Industrial Compliance

9719 Lincoln Village Drive, Suite 310 Sacramento, CA 95827 916/369-8971 FAX 916/369-8370

September 1, 1992

Ms. Jennifer Eberle
Alameda County Health Care Services Agency
Department of Environmental Health
Hazardous Materials Division
80 Swan Way, Room 200
Oakland, California 94621

3725

Subject: **Third Quarter 1992 Groundwater Monitoring Report**
Southern Pacific Transportation Company
5th and Kirkham Streets Site
Oakland, California
IC Project No. 05032

missing from this file

Dear Ms. Eberle:

Industrial Compliance (IC), on behalf of Southern Pacific Transportation Company (SPTCo), is submitting the third quarter 1992 groundwater monitoring report for the SPTCo property located at 5th and Kirkham Streets in Oakland, California (see Figure 1). Work was performed in accordance with the guidelines presented in the Alameda County Health Care Services Agency (the County) letter dated June 21, 1991, which required groundwater monitoring at this site. Quarterly groundwater sampling of these wells began in the third quarter of 1990.

Groundwater Sampling

There are currently four wells onsite (MW-1, MW-3, MW-4 and MW-6). Well locations are shown on Figure 2. Wells MW-1, MW-3 and MW-4 were installed adjacent to former underground storage tank (UST) locations. The monitoring ~~well MW-6~~ is an upgradient well not associated with the UST's, and ~~was therefore not included in the quarterly sampling.~~

→ or cross-gradient

Groundwater samples were collected on July 23, 1992. Prior to sampling, groundwater elevations were measured with an electronic water level probe to calculate saturated well volumes and to generate a site groundwater gradient map. This data is included in the purge characterization and sample logs presented as Attachment A. Approximately 3 well volumes were purged from each well using a bailer. Prior to initial use and between each well, all sampling and purging equipment was decontaminated by scrubbing with a water and trisodium phosphate (TSP) solution, and rinsing with potable water. During purging, the groundwater pH, temperature, and electrical conductivity were measured after purging each well volume and recorded on a purge characterization and sample log form. Information from the purge characterization and sample logs is presented on Table 1; original forms are presented as Attachment A.

Samples were collected with disposable polyethylene bailers and transferred into laboratory supplied containers. Samples were analyzed for total petroleum hydrocarbons as gasoline (TPH-gasoline), and benzene, toluene, ethylbenzene, and xylenes (BTEX) using Method

P/T-BX-Tri-regional, and total petroleum hydrocarbons as diesel (TPH-diesel) using Method TPH-D-Tri-regional.

Analytical Results

The results of analyses have been summarized in Table 2. The analytical laboratory reports are included as Attachment B.

The results of analyses for TPH-gasoline indicate concentrations above the laboratory reporting limits were not present in any of the groundwater samples submitted for analysis.

Unidentified hydrocarbons in the diesel range (C11-C30) **were detected in MW-1 at a concentration of 100 µg/L and in MW-3 at a concentration of 870 µg/L.** Hydrocarbons were not detected in MW-4. **Benzene** was detected in the sample from **MW-3 at a concentration 1.3 µg/L.** BTEX was not detected in the samples from MW-1 and MW-4.

Groundwater Gradient

to west

On July 20, 1992, depth to water measurements were collected from the 4 wells at the site for the purpose of measuring the hydraulic gradient. The data collected is presented in Table 3. **The hydraulic gradient was measured to be northwest** approximately parallel with Third Street (see Figure 3) with a slope of 0.0056 (29.3 feet/mile).

If you have any questions concerning this report, please contact Mr. Walter Floyd at (916) 369-8971.

Sincerely,

Walter Floyd

Walter D. Floyd
Project Geologist

Mark S. Dockum, C.E.G.
Project Manager

Attachments

cc: Mr. Lester Feldman

Table 1
Purge Characterization Data
Southern Pacific Transportation Company Property
5th & Kirkham Streets
Oakland, California
Samples Collected July 1992
IC Project No. 05032

Well[a]	Purged Volume (Gallons)	pH	Electrical Conductivity (μmhos)	Temperature (°F)
MW-1	0	7.01	3650	69.2
	5	7.21	3250	69.3
	10	7.18	3190	69.9
	20	7.20	3181	70.0
	30	7.19	3185	70.1
MW-3	0	7.31	4100	70.2
	5	7.20	883	68.7
	10	7.18	713	68.7
	20	7.15	693	67.9
	30	7.10	680	67.4
	35	7.13	1112	68.0
MW-4	0	6.71	2020	73.4
	5	6.89	2450	69.8
	10	6.87	2920	69.7
	15	6.88	1577	67.7
	20	6.90	1470	67.6
	30	6.89	1610	67.7

a See Figure 2 for approximate well locations.

