BP OIL

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

December 16, 1996

Alameda County Health Care Services Agency
Attention Ms. Susan L. Hugo - Senior Hazardous Materials Specialist
UST Local Oversight Program
1131 Harbor Bay Parkway
Alameda, CA 94502-6577

RE: BP Oil Site No. 11127
5425 Martin Luther King, Jr. Way
Oakland, CA 94609
STID# 3105

Dear Ms. Hugo:

This letter transmits a report titled Groundwater Monitoring and Sampling Report, dated October 22, 1996. You may recall that we have been sampling this site on a semi-annual basis per BP's February 2, 1993 letter to Rafat Shahid and Eddy So.

The enclosed report summarizes chemical data obtained from the monitoring wells since 1991. Upon review of the results reported in the enclosed report, you will note that fuel constituents (TPH-G, TPH-D, benzene, ethylbenzene, toluene, xylenes) and chlorinated solvents were not detected in any of the samples submitted for laboratory analysis. Figure 2, Potentiometric Groundwater Elevation Contour Map, shows a northwesterly direction of groundwater flow.

You will recall that BP performed this sampling event to provide the information you requested to close this site. This letter, therefore, serves as a request for a finding for "no further action" and "case closure". I understand that further monitoring and sampling will not be required at this time, and we will remove or destroy the monitoring wells upon confirmation that a closure letter is forthcoming.

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

Sincerely,

Scott Hooton
Environmental Remediation Management

attachment

cc: site file
B. Nagle - AEG
CRWQCB-SFBR, Attention Mr. K. Graves, 2101 Webster Street, Ste. 500, Oakland, CA 94612

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11127
5425 Martin Luther King, Jr. Way
Oakland, California

Project No. 10-022-06-001

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

October 22, 1996

Ken Simas
Project Manager

Al Sevilla, P.E.
Principal

3/31/00

GROUNDWATER MONITORING AND SAMPLING REPORT

BP Oil Company Service Station No. 11127
5425 Martin Luther King, Jr. Way
Oakland, California

Project No. 10-022-06-001

October 22, 1996

INTRODUCTION

This report presents the results and findings of the July 23, 1996 groundwater monitoring and sampling conducted by Alisto Engineering Group at BP Oil Company Service Station No. 11127, 5425 Martin Luther King, Jr. Way, 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 in reference to mean sea level. The survey data and groundwater elevation measurements collected to date are presented in Table 1.

Groundwater monitoring was performed concurrently at the neighboring Chevron service station, 5509 Martin Luther King, Jr. Way. The results are presented in Table 3.

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 Tables 1 and 2. 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. 11127
5425 MARTIN LUTHER KING, JR. WAY, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-022

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)	TOG (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-1	08/29/91	82.35	10.54	71.81	ND<50	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---
MW-1	11/20/91	82.35	10.24	72.11	55	---	ND<0.3	ND<0.3	ND<0.3	ND<0.3	---	---	---	---
MW-1	02/28/92	82.35	8.17	74.18	400	---	6.7	0.7	11	170	---	---	---	SUP
MW-1	06/08/92	82.35	10.25	72.10	250	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
MW-1	09/03/92	82.35	10.68	71.67	160	---	1.2	3.8	1.7	5.4	---	---	---	ANA
QC-1 (c)	09/03/92	---	---	---	190	---	0.7	2.6	1.3	5.2	---	---	---	ANA
MW-1	11/12/92 (d)	82.35	10.22	72.13	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-1 (c)	11/12/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-1	02/05/93	82.35	8.77	73.58	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-1 (c)	02/05/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-1	08/16/93	82.35	10.25	72.10	300	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-1	03/14/94	82.35	9.53	72.82	130	---	ND<0.5	ND<0.5	0.8	2.7	---	---	---	PACE
MW-1	12/15/94	82.35	7.88	74.47	---	---	---	---	---	---	---	---	---	---
MW-1	07/06/95	82.35	10.84	71.51	---	---	---	---	---	---	---	---	---	---
MW-1	01/17/96	82.35	9.46	72.89	---	---	---	---	---	---	---	---	---	---
MW-1	01/19/96	---	---	---	410	---	ND<2.5	ND<2.5	ND<2.5	ND<5.0	---	1500	7.1	ATI
MW-1	07/23/96	82.35	10.10	72.25	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	---	480	6.8	SPL
MW-2	08/29/91	83.49	11.56	71.93	950	66	ND<0.3	ND<0.3	17	50	---	---	---	---
MW-2	11/20/91	83.49	11.25	72.24	1400	ND<50	0.3	ND<0.3	32	90	---	---	---	---
MW-2	02/28/92	83.49	9.02	74.47	2300	70	4.2	1.8	47	360	---	---	---	SUP
MW-2	06/08/92	83.49	11.37	72.12	470	---	ND<0.5	ND<0.5	7.7	12	---	---	---	ANA
MW-2	09/03/92	83.49	11.81	71.68	530	---	1.6	3.5	23	46	---	---	---	ANA
MW-2	11/12/92	83.48	11.27	72.21	250	88	ND<0.5	ND<0.5	5.0	10	ND<5000	---	---	PACE
MW-2	02/05/93	83.48	9.85	73.63	330	ND<50	0.7	ND<0.5	3.6	15	---	---	---	PACE
MW-2	08/16/93	83.48	11.33	72.15	270	---	ND<0.5	ND<0.5	ND<0.5	19	---	---	---	PACE
MW-2	03/14/94	83.48	10.80	72.68	ND<50	ND<50	ND<0.5	ND<0.5	0.6	3.1	ND<5000	---	---	PACE
QC-1 (c)	03/14/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-2	12/15/94	83.48	8.66	74.82	79	ND<50	ND<0.5	0.6	1.3	1.6	ND<5000	---	6.2	PACE
QC-1 (c)	12/15/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-2	07/06/95	83.48	11.12	72.36	120	160	ND<0.50	ND<0.50	0.52	ND<1.0	ND<50	---	7.4	ATI
QC-1 (c)	07/06/95	---	---	---	87	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	ATI
MW-2	01/17/96	83.48	9.76	73.72	---	---	---	---	---	---	---	---	---	---
MW-2	01/19/96	---	---	---	ND<50	ND<50	ND<0.50	ND<0.50	ND<0.50	ND<1.0	200	ND<5.0	7.3	ATI
MW-2	07/23/96	83.48	11.31	72.17	ND<50	ND<50	ND<0.5	ND<1	ND<1	ND<1	ND<500	18	7.3	SPL
MW-3	11/12/92	84.96	12.24	72.72	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-3	02/05/93	84.96	10.95	74.01	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-3	08/16/93	84.96	12.46	72.50	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-3	03/14/94	84.96	11.61	73.35	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-3	12/15/94	84.96	10.08	74.88	---	---	---	---	---	---	---	---	---	---
MW-3	07/06/95	84.96	11.93	73.03	---	---	---	---	---	---	---	---	---	---
MW-3	01/17/96	84.96	10.54	74.42	---	---	---	---	---	---	---	---	---	---
MW-3	01/19/96	---	---	---	---	---	---	---	---	---	---	---	---	---
MW-3	07/23/96	84.96	11.54	73.42	---	---	---	---	---	---	---	---	---	---

