BP OIL

BP Oil Company
16400 Southcenter Parkway, Suite 301
Tukwila, Washington 98188
(206) 575-4077

November 16, 1992

STID 3878

Mr. Ron Owcarz
Alameda County Health Care Services Agency
80 Swan Way
Oakland, Ca 94621

RE: BP OIL Facility #11132
3201 35th Avenue
Oakland, California

Dear Mr. Owcarz:

Attached please find our **QUARTERLY GROUND WATER MONITORING AND SAMPLING REPORT** for the above referenced facility.

Please call me at (206) 394-5243 with questions regarding this submission.

Respectfully,

S. Hooton
Environmental Resources Management

STH:JC ERM11132

cc: Mr. Tom Callaghan
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland, CA 94612

Mr. Markus B. Niebanck, Hydro Environmental Technologies, Inc., 2363 Mariner Square Drive, Suite 243, Alameda, CA 94501

David Baker, Mobil Oil Corp, 3225 Gallows Road, Fairfax, VA 22037

Mr. Al Sveilla, Alisto Engineering, 1000 Burnett Ave., Suite 420, Concord, CA 94520

Site file

QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

Prepared for

BP Oil Company Service Station No. 11132
3201 35th Avenue
Oakland, California

Prepared by

Alisto Engineering Group
1000 Burnett Avenue, Suite 420
Concord, California

Project No. 10-024

November 9, 1992

Brady Nagle
Project Manager

Al Sevilla, P.E.
Principal

QUARTERLY GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11132
3201 35th Avenue
Oakland, California

Project No. 10-024

November 9, 1992

INTRODUCTION

This report presents the results and findings of the October 5, 1992 quarterly groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11132, 3201 35th Avenue, Oakland, California. A site vicinity map is shown in Figure 1.

FIELD PROCEDURES

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

Before purging and sampling, the ground water level in each well was measured from a permanent mark on the top of the casing to the nearest 0.01 foot using an electronic sounder. The depth to ground water and the top of casing elevation data were used to calculate the ground water elevation in each well in reference to mean sea level. The survey data and ground water 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, and electrical conductivity. Ground water samples for laboratory analysis were collected by lowering a bottom-fill, disposable bailer to just below the water level in the well. The samples were carefully transferred from the bailer into the appropriate clean glass 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 quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this quarterly monitoring event are depicted in Figure 2. The results of groundwater analysis are shown in Figure 3. The laboratory report and chain of custody record are presented in Appendix B.

SUMMARY OF FINDINGS

The findings of the October 5, 1992 ground water monitoring and sampling event are summarized below:

- Free product up to 0.24 foot thick was detected in MW-1, MW-2, MW-8, MW-10, and RW-1.
- Groundwater elevation data indicate a gradient of approximately 0.005 foot/foot in a general south-southwest direction across the site.
- Dissolved-phase total petroleum hydrocarbons as gasoline (TPH-G), benzene, toluene, ethylbenzene, and total xylenes (BTEX) constituents were detected in samples collected from MW-3, MW-5, and MW-9 at concentrations of up to 1,400 and 440 parts per billion TPH-G and benzene.
- TPH-G and BTEX constituents were not detected above reported detection limits in samples collected from MW-4, MW-6, and MW-7.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35th AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a)	DEPTH TO WATER	PRODUCT THICKNESS	GROUNDWATER ELEVATION (b)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	LAB
RW-1	07/09/90	168.01	---	1.21	---	FP	FP	FP	FP	FP	---
RW-1	12/21/90	168.01	---	0.01	---	FP	FP	FP	FP	FP	---
RW-1	03/07/91	168.01	17.62	SHEEN	150.39	FP	FP	FP	FP	FP	---
RW-1	06/27/91	168.01	---	0.04	---	FP	FP	FP	FP	FP	---
RW-1	09/27/91	168.01	---	0.02	---	FP	FP	FP	FP	FP	---
RW-1	12/18/91	168.01	---	0.02	---	FP	FP	FP	FP	FP	---
RW-1	04/01/91	168.01	14.40	0.11	153.69	FP	FP	FP	FP	FP	---
RW-1	07/03/92	168.01	20.66	SHEEN	147.35	FP	FP	FP	FP	FP	---
RW-1	10/05/92	168.01	23.34	0.08	144.73	FP	FP	FP	FP	FP	---
MW-1	07/09/90	169.75	---	0.22	---	FP	FP	FP	FP	FP	---
MW-1	12/21/90	169.75	---	0.58	---	FP	FP	FP	FP	FP	---
MW-1	03/07/91	169.75	20.59	---	---	FP	FP	FP	FP	FP	---
MW-1	06/27/91	169.75	---	0.18	---	FP	FP	FP	FP	FP	---
MW-1	09/27/91	169.75	---	0.27	---	FP	FP	FP	FP	FP	---
MW-1	12/18/91	169.75	---	0.28	---	FP	FP	FP	FP	FP	---
MW-1	04/01/91	169.75	16.51	0.15	153.35	FP	FP	FP	FP	FP	---
MW-1	07/03/92	169.75	22.30	0.27	147.65	FP	FP	FP	FP	FP	---
MW-1	10/05/92	169.75	23.98	0.24	145.95	FP	FP	FP	FP	FP	---
MW-2	07/09/90	168.14	---	0.10	---	FP	FP	FP	FP	FP	---
MW-2	12/21/90	168.14	---	0.48	---	FP	FP	FP	FP	FP	---
MW-2	03/07/91	168.14	19.18	---	---	FP	FP	FP	FP	FP	---
MW-2	06/27/91	168.14	---	0.19	---	FP	FP	FP	FP	FP	---
MW-2	09/27/91	168.14	---	0.15	---	FP	FP	FP	FP	FP	---
MW-2	12/18/91	168.14	---	0.36	---	FP	FP	FP	FP	FP	---
MW-2	04/01/91	168.14	15.21	0.10	153.01	FP	FP	FP	FP	FP	---
MW-2	07/03/92	168.14	20.93	0.03	147.23	FP	FP	FP	FP	FP	---
MW-2	10/05/92	168.14	22.74	0.21	145.56	FP	FP	FP	FP	FP	---
MW-3	07/09/90	167.17	---	0.00	---	140	5.3	4.6	2.0	3.8	---
MW-3	12/21/90	167.17	---	0.00	---	0.19	100	6.0	0.9	27	---
MW-3	03/07/91	167.17	17.40	0.00	149.77	0.4	69	22	6.1	57	---
MW-3	06/27/91	167.17	---	0.00	---	380	28	26	13	46	---
MW-3	09/27/91	167.17	---	0.00	---	0.07	7.9	ND	0.4	1.1	---
MW-3	12/18/91	167.17	---	0.00	---	0.26	34	24	0.8	28	---
MW-3	04/01/91	167.17	13.69	0.00	153.48	ND	ND	ND	ND	ND	---
MW-3	07/03/92	167.17	19.59	0.00	147.58	71	9.4	0.9	5.0	13	ANA
MW-3	10/05/92	167.17	21.22	0.00	145.95	67	5.1	1.1	6.1	8.1	ANA
QC-1 (c)	10/05/92	167.17	21.22	0.00	145.95	ND<50	2.2	ND<0.5	1.5	2.8	ANA