Table 2
Third Quarter 1992 Groundwater Monitoring Report
Southern Pacific Transportation Company Property
5th & Kirkham Streets
Oakland, California
Samples Collected July 1992
IC Project No. 05032

Well[a]	Sample I.D.	TPH-Gasoline[b] Range (µg/L)	TPH-Diesel[c] Range (µg/L)	BTEX[d] (µg/L)
MW-1	25268	<50	100	<0.50
MW-3	25425	<50	870	1.3 (benzene)
MW-4	25438	<50	<50	<0.50

a See Figure 2 for approximate location of well.

b TPH-Gasoline - total petroleum hydrocarbons as gasoline analyzed using Method P/T-GBX-Tri-regional.

c TPH-Diesel - total petroleum hydrocarbons analyzed using Method TPH-D-Tri-regional. The laboratory identified the hydrocarbons present as being in the range of C11-30 and was quantitated against diesel (C10-C24).

d BTEX - benzene, toluene, ethylbenzene, xylenes analyzed using Method P/T-GBX-Tri-regional.

µg/l Micrograms per liter

< Symbol indicates constituents not detected above method detection limits as noted.

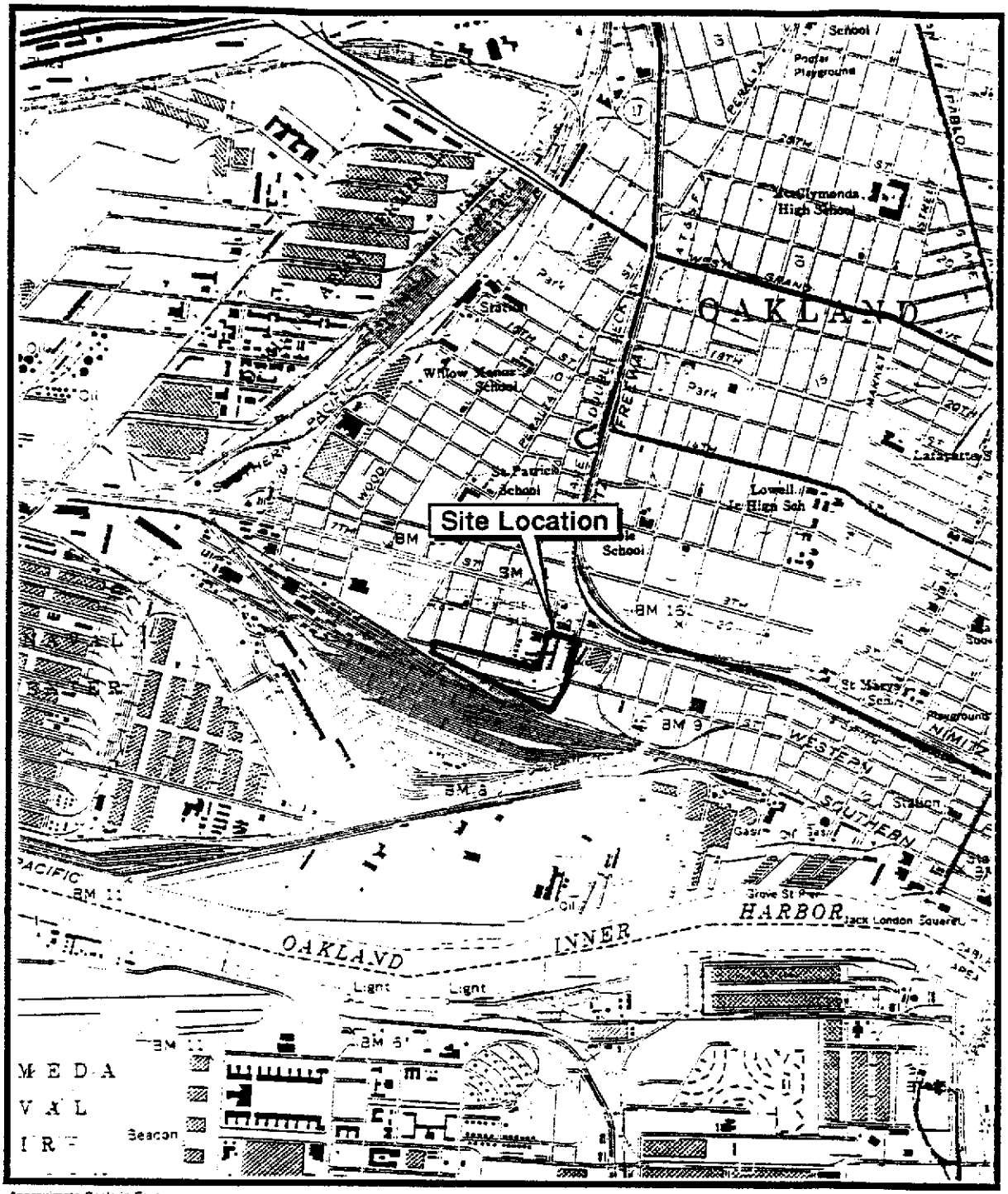
Table 3
Depth to Groundwater Measurements
Southern Pacific Transportation Company Property
5th & Kirkham Streets
Oakland, California
July 20, 1992
IC Project No. 05032

Well[a]	Depth to Water (feet)	PVC Casing Elevation[b]	Groundwater Elevation[c]
MW-1	3.28	6.22	2.94
MW-3	4.08	6.53	2.45
MW-4	6.92	7.50	0.58
MW-6	2.76	5.78	3.02

a See Figure 2 for approximate monitoring well locations.

b Elevations were measured by a licensed surveyor. Units are in feet above mean sea level.