TABLE 1 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11127
5425 MARTIN LUTHER KING, JR. WAY, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-022

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)	TOG (ug/l)	MTBE (ug/l)	DO (ppm)	LAB
MW-4	11/12/92	82.70	10.44	72.26	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-4	02/05/93	82.70	9.14	73.56	92	---	0.7	ND<0.5	ND<0.5	1.2	---	---	---	PACE
MW-4	08/16/93	82.70	10.57	72.13	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-1 (c)	08/16/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-4	03/14/94	82.70	9.70	73.00	220	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
MW-4	12/15/94	82.70	8.39	74.31	---	---	---	---	---	---	---	---	---	---
MW-4	07/06/95	82.70	10.03	72.67	---	---	---	---	---	---	---	---	---	---
MW-4	01/17/96	82.70	8.67	74.03	---	---	---	---	---	---	---	---	---	---
MW-4	01/19/96	---	---	---	71	---	2.6	ND<0.50	ND<0.50	ND<1.0	---	170	7.0	ATI
QC-1 (c)	01/19/96	---	---	---	68	---	2.4	ND<0.50	ND<0.50	ND<1.0	---	200	7.0	ATI
MW-4	07/23/96	82.70	10.27	72.43	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	---	ND<10	7.5	SPL
QC-1 (c)	07/23/96	---	---	---	ND<50	---	ND<0.5	ND<1	ND<1	ND<1	---	ND<10	---	SPL
QC-2 (e)	09/03/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	ANA
QC-2 (e)	11/12/92	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (e)	02/05/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (e)	08/16/93	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (e)	03/14/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (e)	12/15/94	---	---	---	ND<50	---	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	---	---	PACE
QC-2 (e)	07/06/95	---	---	---	ND<50	---	ND<0.50	ND<0.50	ND<0.50	ND<1.0	---	---	---	ATI
QC-2 (e)	01/19/96	---	---	---	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
TOG	Total oil and grease
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
SUP	Superior Analytical Laboratory
ANA	Anametrix, Inc.
PACE	Pace, Inc.
ATI	Analytical Technologies, Inc.
SPL	Southern Petroleum Laboratories

NOTES:

(a) Top of casing elevations surveyed in reference to the City of Oakland Benchmark No. 1967, on the curb at the southwest corner of Martin Luther King, Jr. Way and 55th Street.

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

(c) Blind duplicate.

(d) A sheen of unknown origin was observed before groundwater purging.

(e) Travel blank.

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TABLE 2 - SUMMARY OF RESULTS OF GROUNDWATER SAMPLING
BP OIL COMPANY SERVICE STATION NO. 11127
5425 MARTIN LUTHER KING, JR. WAY, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-022

WELL ID	DATE OF SAMPLING/ MONITORING	1,1-DCA (ug/l)	1,2-DCA (ug/l)	1,1-DCE (ug/l)	1,1,1-TCA (ug/l)	PCE (ug/l)	Chloroform (ug/l)	LAB
MW-1	08/29/91	---	---	---	---	---	---	---
MW-1	11/20/91	---	---	---	---	---	---	---
MW-1	02/28/92	---	---	---	---	---	---	SUP
MW-1	06/08/92	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
MW-1	09/03/92	---	---	---	---	---	---	ANA
MW-1	11/12/92	---	---	---	---	---	---	PACE
MW-1	02/05/93	---	---	---	---	---	---	PACE
MW-1	08/16/93	---	---	---	---	---	---	PACE
MW-1	03/14/94	---	---	---	---	---	---	PACE
MW-1	12/15/94	---	---	---	---	---	---	---
MW-1	07/06/95	---	---	---	---	---	---	---
MW-1	01/19/96	---	---	---	---	---	---	ATI
MW-2	08/29/91	ND	ND	ND	ND	ND	---	---
MW-2	11/20/91	ND	0.8	ND	0.7	ND	---	---
MW-2	02/28/92	ND	ND	ND	4.1	ND	---	SUP
MW-2	06/08/92	6.6	ND<0.5	ND<0.5	4.2	ND<0.5	---	ANA
MW-2	09/03/92	ND<0.5	ND<0.5	ND<0.5	ND<0.5	ND<0.5	---	ANA
MW-2	11/12/92	ND<0.5	0.5	ND<0.5	ND<0.5	ND<0.5	---	PACE
MW-2	02/05/93	ND<0.5	0.9	ND<0.5	8.3	ND<0.5	---	PACE
MW-2	08/16/93	---	---	---	---	---	---	PACE
MW-2	03/14/94	0.8	0.7	ND	1.3	ND	---	PACE
MW-2	12/15/94	ND<0.5	ND<0.5	ND<0.5	4.8	ND<0.5	2.3	PACE
MW-2	07/06/95	0.28	0.24	ND	0.47	ND	ND<0.20	ATI
MW-2	01/19/96	1.3	ND<0.20	0.65	18	0.42	ND<0.20	ATI
MW-2	07/23/96	ND<1	ND<1	ND<1	ND<1	ND<1	ND<1	SPL

ABBREVIATIONS:

1,1-DCA	1,1-Dichloroethane
1,2-DCA	1,2-Dichloroethane
1,1-DCE	1,1-Dichloroethene
1,1,1-TCA	1,1,1-Trichloroethane
PCE	Tetrachloroethene
ug/l	Parts per billion
ND	Not detected above reported detection limit
---	Not analyzed/applicable/measured
SUP	Superior Analytical Laboratory
ANA	Anametrix, Inc.
PACE	Pace, Inc.
ATI	Analytical Technologies, Inc.
SPL	Southern Petroleum Laboratories

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TABLE 3 - SUMMARY OF RESULTS OF GROUNDWATER MONITORING
CHEVRON STATION 9-1583
5509 MARTIN LUTHER KING, JR. WAY, OAKLAND, CALIFORNIA

ALISTO PROJECT NO. 10-022

WELL ID	DATE OF MONITORING	CASING ELEVATION (a) (Feet)	DEPTH TO WATER (Feet)	PRODUCT THICKNESS (Feet)	GROUNDWATER ELEVATION (b) (Feet)
MW-1	07/23/96	72.19	10.23	---	61.96
MW-2	07/23/96	72.57	10.91	---	61.66
MW-3	07/23/96	72.38	12.00	---	60.38
MW-4	07/23/96	70.86	13.39	---	57.47
MW-5	07/23/96	72.25	9.70	---	62.55
MW-6	07/23/96	71.86	8.74	---	63.12
MW-7	07/23/96	74.57	11.79	---	62.78
MW-8	07/23/96	74.56	11.37	---	63.19

(a) Casing elevations survey 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.

Source: Groundwater data collected by Blaine Tech Services, Inc.

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

N

0 1000' 2000'

FIGURE 1

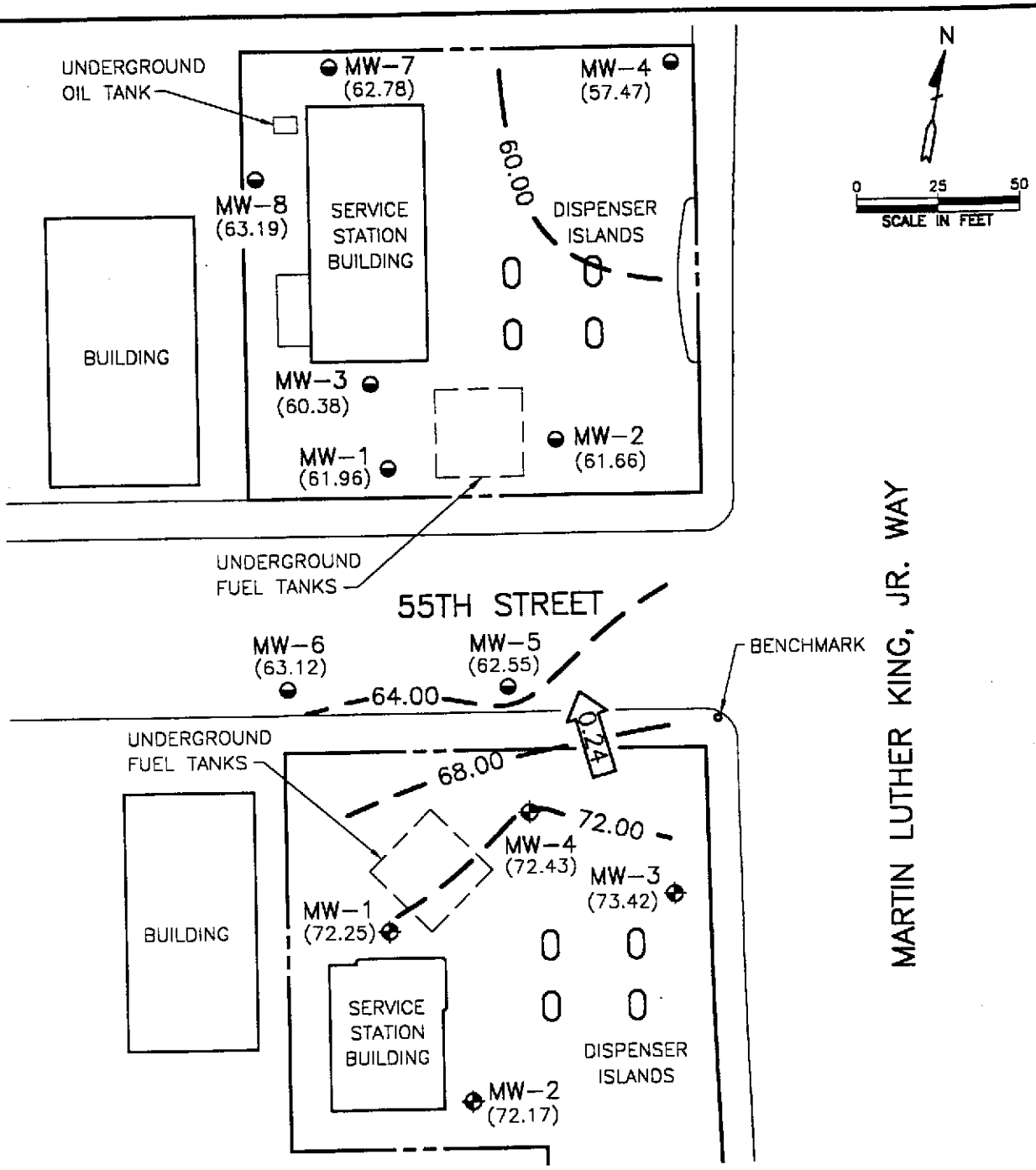
SITE VICINITY MAP

BP OIL SERVICE STATION NO. 11127
5425 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA

PROJECT NO. 10-022

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10022B---.DWG 10-21-93 RKW 1=1



LEGEND

- ⊕ GROUNDWATER MONITORING WELL
- ⊖ CHEVRON GROUNDWATER MONITORING WELL
- (62.55) GROUNDWATER ELEVATION IN FEET ABOVE MEAN SEA LEVEL
- 64.00 GROUNDWATER ELEVATION CONTOUR IN FEET ABOVE MEAN SEA LEVEL (CONTOUR INTERVAL—4.00 FEET)
- 0.24 CALCULATED GROUNDWATER GRADIENT DIRECTION AND MAGNITUDE IN FOOT PER FOOT

