

ENVIRONMENTAL
PROTECTION

96 MAY -9 PM 12:25

XTRA OIL COMPANY
2307 PACIFIC AVE.
ALAMEDA, CA 94501
(510) 865-9503

May 2, 1996

ALAMEDA COUNTY
DEPT. OF ENVIRONMENTAL HEALTH
HAZARDOUS MATERIALS DIVISION
1131 HARBOR BAY PKWY. ROOM 250
ALAMEDA, CA. 94502

ATTENTION: EVA CHU
REGARDING: 1701 PARK ST.
ALAMEDA

DEAR MS. CHU,

PLEASE FIND ENCLOSED, THE GROUNDWATER MONITORING AND SAMPLING REPORT
FOR THE ABOVE LOCATION. IF YOU HAVE ANY QUESTIONS FEEL FREE TO
CONTACT ME.

SINCERELY,


KEITH SAMAS

ENCLOSURES

GROUNDWATER MONITORING AND SAMPLING REPORT

**Xtra Oil Company Service Station (dba Shell)
1701 Park Street
Alameda, California**

Project No. 10-210-05-001

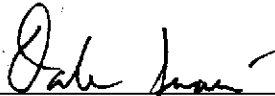
Prepared for:

**Xtra Oil Company
2307 Pacific Avenue
Alameda, California**

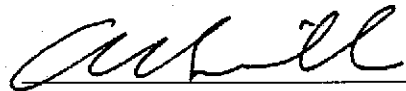
Prepared by:

**Alisto Engineering Group
1575 Treat Boulevard, Suite 201
Walnut Creek, California**

April 23, 1996



**Dale Swain
Project Manager**



**Al Sevilla, P.E.
Principal**



GROUNDWATER MONITORING AND SAMPLING REPORT

Xtra Oil Company Service Station (dba Shell)
1701 Park Street
Alameda, California

Project No. 10-210-05-001

April 23, 1996

INTRODUCTION

This report presents the results and findings of the March 20, 1996 groundwater monitoring and sampling conducted by Alisto Engineering Group at the Xtra Oil Company service station (dba Shell), 1701 Park Street, Alameda, California. A site vicinity map is shown on Figure 1.

FIELD PROCEDURES

Field activities were performed in accordance with the procedures and guidelines of Alameda County Health Care Services Agency and the California Regional Water Quality Control Board, San Francisco Bay Region.

Before purging and sampling, the groundwater level in each well was measured from a permanent mark on top of the casing to the nearest 0.01 foot using an electronic sounder. The depth to groundwater and top of casing elevation data were used to calculate the groundwater elevation in each well in reference to mean sea level. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Before sample collection, each well was purged of 3 casing volumes while recording field readings of pH, temperature, electrical conductivity, and dissolved oxygen. Groundwater samples were collected for laboratory analysis by lowering a bottom-fill, disposable bailer to just below the water level in each well. The samples were transferred from the bailer into laboratory-supplied containers. The water sampling field survey forms are presented in Appendix A.

SAMPLING AND ANALYTICAL RESULTS

The results of monitoring and laboratory analysis of the groundwater samples for this and previous events are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown on Figure 2. The results of laboratory analysis are shown on Figure 3. The laboratory report and chain of custody record are presented in Appendix B.



FINDINGS

The findings of the March 20, 1996 groundwater monitoring and sampling event are summarized as follows:

- Approximately 0.01 foot of free product was observed in Monitoring Well MW-2. Free product or sheen was not observed in MW-1 or MW-3.
- Groundwater elevation data indicate a gradient of approximately 0.01 foot per foot in a southeasterly direction across the site.
- Analysis of the groundwater samples detected 46000 micrograms per liter (ug/l) total petroleum hydrocarbons as gasoline and 10000 ug/l benzene in the sample collected from MW-1.



