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

January 5, 1996

Mr. Ed So
California Regional Water Quality Control Board
San Francisco Bay Region
2101 Webster Street, Suite 500
Oakland CA 94612

RE: BP OIL FACILITY #11126
1700 Powell Street
Emeryville, California

Dear Mr. So:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED September 22, 1995,** for the above referenced facility. As you know, Pacific Environmental Group is under contract to perform a pump test and vapor extraction test at this site.

If you should have any questions regarding this site, I may be reached at (206) 251-0689.

Respectfully,

Scott T. Hooton
Environmental Resources Management

STH:aa msword\ERM11126

cc: Ms. Susan Hugo, Alameda County Health Care Services Agency
1131 Harbor Bay Parkway, Room 250, Oakland, CA 94502-6577

Mr. Brady Nagle, Alisto Engineering Group, 1777 Oakland Blvd., Suite 200, Walnut Creek, CA 94596

Mr Andrew Lehane, Pacific Environmental Group, 2025 Gateway Place Ste 440, San Jose, CA 95110

Mr. Larry Silva, TOSCO Northwest, 601 Union Street, Suite 2500, Seattle WA 98101

Site File

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11126
1700 Powell Street
Emeryville, California

Project No. 10-061-06-001

SEP 27 1995
BP OIL CO.
ENVIRONMENTAL DEPT.
WEST COAST REGION OFFICE

Prepared for:

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

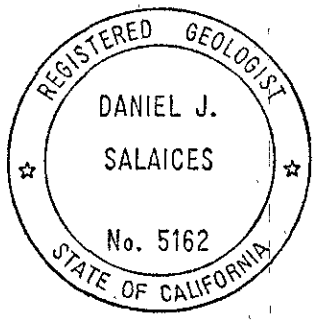
Prepared by:

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

September 22, 1995

William Howell
Project Manager

Dan Salaices
Registered Geologist



GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11126
1700 Powell Street
Emeryville, California

Project No. 10-061-06-001

September 22, 1995

INTRODUCTION

This report presents the results and findings of the July 11, 1995 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11126, 1700 Powell Street, Emeryville, California. A site vicinity map is shown in Figure 1.

FIELD PROCEDURES

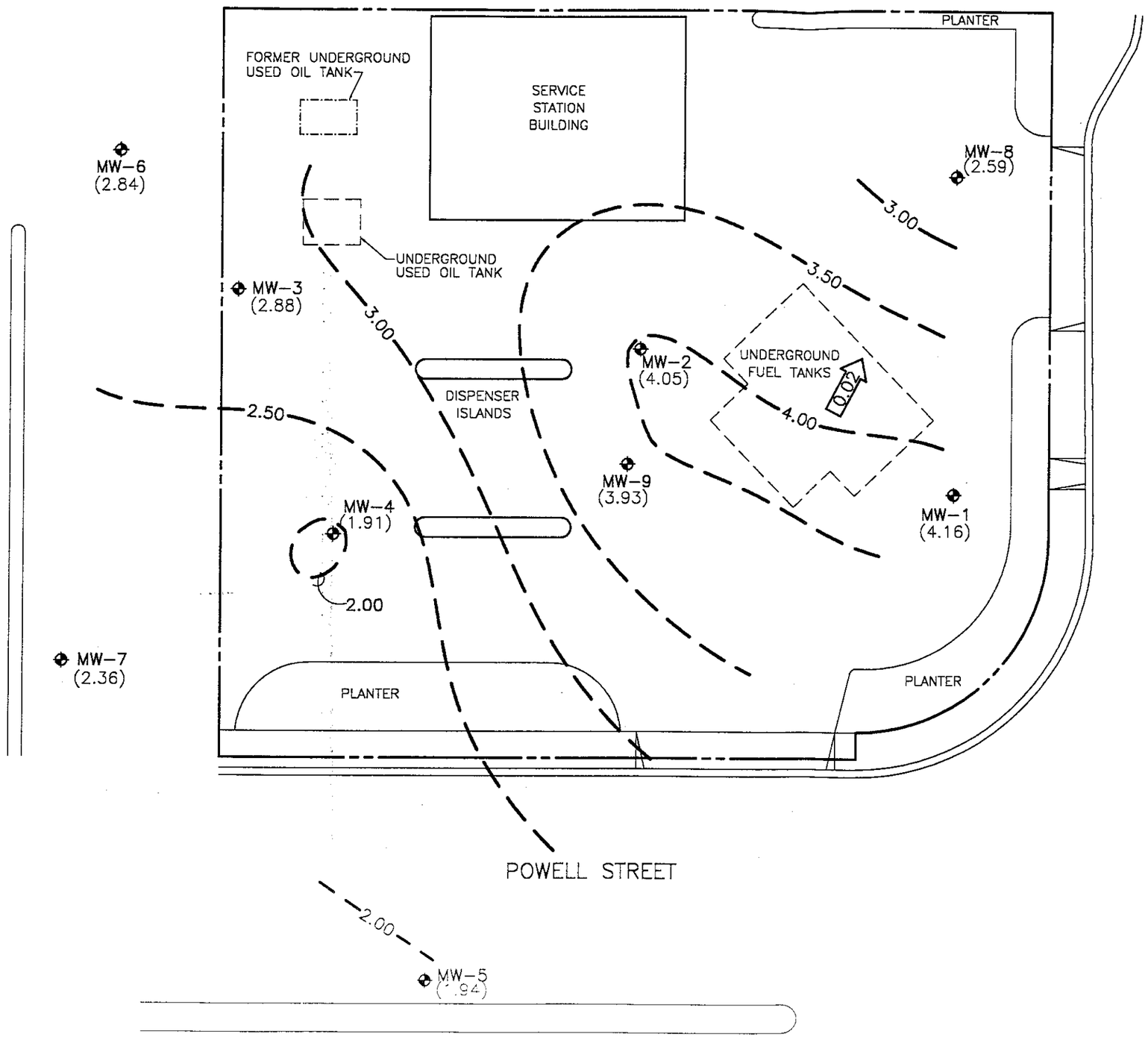
Field activities were performed in accordance with the procedures and guidelines of the Alameda County Health Care Services Agency and the California Regional Water Quality Control Board, San Francisco Bay Region.

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.



