



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 22, 1996

Alameda County Health Care Services Agency
Attention Ms. Susan Hugo
1131 Harbor Bay Parkway, Ste.

RE: BP Oil Site No. 11126
1700 Powell St.
Emeryville, CA

Dear Ms. Hugo:

Enclosed please find a report titled Groundwater Monitoring and Sampling Report, dated January 24, 1996. Upon review of the results, you will note that petroleum hydrocarbon constituents were detected in five of the wells. Liquid petroleum hydrocarbon (0.05 feet) was measured in well MW-9, and was subsequently pumped out.

As mentioned in prior correspondence, Pacific Environmental Group has been contracted to perform a soil-vapor extraction test, however, the field work has not been performed due to high water level conditions.

By copy of this letter to Alisto Engineering group, all of the wells should be sampled for total dissolved solids during the next quarterly sampling event.

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

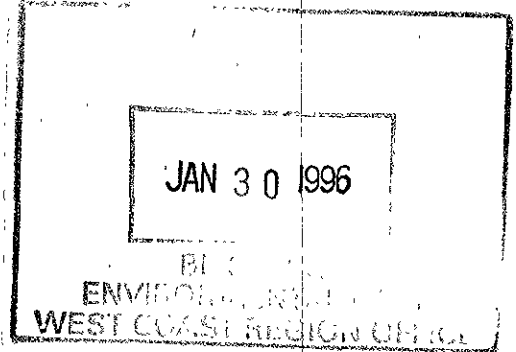
attachment

cc: A. Lehane - Pacific
B. Nagle - Alisto
CRWQCB-SFBR, Attention E. So, 2101 Webster Street, Ste. 500, Oakland, CA
94612 (w/attachment)
site file

GROUNDWATER MONITORING AND SAMPLING REPORT

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

Project No. 10-061-06-002



Prepared for:

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

Prepared by:

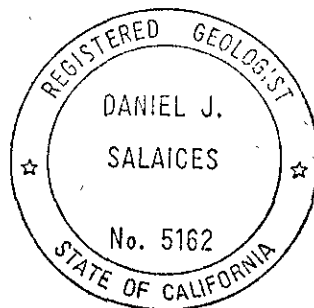
Alisto Engineering Group
1575 Treat Boulevard, Suite 201
Walnut Creek, California

(510) 295-1650
for (510) 295-1823

January 24, 1996

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. 10-061-06-002

January 24, 1996

INTRODUCTION

This report presents the results and findings of the November 2 and 3, 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 on 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 on Figure 2. The results of groundwater analysis are shown on 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. 11126
 1700 POWELL STREET, EMERYVILLE, CALIFORNIA

ALISTO PROJECT NO. 10-061

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (Feet)	DEPTH TO WATER (a) (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (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-1	11/02/95	7.76	4.58	--	3.18	19000	--	920	ND<100	ND<100	430	52000	--	--	7.3	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-2	11/02/95	8.56	5.55	--	3.01	20000	--	3800	1200	570	2700	15000	--	--	7.3	ATI
QC-1 (c)	11/02/95	--	--	--	--	22000	--	4000	1200	600	2700	19000	--	--	--	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	--	30	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-3	11/02/95	8.25	6.29	--	1.96	250	2000	0.73	ND<0.50	ND<0.50	1.8	270	1400	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
MW-4	11/02/95	8.12	6.78	--	1.34	71	--	1.4	0.96	0.99	2.8	140	--	--	8.6	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 (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (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-5	11/03/95	7.69	6.65	--	1.04	7200	--	270	15	38	23	200	--	--	8.4	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-6	11/02/95	8.52	6.57	--	1.95	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	35	--	--	8.3	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-7	11/02/95	7.61	6.19	--	1.42	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	55	--	--	8.0	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
MW-8	11/02/95	8.60	6.81	--	1.79	100	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	--	--	8.7	ATI
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	--	--	--	--	--	--	--	--	--	--	--
MW-9 (e)	11/02/95	8.08	5.22	0.05	2.90	--	--	--	--	--	--	--	--	--	--	--

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 (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	TOG (ug/l)	HVOC (ug/l)	DO (ppm)	LAB
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
QC-2	(f) 11/02/95	--	--	--	--	ND<50	--	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	--	--	--	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
 MTBE Methyl tert butyl ether
 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.