TABLE 1-SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
XTRA OIL COMPANY SERVICE STATION
1701 PARK STREET, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-210

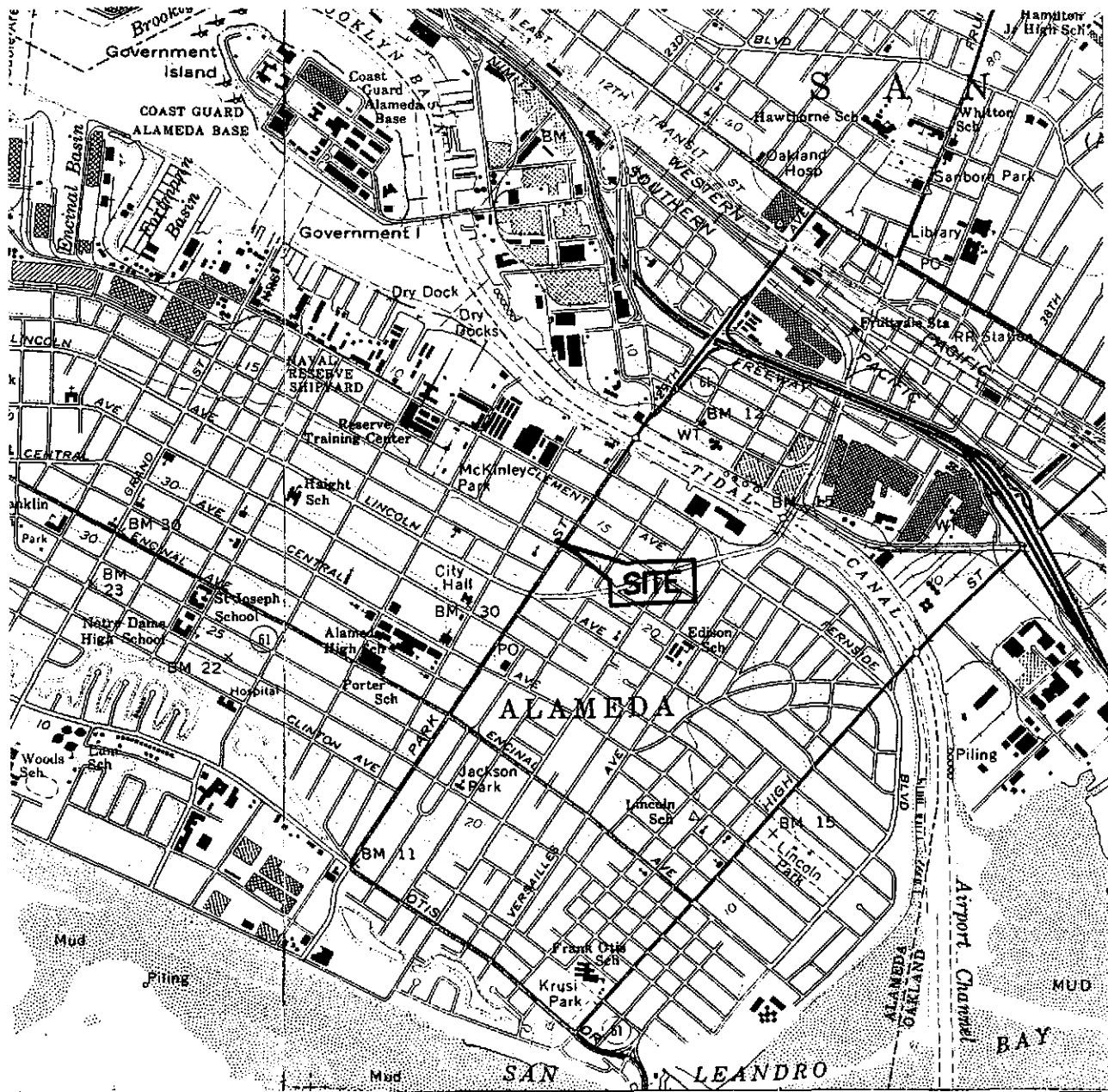
WELL ID	DATE OF MONITORING/SAMPLING	CASING ELEVATION (Feet) (a)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (Feet) (b)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	DO (ppm)	LAB
MW-1	11/04/94	19.49	8.64	---	10.85	60000	6400	13000	4900	1300	5500	---	MC
QC-1 (c)	11/04/94	---	---	---	---	54000	---	12000	4500	1200	5200	---	MC
MW-1	01/11/95	19.49	8.10	---	13.39	---	---	---	---	---	---	---	---
MW-1	02/24/95	19.49	6.57	---	12.92	56000	4400	13000	7000	1400	5100	---	MC
QC-1 (c)	02/24/95	---	---	---	---	43000	---	8900	4600	970	3300	---	MC
MW-1	05/25/95	19.49	6.54	---	12.95	53000	4700	11000	5700	1200	4000	4.3	MC
QC-1 (c)	05/25/95	---	---	---	---	48000	---	11000	5300	1200	3800	---	MC
MW-1	08/30/95	19.49	8.15	---	11.34	14000	3700	5000	1100	3900	103	2.8	MC
QC-1 (c)	08/30/95	---	---	---	---	57000	---	17000	7000	1500	5200	---	MC
MW-1	11/16/95	19.49	8.79	---	10.70	100000	5900	22000	17000	2100	8500	---	MC
QC-1 (c)	11/16/95	---	---	---	---	95000	---	20000	15000	1800	7800	---	MC
MW-1	03/20/96	19.49	6.45	---	13.04	46000	3300	10000	6200	1100	3200	---	MC
QC-1 (c)	03/20/96	---	---	---	---	42000	---	9800	5800	970	3000	---	MC
MW-2	11/04/94	20.29	9.12	0.16	11.29	---	---	---	---	---	---	---	---
MW-2	01/11/95	20.29	6.75	---	13.54	---	---	---	---	---	---	---	---
MW-2	02/24/95	20.29	7.11	0.18	13.32	---	---	---	---	---	---	---	---