N

0 20 40

SCALE IN FEET

LEGEND

- ◆ GROUNDWATER MONITORING WELL
- (1.91) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 2.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.50 FOOT)
- 0.02 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

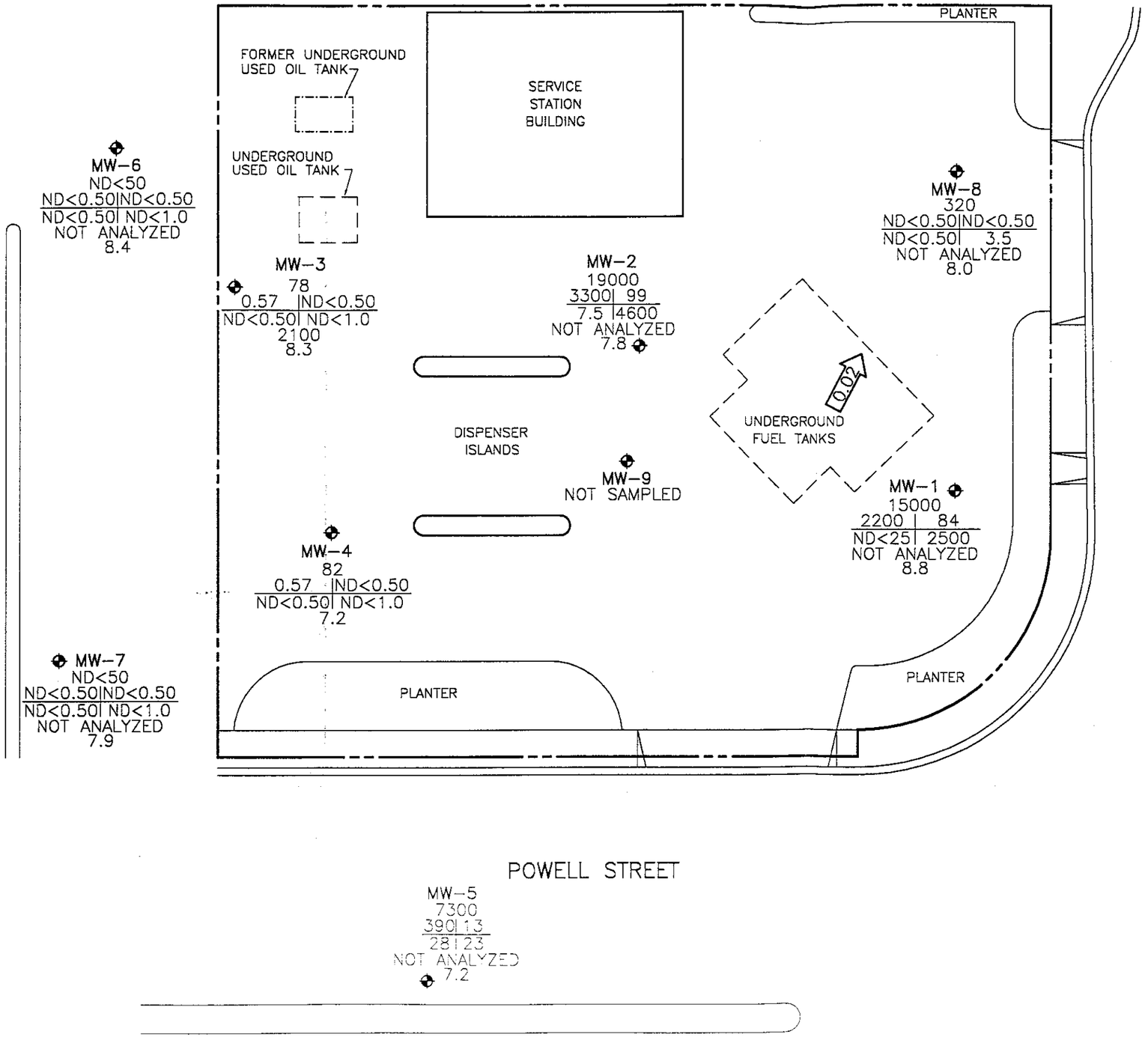
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

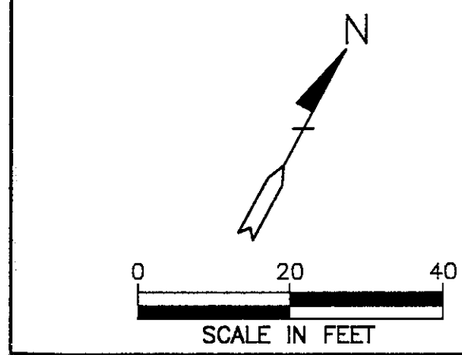
JULY 11, 1995

BP OIL SERVICE STATION NO. 11126
1700 POWELL STREET
EMERYVILLE, CALIFORNIA

PROJECT NO. 10–061

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA





LEGEND

◆	GROUNDWATER MONITORING WELL
TPH-G / B | T / E | X / TPH-D / 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
TPH-D	TOTAL PETROLEUM HYDROCARBONS AS DIESEL
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 11, 1995

BP OIL SERVICE STATION NO. 11126
1700 POWELL STREET
EMERYVILLE, CALIFORNIA

PROJECT NO. 10-061

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10061-01.DWG 8-21-95 MKN 1"=20'

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11126
1700 POWELL STREET, EMERYVILLE, CALIFORNIA