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35th AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO 10-024

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a)	DEPTH TO WATER	PRODUCT THICKNESS	GROUNDWATER ELEVATION (b)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	LAB
MW-4	07/09/90	170 36	---	0 00	---	ND	ND	ND	ND	ND	---
MW-4	12/21/90	170.36	---	0.00	---	ND	ND	ND	ND	0 8	---
MW-4	03/07/91	170.36	20 72	0.00	149.64	ND	2.2	3.8	1.5	2.8	---
MW-4	06/27/91	170.36	---	0.00	---	ND	6.3	1.8	0.4	1.0	---
MW-4	09/27/91	170.36	---	0.00	---	ND	ND	ND	ND	ND	---
MW-4	12/18/91	170.36	---	0.00	---	ND	ND	ND	ND	ND	---
MW-4	04/01/91	170.36	17.49	0.00	152 87	ND	ND	ND	ND	ND	---
MW-4	07/03/92	170.36	22.16	0.00	148.20	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-4	10/05/92	170 36	23 38	0.00	146 98	ND<50	ND<0.5	ND<0.5	ND<0 5	ND<0.5	ANA
MW-5	07/09/90	165 14	---	0.00	---	280	200	210	46	290	---
MW-5	12/21/90	165 14	---	0.00	---	0.69	300	34	8.4	39	---
MW-5	03/07/91	165.14	16.60	0 00	148.54	ND	17	0 9	0.7	1.6	---
MW-5	06/27/91	165.14	---	0 00	---	330	120	10	12	8	---
MW-5	09/27/91	165.14	---	0.00	---	0.73	230	16	20	22	---
MW-5	12/18/91	165.14	---	0.00	---	ND	ND	ND	ND	ND	---
MW-5	04/01/91	165.14	11.99	0.00	153.15	800	250	54	11	60	---
MW-5	07/03/92	165.14	18.65	0.00	146.49	150	36	ND<0.5	ND<0.5	1.1	ANA
MW-5	10/05/92	165.14	20.32	0.00	144.82	270	79	4	1 7	2.9	ANA
MW-6	07/09/90	165.40	---	0.00	---	ND	ND	ND	ND	ND	---
MW-6	12/21/90	165.40	---	0.00	---	0.17	2.6	7.0	4 9	26	---
MW-6 (d)	03/07/91	165 40	---	0.00	---	---	---	---	---	---	---
MW-6 (d)	06/27/91	165.40	---	0.00	---	---	---	---	---	---	---
MW-6 (d)	09/27/91	165.40	---	0.00	---	---	---	---	---	---	---
MW-6	12/18/91	165.40	---	0.00	---	ND	1.3	22	ND	2.7	---
MW-6	04/01/91	165.40	11.79	0.00	153.61	ND	ND	ND	ND	ND	---
MW-6	07/03/92	165.40	17 77	0 00	147.63	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-6	10/05/92	165.40	19.46	0.00	145.94	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-7	07/09/90	167.61	---	0.00	---	ND	ND	ND	ND	ND	---
MW-7	12/21/90	167.61	---	0.00	---	ND	ND	ND	ND	ND	---
MW-7	03/07/91	167.61	19.04	0.00	148.57	ND	ND	0.4	0.3	2.4	---
MW-7	06/27/91	167.61	---	0.00	---	70	17	4	0.8	2.2	---
MW-7	09/27/91	167.61	---	0.00	---	ND	0.4	ND	ND	0.4	---
MW-7	12/18/91	167.61	---	0.00	---	ND	0.7	2.9	0.8	3.3	---
MW-7	04/01/91	167.61	15 18	0.00	152.43	ND	ND	ND	ND	ND	---
MW-7	07/03/92	167.61	20.28	0.00	147.33	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA
MW-7	10/05/92	167.61	21.56	0.00	146.05	ND<50	ND<0.5	ND<0.5	ND<0.5	1.5	ANA

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11132
3201 35th AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO 10-024

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a)	DEPTH TO WATER	PRODUCT THICKNESS	GROUNDWATER ELEVATION (b)	TPH-G (ppb)	B (ppb)	T (ppb)	E (ppb)	X (ppb)	LAB
MW-8	03/07/91	165.74	16.72	0 00	149 02	2 7	780	450	64	310	---
MW-8	06/27/91	165.74	---	0 00	---	12000	3400	1100	240	750	---
MW-8	09/27/91	165.74	---	0.00	---	41	5700	5200	1100	4300	---
MW-8	12/18/91	165.74	---	0.00	---	3.2	990	150	120	250	---
MW-8	04/01/91	165.74	12 54	0.00	153.20	15000	3600	2600	410	1900	---
MW-8	07/03/92	165.74	18 78	0 00	146.96	72000	19000	32000	3000	15000	ANA
MW-8	10/05/92	165.74	20 48	0.01	145.27	FP	FP	FP	FP	FP	---
MW-9	03/07/91	166.20	16.79	0.00	149.41	7.1	220	4	2 4	2400	---
MW-9	06/27/91	166 20	---	0.00	---	3600	520	400	85	310	---
MW-9	09/27/91	166 20	---	0.00	---	3 2	720	150	50	180	---
MW-9	12/18/91	166.20	---	0.00	---	ND	2.5	1.1	0 3	5 8	---
MW-9	04/01/91	166.20	12.89	0.00	153.31	12000	2000	2600	360	1600	---
MW-9	07/03/92	166 20	18.89	0.00	147 31	5700	17000	840	230	800	ANA
MW-9	10/05/92	166 20	20.52	0.00	145 68	1400	440	17	14	100	ANA
MW-10	03/07/91	167.01	18.09	0.00	148.92	1.6	120	190	32	230	---
MW-10	06/27/91	167.01	---	0.00	---	12000	7300	500	150	300	---
MW-10	09/27/91	167.01	---	0 00	---	57	12000	7200	1400	4600	---
MW-10	12/18/91	167.01	---	0.00	---	5.3	2500	120	36	79	---
MW-10	04/01/91	167.01	13.92	0.00	153.09	ND	ND	ND	ND	ND	---
MW-10	07/03/92	167.01	19 92	0.00	147 09	8600	5100	1300	180	690	ANA
MW-10	10/05/92	167.01	21.92	0.19	145.09	FP	FP	FP	FP	FP	---
QC-2 (e)	10/05/92	---	---	---	---	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ANA