MW-2	05/25/95	20.29	7.01	0.01	13.29	---	---	---	---	---	---	---	---
MW-2	08/30/95	20.29	8.58	0.12	11.80	---	---	---	---	---	---	---	---
MW-2	11/16/95	20.29	9.07	0.01	11.23	---	---	---	---	---	---	---	---
MW-2	11/16/95	20.29	9.07	0.01	11.23	---	---	---	---	---	---	---	---
MW-2	03/20/96	20.29	8.79	0.01	13.51	---	---	---	---	---	---	---	---
MW-3	11/04/94	20.58	8.92	---	11.66	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
MW-3	01/11/95	20.58	5.67	---	14.91	---	---	---	---	---	---	---	---
MW-3	02/24/95	20.58	6.11	---	14.47	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
MW-3	05/25/95	20.58	6.24	---	14.34	91	ND<50	28	12	2.1	6.5	---	MC
MW-3	08/30/95	20.58	8.27	---	12.31	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4.6	MC
MW-3	11/16/95	20.58	8.82	---	11.76	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
MW-3	11/16/95	20.58	8.82	---	11.76	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
MW-3	03/20/96	20.58	5.44	---	15.14	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
QC-2 (d)	11/04/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
QC-2 (d)	02/24/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
QC-2 (d)	05/25/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
QC-2 (d)	08/30/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
QC-2 (d)	11/16/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
QC-2 (d)	11/16/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC
QC-2 (d)	03/20/96	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	MC

