BP OIL

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TECTION

10 AM11:21

BP Oil Company
Environmental Remediation Management
295 SW 41st Street
Renton, Washington 98055-4931
(425) 251-0667
Fax No: (425) 251-0736

September 2, 1997

GW flow may be to SW -
See if next QMR show increase
MtBE in well MW-7

Ms Eva Chu
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway Suite 250
Alameda, CA 94502-6577

RE: BP OIL FACILITY #11120
6400 Dublin Blvd
Dublin, CA

Dear Ms Chu:

Attached please find our **GROUNDWATER MONITORING AND SAMPLING REPORT DATED AUGUST 13, 1997** for the above referenced facility. Plans for the following quarter include additional groundwater monitoring.

On a final note, please note that BP and Mobil Oil Corporation have an agreement to cooperate in the filing for reimbursement applications to the UST Cleanup Fund. If you become aware of any notices or proposals to withdraw a Letter of Commitment for this site, please give me a call to let me know immediately.

If you should have any questions regarding this site, I may be reached at (425) 251-0689.

Sincerely,

Scott T. Hooton
Environmental Remediation Management

STH:sb msword\ERM11120

cc: Mr. Eddy So, CRWQCB San Francisco Bay Region, 2101 Webster Street, Suite 500,Oakland CA 94612(without attachment)

Mr. Brady Nagle, Alisto Engineering Group, 1575 Treat Blvd, Ste 201, Walnut Creek, CA 94598

Ms. Tina Berry,TOSCO, 2000 Crow Canyon Place, Suite 400, San Ramon, CA 94583

site file

BP OIL

MENTAL
CTION
PM 1:02

0.5

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

February 21, 1997

Alameda County Heath Care Services Agency
Attention Ms. Eva Chu - Hazardous Materials Specialist
1131 Harbor Bay Parkway, Suite 250
Alameda, CA 94502-6577

Need to locate MW #1 and sample GW for TOG, 8010 and 8270, then can close out if constituents are low to ND

RE: Former BP Oil Site No. 11120
6400 Dublin Boulevard
Dublin, CA
StID 2095

3/3/97 New Building now over MW-1 & near it. Want new site plan to update figure

Dear Ms. Chu:

This letter transmits two Groundwater Monitoring and Sampling Report, dated 26 December 1996 and 20 January 1997. Please note that the additional testing parameters requested in your 23 September 1996 letter are included in the appendix of the 20 January 1997 report. We were not able to comply with your request to sample both MW-1 and MW-4 for chlorinated hydrocarbons and semi-volatile organic compounds because MW-1 cannot be located as a result of construction last April. You will note that chlorinated hydrocarbons and semi-volatile organic compounds[1] were not detected in samples obtained from MW-4.

The aromatic fuel constituents (benzene, ethylbenzene, toluene, and total xylenes) and TPH-G were not detected in samples obtained from any of the groundwater monitoring wells during the last two sampling events. Review of the previous data shows that aromatic fuel constituents have been detected in two (MW-3 and MW-4) of the seven monitoring wells installed at this site. Aromatic fuel constituents have not been detected in well MW-3 since the April 1995 sampling event.

The non-specific hydrocarbon analyses showed that TPH-D was detected in samples obtained from MW-4 during the last two sampling events.

You will also note that MTBE was detected in samples collected from MW-3 and MW-4 during both quarters. The MTBE concentrations in MW-7 appear to be relatively stable. MTBE concentrations reported for MW-4, on the other hand, increased to 2200 ug/l; MTBE was not detected in MW-4 during the prior sampling event. It is noteworthy that MTBE concentrations in MW-4 appeared to have generally declined until this most recent sampling event.

[1] With the exception of 9 ug/l of bis(2-Ethylhexl) Phthalate.

BP intends to request a determination of no further action and case closure if MW-4 MTBE concentrations appear to be stable or declining based on data to be obtained during the next quarterly groundwater monitoring event. If this approach presents any concerns to the Alameda County Health Care Services Agency, please give me a call at (206) 251-0689.

Sincerely,

Scott Hooton
Environmental Remediation Management

attachments

cc: site file
Brady Nagle - Alisto Engineering Group
Kevin Graves - RWQCB-SFBR

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11120
6400 Dublin Boulevard
Dublin, California

Project No. 10-170-05-001

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

August 13, 1997

Dale Swain
Project Manager

Al Sevilla, P.E.
Principal

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11120
6400 Dublin Boulevard
Dublin, California

Project No. 10-170-05-001

August 13, 1997

INTRODUCTION

This report presents the results and findings of the June 3, 1997 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11120, 6400 Dublin Boulevard, Dublin, 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 an arbitrary datum. 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. Historical methyl tert butyl ether (MTBE) laboratory analysis data not previously tabulated are now included in Table 1. Copies of the MTBE documentation are included in Appendix C of this report only.

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11120
6400 DUBLIN BOULEVARD, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-170

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-3	10/27/92	329.36	8.43	320.93	210	ND<50	3	0.7	0.9	30	---	---	PACE
MW-3	04/09/93	329.36	4.90	324.46	400	260	6.1	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-3	08/25/93	329.36	7.13	322.23	2000	440	ND<0.5	ND<0.5	ND<0.5	ND<0.5	3300 (e)	---	PACE
MW-3	11/22/93	329.36	7.60	321.76	1800	360	ND<2.5	ND<2.5	ND<2.5	ND<2.5	910 (e)	---	PACE
MW-3	03/07/94	329.36	6.08	323.28	1300	5000	22	4.0	2.2	3.8	7200 (e)	3.7	PACE
MW-3	06/09/94	329.36	6.51	322.85	8500	2600	25	8.3	0.5	15	13000 (e)	7.2	PACE
QC-1 (f)	06/09/94	---	---	---	8800	---	23	6.3	0.5	10	13000 (e)	---	PACE
MW-3	09/12/94	329.36	7.63	321.73	2100	3200	ND<5.0	ND<5.0	8.8	20	3800 (e)	7.3	PACE
QC-1 (f)	09/12/94	---	---	---	1800	---	ND<5.0	ND<5.0	8.0	10	3900 (e)	---	PACE
MW-3	12/20/94	329.36	6.41	322.95	18000	9600	79	28	89	9.3	---	7.3	PACE
QC-1 (f)	12/20/94	---	---	---	17000	---	79	33	80	ND<2.5	---	---	PACE
MW-3	03/16/95	329.36	4.39	324.97	6300	7000	470	ND<5.0	210	9.9	---	5.5	ATI
QC-1 (f)	03/16/95	---	---	---	6300	---	500	ND<5.0	230	13	---	---	ATI
MW-3	06/28/95	329.36	5.50	323.86	9000	3000 (g)	ND<10	ND<10	ND<10	ND<20	---	7.4	ATI
QC-1 (f)	06/28/95	---	---	---	8800	--- (g)	ND<10	ND<10	ND<10	ND<20	---	---	ATI
MW-3	09/06/95	329.36	6.66	322.70	10000	2800	ND<50	ND<50	ND<50	ND<100	37000	7.1	ATI
QC-1 (f)	09/06/95	---	---	---	9700	---	ND<50	ND<50	ND<50	ND<100	36000	---	ATI
MW-3	12/22/95	329.36	6.31	323.05	9200	2500	ND<50	ND<50	ND<50	ND<100	29000	6.7	ATI
MW-3	08/20/96	329.36	5.87	323.49	---	---	---	---	---	---	---	---	---
MW-3	08/21/96	329.36	---	---	3700	1900	ND<25	ND<50	ND<50	ND<50	4100	6.8	SPL
QC-1 (f)	08/21/96	---	---	---	3500	---	ND<25	ND<50	ND<50	ND<50	4000	---	SPL
MW-3	10/31/96	329.36	6.20	323.16	ND<250	ND<500	ND<2.5	ND<5.0	ND<5.0	ND<5.0	ND<50	6.8	SPL
QC-1 (f)	10/31/96	---	---	---	ND<250	---	ND<2.5	ND<5.0	ND<5.0	ND<5.0	ND<50	---	---
MW-3	12/02/96	329.36	6.27	323.09	ND<250	50	ND<2.5	ND<5.0	ND<5.0	ND<5.0	ND<50	6.4	SPL
QC-1 (f)	12/02/96	---	---	---	ND<250	---	ND<2.5	ND<5.0	ND<5.0	ND<5.0	ND<50	---	---
MW-3	03/27/97	329.36	5.39	323.97	470	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<1.0	490	6.2	SPL
MW-3	06/03/97	329.36	7.92	321.44	ND<250	100	ND<2.5	ND<5.0	ND<5.0	ND<5.0	84	5.9	SPL
QC-1 (f)	06/03/97	---	---	---	ND<250	---	ND<2.5	ND<5.0	ND<5.0	ND<5.0	74.0	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11120
6400 DUBLIN BOULEVARD, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-170

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-4	10/27/92	329.45	8.61	320.84	2300	190	23	54	50	320	---	---	PACE
MW-4	04/09/93	329.45	5.25	324.20	1600	500	78	3.5	68	1.0	---	---	PACE
MW-4	08/25/88	329.45	7.32	322.13	1800	380	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2100 (e)	---	PACE
QC-1 (f)	08/25/93	---	---	---	1600	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	2100 (e)	---	PACE
MW-4	11/22/93	329.45	7.83	321.62	610	260	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-1 (f)	11/22/93	---	---	---	1700	---	ND<2.5	ND<2.5	ND<2.5	ND<2.5	3500 (e)	---	PACE
MW-4	03/07/94	329.45	6.29	323.16	710	1400	0.5	0.8	ND<0.5	ND<0.5	5900 (e)	3.8	PACE
QC-1 (f)	03/07/94	---	---	---	1600	---	ND<0.5	ND<0.5	1.4	0.6	4200 (e)	---	PACE
MW-4	06/09/94	329.45	6.76	322.69	6400	1800	ND<10	ND<10	ND<10	ND<10	10000 (e)	7.5	PACE
MW-4	09/12/94	329.45	7.83	321.62	2000	2700	ND<0.5	ND<0.5	ND<0.5	ND<0.5	4200 (e)	7.2	PACE
MW-4	12/20/94	329.45	6.68	322.77	9200	2400	ND<5.0	ND<5.0	ND<5.0	ND<5.0	---	6.1	PACE
MW-4	03/16/95	329.45	4.66	324.79	1400	960	140	ND<2.5	58	14	---	5.5	ATI
MW-4	06/28/95	329.45	5.93	323.52	5000	5400 (g)	240	ND<5.0	220	ND<10	---	7.4	ATI
MW-4	09/06/95	329.45	6.83	322.62	4400	4500	ND<13	ND<13	ND<13	ND<25	12000	7.6	ATI
MW-4	12/22/95	329.45	6.42	323.03	3800	4700	15	ND<13	ND<13	ND<25	9200	7.1	ATI
QC-1 (f)	12/22/95	---	---	---	3900	---	16	ND<13	ND<13	ND<25	8600	---	ATI
MW-4	08/20/96	329.45	6.01	323.44	---	---	---	---	---	---	---	---	---
MW-4	08/21/96	329.45	---	---	ND<250	470	ND<12	ND<25	ND<25	ND<25	ND<250	7.7	SPL
MW-4	10/31/96	329.45	6.37	323.08	ND<250	1600	ND<2.5	ND<5.0	ND<5.0	ND<5.0	ND<50	7.1	SPL
MW-4	12/02/96	329.45	6.71	322.74	ND<50	13000	ND<5	ND<10	ND<10	ND<10	2200	7.3	SPL
MW-4	03/27/97	329.45	5.70	323.75	8300	1500	44	ND<25	ND<25	ND<25	8000	6.2	SPL
QC-1 (f)	03/27/97	---	---	---	6900	---	51	ND<25	ND<25	ND<25	8500	---	SPL
MW-4	06/03/97	329.45	8.37	321.08	2800	270	62	ND<1.0	ND<1.0	ND<1.0	7000.0	7.1	SPL
MW-5	04/09/93	329.60	5.18	324.42	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	08/25/93	329.60	7.28	322.32	ND<50	70	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	11/22/93	329.60	7.82	321.78	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-5	03/07/94	329.60	6.27	323.33	ND<50	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	5.7	PACE
MW-5	06/09/94	329.60	6.73	322.87	ND<50	70	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	7.7	PACE
MW-5	09/12/94	329.60	7.78	321.82	ND<50	120	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	7.2	PACE
MW-5	12/20/94	329.60	6.63	322.97	---	---	---	---	---	---	---	---	---
MW-5	03/16/95	329.60	4.65	324.95	ND<50	ND<500	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	4.9	ATI
MW-5	06/28/95	329.60	5.69	323.91	---	---	---	---	---	---	---	---	---
MW-5	09/06/95	329.60	6.82	322.78	ND<50	200	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	7.3	ATI
MW-5	12/22/95	329.60	6.40	323.20	---	---	---	---	---	---	---	---	---
MW-5	08/20/96	329.60	5.98	323.62	---	---	---	---	---	---	---	---	---
MW-5	08/21/96	329.60	---	---	ND<50	ND<50	ND<0.50	ND<1.0	ND<1.0	ND<1.0	ND<10	6.9	SPL
MW-5	10/31/96	329.60	6.29	323.31	---	---	---	---	---	---	---	---	---
MW-5	12/02/96	329.60	6.37	323.23	---	---	---	---	---	---	---	---	---
MW-5	03/27/97	329.60	5.33	324.27	ND<50	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	5.8	SPL
MW-5	06/03/97	329.60	8.00	321.60	---	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11120
6400 DUBLIN BOULEVARD, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-170

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-6	04/09/93	329.55	5.37	324.18	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	08/25/93	329.55	7.42	322.13	ND<50	170	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	11/22/93	329.55	7.93	321.62	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-6	03/07/94	329.55	6.25	323.30	ND<50	90	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	4.2	PACE
MW-6	06/09/94	329.55	6.85	322.70	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	7.0	PACE
MW-6	09/12/94	329.55	7.91	321.64	ND<50	240	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	6.7	PACE
MW-6	12/20/94	329.55	6.82	322.73	---	---	---	---	---	---	---	---	---
MW-6	03/16/95	329.55	4.78	324.77	ND<50	ND<500	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	6.1	ATI
MW-6	06/28/95	329.55	5.97	323.58	---	---	---	---	---	---	---	---	---
MW-6	09/06/95	329.55	6.94	322.61	ND<50	340	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	7.2	ATI
MW-6	12/22/95	329.55	6.53	323.02	---	---	---	---	---	---	---	---	---
MW-6	08/20/96	329.55	6.18	323.37	---	---	---	---	---	---	---	---	---
MW-6	08/21/96	329.55	---	---	ND<50	120	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	SPL
MW-6	10/31/96	329.55	6.52	323.03	---	---	---	---	---	---	---	---	---
MW-6	12/02/96	329.55	6.55	323.00	---	---	---	---	---	---	---	---	---
MW-6	03/27/97	329.55	5.50	324.05	ND<50	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	6.3	SPL
MW-6	06/03/97	329.55	8.19	321.36	---	---	---	---	---	---	---	---	---
MW-7	04/09/93	329.49	5.36	324.13	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-7	08/25/93	329.49	7.44	322.05	ND<50	150	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-7	11/22/93	329.49	7.92	321.57	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
MW-7	03/07/94	329.49	6.20	323.29	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	3.7	PACE
MW-7	06/09/94	329.49	6.89	322.60	ND<50	70	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	6.8	PACE
MW-7	09/12/94	329.49	7.87	321.62	ND<50	50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	6.8	PACE
MW-7	12/20/94	329.49	6.77	322.72	ND<50	ND<50	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	6.5	PACE
MW-7	03/16/95	329.49	4.77	324.72	ND<50	ND<500	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	5.9	ATI
MW-7	06/28/95	329.49	5.94	323.55	ND<50	320	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	7.8	ATI
MW-7	09/06/95	329.49	6.98	322.51	ND<50	240	ND<0.50	ND<0.50	ND<0.50	ND<1.0	8.5	7.5	ATI
MW-7	12/22/95	329.49	6.65	322.84	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	7.2	6.9	ATI
MW-7	08/20/96	329.49	6.22	323.27	---	---	---	---	---	---	---	---	---
MW-7	08/21/96	329.49	---	---	ND<50	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	---	SPL
MW-7	10/31/96	329.49	6.56	322.93	ND<50	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<1.0	86	6.8	SPL
MW-7	12/02/96	329.49	6.13	323.36	ND<50	ND<50	ND<0.5	ND<1.0	ND<1.0	ND<1.0	59	7.3	SPL
MW-7	03/27/97	329.49	5.08	324.41	ND<50	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<1.0	ND<10	6.6	SPL
MW-7	06/03/97	329.49	7.80	321.69	650	ND<100	ND<0.5	ND<1.0	ND<1.0	ND<1.0	630	6.8	SPL

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11120
6400 DUBLIN BOULEVARD, DUBLIN, CALIFORNIA

ALISTO PROJECT NO. 10-170

WELL ID	DATE OF SAMPLING/ MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	GROUNDWATER ELEVATION (b) (Feet)	TPH-G (ug/l)	TPH-D (ug/l)	B (ug/l)	T (ug/l)	E (ug/l)	X (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
QC-2 (h)	08/25/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (h)	11/22/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (h)	03/07/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (h)	06/09/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (h)	09/12/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (h)	12/20/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	PACE
QC-2 (h)	03/16/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2 (h)	06/28/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	ATI
QC-2 (h)	09/06/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	ND<5.0	---	ATI
QC-2 (h)	12/22/95	---	---	---	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
DO	Dissolved oxygen
ug/l	Micrograms per liter
ppm	Parts per million
ND	Not detected above reported detection limit
---	Not analyzed/applicable/measured
PACE	Pace, Inc.
ATI	Analytical Technologies, Inc.
SPL	Southern Petroleum Laboratories

NOTES:

(a) Top of casing elevations surveyed to an arbitrary datum.

(b) Groundwater elevations relative to an arbitrary datum.

(c) Analysis did not detect total oil and grease and halogenated volatile organic compounds above reported detection limits.

(d) Well inaccessible.

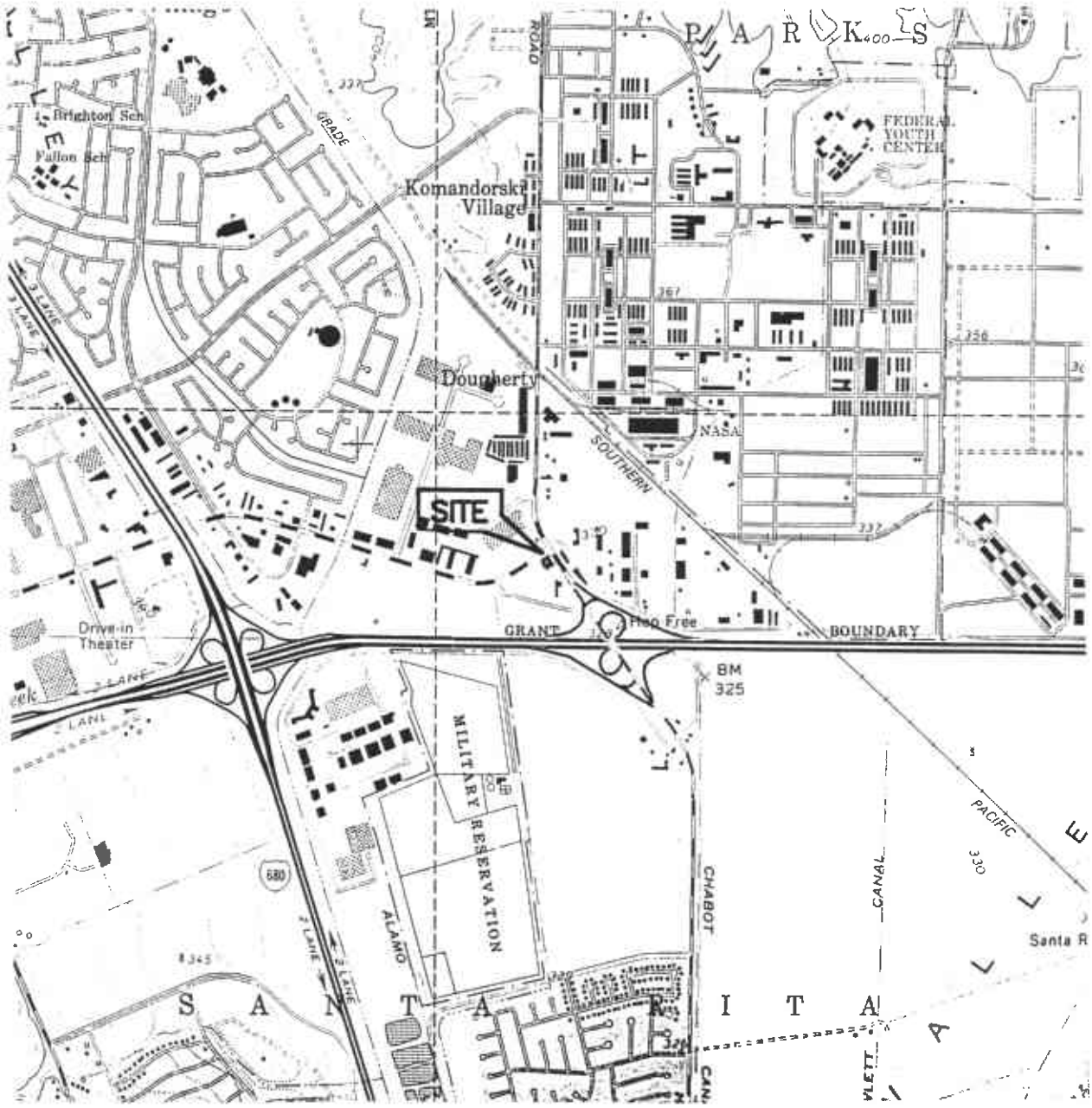
(e) A copy of the documentation for this data is included in Appendix C of Alisto report 10-170-05-001.

(f) Blind duplicate.

(g) MTBE peak. Refer to documentation for this data in Appendix C of Alisto report 10-170-05-001.

(h) Travel blank.

F:\01\10-170\170-5-1.WQ2



SOURCE:
USGS MAP, DUBLIN QUADRANGLE, CALIFORNIA, 7.5 MINUTE SERIES, 1961, PHOTOREVISED 1980.

N

0 1000' 2000'

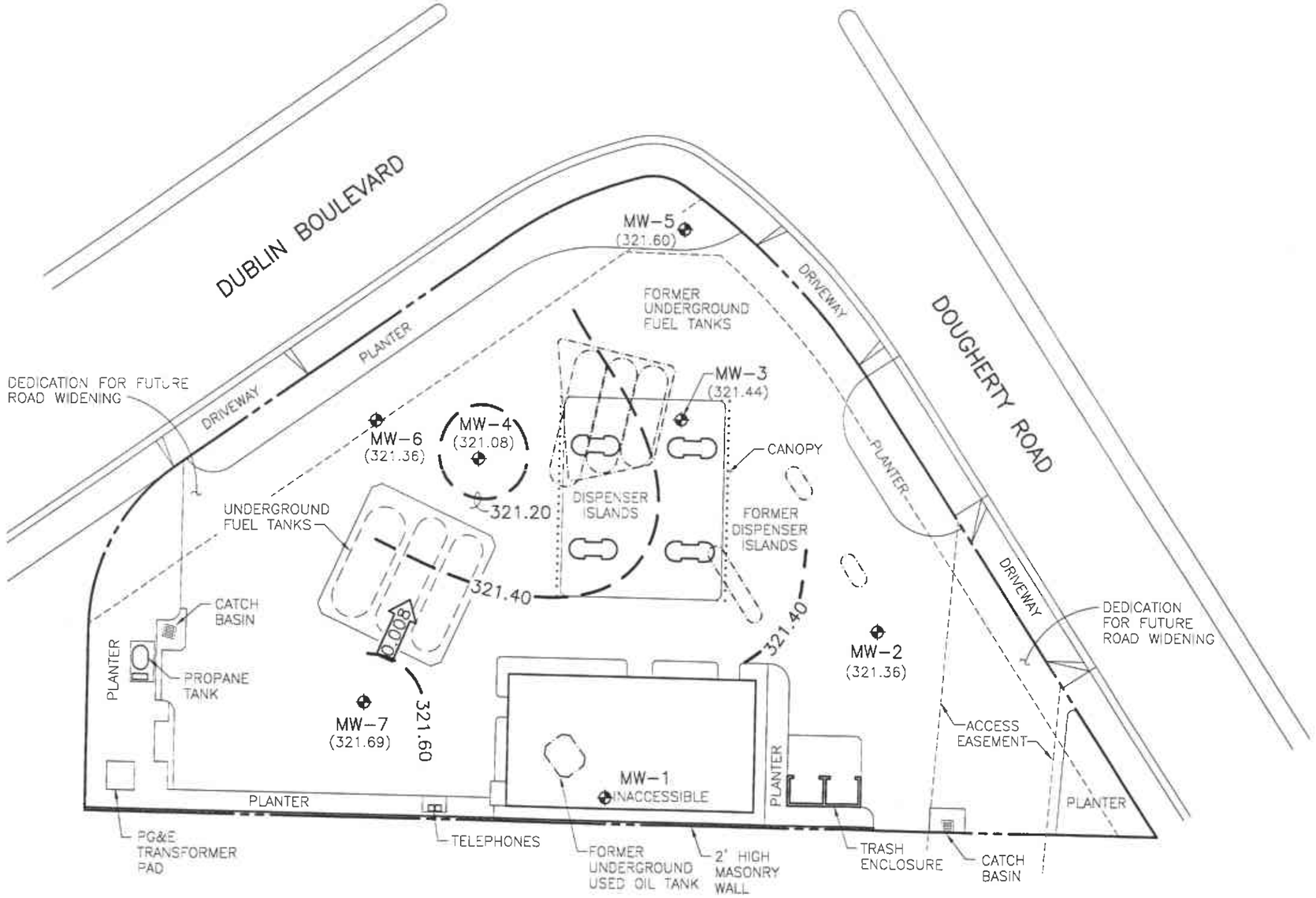
FIGURE 1

SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11120
6400 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA

PROJECT NO. 10-170

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA



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0 30 60

SCALE IN FEET

LEGEND

- ◆ GROUNDWATER MONITORING WELL
- (321.08) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 321.20 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL–0.20 FOOT)
- 0.008 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

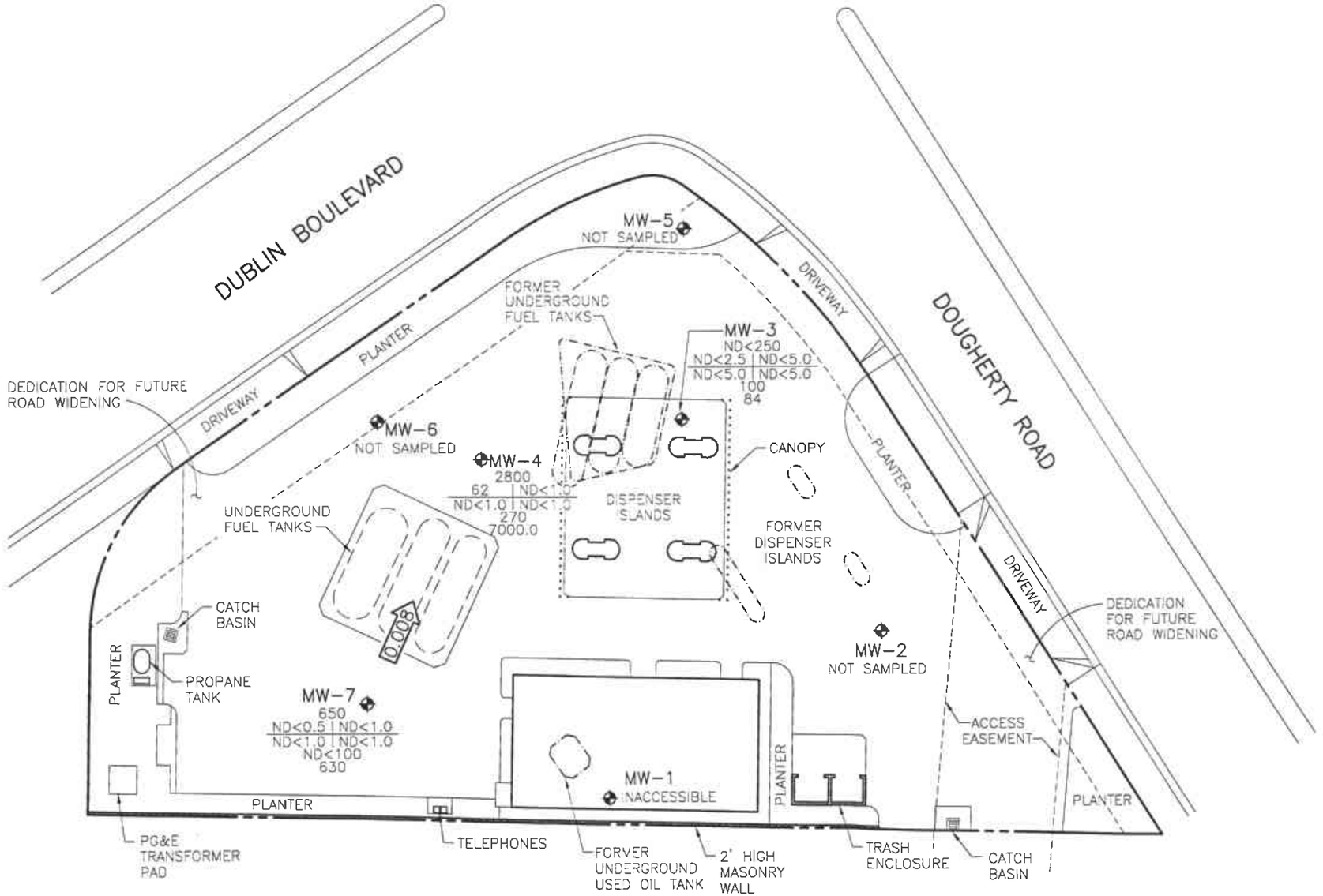
POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

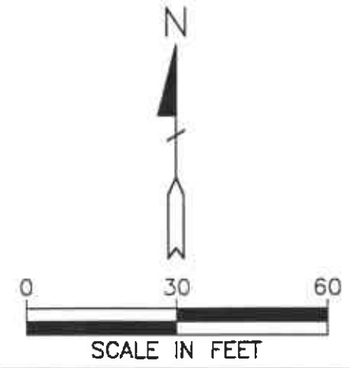
JUNE 3, 1997

BP OIL SERVICE STATION NO. 11120
6400 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA

PROJECT NO. 10–170

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA





LEGEND

◆	GROUNDWATER MONITORING WELL
TPH-G / B | T / E | X / TPH-D / MTBE	CONCENTRATION OF CONSTITUENTS IN MICROGRAMS PER LITER
TPH-G	TOTAL PETROLEUM HYDROCARBONS AS GASOLINE
B	BENZENE
T	TOLUENE
E	ETHYLBENZENE
X	TOTAL XYLENES
TPH-D	TOTAL PETROLEUM HYDROCARBONS AS DIESEL
MTBE	METHYL TERT BUTYL ETHER
ND	NOT DETECTED ABOVE REPORTED DETECTION LIMIT
0.008	CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

JUNE 3, 1997

BP OIL SERVICE STATION NO. 11120
6400 DUBLIN BOULEVARD
DUBLIN, CALIFORNIA

PROJECT NO. 10-170

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

APPENDIX A

WATER SAMPLING FIELD SURVEY FORMS

ALISTO

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

Field Report / Sampling Data Sheet

Project No. 10-170-04-004 (05 001) Date: 6/3/97
Address 6400 Dublin Blvd. Day: M T W TH F
Contract No. G797391 City: Dublin
Station No. BP 11120 Sampler: LCB

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS: Semi=August/Feb
MW-1	N/S	2"	—	—	—	—	Semi Cannot Locate well
MW-2	N/S	2"	N/m	7.14	Ø	0945	Semi
MW-3	S-3	2"	20.00	7.92		1011	QC-1 (S-4) From this well
MW-4	S-2	2"	20.00	8.37		1007	
MW-5	N/S	2"	N/m	8.00		0950	Semi
MW-6	N/S	4"	N/m	8.19		0955	Semi
MW-7	S-1	2"	20.25	7.80	↓	1000	

FIELD INSTRUMENT CALIBRATION DATA

pH METER Ilm 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED (Y) N TIME 1017 WEATHER ~~clear~~ Rain
D.O. METER Ilm ZERO d.O. SOLUTION ____ BAROMETRIC PRESSURE 760 TEMP 68
CONDUCTIVITY METER Ilm 10,000 ____ TURBIDITY METER ____ 5.0 NTU ____ OTHER X
LEAK DETECTOR : ____ ALARM MODE X NON ALARM MODE

Well ID	Depth to Wate	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-7	7.80	2"	OK	Ø	Y (N)	2	1034	73.2	7.37	1.67ms	6.8
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4		72.1	7.22	1.77ms	
20.25 - 7.80 = 12.45 x .16 =	1.99 x 3 =	5.97				6	1044	71.3	7.14	1.79ms	6.8

Purge Method: (X)Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

EPA 601 ____ TPH-G/BTEX HCl ____ TPH Diesel ____ TOG 5520 ____
TIME/SAMPLE ID: 1050

Well ID	Depth to Wate	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-4	8.37	2"	OK	Ø	Y (N)	2	1101	72.4	7.71	1.21ms	6.8
Total Depth - Water Level=	x Well Vol. Factor=	x#vol. to Purge	PurgeVol.			4		71.3	7.59	1.37ms	
20.00 - 8.37 = 11.63 x .16 =	1.86 x 3 =	5.58				6	1111	70.6	7.52	1.41ms	7.1

Purge Method: (X)Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port
Comments:

EPA 601 ____ TPH-G/BTEX HCl ____ TPH Diesel ____ TOG 5520 ____
TIME/SAMPLE ID: 1114

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. 10-170-04-~~004~~ 05 001 Date: 6/3/97
Address 6400 Dublin Blvd. Day: M T W TH F
Contract No. G797391 City: Dublin
Station No. BP 11120 Sampler: CS

Well ID	Depth to Water	Diam	Cap/Lock	Product Dept	Iridescence	Gal.	Time	Temp *F	pH	E.C.	D.O.
MW-3	7.92	2"	OIL	Ø	Y (N)	2	1121	72.9	7.89	1.24mmhos	5.7
						4		71.6	7.70	1.61mmhos	
						6	1133	71.1	7.63	1.69mmhos	5.9

Total Depth - Water Level= x Well Vol. Factor= x#vol. to Purge PurgeVol.
20.00 - 7.92 = 12.09 X .16 = 1.93 X 3 = 5.79

Purge Method: ⊠Surface Pump ODisp.Tube OWinch ODisp. Bailer(s)___ OSys Port

Comments: QC-1 (S-4) From this well

EPA 601_____
TPH-G/BTEX HCl
TPH Diesel_____
TOG 5520 ___
TIME/SAMPLE ID
1137

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

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

June 17, 1997

Mr. Scott Hooton
BP Oil Company
295 SW 41st St., Bldg 13, Ste N
Renton, WA 98055

The following report contains analytical results for samples received at Southern Petroleum Laboratories (SPL) on June 9, 1997. The samples were assigned to Certificate of Analysis No(s). 9706377 and analyzed for the parameters specified on the chain of custody.

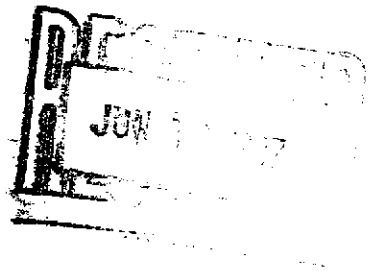
There were no analytical problems encountered with this group of samples and all quality control data was within acceptance limits.

If you have any questions or comments pertaining to this data report, please do not hesitate to contact me. Please reference the above Certificate of Analysis Number(s) during any inquiries.

Again, SPL is pleased to be of service to you. We anticipate working with you in fulfilling all your current and future analytical needs.

Southern Petroleum Laboratories

Ed Fry
Project Manager



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

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 97-06-377

Approved for Release by:

Ed Fry, Project Manager — Date: 6/17/97

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

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

****SUMMARY REPORT*****

06/17/97

Company: BP Oil Company
Site: Dublin, CA
Project No: 10-170-4-4
Project: BP# 11120

ANALYTICAL DATA
NOTE: ND - Not Detected

SPL ID MATRIX	CLIENT ID DATE SAMPLED	BENZENE	TOLUENE	ETHYLBENZ.	XYLENE	TPH-IR	TPH-GC PQL	LEAD	MTBE
9706377-01 WATER	S-1 06/03/97						ND 0.1mg/L		
9706377-02 WATER	S-2 06/03/97						0.27 0.1mg/L		
9706377-03 WATER	S-3 06/03/97						0.10 0.1mg/L		

TPH-GC - California LUFT Manual for Diesel

SPL, Inc., - Project Manager

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

Certificate of Analysis No. H9-9706377-01

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797391 , COC#077262
DATE: 06/17/97

PROJECT: BP# 11120
SITE: Dublin, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-170-4-4 yr
MATRIX: WATER
DATE SAMPLED: 06/03/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	630	50 P	µg/L
Benzene	ND	0.5 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	ND	1.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	100		
4-Bromofluorobenzene	87		
Method 8020A***			
Analyzed by: VHZ			
Date: 06/13/97			
Total Petroleum Hydrocarbons-Gasoline	0.65	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	107		
4-Bromofluorobenzene	87		
California LUFT Manual			
Analyzed by: VHZ			
Date: 06/11/97 05:51:00			
Diesel Range Organics	ND	0.1 P	mg/L
Surrogate	**% Recovery**		
n-Pentacosane	88		
California LUFT Manual for Diesel			
Analyzed by: RR			
Date: 06/12/97 12:17:00			

(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. H9-9706377-01

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797391 , COC#077262
DATE: 06/17/97

PROJECT: BP# 11120
SITE: Dublin, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-170-4-4
MATRIX: WATER
DATE SAMPLED: 06/03/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
California TPH-D Extraction Method 3510B ***	06/10/97		
Analyzed by: AM			
Date: 06/10/97 13:00:00			

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. H9-9706377-02

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797391 , COC#077262
DATE: 06/17/97

PROJECT: BP# 11120
SITE: Dublin, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-170-~~4~~ 5-1 yrs
MATRIX: WATER
DATE SAMPLED: 06/03/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	7000.0	250 P	µg/L
Benzene	62	0.5 P	µg/L
Toluene	ND	1.0 P	µg/L
Ethylbenzene	ND	1.0 P	µg/L
Total Xylene	ND	1.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	117		
4-Bromofluorobenzene	97		
Method 8020A***			
Analyzed by: AA			
Date: 06/15/97			
Total Petroleum Hydrocarbons-Gasoline	2.8	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	133		
4-Bromofluorobenzene	123		
California LUFT Manual			
Analyzed by: VHZ			
Date: 06/11/97 06:46:00			
Diesel Range Organics	0.27	0.1 P	mg/L
Surrogate	**% Recovery**		

(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.

COMMENTS: Sample contains petroleum hydrocarbons from C10-C24 that does not resemble a diesel pattern.(C10-C24) RR

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. H9-9706377-02

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797391 , COC#077262
DATE: 06/17/97

PROJECT: BP# 11120
SITE: Dublin, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-170-4-4 1 year
MATRIX: WATER
DATE SAMPLED: 06/03/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
n-Pentacosane	76		
California LUFT Manual for Diesel			
Analyzed by: RR			
Date: 06/12/97 12:20:00			
California TPH-D Extraction	06/10/97		
Method 3510B ***			
Analyzed by: AM			
Date: 06/10/97 13:00:00			

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.

COMMENTS: Sample contains petroleum hydrocarbons from C10-C24 that does not resemble a diesel pattern.(C10-C24) RR

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. H9-9706377-03

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797391 , COC#077262
DATE: 06/17/97

PROJECT: BP# 11120
SITE: Dublin, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-170-4
MATRIX: WATER
DATE SAMPLED: 06/03/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	84	50 P	µg/L
Benzene	ND	2.5 P	µg/L
Toluene	ND	5.0 P	µg/L
Ethylbenzene	ND	5.0 P	µg/L
Total Xylene	ND	5.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	100		
4-Bromofluorobenzene	87		
Method 8020A***			
Analyzed by: VHZ			
Date: 06/13/97			
Total Petroleum Hydrocarbons-Gasoline	ND	0.25 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	107		
4-Bromofluorobenzene	87		
California LUFT Manual			
Analyzed by: VHZ			
Date: 06/13/97 04:20:00			
Diesel Range Organics	0.10	0.1 P	mg/L
Surrogate	**% Recovery**		

(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.

COMMENTS: Sample contains petroleum hydrocarbons from C10-C24 that does not resemble a diesel pattern.(C10-C24) RR

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. H9-9706377-03

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.#
G797391 , COC#077262
DATE: 06/17/97

PROJECT: BP# 11120
SITE: Dublin, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-170-~~A~~-4 S-1 yms
MATRIX: WATER
DATE SAMPLED: 06/03/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
n-Pentacosane	76		
California LUFT Manual for Diesel Analyzed by: RR Date: 06/12/97 01:07:00			
California TPH-D Extraction Method 3510B *** Analyzed by: AM Date: 06/10/97 13:00:00	06/10/97		

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.

COMMENTS: Sample contains petroleum hydrocarbons from C10-C24 that does not resemble a diesel pattern.(C10-C24) RR

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. H9-9706377-04

BP Oil Company
295 SW 41st St, Bldg 13,Ste N
Renton, WA 98055
ATTN: Scott Hooton

P.O.# G797391 , COC#077262
DATE: 06/17/97

PROJECT: BP# 11120
SITE: Dublin, CA
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-4

PROJECT NO: 10-170-5A-1-4 Yrs
MATRIX: WATER
DATE SAMPLED: 06/03/97
DATE RECEIVED: 06/09/97

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	74.0	50 P	µg/L
Benzene	ND	2.5 P	µg/L
CHLOROBENZENE	ND	5.0 P	µg/L
1,2-DICHLOROBENZENE	ND	5.0 P	µg/L
1,3-DICHLOROBENZENE	ND	5.0 P	µg/L
1,4-DICHLOROBENZENE	ND	5.0 P	µg/L
Toluene	ND	5.0 P	µg/L
Ethylbenzene	ND	5.0 P	µg/L
Total Xylene	ND	5.0 P	µg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	87		
4-Bromofluorobenzene	73		
Method 8020A***			
Analyzed by: AA			
Date: 06/14/97			
Total Petroleum Hydrocarbons-Gasoline	ND	0.25 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	107		
4-Bromofluorobenzene	87		
California LUFT Manual			
Analyzed by: VHZ			
Date: 06/13/97 09:43:00			

(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

QUALITY CONTROL

DOCUMENTATION

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

SURROGATE RECOVERY SUMMARY **PAGE 1**
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California LUFT Manual for Diesel **BATCH#:HP_T970611064600**
WORK ORDER: 9706377-01B **CLIENT SAMPLE ID:S-1**

	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
n-Pentacosane	50	44	88	20- 150
o-Terphenyl		0.0	0	-
2-Fluorobiphenyl		0.0	0	-
5-a-androstane		0.0	0	-
Nonane		0.0	0	-
Nonacosane		0.0	0	-
Hexacosane		0.0	0	-

California LUFT Manual for Diesel **BATCH#:HP_T970611064600**
WORK ORDER: 9706377-02B **CLIENT SAMPLE ID:S-2**

n-Pentacosane	50	38	76	-
o-Terphenyl		0.0	0	-
2-Fluorobiphenyl		0.0	0	-
5-a-androstane		0.0	0	-
Nonane		0.0	0	-
Nonacosane		0.0	0	-
Hexacosane		0.0	0	-

California LUFT Manual for Diesel **BATCH#:HP_T970611064600**
WORK ORDER: 9706377-03B **CLIENT SAMPLE ID:S-3**

n-Pentacosane	50	38	76	-
o-Terphenyl		0.0	0	-
2-Fluorobiphenyl		0.0	0	-
5-a-androstane		0.0	0	-
Nonane		0.0	0	-
Nonacosane		0.0	0	-
Hexacosane		0.0	0	-