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
ND	Not detected above reported detection limits
(ppb)	Parts per billion
---	Not analyzed/not available
ANA	Anametrix, Inc.

NOTES:

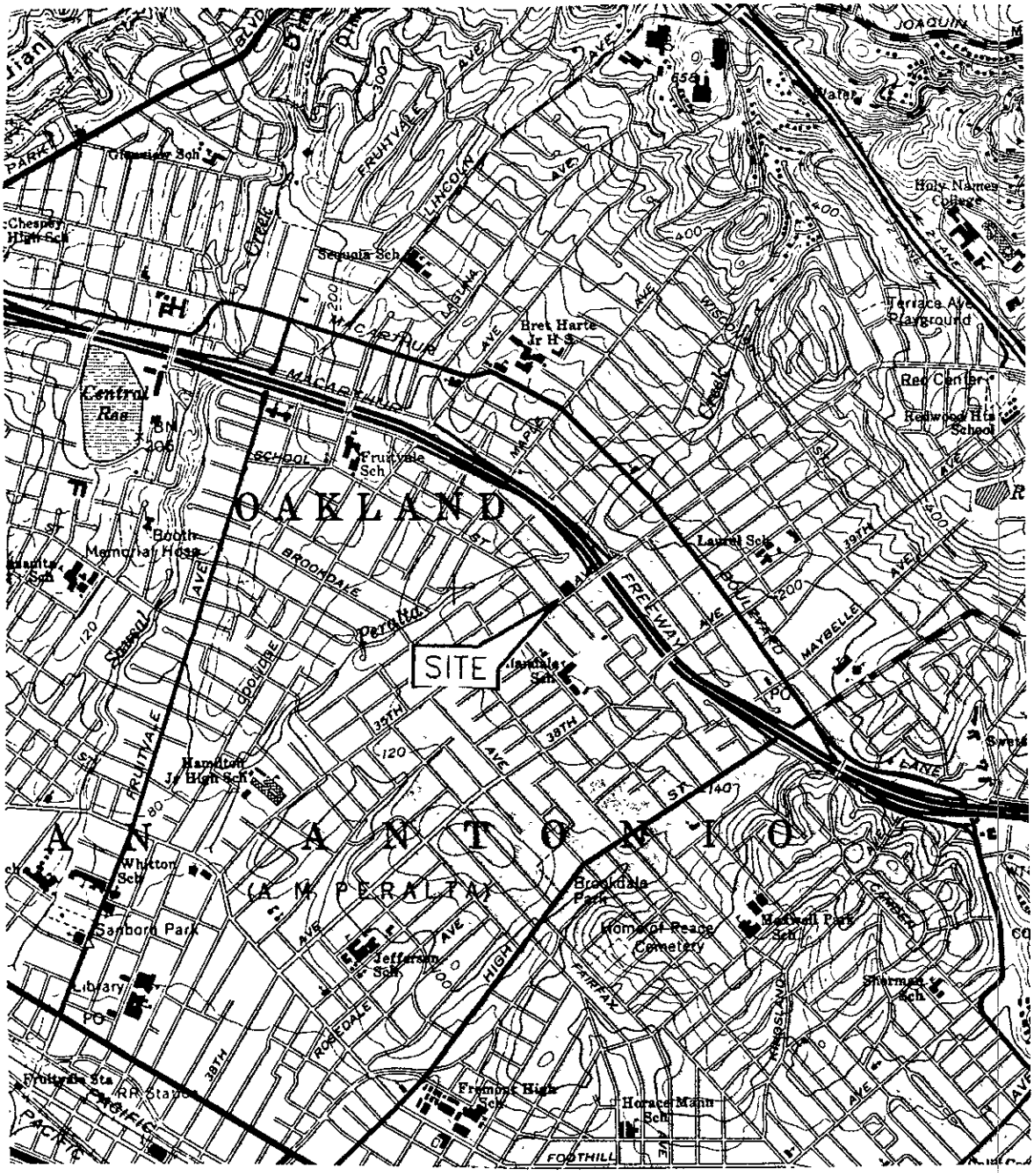
(a) Casing elevations were surveyed to the nearest 0.01 foot relative to Mean Sea Level.

(b) Groundwater elevations adjusted assuming a specific gravity of 0.75 for free product.

(c) Blind duplicate of MW-3.

(d) MW-6 could not be accessed due to an abandoned vehicle parked over the well.

(e) Travel blank



SOURCE:
USGS MAP, OAKLAND EAST QUADRANGLE, CALIFORNIA.
7.5 MINUTE SERIES. 1959. PHOTOREVERSED 1980.

