BP OIL

548824
for
dispensers

BP Oil Company
Aetna Bldg., Suite 360
2868 Prospect Park Drive
Rancho Cordova, California 95670-6020
(916) 631-0733

LOP 3878

May 25, 1990

Scott Hugenberger
Regional Water Quality Control Board
1111 Jackson St., Room 6000
Oakland, CA 94607

RE: INTERIM REPORTS

BP OIL FACILITY #11132
3201 35TH AVE.
OAKLAND, CA 94619

BP OIL FACILITY #11133
2220 98TH AVE.
OAKLAND, CA

Dear Scott:

Please find enclosed interim reports on BP Oil Company's Phase II assessments at the subject facilities. The levels of BETX and TPH encountered in groundwater are of concern to us. We have instructed our consultant, Alton Geoscience, Inc., to complete aquifer testing, installation of recovery wells, and offsite compliance wells as quickly as possible. We have experienced some delay in obtaining easements to drill in the City of Oakland streets, but now believe this to be resolved.

We welcome your input on this report and our short term plans outlined above. Please feel free to contact me directly should you have any questions.

Sincerely,

W.J. Hollis
Environmental Coordinator

WJH:dj

Enclosure

cc: D. Noe: Mobil Oil Corporation (w/attach)
J.R. Rocco: BP Oil Company (w/o attache)
S. Seery: Alameda County (w/attach)

ALTON GEOSCIENCE, INC.

May 10, 1990

Mr. William J. Hollis
BP Oil Company
2868 Prospect Park Drive, Suite 360
Rancho Cordova, California 95670-6020

30-081

Subject: Interim Report - Preliminary Results of
Qualitative Water Survey, Monitoring, and Sampling
BP Service Station No. 11132
3201 35th Avenue 94619
Oakland, California

Dear Mr. Hollis:

This interim report presents the results of this phase of investigative work completed to date at BP Oil Service Station No. 11132, located at 3201 35th Avenue, Oakland, California. All activities were performed in accordance with the regulations and guidelines of the San Francisco Bay Regional Water Quality Control Board (RWQCB) and the Alameda County Department of Environmental Health (ACDEH).

SCOPE OF WORK

The scope of work performed to date by Alton Geoscience includes the following tasks:

- Survey, monitoring, and sampling of three existing onsite monitoring wells.
- Installation, sampling, and destruction of 10 temporary wells for the qualitative water survey.
- Analysis of 13 water samples by a state-certified analytical laboratory.
- Preparation of this letter report.

SITE DESCRIPTION AND BACKGROUND

The site is currently an operating BP service station at the northern corner of the intersection of 35th Avenue and Suter Street, Oakland, California. The approximate site elevation is 160 feet. Regional surface and ground water flow in the region is to the southwest, towards San Francisco Bay. The nearest surface water drainage is Peralta Creek, about 1/4-mile north of the site.

On July 30, 1986, Kaprealian Engineering, Inc. (KEI) was retained by Mobil Oil Corporation to install three 2-inch-diameter monitoring wells at this former Mobil Oil service station. Monitoring and sampling of the wells, performed by KEI, indicated detectable levels of total petroleum hydrocarbons (TPH) in both MW-1 and MW-2 at levels up to 210 parts per million (ppm).

Tanks were removed in april 1986 replaced with Doublewalled fiberglass
Free product noted on Wells in March 1989

FIELD METHODS

The procedures and methods used during field activities were in accordance with regulatory requirements of the RWQCB and ACDEH.

Wellhead Survey

On December 12, 1989, the top of casing of the wells was surveyed in reference to an arbitrary datum (MW-1), with an assumed elevation of 160 feet above mean sea level. Depth to water measurements obtained on January 26, 1990 were used to construct the ground water elevation contour map (Figure 2). Wellhead elevations, depth to water measurements, and ground water elevations are presented in Table 1.

Qualitative Ground Water Sampling

On January 26 and February 1, 1990, 10 soil borings were completed to various depths, ranging from 25 to 33 feet below grade, at the locations shown in Figure 2. The drilling was completed by West Hazmat Drilling Company of Rancho Cordova, California, using a CME 75 drill rig equipped with 8-inch-diameter, hollow-stem augers.