Modified 8015A - Diesel *** **BATCH#:HP_T970611064600**
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

n-Pentacosane	50	49	98	50- 150

Modified 8015A - Diesel *** **BATCH#:HP_T970611064600**
WORK ORDER: LCS **CLIENT SAMPLE ID:**

n-Pentacosane	50	51	102	50- 150

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	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
Modified 8015A - Diesel * BATCH#:HP_T970611064600**				
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9706373-01B				
n-Pentacosane	10	8.6000	86	50- 150
Modified 8015A - Diesel * BATCH#:HP_T970611064600**				
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9706373-01B				
n-Pentacosane	10	9.4000	94	50- 150
Method 8020A * BATCH#:HP_W970611065800**				
WORK ORDER: 9706377-01A **CLIENT SAMPLE ID:**S-1				
1,4-Difluorobenzene	30	33	110	70- 131
4-Bromofluorobenzene	30	27	90	43- 135
Method 8020A* BATCH#:HP_W970611065800**				
WORK ORDER: 9706377-02A **CLIENT SAMPLE ID:**S-2				
1,4-Difluorobenzene	30	35	117	70- 131
4-Bromofluorobenzene	30	29	97	43- 135
Method 8020A * BATCH#:HP_W970611065800**				
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**				
1,4-Difluorobenzene	30	30	100	74- 131
4-Bromofluorobenzene	30	27	90	43- 135
Method 8020A * BATCH#:HP_W970611065800**				
WORK ORDER: LCS **CLIENT SAMPLE ID:**				
1,4-Difluorobenzene	30	32	107	70- 131
4-Bromofluorobenzene	30	29	96.7	43- 135
Method 8020A * BATCH#:HP_W970611065800**				
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9706377-01A				
1,4-DIFLUOROBENZENE	30	33	110	70- 131
4-BROMOFLUOROBENZENE	30	27	90	43- 135
Method 8020A * BATCH#:HP_W970611065800**				
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9706377-01A				
1,4-Difluorobenzene	30	33	110	70- 131
4-Bromofluorobenzene	30	29	97	43- 135

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	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
California LUFT Manual			**BATCH#:** HP_W970611082100	
WORK ORDER: 9706377-01A		**CLIENT SAMPLE ID:** S-1		
1,4-Difluorobenzene	30	32	107	50- 150
4-Bromofluorobenzene	30	26	87	50- 150
California LUFT Manual			**BATCH#:** HP_W970611082100	
WORK ORDER: 9706377-02A		**CLIENT SAMPLE ID:** S-2		
1,4-Difluorobenzene	30	40	133	50- 150
4-Bromofluorobenzene	30	37	123	50- 150
California LUFT Manual			**BATCH#:** HP_W970611082100	
WORK ORDER: Method Blank		**CLIENT SAMPLE ID:**		
1,4-Difluorobenzene	30	32	32.3	50- 150
4-Bromofluorobenzene	30	27	27.4	50- 150
California LUFT Manual			**BATCH#:** HP_W970611082100	
WORK ORDER: Matrix Spike		**CLIENT SAMPLE ID:** 9706377-02A		
1,4-Difluorobenzene	30	40	133	50- 150
4-Bromofluorobenzene	30	42	140	50- 150
California LUFT Manual			**BATCH#:** HP_W970611082100	
WORK ORDER: Matrix Spike Dup.		**CLIENT SAMPLE ID:** 9706377-02A		
1,4-Difluorobenzene	30	42	140	50- 150
4-Bromofluorobenzene	30	45	150	50- 150
Method 8020A* **			**BATCH#:** HP_W970612054200	
WORK ORDER: 9706377-03A		**CLIENT SAMPLE ID:** S-3		
1,4-Difluorobenzene	30	30.0000	100	70- 131
4-Bromofluorobenzene	30	26.0000	87	43- 135
Method 8020A * **			**BATCH#:** HP_W970612054200	
WORK ORDER: Method Blank		**CLIENT SAMPLE ID:**		
1,4-Difluorobenzene	30	31		74- 131
4-Bromofluorobenzene	30	26		43- 135
Method 8020A * **			**BATCH#:** HP_W970612054200	
WORK ORDER: LCS		**CLIENT SAMPLE ID:**		
1,4-Difluorobenzene	30	34	113	70- 131

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	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
4-Bromofluorobenzene	30	29	96.7	43- 135

Method 8020A *** **BATCH#:**HP_W970612054200
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9706214-02A

1,4-DIFLUOROBENZENE	30	32	107	70- 131
4-BROMOFLUOROBENZENE	30	28	93	43- 135

Method 8020A *** **BATCH#:**HP_W970612054200
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9706214-02A

1,4-Difluorobenzene	30	32	107	70- 131
4-Bromofluorobenzene	30	28	93	43- 135

California LUFT Manual **BATCH#:**HP_W970612082100
WORK ORDER: 9706377-03A **CLIENT SAMPLE ID:**S-3

1,4-Difluorobenzene	30	32.0000	107	50- 150
4-Bromofluorobenzene	30	26.0000	87	50- 150

California LUFT Manual **BATCH#:**HP_W970612082100
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	31	30.6	50- 150
4-Bromofluorobenzene	30	27	27.5	50- 150

California LUFT Manual **BATCH#:**HP_W970612082100
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9706214-02A

1,4-Difluorobenzene	30	32	107	50- 150
4-Bromofluorobenzene	30	38	127	50- 150

California LUFT Manual **BATCH#:**HP_W970612082100
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9706214-02A

1,4-Difluorobenzene	30	32	107	50- 150
4-Bromofluorobenzene	30	36	120	50- 150

Method 8020A*** **BATCH#:**HP_W970613054200
WORK ORDER: 9706377-01A **CLIENT SAMPLE ID:**S-1

1,4-Difluorobenzene	30	30.0000	100	70- 131
4-Bromofluorobenzene	30	26.0000	87	43- 135

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	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS

Method 8020A *** **BATCH#:**HP_W970613054200
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	31	103	74- 131
4-Bromofluorobenzene	30	27	90	43- 135

Method 8020A *** **BATCH#:**HP_W970613054200
WORK ORDER: LCS **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	32	107	70- 131
4-Bromofluorobenzene	30	30	100	43- 135

Method 8020A *** **BATCH#:**HP_W970613054200
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9706333-01A

1,4-DIFLUOROBENZENE	30	32	107	70- 131
4-BROMOFLUOROBENZENE	30	27	90	43- 135

Method 8020A *** **BATCH#:**HP_W970613054200
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9706333-01A

1,4-Difluorobenzene	30	31	103	70- 131
4-Bromofluorobenzene	30	29	97	43- 135

California LUFT Manual **BATCH#:**HP_W970613063600
WORK ORDER: 9706377-04A **CLIENT SAMPLE ID:**S-4

1,4-Difluorobenzene	30	32.0000	107	50- 150
4-Bromofluorobenzene	30	26.0000	87	50- 150

California LUFT Manual **BATCH#:**HP_W970613063600
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	33	110	50- 150
4-Bromofluorobenzene	30	27	90	50- 150

California LUFT Manual **BATCH#:**HP_W970613063600
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9706333-02A

1,4-Difluorobenzene	30	37	123	50- 150
4-Bromofluorobenzene	30	43	143	50- 150

California LUFT Manual **BATCH#:**HP_W970613063600
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9706333-02A

1,4-Difluorobenzene	30	38	127	50- 150

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	AMOUNT ADDED	CONC. MEASURED	RECOVERY	LIMITS
4-Bromofluorobenzene	30	43	143	50- 150

Method 8020A* BATCH#:HP_W970614050000**
WORK ORDER: 9706377-04A **CLIENT SAMPLE ID:** S-4

1,4-Difluorobenzene	30	26.0000	87	70- 131
4-Bromofluorobenzene	30	22.0000	73	43- 135

Method 8020A * BATCH#:**HP_W970614050000
WORK ORDER: Method Blank **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	30	100	74- 131
4-Bromofluorobenzene	30	26	87	43- 135

Method 8020A * BATCH#:**HP_W970614050000
WORK ORDER: LCS **CLIENT SAMPLE ID:**

1,4-Difluorobenzene	30	32	107	70- 131
4-Bromofluorobenzene	30	29	96.7	43- 135

Method 8020A * BATCH#:**HP_W970614050000
WORK ORDER: Matrix Spike **CLIENT SAMPLE ID:**9706578-04A

1,4-DIFLUOROBENZENE	30	26	87	70- 131
4-BROMOFLUOROBENZENE	30	22	73	43- 135

Method 8020A * BATCH#:**HP_W970614050000
WORK ORDER: Matrix Spike Dup. **CLIENT SAMPLE ID:**9706578-04A

1,4-Difluorobenzene	30	27	90	70- 131
4-Bromofluorobenzene	30	22	73	43- 135

« = Recovery outside of control limits
*** = Methods for Chemical Analysis of Water & Wastes,1983,EPA**
**** = Standard Methods for Examination of Water & Wastewater,17th**
***** = Test Methods for Evaluating Solid Waste,EPA SW846,3rd**

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** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020/602

Matrix: Aqueous
Units: µg/L

Batch Id: HP_W970612054200

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	47	94.0	63 - 120
Benzene	ND	50	48	96.0	62 - 121
Toluene	ND	50	53	106	66 - 136
EthylBenzene	ND	50	54	108	70 - 136
O Xylene	ND	50	52	104	74 - 134
M & P Xylene	ND	100	110	110	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	61	20	97	180 *	110	245 *	30.6 *	20	39 - 150
BENZENE	ND	20	18	90.0	19	95.0	5.41	25	39 - 150
TOLUENE	ND	20	20	100	20	100	0	26	56 - 134
ETHYLBENZENE	ND	20	19	95.0	20	100	5.13	38	61 - 128
O XYLENE	ND	20	18	90.0	19	95.0	5.41	29	40 - 130
M & P XYLENE	1	40	39	95.0	40	97.5	2.60	20	43 - 152

Analyst: VHZ
Sequence Date: 06/12/97
SPL ID of sample spiked: 9706214-02A
Sample File ID: W_F7442.TX0
Method Blank File ID:
Blank Spike File ID: W_F7440.TX0
Matrix Spike File ID: W_F7444.TX0
Matrix Spike Duplicate File ID: W_F7445.TX0

* = Values Outside QC Range. « = Data outside Method Specification limits.
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): 9706214-03A 9706214-01A 9706214-04A 9706214-05A 9706298-06A 9706298-07A 9706298-08A 9706298-09A 9706208-03A 9706374-14A 9706214-02A 9706374-15A 9706374-11A 9706374-19A 9706377-03A 9706159-10A

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** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020/602

Matrix: Aqueous
Units: µg/L

Batch Id: HP_W970613054200

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	42	84.0	63 - 120
Benzene	ND	50	43	86.0	62 - 121
Toluene	ND	50	47	94.0	66 - 136
EthylBenzene	ND	50	47	94.0	70 - 136
O Xylene	ND	50	47	94.0	74 - 134
M & P Xylene	ND	100	96	96.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	ND	20	18	90.0	19	95.0	5.41	20	39 - 150
BENZENE	ND	20	19	95.0	19	95.0	0	25	39 - 150
TOLUENE	ND	20	20	100	19	95.0	5.13	26	56 - 134
ETHYLBENZENE	ND	20	19	95.0	19	95.0	0	38	61 - 128
O XYLENE	ND	20	18	90.0	18	90.0	0	29	40 - 130
M & P XYLENE	ND	40	38	95.0	37	92.5	2.67	20	43 - 152

Analyst: VHZ
Sequence Date: 06/13/97
SPL ID of sample spiked: 9706333-01A
Sample File ID: W_F7484.TXO
Method Blank File ID:
Blank Spike File ID: W_F7474.TXO
Matrix Spike File ID: W_F7478.TXO
Matrix Spike Duplicate File ID: W_F7479.TXO

* = Values Outside QC Range. « = Data outside Method Specification limits.
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): 9706333-01A 9706333-02A 9706374-18A 9706374-20A 9706374-21A 9706377-01A 9706333-04A 9706333-05A 9706333-09A 9706333-10A 9706333-06A 9706578-02A 9706578-01A

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** SPL BATCH QUALITY CONTROL REPORT **
METHOD 8020/602

Matrix: Aqueous
Units: µg/L

Batch Id: HP_W970614050000

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
MTBE	ND	50	43	86.0	63 - 120
Benzene	ND	50	43	86.0	62 - 121
Toluene	ND	50	48	96.0	66 - 136
EthylBenzene	ND	50	49	98.0	70 - 136
O Xylene	ND	50	48	96.0	74 - 134
M & P Xylene	ND	100	99	99.0	77 - 140

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
MTBE	ND	20	17	85.0	17	85.0	0	20	39 - 150
BENZENE	ND	20	14	70.0	15	75.0	6.90	25	39 - 150
TOLUENE	ND	20	15	75.0	15	75.0	0	26	56 - 134
ETHYLBENZENE	ND	20	14	70.0	14	70.0	0	38	61 - 128
O XYLENE	ND	20	14	70.0	15	75.0	6.90	29	40 - 130
M & P XYLENE	ND	40	29	72.5	29	72.5	0	20	43 - 152

Analyst: AA
Sequence Date: 06/14/97
SPL ID of sample spiked: 9706578-04A
Sample File ID: W_F7524.TXO
Method Blank File ID:
Blank Spike File ID: W_F7509.TXO
Matrix Spike File ID: W_F7517.TXO
Matrix Spike Duplicate File ID: W_F7518.TXO

* = Values Outside QC Range. « = Data outside Method Specification limits.
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):

9706350-03A	9706350-04A	9706377-04A	9706333-08A
9706377-02A	9706333-03A	9706333-07A	9706350-07A
9706350-05A	9706350-02A	9706350-01A	9706350-08A
9706575-01A	9706575-02A	9706575-03A	9706575-04A
9706575-05A	9706578-04A	9706578-03A	9706350-06A

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** SPL BATCH QUALITY CONTROL REPORT **
CA LUFT

Matrix: Aqueous
Units: mg/L

Batch Id: HP_W970611082100

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Petroleum Hydrocarbons-Gas	ND	1.0	0.99	99.0	50 - 150

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
PETROLEUM HYDROCARBONS-GAS	2.80	0.9	2.95	16.7 *	3.11	34.4 *	69.3 *	50	50 - 150

Analyst: VHZ
Sequence Date: 06/11/97
SPL ID of sample spiked: 9706377-02A
Sample File ID: WWF7413.TXO
Method Blank File ID:
Blank Spike File ID: WWF7402.TXO
Matrix Spike File ID: WWF7405.TXO
Matrix Spike Duplicate File ID: WWF7406.TXO

* = Values Outside QC Range. « = Data outside Method Specification limits.
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: Temporary Limits
(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9706208-02A	9706208-04A	9706208-06A	9706208-08A
9706208-01A	9706208-05A	9706208-07A	9706214-02A
9706208-03A	9706214-03A	9706214-01A	9706214-04A
9706214-05A	9706350-09A	9706377-01A	9706377-02A

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** SPL BATCH QUALITY CONTROL REPORT **
CA LUFT

Matrix: Aqueous
Units: mg/L

Batch Id: HP_W970612082100

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Petroleum Hydrocarbons-Gas	ND	1.0	0.94	94.0	50 - 150

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
PETROLEUM HYDROCARBONS-GAS	0.12	0.9	1.12	111	1.10	109	1.82	50	50 - 150

Analyst: VHZ
Sequence Date: 06/12/97
SPL ID of sample spiked: 9706214-02A
Sample File ID: WWF7442.TXO
Method Blank File ID:
Blank Spike File ID: WWF7441.TXO
Matrix Spike File ID: WWF7446.TXO
Matrix Spike Duplicate File ID: WWF7447.TXO

* = Values Outside QC Range. « = Data outside Method Specification limits.
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: Temporary Limits
(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID): 9706374-18A 9706374-19A 9706374-20A 9706374-21A 9706377-03A 9706214-02A 9706159-10A

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** SPL BATCH QUALITY CONTROL REPORT **
CA LUFT

Matrix: Aqueous
Units: mg/L

Batch Id: HP_W970613063600

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Petroleum Hydrocarbons-Gas	ND	1.0	0.82	82.0	50 - 150

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
PETROLEUM HYDROCARBONS-GAS	0.67	0.9	1.71	116	1.75	120	3.39	50	50 - 150

Analyst: VHZ
Sequence Date: 06/13/97
SPL ID of sample spiked: 9706333-02A
Sample File ID: WWF7485.TXO
Method Blank File ID:
Blank Spike File ID: WWF7476.TXO
Matrix Spike File ID: WWF7480.TXO
Matrix Spike Duplicate File ID: WWF7481.TXO

* = Values Outside QC Range. « = Data outside Method Specification limits.
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: Temporary Limits
(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID): 9706377-04A 9706578-02A 9706578-01A 9706333-02A 9706374-15A

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

** SPL BATCH QUALITY CONTROL REPORT **
Mod. 8015 - Diesel

Matrix: Aqueous
Units: mg/L

Batch Id: HP_T970611064600

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Diesel Petr. Hydrocarbons	ND	5.0	5.04	101	60 - 139

MATRIX SPIKES

SPIKE COMPOUNDS	Sample Results <2>	Spike Added <3>	Matrix Spike Result <1>	Matrix Spike Recovery <4>	Matrix Spike Duplicate Result <1>	Matrix Spike Duplicate Recovery <5>	MS/MSD Relative % Difference	QC Limits(***) (Advisory) RPD Max.	QC Limits(***) (Advisory) Recovery Range
DIESEL PETR. HYDROCARBONS	0.89	5.0	3.83	58.8	4.49	72.0	20.2	43	20 - 177

Analyst: RR
Sequence Date: 06/11/97
SPL ID of sample spiked: 9706373-01B
Sample File ID: T_F7151.TXO
Method Blank File ID:
Blank Spike File ID: T_F7149.TXO
Matrix Spike File ID: T_F7152.TXO
Matrix Spike Duplicate File ID: T_F7153.TXO

* = Values Outside QC Range. « = Data outside Method Specification limits.
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 (1st Q '96)
(***) = Source: SPL-Houston Historical Data (2nd Q '94)

SAMPLES IN BATCH(SPL ID):

9706284-01B 9706349-02D 9706409-01A 9706373-01B
9706373-02B 9706373-03B 9706377-01B 9706284-02B
9706352-02B 9706377-02B 9706377-03B 9706285-02B
9706289-01B 9706289-02B 9706302-01B 9706302-02B
9706302-03B 9706349-01D

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

9706377

CHAIN OF CUSTODY

No. 077262 Page 1 of 1

CONSULTANT'S NAME: Alisto Engineering	ADDRESS: 1575 Treat Blvd #201	CITY: W.C.	STATE: Ca	ZIP CODE: 94598
BP SITE NUMBER: 11120	BP CORNER ADDRESS/CITY: Dublin			CONSULTANT PROJECT NUMBER: 10-170-4-45-1 yrs
CONSULTANT PROJECT MANAGER: Brady Nagle	PHONE NUMBER: (510) 295-1650	FAX NUMBER: 295-1823		CONSULTANT CONTRACT NUMBER: 679739
BP CONTACT: Scott Houston	BP ADDRESS: Renton, WA	PHONE NUMBER: —		FAX NO.: —
LAB CONTACT: SPL	LABORATORY ADDRESS: Texas	PHONE NUMBER: —		FAX NO.: —
SAMPLED BY (Please Print Name): Larry Buenviaje	SAMPLED BY (Signature):	SHIPMENT DATE: 6/5/97		SHIPMENT METHOD: FedEx

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

ANALYSIS REQUIRED

AIRBILL NUMBER: 38484 70220

SAMPLE DESCRIPTION	COLLECTION DATE / TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE / LAB SAMPLE #	TPH-D	BTEX	TPH-G	COMMENTS
S-1	6/3/97	W	5	HCL		X	X	X	
S-2	"	"	"	"		"	"	"	
S-3	"	"	"	"		"	"	"	
S-4	"	"	3	"		"	"	"	

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	6/4/97		Patricia Upton	6/5/97	1200
Patricia Upton	6/5/97	1700		6/9/97	0945

ADDITIONAL COMMENTS: ROI 4°C

CLV-16722
PKG/50

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

SPL Houston Environmental Laboratory

Sample Login Checklist

Date: 6/9/97	Time: 0945

SPL Sample ID: 9706377

			Yes	No
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:		4° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	384847020	
		Other:		
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name: Annette Salas	Date: 6/9/97

APPENDIX C

HISTORICAL MTBE LABORATORY ANALYSIS DOCUMENTATION

10-170-01-001

pace
INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

September 07, 1993

Mr. Bill Howell
Alisto Engineering Group
1777 Oakland Blvd., Ste. 200
Walnut Creek, CA 94596

RE: PACE Project No. 430826.520
Client Reference: BP Station # 11120

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received August 26, 1993.

Please note that a peak eluting earlier than Benzene and suspected to be methyl tertiary butyl ether (MTBE) was detected in the following samples at the approximated level:

70 0141362/MW-3	3300ug/L
70 0141370/MW-4	2100ug/L
70 0141419/QC-1	2100ug/L

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Jim J. Oys

Jim J. Oys
Project Manager

Enclosures

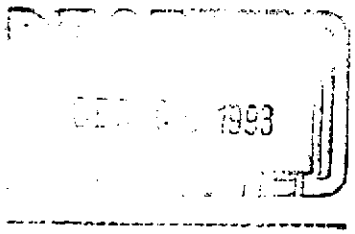
11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

10-170-01-002

pace
INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

December 02, 1993



Mr. Bill Howell
Alisto Engineering Group
1777 Oakland Blvd., Ste. 200
Walnut Creek, CA 94596

RE: PACE Project No. 431123.505
Client Reference: BP Station # 11120

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received November 23, 1993.

Please note that methyl tertiary butyl ether (MTBE) was detected in the following samples at the approximated level:

70 0198445/QC-1	3500ug/L
70 0198500/MW-3	910ug/L(over range)

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

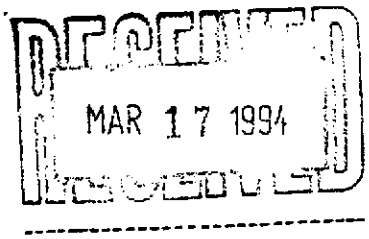
Jim J. Oys
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

pace
INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS



March 15, 1994

Mr. Bill Howell
Alisto Engineering Group
1777 Oakland Blvd., Ste. 200
Walnut Creek, CA 94596

RE: PACE Project No. 440308.510
Client Reference: BP Station # 11120/CP# 10-170-01/003

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received March 08, 1994.

Please note that a peak eluting earlier than Benzene and suspected to be Methyl Tert Butyl Ether was detected in the following samples at the approximated levels:

700268109/MW-3	7200 ug/L
700268117/MW-4	5900 ug/L
700268168/QC-1	4200 ug/L

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Ronald M. Chew

Ronald M. Chew
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

pace
INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

June 20, 1994

Mr. Bill Howell
Alisto Engineering Group
1777 Oakland Blvd., Ste. 200
Walnut Creek, CA 94596

RE: PACE Project No. 440610.506
Client Reference: BP Site #11120/10-170-1-4

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received June 10, 1994.

Please note that a peak eluting earlier than Benzene and suspected to be Methyl Tert Butyl Ether was detected in the following samples at the approximated levels:

700338697/S-6	10000 ug/L
700338700/S-7	13000 ug/L
700338719/S-8	13000 ug/L

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Ronald M. Chew

Ronald M. Chew
Project Manager

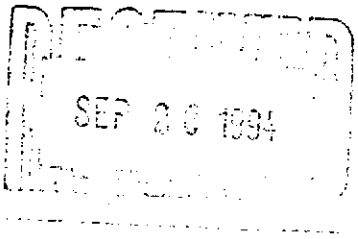
Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

pace INCORPORATED
THE ASSURANCE OF QUALITY

REPORT OF LABORATORY ANALYSIS

September 22, 1994



Mr. Bill Howell
Alisto Engineering Group
1777 Oakland Blvd., Ste. 200
Walnut Creek, CA 94596

RE: PACE Project No. 440913.522
Client Reference: BP Site #11120 10-17e-2-1

Dear Mr. Howell:

Enclosed is the report of laboratory analyses for samples received September 13, 1994.

Please note that a peak eluting earlier than Benzene and suspected to be Methyl Tert Butyl Ether was detected in the following samples at the approximated levels:

700392810/S-6 1533	4200 ug/L
700392829/S-7 1600	3800 ug/L
700392837/S-8	3900 ug/L

Footnotes are given at the end of the report.

If you have any questions concerning this report, please feel free to contact us.

Sincerely,

Ronald M. Chew

Ronald M. Chew
Project Manager

Enclosures

11 Digital Drive
Novato, CA 94949
TEL: 415-883-6100
FAX: 415-883-2673

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

ATI I.D.: 506372

July 13, 1995

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

Project Name: BP SITE#11120/I-S80 & DOUGHERTY, DUBLIN CA
Project # : G317864/10-170-02-004

Attention: BILL HOWELL

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

Date Received	Quantity	Matrix
June 30, 1995	5	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.

Please note that Alisto Engineering samples S-2, S-3 and S-4 contain an MTBE peak.

GARY STEWART
VOLATILES SUPERVISOR

FOR ALAN J. KLEINSCHMIDT
LABORATORY MANAGER

RECEIVED
JUL 14 1995

BP EXPLORATION & OIL, INC.
ENVIRONMENTAL REMEDIATION MANAGEMENT
DATA REVIEW CHECKLIST

BP Site Number: 11120
ERM Contact: G797391
Sampling Date: 06/03/97
Matrix Description: Water
Date Final Report Received: 06/23/97
Laboratory & Location: SPL, Houston, Texas

		Yes	No	N/A
1.	Is BP contract release number consistent with analytical report?	X	____	____
2.	Was report submitted within the specified timeframe?	C	____	____
3.	Does report agree with the COC?	X	____	____
4.	Are units consistent with the given matrix?	X	____	____
5.	Were any target analytes/compounds detected in blanks (i.e., trip or equipment)?	____	____	X
6.	Are duplicate water samples within 30%?	X	____	____
7.	Are holding times met?	X	____	____
8.	Are surrogates within limits using laboratory criteria?	X	____	____
9.	Are MS/MSD acceptable using laboratory criteria?	X	____	____
10.	Are LCS results acceptable using laboratory criteria?	X	____	____

Notes: _____

Data Validation Completed by: Dale Swain

(signature): Dale Swain

Date: 7/1/97