N

0 1000 2000
SCALE IN FEET

FIGURE 1

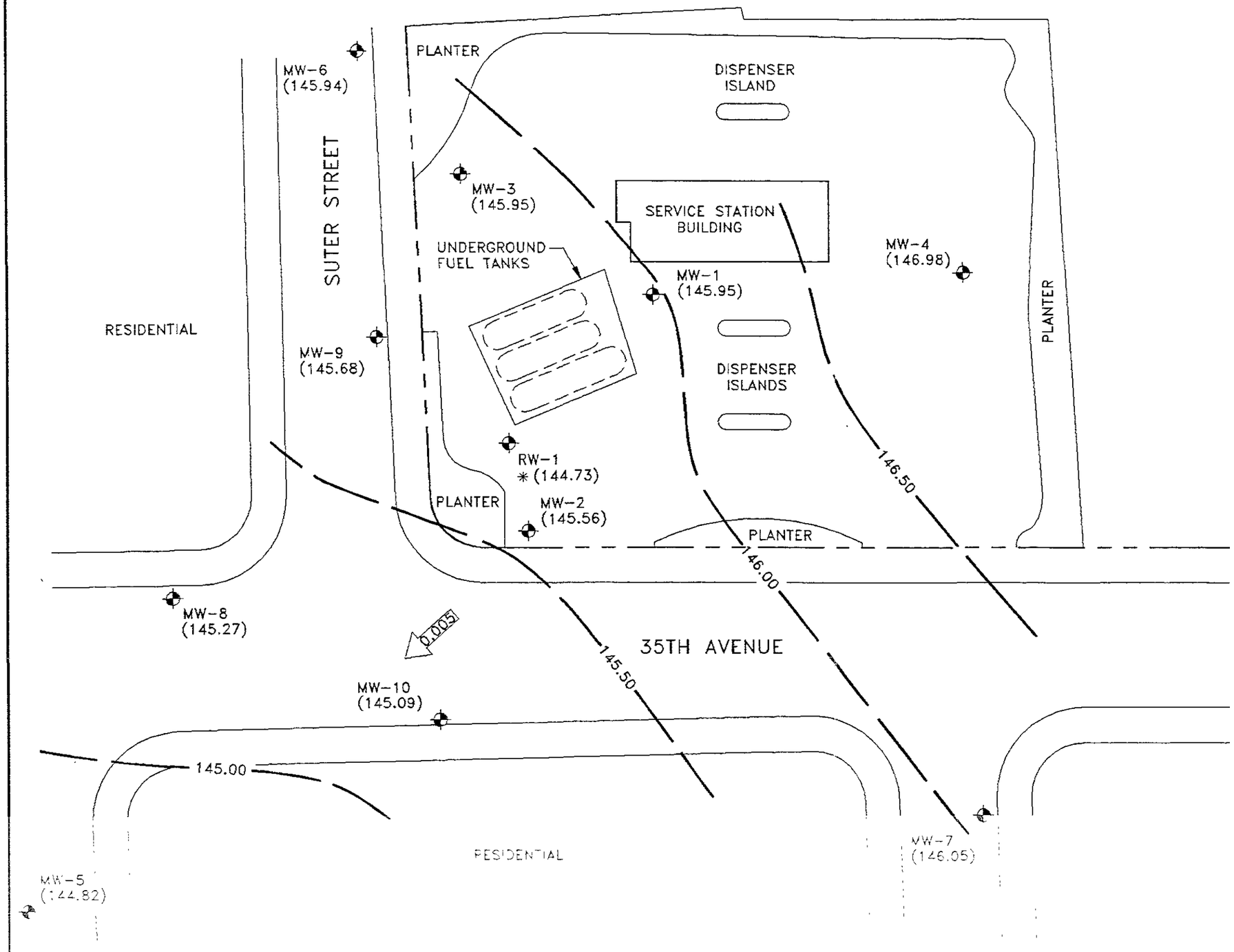
SITE VICINITY MAP

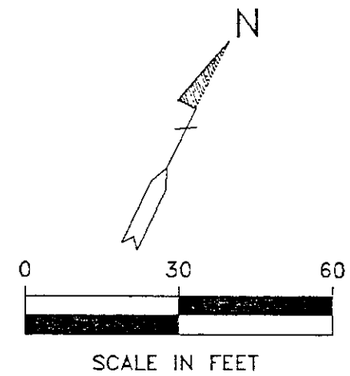
BP OIL SERVICE STATION NO. 11132
3201 35TH AVENUE
OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-024

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

11132-2.DWG 7-23-92 JNB 1:1





LEGEND:

- ⊕ GROUNDWATER MONITORING WELL
- (145.95) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 146.50 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL – 0.50 FOOT)
- 0.005 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE
- * ANOMALOUS DATA NOT USED TO PRODUCE CONTOURS

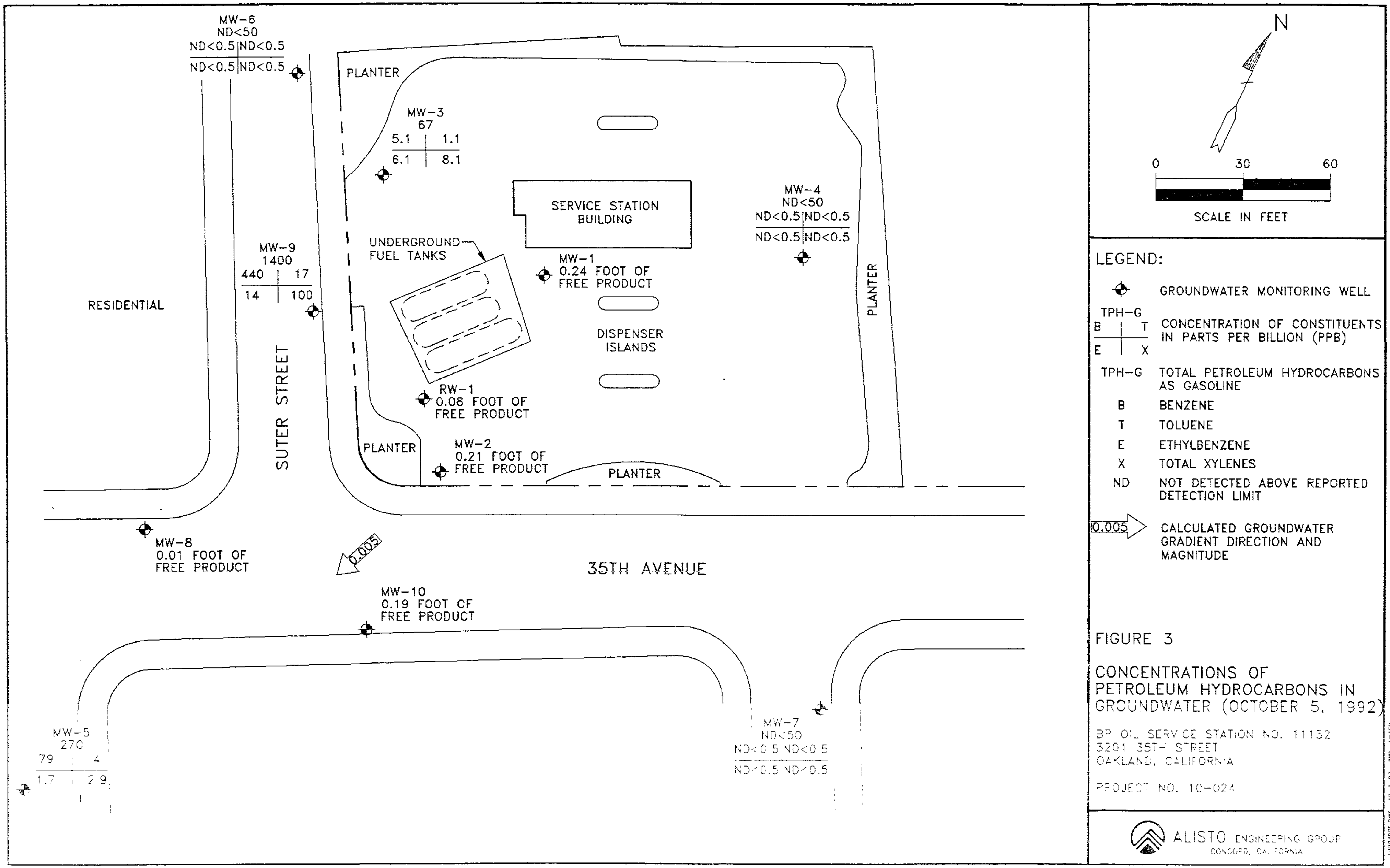
FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP (OCTOBER 5, 1992)