F:\010-061\061-6-2.WC2



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

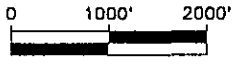
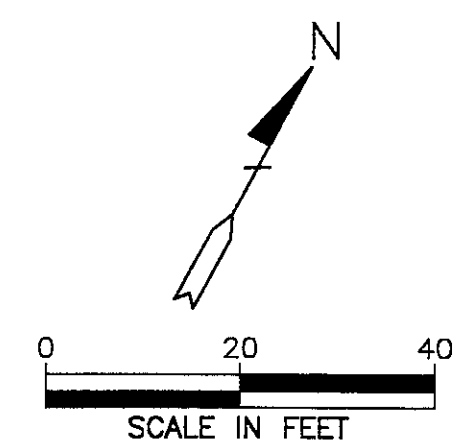
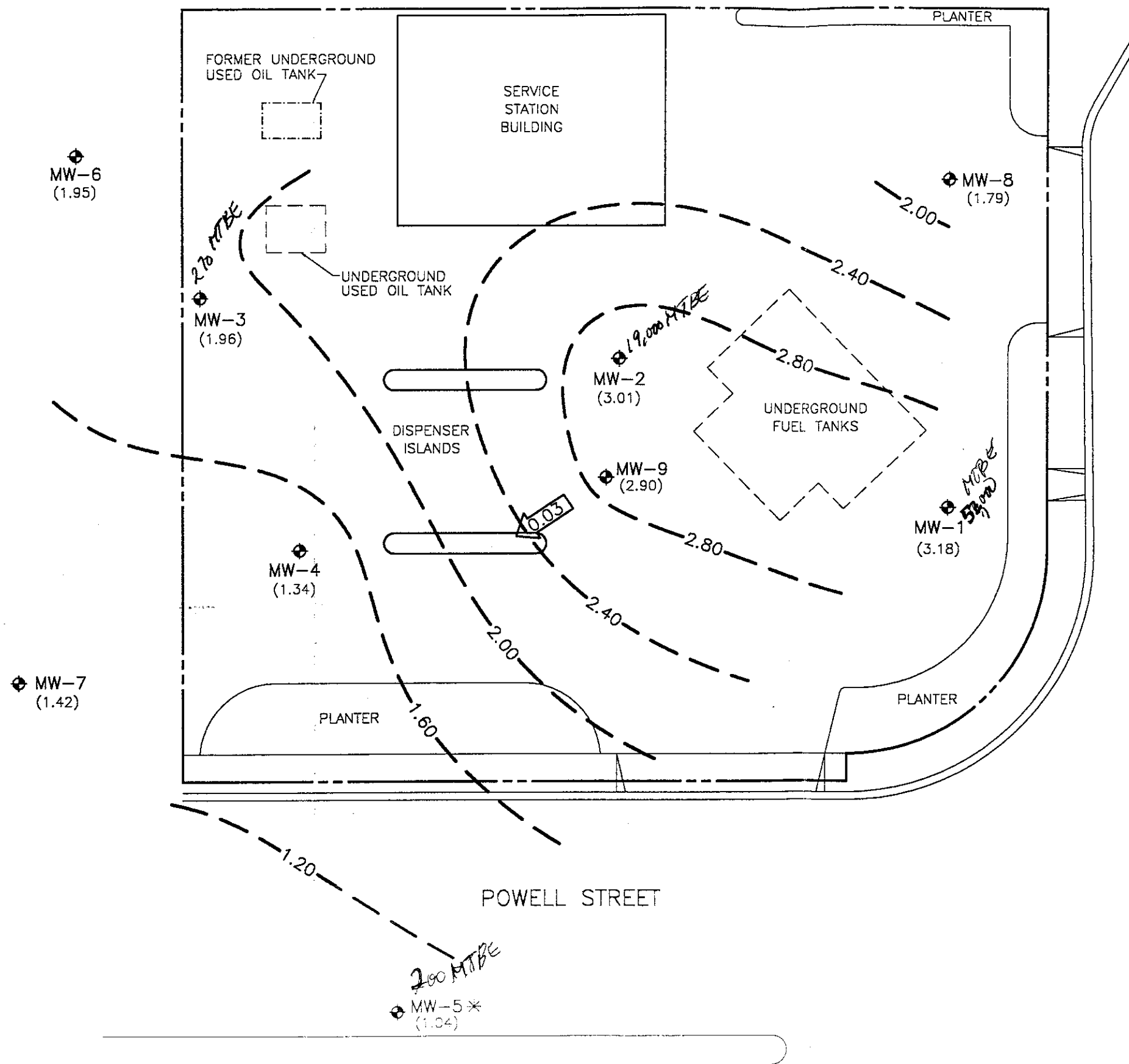