The borings were advanced 3 to 4 feet beyond the depth at which ground water was encountered. Following drilling, the borings were converted into temporary wells (TW-1 through TW-10) by inserting clean, 2-inch-diameter, Schedule 40, PVC casing with 0.020-inch slots. The ground water level was allowed to stabilize in the wells. Prior to sampling, each temporary well was purged of 2 to 3 gallons of ground water. During purging, ground water was inspected for the presence of free product or sheen, and then decanted into sterile volatile organic analysis (VOA) containers for transport to a state-certified laboratory for analysis under chain of custody documentation.

Following sample collection, the temporary casing was removed from the boring and steam cleaned. Soil borings were then backfilled with grout slurry and capped with asphalt.

On January 26, 1990, ground water samples were collected from the three existing monitoring wells, following RWQCB guidelines and procedures for well purging and sampling.

Well Monitoring

On January 26, 1990, Monitoring Wells MW-1, MW-2, and MW-3 were surveyed for depth to water and the presence of sheen or free-floating product. Depth to water and product thickness were measured using an electronic sounder. Approximately 0.1 foot of free product was observed in MW-1. (1.2 inches)

ANALYTICAL METHODS AND RESULTS

Nine of the ground water samples were submitted to a laboratory for analysis. Ground water samples collected from MW-1 and TW-2 were not analyzed due to presence of free product. All laboratory analysis of ground water samples was performed by Superior Analytical, a California state-certified laboratory, using standard test methods of the U.S. EPA and the California Department of Health Services (DHS). Analytical methods used were EPA Method 8015 for total petroleum hydrocarbons as gasoline (TPH) and EPA Method 602 for benzene, toluene, ethylbenzene, and total xylenes (BTEX). Table 2 presents the laboratory results, while the official laboratory report is presented in Attachment A.

DISCUSSION OF RESULTS

The sample from Monitoring Well MW-1 contained 0.1 foot of free product, while Temporary Well TW-2 contained 0.05 foot. (.6 in) Samples from the other monitoring and temporary wells contained levels of dissolved TPH as gasoline and hydrocarbon constituents (BTEX) ranging from nondetectable (ND) to 240,000 parts per billion (ppb). It appears that the contaminant plume in the ground water has migrated downgradient towards the southwest and offsite of the property.

RECOMMENDATIONS

Based on the results of this qualitative ground water survey, and in accordance with our agreement, we recommend the following:

1. Install confirmation/monitoring wells, one upgradient onsite, two crossgradient offsite, and one downgradient offsite.

2. Install a large-diameter recovery well and an automatic recovery system (ARS) onsite to control the migration of the plume and remove free product from the ground water.

3. Perform aquifer tests to determine the hydrogeologic properties of the aquifer at the site as well as an interim remedial measure.

If you have any questions, please contact either of the undersigned at (415) 682-1582.

Sincerely,

ALTON GEOSCIENCE, INC.

Matthew J. Hopwood
Project Geologist

Al Sevilla
Division General Manager

TABLE 1

MONITORING AND SURVEY DATA

Well	Depth to Water (Feet)	Product Thickness (Feet)	TOC Elevation (Feet)	Ground Water Elevation (Feet)
		January 26, 1990		
MW-1	19.48	0.1	160	140.52
MW-2	19.80	---	158.40	138.60
MW-3	20.75	---	157.42	136.67

TOC = Top of Casing

*A 0.8 conversion factor is used to determine water table depression due to the presence of free-floating product interpreted from Levorson, 1967.

