



BP OIL

BP Oil Company
Environmental Resources Management
Building 13, Suite N
295 SW 41st Street
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(206) 251-0667
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ET
PA
96 AUG 26

August 19, 1996

Alameda County Health Care Services Agency
Attention Ms. Juliet Shin
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

RE: Former BP Site No. 11117
StID 3690
7210 Bancroft Ave
Oakland, CA

ENVIRONMENTAL
PROTECTION
96 AUG 26 PM 4: 12

Dear Ms. Shin:

This letter transmits a Groundwater Monitoring and Sampling Report, dated July 8, 1996. Upon review of the results reported this quarter, you will note that benzene, ethylbenzene, toluene, xylenes, and total petroleum hydrocarbons were detected in one of the wells sampled this quarter (MW-5). Liquid petroleum hydrocarbons were also encountered in well MW-2. A product recovery canister has been placed in MW-2 to remove liquid petroleum hydrocarbon as it accumulates in the well. Plans for the coming quarter include groundwater monitoring and the removal of liquid petroleum hydrocarbon.

There is no Well 5.

Confirming our August 5, 1996 telephone conversation, please note that we will be submitting a report describing the results of a soil-vapor extraction pilot test performed at the site. This information will allow us to assess whether employment of this technology is feasible. We will follow this report with a risk assessment to assess whether remediation is warranted. If remediation is not warranted, we will assess the stability of the hydrocarbon release to determine if groundwater monitoring is sufficient to address the release.

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: Mr. Kevin Graves - RWQCB-SFBR (w/attachment)
Brady Nagle - Alisto
site file

GROUNDWATER MONITORING AND SAMPLING REPORT

**BP Oil Company Service Station No. 11117
7210 Bancroft Avenue
Oakland, California**

Project No. 10-018-04-003

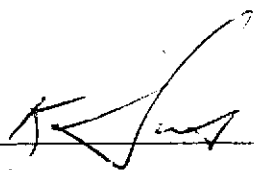
Prepared for:

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

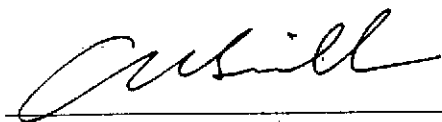
Prepared by:

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

July 8, 1996



**Ken Simas
Project Manager**



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



ENVIRONMENTAL
PROTECTION
PM 4: 12

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GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11117
7210 Bancroft Avenue
Oakland, California

Project No. 10-018-04-003

July 8, 1996

INTRODUCTION

This report presents the results and findings of the April 22, 1996 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11117, 7210 Bancroft Avenue, Oakland, 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 relative 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.

FREE PRODUCT MONITORING AND RECOVERY

A passive product recovery canister has been installed in Monitoring Well MW-2 to recover liquid-phase product. Product thicknesses for this and previous monitoring events are presented in Table 1. The volume of free product recovered from the wells is presented in Table 2.



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. 11117
 7210 BANCROFT AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-018

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)	MTBE (ug/l)	Organic Lead (ug/l)	DO (ppm)	LAB
MW-1	01/05/92	49.81	33.16	---	16.65	57000	50000	2400	1000	1100	3100	---	ND	---	---
MW-1	01/10/92	49.81	33.16	---	16.65	---	---	---	---	---	---	---	---	---	---
MW-1	06/05/92	49.81	29.01	---	20.80	31000	---	2800	2100	800	2300	---	---	---	---
MW-1	07/24/92	49.80	29.45	---	20.35	---	---	---	---	---	---	---	---	---	---
MW-1	07/27/92	49.80	29.45	---	20.35	---	---	---	---	---	---	---	---	---	---
MW-1	09/15/92	49.80	30.53	---	19.27	40000	1200 (c)	3400	3000	1300	3400	---	---	---	ANA
QC-1 (d)	09/15/92	---	---	---	---	36000	---	3800	3400	1400	3800	---	---	---	ANA
MW-1	12/15/92	49.80	31.26	---	18.54	27000	1100 (c)	1700	580	700	1900	---	---	---	ANA
QC-1 (d)	12/15/92	---	---	---	---	22000	---	1500	440	510	1300	---	---	---	ANA
MW-1	03/15/93	49.80	24.80	---	25.00	17000	580	1700	1200	590	1800	---	---	---	PACE
QC-1 (d)	03/15/93	---	---	---	---	15000	---	1100	860	440	1400	---	---	---	PACE
MW-1	06/07/93	49.80	25.01	---	24.79	750	100	0.8	0.8	ND<0.5	ND<0.5	---	---	---	PACE
QC-1 (d)	06/07/93	---	---	---	---	720	---	0.7	0.7	ND<0.5	ND<0.5	---	---	---	PACE
MW-1	09/23/93	49.80	28.70	---	21.10	---	---	---	---	---	---	---	---	---	---
MW-1	09/23/93	---	---	---	---	40000	770	4000	500	920	3000	---	---	---	PACE
MW-1	12/27/93	49.80	28.66	---	21.14	27000	---	2000	400	940	2600	---	---	---	PACE
QC-1 (d)	12/27/93	---	---	---	---	21000	---	1700	380	830	2400	---	---	---	PACE
MW-1	04/05/94	49.80	26.37	---	23.43	27000	---	3400	930	950	2900	---	---	---	PACE
QC-1 (d)	04/05/94	---	---	---	---	29000	---	3700	1000	1000	3100	---	---	1.3	PACE
MW-1	07/22/94	49.80	26.54	---	23.26	1700	---	220	2.3	2.0	3.4	---	---	2.0	PACE
MW-1	10/13/94	49.80	27.46	---	22.34	1200	---	250	21	ND<0.5	3.2	---	---	2.6	PACE
MW-1	01/25/95	49.80	20.96	---	28.84	1000	---	420	8	13	4	---	---	---	ATI
MW-1	04/19/95	49.80	19.59	---	30.21	5200	---	420	51	230	340	---	---	6.0	ATI
MW-1	07/05/95	49.80	19.61	---	30.19	320	---	4.2	ND<0.50	ND<0.50	ND<1.0	---	---	4.6	ATI
MW-1	10/05/95	49.80	24.40	---	25.40	5800	---	1000	40	31	180	7800	---	2.3	ATI
MW-1	01/12/96	49.80	25.44	---	24.36	370	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	3.7	ATI
MW-1	04/22/96	49.80	18.02	---	31.78	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	3.9	SPL
MW-2	01/05/92	51.07	DRY	---	DRY	---	---	---	---	---	---	---	---	---	---
MW-2	01/10/92	51.06	DRY	---	DRY	---	---	---	---	---	---	---	---	---	---
MW-2	06/05/92	51.06	30.05	---	21.01	11000	---	2000	180	490	1900	---	---	---	---
MW-2	07/24/92	51.07	30.72	---	20.35	---	---	---	---	---	---	---	---	---	---
MW-2	07/27/92	51.07	30.52	---	20.55	---	---	---	---	---	---	---	---	---	---
MW-2	09/15/92	51.07	31.56	---	19.51	75000	3200 (c)	2000	6500	2300	13000	---	---	---	ANA
MW-2	12/15/92	51.07	32.40	---	18.67	34000	1600 (c)	6200	8900	2000	7900	---	---	---	ANA
MW-2	03/15/93	51.07	26.14	---	24.93	150000	8400	12000	18000	3200	22000	---	---	---	PACE
MW-2 (e)	06/07/93	51.07	26.38	SHEEN	24.69	---	---	---	---	---	---	---	---	---	---
MW-2 (e)	09/23/93	51.07	31.43	1.92	21.08	---	---	---	---	---	---	---	---	---	---
MW-2 (e)	12/27/93	51.07	34.07	1.07	17.80	---	---	---	---	---	---	---	---	---	---
MW-2 (e)	04/05/94	51.07	30.44	3.30	23.11	---	---	---	---	---	---	---	---	---	---
MW-2 (e)	07/22/94	51.07	28.51	0.80	23.16	---	---	---	---	---	---	---	---	---	---
MW-2 (e)	10/13/94	51.07	29.33	0.70	22.27	---	---	---	---	---	---	---	---	---	---
MW-2 (e)	01/25/95	51.07	25.55	4.25	28.71	---	---	---	---	---	---	---	---	---	---
MW-2 (e)	04/19/95	51.07	19.78	0.12	31.38	---	---	---	---	---	---	---	---	---	---
MW-2	07/05/95	51.07	20.88	0.09	30.26	140000	---	14000	30000	3500	26000	---	---	---	ATI
MW-2 (e)	10/05/95	51.07	24.68	0.10	26.47	---	---	---	---	---	---	---	---	---	---
MW-2 (e)	01/12/96	51.07	25.72	0.06	25.40	---	---	---	---	---	---	---	---	---	---
MW-2 (e)	04/22/96	51.07	19.33	0.08	31.80	---	---	---	---	---	---	---	---	---	---