FIGURE 1
SITE VICINITY MAP
 BP OIL SERVICE STATION NO. 11126
 1700 POWELL STREET
 EMERYVILLE, CALIFORNIA
 PROJECT NO. 10-061

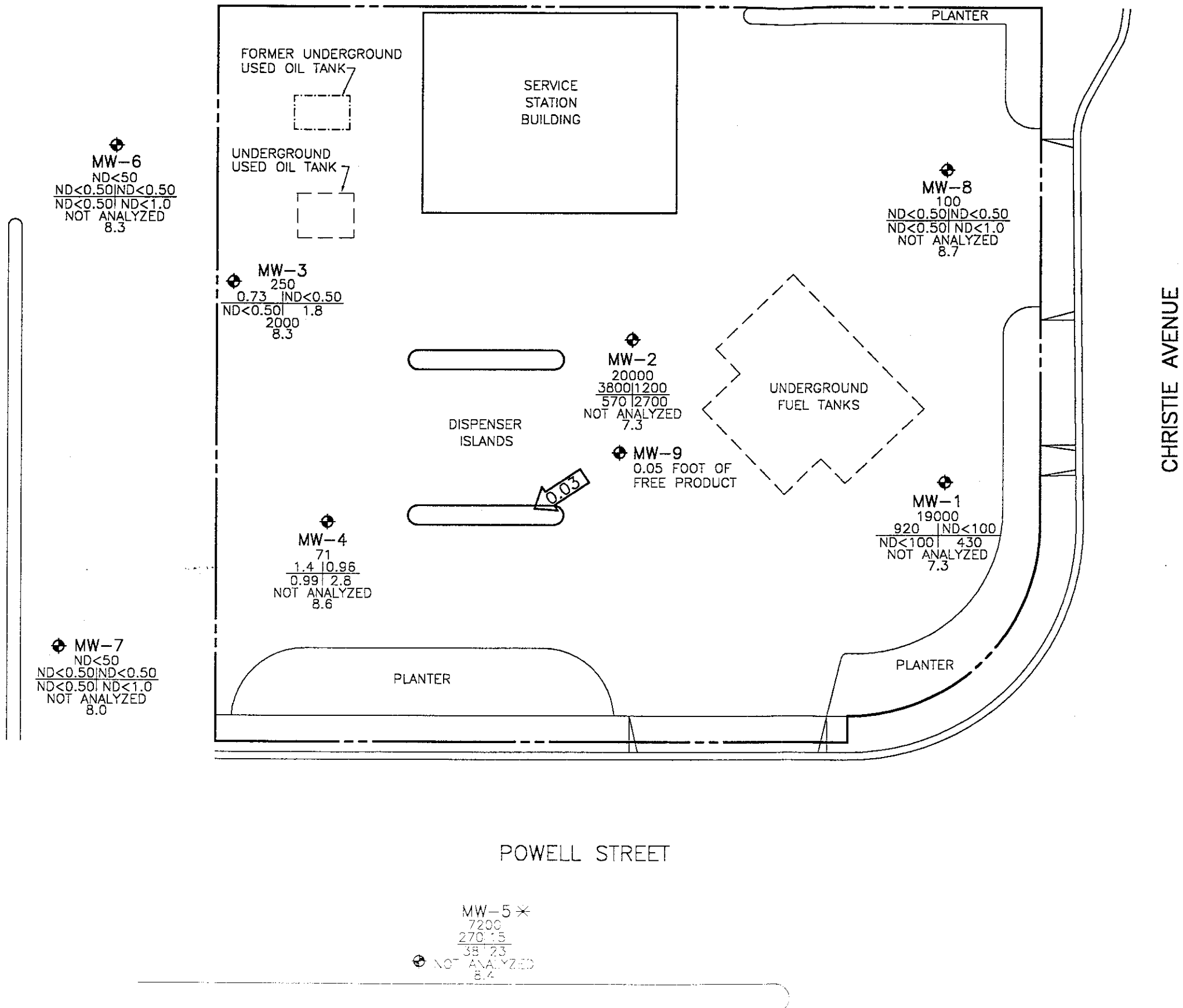




- LEGEND**
- ◆ GROUNDWATER MONITORING WELL
 - (1.79) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
 - 2.00 - GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL-0.40 FOOT)
 - ← 0.03 → CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
 - * GROUNDWATER ELEVATION MONITORED ON 11/3/95