TABLE 2

RESULTS OF ANALYSIS
GROUND WATER SAMPLES

January 26, and February 1, 1990 Sampling

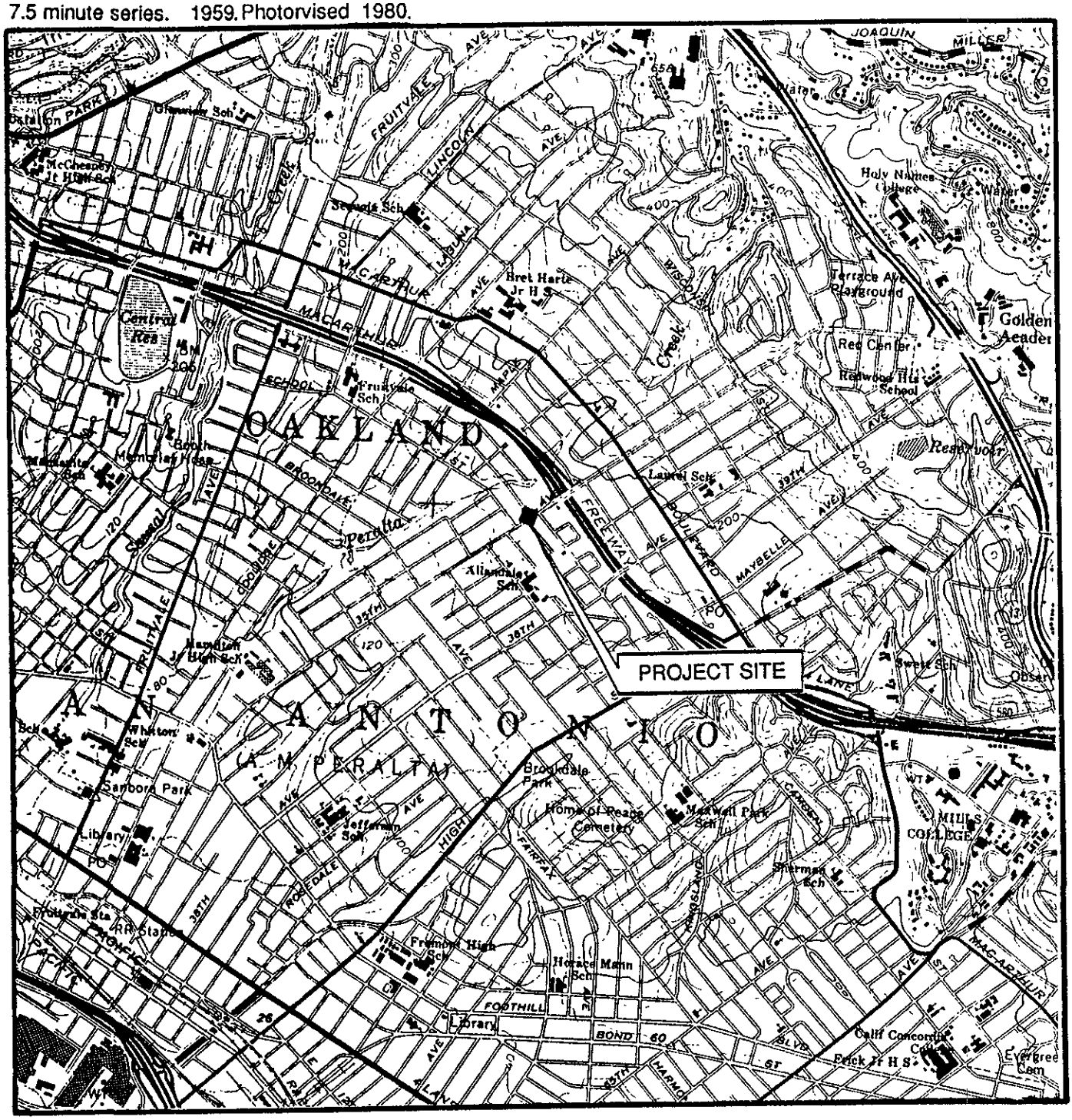
Well	TPH (ppb)	Benzene (ppb)	Toluene (ppb)	Ethyl-benzene (ppb)	Total Xylenes (ppb)
MW-1	FP	---	---	---	---
MW-2	14,000	580	1,300	460	2,300
MW-3	500	20	30	24	35
TW-1	7,400	230	180	690	1,200
TW-2	FP	---	---	---	---
TW-3	22,000	2,400	2,800	530	4,000
TW-4	ND<100	ND <0.3	ND <0.3	ND <0.3	0.7
TW-5	240,000	1,100	5,100	5,600	28,000
TW-6	20,000	56	910	590	3,700
TW-7	ND<100	ND <0.3	0.4	0.7	4.3
TW-8	ND<100	0.3	0.6	1.1	7.9
TW-9	41,000	2,100	5,700	120	6,900
TW-10	50,000	1,900	7,300	1,400	8,000

ND = Nondetectable
FP = Free Product
ppb = parts per billion
MW = Monitoring Well
TW = Temporary Well

FIGURES

Source: U.S.G.S. Map, East Oakland, California Quadrangle

7.5 minute series. 1959. Photorvised 1980.