Lower concentrations than seen in comparison to shallower groundwater.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO. 11117
 7210 BANCROFT AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-018

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)	MTBE (ug/l)	Organic Lead (ug/l)	DO (ppm)	LAB
MW-3	01/05/92	49.95	33.69	---	16.26	7400	4000	790	23	210	40	---	ND	---	---
MW-3	01/10/92	50.00	33.74	---	16.26	---	---	---	---	---	---	---	---	---	---
MW-3	06/05/92	50.00	29.65	---	20.35	2000	---	130	5.3	93	20	---	---	---	---
MW-3	07/24/92	49.95	30.14	---	19.81	---	---	---	---	---	---	---	---	---	---
MW-3	07/27/92	49.95	30.14	---	19.81	---	---	---	---	---	---	---	---	---	---
MW-3	09/15/92	49.95	31.07	---	18.88	450	ND<50	55	3.1	34	7.1	---	---	---	ANA
MW-3	12/15/92	49.95	31.93	---	18.02	12000	710 (c)	940	ND<50	310	120	---	---	---	ANA
MW-3	03/15/93	49.95	25.71	---	24.24	ND<50	60	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-3	06/07/93	49.95	25.80	---	24.15	150	ND<50	3.6	ND<0.5	0.9	1.3	---	---	---	PACE
MW-3	09/23/93	49.95	29.18	---	20.77	---	---	---	---	---	---	---	---	---	---
MW-3	09/24/93	---	---	---	---	160	ND<50	8.4	ND<0.5	3.7	1.3	---	---	---	PACE
MW-3	12/27/93	49.95	29.25	---	20.70	9400	---	1100	48	530	120	---	---	---	PACE
MW-3	04/05/94	49.95	26.84	---	23.11	7000	---	860	19	330	52	---	---	2.0	PACE
MW-3	07/22/94	49.95	26.90	---	23.11	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	2.1	PACE
MW-3	10/13/94	49.95	27.83	---	22.12	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	2.6	PACE
MW-3	01/25/95	49.95	21.65	---	28.30	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	---	ATI
MW-3	04/19/95	49.95	19.33	---	30.62	2400	---	170	8.0	130	27	---	---	5.0	ATI
MW-3	07/05/95	49.95	20.27	---	29.68	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	4.4	ATI
MW-3	10/05/95	49.95	23.73	---	26.22	2300	---	210	3.1	10	5.1	2400	---	4.2	ATI
MW-3	01/12/96	49.95	24.84	---	25.11	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	4.1	ATI
MW-3	04/22/96	49.95	18.60	---	31.35	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	4.4	SPL
MW-4	07/24/92	50.76	30.02	---	20.74	42000	---	3200	3600	1400	4100	---	---	---	---
MW-4	07/27/92	50.76	30.02	---	20.74	---	---	---	---	---	---	---	---	---	---
MW-4	09/15/92	50.76	31.14	---	19.62	55000	1700 (c)	7600	13000	2800	9500	---	---	---	ANA
MW-4	12/15/92	50.76	31.98	---	18.78	36000	2200 (c)	3700	4700	1200	4000	---	---	---	ANA
MW-4	03/15/93	50.76	25.34	---	25.42	89000	1200	7600	15000	2500	11000	---	---	---	PACE
MW-4	06/07/93	50.76	25.67	---	25.09	73000	2500	10000	19000	3400	14000	---	---	---	PACE
MW-4	09/23/93	50.76	29.37	---	21.39	---	---	---	---	---	---	---	---	---	---
MW-4	09/24/93	---	---	---	---	68000	5700	11000	2100	8600	990	---	---	---	PACE
QC-1 (d)	09/24/93	---	---	---	---	59000	---	5300	10000	2200	8400	---	---	---	PACE
MW-4	12/27/93	50.76	29.40	---	21.36	32000	---	2500	4400	1300	4400	---	---	---	PACE
MW-4	04/05/94	50.76	27.09	---	23.67	64000	---	6500	14000	1900	9600	---	---	1.4	PACE
MW-4	07/22/94	50.76	27.33	---	23.43	85000	---	10000	20000	3200	13000	---	---	0.8	PACE
QC-1 (d)	07/22/94	---	---	---	---	85000	---	11000	21000	3300	14000	---	---	---	PACE
MW-4	10/13/94	50.76	28.25	---	22.51	51000	---	7100	13000	2100	8900	---	---	2.9	PACE
QC-1 (d)	10/13/94	---	---	---	---	51000	---	7400	13000	2100	9100	---	---	---	PACE
MW-4	01/25/95	50.76	21.85	---	28.91	26000	---	3600	9600	1200	6400	---	---	---	ATI
QC-1 (d)	01/25/95	---	---	---	---	28000	---	4200	12000	1500	7800	---	---	---	ATI
MW-4	04/19/95	50.76	19.44	---	31.32	89000	---	12000	24000	3500	18000	---	---	5.1	ATI
QC-1 (d)	04/19/95	---	---	---	---	100000	---	12000	26000	3800	21000	---	---	---	ATI
MW-4	07/05/95	50.76	20.52	---	30.24	130000	---	13000	29000	3300	25000	---	---	4.3	ATI
MW-4	10/05/95	50.76	24.23	---	26.53	110000	---	10000	23000	3600	17000	34000	---	2.1	ATI
MW-4	01/12/96	50.76	25.34	---	25.42	46000	---	3500	8300	1100	8000	3000	---	3.3	ATI
QC-1 (d)	01/12/96	---	---	---	---	40000	---	3500	9000	1200	8700	4300	---	---	ATI
MW-4	04/22/96	50.76	19.13	---	31.63	40000	---	5100	9600	980	11800	29000	---	3.2	SPL
QC-1 (d)	04/22/96	---	---	---	---	61000	---	8300	16000	1600	15200	36000	---	---	SPL

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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)	MTBE (ug/l)	Organic Lead (ug/l)	DO (ppm)	LAB
MW-6	07/24/92	50.32	30.63	---	19.69	ND	---	1.6	ND	ND	ND	---	---	---	---
MW-6	07/27/92	50.32	30.63	---	19.69	---	---	---	---	---	---	---	---	---	---
MW-6	09/15/92	50.32	31.52	---	18.80	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-6	12/15/92	50.32	32.42	---	17.90	58	ND<50	1.3	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-6	03/15/93	50.32	26.29	---	24.03	ND<50	ND<50	ND<0.5	0.6	ND<0.5	0.7	---	---	---	PACE
MW-6	06/07/93	50.32	26.33	---	23.99	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	1.5	---	---	---	PACE
MW-6	09/23/93	50.32	29.64	---	20.68	---	---	---	---	---	---	---	---	---	---
MW-6	09/24/93	---	---	---	---	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-6	12/27/93	50.32	29.75	---	20.57	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-6	04/05/94	50.32	27.26	---	23.06	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	1.7	PACE
MW-6	07/22/94	50.32	27.34	---	22.98	350	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	4.5	PACE
MW-6 (f)	10/13/94	50.32	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	01/25/95	50.32	22.16	---	28.16	240	---	6	ND<0.5	ND<0.5	ND<1	---	---	---	ATI
MW-6 (f)	04/19/95	---	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-6	07/05/95	50.32	20.80	---	29.52	180	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	4.9	ATI
MW-6	10/05/95	50.32	24.20	---	26.12	860	---	ND<5.0	ND<5.0	ND<5.0	ND<10	3600	---	2.8	ATI
MW-6	01/12/96	50.32	25.30	---	25.02	860	---	ND<5.0	ND<5.0	ND<5.0	ND<10	2800	---	4.2	ATI
MW-6	04/22/96	50.32	19.13	---	31.19	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	470	---	4.3	SPL
MW-7	01/25/95	51.4	21.67	---	29.73	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	7.0	ATI
MW-7	04/19/95	51.4	25.27	---	26.13	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	5.0	ATI
MW-7	07/05/95	51.4	24.63	---	26.77	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	4.2	ATI
MW-7	10/05/95	51.4	28.21	---	23.19	83	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	77	---	4.5	ATI
MW-7	01/12/96	51.4	29.29	---	22.11	63	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	120	---	4.8	ATI
MW-7	04/22/96	51.4	23.11	---	28.29	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	13	---	4.8	SPL
MW-8	01/25/95	50.88	31.59	---	19.29	54	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	7.1	ATI
MW-8	04/19/95	50.88	19.18	---	31.70	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	5.1	ATI
MW-8	07/05/95	50.88	19.03	---	31.85	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	4.5	ATI
MW-8	10/05/95	50.88	24.40	---	26.48	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	4.1	ATI
MW-8	01/12/96	50.88	25.51	---	25.37	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	4.6	ATI
MW-8	04/22/96	50.88	18.00	---	32.88	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	4.8	SPL
MW-9	01/25/95	51.05	22.32	---	28.73	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	7.4	ATI
MW-9	04/19/95	51.05	19.86	---	31.19	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<1	---	---	5.2	ATI
MW-9	07/05/95	51.05	20.78	---	30.27	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	4.4	ATI
MW-9	10/05/95	51.05	24.33	---	26.72	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	2.3	ATI
QC-1 (d)	10/05/95	---	---	---	---	52	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	160	---	---	ATI
MW-9	01/12/96	51.05	25.44	---	25.61	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	3.2	ATI
MW-9	04/22/96	51.05	18.01	---	33.04	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	11	---	3.5	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
 BP OIL COMPANY SERVICE STATION NO. 11117
 7210 BANCROFT AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-018

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)	MTBE (ug/l)	Organic Lead (ug/l)	DO (ppm)	LAB
QC-2 (g)	09/15/92	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
QC-2 (g)	12/15/92	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
QC-2 (g)	03/15/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	06/07/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	09/24/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	12/27/93	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	04/05/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	07/22/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	10/13/94	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (g)	01/25/95	---	---	---	---	ND<50	---	ND<0.5	2	0.6	1	---	---	---	ATI
QC-2 (g)	04/19/95	---	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ATI
QC-2 (g)	07/05/95	---	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	ATI
QC-2 (g)	10/05/95	---	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	ATI
QC-2 (g)	01/12/96	---	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	---	ATI
QC-2 (g)	04/22/96	---	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	ND<10	---	---	SPL

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
 DO Dissolved oxygen
 ug/l Micrograms per liter
 ppm Parts per million
 ND Not detected above reported detection limit
 --- Not analyzed/applicable/measurable
 ANA Anametrix, Inc.
 PACE Pace, Inc.
 ATI Analytical Technologies, Inc.
 SPL Southern Petroleum Laboratories

NOTES:

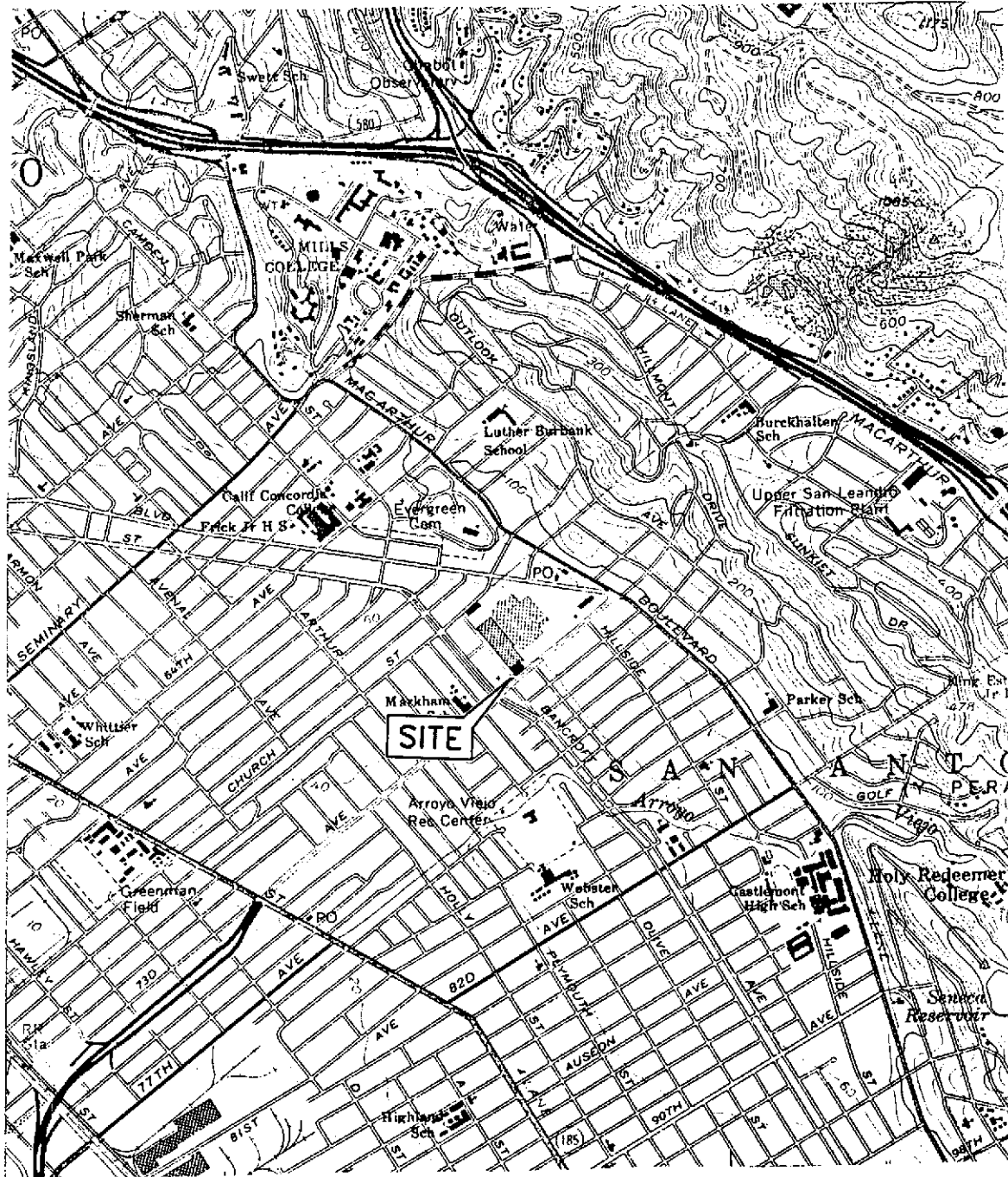
- (a) Casing elevations surveyed to the nearest 0.01 foot relative to mean sea level.
- (b) Groundwater elevations adjusted assuming a specific gravity of 0.75 for free product.
- (c) Concentrations reported as diesel from MW-1, MW-2, and MW-4 are primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene.
- (d) Blind duplicate.
- (e) Well not sampled due to presence of free product.
- (f) Well inaccessible.
- (g) Travel blank.

F:\010-018\018-4-3.W02

TABLE 2 - PRODUCT REMOVAL STATUS
 BP OIL COMPANY SERVICE STATION NO. 11117
 7210 BANCROFT AVENUE, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-018

WELL ID	DATE	PRODUCT THICKNESS	PRODUCT REMOVED (Gallons)	PRODUCT REMOVED CUMULATIVE (Gallons)
MW-2	02/01/94	1.78	<0.01	<0.01
MW-2	02/11/94	1.55	0.10	0.10
MW-2	02/18/94	1.62	0.90	1.00
MW-2	02/25/94	3.21	0.10	1.10
MW-2	03/04/94	3.92	0.10	1.20
MW-2	03/30/94	4.06	2.60	3.80
MW-2	04/13/95	3.10	0.10	3.90
MW-2	04/21/94	2.88	0.10	4.00
MW-2	04/24/95	6.00	0.10	4.10
MW-2	05/06/94	8.00	0.60	4.70
MW-2	05/13/94	7.00	0.10	4.80
MW-2	05/20/94	7.38	2.10	6.90
MW-2	05/26/94	2.00	2.00	8.90
MW-2	06/02/94	1.09	1.00	9.90
MW-2	06/09/94	1.70	1.00	10.90
MW-2	06/16/94	1.13	1.00	11.90
MW-2	06/23/94	1.24	0.75	12.65
MW-2	06/29/94	0.72	0.60	13.25
MW-2	07/07/94	0.56	0.50	13.75
MW-2	07/12/94	1.00	1.10	14.85
MW-2	07/20/94	0.72	0.75	15.60
MW-2	07/29/94	1.42	1.10	16.70
MW-2	08/05/94	1.04	0.76	17.46
MW-2	08/12/94	1.22	0.76	18.22
MW-2	08/18/94	1.33	0.43	18.65
MW-2	09/16/94	0.42	0.76	19.41
MW-2	09/23/94	0.19	0.17	19.58
MW-2	10/26/94	1.13	0.76	20.34
MW-2	11/03/94	0.77	1.10	21.44
MW-2	11/12/94	0.64	0.60	22.04
MW-2	11/16/94	0.67	0.67	22.71
MW-2	11/23/94	0.56	0.50	23.21
MW-2	12/01/94	0.49	0.60	23.81
MW-2	12/08/94	0.61	0.76	24.57
MW-2	04/19/05	0.12	<0.01	24.57
MW-2	05/23/95	SHEEN	<0.01	24.57
MW-2	06/15/95	0.10	<0.01	24.57
MW-2	10/05/95	0.10	0.25	24.82
MW-2	01/12/96	0.06	0.01	24.83
MW-2	02/08/96	0.06	0.01	24.84
MW-2	04/22/96	0.08	0.01	24.85



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

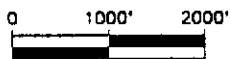


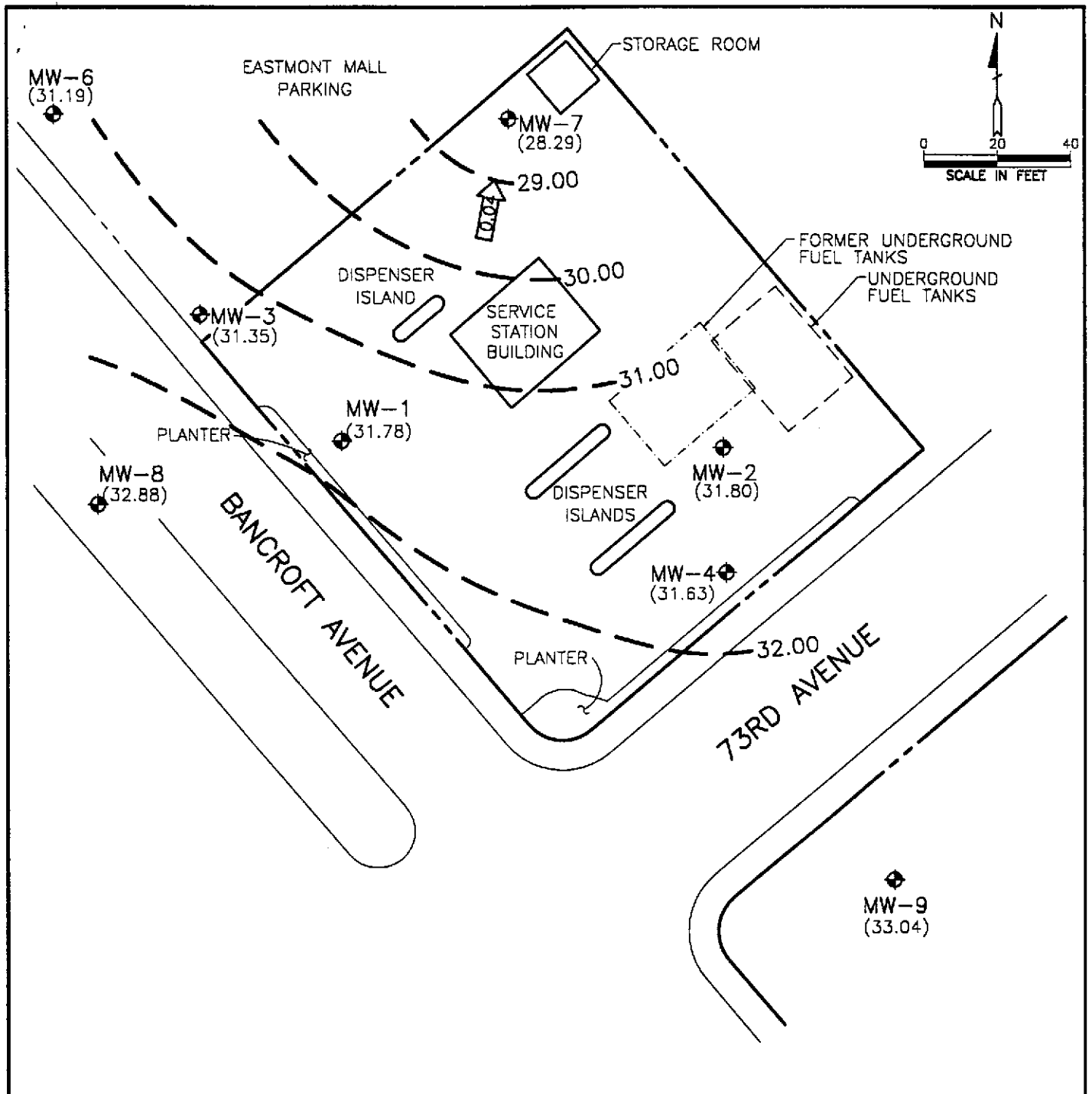
FIGURE 1

SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11117
 7210 BANCROFT AVENUE
 OAKLAND, CALIFORNIA
 PROJECT NO. 10-018



ALISTO ENGINEERING GROUP
 WALNUT CREEK, CALIFORNIA



LEGEND




- 
 GROUNDWATER MONITORING WELL
 (31.19) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 
 31.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL=1.00 FOOT)
- 
 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