FIGURE 2
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP
 NOVEMBER 2 & 3, 1995
 BP OIL SERVICE STATION NO. 11126
 1700 POWELL STREET
 EMERYVILLE, CALIFORNIA
 PROJECT NO. 10-061

100010-P-1000 12-12-95 10-061



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
- ←0.03→ CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT
- * WELL SAMPLED ON 11/3/95

FIGURE 3
CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER
NOVEMBER 2 & 3, 1995
BP OIL SERVICE STATION NO. 11126
1700 POWELL STREET
EMERYVILLE, CALIFORNIA
PROJECT NO. 10-061

APPENDIX A
WATER SAMPLING FIELD SURVEY FORMS

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201

Project No. 10-061-06-002 Date: 11/2/95 & 11/3/95
Address 1700 Powell St. Day: M T W T F
Contract No. G602099 City: Emeryville
Station No. BP 11126 Sampler: CEB

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME SAMPLED	COMMENTS:
MW-1	S-7	2"	11.62	4.58	Ø	1427	
MW-2	S-8	1"	11.83	5.55	Ø	1529	QC-1 = S-9 S-10 = Trip Blank
MW-3	S-6	1"	12.08	6.29	Ø	1415	
MW-4	S-4	1"	11.06	6.78	Ø	1250	
MW-5	S-1	1"	13.70	6.65	Ø	1430	Sampled 11/3/95 Traffic Control
MW-6	S-3	1"	13.25	6.57	Ø	1227	
MW-7	S-2	1"	13.72	6.19	Ø	1152	
MW-8	S-5	1"	13.65	6.81	Ø	1335	
MW-9	S-9	4"	N/A	5.22	0.05	N/A	Not Sampled due to presence of FP

FIELD INSTRUMENT CALIBRATION DATA

pH METER Icm 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED N TIME 1000
D.O. METER Icm ZERO d.O. SOLUTION 0 BAROMETRIC PRESSURE 760 TEMP 64 WEATHER cloudy
CONDUCTIVITY METER Icm 10,000 10,000 TURBIDITY METER _____ 5.0 NTU _____ OTHER _____

Well ID	Depth to Water	Diam	Cap/Lock	Product	Dept	Iridescence	Gal.	Time	Temp °F	pH	E.C.	D.O.	TIME/SAMPLE ID
MW-5	6.65	2"	Repaired	Ø	Y (N)		15	1410	66.2	7.97	3.87ms	7.9	<input type="radio"/> EPA 601 <input checked="" type="radio"/> TPH-G/BTEX HCL <input type="radio"/> TPH Diesel <input type="radio"/> TOG 5520
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge Purge Vol.							22		64.4	7.82	3.61ms		
13.70 - 6.65 = 7.05 X .16 = 1.13 x 3 = 3.39							35	1425	63.9	7.76	3.59ms	8.4	
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> O Sys Port													
Comments:													
MW-7	6.19	2"	Repaired Lock	Ø	Y (N)		1	1143	68.5	7.63	4.03ms	8.3	<input type="radio"/> EPA 601 <input checked="" type="radio"/> TPH-G/BTEX HCL <input type="radio"/> TPH Diesel <input type="radio"/> TOG 5520
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge Purge Vol.							2		65.1	7.54	3.86ms		
13.72 - 6.19 = 7.53 X .16 = 1.20 X 3 = 3.60							4	1150	64.5	7.48	3.92ms	8.0	
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> Disp. Tube <input type="checkbox"/> Winch <input type="checkbox"/> Disp. Bailer(s) <input type="checkbox"/> O Sys Port													
Comments:													

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.

10-061-06-002

Date:

11/2/95

Address

1700 Powell St.

Day:

M T W T F

Contract No.

G602099

City:

Emeryville

Station No.

BP 11126

Sampler:

LB

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-6	13.25	2"	6.57		Y (N)	1	1210	66.4	7.73	4.11ms	7.9	<input type="radio"/> EPA 601
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						2		65.7	7.64	4.03ms		<input checked="" type="radio"/> TPH-G/BTEX HCL
13.25 - 6.57 = 6.68 x .16 = 1.07 x 3 = 3.21						3.5	65.3	7.57	3.98ms	8.3		<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp. Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailer(s) <input type="checkbox"/> OSys Port							1224					<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1227
MW-4	11.06	2"	OK		Y (N)	1	1236	65.3	7.99	4.07ms	8.4	<input type="radio"/> EPA 601
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						2		64.3	7.88	4.00ms		<input checked="" type="radio"/> TPH-G/BTEX HCL
11.06 - 6.78 = 4.28 x .16 = .68 x 3 = 2.04						2.5	1245	63.7	7.88	3.92ms	8.6	<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp. Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailer(s) <input type="checkbox"/> OSys Port												<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1250
MW-8	13.65	2"	OK		Y (N)	1	1317	65.7	8.18	2.11ms	8.8	<input type="radio"/> EPA 601
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						2		64.8	8.03	2.04ms		<input checked="" type="radio"/> TPH-G/BTEX HCL
13.65 - 6.81 = 6.84 x .16 = 1.09 x 3 = 3.27						3.5	1325	64.5	7.98	2.01ms	8.7	<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp. Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailer(s) <input type="checkbox"/> OSys Port												<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1335
MW-3	12.08	2"	OK		Y (N)	1	1401	67.3	7.55	4.89ms	8.5	<input type="radio"/> EPA 601
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						2		66.1	7.42	4.70ms		<input checked="" type="radio"/> TPH-G/BTEX HCL
12.08 - 6.29 = 5.79 x .16 = .92 x 3 = 2.76						3	1411	65.3	7.39	4.67ms	8.3	<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp. Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailer(s) <input type="checkbox"/> OSys Port												<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1415
MW-1	11.62	2"	OK		Y (N)	1	1419	66.3	8.03	1.62ms	7.3	<input type="radio"/> EPA 601
Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.						2		65.4	7.83	1.41ms		<input checked="" type="radio"/> TPH-G/BTEX HCL
11.62 - 4.58 = 7.04 x .16 = 1.13 x 3 = 3.39						3.5	1425	64.8	7.79	1.35ms	7.3	<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump <input type="checkbox"/> ODisp. Tube <input type="checkbox"/> OWinch <input type="checkbox"/> ODisp. Bailer(s) <input type="checkbox"/> OSys Port												<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1427

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.

10-061-06-002

Address

1700 Powell St.

Contract No.

G602099

Station No.

BP 11126

Sampler:

CB

Date:

11/2/95

Day:

MTWTF

City:

Emeryville

Well ID	Depth to Water	Diam	Cap/Lock	Product	Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-2	5.55	2"	OK	Ø	Y	Ⓝ	1	1459	66.9	7.92	1.67ms	7.1
Total Depth - Water Level=							x Well Vol. Factor=	x#vol. to Purge		PurgeVol.		
11.83 - 5.55 = 6.28							x 1.6 =	1.00 x 3 =		3.00		
Purge Method: <input checked="" type="checkbox"/> Surface Pump							<input type="checkbox"/> Disp. Tube	<input type="checkbox"/> Winch	<input type="checkbox"/> Disp. Bailer(s)	<input type="checkbox"/> Sys Port		
Comments: DC-1 Dip taken from this well 5-9												

- EPA 601
 - TPH-G/BTEX *ALL*
 - TPH Diesel
 - TOG 5520
- TIME/SAMPLE ID

1529

Well ID	Depth to Water	Diam	Cap/Lock	Product	Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-9	5.22	4"	OK	.05	Y	Ⓝ						
Total Depth - Water Level=							x Well Vol. Factor=	x#vol. to Purge		PurgeVol.		
Pumped out 7 gal TF, .02 gal FF												
Purge Method: <input checked="" type="checkbox"/> Surface Pump							<input type="checkbox"/> Disp. Tube	<input type="checkbox"/> Winch	<input type="checkbox"/> Disp. Bailer(s)	<input type="checkbox"/> Sys Port		
Comments:												

- EPA 601
 - TPH-G/BTEX
 - TPH Diesel
 - TOG 5520
- TIME/SAMPLE ID

MW-9 DTP = 5.17'

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.: 511093

November 20, 1995

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

Project Name: BP SITE#11126/EMERYVILLE, CA
Project # : G602099/10-61-4-4


Attention: BRADY NAGLE

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

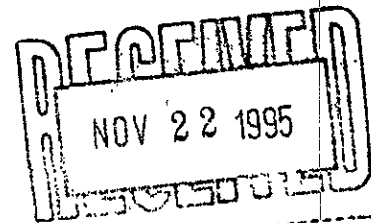
<u>Date Received</u>	<u>Quantity</u>	<u>Matrix</u>
November 07, 1995	10	WATER