BP OIL SERVICE STATION NO. 11132
3201 35TH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-024

ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA



MW-6
ND<50
ND<0.5 ND<0.5
ND<0.5 ND<0.5
PLANTER
MW-3
67
5.1 1.1
6.1 8.1
SERVICE STATION BUILDING
MW-4
ND<50
ND<0.5 ND<0.5
ND<0.5 ND<0.5
MW-9
1400
440 17
14 100
UNDERGROUND FUEL TANKS
MW-1
0.24 FOOT OF FREE PRODUCT
RESIDENTIAL
DISPENSER ISLANDS
PLANTER
SUTER STREET
RW-1
0.08 FOOT OF FREE PRODUCT
PLANTER
MW-2
0.21 FOOT OF FREE PRODUCT
PLANTER
MW-8
0.01 FOOT OF FREE PRODUCT
0.005
35TH AVENUE
MW-10
0.19 FOOT OF FREE PRODUCT
MW-5
270
79 4
1.7 2.9
MW-7
ND<50
ND<0.5 ND<0.5
ND<0.5 ND<0.5
N
0 30 60
SCALE IN FEET
LEGEND:
GROUNDWATER MONITORING WELL
TPH-G
B T
E X
CONCENTRATION OF CONSTITUENTS IN PARTS PER BILLION (PPB)
TPH-G TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B BENZENE
T TOLUENE
E ETHYLBENZENE
X TOTAL XYLENES
ND NOT DETECTED ABOVE REPORTED DETECTION LIMIT
0.005 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE
ALISTO ENGINEERING GROUP
CONCORD, CALIFORNIA

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER (OCTOBER 5, 1992)

BP OIL SERVICE STATION NO. 11132
3201 35TH STREET
OAKLAND, CALIFORNIA

PROJECT NO. 10-024

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

Field Report / Data Sheet

Birch Technical Services
116 Liberty st
Santa Cruz, Ca 95060
(408) 459-0718

☒ Groundwater Sampling ○ Groundwater Monitoring ○ Well Development ○ Drill Support ○ Stockpile Sampling

Firm: ALISTO	Date: 10/31/92	Station #: BP11132	Day: (M) Tu W Th F
Project Number: 10-024	Field Technician: DAN BIRCH	Address: 3201 35th Ave, OAKLAND	Weather: Milage: mi

Equipment List:
- ☒ Water Guage (___)day
- ☒ Parameter Kit(___)day
- ☒ Disposable Bailers (11)
- ○ _____(___)
- ○ _____(___)
- ○ Plug(s)(___)(__in)
- ☒ Honda Pump (___)day
- ☒ Poly Tubing (_____ft)
- ☒ Dolphin Lock(s) (____)
- ☒ Nitrile Gloves (___ pair)

Travel Time: 2 hrs
Time at Site: 6 hrs
Total Time: 8 hrs

DTWorder	Well ID	Diam	Lock	Exp Cap	Total Depth (feet)	1st Depth to Water (feet)	2nd Depth to Water (feet)	Depth to Product (feet)	Product Thickness	Comments
9	MW-1	2	ok	ok	44.08	23.98	23.98	23.74	0.24	Black thick product
10	MW-2	2	ok	ok	34.31	22.74	22.74	22.53	0.21	Black oily product
2	MW-3	2	ok	ok	34.58	21.22	21.22	—	—	
3	MW-4	2	ok	ok	38.74	23.38	23.38	—	—	
6	MW-5	2	ok	ok	30.88	20.32	20.32	—	—	
1	MW-6	2	ok	ok	34.56	19.46	19.46	—	—	
4	MW-7	2	ok	ok	34.49	21.56	21.56	—	—	
7	MW-8	2	ok	ok	38.72	20.48	20.48	20.47	0.01	Black thick product
8	MW-9	2	ok	ok	29.49	20.52	20.52	—	—	
5	MW-10	2	ok	ok	34.00	21.92	21.92	21.73	0.19	Black thick product
11	RW-1	6	ok	ok	38.41	23.34	23.34	23.26	0.08	Black thick product

Notes: Travel 11-12. Arrive on in wells measure OTW prepare forms. Start sampling as shown on "Sampling forms". Heti people arrive and work on system. Heti people visit me at MW-7 Then leave site ~ 5:00. Return leave site at 6:15.