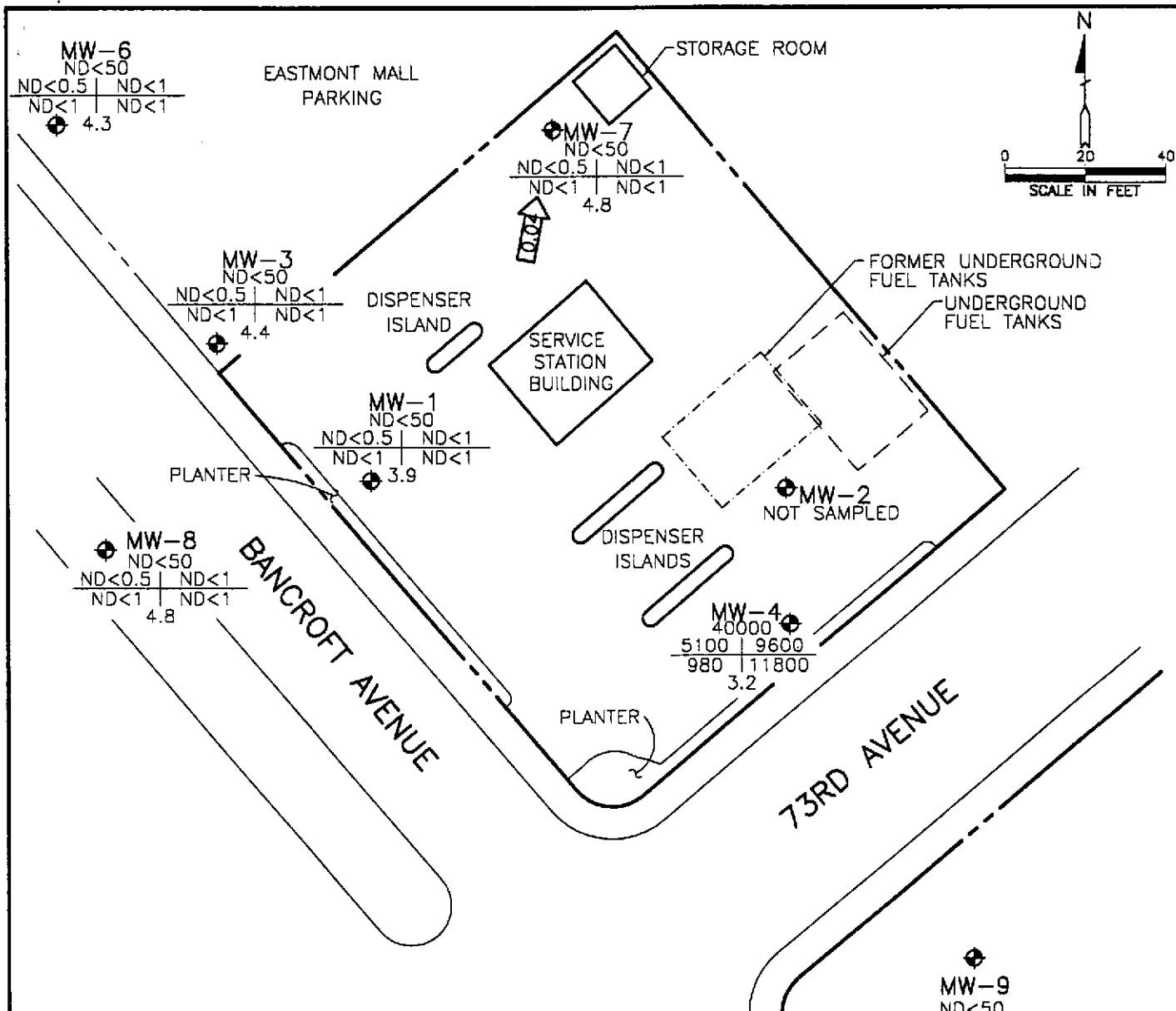
APRIL 22, 1996

BP OIL SERVICE STATION NO. 11117
 7210 BANCROFT AVENUE
 OAKLAND, CALIFORNIA

PROJECT NO. 10-018



ALISTO ENGINEERING GROUP
 WALNUT CREEK, CALIFORNIA



LEGEND

- ⊕ GROUNDWATER MONITORING WELL
- TPH-G CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER, EXCEPT DISSOLVED OXYGEN, WHICH IS IN PARTS PER MILLION
- B | T
- E | X
- DO
- ND NOT DETECTED ABOVE REPORTED DETECTION LIMIT
- ← 0.04 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

APRIL 22, 1996

BP OIL SERVICE STATION NO. 11117
7210 BANCROFT AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 10-018



ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

APPENDIX A
WATER SAMPLING FIELD SURVEY FORMS

ALISTO

Field Report / Sampling Data Sheet

ENGINEERING
GROUP
1575 TREAT BOULEVARD, SUITE 201

Project No. 10-018-04-003 Date: 4/22/16
Address 7210 Bancroft Ave. Day: M W T H F
Contract No. G602089 City: Oakland
Station No. BP 11117 Sampler: LB

DEPTH TO GROUNDWATER SUMMARY

TF = Total Fluids

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	S-6	2"	36.12	18.02	∅	1125	QC-2(TB) = S-9
MW-2	N/S	↓	N/A	19.33	.08	1145	DTP = 19.25' Service PPKS, Remove 2 gal TF. 0.1 gal FP
MW-3	S-2	↓	42.40	18.60	∅	1105	
MW-4	S-7	↓	40.00	19.13	↓	1131	QC-1 Dup (S-8) from this well
MW-6	S-5	↓	40.00	19.13	↓	1116	
MW-7	S-4	↓	44.72	23.11	↓	1114	
MW-8	S-1	↓	39.50	18.00	↓	1101	
MW-9	S-3	↓	38.86	18.01	↓	1110	

FIELD INSTRUMENT CALIBRATION DATA

pH METER ^{Agua} check 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED Y N TIME 1030
D.O. METER " ZERO d.O. SOLUTION 0 BAROMETRIC PRESSURE 760 TEMP 64 WEATHER Cloudy
CONDUCTIVITY METER " 10,000 TURBIDITY METER 5.0 NTU OTHER X

Well ID	Depth to Water	Diam	Cap/Lock	Product	Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	TIME/SAMPLE ID
MW-8	18.00	2"	OK	∅	Y	N	3	1302	66.6	7.31	537µS	4.4	1312
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge PurgeVol.							7		65.3	7.22	509µS		
39.50 - 18.00 = 21.50 x .16 = 3.44 x 3 = 10.32							10.5	1310	65.1	7.17	515µS	4.8	
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													
Comments:													
Well ID	Depth to Water	Diam	Cap/Lock	Product	Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	TIME/SAMPLE ID
MW-3	18.60	2"	OK	∅	Y	N	4	1325	65.8	7.92	910µS	4.2	1340
Total Depth - Water Level = x Well Vol. Factor = x#vol. to Purge PurgeVol.							1		65.2	7.59	869µS		
42.40 - 18.60 = 23.80 x .16 = 3.81 x 3 = 11.43							11.5	1332	64.7	7.54	860µS	4.4	
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													
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. 10-018-04-003

Address 7210 Bancroft Ave.

Contract No. G602089

Station No. BP 11117

Date: 4/22/96

Day: M T W T H F

City: Oakland

Sampler: LUB

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.	
MW-9	18.01	2"	OK	Ø	Y (N)	3	1400	66.7	7.56	1002 µs	3.5	<input type="radio"/> EPA 601
Total Depth - Water Level=						7		65.3	7.29	972 µs		<input checked="" type="radio"/> TPH-G/BTEX HCL
38.86 - 18.01 = 20.85 x .16 = 3.34 x 3 =						10.5	1410	65.3	7.27	970 µs	3.5	<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump ODisp. Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1412
MW-7	23.11	2"	OK	Ø	Y (N)	3	1427	65.9	7.72	1210 µs	5.1	<input type="radio"/> EPA 601
Total Depth - Water Level=						7		65.1	7.49	1152 µs		<input checked="" type="radio"/> TPH-G/BTEX HCL
44.72 - 23.11 = 21.61 x .16 = 3.46 x 3 =						10.5	1436	64.9	7.44	1146 µs	4.8	<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump ODisp. Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1445
MW-6	19.13	2"	OK	Ø	Y (N)	3	1501	65.3	7.72	941 µs	4.4	<input type="radio"/> EPA 601
Total Depth - Water Level=						7		64.6	7.59	910 µs		<input checked="" type="radio"/> TPH-G/BTEX HCL
40 - 19.13 = 20.87 x .16 = 3.34 x 3 =						10.5	1515	64.3	7.51	903 µs	4.3	<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump ODisp. Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1517
MW-1	18.02	2"	OK	Ø	Y (N)	3	1524	65.7	7.82	721 µs	3.7	<input type="radio"/> EPA 601
Total Depth - Water Level=						6		65.2	7.47	725 µs		<input checked="" type="radio"/> TPH-G/BTEX HCL
26.12 - 18.02 = 18.10 x .16 = 2.90 x 3 =						9	1537	65.5	7.41	725 µs	3.9	<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump ODisp. Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520
Comments:												TIME/SAMPLE ID
												1545
MW-4	19.13	2"	OK	Ø	Y (N)	3	1604	68.4	7.93	1.17 ms	3.0	<input type="radio"/> EPA 601
Total Depth - Water Level=						7		65.4	7.77	1.21 ms		<input checked="" type="radio"/> TPH-G/BTEX HCL
40 - 19.13 = 20.87 x .16 = 3.34 x 3 =						10.5	1622	65.1	7.67	1.30 ms	3.2	<input type="radio"/> TPH Diesel
Purge Method: <input checked="" type="checkbox"/> Surface Pump ODisp. Tube OWinch ODisp. Bailer(s) OSys Port												<input type="radio"/> TOG 5520
Comments: (A-1 (S-8) from this well)												TIME/SAMPLE ID
												1635

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD



HOUSTON LABORATORY
8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

SPL, INC.

REPORT APPROVAL SHEET

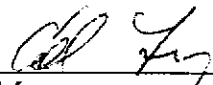
WORK ORDER NUMBER: 96 - 04 - C75

Approved for release by:



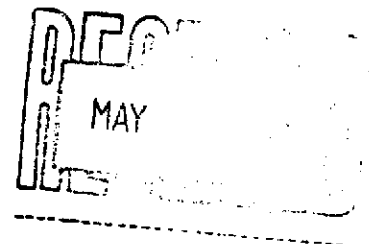
Brent Barron, Client Services Supervisor

Date: 5/8/96



Ed Fry, Project Manager

Date: 5/8/96





HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis No. H9-9604C75-01

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Brady Nagle

P.O.#
 G602089 , COC#070721
 DATE: 05/07/96

PROJECT: BP Oil #11117
 SITE: Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-1

PROJECT NO: 10-018-04-003
 MATRIX: WATER
 DATE SAMPLED: 04/22/96
 DATE RECEIVED: 04/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1 P	µg/L
Ethylbenzene	ND	1 P	µg/L
Total Xylene	ND	1 P	µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	83
4-Bromofluorobenzene	83

METHOD 8020***

Analyzed by: VHZ

Date: 05/05/96

Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
---------------------------------------	----	--------	------

Surrogate	% Recovery
1,4-Difluorobenzene	111
4-Bromofluorobenzene	58

CA LUFT - Gasoline

Analyzed by: VHZ

Date: 05/05/96 08:59:00

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
 SPL California License # 1903



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis No. H9-9604C75-02

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Brady Nagle

P.O.#
 G602089 , COC#070721
 DATE: 05/07/96

PROJECT: BP Oil #11117
 SITE: Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-2

PROJECT NO: 10-018-04-003
 MATRIX: WATER
 DATE SAMPLED: 04/22/96
 DATE RECEIVED: 04/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1 P	µg/L
Ethylbenzene	ND	1 P	µg/L
Total Xylene	ND	1 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene

87

4-Bromofluorobenzene

81

METHOD 8020***

Analyzed by: VHZ

Date: 05/05/96

Total Petroleum Hydrocarbons-Gasoline

ND 0.05 P

mg/L

Surrogate

% Recovery

1,4-Difluorobenzene

113

4-Bromofluorobenzene

58

CA LUFT - Gasoline

Analyzed by: VHZ

Date: 05/05/96 09:25:00

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
 SPL California License # 1903



HOUSTON LABORATORY

8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9604C75-03

Alisto Engineering
1575 Treat Blvd.
Walnut Creek, CA 94598
ATTN: Brady Nagle

P.O.#
G602089 , COC#070721
DATE: 05/07/96

PROJECT: BP Oil #11117
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-018-04-003
MATRIX: WATER
DATE SAMPLED: 04/22/96
DATE RECEIVED: 04/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	11	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1 P	µg/L
Ethylbenzene	ND	1 P	µg/L
Total Xylene	ND	1 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene
4-Bromofluorobenzene

90
79

METHOD 8020***

Analyzed by: VHZ
Date: 05/05/96

Total Petroleum Hydrocarbons-Gasoline ND 0.05 P mg/L

Surrogate

% Recovery

1,4-Difluorobenzene
4-Bromofluorobenzene

103
74

CA LUFT - Gasoline

Analyzed by: VHZ
Date: 05/05/96 09:52:00

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
SPL California License # 1903



HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis No. H9-9604C75-04

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Brady Nagle

P.O.#
 G602089 , COC#070721
 DATE: 05/07/96

PROJECT: BP Oil #11117
 SITE: Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-4

PROJECT NO: 10-018-04-003
 MATRIX: WATER
 DATE SAMPLED: 04/22/96
 DATE RECEIVED: 04/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	13	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1 P	µg/L
Ethylbenzene	ND	1 P	µg/L
Total Xylene	ND	1 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene
 4-Bromofluorobenzene

90
 83

METHOD 8020***

Analyzed by: VHZ

Date: 05/05/96

Total Petroleum Hydrocarbons-Gasoline ND 0.05 P mg/L

Surrogate

% Recovery

1,4-Difluorobenzene
 4-Bromofluorobenzene

98
 70

CA LUFT - Gasoline

Analyzed by: VHZ

Date: 05/05/96 10:18:00

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
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HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 680-0901

Certificate of Analysis No. H9-9604C75-05

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Brady Nagle

P.O.#
 G602089 , COC#070721
 DATE: 05/07/96

PROJECT: BP Oil #11117
 SITE: Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-5

PROJECT NO: 10-018-04-003
 MATRIX: WATER
 DATE SAMPLED: 04/22/96
 DATE RECEIVED: 04/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	470	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1 P	µg/L
Ethylbenzene	ND	1 P	µg/L
Total Xylene	ND	1 P	µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	86
4-Bromofluorobenzene	83

METHOD 8020***

Analyzed by: VHZ
 Date: 05/05/96

Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
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Surrogate	% Recovery
1,4-Difluorobenzene	111
4-Bromofluorobenzene	59

CA LUFT - Gasoline
 Analyzed by: VHZ
 Date: 05/05/96 10:44:00

(P) - Practical Quantitation Limit ND - Not detected.

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

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HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis No. H9-9604C75-06

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Brady Nagle

P.O.#
 G602089 , COC#070721
 DATE: 05/07/96

PROJECT: BP Oil #11117
 SITE: Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-6

PROJECT NO: 10-018-04-003
 MATRIX: WATER
 DATE SAMPLED: 04/22/96
 DATE RECEIVED: 04/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1 P	µg/L
Ethylbenzene	ND	1 P	µg/L
Total Xylene	ND	1 P	µg/L

Surrogate % Recovery
 1,4-Difluorobenzene 85
 4-Bromofluorobenzene 77

METHOD 8020***
 Analyzed by: VHZ
 Date: 05/06/96

Total Petroleum Hydrocarbons-Gasoline ND 0.05 P mg/L

Surrogate % Recovery
 1,4-Difluorobenzene 112
 4-Bromofluorobenzene 55

CA LUFT - Gasoline
 Analyzed by: VHZ
 Date: 05/06/96 04:01:00

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
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HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis No. H9-9604C75-07

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Brady Nagle

P.O.#
 G602089 , COC#070721
 DATE: 05/07/96

PROJECT: BP Oil #11117
 SITE: Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-7

PROJECT NO: 10-018-04-003
 MATRIX: WATER
 DATE SAMPLED: 04/22/96
 DATE RECEIVED: 04/25/96

Well 4?