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



SAMPLE CROSS REFERENCE

Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

Report Date: November 20, 1995
 ATI I.D. : 511093

ATI #	Client Description	Matrix	Date Collected
1	S-1	WATER	03-NOV-95
2	S-2	WATER	02-NOV-95
3	S-3	WATER	02-NOV-95
4	S-4	WATER	02-NOV-95
5	S-5	WATER	02-NOV-95
6	S-6	WATER	02-NOV-95
7	S-7	WATER	02-NOV-95
8	S-8	WATER	02-NOV-95
9	S-9	WATER	02-NOV-95
10	S-10	WATER	02-NOV-95

---TOTALS---

<u>Matrix</u>	<u># Samples</u>
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 SCHEDULE

Client : ALISTO ENGINEERING
Project # : G602099/10-61-4-4
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D.: 511093

Analysis	Technique/Description
EPA 413.2 (OIL & GREASE)	INFRARED SPECTROMETER
EPA 8010 (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

GENERAL CHEMISTRY RESULTS

Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D.: 511093

Sample Client ID #	Matrix	Date Sampled	Date Received
6 S-6	WATER	02-NOV-95	07-NOV-95
Parameter	Units		
OIL AND GREASE	MG/L	1.4	

GENERAL CHEMISTRY - QUALITY CONTROL

DUP/MS

Client : ALISTO ENGINEERING

Project # : G602099/10-61-4-4

ATI I.D. : 511093

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	511044-01	MG/L	1.0	1.2	18	5.4	5.0	88

% Recovery = (Spike Sample Result - Sample Result)*100/Spike Concentration

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

GENERAL CHEMISTRY - QUALITY CONTROL

BLANK SPIKE

Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093

Parameters	Blank Spike ID#	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
OIL AND GREASE	59886	MG/L	<0.05	4.3	5.0	86

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

GAS CHROMATOGRAPHY RESULTS

Test : EPA 8010 (HALOGENATED VOLATILE ORGANICS)
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
6	S-6	WATER	02-NOV-95	N/A	13-NOV-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)	%	73
BROMOFLUOROBENZENE (PID)	%	72

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Page 7

Test : EPA 8010 (HALOGENATED VOLATILE ORGANICS)
 Blank I.D. : 37373
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
 Date Extracted: N/A
 Date Analyzed : 13-NOV-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
<u>SURROGATES</u>		
BROMOFLUOROBENZENE (ELCD)	%	99
BROMOFLUOROBENZENE (PID)	%	84

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Page 8

Test : EPA 8010 (HALOGENATED VOLATILE ORGANICS)
 MSMSD # : 80081
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
 Date Extracted: N/A
 Date Analyzed : 16-NOV-95
 Sample Matrix : WATER
 REF I.D. : 511119-03

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
CHLOROBENZENE	UG/L	<0.5	4.0	3.9	98	3.8	95	3
CHLOROFORM	UG/L	1.7	2.0	3.6	95	3.4	85	6
1,1-DICHLOROETHENE	UG/L	<0.2	2.0	2.1	105	2.0	100	5
TETRACHLOROETHENE	UG/L	<0.2	2.0	1.9	95	1.8	90	5
TRICHLOROETHENE	UG/L	<0.2	2.0	1.9	95	1.8	90	5

% 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 : EPA 8010 (HALOGENATED VOLATILE ORGANICS)
 Blank Spike #: 60078
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name : BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
 Date Extracted: N/A
 Date Analyzed : 13-NOV-95
 Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
CHLORO BENZENE	UG/L	<0.50	3.8	4.0	95
CHLOROFORM	UG/L	<0.20	1.9	2.0	95
1,1-DICHLOROETHENE	UG/L	<0.20	1.9	2.0	95
TETRACHLOROETHENE	UG/L	<0.20	1.8	2.0	90
TRICHLOROETHENE	UG/L	<0.20	1.8	2.0	90

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

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS: C7-C24)
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
6	S-6	WATER	02-NOV-95	10-NOV-95	13-NOV-95	1.00

Parameter	Units	6
FUEL HYDROCARBONS	MG/L	2.0
HYDROCARBON RANGE		C7-C24+
HYDROCARBONS QUANTITATED USING		DIESEL

<u>SURROGATES</u>		
BIS (2-ETHYLHEXYL) PHTHALATE	%	91

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS)
Blank I.D. : 37332
Client : ALISTO ENGINEERING
Project # : G602099/10-61-4-4
Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
Date Extracted: 10-NOV-95
Date Analyzed : 13-NOV-95
Dil. Factor : 1.00