N

0 1000 2000

SCALE IN FEET

FIGURE 1

SITE VICINITY MAP

B P SERVICE STATION NO. 11132
3201 35TH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 30 - 081

ALTON GEOSCIENCE
1000 Burnett Ave., Ste 140
Concord, CA 94520

RESIDENTIAL

RESIDENTIAL

ND

PLANTER

TW-8
(ND)

TW-4
(ND)

PUMP ISLAND

TW-6
(20)

SUTER

MW-3
(0.5)

STRUCTURE

TW-10
(50)

TW-3
(22)

MW-1
(FP)
1,2in

PUMP ISLANDS

PLANTER

UNDERGROUND STORAGE TANKS

TW-7
(ND)

TW-9
(41)

MW-2
(14)

PLANTER

TW-2
(FP)
1/2in

100

100

10

TW-1
(7.4)

35TH AVENUE

TW-5
(240)

ND

does this have an impact

QUIK STOP

RESIDENTIAL

Source: B P Oil Company

0 15 30
SCALE IN FEET

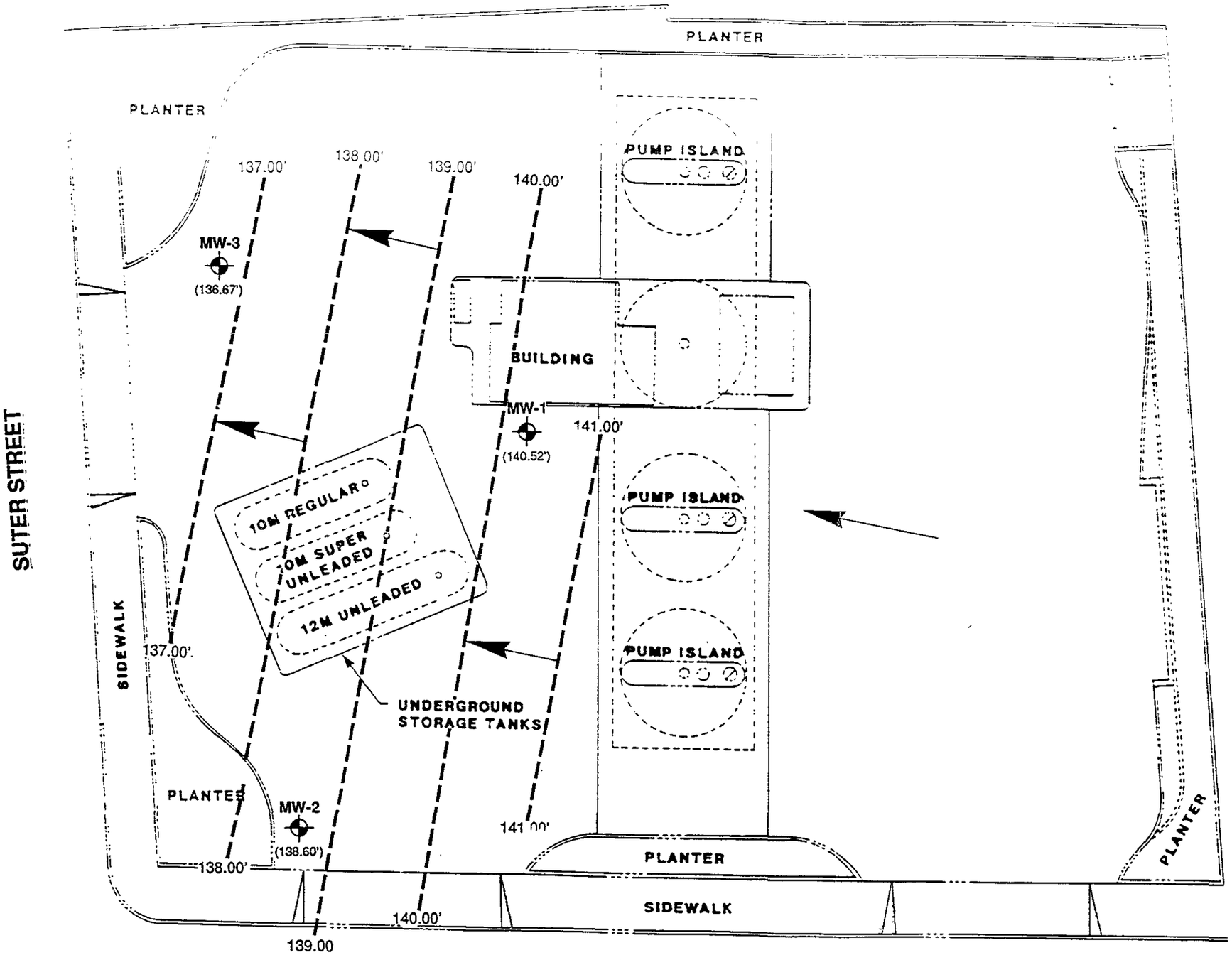
LEGEND:

- MONITORING WELL
- PROPOSED MONITORING WELL
- PROPOSED RECOVERY WELL
- TEMPORARY WELL
- 10 — TPH ISOCONCENTRATION CONTOUR LINE (ppm)
- (FP) FREE PRODUCT
- (14) TPH CONCENTRATION (ppm)
- (ND) NONDETECTABLE

FIGURE 3
TOTAL PETROLEUM HYOROCARBON (TPH) ISOCONCENTRATION MAP

B P SERVICE STATION NO. 11132
3201 35TH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 30-081



Source: B P Oil Company

N

0 10 20
SCALE IN FEET

LEGEND:

- MONITORING WELLS
- (140.52') GROUND WATER ELEVATION
- 138.00' GROUND WATER ELEVATION CONTOUR
- DIRECTION OF GROUND WATER FLOW

FIGURE 2 GROUND WATER ELEVATION CONTOUR MAP

B P SERVICE STATION NO. 11132
3201 35TH AVENUE
OAKLAND, CALIFORNIA

PROJECT NO. 30-081

ATTACHMENT A

LABORATORY REPORTS AND
CHAIN OF CUSTODY FORMS

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE. D. • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 80513
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-081

DATE RECEIVED: 02/02/90
DATE REPORTED: 02/09/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L) Benzene	Toluene	Ethyl Benzene	Xylenes
1	TW-4	ND<0.3	ND<0.3	ND<0.3	0.7
2	TW-5	1100	5100	5600	28000
3	TW-6	56	910	590	3700
4	TW-7	ND<0.3	0.4	0.7	4.3
5	TW-8	0.3	0.6	1.1	7.9
6	TW-9	2100	5700	1200	6900
7	TW-10	1900	7300	1400	8000

ug/L - parts per billion (ppb)
ug/kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/kg
Method Detection Limit in Water: 0.3 ug/L

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 92 %: Duplicate RPD = <10

Edward R. Morales
Laboratory Manager

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE. D. • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 80498
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-081

DATE RECEIVED: 01/29/90
DATE REPORTED: 02/05/90

ANALYSIS FOR BENZENE, TOLUENE, ETHYL BENZENE & XYLENES by EPA SW-846 Methods 5030 and 8020

LAB #	Sample Identification	Concentration(ug/L) Benzene	Toluene	Ethyl Benzene	Xylenes
1	MW-2	580	1300	460	2300
2	MW-3	20	30	24	35
3	TW-1	230	180	690	1200
4	TW-3	2400	2800	530	4000

ug/L - parts per billion (ppb)
ug/kg - parts per billion (ppb)

Method Detection Limit in Soil: 3 ug/kg
Method Detection Limit in Water: 0.3 ug/L

QAQC Summary:

Daily Standard run at 20ug/L: RPD = <15%
MS/MSD Average Recovery = 96 %: Duplicate RPD = <2%

Edward R. Morales
Laboratory Manager

SUPERIOR ANALYTICAL LABORATORY, INC.