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	29000	1000 P	µg/L
Benzene	5100	50 P	µg/L
Toluene	9600	100 P	µg/L
Ethylbenzene	980	100 P	µg/L
Total Xylene	11800	100 P	µg/L

Surrogate

% Recovery

1,4-Difluorobenzene 99
 4-Bromofluorobenzene 98

METHOD 8020***

Analyzed by: VHZ
 Date: 05/06/96

Total Petroleum Hydrocarbons-Gasoline 40 ✓ 5 P mg/L

Surrogate

% Recovery

1,4-Difluorobenzene 127
 4-Bromofluorobenzene 90

CA LUFT - Gasoline

Analyzed by: VHZ
 Date: 05/06/96 04:53:00

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
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HOUSTON LABORATORY
 8880 INTERCHANGE DRIVE
 HOUSTON, TEXAS 77054
 PHONE (713) 660-0901

Certificate of Analysis No. H9-9604C75-08

Alisto Engineering
 1575 Treat Blvd.
 Walnut Creek, CA 94598
 ATTN: Brady Nagle

P.O.#
 G602089 , COC#070721
 DATE: 05/07/96

PROJECT: BP Oil #11117
 SITE: Oakland, CA
 SAMPLED BY: Alisto Engineering
 SAMPLE ID: S-8 *Quality Control Well 4*

PROJECT NO: 10-018-04-003
 MATRIX: WATER
 DATE SAMPLED: 04/22/96
 DATE RECEIVED: 04/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	36000	2500 P	µg/L
Benzene	8300	120 P	µg/L
Toluene	16000	200 P	µg/L
Ethylbenzene	1600	200 P	µg/L
Total Xylene	15200	200 P	µg/L

Surrogate % Recovery
 1,4-Difluorobenzene 93
 4-Bromofluorobenzene 92
 METHOD 8020***
 Analyzed by: VHZ
 Date: 05/06/96

Total Petroleum Hydrocarbons-Gasoline 61 12 P mg/L

Surrogate % Recovery
 1,4-Difluorobenzene 120
 4-Bromofluorobenzene 81
 CA LUFT - Gasoline
 Analyzed by: VHZ
 Date: 05/06/96 05:20:00

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
 **Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
 ***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.
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HOUSTON LABORATORY

8880 INTERCHANGE DRIVE
HOUSTON, TEXAS 77054
PHONE (713) 660-0901

Certificate of Analysis No. H9-9604C75-09

Alisto Engineering
1575 Treat Blvd.
Walnut Creek, CA 94598
ATTN: Brady Nagle

P.O.#
G602089 , COC#070721
DATE: 05/07/96

PROJECT: BP Oil #11117
SITE: Oakland, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-9

PROJECT NO: 10-018-04-003
MATRIX: WATER
DATE SAMPLED: 04/22/96
DATE RECEIVED: 04/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	ND	10 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1 P	µg/L
Ethylbenzene	ND	1 P	µg/L
Total Xylene	ND	1 P	µg/L

Surrogate	% Recovery
1,4-Difluorobenzene	85
4-Bromofluorobenzene	81

METHOD 8020***

Analyzed by: VHZ

Date: 05/06/96

Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
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Surrogate	% Recovery
1,4-Difluorobenzene	110
4-Bromofluorobenzene	57

CA LUFT - Gasoline

Analyzed by: VHZ

Date: 05/06/96 04:27:00

ND - Not detected.

(P) - Practical Quantitation Limit

Notes: *Ref: Methods for Chemical Analysis of Water and Wastes, 1983, EPA
**Ref: Standard Methods for Examination of Water & Wastewater, 18th ed.
***Ref: Test Methods for Evaluating Solid Waste, EPA SW846, 3rd Ed.

QUALITY ASSURANCE: These analyses are performed in accordance with EPA guidelines for quality assurance.

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QUALITY CONTROL

DOCUMENTATION



Matrix: Aqueous
Units: µg/L

Batch Id: HP_J960505040800

LABORATORY CONTROL SAMPLE

S P I K E C O M P O U N D S	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) ‡ Recovery Range
			Result <1>	Recovery ‡	
MTBE	ND	50	48	96.0	20 - 110
Benzene	ND	50	51	102	62 - 121
Toluene	ND	50	51	102	66 - 136
EthylBenzene	ND	50	51	102	70 - 136
O Xylene	ND	50	52	104	74 - 134
M & P Xylene	ND	100	110	110	77 - 140

M A T R I X S P I K E S

S P I K E C O M P O U N D S	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
			MTBE	ND	20	17			
BENZENE	ND	20	20	100	20	100	0	25	39 - 150
TOLUENE	ND	20	19	95.0	20	100	5.13	26	56 - 134
ETHYLBENZENE	ND	20	18	90.0	19	95.0	5.41	38	61 - 128
O XYLENE	ND	20	19	95.0	18	90.0	5.41	29	40 - 130
M & P XYLENE	ND	40	38	95.0	38	95.0	0	20	43 - 152

Analyst: VHZ

Sequence Date: 05/05/96

SPL ID of sample spiked: 9604C02-03A

Sample File ID: J__620.TX0

Method Blank File ID:

Blank Spike File ID: J__611.TX0

Matrix Spike File ID: J__627.TX0

Matrix Spike Duplicate File ID: J__628.TX0

* = Values Outside QC Range

NC = Not Calculated (Sample exceeds spike by factor of 4 or more)

ND = Not Detected/Below Detection Limit

‡ Recovery = $(\langle 1 \rangle - \langle 2 \rangle) / \langle 3 \rangle \times 100$

LCS ‡ Recovery = $(\langle 1 \rangle / \langle 3 \rangle) \times 100$

Relative Percent Difference = $|(\langle 4 \rangle - \langle 5 \rangle | / [(\langle 4 \rangle + \langle 5 \rangle) \times 0.5] \times 100$

(**) = Source: SPL-Houston Historical Data (3rd Q '95)

(***) = Source: SPL-Houston Historical Data (2nd Q '95)

SAMPLES IN BATCH(SPL ID):

9604C02-03A 9604C02-04A 9604C02-05A 9604C02-06A
 9604C02-07A 9604C02-08A 9604C02-07A 9604C02-08A
 9605123-04A 9605123-05A 9604C02-09A 9604C75-01A
 9604C75-02A 9604C75-03A 9604C75-04A 9604C75-05A
 9604B02-05A 9604B06-04A

QC Officer



Matrix: Aqueous
Units: µg/L

Batch Id: HP_J960505111100

LABORATORY CONTROL SAMPLE

S P I K E C O M P O U N D S	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
MTBE	ND	50	48	96.0	20 - 110
Benzene	ND	50	45	90.0	62 - 121
Toluene	ND	50	45	90.0	66 - 136
EthylBenzene	ND	50	44	88.0	70 - 136
O Xylene	ND	50	45	90.0	74 - 134
M & P Xylene	ND	100	92	92.0	77 - 140

M A T R I X S P I K E S

S P I K E C O M P O U N D S	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
MTBE	ND	20	20	70.0	20	70.0	0	20	39 - 150
BENZENE	ND	20	20	100	20	100	0	25	39 - 150
TOLUENE	ND	20	20	100	19	95.0	5.13	26	56 - 134
ETHYLBENZENE	ND	20	18	90.0	18	90.0	0	38	61 - 128
O XYLENE	ND	20	21	105	19	95.0	10.0	29	40 - 130
M & P XYLENE	ND	40	39	97.5	37	92.5	5.26	20	43 - 152

Analyst: VHZ

Sequence Date: 05/05/96

SPL ID of sample spiked: 9604C75-06A

Sample File ID: J__655.TX0

Method Blank File ID:

Blank Spike File ID: J__644.TX0

Matrix Spike File ID: J__650.TX0

Matrix Spike Duplicate File ID: J__651.TX0

* = Values Outside QC Range

NC = Not Calculated (Sample exceeds spike by factor of 4 or more)

ND = Not Detected/Below Detection Limit

% Recovery = [(<1> - <2>) / <3>] x 100

LCS % Recovery = (<1> / <3>) x 100

Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100

(**) = Source: SPL-Houston Historical Data (3rd Q '95)

(***) = Source: SPL-Houston Historical Data (2nd Q '95)

SAMPLES IN BATCH(SPL ID):

9604C75-06A 9604C75-09A 9604C75-07A 9604C75-08A
 9605101-01A 9605101-02A 9605101-03A 9605101-04A
 9605101-05A 9605101-06A 9605101-10A 9605101-07A
 9604A96-06A 9604986-07A 9605101-08A 9605101-09A
 9604C95-01A 9604C95-02A

QC Officer



Matrix: Aqueous
Units: mg/L

Batch Id: HP_J960505040801

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
Gasoline Petr. Hydrocarbon	ND	0.9	1.0	111	56 - 130

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
GASOLINE PETR. HYDROCARBON	ND	0.9	0.76	84.4	0.73	81.1	3.99	22	37 - 169

Analyst: VHZ

Sequence Date: 05/05/96

SPL ID of sample spiked: 9604C02-04A

Sample File ID: JJ_621.TX0

Method Blank File ID:

Blank Spike File ID: JJ_613.TX0

Matrix Spike File ID: JJ_629.TX0

Matrix Spike Duplicate File ID: JJ_630.TX0

* = Values Outside QC Range

NC = Not Calculated (Sample exceeds spike by factor of 4 or more)

ND = Not Detected/Below Detection Limit

% Recovery = [(<1> - <2>) / <3>] x 100

LCS % Recovery = (<1> / <3>) x 100

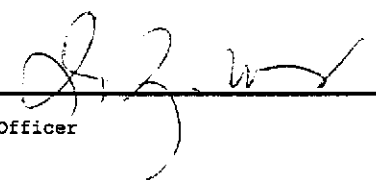
Relative Percent Difference = |(<4> - <5> | / [(<4> + <5>) x 0.5] x 100

(**) = Source: SPL-Houston Historical data (3rd Q '95)

(***) = Source: SPL-Houston Historical Data (3rd Q '95)

SAMPLES IN BATCH(SPL ID):

9604C02-03A 9604C02-04A 9604C02-05A 9604C02-06A
9604C02-07A 9604C02-08A 9604C02-09A 9604C75-01A
9604C75-02A 9604C75-03A 9604C75-04A 9604C75-05A
9604B02-05A


QC Officer



Matrix: Aqueous
Units: mg/L

Batch Id: HP_J960505111101

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike		QC Limits(**) (Mandatory) % Recovery Range
			Result <1>	Recovery %	
Petroleum Hydrocarbons-Gas	ND	0.9	0.95	106	50 - 150

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike		Matrix Spike Duplicate		MS/MSD Relative % Difference	QC Limits(***) (Advisory)	
			Result <1>	Recovery <4>	Result <1>	Recovery <5>		RPD Max.	Recovery Range
			PETROLEUM HYDROCARBONS-GAS	ND	0.9	.60			

Analyst: VHZ

Sequence Date: 05/06/96

SPL ID of sample spiked: 9604C75-09A

Sample File ID: JJ_656.TX0

Method Blank File ID:

Blank Spike File ID: JJ_647.TX0

Matrix Spike File ID: JJ_652.TX0

Matrix Spike Duplicate File ID: JJ_653.TX0

* = Values Outside QC Range

NC = Not Calculated (Sample exceeds spike by factor of 4 or more)

ND = Not Detected/Below Detection Limit

% Recovery = $[(<1> - <2>) / <3>] \times 100$

LCS % Recovery = $(<1> / <3>) \times 100$

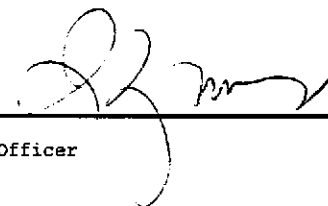
Relative Percent Difference = $| (<4> - <5>) / [(<4> + <5>) \times 0.5] \times 100$

(**) = Source: Temporary Limits

(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9604C75-06A 9604C75-09A 9604C75-07A 9604C75-08A
 9605101-01A 9605101-02A 9605101-03A 9605101-04A
 9605101-05A 9605101-06A 9605101-10A 9605101-07A
 9605101-08A 9605101-09A 9604C95-01A 9604C95-02A


QC Officer

CHAIN OF CUSTODY
AND
SAMPLE RECEIPT CHECKLIST



9604C75

CHAIN OF CUSTODY

No. 070721

Page 1 of 1

CONSULTANT'S NAME Alisto Engineering		ADDRESS 1575 Trent Blvd # 201		CITY W.C.	STATE CA	ZIP CODE 94598
BP SITE NUMBER 1117	BP CORNER ADDRESS/CITY Oakland, CA			CONSULTANT PROJECT NUMBER 10-018-04/003		
CONSULTANT PROJECT MANAGER Brady Nagle		PHONE NUMBER (510) 295-1650		FAX NUMBER 295-1823		CONSULTANT CONTRACT NUMBER G602099
BP CONTACT Scott Hooton		BP ADDRESS Renton, WA		PHONE NUMBER -		FAX NO. -
LAB CONTACT SPL		LABORATORY ADDRESS Texas		PHONE NUMBER -		FAX NO. -
SAMPLED BY (Please Print Name) Larry Buenavista		SAMPLED BY (Signature) <i>[Signature]</i>		SHIPMENT DATE 4-24-96		SHIPMENT METHOD Fed Ex

TAT: 24 Hours 48 Hours 1 Week Standard 2 Weeks

ANALYSIS REQUIRED

AIRBILL NUMBER **4360716886**

SAMPLE DESCRIPTION	COLLECTION DATE	MATRIX SOIL/WATER	CONTAINERS		PRESERVATIVE	COMMENTS
	COLLECTION TIME		NO.	TYPE (VOL.)	LAB SAMPLE #	
S-1	4/20/96	W	3	HU	SOIL 4/25/96	
S-2	↓	↓	↓	↓	↓	
S-3	↓	↓	↓	↓	↓	
S-4	↓	↓	↓	↓	↓	
S-5	↓	↓	↓	↓	↓	
S-6	↓	↓	↓	↓	↓	
S-7	↓	↓	↓	↓	↓	
S-8	↓	↓	↓	↓	↓	
S-9	↓	↓	2	↓	↓	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME	ADDITIONAL COMMENTS
<i>[Signature]</i>	4/23/96	1605	P. Yelton	4/23/96	1610	2°C Intact
P. Yelton	4/24/96	1100	Alvina Salas	4/25/96	1100	

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: <i>4/25/96</i>	Time: <i>1100</i>
-------------------------	----------------------

SPL Sample ID:

9604C75

		<u>Yes</u>	<u>No</u>
1	Chain-of-Custody (COC) form is present.	✓	
2	COC is properly completed.	✓	
3	If no, Non-Conformance Worksheet has been completed.		
4	Custody seals are present on the shipping container.	✓	
5	If yes, custody seals are intact.	✓	
6	All samples are tagged or labeled.	✓	
7	If no, Non-Conformance Worksheet has been completed.		
8	Sample containers arrived intact	✓	
9	Temperature of samples upon arrival:	<i>2° C</i>	
10	Method of sample delivery to SPL:	SPL Delivery	
		Client Delivery	
		FedEx Delivery (airbill #)	<i>9360716886</i>
		Other:	
11	Method of sample disposal:	SPL Disposal	✓
		HOLD	
		Return to Client	

Name: <i>S. West</i>	Date: <i>4/25/96</i>
-----------------------------	-----------------------------