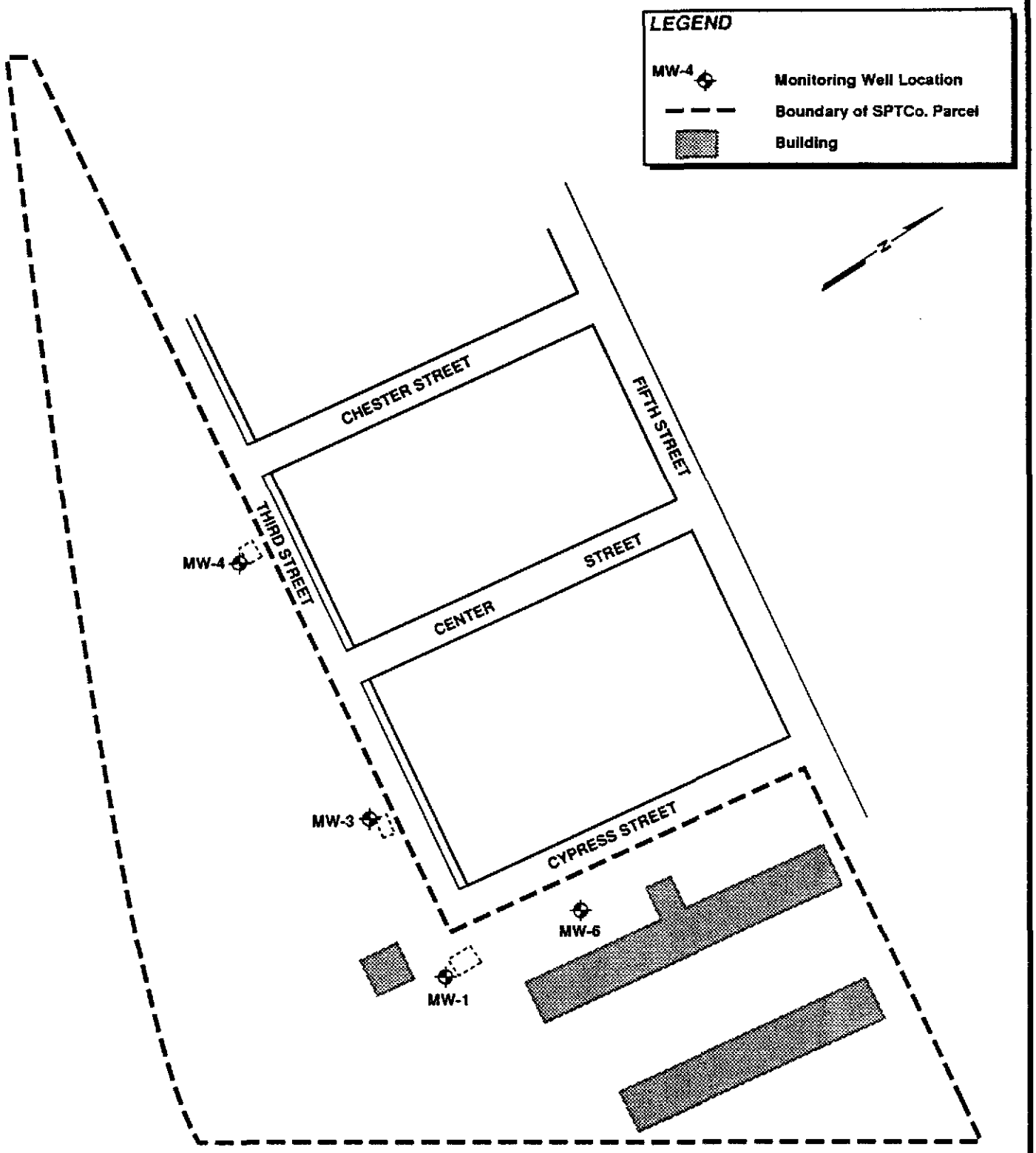
c Measured in feet above mean sea level.



Reference:
USGS 7.5 Minute Series (Topographic)
Oakland West Quadrangle
California