ALISTO PROJECT NO. 10-061

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-1	11/04/92	7.76	4.96	---	2.80	5300	---	1100	480	ND<0.5	1500	---	---	---	PACE
MW-1	10/12/93	7.76	5.26	---	2.50	3600	---	970	71	100	550	---	---	---	PACE
MW-1	02/15/94	7.76	4.98	---	2.78	17000	---	4200	510	360	1600	---	---	3.9	PACE
MW-1	05/11/94	7.76	4.55	---	3.21	5500	---	2900	37	56	64	---	---	8.0	PACE
MW-1	08/01/94	7.76	5.51	---	2.25	15000	---	3600	740	510	2800	---	---	2.9	PACE
QC-1 (c)	08/01/94	8.56	---	---	---	16000	---	3600	750	510	2800	---	---	---	PACE
MW-1	10/18/94	7.76	5.11	---	2.65	16000	---	1800	61	160	890	---	---	2.9	PACE
QC-1 (c)	10/18/94	---	---	---	---	16000	---	1900	64	170	950	---	---	---	PACE
MW-1	01/13/95	7.76	3.05	---	4.71	220	---	7	ND<0 5	1	23	---	---	6.6	ATI
QC-1 (c)	01/13/95	---	---	---	---	590	---	88	0.7	ND<0.5	55	---	---	---	ATI
MW-1	04/13/95	7.76	3.84	---	3.92	9300	---	4000	300	200	950	---	---	7.7	ATI
MW-1	07/11/95	7.76	3.60	---	4.16	15000	---	2200	84	ND<25	2500	---	---	8 8	ATI
MW-2	11/04/92	8.56	5.88	---	2.68	12000	---	3900	1300	ND<0.5	2300	---	---	---	PACE
QC-1 (c)	11/04/92	8.56	5.88	---	2.68	12000	---	3200	980	ND<0.5	1900	---	---	---	PACE
MW-2	10/12/93	8.56	6.29	---	2.27	4500	---	3400	180	230	940	---	---	---	PACE
MW-2	02/15/94	8.56	5.56	---	3.00	2000	---	430	270	28	390	---	---	4.0	PACE
QC-1 (c)	02/15/94	8.56	5.56	---	3.00	1800	---	290	160	14	250	---	---	---	PACE
MW-2	05/11/94	8.56	5.17	---	3.39	14000	---	3900	1200	440	1900	---	---	8.9	PACE
QC-1 (c)	05/11/94	8.56	---	---	---	15000	---	5600	1500	470	2000	---	---	---	PACE
MW-2	08/01/94	8.56	5.43	---	3.13	8200	---	3000	420	230	680	---	---	2.6	PACE
MW-2	10/18/94	8.56	5.71	---	2.85	9000	---	2000	140	150	420	---	---	7.2	PACE
MW-2	01/13/95	8.56	4.67	---	3.89	7900	---	2200	42	ND<5	770	---	---	6.8	ATI
MW-2	04/13/95	8 56	4.37	---	4.19	33000	---	8000	2500	1100	6600	---	---	7.5	ATI
QC-1 (c)	04/13/95	8.56	---	---	---	25000	---	6500	1500	110	5300	---	---	---	ATI
MW-2	07/11/95	8.56	4.51	---	4.05	19000	---	3300	99	7.5	4600	---	---	7.8	ATI
QC-1 (c)	07/11/95	---	---	---	---	28000	---	6800	1000	900	4900	---	---	---	ATI
MW-3	11/04/92	8.25	6.38	---	1.87	200	690	1.6	ND<0.5	ND<0.5	1.1	ND<5000	ND (d)	---	PACE
MW-3	10/12/93	8.25	5.84	---	2.41	270	2100	5.0	0.7	ND<0.5	2.6	ND<5000	ND (d)	---	PACE
QC-1 (c)	10/12/93	8.25	5.84	---	2.41	150	---	5.6	0.6	ND<0.5	1.6	---	---	---	PACE
MW-3	02/15/94	8.25	6.60	---	1.65	140	2.3	5.7	ND<0.5	ND<0.5	ND<0.5	90	ND (d)	3.9	PACE
MW-3	05/11/94	8.25	5.86	---	2.39	190	2500	2.7	1.9	ND<0.5	1.9	ND<5000	ND (d)	9.2	PACE
MW-3	08/01/94	8.25	6.13	---	2.12	120	1300	1.3	ND<0.5	0.5	1.1	ND<5000	ND (d)	2.9	PACE
MW-3	10/18/94	8.25	6.39	---	1.86	100	2200	2.3	ND<0.5	ND<0.5	ND<0.5	ND<5000	ND (d)	3.6	PACE
MW-3	01/13/95	8.25	5.47	---	2.78	ND<50	970	0.8	ND<0.5	ND<0.5	ND<1	---	ND (d)	7.7	ATI
MW-3	04/13/95	8.25	5.17	---	3.08	530	ND<500	8.7	1.9	ND<0.5	3.9	2100	ND (d)	8.4	ATI
MW-3	07/11/95	8.25	5.37	---	2.88	78	2100	0.57	ND<0.50	ND<0.50	ND<1.0	1900	ND (d)	8.3	ATI
MW-4	11/04/92	8.12	6.66	---	1.46	340	---	4.5	ND<0.5	4.3	ND<0.5	---	---	---	PACE
MW-4	10/12/93	8.12	6.87	---	1.25	160	---	5.8	1.4	0.8	2.7	---	---	---	PACE
MW-4	02/15/94	8.12	6.61	---	1.51	110	---	4.4	0.7	ND<0.5	2.5	---	---	4.3	PACE
MW-4	05/11/94	8.12	5.89	---	2 23	120	---	0.5	0.8	ND<0.5	ND<0.5	---	---	9.3	PACE
MW-4	08/01/94	8.12	6.87	---	1.25	140	---	0.7	2.0	5 2	15	---	---	3.3	PACE
MW-4	10/18/94	8.12	6.62	---	1.50	140	---	3.5	ND<0.5	0.5	ND<0.5	---	---	3.0	PACE
MW-4	01/13/95	8.12	7.27	---	0.85	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	7.9	ATI
MW-4	04/13/95	8.12	6.51	---	1.61	73	---	1.2	ND<0.5	ND<0.5	ND<1	---	---	9.9	ATI
MW-4	07/11/95	8.12	6.21	---	1.91	82	---	0.57	ND<0 50	ND<0.50	ND<1.0	---	---	7 2	ATI

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11126
1700 POWELL STREET, EMERYVILLE, CALIFORNIA