1385 FAIRFAX ST., STE. D. • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 80498
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-081

DATE RECEIVED: 01/29/90
DATE REPORTED: 02/05/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/L) Gasoline Range
1	MW-2	14
2	MW-3	0.5
3	TW-1	7.4
4	TW-3	22

mg/L - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 1 mg/kg
Method Detection Limit for Gasoline in Water: 0.1 mg/L

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 10%
MS/MSD Average Recovery = 95%: Duplicate RPD = 5%

Edward R. Morales

Laboratory Manager

SUPERIOR ANALYTICAL LABORATORY, INC.
1385 FAIRFAX ST., STE. D. • SAN FRANCISCO, CA 94124 • PHONE (415) 647-2081

C E R T I F I C A T E O F A N A L Y S I S

LABORATORY NO.: 80513
CLIENT: Alton Geoscience
CLIENT JOB NO.: 30-081

DATE RECEIVED: 02/02/90
DATE REPORTED: 02/09/90

ANALYSIS FOR TOTAL PETROLEUM HYDROCARBONS
by Modified EPA SW-846 Method 5030 and 8015

LAB #	Sample Identification	Concentration (mg/L) Gasoline Range
1	TW-4	ND<0.1
2	TW-5	240
3	TW-6	20
4	TW-7	ND<0.1
5	TW-8	ND<0.1
6	TW-9	41
7	TW-10	50

mg/L - parts per million (ppm)

Method Detection Limit for Gasoline in Soil: 0.5 mg/kg
Method Detection Limit for Gasoline in Water: 0.1 mg/L

QAQC Summary:

Daily Standard run at 2mg/L: RPD Gasoline = 5
MS/MSD Average Recovery = 105%: Duplicate RPD = 2

Edward R. Morales

Laboratory Manager

ALTON GEOSCIENCE
1170 BURNETT AVE., STE. S
CONCORD, CA. 94520 (415) 682-1582

CHAIN of CUSTODY RECORD

PAGE 1 of 1

DATE: 1/29/90 DUE BY: 2/6/90
LABORATORY: Superior

PROJECT NUMBER / MANAGER: 30-081 M. Hopwood
SAMPLERS SIGNATURE: William G. Shipp
PROJECT NAME / ADDRESS: BP, 35th Ave. Oakland
REMARKS OR SPECIAL INSTRUCTIONS:

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATRIX	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	TYPE & NUMBER OF CONTAINERS	ANALYSIS	WATER ANALYSIS: TPH as Gas / BTEX
MW-2	1/26/90	MW-2	Water			3x40 ml		X
MW-3		MW-3				3 x 40 ml		X
TW-1		TW-1				3 x 40 ml		X
~~MW-4~~		~~TW-2~~				~~3 x 40 ml~~		X
TW-3		TW-3				3 x 40 ml		X

CHAIN OF CUSTODY

	SIGNATURE	INCLUSIVE DATES/TIMES			SIGNATURE	INCLUSIVE DATES/TIMES	
1.	William G Shipp	1/29/90	3:30 pm	4.			
2.	[signature]	1/29/90	3:30 pm	5.			
3.				6.			

ALTON GEOSCIENCE
1170 BURNETT AVE., STE. S
CONCORD, CA. 94520 (415) 682-1582

CHAIN of CUSTODY RECORD

PAGE 1 of 1

DATE: 2/2/90 DUE BY: 2/9/90
LABORATORY: Sperior

PROJECT NUMBER / MANAGER: 30-081 SAMPLERS SIGNATURE:
PROJECT NAME / ADDRESS: BP - 98th Oakland

REMARKS OR SPECIAL INSTRUCTIONS:

One Week T.A.

SAMPLE NUMBER	SAMPLE DATE/TIME	LOCATION/ DESCRIPTION	SAMPLE MATRIX	SAMPLE TYPE: GRAB	SAMPLE TYPE: COMP.	TYPE & NUMBER OF CONTAINERS	SOIL ANALYSIS			WATER ANALYSIS			
										TPH as Diesel			
TW-4	2/1		Water	X		3 VOA's				X			
TW-5										X			
TW-6										X			
TW-7										X			
TW-8										X			
TW-9										X			
TW-10						2 VOA's				X			

CHAIN OF CUSTODY

	SIGNATURE	INCLUSIVE DATES/TIMES	SIGNATURE	INCLUSIVE DATES/TIMES
1.		1100 2/2	4.	2/2/90 2:25 pm
2.	Geri Yordley	9:25 p.m. 2/2	5.	
3.			6.	