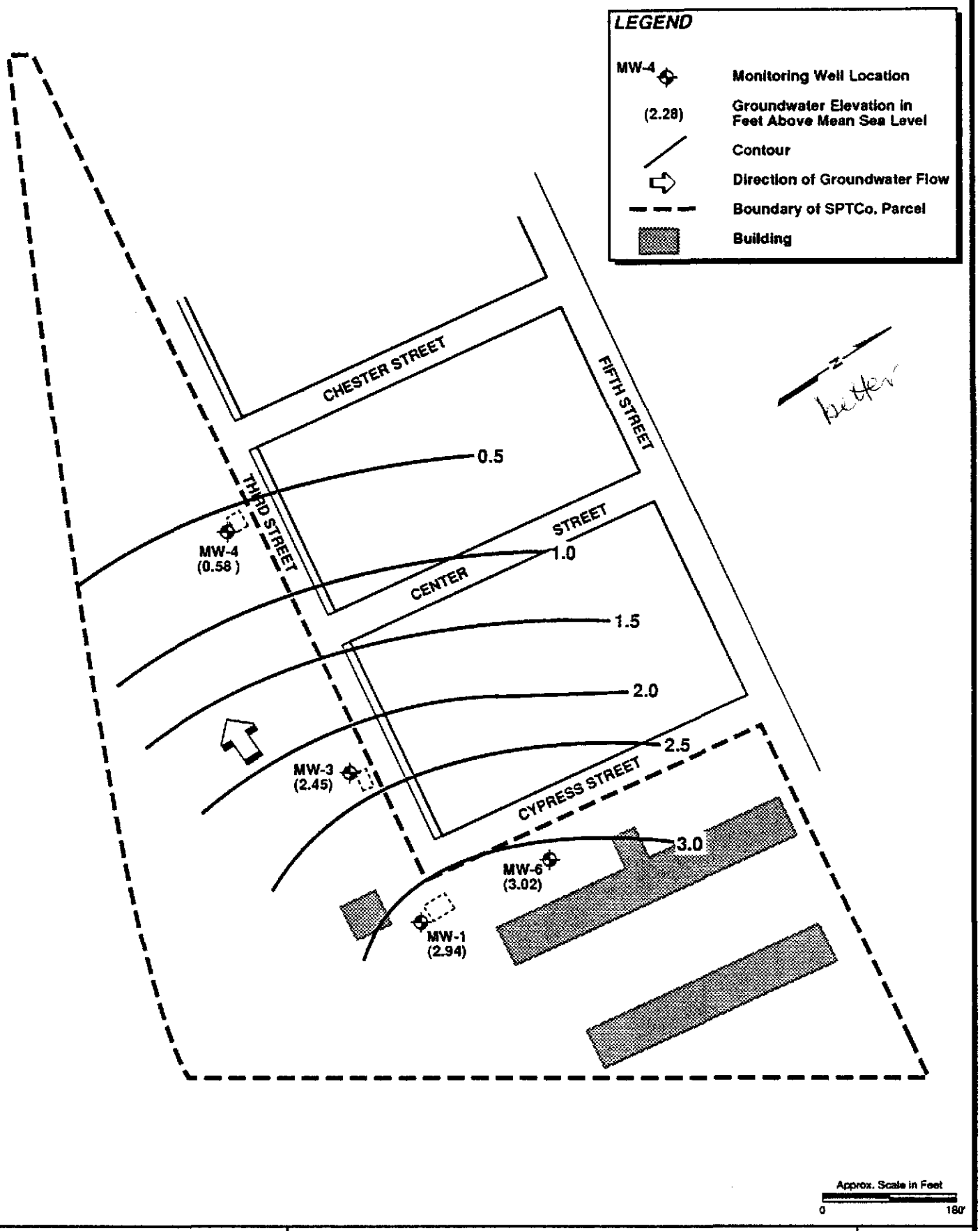
Industrial Compliance A Subsidiary of SP Environmental Systems, Inc.	SITE LOCATION MAP SOUTHERN PACIFIC TRANSPORTATION CO. 5TH & KIRKHAM STREETS PROPERTY OAKLAND, CALIFORNIA	FIGURE: 1	
PROJECT NO: 05032	DATE: 05/26/92	SCALE: as shown	
DRAWN BY: PD	CHECKED BY: WF		

05032 Fig 1/disk 118/2nd QTR GW 1992



Approx. Scale in Feet
0 180'

Industrial Compliance A Subsidiary of SP Environmental Systems, Inc.		**SITE MAP** **SOUTHERN PACIFIC TRANSPORTATION CO.** **5TH & KIRKHAM PROPERTY** **OAKLAND, CALIFORNIA**	FIGURE: 2
PROJECT NO: 05032	DATE: 08/31/92		SCALE: as shown
DRAWN BY: PD	CHECKED BY: WF		



Industrial Compliance A Subsidiary of SP Environmental Systems, Inc.	GROUNDWATER GRADIENT MAP SOUTHERN PACIFIC TRANSPORTATION CO. 5TH & KIRKHAM PROPERTY OAKLAND, CALIFORNIA		FIGURE: 3
PROJECT NO: 05032	DATE: 08/31/92		SCALE: as shown
DRAWN BY: PD	CHECKED BY: WF		

05032 Fig 3/disk 139/2nd QTR GW 1992

APPENDIX A

PURGE CHARACTERIZATION AND SAMPLE LOGS

Industrial Compliance

A Subsidiary of SP Environmental Systems, Inc.