ALISTO PROJECT NO. 10-061

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-5	10/12/93	7.69	6.01	---	1.68	---	---	---	---	---	---	---	---	---	---
MW-5	10/13/93	---	---	---	---	2300	---	160	10	ND<0.5	26	---	---	---	PACE
MW-5	02/15/94	7.69	5.74	---	1.95	5100	---	710	16	33	35	---	---	4.0	PACE
MW-5	05/11/94	7.69	5.28	---	2.41	11000	---	1100	39	110	57	---	---	8.0	PACE
MW-5	08/01/94	7.69	5.84	---	1.85	9000	---	730	35	61	41	---	---	2.6	PACE
MW-5	10/18/94	7.69	6.01	---	1.68	7800	---	330	30	27	27	---	---	5.6	PACE
MW-5	01/13/95	7.69	4.74	---	2.95	ND<500	---	290	6	ND<5	18	---	---	6.8	ATI
MW-5	04/13/95	7.69	5.50	---	2.19	9100	---	400	15	52	27	---	---	7.4	ATI
MW-5	07/11/95	7.69	5.75	---	1.94	7300	---	390	13	28	23	---	---	7.2	ATI
MW-6	10/12/93	8.52	6.59	---	1.93	63	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-6	02/15/94	8.52	6.31	---	2.21	68	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	3.1	PACE
MW-6	05/11/94	8.52	6.15	---	2.37	68	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	8.7	PACE
MW-6	08/01/94	8.52	6.46	---	2.06	91	---	ND<0.5	ND<0.5	ND<0.5	0.6	---	---	2.4	PACE
MW-6	10/18/94	8.52	6.72	---	1.80	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	6.0	PACE
MW-6	01/13/95	8.52	5.95	---	2.57	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	7.0	ATI
MW-6	04/13/95	8.52	5.44	---	3.08	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	8.5	ATI
MW-6	07/11/95	8.52	5.68	---	2.84	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	8.4	ATI
MW-7	10/12/93	7.61	6.14	---	1.47	ND<50	---	ND<0.5	ND<0.5	ND<0.5	0.7	---	---	---	PACE
MW-7	02/15/94	7.61	5.88	---	1.73	78	---	ND<0.5	ND<0.5	ND<0.5	0.6	---	---	4.0	PACE
MW-7	05/11/94	7.61	5.76	---	1.85	70	---	ND<0.5	ND<0.5	ND<0.5	0.9	---	---	9.1	PACE
MW-7	08/01/94	7.61	5.97	---	1.64	77	---	ND<0.5	ND<0.5	ND<0.5	0.5	---	---	2.5	PACE
MW-7	10/18/94	7.61	6.24	---	1.37	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	6.3	PACE
MW-7	01/13/95	7.61	5.39	---	2.22	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	8.2	ATI
MW-7	04/13/95	7.61	5.17	---	2.44	63	---	ND<0.5	ND<0.5	ND<0.5	1.4	---	---	8.4	ATI
MW-7	07/11/95	7.61	5.25	---	2.36	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	7.9	ATI
MW-8	10/12/93	8.60	5.86	---	2.74	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-8	02/15/94	8.60	5.50	---	3.10	380	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	3.3	PACE
MW-8	05/11/94	8.60	5.09	---	3.51	330	---	ND<0.5	1.2	ND<0.5	1.9	---	---	8.5	PACE
MW-8	08/01/94	8.60	5.20	---	3.40	260	---	ND<0.5	1.2	2.9	5.8	---	---	2.3	PACE
MW-8	10/18/94	8.60	5.70	---	2.90	82	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	6.4	PACE
MW-8	01/13/95	8.60	4.96	---	3.64	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	6.9	ATI
MW-8	04/13/95	8.60	5.40	---	3.20	270	---	ND<0.5	ND<0.5	ND<0.5	4.4	---	---	8.4	ATI
MW-8	07/11/95	8.60	6.01	---	2.59	320	---	ND<0.50	ND<0.50	ND<0.50	3.5	---	---	8.0	ATI

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11126
1700 POWELL STREET, EMERYVILLE, CALIFORNIA

ALISTO PROJECT NO. 10-061

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (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)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
MW-9 (e)	10/12/93	8.08	5.66	0.08	2.48	---	---	---	---	---	---	---	---	---	---
MW-9 (e)	02/15/94	8.08	5.32	0.05	2.80	---	---	---	---	---	---	---	---	---	---
MW-9 (e)	05/11/94	8.08	5.57	---	2.51	---	---	---	---	---	---	---	---	---	---
MW-9 (e)	08/01/94	8.08	6.25	---	1.83	---	---	---	---	---	---	---	---	---	---
MW-9 (e)	10/18/94	8.08	5.59	0.13	2.59	---	---	---	---	---	---	---	---	---	---
MW-9 (e)	01/13/95	8.08	4.42	0.14	3.77	---	---	---	---	---	---	---	---	---	---
MW-9 (e)	04/13/95	8.08	4.06	0.11	4.10	---	---	---	---	---	---	---	---	---	---
MW-9 (e)	07/11/95	8.08	4.21	0.08	3.93	---	---	---	---	---	---	---	---	---	---
QC-2 (f)	11/05/92	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	10/12/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	02/15/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	05/11/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	08/01/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	10/18/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (f)	01/13/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	ATI
QC-2 (f)	04/13/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	ATI
QC-2 (f)	07/11/95	---	---	---	---	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
TOG	Total oil and grease
HVOC	Halogenated volatile organic compounds
DO	Dissolved oxygen
ug/l	Micrograms per liter
ppm	Parts per million
ND	Not detected above reported detection limit
---	Not analyzed/applicable/measurable
PACE	Pace, Inc.
ATI	Analytical Technologies, Inc.

NOTES:

(a) Top of casing elevations surveyed relative to an established benchmark with an elevation of 8.11 feet above mean sea level.

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

(c) Blind duplicate.

(d) Detection limits vary; see laboratory report.

(e) Well not sampled due to presence of free product. Groundwater elevation adjusted assuming a specific gravity of 0.75 for free product.

(f) Travel blank.

10-061-061-6-1.WQ1

TABLE 2
PRODUCT REMOVAL STATUS

BP OIL COMPANY SERVICE STATION NO. 11126
1700 POWELL STREET, EMERYVILLE, CALIFORNIA

ALISTO PROJECT NO. 10-061

WELL ID	DATE	PRODUCT THICKNESS (Feet)	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-9	12/02/93	4.62	0.15	0.15
MW-9	12/09/93	2.45	0.15	0.30
MW-9	12/30/93	2.39	0.15	0.45
MW-9	01/12/94	2.15	0.02	0.47
MW-9	02/02/94	1.82	Sheen	0.47
MW-9	02/15/94	3.75	0.35	0.82
MW-9	05/11/94	3.00	Sheen	0.82
MW-9	05/27/94	1.50	Sheen	0.82
MW-9	06/25/94	1.32	Sheen	0.82
MW-9	08/01/94	---	Sheen	0.82
MW-9	10/18/94	0.13	---	0.82
MW-9	01/13/95	0.14	---	0.82
MW-9	04/13/95	0.11	---	0.82
MW-9	07/11/95	0.08	0.13	0.90

ABBREVIATIONS:

--- Not measured/analyzed/applicable/available

E:\0\10-061\PRODUCT.WQ1

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

N

0 1000' 2000'

FIGURE 1

SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11126
1700 POWELL STREET
EMERYVILLE, CALIFORNIA

PROJECT NO. 10-061

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10061S—.DWG 12-30-93 RKW 1-1

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. 10-061-~~04-003~~ 06-001 COA
Address 1700 Powell Street
Contract No. ~~G463058~~ Penalty
Station No. BP 11126

Date: 7/11/95
Day: M T W TH F
City: Emeryville
Sampler: ICB

WELL ID	SAMPLE ID	DEPTH TO WATER	TIME	COMMENTS:
MW-1	S-7	3.60		
MW-2	S-8	4.51		QC-1 Dup. taken from this well
MW-3	S-6	5.37		
MW-4	S-4	6.21		
MW-5	S-1	~~4.21~~ 5.75		
MW-6	S-~~2~~ 2nd	5.68		S-2
MW-7	S-~~3~~ 3rd	5.25		S-3
MW-8	S-5	6.01		
MW-9	N/S	4.21		