ABBREVIATIONS:

TPH-G Total petroleum hydrocarbons as gasoline
 TPH-D Total petroleum hydrocarbons as diesel
 B Benzene
 T Toluene
 E Ethylbenzene
 X Total xylenes
 DO Dissolved oxygen
 ug/l Micrograms per liter
 ppm Parts per million
 ND Not detected above reported detection limit
 MCC McCampbell Analytical, Inc.

NOTES:

(a) Top of casing surveyed relative to mean sea level.
 (b) Groundwater elevations expressed in feet above mean sea level, and adjusted assuming a specific gravity of 0.75 for free product.
 (c) Blind duplicate.
 (d) Travel blank.



SOURCE:
 USGS MAP, OAKLAND WEST AND EAST QUADRANGLE,
 7.5 MINUTE SERIES, 1959.
 PHOTOREVISED 1980.

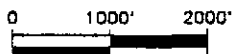


FIGURE 1

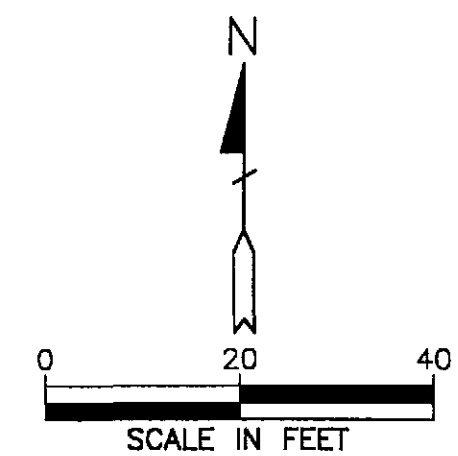
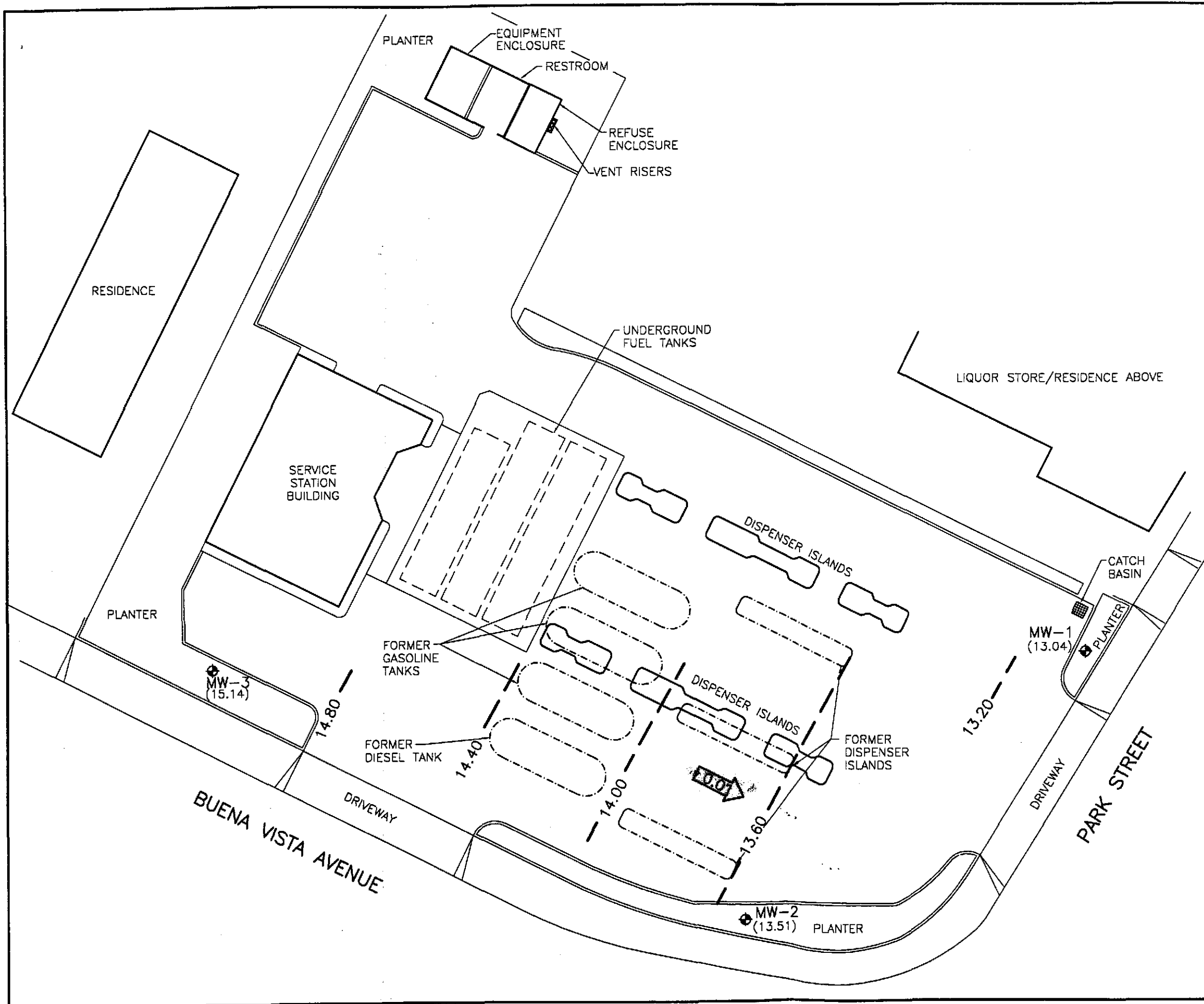
SITE VICINITY MAP