PURGE CHARACTERIZATION AND SAMPLE LOG

Project Number: 05032 **Project Name:** BoBo **Date:** 7/20/92

Well Number: MW1 **Sampler:** BML **Weather:** 83

Military Time	1515	1520	1530	1540	1550	1600
Gallons Purged	Start	5	10	20	30	
Purge Rate						
pH	7.01	7.21	7.18	7.20	7.19	
Conductivity	3650	3250	3190	3181	3185	
Temperature (C)	69.2	69.3	69.9	70.0	70.1	
Salinity (0/00)						
Turbidity						
Color						
Water Level Casing						
Calibration	pH:					

Depth to bottom (DB): 19.34

Depth to water: 3.28

Height of water column (H) = DB - BW: 16

One casing volume (CV) = H x multiplier: .65 / 10

Three casing volumes (3CV): 30

Multipliers = 2" well = 0.16 gallons/foot

4" well = 0.65 gallons/foot

6" well = 1.47 gallons/foot

8" well = 2.61 gallons/foot

S.C.:

Sample #	Quantity	Volume	Type	Preserv.	Analysis	Lab	Sample Equip.	Purge Equip.	Field Comments
25268	3	40ml	VOA	HCl	BTEX/TPH	CAL	Bailer	Bailer	
	1	Qt	Amber	H2SO4	8015 D	"	"	"	
Cleaning:	TSP / Distilled Rinse								
Comments:									

Sampler's Signature:

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

PURGE CHARACTERIZATION AND SAMPLE LOG

Project Number: 15037 **Project Name:** PxBo **Date:** 7/20/92

Well Number: MW3 **Sampler:** BMH **Weather:** warm 80

Military Time	1355	1400	1410	1420	1430	1440	
Gallons Purged	start.	5	10	20	30	35	Depth to bottom (DB): 21.54
Purge Rate							Depth to water: 4.08
pH	7.31	7.20	7.18	7.15	7.10	7.13	Height of water column (H) = DB - BW: 17.46
Conductivity	4100	883	713	693	680	1112	One casing volume (CV) = H x multiplier: .65 / 11
Temperature (C)	70.2	68.7	68.7	67.9	67.4	68.0	Three casing volumes (3CV):
Salinity (0/00)							Multipliers: 2" well = 0.16 gallons/foot
Turbidity							4" well = 0.65 gallons/foot
Color							6" well = 1.47 gallons/foot
Water Level Casing							8" well = 2.61 gallons/foot
Calibration	pH:						S.C.:

Sample #	Quantity	Volume	Type	Preserv.	Analysis	Lab	Sample Equip.	Purge Equip.	Field Comments
25425	3	40ml	VOA	HCl	8240/8010	CAL	Bailer	Bailer	1450 Sample
	1	9L	Amber	H2SO4	8015 D	"	"	"	
Cleaning:	TSP / Distilled Rinse								
Comments:									

Sampler's Signature:

Industrial Compliance
A Subsidiary of SP Environmental Systems, Inc.

PURGE CHARACTERIZATION AND SAMPLE LOG

Project Number: 05032 **Project Name:** BoBo's **Date:** 7/20/92

Well Number: MW-4 **Sampler:** BML **Weather:** 78

Military Time	1245	1250	1300	1310	1320	1337
Gallons Purged	start	5	10	15	20	30
Purge Rate						
pH	10.71	6.89	6.87	6.88	6.90	6.89
Conductivity	2080	2450	1920	1577	1470	1410
Temperature (C)	73.4	69.8	69.7	67.7	67.6	67.7
Salinity (0/00)						
Turbidity						
Color						
Water Level Casing						
Calibration	pH:					

Depth to bottom (DB): 21.36
Depth to water: 6.92
Height of water column (H) = DB - BW: 14.44
One casing volume (CV) = H x multiplier: .65 / 9.4
Three casing volumes (3CV): 28 gallons
Multipliers = 2" well = 0.16 gallons/foot
4" well = 0.65 gallons/foot
6" well = 1.47 gallons/foot
8" well = 2.61 gallons/foot
S.C.:

Sample #	Quantity	Volume	Type	Preserv.	Analysis	Lab	Sample Equip.	Purge Equip.	Field Comments
25438	3	40ml	VOA	HCL	BTEX/TMG	CAL	Bailer	Bailer	1340 Sample
	1	Amber	QT	H_2SO_4	TPH/HOLD	CAL	"	"	

Cleaning: TSP Distilled Rinse
Comments:

Sampler's Signature:

SP ENVIRONMENTAL SYSTEMS

FIELD OBSERVATION DATA SHEET

PROJECT NO. _____ EMPLOYEE(S) NO. _____

	Location No.	Date			Military Time		Code Number*	Measurement	Alt. Msmt. (product)	Comments
		M	D	Y	Hr.	Min.				
1										
2										
3										
4										
5										
6										
7										
8										
9										
10										
11										
12										
13										
14										
15										
16										
17										
18										
19										
20										
21										
22										
23										
24										
25										