FIELD INSTRUMENT CALIBRATION DATA

Ph METER ICM 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED (Y) N TIME 1100

D.O. METER ICM ZERO d.O. SOLUTION 0 BAROMETRIC PRESSURE 760 TEMP 70° WEATHER clear

CONDUCTIVITY METER ICM 10,000 10,000 TURBIDITY METER _____ 5.0 NTU _____ OTHER _____

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-5	5.75	2"	OK	0	Y (N)	1	1108	72.5	8.35	1.01 ms	7.0	O EPA 601
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			2.5		71.1	8.07	.97 ms		X TPH-G/BTEX HCl
13.70 - 5.75 = 7.94 X .16 = 1.27 X 3 =			3.81			4	1125	70.6	7.98	.95 ms	7.2	O TPH Diesel
Purge Method: XSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port												O TOG 5520
Comments:												TIME/SAMPLE ID 1135

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-7	5.25	2"	OK	0	Y (N)	2	1153	73.9	7.21	1.88 ms	7.7	O EPA 601
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			3		72.1	7.10	1.82 ms		X TPH-G/BTEX HCl
13.72 - 5.25 = 8.47 X .16 = 1.36 X 3 =			4.08			4.5	1210	71.3	7.03	1.79 ms	7.9	O TPH Diesel
Purge Method: XSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port												O TOG 5520
Comments:												TIME/SAMPLE ID 1217

ALISTO

Field Report / Sampling Data Sheet

06-001

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

Project No. 10-061-~~04-003~~ Date: 7/11/95
Address 1700 Powell Street Day: M T W TH F
Contract No. ~~G463058~~ Pending City: Emeryville
Station No. BP 11126 Sampler: WS

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-6	5.68	2"	OK	Ø	Y (N)	1	1227	73.1	7.50	4.97ms	8.1	O EPA 601 ___
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			2		72.4	7.42	4.91ms		X TPH-G/BTEX HCl
13.25-5.68=7.57	X .16 = 1.21	X3 = 3.63				4	1245	71.7	7.36	4.88ms	8.4	O TPH Diesel ___
Purge Method: XSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port												O TOG 5520 ___
Comments:												TIME/SAMPLE ID 1259

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-4	6.21	2"	OK	Ø	Y (N)	1	1315	73.3	7.42	4.01ms	7.7	O EPA 601 ___
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			2		72.4	7.31	3.88ms		X TPH-G/BTEX HCl
11.06-6.21=4.85	X .16 = .78	X3 = 2.34				2.5	1345	71.9	7.24	3.86ms	7.2	O TPH Diesel ___
Purge Method: XSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port												O TOG 5520 ___
Comments:												TIME/SAMPLE ID 1356

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-8	6.01	2"	OK	Ø	Y (N)	1	1429	72.9	7.36	1.69ms	8.2	O EPA 601 ___
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			2		72.0	7.21	1.63ms		X TPH-G/BTEX HCl
13.65-6.01=7.64	X .16 = 1.22	X3 = 3.66				4	1450	71.4	7.11	1.59ms	8.0	O TPH Diesel ___
Purge Method: XSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port												O TOG 5520 ___
Comments:												TIME/SAMPLE ID 1455

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-3	5.37	2"	OK	Ø	Y (N)	.75	1515	72.6	7.58	5.38ms	8.5	X EPA 601 HCl
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			2.75		71.3	7.47	5.26ms		X TPH-G/BTEX HCl
12.08-5.37 ~~-1.0~~ =6.71	X .16 = 1.07	X3 = 3.21				3.50	1527	70.7	7.43	5.21ms	8.3	X TPH Diesel HCl
Purge Method: XSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port												X TOG 5520 H2SO4
Comments:												TIME/SAMPLE ID 1530

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	
MW-1	3.60	2"	OK	Ø	Y (N)	1.25	1552	75.6	7.07	1.93ms	8.6	X EPA 601 ___
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			2.50		74.2	7.02	1.86ms		X TPH-G/BTEX HCl
11.62-3.60 ~~-1.0~~ =8.02	X .16 = 1.28	X3 = 3.84				4.00	1609	73.0	6.97	1.84ms	8.8	O TPH Diesel ___
Purge Method: XSurface Pump ODisp.Tube OWinch XDisp. Bailer(s) 1 OSys Port												O TOG 5520 ___
Comments:												TIME/SAMPLE ID 1615

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK CA 94598 (510) 295-1650 FAX 295-1823

06-001

Project No. 10-061-~~04-003~~ Date: 7/11/95
Address 1700 Powell Street Day: M T W TH F
Contract No. ~~G463058~~ Pending City: Emeryville
Station No. BP 11126 Sampler: WS

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Irridensence	Gal.	Time	Temp °F	pH	E.C.	D.O.
* MW-2	4.51	2"	OK	Ø	(Y) N	1	1631	74.1	7.50	1.87ms	8.0
						2		72.1	7.42	1.82ms	
See below						3.75	1642	71.6	7.33	1.77ms	7.8

~~11.83 - 4.51 = 7.32 x .16 = 1.16~~

Total Depth - Water Level= x Well Vol. Factor= x#Vol. to Purge PurgeVol.

Purge Method: ~~O~~Surface Pump ODisp.Tube OWinch ~~O~~Disp. Bailer(s) 1 OSys Port

Comments: ~~NFS FP present did not Sample~~

O EPA 601____
~~O~~ TPH-G/BTEX HCL
O TPH Diesel____
O TOG 5520 __

TIME/SAMPLE ID
1650 QC-1

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Irridensence	Gal.	Time	Temp °F	pH	E.C.	D.O.
** MW-9	4.21	4"	OK	4.13	Y N						

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.

NM - 4.21

Purge Method: OSurface Pump ODisp.Tube OWinch ~~O~~Disp. Bailer(s) ~~2~~ OSys Port

Comments: FP Present did not Sample

O EPA 601____
~~O~~ TPH-G/BTEX HCL
O TPH Diesel____
O TOG 5520 __

TIME/SAMPLE ID

** MW-9 P.T.= .08 bailed about 1/8 gal FP legal TF

* MW-2 11.83 - 4.51 = 7.32 x .16 = 1.17 x 3 = 3.51

QC-1 Dup 9/50 taken from this well

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

Analytical**Technologies,** Inc. Corporate Offices: 5550 Morehouse Drive San Diego, CA 92121 (619) 458-9141

ATI I.D.: 507095

August 03, 1995

ALISTO ENGINEERING
1575 TREAT BOULEVARD, SUITE 201
WALNUT CREEK, CA 94598

Project Name: BP SITE#11126/EMERYVILLE, CA
Project # : G463058/10-061-~~04/003~~ 06-001 c DT

Attention: BILL HOWELL

Analytical Technologies, Inc. has received the following sample(s):

Date Received	Quantity	Matrix
July 14, 1995	10	WATER

The sample(s) were analyzed with EPA methodology or equivalent methods as specified in the enclosed analytical schedule. The symbol for "less than" indicates a value below the reportable detection limit. If any flags appear next to the analytical data in this report, please see the attached list of flag definitions.