FIGURE 2

POTENTIOMETRIC GROUNDWATER ELEVATION CONTOUR MAP

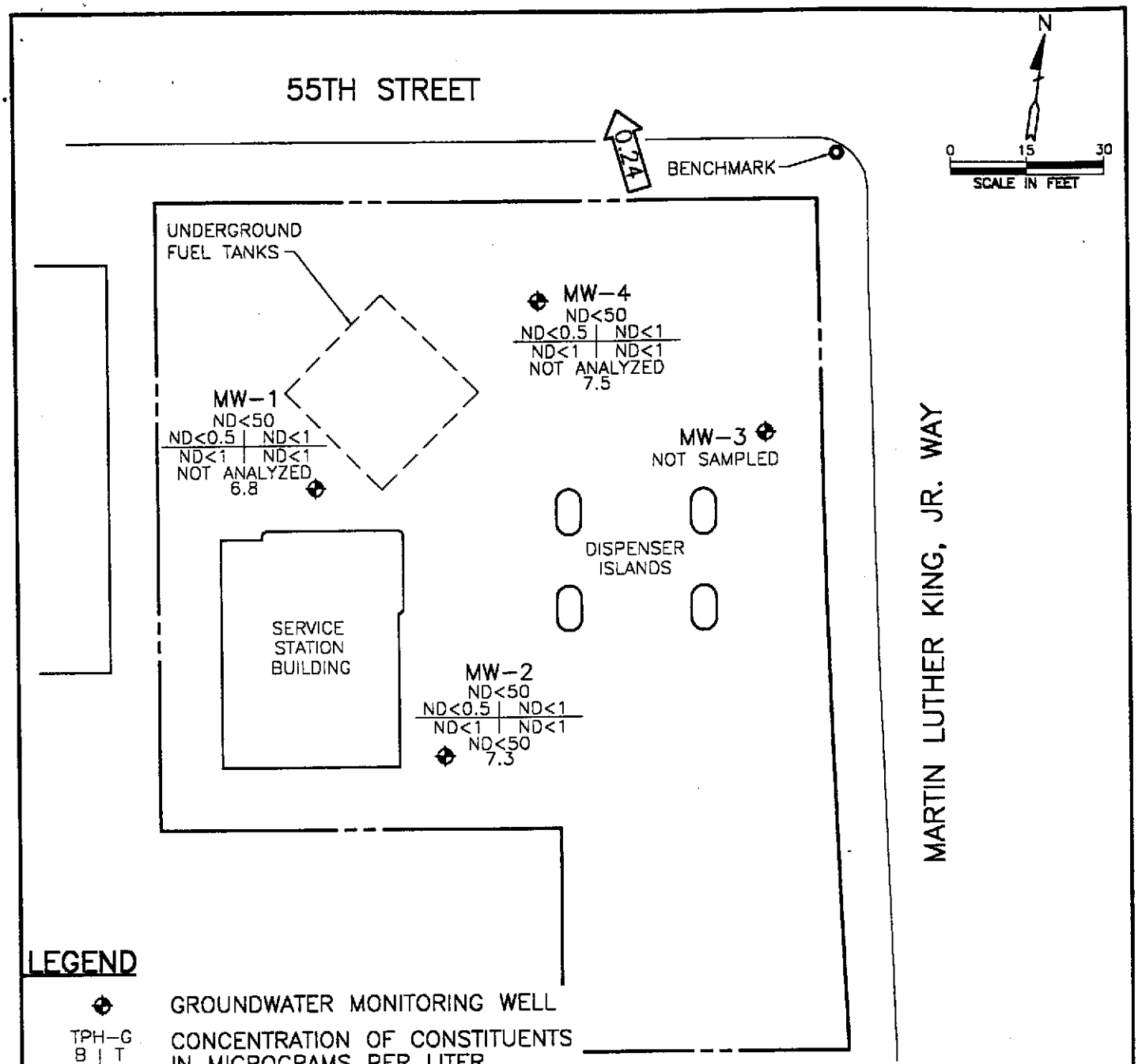
AUGUST 23, 1996

BP OIL SERVICE STATION NO. 11127
5425 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA

PROJECT NO. 10-022

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

100220-S.DWG 9-24-08 DDM 1-30



LEGEND

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

FIGURE 3

CONCENTRATIONS OF PETROLEUM HYDROCARBONS IN GROUNDWATER

AUGUST 23, 1996

BP OIL SERVICE STATION NO. 11127
5425 MARTIN LUTHER KING, JR. WAY
OAKLAND, CALIFORNIA

PROJECT NO. 10-022

ALISTO ENGINEERING GROUP
WALNUT CREEK, CALIFORNIA

10022E-S.DWG 8-24-96 0004 1"=30'

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. 10-022-06-001 Date: 7/23/96
Address 5425 M.L.King Jr. Blvd. Day: M T W TH F
Contract No. Pending City: Oakland
Station No. BP 11127 Sampler: LB

DEPTH TO GROUNDWATER SUMMARY

WELL ID	SAMPLE ID	WELL DIAM	TOTAL DEPTH	DEPTH TO WATER	PRODUCT THICKNESS	TIME MONITORED	COMMENTS:
MW-1	S-2	4"	27.55	10.10	Ø	0910	S-2
MW-2	S-1	↓	26.81	11.31	↓	0903	S-1
MW-3	N/S	↓	N/M	11.54	↓	0916	Not Sampled
MW-4	S-3	2"	24.75	10.27	↓	0913	QC-1 taken from this well (S-4)

FIELD INSTRUMENT CALIBRATION DATA

pH METER Aqua check 4.00 4 7.00 7 10.00 10 TEMPERATURE COMPENSATED (Y) N TIME 0900 WEATHER Clear