XTRA OIL COMPANY SERVICE STATION
 1701 PARK STREET
 ALAMEDA, CALIFORNIA

PROJECT NO. 10-210

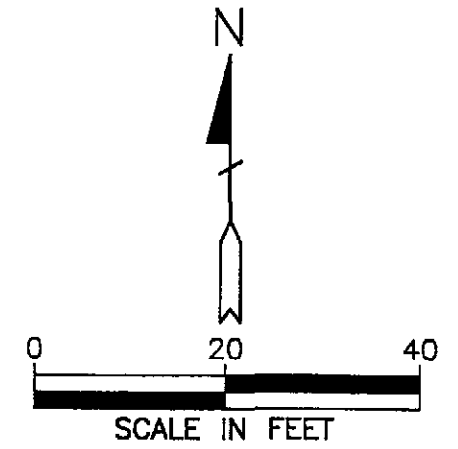
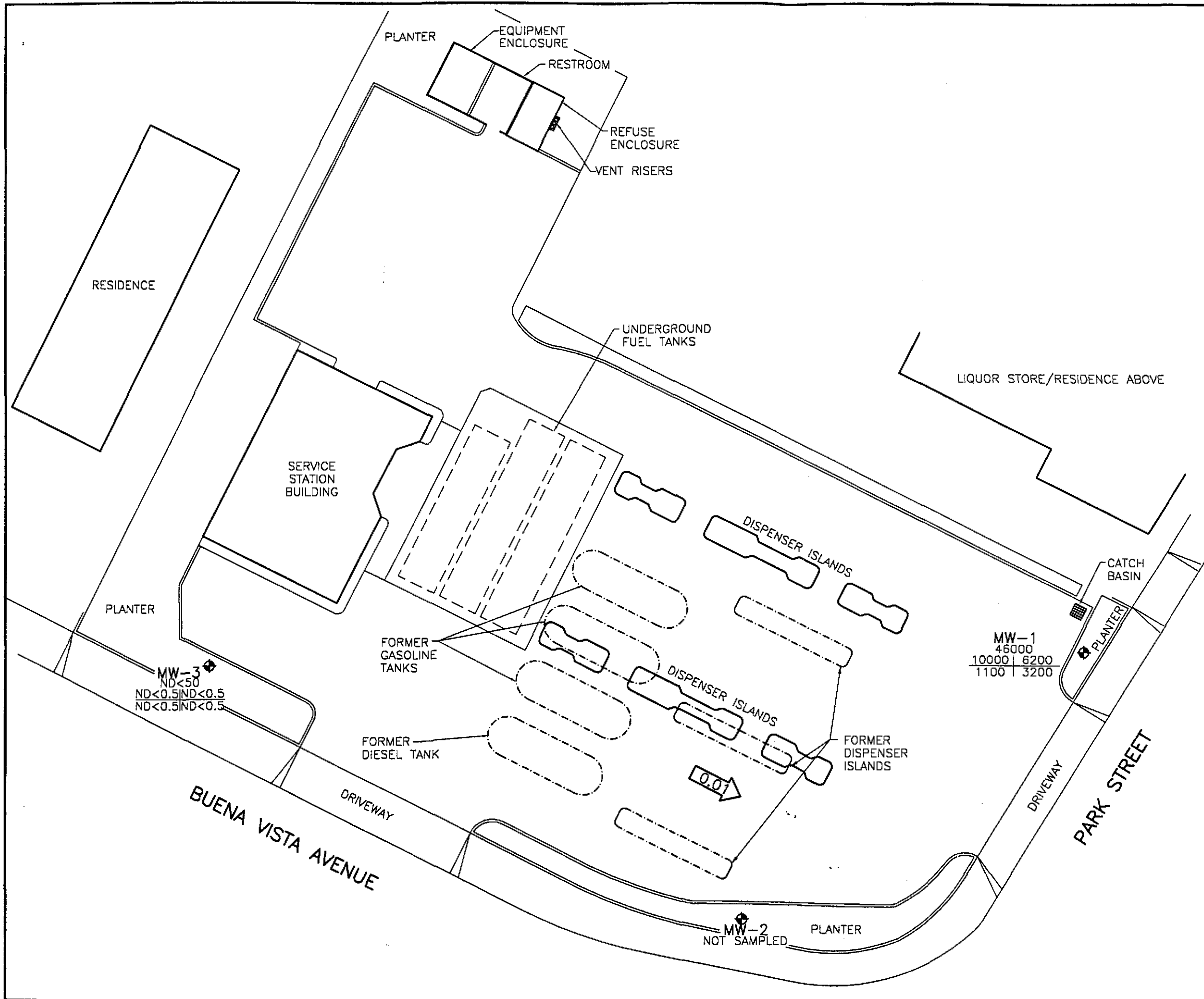