Parameters	Units	Results
FUEL HYDROCARBONS	MG/L	<0.05
HYDROCARBON RANGE		-
HYDROCARBONS QUANTITATED USING		-
<u>SURROGATES</u>		
BIS (2-ETHYLHEXYL) PHTHALATE	%	99

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS)
 MSMSD # : 79946
 Client : ALISTO ENGINEERING

ATI I.D. : 511093
 Date Extracted: 10-NOV-95
 Date Analyzed : 13-NOV-95
 Sample Matrix : WATER
 REF I.D. : REAGENT WATER

Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
FUEL HYDROCARBONS	MG/L	<0.05	1.0	0.93	93	0.91	91	2

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

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
 Client : ALISTO ENGINEERING ATI I.D. : 511093
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
4	S-4	WATER	02-NOV-95	N/A	14-NOV-95	1.00
5	S-5	WATER	02-NOV-95	N/A	15-NOV-95	1.00
6	S-6	WATER	02-NOV-95	N/A	16-NOV-95	1.00

Parameter	Units	4	5	6
METHYL T-BUTYL ETHER	UG/L	140	<5.0	270
BENZENE	UG/L	1.4	<0.50	0.73
TOLUENE	UG/L	0.96	<0.50	<0.50
ETHYLBENZENE	UG/L	0.99	<0.50	<0.50
XYLENES (TOTAL)	UG/L	2.8	<1.0	1.8
FUEL HYDROCARBONS	UG/L	71	100	250
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
<u>SURROGATES</u>				
TRIFLUOROTOLUENE	%	124*H	94	133*H

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
 Client : ALISTO ENGINEERING ATI I.D. : 511093
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
7	S-7	WATER	02-NOV-95	N/A	15-NOV-95	200.00
8	S-8	WATER	02-NOV-95	N/A	15-NOV-95	50.00
9	S-9	WATER	02-NOV-95	N/A	15-NOV-95	100.00

Parameter	Units	7	8	9
METHYL T-BUTYL ETHER	UG/L	52000	15000	19000
BENZENE	UG/L	920	3800	4000
TOLUENE	UG/L	<100	1200	1200
ETHYLBENZENE	UG/L	<100	570	600
XYLENES (TOTAL)	UG/L	430	2700	2700
FUEL HYDROCARBONS	UG/L	19000	20000	22000
HYDROCARBON RANGE		C6-C12	C6-C12	C6-C12
HYDROCARBONS QUANTITATED USING		GASOLINE	GASOLINE	GASOLINE
<u>SURROGATES</u>				
TRIFLUOROTOLUENE	%	92	86	91

GAS CHROMATOGRAPHY RESULTS

Test : MOD EPA 8015-CDOHS/8020 (HYDROCARBONS C6-C12/BTXE)
 Client : ALISTO ENGINEERING ATI I.D. : 511093
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

Sample #	Client ID	Matrix	Date Sampled	Date Extracted	Date Analyzed	Dil. Factor
10	S-10	WATER	02-NOV-95	N/A	15-NOV-95	1.00

Parameter	Units	10
METHYL T-BUTYL ETHER	UG/L	<5.0
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
<u>SURROGATES</u>		
TRIFLUOROTOLUENE	%	91

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
 Blank I.D. : 37340
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
 Date Extracted: N/A
 Date Analyzed : 14-NOV-95
 Dil. Factor : 1.00

Parameters	Units	Results
METHYL T-BUTYL ETHER	UG/L	<5.0
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
<u>SURROGATES</u>		
TRIFLUOROTOLUENE	%	95

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
 Blank I.D. : 37347
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
 Date Extracted: N/A
 Date Analyzed : 15-NOV-95
 Dil. Factor : 1.00

Parameters	Units	Results
METHYL T-BUTYL ETHER	UG/L	<5.0
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
<u>SURROGATES</u>		
TRIFLUOROTOLUENE	%	96

GAS CHROMATOGRAPHY - QUALITY CONTROL

REAGENT BLANK

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
 Blank I.D. : 37365
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
 Date Extracted: N/A
 Date Analyzed : 16-NOV-95
 Dil. Factor : 1.00

Parameters	Units	Results
METHYL T-BUTYL ETHER	UG/L	<5.0
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
<u>SURROGATES</u>		
TRIFLUOROTOLUENE	%	96

GAS CHROMATOGRAPHY - QUALITY CONTROL

MSMSD

Test : MOD EPA 8015-CDOHS (FUEL HYDROCARBONS/BTXE)
 MSMSD # : 80056
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name: BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
 Date Extracted: N/A
 Date Analyzed : 14-NOV-95
 Sample Matrix : WATER
 REF I.D. : 511093-03