* Code

0 Depth Water, Feet (TOC)
1 Water Level Elevation, Feet (MSL)
2 Depth Water, Feet (Cristy Box)
3 Depth Water/Product, Feet (TOC)
4 Water/Product Elevation, Feet (MSL)
5 Depth Water/Product, Feet (Cristy)
6 Oil Flow Rate, GPM
7 Cumulative Oil, Gallons
20 Pumping Depth, Feet
21 Pumping Rate, GPM
22 Pressure, PSI
23 Flow Rate, GPM
24 Stream Flow, CFS
25 Volume, ml
27 pH, Water Sample
28 pH, Probe (Lowered Into Well)
29 Air Temperature (°C)
30 Water Temperature (°C)
31 Residual Chlorine
32 Dissolved Oxygen, mg/l
33 Specific Conductance, µmhos/cm
34 Nitrogen as Ammonia, mg/l
35 Nitrate Nitrogen, mg/l
36 Precipitation, Inches/ Day
39 Cumulative Gallons
40 Cumulative Acre-Feet

APPENDIX B

ANALYTICAL LABORATORY REPORTS

Enseco
A Corning Company

DUPLICATE CONTROL SAMPLE REPORT
Hydrocarbon Work Cell

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	Measured AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: TPH-D-TR-A Matrix: AQUEOUS QC Lot: 30 JUL 92-22A Concentration Units: ug/L								
Diesel Fuel	300	268	268	268	89	56-122	0.0	26.0

Calculations are performed before rounding to avoid round-off errors in calculated results.

Enseco
A Corning Company

METHOD BLANK REPORT
Hydrocarbon Work Cell

Analyte	Result	Units	Reporting Limit
Test: TPH-D-TR-A			
Matrix: AQUEOUS			
QC Lot: 30 JUL 92-22A QC Run: 30 JUL 92-22A			
Diesel Fuel	ND	ug/L	50
Unknown hydrocarbon	ND	ug/L	50

California Analytical
Laboratory

Enseco
A Corning Company

August 5, 1992
ENSECO CAL LAB PROJECT NUMBER: 065102
PO/CONTRACT: NA

Diane Beaulaurier
Industrial Compliance
9719 Lincoln Village Dr.
Suite 310
Sacramento, CA 95827

Dear Ms. Beaulaurier:

This report contains the analytical results for the twelve aqueous samples which were received under chain of custody by Enseco Cal Lab on 22 July 1992. These samples are associated with your BoBo Project, Number 05032.

The case narrative is an integral part of this report.

Preliminary data were sent via facsimile to you on 5 August 1992.

If you have any questions, please call me at (916) 374-4300.

Sincerely,

Cindy Rhatigan
Program Administrator

mbw

Enseco Incorporated
2544 Industrial Boulevard
West Sacramento, California 95691
916/372-1393 Fax: 916/372-7768

Enseco
A Corning Company

TABLE OF CONTENTS

ENSECO CAL LAB PROJECT NUMBER 065102

Enseco
A Corning Company

CASE NARRATIVE

ENSECO CAL LAB PROJECT NUMBER 065102

There were no anomalies associated with this report.

ENSECO CAL LAB'S QUALITY ASSURANCE PROGRAM

Enseco Cal Lab has implemented an extensive Quality Assurance (QA) program to ensure the production of scientifically sound, legally defensible data of known documental quality. A key element of this program is Enseco's Laboratory Control Sample (LCS) system. Controlling lab operations with LCS (as opposed to matrix spike/matrix spike duplicate samples), allows the lab to differentiate between bias as a result of procedural errors versus bias due to matrix effects. The analyst can then identify and implement the appropriate corrective actions at the bench level, without waiting for extensive senior level review or costly and time-consuming sample re-analyses. The LCS program also provides our client with information to assess batch, and overall laboratory performance.

Laboratory Control Samples - (LCS)

Laboratory Control Samples (LCS) are well-characterized, laboratory generated samples used to monitor the laboratory's day-to-day performance of routine analytical methods. The results of the LCS are compared to well-defined laboratory acceptance criteria to determine whether the laboratory system is "in control". Three types of LCS are routinely analyzed: Duplicate Control Samples (DCS), Single Control Samples (SCS), and method blanks. Each of these LCS are described below.

Duplicate Control Samples. A DCS is a well-characterized matrix (blank water, sand, sodium sulfate or celite) which is spiked with certain target parameters and analyzed at approximately 10% of the sample load in order to establish method-specific control limits.

Single Control Samples. An SCS consists of a control matrix that is spiked with surrogate compounds appropriate to the method being used. In cases where no surrogate is available, (e.g. metals or conventional analyses) a single control sample identical to the DCS serves as the control sample. An SCS is prepared for each sample lot. Accuracy is calculated identically to the DCS.

Method Blank Results. A method blank is a laboratory-generated sample which assesses the degree to which laboratory operations and procedures cause false-positive analytical results for your samples.