The results of these analyses and the quality control data are enclosed. Please note that the Sample Condition Upon Receipt Checklist is included at the end of this report.

GARY STEWART
VOLATILES SUPERVISOR

ALAN J. KLEINSCHMIDT
LABORATORY MANAGER

RECEIVED
AUG 04 1995

Analytical Technologies, Inc.

SAMPLE CROSS REFERENCE

Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

Report Date: August 03, 1995
ATI I.D. : 507095

ATI #	Client Description	Matrix	Date Collected
1	S-1	WATER	11-JUL-95
2	S-2	WATER	11-JUL-95
3	S-3	WATER	11-JUL-95
4	S-4	WATER	11-JUL-95
5	S-5	WATER	11-JUL-95
6	S-6	WATER	11-JUL-95
7	S-7	WATER	11-JUL-95
8	S-8	WATER	11-JUL-95
9	S-9	WATER	11-JUL-95
10	S-10	WATER	11-JUL-95

---TOTALS---

Matrix	# Samples
WATER	10

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.

Analytical Technologies, Inc.

ANALYTICAL SCHEDULE

Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D.: 507095

Analysis	Technique/Description
EPA 413.2 (OIL & GREASE)	INFRARED SPECTROMETER
EPA 601 (HALOGENATED VOLATILE ORGANICS)	GC/ELECTROLYTIC CONDUCTIVITY DETECTOR
MOD EPA 8015-CDOHS (FUEL HYDROCARBONS: C7-C24)	GC/FLAME IONIZATION DETECTOR
MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)	GC/FLAME ION./PHOTO IONIZATION DETECTOR

Analytical Technologies, Inc.

GENERAL CHEMISTRY RESULTS

Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003 ATI I.D.: 507095
Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Received
6	S-6	WATER	11-JUL-95	14-JUL-95

Parameter	Units	6
OIL AND GREASE	MG/L	1.9

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

DUP/MS

Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003 ATI I.D. : 507095
Project Name: BP SITE#11126/EMERYVILLE, CA

Parameters	REF I.D.	Units	Sample Result	Dup Result	RPD	Spiked Sample	Spike Conc	% Rec
OIL AND GREASE	507085-03	MG/L	<0.05	<0.05	0	4.2	5.0	84

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

Analytical Technologies, Inc.

GENERAL CHEMISTRY - QUALITY CONTROL

BLANK SPIKE

Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095

Parameters	Blank Spike ID#	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
OIL AND GREASE	57715	MG/L	<0.05	4.2	5.0	84

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

GAS CHROMATOGRAPHY RESULTS

Test : EPA 601 (HALOGENATED VOLATILE ORGANICS)
Client : ALISTO ENGINEERING ATI I.D. : 507095
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
6	S-6	WATER	11-JUL-95	N/A	19-JUL-95	1.00

Parameter	Units	6
BROMODICHLOROMETHANE	UG/L	<0.20
BROMOFORM	UG/L	<1.0
BROMOMETHANE	UG/L	<1.0
CARBON TETRACHLORIDE	UG/L	<0.20
CHLOROBENZENE	UG/L	<0.50
CHLOROETHANE	UG/L	<1.0
CHLOROFORM	UG/L	<0.20
CHLOROMETHANE	UG/L	<1.0
DIBROMOCHLOROMETHANE	UG/L	<0.20
1,2-DICHLOROBENZENE	UG/L	<0.50
1,3-DICHLOROBENZENE	UG/L	<0.50
1,4-DICHLOROBENZENE	UG/L	<0.50
DICHLORODIFLUOROMETHANE	UG/L	<1.0
1,1-DICHLOROETHANE	UG/L	<0.20
1,2-DICHLOROETHANE	UG/L	<0.20
1,1-DICHLOROETHENE	UG/L	<0.20
CIS-1,2-DICHLOROETHENE	UG/L	<0.20
TRANS-1,2-DICHLOROETHENE	UG/L	<0.20
1,2-DICHLOROPROPANE	UG/L	<0.20
CIS-1,3-DICHLOROPROPENE	UG/L	<0.20
TRANS-1,3-DICHLOROPROPENE	UG/L	<0.20
METHYLENE CHLORIDE	UG/L	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<0.50
TETRACHLOROETHENE	UG/L	<0.20
1,1,1-TRICHLOROETHANE	UG/L	<0.20
1,1,2-TRICHLOROETHANE	UG/L	<0.20
TRICHLOROETHENE	UG/L	<0.20
TRICHLOROFLUOROMETHANE	UG/L	<2.0
VINYL CHLORIDE	UG/L	<0.20
SURROGATES		
BROMOFLUOROBENZENE (ELCD)	%	113
BROMOFLUOROBENZENE (PID)	%	112

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : EPA 601 (HALOGENATED VOLATILE ORGANICS)
Blank I.D. : 36179
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 19-JUL-95
Dil. Factor : 1.00

Parameters	Units	Results
BROMODICHLOROMETHANE	UG/L	<0.20
BROMOFORM	UG/L	<1.0
BROMOMETHANE	UG/L	<1.0
CARBON TETRACHLORIDE	UG/L	<0.20
CHLOROBENZENE	UG/L	<0.50
CHLOROETHANE	UG/L	<1.0
CHLOROFORM	UG/L	<0.20
CHLOROMETHANE	UG/L	<1.0
DIBROMOCHLOROMETHANE	UG/L	<0.20
1,2-DICHLOROBENZENE	UG/L	<0.50
1,3-DICHLOROBENZENE	UG/L	<0.50
1,4-DICHLOROBENZENE	UG/L	<0.50
DICHLORODIFLUOROMETHANE	UG/L	<1.0
1,1-DICHLOROETHANE	UG/L	<0.20
1,2-DICHLOROETHANE	UG/L	<0.20
1,1-DICHLOROETHENE	UG/L	<0.20
CIS-1,2-DICHLOROETHENE	UG/L	<0.20
TRANS-1,2-DICHLOROETHENE	UG/L	<0.20
1,2-DICHLOROPROPANE	UG/L	<0.20
CIS-1,3-DICHLOROPROPENE	UG/L	<0.20
TRANS-1,3-DICHLOROPROPENE	UG/L	<0.20
METHYLENE CHLORIDE	UG/L	<2.0
1,1,2,2-TETRACHLOROETHANE	UG/L	<0.50
TETRACHLOROETHENE	UG/L	<0.20
1,1,1-TRICHLOROETHANE	UG/L	<0.20
1,1,2-TRICHLOROETHANE	UG/L	<0.20
TRICHLOROETHENE	UG/L	<0.20
TRICHLOROFLUOROMETHANE	UG/L	<2.0
VINYL CHLORIDE	UG/L	<0.20
SURROGATES		
BROMOFLUOROBENZENE (ELCD)	%	83
BROMOFLUOROBENZENE (PID)	%	91