ALISTO ENGINEERING GROUP
 WALNUT CREEK, CALIFORNIA



- LEGEND**
- ◆ GROUNDWATER MONITORING WELL
 - (13.04) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
 - 13.20 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL - 0.40 FOOT)
 - ← 0.01 → CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP
MARCH 20, 1996
 XTRA OIL COMPANY SERVICE STATION
 1701 PARK STREET
 ALAMEDA, CALIFORNIA
 PROJECT NO. 10-210



LEGEND

- ◆ GROUNDWATER MONITORING WELL
- TPH-G
B | T
E | X
CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER
- TPH-G
B
T
E
X
TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
- B
T
E
X
BENZENE
TOLUENE
ETHYLBENZENE
TOTAL XYLENES
- ND
NOT DETECTED ABOVE REPORTED DETECTION LIMIT
- ← 0.01
CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3
CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER
MARCH 20, 1996
 XTRA OIL COMPANY SERVICE STATION
 1701 PARK STREET
 ALAMEDA, CALIFORNIA
 PROJECT NO. 10-210

APPENDIX A
WATER SAMPLING FIELD SURVEY FORMS

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING

GROUP

1575 TREAT BOULEVARD, SUITE 201

WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

Project No. 10-210-05-001

Address 1701 Park Street

Contract No. Pending

Station No. XTRA

Date: 3/20/96

Day: M T W T H F

City: Alameda

Sampler: WB

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	S-1	2"	20.00	6.45	Ø	1315	Ac-1 S-3 From this well
MW-2	NIS	↓	N/A	6.79	.01	1322	Serviced well, Purged 5 gal T.F.
MW-3	S-2	↓	19.50	5.44	Ø	1310	

FIELD INSTRUMENT CALIBRATION DATA

pH METER Icm 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED N TIME 1300 WEATHER Clear

D.O. METER Icm ZERO d.O. SOLUTION 760 0 BAROMETRIC PRESSURE 760 TEMP 65

CONDUCTIVITY METER Icm 10,000 TURBIDITY METER 5.0 NTU OTHER X

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-3	5.44	2"	OK	Ø	Y (N)	7	1340	64.1	7.42	322 µS		<input type="radio"/> EPA 601
Total Depth - Water Level =						4		63.4	7.33	364 µS		<input checked="" type="radio"/> TPH-G/BTEX <u>Hcl</u>
19.50 - 5.44 = 14.06 x .16 = 2.25 x 3 = 6.75						7	1344	63.1	7.27	369 µS		<input checked="" type="radio"/> TPH Diesel <u>Hcl</u>
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> OSys Port												<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1355

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-1	6.45	2"	OK	Ø	Y (N)	7	1407	63.2	7.56	792 µS		<input type="radio"/> EPA 601
Total Depth - Water Level =						4		62.8	7.39	906 µS		<input checked="" type="radio"/> TPH-G/BTEX <u>Hcl</u>
20.00 - 6.45 = 13.55 x .16 = 2.17 x 3 = 6.51						6.75	1415	62.6	7.32	810 µS		<input checked="" type="radio"/> TPH Diesel <u>Hcl</u>
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> OSys Port												<input type="radio"/> TOG 5520
Comments: <u>Ac-1 Dup (S-3) From this well</u>												TIME/SAMPLE ID
												1422

APPENDIX B
LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

McCAMPBELL ANALYTICAL INC.