Enseco
A Corning Company

SAMPLE DESCRIPTION INFORMATION
for
Industrial Compliance

Lab ID	Client ID	Matrix	Sampled Date	Sampled Time	Received Date
065102-0001-SA	MW3	AQUEOUS	20 JUL 92	14:50	22 JUL 92
065102-0002-SA	MW4	AQUEOUS	20 JUL 92	13:40	22 JUL 92
065102-0003-SA	MW1	AQUEOUS	20 JUL 92	16:00	22 JUL 92

SP - EvS

CHAIN-OF-CUSTODY RECORD

No. 12383

SP - Environmental Systems, Inc. • 9719 Lincoln Village Drive, Ste. 310 • Sacramento, CA 95827 • Phone 916-369-8971 • FAX 916-369-8370

PROJECT NAME	PROJECT LOCATION
Bobo	

PROJ. NO.	PROJECT CONTACT	PROJECT TELEPHONE NO.
05032	Walt Floyd	369 8971

CLIENT'S REPRESENTATIVE	PROJECT MANAGER/SUPERVISOR

ITEM NO.	SAMPLE NUMBER	DATE	TIME	COMP	GRAB	SAMPLE LOCATION (INCLUDE MATRIX AND POINT OF SAMPLE)	NUMBER OF CONTAINERS	ANALYSIS DESIRED (INDICATE SEPARATE CONTAINERS) BTEX	REMARKS
1	25125	7/20	1150		X	MW3 65102-0001	4		
2	25138	7/20	1340		X	MW4 -0002	4		
3	25268	7/20	1600		X	MW1 -0003	4		
4									
5									
6									
7									
8									
9									
10									

TRANSFER NUMBER	ITEM NUMBER	TRANSFERS RELINQUISHED BY	TRANSFERS ACCEPTED BY	DATE	TIME
1	3	[signature]	[signature]	7/23/92	10:30
2					
3					
4					

REMARKS

7/23 - Walt Floyd to send amended COC - requires TPHG/BTEX & Diesel Regular TAT

SAMPLER'S NAME

SAMPLER'S SIGNATURE [signature]

* Sampled recd the day before (7/22/92) without paperwork him

LAB COPY

Total Petroleum Hydrocarbons (Gasoline) and BTEX - P/T-GBX-Triregional

Enseco
A Corning Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method P/T-GBX-TRIREGIONAL

Client Name: Industrial Compliance
Client ID: MW3
Lab ID: 065102-0001-SA
Matrix: AQUEOUS Sampled: 20 JUL 92 Received: 23 JUL 92
Authorized: 23 JUL 92 Prepared: NA Analyzed: 24 JUL 92

Parameter	Result	Units	Reporting Limit
Benzene	1.3	ug/L	0.50
Toluene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50
Unknown hydrocarbon	ND	ug/L	50

Surrogate	Recovery	
4-Bromofluorobenzene	119	%

ND = Not detected
NA = Not applicable

Reported By: Pat Trinidad Approved By: Sharon Campbell

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method P/T-GBX-TRIREGIONAL

Client Name: Industrial Compliance
Client ID: MW4
Lab ID: 065102-0002-SA
Matrix: AQUEOUS
Authorized: 23 JUL 92

Sampled: 20 JUL 92
Prepared: NA

Received: 23 JUL 92
Analyzed: 24 JUL 92

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50
Unknown hydrocarbon	ND	ug/L	50
Surrogate	**Recovery**		
4-Bromofluorobenzene	116	%	

ND = Not detected
NA = Not applicable

Reported By: Pat Trinidad

Approved By: Sharon Campbell

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

Total Petroleum Hydrocarbons (Gasoline) and BTEX

Method P/T-GBX-TRIREGIONAL

Client Name: Industrial Compliance
Client ID: MW1
Lab ID: 065102-0003-SA
Matrix: AQUEOUS Sampled: 20 JUL 92 Received: 23 JUL 92
Authorized: 23 JUL 92 Prepared: NA Analyzed: 24 JUL 92

Parameter	Result	Units	Reporting Limit
Benzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50
Unknown hydrocarbon	ND	ug/L	50
Surrogate	**Recovery**		
4-Bromofluorobenzene	111	%	

ND = Not detected
NA = Not applicable

Reported By: Pat Trinidad Approved By: Sharon Campbell

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

QC LOT ASSIGNMENT REPORT
Hydrocarbon Work Cell

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
065102-0001-SA	AQUEOUS	TPH-BTEX-A	15 JUL 92-19A	24 JUL 92-19A
065102-0002-SA	AQUEOUS	TPH-BTEX-A	15 JUL 92-19A	24 JUL 92-19A
065102-0003-SA	AQUEOUS	TPH-BTEX-A	23 JUL 92-19A	24 JUL 92-19A

Enseco
A Corning Company

METHOD BLANK REPORT
Hydrocarbon Work Cell

Analyte	Result	Units	Reporting Limit
Test: TPH-GBX-TR-A			
Matrix: AQUEOUS			
QC Lot: 15 JUL 92-19A QC Run: 24 JUL 92-19A			
Benzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50
Unknown hydrocarbon	ND	ug/L	50
Test: TPH-GBX-TR-A			
Matrix: AQUEOUS			
QC Lot: 23 JUL 92-19A QC Run: 24 JUL 92-19A			
Benzene	ND	ug/L	0.50
Toluene	ND	ug/L	0.50
Ethylbenzene	ND	ug/L	0.50
Xylenes (total)	ND	ug/L	0.50
Gasoline	ND	ug/L	50
Unknown hydrocarbon	ND	ug/L	50