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : EPA 601 (HALOGENATED VOLATILE ORGANICS)
MSMSD # : 77360
Client : ALISTO ENGINEERING

Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 20-JUL-95
Sample Matrix : WATER
REF I.D. : REAGENT WATER

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
CHLOROBENZENE	UG/L	<0.50	4.0	3.8	95	4.2	105	10
CHLOROFORM	UG/L	<0.20	2.0	2.1	105	2.1	105	0
1,1-DICHLOROETHENE	UG/L	<0.20	2.0	2.0	100	1.9	95	5
TETRACHLOROETHENE	UG/L	<0.20	2.0	1.8	90	1.8	90	0
TRICHLOROETHENE	UG/L	<0.20	2.0	1.7	85	1.8	90	6

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

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

BLANK SPIKE

Test : EPA 601 (HALOGENATED VOLATILE ORGANICS)
Blank Spike #: 57860
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name : BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 19-JUL-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
CHLOROBENZENE	UG/L	<0.50	3.6	4.0	90
CHLOROFORM	UG/L	<0.20	2.0	2.0	100
1,1-DICHLOROETHENE	UG/L	<0.20	2.0	2.0	100
TETRACHLOROETHENE	UG/L	<0.20	1.6	2.0	80
TRICHLOROETHENE	UG/L	<0.20	1.9	2.0	95

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

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS: C7-C24)
Client : ALISTO ENGINEERING ATI I.D. : 507095
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
6	S-6	WATER	11-JUL-95	21-JUL-95	24-JUL-95	1.00

Parameter	Units	6
FUEL HYDROCARBONS	MG/L	2.1
HYDROCARBON RANGE		C10-C24+
HYDROCARBONS QUANTITATED USING		DIESEL
SURROGATES		
BIS(2-ETHYLHEXYL) PHTHALATE	%	99

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS)
Blank I.D. : 36150
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: 21-JUL-95
Date Analyzed : 24-JUL-95
Dil. Factor : 1.00

Parameters	Units	Results
FUEL HYDROCARBONS	MG/L	<0.05
HYDROCARBON RANGE		-
HYDROCARBONS QUANTITATED USING		-
SURROGATES		
BIS(2-ETHYLHEXYL)PHTHALATE	%	67

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS)
MSMSD # : 77313
Client : ALISTO ENGINEERING

Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: 21-JUL-95
Date Analyzed : 24-JUL-95
Sample Matrix : WATER
REF I.D. : REAGENT WATER

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
FUEL HYDROCARBONS	MG/L	<0.050	1.0	0.65	65	0.64	64	2

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

Analytical**Technologies,**Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507095
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
1	S-1	WATER	11-JUL-95	N/A	22-JUL-95	10.00
2	S-2	WATER	11-JUL-95	N/A	22-JUL-95	1.00
3	S-3	WATER	11-JUL-95	N/A	24-JUL-95	1.00

Parameter	Units	1	2	3
BENZENE	UG/L	390	<0.50	<0.50
TOLUENE	UG/L	13	<0.50	<0.50
ETHYLBENZENE	UG/L	28	<0.50	<0.50
XYLENES (TOTAL)	UG/L	23	<1.0	<1.0
FUEL HYDROCARBONS	UG/L	7300	<50	<50
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	145*H	88	87

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507095
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
4	S-4	WATER	11-JUL-95	N/A	24-JUL-95	1.00
5	S-5	WATER	11-JUL-95	N/A	22-JUL-95	1.00
6	S-6	WATER	11-JUL-95	N/A	24-JUL-95	1.00

Parameter	Units	4	5	6
BENZENE	UG/L	0.57	<0.50	0.57@E
TOLUENE	UG/L	<0.50	<0.50	<0.50
ETHYLBENZENE	UG/L	<0.50	<0.50	<0.50
XYLENES (TOTAL)	UG/L	<1.0	3.5	<1.0
FUEL HYDROCARBONS	UG/L	82	320	78
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	96	106	100

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507095
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
7	S-7	WATER	11-JUL-95	N/A	22-JUL-95	50.00
8	S-8	WATER	11-JUL-95	N/A	25-JUL-95	100.00
9	S-9	WATER	11-JUL-95	N/A	25-JUL-95	100.00

Parameter	Units	7	8	9
BENZENE	UG/L	2200	3300	6800
TOLUENE	UG/L	84	99	1000
ETHYLBENZENE	UG/L	<25	7.5	900
XYLENES (TOTAL)	UG/L	2500	4600	4900
FUEL HYDROCARBONS	UG/L	15000	19000	28000
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
SURROGATES				
TRIFLUOROTOLUENE	%	98	101	106

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
Client : ALISTO ENGINEERING ATI I.D. : 507095
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
10	S-10	WATER	11-JUL-95	N/A	24-JUL-95	1.00

Parameter	Units	10
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	%	89

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36159
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 22-JUL-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

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36160
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 22-JUL-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	%	96

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36161
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 24-JUL-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	%	101

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36162
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted : N/A
Date Analyzed : 24-JUL-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

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank I.D. : 36163
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 25-JUL-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	%	101

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
MSMSD # : 77271
Client : ALISTO ENGINEERING

Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 20-JUL-95
Sample Matrix : WATER
REF I.D. : 507065-01

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	5.1	102	4.8	96	6
TOLUENE	UG/L	<0.50	5.0	5.3	106	5.1	102	4

% 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 # : 77306
Client : ALISTO ENGINEERING

Project # : G463058/10-061-04/003
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 21-JUL-95
Sample Matrix : WATER
REF I.D. : 507059-03

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	5.1	102	5.0	100	2
TOLUENE	UG/L	<0.50	5.0	5.4	108	5.3	106	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

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 57819
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name : BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 22-JUL-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	5.0	5.0	100
TOLUENE	UG/L	<0.50	5.2	5.0	104

% 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 #: 57820
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name : BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 22-JUL-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 #: 57821
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name : BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 24-JUL-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	5.1	5.0	102
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

Analytical Technologies, Inc.