Page ___ of ___ Inv#:_____

Birch Technical Services

116 Liberty Street
Santa Cruz, Ca 95060
(408) 459-0718

GROUND-WATER SAMPLING FORM

Well Number: RW-1

Project Number: 10-024
Station Number: BP11132
Date: 10/4/92

Well Type: OMonitor ⊗Extraction O_____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

O 2"	O3"	O4"	O4.5"	⊗6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well (BOW) _____ Initial Water Level:_____

Total Volume Purged:_____ Time Elapsed:_____

PURGE METHOD:
⊗O Honda Pump
OODisposable PolyTubing(____ft)
OODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

_____ - _____ = _____ x _____ = _____ x _____ = _____(gallons)
Total Depth | Water Level | Well Vol. Fac. | #of vol. to Purge | Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ONo | Depth of Product _____(ft) | Emulsion OYes ONo

COMMENTS: 0.08' of black product measured on ground-water. Well was not sampled.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

OPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): NOT

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
⊗	~~TPH-G/BTEX~~	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: MW-1

Project Number: 10-024
Station Number: BP11132
Date: 10/4/92

Well Type: ☒Monitor OExtraction O_____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

☒2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well (BOW) 44.08

Initial Water Level:_____

Total Volume Purged:_____

Time Elapsed:_____

PURGE METHOD:
☒Honda Pump
☒Disposable PolyTubing(45 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

44.08 (Total Depth) - _____ (Water Level) = _____ x .16 (Well Vol. Fac.) = _____ x 3 (#of vol. to Purge) = _____(gallons) (Calculated Purge Volume)

Subjective Analysis Prior to Purging

SHEEN OYes ONo | Depth of Product _____(ft) | Emulsion OYes ONo

COMMENTS: 0.24' of black product measured on ground-water - well MW-1 was NOT sampled

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

☒PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): NOT

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	~~TPH-G/BTEX~~	3	~~VOA's~~	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: MW-2

Project Number: 10-024
Station Number: BP11132
Date: 10/4/92

Well Type: ⊗Monitor OExtraction O_____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

⊗2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well (BOW) 34.31

Initial Water Level:_____

Total Volume Purged:_____

Time Elapsed:_____

PURGE METHOD:
⊗Honda Pump
⊗Disposable PolyTubing(35 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

34.31 (Total Depth) - _____ (Water Level) = _____ x .16 (Well Vol. Fac.) = _____ x 3 (#of vol. to Purge) = _____ (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN	Depth of Product	Emulsion
OYes ONo	_____(ft)	OYes ONo

COMMENTS: 0.21' Black product measured on the groundwater. Well MW-2 NOT Sampled.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr) _____

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: MW-3

Project Number: 10-024
Station Number: BP11132
Date: 10/5/92

Well Type: XMonitor OExtraction O_____

Sampled by: DAN BIRCL

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

X2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	____

Total Depth of Well (BOW) 34.58 Initial Water Level: 21.22

Total Volume Purged: 7 Time Elapsed: 8

PURGE METHOD:
X Honda Pump
X Disposable PolyTubing(35 ft)
O Disposable PVC Bailer(s)(____)
O Other_____

Calculated Purge Volume:

34.58 (Total Depth) - 21.22 (Water Level) = 13.36 x .16 (Well Vol. Fac.) = 2.14 x 3 (#of vol. to Purge) = 6.4 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes XNo | Depth of Product _____(ft) | Emulsion OYes XNo

COMMENTS: Sample Duplicate QC-1 was collected from MW-3.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 912 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 711
Water Level Meter#: 10337

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): 1730

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)
2	1717	78.1	6.82	0.80
4	1721	77.9	6.81	0.81
7	1724	77.9	6.83	0.81

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: MW-4

Project Number: 10-024
Station Number: BP 11132
Date: 10/15/92

Well Type: XMonitor OExtraction O_____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

X2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	____

Total Depth of Well (BOW) 38.74 Initial Water Level: 23.38

Total Volume Purged: 8 Time Elapsed: 12

PURGE METHOD:
XHonda Pump
XDisposable PolyTubing(40 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

38.74 (Total Depth) - 23.38 (Water Level) = 15.36 x .16 (Well Vol. Fac.) = 2.5 x 3 (#of vol. to Purge) = 7.5 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes XNo | Depth of Product _____(ft) | Emulsion OYes XNo

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): 1458

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)
3	1445	82.1	7.31	0.61
6	1450	81.9	7.33	0.56
8	1455	81.7	7.33	0.55

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: MW-5

Project Number: 10-024
Station Number: BP11132
Date: 10/5/92

Well Type: ⊠Monitor OExtraction O_____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

⊠2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	____

Total Depth of Well (BOW) 30.88 Initial Water Level: 20.32

Total Volume Purged: 6 Time Elapsed: 6

PURGE METHOD:
⊠Honda Pump
⊠Disposable PolyTubing(3 1 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

30.88 - 20.32 = 10.56 x .16 = 1.69 x 3 = 5.1 (gallons)

Total Depth | Water Level | Well Vol. Fac. | #of vol. to Purge | Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ⊠No | Depth of Product _____(ft) | Emulsion OYes ⊠No

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

⊠PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): 1540

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)
2	1532	72.9	6.64	0.87
4	1533	72.5	6.66	0.85
6	1536	72.6	6.67	0.87

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: MW-6

Project Number: 10-024
Station Number: BP11132
Date: 10/5/92

Well Type: XMonitor OExtraction O_____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

X2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	____

Total Depth of Well (BOW) 34.56
Initial Water Level: 19.46
Total Volume Purged: 7
Time Elapsed: 10

PURGE METHOD:
XHonda Pump
ODisposable PolyTubing(35 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

34.56 (Total Depth) - 19.46 (Water Level) = 15.1 x .16 (Well Vol. Fac.) = 2.4 x 3 (#of vol. to Purge) = 7.2 (gallons) (Calculated Purge Volume)

Subjective Analysis Prior to Purging

~~SHEEN~~ ~~OYes~~ XNo
Depth of Product _____(ft)
Emulsion ~~OYes~~ XNo

COMMENTS: ~~0.19' black product~~ measured on ground - NOT.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

XPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): 1445

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)
2	1635	76.4	7.22	0.52
4	1640	76.5	7.19	0.53
7	1643	74.6	7.12	0.53

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: MW-7

Project Number: 10-024
Station Number: BP11132
Date: 10/5/92

Well Type: XMonitor OExtraction O_____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

X 2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	____

Total Depth of Well (BOW) 34.49 Initial Water Level: 21.56

Total Volume Purged: 6 Time Elapsed: 5

PURGE METHOD:
X Honda Pump
O Disposable PolyTubing(36 ft)
O Disposable PVC Bailer(s)(____)
O Other_____