D.O. METER Aqua check ZERO d.O. SOLUTION 0 BAROMETRIC PRESSURE 760 TEMP 66

CONDUCTIVITY METER Aqua check 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.
MW-2	11.31	4"	OK	Ø	Y (N)	10	0922	69.7	7.47	910 µS	7.0
Total Depth - Water Level=	x Well Vol. Factor=		x#Vol. to Purge	PurgeVol.		20		69.0	7.20	883µS	
26.81 - 11.31 = 15.50 x .65 = 10.08 x 3 =	30.24					30.5	0936	68.7	7.14	876µS	7.3
Purge Method: (X)Surface Pump ODisp.Tube OWinch ODisp. Bailer(s) OSys Port											
Comments:											

Ø EPA 601 HCl
Ø TPH-G/BTEX HCl
Ø TPH Diesel HCl
Ø TOG 5520 HCl

TIME/SAMPLE ID
0941

PAGE _____ OF _____

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. 10-022-06-001 Date: 7/23/96

Address 5425 M.L.King Jr. Blvd. Day: M T W TH F

Contract No. Pending City: Oakland

Station No. BP 11127 Sampler: WS

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence
MW-1	10.10	4"	OK	Ø	Y (N)

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

27.55 - 10.10 = 17.45 x .65 = 11.34 x 3 = 34.02

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

Comments:

Gal.	Time	Temp °F	pH	E.C.	D.O.
12	0953	71.9	7.72	1.21 ms	6.4
24		70.3	7.43	1.14 ms	
34.5	1017	70.0	7.36	1.06 ms	6.8

O EPA 601____
(X) TPH-G/BTEX HCl
O TPH Diesel____
O TOG 5520 ___
TIME/SAMPLE ID
1025

Well ID	Depth to Water	Diam	Cap/Lock	Product Depth	Iridescence
MW-4	10.27	2"	OK	Ø	Y (N)

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

24.75 - 10.27 = 14.48 x .16 = 2.32 x 3 = 6.96

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

Comments: QC-1 (3-4) from this well

Gal.	Time	Temp °F	pH	E.C.	D.O.
2	1034	71.4	7.67	963 µs	6.4
4		70.5	7.30	934 µs	
7	1042	69.9	7.24	926 µs	7.5

O EPA 601____
(X) TPH-G/BTEX HCl
O TPH Diesel____
O TOG 5520 ___
TIME/SAMPLE ID
1044

APPENDIX B

LABORATORY REPORT AND CHAIN OF CUSTODY RECORD

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

Southern Petroleum Laboratories, Inc.

Certificate of Analysis Number: 96-07-B95

Approved for Release by:

Ed Fry, Project Manager

Date: 8/5/96

Greg Grandits
Laboratory Director

Idelis Williams
Quality Assurance Officer

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

Certificate of Analysis No. H9-9607B95-01

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

P.O.# G-797421,COC#082709
DATE: 08/05/96

PROJECT: BP Oil #11127
SITE: Oakland, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-022-6-1
MATRIX: WATER
DATE SAMPLED: 07/23/96
DATE RECEIVED: 07/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	18	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	100		
METHOD 8020***			
Analyzed by: SB			
Date: 07/30/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	110		
4-Bromofluorobenzene	107		
CA LUFT - Gasoline			
Analyzed by: SB			
Date: 07/30/96 07:08:00			
Total Petroleum Hydrocarbons-Diesel	ND	0.050 P	mg/L
Surrogate	**% Recovery**		
o-Terphenyl	81		
2-Fluorobiphenyl	78		
CA LUFT - Diesel			
Analyzed by: RR			
Date: 07/30/96 07:46:00			

(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. H9-9607B95-01

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

P.O.#
G-797421,COC#082709
DATE: 08/05/96

PROJECT: BP Oil #11127
SITE: Oakland, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-022-6-1
MATRIX: WATER
DATE SAMPLED: 07/23/96
DATE RECEIVED: 07/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
Liquid-liquid extraction METHOD 3510B *** Analyzed by: LD Date: 07/26/96 12:00:00	07/26/96		
Hydrocarbons by Gravimetry Method 5520 B & F ** Analyzed by: MF Date: 08/02/96 12:00:00	ND	0.5	mg/L

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. H9-9607B95-01

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

P.O.# G-797421,COC#082709
08/05/96

PROJECT: BP Oil #11127
SITE: Oakland, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-1

PROJECT NO: 10-022-6-1
MATRIX: WATER
DATE SAMPLED: 07/23/96
DATE RECEIVED: 07/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	PQL*	UNITS
Dichlorodifluoromethane	ND	1	µg/L
Chloromethane	ND	1	µg/L
Vinyl chloride	ND	1	µg/L
Bromomethane	ND	1	µg/L
Chloroethane	ND	1	µg/L
Trichlorofluoromethane	ND	1	µg/L
1,1-Dichloroethene	ND	1	µg/L
Methylene chloride	ND	1	µg/L
Trans-1,2-Dichloroethene	ND	1	µg/L
1,1-Dichloroethane	ND	1	µg/L
Chloroform	ND	1	µg/L
1,1,1-Trichloroethane	ND	1	µg/L
Carbon tetrachloride	ND	1	µg/L
1,2-Dichloroethane	ND	1	µg/L
2-Chloroethylvinyl ether	ND	1	µg/L
Trichloroethene	ND	1	µg/L
1,2-Dichloropropane	ND	1	µg/L
Bromodichloromethane	ND	1	µg/L
cis-1,3-Dichloropropene	ND	1	µg/L
trans-1,3-Dichloropropene	ND	1	µg/L
1,1,2-Trichloroethane	ND	1	µg/L
Tetrachloroethene	ND	1	µg/L
Dibromochloromethane	ND	1	µg/L
Chlorobenzene	ND	1	µg/L
Bromoform	ND	1	µg/L
1,1,2,2-Tetrachloroethane	ND	1	µg/L
1,3-Dichlorobenzene	ND	1	µg/L
1,4-Dichlorobenzene	ND	1	µg/L
1,2-Dichlorobenzene	ND	1	µg/L

METHOD: 601, Halogenated Volatile Organics

(continued on next page)

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

Certificate of Analysis No. H9-9607B95-01

Alisto Engineering

SAMPLE ID: S-1

SURROGATES	% RECOVERY
1-Chloro-2-Fluorobenzene	87

ANALYZED BY: DAO DATE/TIME: 08/01/96 03:51:00
METHOD: 601, Halogenated Volatile Organics
NOTES: * - Practical Quantitation Limit ND - Not Detected
NA - Not Analyzed