Parameters	Units	Sample Result	Conc Spike	Spiked Sample	% Rec	Dup Spike	Dup % Rec	RPD
BENZENE	UG/L	<0.50	5.0	5.1	102	5.2	104	2
TOLUENE	UG/L	<0.50	5.0	5.2	104	5.2	104	0

% 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 #: 59996
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name : BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
 Date Extracted: N/A
 Date Analyzed : 14-NOV-95
 Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	5.2	5.0	104
TOLUENE	UG/L	<0.50	5.3	5.0	106

% 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)	ATI I.D.	: 511093
Blank Spike #:	60017	Date Extracted:	N/A
Client	: ALISTO ENGINEERING	Date Analyzed:	15-NOV-95
Project #	: G602099/10-61-4-4	Sample Matrix:	WATER
Project Name	: BP SITE#11126/EMERYVILLE, CA		

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	5.1	5.0	102
TOLUENE	UG/L	<0.50	5.1	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 #: 60057
 Client : ALISTO ENGINEERING
 Project # : G602099/10-61-4-4
 Project Name : BP SITE#11126/EMERYVILLE, CA

ATI I.D. : 511093
 Date Extracted: N/A
 Date Analyzed : 16-NOV-95
 Sample Matrix : WATER

Parameters	Units	Blank Result	Spiked Sample	Spike Conc.	% Rec
BENZENE	UG/L	<0.50	5.3	5.0	106
TOLUENE	UG/L	<0.50	5.5	5.0	110

% 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

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 ? a) are Custody Seals present on Cooler(s) ? If yes, are seals intact ? b) are Custody Seals present on the sample ? If yes, are seals intact ?	YES	NO
		YES	N/A
		YES	NO
		YES	NO
		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. Is ice present in cooler?	YES	NO
			2.0°C
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: * Date taken from C.O.C.
* * 6/11/16 PRES. IN LAB HCL

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



CHAIN OF CUSTODY

No. 071286 Page of

CONSULTANT'S NAME <i>Alicia Engineering</i>		ADDRESS <i>1575 Trout Blvd #201 Walnut Creek CA</i>		CITY <i>Walnut Creek CA</i>	STATE <i>CA</i>	ZIP CODE <i>94598</i>
BP SITE NUMBER <i>1126</i>	BP CORNER ADDRESS/CITY <i>Emeryville, Ca</i>			CONSULTANT PROJECT NUMBER <i>10-61-4-4</i>		
CONSULTANT PROJECT MANAGER <i>Brady Nagle</i>		PHONE NUMBER <i>(510) 295-1650</i>	FAX NUMBER <i>295-1823</i>		CONSULTANT CONTRACT NUMBER <i>6002099</i>	
BP CONTACT <i>Scott Hootel</i>		BP ADDRESS <i>Renton WA.</i>	PHONE NUMBER <i>-</i>		FAX NO. <i>-</i>	
LAB CONTACT <i>Art Gary Stewart</i>		LABORATORY ADDRESS <i>San Diego</i>	PHONE NUMBER <i>-</i>		FAX NO. <i>-</i>	
SAMPLED BY (Please Print Name) <i>Larry Bumenida</i>		SAMPLED BY (Signature) <i>[Signature]</i>		SHIPMENT DATE <i>11-6-95</i>		SHIPMENT METHOD <i>Fed Express</i>

TAT: 24 Hours 48 Hours 1 Week Standard 2 Weeks

ANALYSIS REQUIRED

AIRBILL NUMBER *6680736651*

SAMPLE DESCRIPTION	COLLECTION DATE	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	TPH-G	BTEX	MTBE	TPH-D	TOG	S&P	HVCs	COMMENTS
	COLLECTION TIME		NO.	TYPE (VOL.)	LAB SAMPLE #								
S-1	11-3-95	SW	2	14cc	01								
S-2	11-2-95				02								
S-3					03								<i>2.3 lbs</i>
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	ADDITIONAL COMMENTS
<i>[Signature]</i>	<i>11/6/95</i>		<i>P. Yellom</i>	<i>11/6/95</i>	<i>8:05</i>	<i>Temp 2.0C</i>
<i>[Signature]</i>	<i>11/6/95</i>	<i>1:40</i>	<i>Fredy Chavez</i>	<i>11/11/95</i>	<i>9:20 AM</i>	

LAB ID 511693