110 2nd Avenue South, #D7, Pacheco, CA 94553
Tele: 510-798-1620 Fax: 510-798-1622

03/29/96

Dear Brady:

Enclosed are:

- 1). the results of 4 samples from your 10-210 project,
- 2). a QC report for the above samples
- 3). a copy of the chain of custody, and
- 4). a bill for analytical services.

If you have any questions please contact me. McCampbell Analytical Laboratories strives for excellence in quality, service and cost. Thank you for your business and I look forward to working with you again.

Yours truly,



Edward Hamilton

Alisto Engineering Group 1575 Treat Blvd. # 201 Walnut Creek, CA 94598	Client Project ID: 10-210	Date Sampled: 03/20/96
		Date Received: 03/21/96
	Client Contact: Brady Nagle	Date Extracted: 03/21/96
	Client P.O:	Date Analyzed: 03/21/96

Gasoline Range (C6-C12) Volatile Hydrocarbons as Gasoline*, with BTEX*

EPA methods 5030, modified 8015, and 8020 or 602; California RWQCB (SF Bay Region) method GCFID(5030)

Lab ID	Client ID	Matrix	TPH(g) ⁺	Benzene	Toluene	Ethylbenzene	Xylenes	% Rec. Surrogate
62599	S-1	W	46,000,a	10,000	6200	1100	3200	100
62600	S-2	W	ND	ND	ND	ND	ND	100
62601	S-3	W	42,000,a	9800	5800	970	3000	1000
62602	S-4	W	ND	ND	ND	ND	ND	97
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W	50 ug/L	0.5	0.5	0.5	0.5	0.5	
	S	1.0 mg/kg	0.005	0.005	0.005	0.005	0.005	

* water and vapor samples are reported in ug/L, soil samples in mg/kg, and all TCLP extracts in mg/L

cluttered chromatogram; sample peak coelutes with surrogate peak

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified gasoline is significant; b) heavier gasoline range compounds are significant(aged gasoline?); c) lighter gasoline range compounds (the most mobile fraction) are significant; d) gasoline range compounds having broad chromatographic peaks are significant; biologically altered gasoline?; e) TPH pattern that does not appear to be derived from gasoline (?); f) one to a few isolated peaks present; g) strongly aged gasoline or diesel range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment; j) no recognizable pattern.

Alisto Engineering Group 1575 Treat Blvd. # 201 Walnut Creek, CA 94598	Client Project ID: 10-210	Date Sampled: 03/20/96
		Date Received: 03/21/96
	Client Contact: Brady Nagle	Date Extracted: 03/22/96
	Client P.O:	Date Analyzed: 03/23-03/24/96

Diesel Range (C10-C23) Extractable Hydrocarbons as Diesel *

EPA methods modified 8015, and 3550 or 3510; California RWQCB (SF Bay Region) method GCFID(3550) or GCFID(3510)

Lab ID	Client ID	Matrix	TPH(d) ⁺	% Recovery Surrogate
62599	S-1	W	3300,d,a	103
62600	S-2	W	ND	101
Reporting Limit unless otherwise stated; ND means not detected above the reporting limit	W	50 ug/L		
	S	1.0 mg/kg		

* water samples are reported in ug/L, soil samples in mg/kg, and all TCLP and STLC extracts in mg/L

cluttered chromatogram resulting in coeluted surrogate and sample peaks, or; surrogate peak is on elevated baseline, or; surrogate has been diminished by dilution of original extract.

+ The following descriptions of the TPH chromatogram are cursory in nature and McCampbell Analytical is not responsible for their interpretation: a) unmodified or weakly modified diesel is significant; b) diesel range compounds are significant; no recognizable pattern; c) aged diesel? is significant; d) gasoline range compounds are significant; e) medium boiling point pattern that does not match diesel (?); f) one to a few isolated peaks present; g) oil range compounds are significant; h) lighter than water immiscible sheen is present; i) liquid sample that contains greater than ~ 5 vol. % sediment.