GAS CHROMATOGRAPHY - QUALITY CONTROL

BLANK SPIKE

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
Blank Spike #: 57822
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name : BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 24-JUL-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	5.1	5.0	102

% 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 #: 57823
Client : ALISTO ENGINEERING
Project # : G463058/10-061-04/003
Project Name : BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 507095
Date Extracted: N/A
Date Analyzed : 25-JUL-95
Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	4.9	5.0	98
TOLUENE	UG/L	<0.50	5.2	5.0	104

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

ANALYTICAL TECHNOLOGIES, INC.
SAN DIEGO
FLAGS

ORGANICS

FLAG	MESSAGE DESCRIPTION
A	A TIC IS A SUSPECTED ALDOL-CONDENSATION PRODUCT
B	ANALYTE FOUND IN THE ASSOCIATED REAGENT BLANK
C	PESTICIDE, WHERE THE IDENTIFICATION WAS CONFIRMED BY GC/MS
CO	THESE COMPOUNDS CO-ELUTE AND ARE QUANTITATED AS ONE PEAK
D	COMPOUND IDENTIFIED IN AN ANALYSIS AT SECONDARY DILUTION
E	ANALYTE AMOUNT EXCEEDS THE CALIBRATION RANGE
J	ESTIMATED VALUE
H	QUANTIFIED AS DIESEL BUT CHROMATOGRAPHIC PATTERN DOES NOT MATCH THAT OF DIESEL
K	QUANTIFIED AS KEROSENE BUT CHROMATOGRAPHIC PATTERN DOES NOT MATCH THAT OF KEROSENE
L	QUANTIFIED AS GASOLINE BUT CHROMATOGRAPHIC PATTERN DOES NOT MATCH THAT OF GASOLINE
N	PRESUMPTIVE EVIDENCE OF A COMPOUND
P	PESTICIDE/AROCLOR TARGET ANALYTE, WHERE THERE IS GREATER THAN 25% DIFFERENCE FOR DETECTED CONCENTRATION BETWEEN 2 GC COLUMNS
TR	COMPOUND DETECTED AT AN UNQUANTIFIABLE TRACE LEVEL
U	COMPOUND WAS ANALYZED FOR BUT NOT DETECTED
X	SEE CASE NARRATIVE
Y	SEE CASE NARRATIVE
Z	SEE CASE NARRATIVE
*	OUTSIDE OF QUALITY CONTROL LIMITS
*D	COMPOUND ANALYZED FROM A SECONDARY ANALYSIS
*F	RESULT OUTSIDE OF ATI'S QUALITY CONTROL LIMITS
*G	RESULT OUTSIDE QUALITY CONTROL LIMITS. INSUFFICIENT SAMPLE FOR RE-EXTRACTION/ANALYSIS
*H	RESULT OUTSIDE OF LIMITS DUE TO SAMPLE MATRIX INTERFERENCE
*I	BECAUSE OF NECESSARY SAMPLE DILUTION, VALUE WAS OUTSIDE QC LIMITS
*K	DUE TO THE NECESSARY DILUTION OF THE SAMPLE, RESULT WAS NOT ATTAINABLE
*L	ANALYTE IS A SUSPECTED LAB CONTAMINANT
*P	A STANDARD WAS USED TO QUANTITATE THIS VALUE
*R	DATA IS NOT USABLE
*T	SURROGATE RECOVERY IS OUTSIDE QC CONTROL LIMITS. NO CORRECTIVE ACTION INDICATED BY METHOD
*V	SAMPLE RESULT IS >4X SPIKED CONCENTRATION, THEREFORE SPIKE IS NOT DETECTABLE
*Y	RESULT NOT ATTAINABLE DUE TO SAMPLE MATRIX INTERFERENCE
@A	RESULTS OUT OF LIMITS DUE TO SAMPLE NON-HOMOGENEITY
@C	*VARIABLE MESSAGE*
@D	RESULT COULD NOT BE CONFIRMED DUE TO MATRIX INTERFERENCE ON THE CONFIRMATION COLUMN
@E	RESULT MAY BE FALSELY ELEVATED DUE TO SAMPLE MATRIX INTERFERENCE
@F	RESULT OUTSIDE OF CONTRACT SPECIFIED QUALITY CONTROL LIMITS
@G	RESULT OUTSIDE OF CONTRACT SPECIFIED ADVISORY LIMITS
@H	DETECTION LIMIT ELEVATED DUE TO MATRIX INTERFERENCE
@M	RESULT NOT CONFIRMED BY U.V. DUE TO SAMPLE MATRIX INTERFERENCE
@N	RESULT NOT CONFIRMED BY FLUORESCENCE DUE TO SAMPLE MATRIX INTERFERENCE
@P	RESULT QUANTITATED USING FLUORESCENCE ONLY DUE TO THE LOW CONCENTRATION
@Q	DETECTION LIMIT ELEVATED DUE TO LIMITED SAMPLE FOR ANALYSIS
@T	RESULT DUE TO TCLP EXTRACTION MATRIX INTERFERENCE. NO QC LIMITS HAVE BEEN ESTABLISHED
@U	SAMPLE CHROMATOGRAM DOES NOT RESEMBLE COMMON FUEL HYDROCARBON FINGERPRINTS
@Z	SAMPLE CHROMATOGRAM DOES NOT RESEMBLE A FUEL HYDROCARBON

ACCESSION #: 567095 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.	2.0 °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: *COC Filled out with Red ink.

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

507095

BP

CHAIN OF CUSTODY

No. 055939 Page ____ of ____

CONSULTANT'S NAME	ADDRESS	CITY	STATE	ZIP CODE
Alisto Engineering	1575 Treat Blvd #201	Walnut Creek	Ca	94596

BP SITE NUMBER	BP CORNER ADDRESS/CITY	CONSULTANT PROJECT NUMBER
11126	/ Emeryville, Ca	10-061-04/003

CONSULTANT PROJECT MANAGER	PHONE NUMBER	FAX NUMBER	CONSULTANT CONTRACT NUMBER
Bill Howell	(510) 295-1650	295-1823	6463058

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

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

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

AIRBILL NUMBER: 1818921064

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	TPH-D	TOG 5520	HVOC 8010							COMMENTS
S-1	7/11/95	W	2	HCl	01	X										
S-2	↓	↓	↓	Voas	02	↓										
S-3				↓	03											
S-4					04											
S-5					05											
S-6					06		X	X	X							
S-7					07											
S-8					08											
S-9					09											
S-10	↓	↓	↓	↓	10	↓										

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
[signature]	7/13/95		[signature]	7/14/95	9:00

ADDITIONAL COMMENTS: 2.0°C

CLV-16722

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