Calculated Purge Volume:

34.49 (Total Depth) - 21.56 (Water Level) = 12.93 x .16 (Well Vol. Fac.) = 2.1 x 3 (#of vol. to Purge) = 6.3 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes XNo | Depth of Product _____(ft) | Emulsion OYes XNo

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

X PVC Disposable Bailer
O Teflon Bailer
O Other:_____

Time Sampled (24 hr): 1616

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)
1	1606	73.7	6.73	0.95
3	1608	73.7	6.79	0.72
6	1610	73.7	6.79	0.71

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: MW-8

Project Number: 10-024
Station Number: BP11132
Date: 10/4/92

Well Type: ⊗Monitor OExtraction O_____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

⊗2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	____

Total Depth of Well (BOW) 38.72 Initial Water Level: 20.48

Total Volume Purged:_____ Time Elapsed:_____

PURGE METHOD:
⊗Honda Pump
ODisposable PolyTubing(40 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

38.72 (Total Depth) − 20.48 (Water Level) = 18.24 x .16 (Well Vol. Fac.) = 2.9 x 3 (#of vol. to Purge) = 8.7 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN ⊗Yes ONo | Depth of Product _____(ft) | Emulsion OYes ONo

COMMENTS: 0.01' of black product measured on the groundwater. MW-8 was not sampled.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): NOT

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: MW-9

Project Number: 10-024
Station Number: BP11132
Date: 10/5/92

Well Type: XMonitor OExtraction O_____

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

X2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	____

Total Depth of Well (BOW) 29.49 Initial Water Level: 20.52

Total Volume Purged: 5 Time Elapsed: 8

PURGE METHOD:
X OHonda Pump
X ODisposable PolyTubing(30 ft)
O Disposable PVC Bailer(s)(____)
O Other_____

Calculated Purge Volume:

29.49 (Total Depth) - 20.52 (Water Level) = 8.97 x .16 (Well Vol. Fac.) = 1.4 x 3 (#of vol. to Purge) = 4.2 (gallons) Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes XNo | Depth of Product _____(ft) | Emulsion OYes XNo

COMMENTS:

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

X OPVC Disposable Bailer
O Teflon Bailer
O Other:_____

Time Sampled (24 hr): 1759

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)
2	1750	78.6	6.91	0.82
3	1754	77.1	6.95	0.83
5	1757	77.1	6.99	0.84

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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Project Number: 10-024
Station Number: BP11132
Date: 10/4/92

GROUND-WATER SAMPLING FORM

Well Number: MW-10

Well Type: ⊗Monitor OExtraction O_____

Sampled by: DAN BIRCL

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

⊗2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well (BOW) 34.00 Initial Water Level:_____

Total Volume Purged:_____ Time Elapsed:_____

PURGE METHOD:
⊗Honda Pump
⊗Disposable PolyTubing(35 ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

34.00 - _____ = _____ x _____ = _____ x _____ = _____(gallons)
Total Depth | Water Level | Well Vol. Fac. | #of vol. to Purge | Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ONo | Depth of Product _____(ft) | Emulsion OYes ONo

COMMENTS: 0.19' of black product measured on ground-water. Well was not sampled.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

⊗PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): NOT

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

Well Number: ~~SAMPLE~~ QC-1

Project Number: 10-024
Station Number: BP11132
Date: 10/5/92

~~Well~~ Type: OMonitor OExtraction ~~X~~ Duplicate

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

O 2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	____

Total Depth of Well (BOW) _____ Initial Water Level:_____

Total Volume Purged:_____ Time Elapsed:_____

PURGE METHOD:
O Honda Pump
ODisposable PolyTubing(____ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

_____ - _____ = _____ x _____ = _____ x _____ = _____(gallons)
Total Depth | Water Level | Well Vol. Fac. | #of vol. to Purge | Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ONo | Depth of Product _____(ft) | Emulsion OYes ONo

COMMENTS: Duplicate sample from MW-3. Purging, parameter and sampling data from MW-3 apply to this sample.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #: 9112 Time: 1030
Solution pH 4.00 4 at 71.1
Solution pH 10.00 10 at 71.1
Solution pH 7.00 7 at 71.1
Water Level Meter#: 10337

SAMPLING METHOD

~~O~~PVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): 1740

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

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GROUND-WATER SAMPLING FORM

~~Well~~ Number: QC-2

SAMPLE

Project Number: 10-024

~~Well~~ Type: OMonitor OExtraction X TRIP BLANK

Station Number: BP 11132

Date: 10/5/92

Sampled by: DAN BIRCH

WELL PURGING

PURGE VOLUME

Casing Diameter (inches) / Volume Factors:

O 2"	O3"	O4"	O4.5"	O6"	O____
0.1632	0.3672	0.6528	0.826	1.469	_____

Total Depth of Well (BOW) _____ Initial Water Level:_____

Total Volume Purged:_____ Time Elapsed:_____

PURGE METHOD:
O Honda Pump
ODisposable PolyTubing(____ft)
ODisposable PVC Bailer(s)(____)
OOther_____

Calculated Purge Volume:

_____ - _____ = _____ x _____ = _____ x _____ = _____(gallons)
Total Depth | Water Level | Well Vol. Fac. | #of vol. to Purge | Calculated Purge Volume

Subjective Analysis Prior to Purging

SHEEN OYes ONo | Depth of Product _____(ft) | Emulsion OYes ONo

COMMENTS: TRIP BLANK Supplied by Anametrix. Re-labelled QC-2; 1400.

