromium (Cr)	**0.64**	0.007	6010	10/18/94	10/21/94
Lead (Pb)	**0.14**	0.012	7421	10/17/94	10/17/94
Nickel (Ni)	**0.86**	0.015	6010	10/18/94	10/21/94
Zinc (Zn)	**0.90 B**	0.010	6010	10/18/94	10/21/94

MRL = Method Reporting Limit

B = Analyte found in the Method Blank

Michelle L. Anderson
Inorganics Supervisor

WEST LABORATORY

October 21, 1994

Metals QC Report for Sample Log 10498

From : Project # 12104 (510-101)
Matrix : Water

Units : (mg/L)

Method Blank

Analyte	Result	MRL	EPA Method	Date Digested	Date Analyzed
Cadmium (Cd)	<0.004	0.004	6010	10/18/94	10/21/94
Chromium (Cr)	<0.007	0.007	6010	10/18/94	10/21/94
Lead (Pb)	<0.003	0.003	7421	10/17/94	10/17/94
Nickel (Ni)	<0.015	0.015	6010	10/18/94	10/21/94
Zinc (Zn)	0.024	0.010	6010	10/18/94	10/21/94

MRL = Method Reporting Limit

Laboratory Control Sample (LCS)

Analyte	% Recovery	EPA Method	Date Digested	Date Analyzed
Cadmium (Cd)	114	6010	10/18/94	10/21/94
Chromium (Cr)	101	6010	10/18/94	10/21/94
Lead (Pb)	92	7421	10/17/94	10/17/94
Nickel (Ni)	103	6010	10/18/94	10/21/94
Zinc (Zn)	110	6010	10/18/94	10/21/94

LCS Limits are 85 - 115%.

Michelle L. Anderson
Inorganics Supervisor

WEST LABORATORY

October 21, 1994

Metals QC Report for Sample Log 10498 (cont'd)

Sample Spiked for MS/MSD : 10498-3 (GFAA), 10498-5 (ICP)

Matrix Spikes

Analyte	MS % Recov	MSD % Recov	RPD	EPA Method	Date Digested	Date Analyzed
Cadmium (Cd)	101	89	13	6010	10/18/94	10/21/94
Chromium (Cr)	100	45 Q	76 Q	6010	10/18/94	10/21/94
Lead (Pb)	80	76	5	7421	10/17/94	10/17/94
Nickel (Ni)	86	56 Q	42 Q	6010	10/18/94	10/21/94
Zinc (Zn)	94	67 Q	34 Q	6010	10/18/94	10/21/94

MS = Matrix Spike MSD = Matrix Spike Duplicate RPD = Relative Percent Difference
Q = Result outside acceptable range. See analytical spike data.
Spike Recovery Limits for Matrix Spikes are 75 - 125%. RPD Limits are ± 20%.

Analytical Spike Recovery

Sample ID	Chromium % Recovery	Nickel % Recovery	Zinc % Recovery
Method Blank	99	101	111
10498-5	76	81	91

Michelle L.. Anderson
Inorganics Supervisor

WEST
Western Environmental Science & Technology

1046 Olive Drive, Suite 3
Davis, CA 95616

916-753-9500
FAX #: 916-753-6091
LAB#: 916-757-4650

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

Project Manager: LARRY MILLER

Phone #: 510 420 7110

Company/Address: ALAMEDA ENVIRONMENTAL FAX #: 510 658-7716

5701 CHRISTIE AVE, STE 501 EMERYVILLE, CA

Project Number: 12104

P.O.#: 51447

Project Name: SIO 101

Project Location: 714 SAN PABLO AVE, ALBANY, CA

Sampler Signature:

Sample ID	Sampling DATE	Sampling TIME	Container VOA	Container SLEEVE	Container 1L GLASS	Container 1L PLASTIC	Method Preserved HCl	Method Preserved HNO_3	Method Preserved ICE	Method Preserved NONE	Matrix WATER	Matrix SOIL
	1994											
TB01 101494	10.14	0630	X				X		X		X	
RS01 101494	10 14	0515	X				X		X		X	
MW01 101494	10 14	0725	X			X	X	X	X		X	
MW2 101494	10 14	1015	X			X	X	X	X		X	
MW3 101494	10 14	1050	X			X	X	X	X		X	
DUP1 101494	10 14	1105	X				X		X		X	
											/	

ANALYSIS REQUEST

BTEX (602/8020)	BTEX/TPH as Gasoline (602/8020/5015)	TPH as Diesel/Oil (8015)	Total Oil & Grease (5520 B/E,F)	Total Oil & Grease IR (5520 B/E,F,C)	96 - Hour Fish Bioassay	EPA 601/8010	EPA 602/8020	EPA 615/8150	EPA 608/8080 - Pesticides	EPA 608/8080-PCBs	EPA 624/8240	EPA 625/8270	ORGANIC LEAD	Reactivity, Corrosivity, Ignitibility	W.E.T. (✓)	TOTAL (✓)	CAM - 17 Metals	EPA - Priority Pollutant Metals	LEAD(7420/7421/239.2)	Cd, Cr, Pb, Zn, Ni	5 WET	TOTAL LEAD
	X																					
	X																					
	X																			X		X
	X																			X		X
	X																			X		X
	X																			X		X
	X																					

DATE 10/14 TIME 1330

TEMP 8°C

INITIAL DC

RUSH SERVICE (12 hr) or (24 hr)

EXPEDITED SERVICE (48 hr) or (1 wk)

STANDARD SERVICE ([redacted]) 1 WK X

Relinquished by	Date	Time	Received by:
	10/14/94	1200	
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory
	10/14/94	13:30	

Remarks: WEST. LAB

Bill To: