BP OIL

BP Oil Company
Environmental Resources Management
Building 13, Suite N
295 SW 41st Street
Renton, Washington 98055-4931
(206) 251-0667
Fax No: (206) 251-0736

February 21, 1996

Alameda County Health Care Services Agency
Attention Ms. Juliet Shin - Senior Hazardous Materials Specialist
1131 Harbor Bay Parkway, Ste. 250
Alameda, CA 94502-6577

RE: BP Oil Site No. 11270
3255 MeCartney Road
Alameda, CA

Dear Ms. Shin:

Enclosed find a report entitled Groundwater Monitoring and Sampling Report, dated September 15, 1995. I apologize for any inconvenience that the delay in transmitting this report may have caused.

As I mentioned in prior correspondence, all of the monitoring wells were sampled for total dissolved solids (TDS) during this sampling event. I believe you can agree that the TDS concentrations show that groundwater in the vicinity of the site should not be considered to be of present or future beneficial use. You will note that the averaged TDS concentration (including upgradient well XW-1) is over two times the 3,000 mg/L TDS ceiling for a present or future beneficial use aquifer. It seems reasonable to conclude that the petroleum release at this site has not affected groundwater with a present or future beneficial use.

While groundwater is not of present or future beneficial use, I understand that the Alameda County Health Care Services Agency is concerned that remnant concentrations of petroleum hydrocarbons may adversely affect aquatic life or humans, depending on the migration or vaporization potential. Those concerns were articulated in your June 12, 1995 letter, and I would like to take this opportunity to address them.

In order to evaluate the potential for petroleum hydrocarbon concentrations in the groundwater to adversely affect humans through the outdoor volatilization pathway, I compared the monitoring data to the Tier 1 Risk-Based Screening Level Look-Up Table[1]. I noted that ethylbenzene, toluene, xylenes (mixed), naphthalene, and benzo(a)pyrene should not be considered problematic because the concentrations required to pose a significant risk exceeds the solubility of the pure compound in water. It seems reasonable to conclude that TPH-G/TPH-D should not be expected to pose a risk using a similar

[1] American Society For Testing And Materials Emergency Standard Guide for Risk-Based Corrective Action Applied at Petroleum Release Sites (ASTM Designation ES 38-94)

rationale. I also noted that the benzene concentration reported for the highest risk level under the most sensitive receptor scenario (one extra case of cancer per million of exposed people in a residential exposure setting) is 11 mg/l. The highest concentration of benzene reported in the groundwater at this site is 250 µg/L, which is over 40 times less than the ASTM target level. I also noted that the assumptions upon which the ASTM target level is based are very conservative (that is to say, tend to overestimate the level of risk), and that the assumptions upon which the lookup values are based can be viewed as appropriate assumptions given the detected benzene concentrations at this site. It seems reasonable, then, to conclude that benzene concentrations reported in the groundwater should not be considered to pose a risk to human health as a result of vaporization to ambient air.

Regarding the potential to effect aquatic life, I believe you can agree that the prior monitoring data shows that the release is not migrating to any significant extent. The nearest surface water body appears to be located to the north (cross-gradient of the direction of groundwater flow at this site). That body of surface water appears to be located over 500 feet to the north based on my reading of the vicinity map shown in the enclosed report. It seems reasonable to conclude that remnant petroleum hydrocarbon concentrations should not be expected to adversely impact aquatic life.

Based on the forgoing, it appears that no further work is necessary or warranted and case closure is appropriate. If, on the other hand, you would like to discuss this matter further, please give me a call. I look forward to receiving a letter of "no further action" at your earliest convenience.

Please give me a call if you have any questions, comments or concerns regarding this matter. I can be reached at (206) 251-0689.

Sincerely,

Scott Hooton
Environmental Remediation Management

cc: site file
A. Sevilla - Alisto
Mr. Larry Cummins, RREEF Engineering Group, 1301 Dove Street, #460, Newport Beach, CA 92660 (w/attachment)
Mr. Jim Pate, RREEF Management Company, 230-A Alamo Plaza, Alamo, CA 94507 (w/attachment)
CRWQCB-SFBR, Attention Mr. E. So, 2101 Webster Street, Ste. 500, Oakland, CA 94612 (w/attachment)

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11270
3255 Mecartney Road
Alameda, California

Project No. 10-206-02-002

Prepared for:

BP Oil Company
Environmental Resources Management
295 S.W. 41st Street
Building 13, Suite N
Renton, Washington

Prepared by:

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

September 15, 1995

Dale Swain
Project Manager

Al Sevilla, P.E.
Principal

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11270
3255 Mecartney Road
Alameda, California

Project No. 10-206-02-002

September 15, 1995

INTRODUCTION

This report presents the results and findings of the July 19, 1995 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11270, 3255 Mecartney Road, Alameda, 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 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 the 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 quarters are summarized in Table 1. The potentiometric groundwater elevations as interpreted from the results of this monitoring event are shown 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.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11270
3255 MECARTNEY ROAD, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-208

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	TDS (mg/l)	DO (ppm)	LAB
MW-1 (c)	10/29/92	12.50	7.28	5.22	---	---	---	---	---	---	---	---	---
MW-1 (c)	06/21/93	12.50	5.40	7.10	---	---	---	---	---	---	---	---	---
MW-1	04/05/94	12.50	5.64	6.86	1700	---	20	1.1	3.9	7.6	---	---	PACE
MW-1	07/28/94	12.50	6.22	6.28	---	---	---	---	---	---	---	---	PACE
MW-1	10/26/94	12.50	6.40	6.10	---	---	---	---	---	---	---	---	---
MW-1 (d)	02/05/95	---	---	---	---	---	---	---	---	---	---	---	---
MW-2	10/29/92	12.08	6.84	5.24	2500	3900	140	ND<10	65	22	---	---	---
MW-2	06/21/93	12.08	5.49	6.59	720	770	12	1.5	11	12	---	---	---
MW-2	04/05/94	12.08	5.40	6.68	420	1300	ND<0.5	ND<0.5	ND<0.5	4.0	---	1.8	PACE
MW-2	07/28/94	12.08	5.97	6.11	---	---	---	---	---	---	---	---	PACE
MW-2	10/26/94	12.08	6.10	5.98	---	---	---	---	---	---	---	---	---
MW-2 (d)	02/05/95	---	---	---	---	---	---	---	---	---	---	---	---
MW-3 (c)	10/29/92	12.09	7.14	4.95	---	---	---	---	---	---	---	---	---
MW-3 (c)	06/21/93	12.09	5.84	6.25	---	---	---	---	---	---	---	---	---
MW-3	04/05/94	12.09	5.83	6.26	990	4300	3.2	ND<0.5	ND<0.5	1.3	---	---	PACE
MW-3	07/28/94	12.09	6.32	5.77	---	---	---	---	---	---	---	---	PACE
MW-3	10/26/94	12.09	6.42	5.67	---	---	---	---	---	---	---	---	---
MW-3 (d)	02/05/95	---	---	---	---	---	---	---	---	---	---	---	---
MW-4	10/29/92	12.14	6.90	5.24	2600	---	250	2.5	74	6.6	---	---	---
MW-4	06/21/93	12.14	5.54	6.60	1400	1100	24	2.9	2.6	7.9	---	---	---
MW-4	04/05/94	12.14	5.46	6.68	830	940	33	0.8	ND<0.5	2.6	---	2.7	PACE
MW-4	07/28/94	12.14	6.02	6.12	2400	1400	19	1.8	0.5	6.0	---	6.7	PACE
QC-1 (e)	07/28/94	---	---	---	2300	---	19	1.7	0.5	7.4	---	---	PACE
MW-4	10/26/94	12.14	6.13	6.01	---	---	---	---	---	---	---	---	---
MW-4 (d)	02/05/95	---	---	---	---	---	---	---	---	---	---	---	---
MW-5	06/21/93	13.37	7.44	5.93	ND<50	100	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---
MW-5	04/05/94	13.37	7.42	5.95	ND<50	100	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	2.5	PACE
QC-1 (e)	04/05/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	07/28/94	13.37	7.88	5.49	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	7.4	PACE
MW-5	10/26/94	13.37	7.92	5.45	ND<50	160	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	5.5	PACE
QC-1 (e)	10/26/94	---	---	---	ND<50	---	ND<0.5	0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	02/05/95	8.36 (f)	7.83	0.53 (g)	ND<50	ND<500	ND<0.25	ND<0.25	ND<0.25	ND<0.50	---	---	ATI
QC-1 (e)	02/05/95	---	---	---	ND<50	---	ND<0.25	ND<0.25	ND<0.25	ND<0.50	---	---	ATI
MW-5	05/05/95	8.36	9.00	-0.64	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	3.1	ATI
MW-5	07/19/95	8.36	9.03	-0.67	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	14700	4.6	ATI
MW-6	02/05/95	6.88 (f)	6.39	0.49 (g)	1000	1000	7.6	19	9.1	96	---	5.0	ATI
MW-6	05/05/95	6.88	6.85	0.03	2300	---	49	9.0	130	48	---	3.3	ATI
QC-1 (e)	05/05/95	---	---	---	2400	---	49	9.2	140	48	---	---	ATI
MW-6	07/19/95	6.88	7.13	-0.25	1200	---	84	3.3	28	24	---	3.7	ATI
QC-1 (e)	07/19/95	---	---	---	---	---	89	3.6	30	26	818	---	ATI
MW-7	02/05/95	6.62 (f)	7.62	-1.00 (g)	280	ND<500	ND<0.25	ND<0.25	ND<0.25	ND<0.50	---	5.1	ATI
MW-7	05/05/95	6.62	7.64	-1.02	290	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	3.6	ATI
MW-7	07/19/95	6.62	7.70	-1.08	150	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	12100	4.6	ATI

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11270
3265 MECARTNEY ROAD, ALAMEDA, CALIFORNIA

ALISTO PROJECT NO. 10-206

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	TDS (mg/l)	DO (ppm)	LAB
XW-1	06/21/93	---	---	---	---	---	---	---	---	---	---	---	---
XW-1	04/05/94	---	5.38	---	ND<50	70	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.0	PACE
XW-1	07/28/94	---	5.92	---	---	---	---	---	---	---	---	---	PACE
XW-1	10/26/94	---	6.05	---	---	---	---	---	---	---	---	---	---
XW-1	02/05/95	7.49 (f)	5.82	1.67 (g)	ND<50	ND<500	ND<0.25	ND<0.25	ND<0.25	ND<0.50	---	4.9	ATI
XW-1	05/05/95	7.49	5.57	1.92	---	---	---	---	---	---	---	---	---
XW-1	07/19/95	7.49	6.12	1.37	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	1680	4.3	ATI
XW-2	06/21/93	12.50	5.89	6.61	---	---	---	---	---	---	---	---	---
XW-2	04/05/94	12.50	5.77	6.73	ND<50	180	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.0	PACE
XW-2	07/28/94	12.50	6.25	6.25	---	---	---	---	---	---	---	---	PACE
XW-2	10/26/94	12.50	6.39	6.11	---	---	---	---	---	---	---	---	---
XW-2	02/05/95	7.48 (f)	5.62	1.86 (g)	ND<50	ND<500	ND<0.25	0.38	ND<0.25	ND<0.50	---	5.2	ATI
XW-2	05/05/95	7.48	5.66	1.82	---	---	---	---	---	---	---	---	---
XW-2	07/19/95	7.48	6.80	0.68	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	4750	3.9	ATI
XW-3	06/21/93	11.85	5.85	6.00	---	---	---	---	---	---	---	---	---
XW-3	04/05/94	11.85	5.85	6.00	ND<50	150	ND<0.5	0.7	ND<0.5	ND<0.5	---	3.1	PACE
XW-3	07/28/94	11.85	6.28	5.57	---	---	---	---	---	---	---	---	PACE
XW-3	10/26/94	11.85	6.40	5.45	---	---	---	---	---	---	---	---	---
XW-3	02/05/95	6.84 (f)	7.23	-0.39 (g)	280	ND<500	ND<0.50	ND<0.50	0.63	ND<1.0	---	4.9	ATI
XW-3	05/05/95	6.84	7.43	-0.59	---	---	---	---	---	---	---	---	---
XW-3	07/19/95	6.84	7.60	-0.76	400	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	10400	4.3	ATI
QC-2 (h)	04/05/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (h)	07/28/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (h)	10/26/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (h)	02/05/95	---	---	---	ND<50	---	ND<0.25	ND<0.25	ND<0.25	ND<0.50	---	---	ATI
QC-2 (h)	05/05/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2 (h)	07/19/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI

ABBREVIATIONS:

TPH-G	Total petroleum hydrocarbons as gasoline
TPH-D	Total petroleum hydrocarbons as diesel
B	Benzene
T	Toluene
E	Ethylbenzene
X	Total xylenes
TDS	Total dissolved solids
DO	Dissolved oxygen
ug/l	Micrograms per liter
mg/l	Milligrams per liter
ppm	Parts per million
---	Not analyzed/measured/applicable
ND	Not detected above reported detection limit
PACE	Pace, Inc.
ATI	Analytical Technologies, Inc.

NOTES:

(a) Casing elevations surveyed to nearest 0.01 foot above mean sea level.

(b) Groundwater elevations in feet above mean sea level.

(c) Not sampled due to inadequate recharge.

(d) Wells were destroyed by HETI on January 18 and 19, 1995.

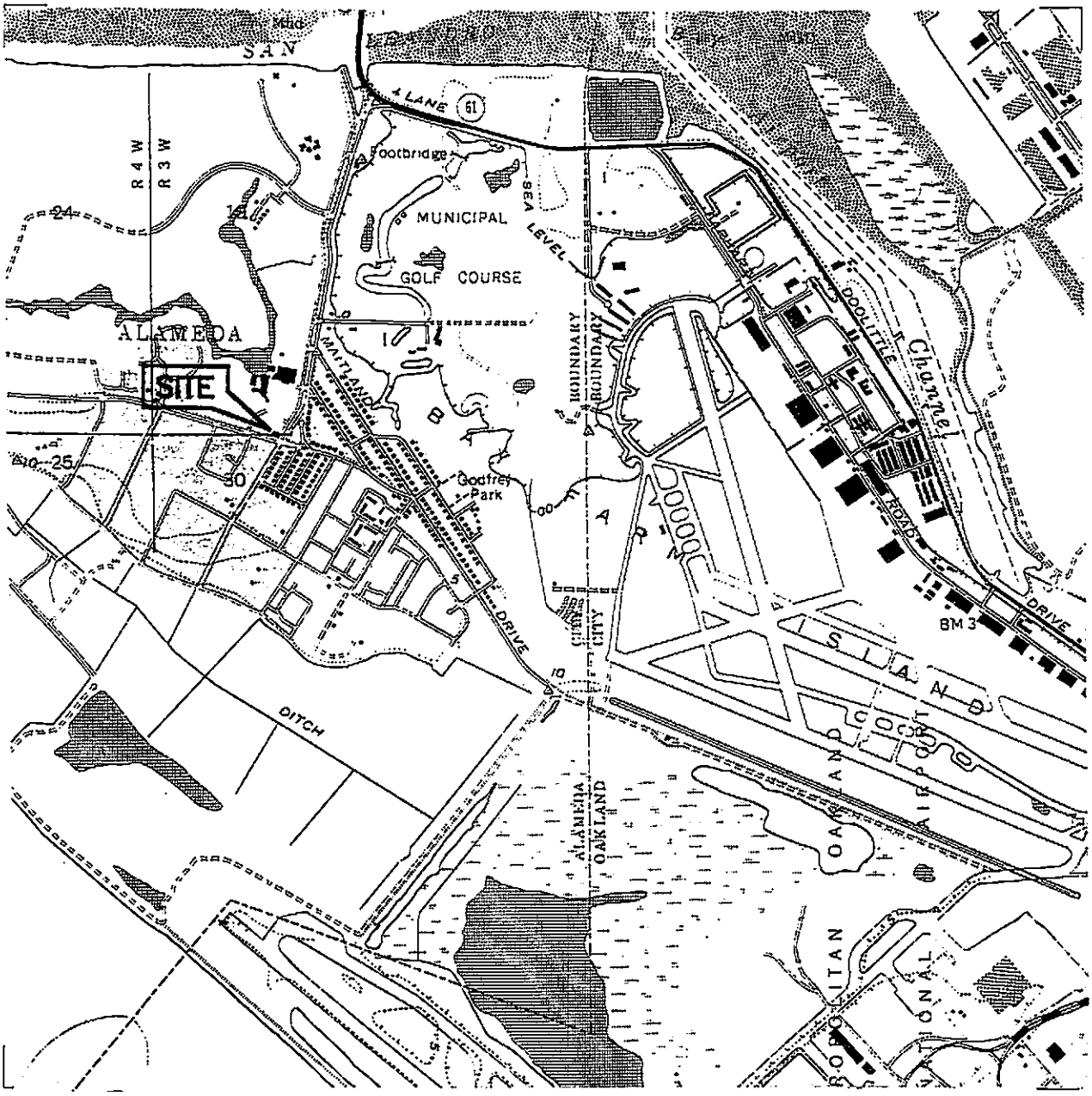
(e) Blind duplicate.

(f) Top of casing elevation surveyed in reference to an arbitrary benchmark; top of hydrant = 10.00 feet above datum.

(g) Groundwater elevation relative to an arbitrary datum.

(h) Travel blank.

E:\10-206\206-3-1.WQ1



SOURCE:
USGS MAP, SAN LEANDRO QUADRANGLE,
7.5 MINUTE SERIES. 1959.
PHOTOREVISED 1980.

N

0 1000' 2000'

FIGURE 1

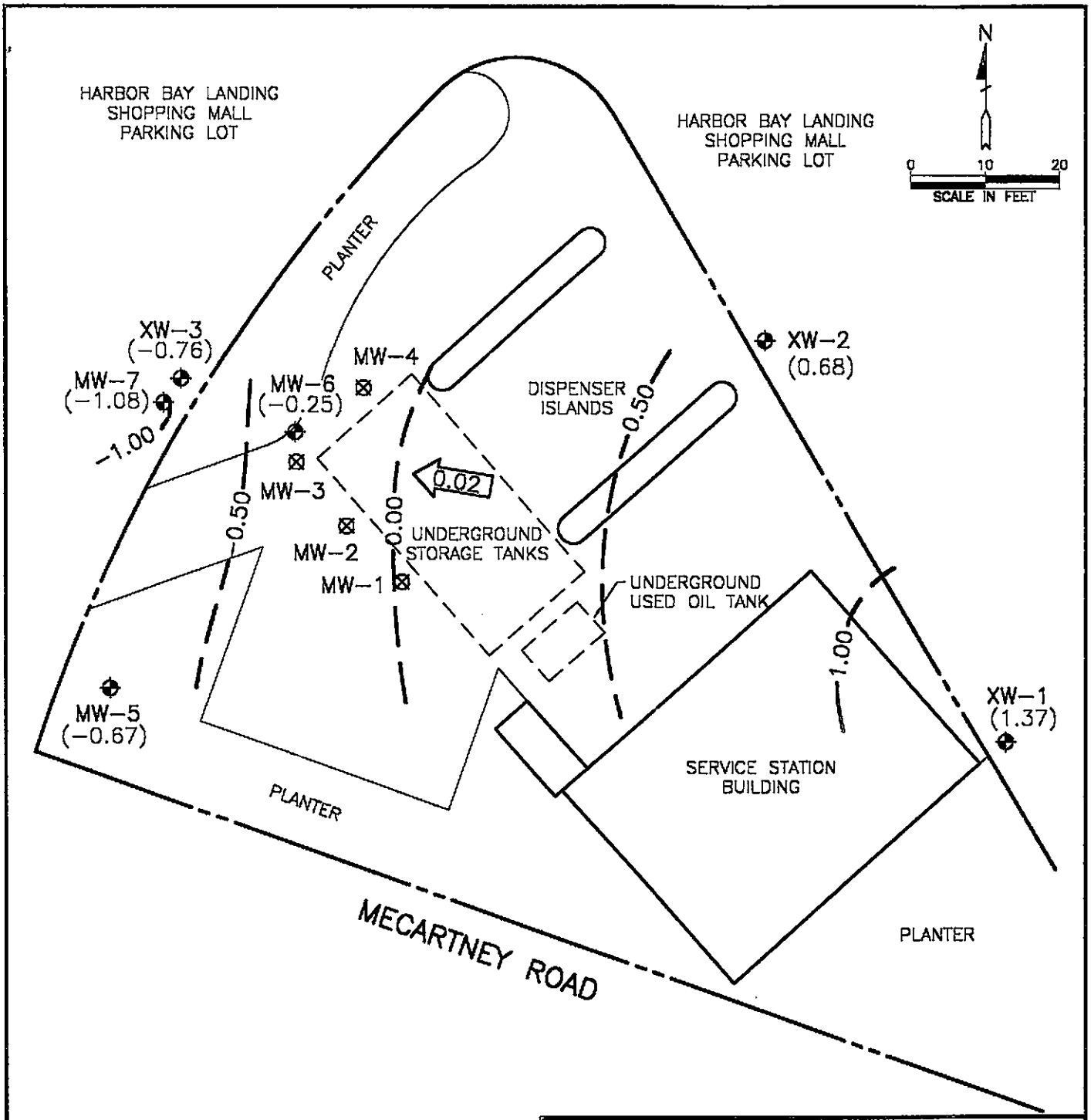
VICINITY MAP

BP OIL SERVICE STATION NO. 11270
3255 MECARTNEY ROAD
ALAMEDA, CALIFORNIA

PROJECT NO. 10-206

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10206B---DWG 5-2-05 RKW 1=1



LEGEND

⊕	GROUNDWATER MONITORING WELL
⊠	DESTROYED WELL
0.68	GROUNDWATER ELEVATION IN FEET ABOVE AN ARBITRARY DATUM
0.50	GROUNDWATER ELEVATION CONTOUR IN FEET RELATIVE TO AN ARBITRARY DATUM (CONTOUR INTERVAL–0.50 FOOT)
⟵ 0.02	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