PARAMETER EQUIPMENT CALIBRATION

pH Meter #:_____ Time:_____
Solution pH 4.00 _____at _____
Solution pH 10.00_____at _____
Solution pH 7.00 _____ at _____
Water Level Meter#:_____

SAMPLING METHOD

OPVC Disposable Bailer
OTeflon Bailer
OOther:_____

Time Sampled (24 hr): 1400

WELL SAMPLING PARAMETERS

Gallons Removed	Time	Temp	pH	Cond. (umhos/cm)

	Analysis Required	No. of	Container Type	Preservatives
	EPA 601		VOA's	
X	TPH-G/BTEX	3	VOA's	HCl
	TPH- Diesel		Amber Liter	
	TOG 5520 BF		Amber Liter	H_2NO_3

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

ANAMETRIX INC
Environmental & Analytical Chemistry

Part of INCHCAPE ENVIRONMENTAL

REPORT

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9210088
Date Received : 10/07/92
Project ID : 10-024
Purchase Order: N/A

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9210088- 1	MW-3
9210088- 2	MW-4
9210088- 3	MW-5
9210088- 4	MW-6
9210088- 5	MW-7
9210088- 6	MW-9
9210088- 7	QC-1
9210088- 8	QC-2

This report consists of 6 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Director

10-20-92
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9210088
Date Received : 10/07/92
Project ID : 10-024
Purchase Order: N/A
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9210088- 1	MW-3	WATER	10/05/92	TPHg/BTEX
9210088- 2	MW-4	WATER	10/05/92	TPHg/BTEX
9210088- 3	MW-5	WATER	10/05/92	TPHg/BTEX
9210088- 4	MW-6	WATER	10/05/92	TPHg/BTEX
9210088- 5	MW-7	WATER	10/05/92	TPHg/BTEX
9210088- 6	MW-9	WATER	10/05/92	TPHg/BTEX
9210088- 7	QC-1	WATER	10/05/92	TPHg/BTEX
9210088- 8	QC-2	WATER	10/05/92	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. BRADY NAGLE
ALISTO ENGINEERING GROUP
1000 BURNETT AVENUE, SUITE 150
CONCORD, CA 94520

Workorder # : 9210088
Date Received : 10/07/92
Project ID : 10-024
Purchase Order: N/A
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Cheryl Balmer 10/19/92
Department Supervisor Date

Irma Shor 10/19/92
Chemist Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9210088
Matrix : WATER
Date Sampled : 10/05/92

Project Number : 10-024
Date Released : 10/19/92

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-3 -01	Sample I.D.# MW-4 -02	Sample I.D.# MW-5 -03	Sample I.D.# MW-6 -04	Sample I.D.# MW-7 -05
Benzene	0.5	5.1	ND	79	ND	ND
Toluene	0.5	1.1	ND	4.0	ND	ND
Ethylbenzene	0.5	6.1	ND	1.7	ND	ND
Total Xylenes	0.5	8.1	ND	2.9	ND	1.5
TPH as Gasoline	50	67	ND	270	ND	ND
% Surrogate Recovery		86%	81%	81%	59%	76%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		10/09/92	10/09/92	10/09/92	10/10/92	10/10/92
RLMF		1	1	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 10/19/92 Date

Supervisor 10/19/92 Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9210088
Matrix : WATER
Date Sampled : 10/05/92

Project Number : 10-024
Date Released : 10/19/92

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# MW-9 -06	Sample I.D.# QC-1 -07	Sample I.D.# QC-2 -08	Sample I.D.# BO0902E3 BLANK	Sample I.D.# BO1203E3 BLANK
Benzene	0.5	440	2.2	ND	ND	ND
Toluene	0.5	17	ND	ND	ND	ND
Ethylbenzene	0.5	14	1.5	ND	ND	ND
Total Xylenes	0.5	100	2.8	ND	ND	ND
TPH as Gasoline	50	1400	ND	ND	ND	ND
% Surrogate Recovery		94%	74%	82%	95%	103%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		10/12/92	10/10/92	10/09/92	10/09/92	10/12/92
RLMF		10	1	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Analyst 10/19/92 Date

Supervisor 10/19/92 Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 10-024 MW-6
Matrix : WATER
Date Sampled : 10/05/92
Date Analyzed : 10/10/92

Anametrix I.D. : 9210088-04
Analyst : IS
Supervisor : CB
Date Released : 10/19/92
Instrument I.D.: HP12

COMPOUND	SPIKE AMT (ug/L)	SAMPLE CONC (ug/L)	REC MS	%REC MS	REC MD (ug/L)	%REC MD	RPD	%REC LIMITS
BENZENE	20.0	0.0	22.0	110%	22.0	110%	0%	49-159
TOLUENE	20.0	0.0	22.0	110%	22.0	110%	0%	53-156
ETHYLBENZENE	20.0	0.0	21.0	105%	22.0	110%	5%	54-151
TOTAL XYLENES	20.0	0.0	22.0	110%	22.0	110%	0%	56-157
p-BFB				82%		81%		53-147

* Quality control established by Anametrix, Inc.

BTEX LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW1010
Matrix	: WATER	Analyst	: [illegible]
Date Sampled	: N/A	Supervisor	: [illegible]
Date Analyzed	: 10/10/92	Date Released	: 10/19/92
		Instrument ID	: HP12

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	21.0	105%	49-159
Toluene	20.0	21.0	105%	53-156
Ethylbenzene	20.0	21.0	105%	54-151
TOTAL Xylenes	20.0	21.0	105%	56-157
P-BFB			81%	53-147

* Limits established by Anametrix, Inc.

ANAMETRIX INC
Environmental & Analytical Chemistry
1961 Concourse Drive, Suite E, San Jose, CA 95131
(408) 432-8192 • Fax (408) 432-8198

9210088 (18) 11:15 MA

CHAIN-OF-CUSTODY RECORD

PROJECT NUMBER	PROJECT NAME
10-024	BP 11132

Send Report Attention of: BRADY NAGLE | Report Due: 10/21/92 | Verbal Due: / /

	Sample Number	Date	Time	Comp	Matrix	Station Location	Number of Cntnrs	Type of Containers	Type of Analysis: TPH w/6 BTEX	Condition of Samples	Initial
1	MW-3	10/5/92	1730		W	35th	3	VOA's	X	ALL SAMPLES COLD PROPER CONTAINER NO BUBBLES	CA
2	MW-4	↓	1458		↓	↓	↓	↓	X	↓	↓
3	MW-5		1540						X		
4	MW-6		1445						X		
5	MW-7		1616						X		
6	MW-9		1759						X		
7	QC-1		1740						X		
8	QC-2	↓	1400		↓	↓	↓	↓	X		

Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Relinquished by: (Signature)	Date/Time 1045 10-7-92	Received by Lab: Cabin Nelson	Date/Time 1040 10-7-92

Remarks:

COMPANY: ALISTO ENGINEERING
ADDRESS:
PHONE : 510-798 4070 FAX : 510-798-4099