COMMENTS:

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. H9-9607B95-02

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

P.O.# G-797421,COC#082709
DATE: 08/05/96

PROJECT: BP Oil #11127
SITE: Oakland, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-2

PROJECT NO: 10-022-6-1
MATRIX: WATER
DATE SAMPLED: 07/23/96
DATE RECEIVED: 07/25/96

ANALYTICAL DATA

PARAMETER	RESULTS	DETECTION LIMIT	UNITS
MTBE	480	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	97		
METHOD 8020***			
Analyzed by: RL			
Date: 07/30/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	110		
4-Bromofluorobenzene	80		
CA LUFT - Gasoline			
Analyzed by: RL			
Date: 07/30/96 09:17:00			

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

Certificate of Analysis No. H9-9607B95-03

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

P.O.# G-797421,COC#082709
DATE: 08/05/96

PROJECT: BP Oil #11127
SITE: Oakland, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-3

PROJECT NO: 10-022-6-1
MATRIX: WATER
DATE SAMPLED: 07/23/96
DATE RECEIVED: 07/25/96

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	80		
4-Bromofluorobenzene	97		
METHOD 8020***			
Analyzed by: SB			
Date: 07/30/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	103		
4-Bromofluorobenzene	77		
CA LUFT - Gasoline			
Analyzed by: SB			
Date: 07/30/96 02:43:00			

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. H9-9607B95-04

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

P.O.#
G-797421,COC#082709
DATE: 08/05/96

PROJECT: BP Oil #11127
SITE: Oakland, CA.
SAMPLED BY: Alisto Engineering
SAMPLE ID: S-4

PROJECT NO: 10-022-6-1
MATRIX: WATER
DATE SAMPLED: 07/23/96
DATE RECEIVED: 07/25/96

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	97		
METHOD 8020***			
Analyzed by: RL			
Date: 07/30/96			
Total Petroleum Hydrocarbons-Gasoline	ND	0.05 P	mg/L
Surrogate	**% Recovery**		
1,4-Difluorobenzene	103		
4-Bromofluorobenzene	80		
CA LUFT - Gasoline			
Analyzed by: RL			
Date: 07/30/96 08:47:00			

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

QUALITY CONTROL

DOCUMENTATION

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

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

Matrix: Aqueous
Units: µg/L

Batch Id: HP_J960729024800

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	20 - 110
Benzene	ND	50	40	80.0	62 - 121
Toluene	ND	50	41	82.0	66 - 136
EthylBenzene	ND	50	43	86.0	70 - 136
O Xylene	ND	50	47	94.0	74 - 134
M & P Xylene	ND	100	82	82.0	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	29	145	29	145	0	20	39 - 150
BENZENE	200	20	190	NC	190	NC	NC	25	39 - 150
TOLUENE	140	20	130	NC	130	NC	NC	26	56 - 134
ETHYLBENZENE	6.5	20	26	97.5	25	92.5	5.26	38	61 - 128
O XYLENE	75	20	84	45.0	81	30.0 *	40.0 *	29	40 - 130
M & P XYLENE	86	40	110	60.0	100	35.0 *	52.6 *	20	43 - 152

Analyst: SB
Sequence Date: 07/29/96
SPL ID of sample spiked: 9607A38-07A
Sample File ID: J_H6117.TX0
Method Blank File ID:
Blank Spike File ID: J_H6107.TX0
Matrix Spike File ID: J_H6110.TX0
Matrix Spike Duplicate File ID: J_H6111.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 (4th Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '95)

SAMPLES IN BATCH(SPL ID):

9607A68-08A 9607A38-06A 9607A38-07A 9607A68-02A
9607A68-03A 9607A68-04A 9607A68-01A 9607A35-07A
9607A35-08A 9607A35-10A 9607A38-05A 9607A68-06A
9607A68-07A 9607B97-03A 9607B97-04A 9607B97-02A
9607B97-05A 9607B97-06A 9607B95-01A

QC Officer

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

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

Matrix: Aqueous
Units: µg/L

Batch Id: HP_J960730102600

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	53	106	20 - 110
Benzene	ND	50	52	104	62 - 121
Toluene	ND	50	53	106	66 - 136
EthylBenzene	ND	50	51	102	70 - 136
O Xylene	ND	50	59	118	74 - 134
M & P Xylene	ND	100	100	100	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	29	145	28	140	3.51	20	39 - 150
BENZENE	ND	20	22	110	23	115	4.44	25	39 - 150
TOLUENE	ND	20	22	110	22	110	0	26	56 - 134
ETHYLBENZENE	ND	20	21	105	21	105	0	38	61 - 128
O XYLENE	ND	20	23	115	22	110	4.44	29	40 - 130
M & P XYLENE	ND	40	40	100	39	97.5	2.53	20	43 - 152

Analyst: RL
Sequence Date: 07/30/96
SPL ID of sample spiked: 9607B95-03A
Sample File ID: J_H6148.TX0
Method Blank File ID:
Blank Spike File ID: J_H6143.TX0
Matrix Spike File ID: J_H6151.TX0
Matrix Spike Duplicate File ID: J_H6152.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 (4th Q '95)
(***) = Source: SPL-Houston Historical Data (4th Q '95)

SAMPLES IN BATCH(SPL ID):

9607A68-05A 9607B95-04A 9607B95-02A 9607B97-08A
9607B97-09A 9607A35-09A 9607A35-07A 9607D17-03A
9607B97-07A 9607D17-02A 9607D17-01A 9607B98-07A
9607B98-04A 9607B98-01A 9607B97-01A 9607B95-03A

QC Officer

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

** SPL BATCH QUALITY CONTROL REPORT **

CA LUFT

Matrix: Aqueous

Batch Id: HP_J960729034700

Units: mg/L

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	0.89	89.0	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	ND	0.9	0.82	91.1	0.87	96.7	5.96	50	50 - 150

Analyst: SB

Sequence Date: 07/29/96

SPL ID of sample spiked: 9607A38-06A

Sample File ID: JJH6116.TX0

Method Blank File ID:

Blank Spike File ID: JJH6109.TX0

Matrix Spike File ID: JJH6112.TX0

Matrix Spike Duplicate File ID: JJH6113.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: Temporary Limits

(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9607A68-08A 9607A38-06A 9607A68-02A 9607A68-03A
9607A68-04A 9607A68-01A 9607A35-07A 9607A35-08A
9607A35-10A 9607A38-05A 9607A68-06A 9607A68-07A
9607B97-03A 9607B97-04A 9607B97-02A 9607B97-05A
9607B97-06A 9607B95-01A 9607A38-07A

QC Officer

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

** SPL BATCH QUALITY CONTROL REPORT **

PAGE

CA LUFT

Matrix: Aqueous

Batch Id: HP_J960730122100

Units: mg/L

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	0.92	92.0	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	ND	0.9	0.79	87.8	0.78	86.7	1.26	50	50 - 150

Analyst: RL

Sequence Date: 07/30/96

SPL ID of sample spiked: 9607B97-01A

Sample File ID: JJH6147.TX0

Method Blank File ID:

Blank Spike File ID: JJH6144.TX0

Matrix Spike File ID: JJH6153.TX0

Matrix Spike Duplicate File ID: JJH6154.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: Temporary Limits

(***) = Source: Temporary Limits

SAMPLES IN BATCH(SPL ID):

9607A68-05A 9607B95-04A 9607B95-02A 9607B97-09A
9607A35-09A 9607A35-07A 9607D17-03A 9607B97-07A
9607D17-02A 9607D17-01A 9607B98-07A 9607B98-04A
9607B98-01A 9607B97-08A 9607B97-01A 9607B95-03A

QC Officer

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

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

PAGE

Batch Id: HPTT960730040000

Units: mg/L

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	4.75	95.0	20 - 130

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	ND	5.0	4.93	97.2	4.94	97.4	0.206	43	20 - 177

Analyst: RR
Sequence Date: 07/30/96
SPL ID of sample spiked: 9607860-04B
Sample File ID: TT__202.TX0
Method Blank File ID:
Blank Spike File ID: TT__267.TX0
Matrix Spike File ID: TT__203.TX0
Matrix Spike Duplicate File ID: TT__204.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 (2nd Q '94)
(***) = Source: SPL-Houston Historical Data

SAMPLES IN BATCH(SPL ID): 9607860-04B 9607A64-04C 9607A64-05C 9607B95-01B 9607B97-03D 9607A64-06C

QC Officer

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

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 601**

Matrix: Aqueous
Units: µg/L

Batch Id: HP_F960731073900

LABORATORY CONTROL SAMPLE

SPIKE COMPOUNDS	Method Blank Result <2>	Spike Added <3>	Blank Spike Result <1>	Blank Spike Recovery %	QC Limits(**) (Mandatory) % Recovery Range
Dichlorodifluoromethane	ND	20	21	105	1 - 200
Chloromethane	ND	20	24	120	1 - 193
Vinyl chloride	ND	20	20	100	28 - 163
Bromomethane	ND	20	22	110	1 - 144
Chloroethane	ND	20	21	105	46 - 137
Trichlorofluoromethane	ND	20	19	95.0	21 - 156
1,1-Dichloroethene	ND	20	20	100	28 - 167
Methylene chloride	ND	20	19	95.0	25 - 162
Trans-1,2-Dichloroethene	ND	20	21	105	38 - 155
1,1-Dichloroethane	ND	20	22	110	34 - 132
Chloroform	ND	20	23	115	49 - 133
1,1,1-Trichloroethane	ND	20	23	115	41 - 138
Carbon tetrachloride	ND	20	24	120	43 - 143
1,2-Dichloroethane	ND	20	22	110	51 - 147
2-Chloroethylvinyl ether	ND	20	23	115	14 - 186
Trichloroethene	ND	20	20	100	35 - 146
1,2-Dichloropropane	ND	20	22	110	44 - 156
Bromodichloromethane	ND	20	23	115	42 - 172
cis-1,3-Dichloropropene	ND	20	25	125	22 - 178
trans-1,3-Dichloropropene	ND	20	22	110	33 - 178
1,1,2-Trichloroethane	ND	20	22	110	39 - 136
Tetrachloroethene	ND	20	21	105	26 - 162
Dibromochloromethane	ND	20	23	115	24 - 191
Chlorobenzene	ND	20	21	105	38 - 150
Bromoform	ND	20	20	100	13 - 159
1,1,2,2-Tetrachloroethane	ND	20	20	100	8 - 184
1,3-Dichlorobenzene	ND	20	20	100	7 - 187
1,4-Dichlorobenzene	ND	20	20	100	42 - 143
1,2-Dichlorobenzene	ND	20	19	95.0	1 - 208

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
DICHLORODIFLUOROMETHANE	ND	20	24	120	23	115	4.26	20	1 - 200
CHLOROMETHANE	ND	20	23	115	27	135	16.0	20	1 - 193
VINYL CHLORIDE	1.5	20	25	118	28	132	11.2	20	28 - 163
BROMOMETHANE	ND	20	25	125	31	155 *	21.4 *	20	1 - 144
CHLOROETHANE	11	20	32	105	37	130	21.3 *	20	46 - 137