Enseco
A Corning Company

DUPLICATE CONTROL SAMPLE REPORT
Hydrocarbon Work Cell

Analyte	Concentration Spiked	Measured DCS1	Measured DCS2	AVG	Accuracy Average(%) DCS	Accuracy Limits	Precision (RPD) DCS	Precision Limit
Category: TPH-BTEX-A Matrix: AQUEOUS QC Lot: 15 JUL 92-19A Concentration Units: ug/L								
Benzene	5.00	5.17	4.97	5.07	101	79-121	3.9	6.8
Toluene	5.00	5.29	5.12	5.20	104	76-120	3.3	7.3
Gasoline	1000	1120	1050	1080	109	80-117	6.5	9.3
Category: TPH-BTEX-A Matrix: AQUEOUS QC Lot: 23 JUL 92-19A Concentration Units: ug/L								
Benzene	5.00	5.06	5.23	5.14	103	79-121	3.3	6.8
Toluene	5.00	5.22	5.24	5.23	105	76-120	0.4	7.3
Gasoline	1000	1030	1140	1080	109	80-117	10*	9.3

* = RPD outside QC Limits

Calculations are performed before rounding to avoid round-off errors in calculated results.

Enseco
A Corning Company

SINGLE CONTROL SAMPLE REPORT
Hydrocarbon Work Cell

Analyte	Concentration Spiked	Concentration Measured	Accuracy(%) SCS	Accuracy(%) Limits
Category: TPH-BTEX-A Matrix: AQUEOUS QC Lot: 15 JUL 92-19A QC Run: 24 JUL 92-19A Concentration Units: ug/L				
4-Bromofluorobenzene	20.0	21.7	108	70-130
Category: TPH-BTEX-A Matrix: AQUEOUS QC Lot: 23 JUL 92-19A QC Run: 24 JUL 92-19A Concentration Units: ug/L				
4-Bromofluorobenzene	20.0	21.7	108	70-130

Calculations are performed before rounding to avoid round-off errors in calculated results.

Total Petroleum Hydrocarbons - Method TPH-D-Triregional

Enseco
A Corning Company

Total Petroleum Hydrocarbons by GC/FID (Triregional)

Method TPH-D-TRIREGIONAL

Client Name: Industrial Compliance
Client ID: MW3
Lab ID: 065102-0001-SA
Matrix: AQUEOUS
Authorized: 23 JUL 92

Sampled: 20 JUL 92
Prepared: 30 JUL 92

Received: 23 JUL 92
Analyzed: 31 JUL 92

Parameter	Result	Units	Reporting Limit	
Diesel Fuel	ND	ug/L	50	
Unknown hydrocarbon	870	ug/L	50	1

Note 1 : The hydrocarbons present in this sample represent an unknown mixture in the range of about C-11 to C-30. Quantitation is based on a diesel reference in range between C-10 to C-24.

ND = Not detected
NA = Not applicable

Reported By: Tony Young

Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

Total Petroleum Hydrocarbons by GC/FID (Triregional)

Method TPH-D-TRIREGIONAL

Client Name: Industrial Compliance
Client ID: MW4
Lab ID: 065102-0002-SA
Matrix: AQUEOUS Sampled: 20 JUL 92 Received: 23 JUL 92
Authorized: 23 JUL 92 Prepared: 30 JUL 92 Analyzed: 31 JUL 92

Parameter	Result	Units	Reporting Limit
Diesel Fuel	ND	ug/L	50
Unknown hydrocarbon	ND	ug/L	50

ND = Not detected
NA = Not applicable

Reported By: Tony Young Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

Total Petroleum Hydrocarbons by GC/FID (Triregional)

Method TPH-D-TRIREGIONAL

Client Name: Industrial Compliance
Client ID: MW1
Lab ID: 065102-0003-SA
Matrix: AQUEOUS Sampled: 20 JUL 92 Received: 23 JUL 92
Authorized: 23 JUL 92 Prepared: 30 JUL 92 Analyzed: 31 JUL 92

Parameter	Result	Units	Reporting Limit	
Diesel Fuel	ND	ug/L	50	
Unknown hydrocarbon	100	ug/L	50	1

Note 1 : The hydrocarbons present in this sample represent an unknown mixture in the range of about C-11 to C-30. This sample contains three single peaks in the ranges of C-15 to C-17, C-20 to C-22, C-24 to C-26. Quantitation is based on a diesel refernce in the range between C-10 to C-24.

ND = Not detected
NA = Not applicable

Reported By: Tony Young Approved By: Lisa Stafford

The cover letter is an integral part of this report.
Rev 230787

Enseco
A Corning Company

QC LOT ASSIGNMENT REPORT
Hydrocarbon Work Cell

Laboratory Sample Number	QC Matrix	QC Category	QC Lot Number (DCS)	QC Run Number (SCS/BLANK)
065102-0001-SA	AQUEOUS	TPH-D-TR-A	30 JUL 92-22A	30 JUL 92-22A
065102-0002-SA	AQUEOUS	TPH-D-TR-A	30 JUL 92-22A	30 JUL 92-22A
065102-0003-SA	AQUEOUS	TPH-D-TR-A	30 JUL 92-22A	30 JUL 92-22A