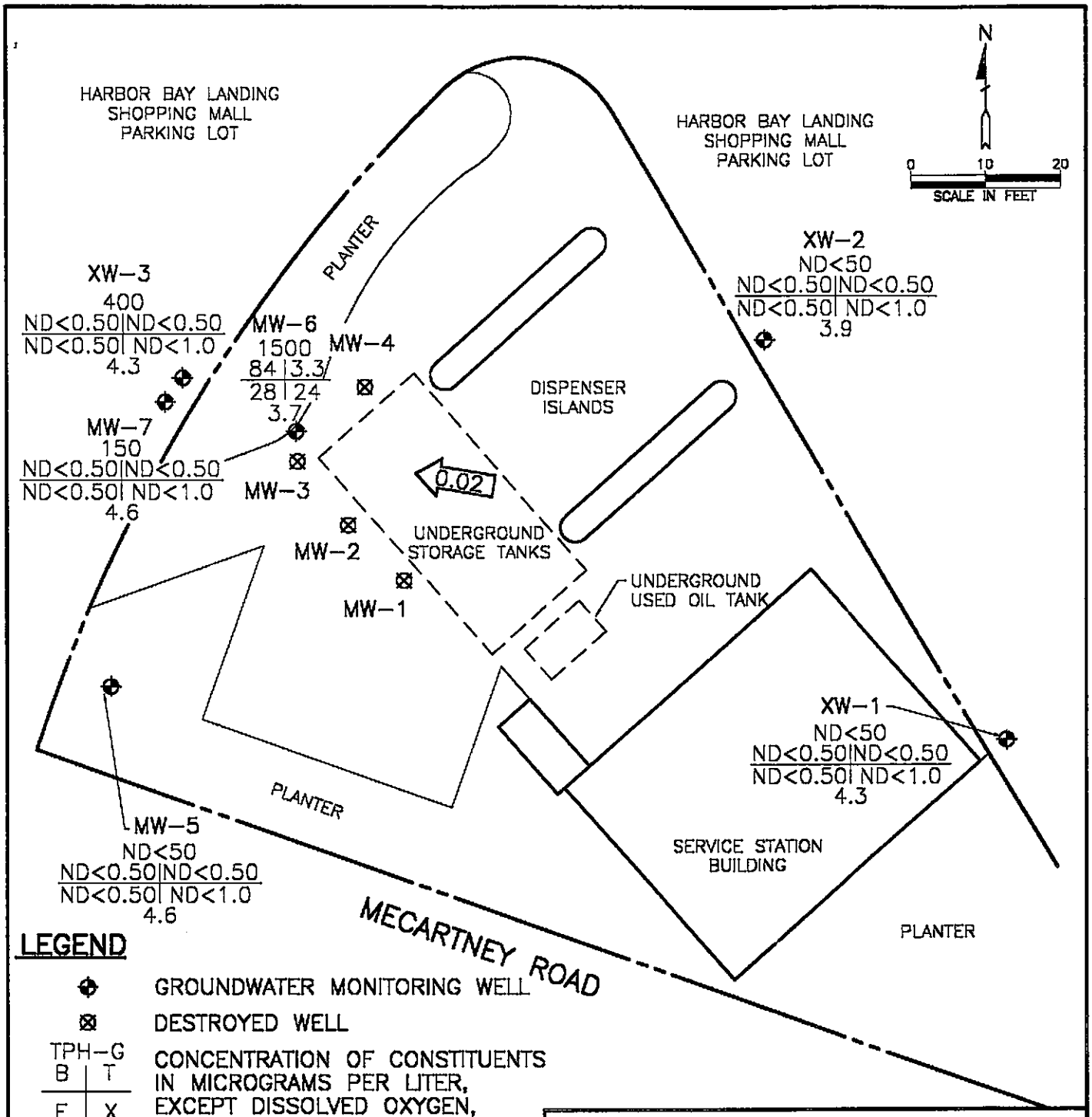
JULY 19, 1995

BP OIL SERVICE STATION NO. 11270
3255 MECARTNEY ROAD
ALAMEDA, CALIFORNIA

PROJECT NO. 10–206

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10206D 0.DWG 9-1-95 MAP 1=20



LEGEND

⊕	GROUNDWATER MONITORING WELL
⊠	DESTROYED WELL
TPH-G / B | T / E | X / DO	CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER, EXCEPT DISSOLVED OXYGEN, WHICH IS IN PARTS PER MILLION
TPH-G	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
DO	DISSOLVED OXYGEN
ND	NOT DETECTED ABOVE REPORTED DETECTION LIMIT
⟵ 0.02	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

JULY 19, 1995

BP OIL SERVICE STATION NO. 11270
3255 MECARTNEY ROAD
ALAMEDA, CALIFORNIA

PROJECT NO. 10-206

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10206E-3.DWG 8-1-95 MAP 1=20

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO ENGINEERING GROUP

1575 TREAT BOULEVARD, SUITE 201

WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

Field Report / Sampling Data Sheet

03-001

☒ Groundwater Sampling

Date: 7/19/95 Project No. 10-206-~~02~~/002 CPA

Day: Wed Station No. 11270

Weather: Clear Address Alameda, CA

SAMPLER: CB

Well ID	SAMPLE#	WATER DEPTH	Well ID	SAMPLE #	WATER DEPTH	Well ID	SAMPLE	WATER DEPTH
X-1	S-1	6.12	MW-6	S-6	7.13			
X-2	S-2	6.80						
X-3	S-3	7.60						
MW-7	S-4	7.70						
MW-5	S-5	9.03						

Well ID X-1 | Depth to Water 6.12 | Diam 2" | Cap/Lock OK | Product Depth Ø | Thickness Ø

Total Depth - Water Level= 15.35-6.12=9.23 | x Well Vol. Factor= X.16= | x#vol. to Purge= 1.48X3= | PurgeVol. 4.44

Purge Method: ☒ Surface Pump ○ Disp.Tube ○ Winch ○ Disp. Bailer(s) ___ ○ Sys Port

Comments:

Gal.	Time	Temp °F	pH	E.C.	D.O.
2	1310	68.9	8.32	1.34 ms	4.0
3		67.1	7.95	1.55 ms	
4.5	1324	66.6	7.90	1.56 ms	4.3

○ EPA 601 ___ ☒ TPH-G/BTEX HCl ○ TPH Diesel ___ ○ TOG 5520 ___

Time Sampled: 1333

Well ID X-2 | Depth to Water 6.80 | Diam 2" | Cap/Lock OK | Product Depth Ø | Thickness Ø

Total Depth - Water Level= 13.62-6.80=6.82 | x Well Vol. Factor= X.16= | x#vol. to Purge= 1.09X3= | PurgeVol. 3.27

Purge Method: ☒ Surface Pump ○ Disp.Tube ○ Winch ○ Disp. Bailer(s) ___ ○ Sys Port

Comments:

Gal.	Time	Temp °F	pH	E.C.	D.O.
1	1351	70.0	7.28	3.79 ms	3.8
2		69.4	7.19	3.81 ms	
3.5	1410	69.2	7.17	3.81 ms	3.9

○ EPA 601 ___ ☒ TPH-G/BTEX HCl ○ TPH Diesel ___ ○ TOG 5520 ___

Time Sampled: 1416

Well ID X-3 | Depth to Water 7.60 | Diam 2" | Cap/Lock OK | Product Depth Ø | Thickness Ø

Total Depth - Water Level= 13.53-7.60=5.93 | x Well Vol. Factor= X.16= | x#vol. to Purge= .95X3= | PurgeVol. 2.85

Purge Method: ☒ Surface Pump ○ Disp.Tube ○ Winch ○ Disp. Bailer(s) ___ ○ Sys Port

Comments:

Gal.	Time	Temp °F	pH	E.C.	D.O.
1	1433	70.9	7.07	10.0 ms	4.1
2		69.3	7.00	9.7 ms	
3	1500	68.9	6.97	9.7 ms	4.3

○ EPA 601 ___ ☒ TPH-G/BTEX HCl ○ TPH Diesel ___ ○ TOG 5520 ___

Time Sampled: 1502

Well ID MW-7 | Depth to Water 7.70 | Diam 2" | Cap/Lock OK | Product Depth Ø | Thickness Ø

Total Depth - Water Level= 20.00-7.70=12.30 | x Well Vol. Factor= X.16= | x#vol. to Purge= 1.97X3= | PurgeVol. 5.91

Purge Method: ☒ Surface Pump ○ Disp.Tube ○ Winch ○ Disp. Bailer(s) ___ ○ Sys Port

Comments:

Gal.	Time	Temp °F	pH	E.C.	D.O.
2	1517	66.6	7.46	9.12 ms	4.7
4		65.9	7.38	9.07 ms	
6	1539	65.3	7.32	9.05 ms	4.6

○ EPA 601 ___ ☒ TPH-G/BTEX HCl ○ TPH Diesel ___ ○ TOG 5520 ___

Time Sampled: 1544

ALISTO

ENGINEERING GROUP

1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94596 (510) 295-1650 FAX 295-1823

Field Report / Sampling Data Sheet

☒ Groundwater Sampling

Date: 7/19/95   Project No. 10-206-02/002 03-001CRA
Day: Wed   Station No. 11270
Weather: Clear   Address Alameda, Ca
SAMPLER: WB

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Thickness	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-5	9.03	4"	OK	Ø	Ø	3	1610	66.6	7.25	11.9 ms	4.4	O EPA 601 ☒ TPH-G/BTEX HCL O TPH Diesel O TOG 5520
Total Depth - Water Level= 14.51-9.03=5.48	x Well Vol. Factor= X.65=	x#vol. to Purge= 3.56X3=			PurgeVol. 10.68	7		66.0	7.16	11.7 ms		
						11	1624	65.7	7.13	11.7 ms	4.6	
Purge Method: ☒Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled: 1636
Comments:												
MW-6	7.13	4"	OK	Ø	Ø	8	1710	69.2	8.13	543µs	4.0	O EPA 601 ☒ TPH-G/BTEX HCL O TPH Diesel O TOG 5520
Total Depth - Water Level= 20.00-7.13=12.87	x Well Vol. Factor= X.65=	x#vol. to Purge= 8.37X3=			PurgeVol. 25.11	16		68.3	7.96	547µs		
						25.5	1736	67.7	7.89	549µs	3.7	
Purge Method: ☒Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled: 1741
Comments: QC-1 Dup taken from this well												
												O EPA 601___ O TPH-G/BTEX___ O TPH Diesel___ O TOG 5520___
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge=			PurgeVol.							
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments:												
												O EPA 601___ O TPH-G/BTEX___ O TPH Diesel___ O TOG 5520___
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge=			PurgeVol.							
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments:												
												O EPA 601___ O TPH-G/BTEX___ O TPH Diesel___ O TOG 5520___
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge=			PurgeVol.							
Purge Method: OSurface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port												Time Sampled
Comments:												

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE

Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

Report Date: August 04, 1995
ATI I.D. : 507221

ATI #	Client Description	Matrix	Date Collected
1	S-1	WATER	19-JUL-95
2	S-2	WATER	19-JUL-95
3	S-3	WATER	19-JUL-95
4	S-4	WATER	19-JUL-95
5	S-5	WATER	19-JUL-95
6	S-6	WATER	19-JUL-95
7	S-7	WATER	19-JUL-95
8	S-8	WATER	19-JUL-95

---TOTALS---

Matrix	# Samples
WATER	8

ATI STANDARD DISPOSAL PRACTICE

The sample(s) from this project will be disposed of in twenty-one (21) days from the date of this report. If an extended storage period is required, please contact our sample control department before the scheduled disposal date.

Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

ATI I.D.: 507221

Analysis	Technique/Description
EPA 160.1 (TOTAL DISSOLVED SOLIDS)	GRAVIMETRIC
MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)	GC/FLAME ION./PHOTO IONIZATION DETECTOR

GENERAL CHEMISTRY RESULTS

Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002 ATI I.D.: 507221
Project Name: BP SITE#11270/ALAMEDA, CA

Sample #	Client ID	Matrix	Date Sampled	Date Received
1	S-1	WATER	19-JUL-95	21-JUL-95
2	S-2	WATER	19-JUL-95	21-JUL-95
3	S-3	WATER	19-JUL-95	21-JUL-95
4	S-4	WATER	19-JUL-95	21-JUL-95
5	S-5	WATER	19-JUL-95	21-JUL-95

Parameter	Units	1	2	3	4	5
TOTAL DISSOLVED SOLIDS	MG/L	1680	4750	10400	12100	14700

GENERAL CHEMISTRY RESULTS

Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

ATI I.D.: 507221

Sample #	Client ID	Matrix	Date Sampled	Date Received
6	S-6	WATER	19-JUL-95	21-JUL-95

Parameter	Units	6
TOTAL DISSOLVED SOLIDS	MG/L	818

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

DUP/MS

Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002 ATI I.D. : 50722
Project Name: BP SITE#11270/ALAMEDA, CA

Parameters	REF I.D.	Units	Sample Result	Dup Result	RPD	Spiked Sample	Spike Conc	% Rec
TOTAL DISSOLVED SOLIDS	507205-03	MG/L	478	466	3	N/A	N/A	N/A

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Sample Result - Duplicate Result)*100/Average Result

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507221
Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
1	S-1	WATER	19-JUL-95	N/A	02-AUG-95	1.00
2	S-2	WATER	19-JUL-95	N/A	02-AUG-95	1.00
3	S-3	WATER	19-JUL-95	N/A	02-AUG-95	1.00

Parameter	Units	1	2	3
BENZENE	UG/L	<0.50	<0.50	<0.50
TOLUENE	UG/L	<0.50	<0.50	<0.50
ETHYLBENZENE	UG/L	<0.50	<0.50	<0.50
XYLENES (TOTAL)	UG/L	<1.0	<1.0	<1.0
FUEL HYDROCARBONS	UG/L	<50	<50	400
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	93	91	91

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507221
Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
4	S-4	WATER	19-JUL-95	N/A	02-AUG-95	1.00
5	S-5	WATER	19-JUL-95	N/A	02-AUG-95	1.00
6	S-6	WATER	19-JUL-95	N/A	03-AUG-95	5.00

Parameter	Units	4	5	6
BENZENE	UG/L	<0.50	<0.50	84
TOLUENE	UG/L	<0.50	<0.50	3.3
ETHYLBENZENE	UG/L	<0.50	<0.50	28
XYLENES (TOTAL)	UG/L	<1.0	<1.0	24
FUEL HYDROCARBONS	UG/L	150	<50	1500
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	96	101	82

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507221
Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
7	S-7	WATER	19-JUL-95	N/A	03-AUG-95	5.00
8	S-8	WATER	19-JUL-95	N/A	03-AUG-95	1.00

Parameter	Units	7	8
BENZENE	UG/L	89	<0.50
TOLUENE	UG/L	3.8	<0.50
ETHYLBENZENE	UG/L	30	<0.50
XYLENES (TOTAL)	UG/L	26	<1.0
FUEL HYDROCARBONS	UG/L	1500	<50
HYDROCARBON RANGE		C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE
SURROGATES			
TRIFLUOROTOLUENE	%	91	101

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36230
Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 02-AUG-95
Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	UG/L	<0.50
TOLUENE	UG/L	<0.50
ETHYLBENZENE	UG/L	<0.50
XYLENES (TOTAL)	UG/L	<1.0
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	98

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36240
Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 03-AUG-95
Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	UG/L	<0.50
TOLUENE	UG/L	<0.50
ETHYLBENZENE	UG/L	<0.50
XYLENES (TOTAL)	UG/L	<1.0
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	95

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36241
Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 02-AUG-95
Dil. Factor : 1.00

Parameters	Units	Results
BENZENE	UG/L	<0.50
TOLUENE	UG/L	<0.50
ETHYLBENZENE	UG/L	<0.50
XYLENES (TOTAL)	UG/L	<1.0
FUEL HYDROCARBONS	UG/L	<50
HYDROCARBON RANGE		C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE
SURROGATES		
TRIFLUOROTOLUENE	%	100

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
MSMSD # : 77350
Client : ALISTO ENGINEERING

Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 27-JUL-95
Sample Matrix : WATER
REF I.D. : 507164-01

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	4.8	96	4.9	98	2
TOLUENE	UG/L	<0.50	5.0	5.1	102	5.2	104	2

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
MSMSD # : 77369
Client : ALISTO ENGINEERING

Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 27-JUL-95
Sample Matrix : WATER
REF I.D. : 507103-07

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	4.9	98	5.0	100	2
TOLUENE	UG/L	<0.50	5.0	5.1	102	5.2	104	2

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
MSMSD # : 77412
Client : ALISTO ENGINEERING

Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 31-JUL-95
Sample Matrix : WATER
REF I.D. : 507195-02

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	4.6	92	4.8	96	4
TOLUENE	UG/L	<0.50	5.0	4.8	96	5.0	100	4

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
MSMSD # : 77425
Client : ALISTO ENGINEERING

Project # : G463120/10-206-02/002
Project Name: BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 01-AUG-95
Sample Matrix : WATER
REF I.D. : 507190-07