QC Officer

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

** SPL BATCH QUALITY CONTROL REPORT **
METHOD 601**

Batch Id: HP_F960731073900

Units: µg/L

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
TRICHLOROFLUOROMETHANE	3.4	20	26	113	28	123	8.47	20	21 - 156
1,1-DICHLOROETHENE	2.0	20	25	115	28	130	12.2	20	28 - 167
METHYLENE CHLORIDE	ND	20	22	110	24	120	8.70	20	25 - 162
TRANS-1,2-DICHLOROETHENE	3.0	20	27	120	25	110	8.70	20	38 - 155
1,1-DICHLOROETHANE	59	20	92	165 *	87	140 *	16.4	20	47 - 132
CHLOROFORM	ND	20	27	135 *	26	130	3.77	20	49 - 133
1,1,1-TRICHLOROETHANE	ND	20	26	130	24	120	8.00	20	41 - 138
CARBON TETRACHLORIDE	ND	20	26	130	22	110	16.7	20	43 - 143
1,2-DICHLOROETHANE	ND	20	24	120	23	115	4.26	20	51 - 147
2-CHLOROETHYLVINYL ETHER	ND	20	0	0 *	0	0 *	0	20	14 - 186
TRICHLOROETHENE	ND	20	24	120	24	120	0	20	35 - 146
1,2-DICHLOROPROPANE	ND	20	25	125	23	115	8.33	20	44 - 156
BROMODICHLOROMETHANE	ND	20	25	125	23	115	8.33	20	42 - 172
CIS-1,3-DICHLOROPROPENE	ND	20	27	135	22	110	20.4 *	20	22 - 178
TRANS-1,3-DICHLOROPROPENE	ND	20	27	135	21	105	25.0 *	20	33 - 178
1,1,2-TRICHLOROETHANE	ND	20	25	125	23	115	8.33	20	39 - 136
TETRACHLOROETHENE	ND	20	26	130	25	125	3.92	20	26 - 162
DIBROMOCHLORCMETHANE	ND	20	27	135	21	105	25.0 *	20	24 - 191
CHLOROBENZENE	ND	20	25	125	25	125	0	20	38 - 150
BROMOFORM	ND	20	26	130	19	95.0	31.1 *	20	13 - 159
1,1,2,2-TETRACHLOROETHANE	ND	20	28	140	19	95.0	38.3 *	20	8 - 184
1,3-DICHLOROBENZENE	ND	20	24	120	24	120	0	20	7 - 187
1,4-DICHLOROBENZENE	ND	20	25	125	25	125	0	20	42 - 143
1,2-DICHLOROBENZENE	ND	20	24	120	24	120	0	20	1 - 208

Analyst: DAO
Sequence Date: 07/31/96
SPL ID of sample spiked: 9607A33-05B
Sample File ID: FFH6105.TX0
Method Blank File ID:
Blank Spike File ID: FFH6097.TX0
Matrix Spike File ID: FFH6100.TX0
Matrix Spike Duplicate File ID: FFH6101.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: 601, Table 2
(***) = Source: SPL Temporary Limits

SAMPLES IN BATCH(SPL ID): 9607A33-09B 9607A33-05B 9607A33-07B 9607B24-10B 9607A33-10B 9607A33-08B 9607B95-01C 9607A33-05B 9607A33-07B 9607B24-11B

QC Officer

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

** SPL QUALITY CONTROL REPORT **

Matrix: Aqueous

Reported on: 08/02/96
Analyzed on: 08/02/96
Analyst: MF

This sample was randomly selected for use in the SPL quality control program. Samples chosen are fortified with a known concentration in duplicate. The results are as follows:

Hydrocarbons by Gravimetry
Method 5520 B & F **

SPL Sample ID Number	Blank Value mg/L	Amt Added mg/L	Matrix Spike Recovery %	Matrix Spike Duplicate Recovery %	Relative Percent Difference %	QC Limits Recovery	RPD Max.
BLANK	ND	4.0	105	105	0	82. - 112	9.8

960802MF -9608129

Samples in batch:

9607B95-01D · 9607B97-03C · 9607C33-02C · 9607C34-02C ·
9607C86-01C · 9607C89-01C ·

COMMENTS:

SPL, Incorporated

QC Officer

CHAIN OF CUSTODY

AND

SAMPLE RECEIPT CHECKLIST

#9607B95

7/26

CHAIN OF CUSTODY

No. 082709 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: 11127	BP CORNER ADDRESS/CITY: Oakland, Ca			CONSULTANT PROJECT NUMBER: 10-022-6-1
CONSULTANT PROJECT MANAGER: Brady Hayle	PHONE NUMBER: (510) 295-1650		FAX NUMBER: 295-1823	CONSULTANT CONTRACT NUMBER: 6797421
BP CONTACT: Scott Hooten	BP ADDRESS: Renton, WA		PHONE NUMBER: —	FAX NO.: —
LAB CONTACT: SPL	LABORATORY ADDRESS: Texas		PHONE NUMBER:	FAX NO.: —
SAMPLED BY (Please Print Name): Larry Brenneida	SAMPLED BY (Signature):		SHIPMENT DATE: 7/24/96	SHIPMENT METHOD: Fed Ex

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

AIRBILL NUMBER: 940477851 5

ANALYSIS REQUIRED

SAMPLE DESCRIPTION	COLLECTION DATE / COLLECTION TIME	MATRIX SOIL/WATER	CONTAINERS NO.	CONTAINERS TYPE (VOL.)	PRESERVATIVE	LAB SAMPLE #	COMMENTS
S-1	7/23/96	W	HCl	8			Lables may show improper Analysis Please Refer to C.O.C
S-2	↓	↓	↓	3			
S-3	↓	↓	↓	↓			
S-4	↓	↓	↓	↓			

RELINQUISHED BY / AFFILIATION	DATE	TIME	ACCEPTED BY / AFFILIATION	DATE	TIME
	7/23/96	0800	Patricia Lyeton	7/24/96	0800
Patricia Lyeton	7/24/96			7/25/96	1030

ADDITIONAL COMMENTS: 2°C, Rec intact @ 7/25

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: 7/25/96	Time: 1600

SPL Sample ID: 9607B95

			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:		2° C	
10	Method of sample delivery to SPL:	SPL Delivery		
		Client Delivery		
		FedEx Delivery (airbill #)	940477851 5	
		Other:		
11	Method of sample disposal:	SPL Disposal	✓	
		HOLD		
		Return to Client		

Name: Ruben Estrada Jr	Date: 7/25/96

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

BP Site Number: 11127
ERM Contact: 6797421
Sampling Date: 7/23/96
Matrix Desription: groundwater
Date Final Report Received: 8/9/96
Laboratory & Location: SPL - TX

	Yes	No	NA
1. Is BP contract release number consistent with analytical report?	X		
2. Was report submitted within the specified timeframe?	X		
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 (ie. trip or equipment)?		X	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 (1)	
10. Are LCS results acceptable using laboratory criteria?			

Notes/Comments: (1) MS/MSD RPD exceeded for some 601 compounds

Data Validation Completed by (print): Bill Hansell
(signature): Bill Hansell
Date: 10/10/96