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	4.6	92	4.7	94	2
TOLUENE	UG/L	<0.50	5.0	4.9	98	5.0	100	2

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample Result - Duplicate Spike Result)*100/Average Result

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 57936
Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002
Project Name : BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 02-AUG-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	4.7	5.0	94
TOLUENE	UG/L	<0.50	5.0	5.0	100

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result

GAS CHROMATOGRAPHY - QUALITY CONTROL

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 57949
Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002
Project Name : BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 03-AUG-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	4.6	5.0	92
TOLUENE	UG/L	<0.50	4.9	5.0	98

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result

GAS CHROMATOGRAPHY - QUALITY CONTROL

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 57950
Client : ALISTO ENGINEERING
Project # : G463120/10-206-02/002
Project Name : BP SITE#11270/ALAMEDA, CA

ATI I.D. : 507221
Date Extracted: N/A
Date Analyzed : 02-AUG-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	4.6	5.0	92
TOLUENE	UG/L	<0.50	4.9	5.0	98

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration
RPD (Relative % Difference) = (Spiked Sample - Blank Result)*100/Average Result

ACCESSION #: 507221 INITIALS: LY

ATI-SanDiego
SAMPLE CONDITION UPON RECEIPT CHECKLIST
(FOR RE-ACCESSIONS, COMPLETE #7 THRU #9)

1	Does this project require special handling according to NFESC Levels C, D, AFCEE or CLP protocols? If yes, complete a) and b) a) pH sample aliquoted: yes /no /na b) Either 1) Record Bottle Lot #'s: Or 2) Attach Sample Kit Request Form(s)	YES	(NO)
2	Number of Coolers Received If more than one cooler received attach Multiple Cooler Documentation Form (MCD) Indicate "see MCD" on Item 11 below	1	
3	Are custody seals required for this project ?	YES	(N/A)
	a) are Custody Seals present on Cooler(s) ?	YES	(NO)
	If yes, are seals intact ?	YES	NO
	b) are Custody Seals present on the sample ?	YES	(NO)
	If yes, are seals intact ?	YES	NO
4	Is there a Chain-Of-Custody (COC)* per cooler ? if not, if a problem is found indicate which samples/test were in the affected cooler on the MCD.	(YES)	NO
5	Is the COC* complete per cooler ? Relinquished: (yes)/no Requested analysis: (yes)/no	(YES)	NO
6	Is the COC* in agreement with the samples received? # Samples: (yes)/no Sample ID's: yes/(no) Date sampled: (yes)/no Matrix: (yes)/no # containers: (yes)/no	YES	(NO)
7	Are the samples preserved correctly?	(YES)	NO
8	Is there enough sample for all the requested analyses?	(YES)	NO
9	Are all samples within holding times for the requested analyses?	(YES)	NO
10	Record cooler temperature. Contact PM if temperature is not 4°C ± 2°C.	2.4 °C	
	Is ice present in cooler?	(YES)	NO
11	Were all sample containers received intact (ie. not broken, leaking, etc.)?	(YES)	NO
12	Are samples requiring no headspace, headspace free? N/A	(YES)	NO
13	Are VOA 1st stickers required?	YES	(NO)
14	Are there special comments on the Chain of Custody which require client contact?	YES	(N/A)
15	If yes, was ATI Project Manager notified?	YES	NO

Describe "no" items: (6) Two pairs of VOA vials labled S-7, one pair A Sample and the other A pair of Trip blanks. No S-8 Received. Will table Trip Blanks 08 (for S-8).

Was client contacted? yes / no

If yes, Date: _____ Name of Person contacted:

Describe actions taken or client instructions:

*Or other representative documents, letters, and/or shipping memos

BP

ATI #507221

CHAIN OF CUSTODY

No. 055937 Page 1 of 1

CONSULTANT'S NAME	ADDRESS	CITY	STATE	ZIP CODE
Alisto Engineering	1575 Treat Blvd #201	W.C.	Ca	94596

BP SITE NUMBER	BP CORNER ADDRESS/CITY	CONSULTANT PROJECT NUMBER
11270	Alameda, Ca	10-206-02/002

CONSULTANT PROJECT MANAGER	PHONE NUMBER	FAX NUMBER	CONSULTANT CONTRACT NUMBER
Bill Howell	(510) 295-1650	295-1823	6463120

BP CONTACT	BP ADDRESS	PHONE NUMBER	FAX NO.
Scott Hooton	Renton, WA		

LAB CONTACT	LABORATORY ADDRESS	PHONE NUMBER	FAX NO.
ATI	San Diego, Ca		

SAMPLED BY (Please Print Name)	SAMPLED BY (Signature)	SHIPMENT DATE	SHIPMENT METHOD
Larry Buenvenida	[signature]		Fed Express

AIRBILL NUMBER: 3855999070

TAT: ☐ 24 Hours ☐ 48 Hours ☐ 1 Week ☒ Standard 2 Weeks

ANALYSIS REQUIRED

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	TYPE (VOL.)	PRESERVATIVE / LAB SAMPLE #	TPH-G/BTEX	TSS	COMMENTS
S-1	7/11/95	W	3	HCL VOAS		↓	X	
S-2	↓	↓	↓	↓		↓	↓	
S-3	↓	↓	↓	↓		↓	↓	
S-4	↓	↓	↓	↓		↓	↓	
S-5	↓	↓	↓	↓		↓	↓	
S-6	↓	↓	↓	↓		↓	↓	
S-7	↓	↓	2	↓		↓		
S-8	↓	↓	↓	↓		↓		

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	7/20/95		[signature] (ATI)	7-21-95	09:00

ADDITIONAL COMMENTS

2.4°C

CTV 16/22

Distribution: White - Original (with Data) Yellow - BP Pink - Lab Blue - Consultant Field Staff