



grettler — ryan inc.

91 APR 16 AM 10:17

April 16, 1991

County of Alameda  
Department of Environmental Health  
Hazardous Materials Division  
80 Swan Way, Room 200  
Oakland, California 94621

*COP 413*

Reference: Former Shell Service Station  
2800 Telegraph Avenue  
Oakland, California *94609*  
WIC 204-5508-2303

Gentlemen:

As requested by Mr. Jack Brastad of Shell Oil Company, we are forwarding a copy of the Site Update Report dated April 15, 1991. The enclosed report presents the results of the first quarter 1991 ground-water sampling at the above referenced location.

Please do not hesitate to call should you have any questions or comments.

Sincerely,

John P. Werfal  
Project Manager

enclosure

cc: Mr. Jack Brastad, Shell Oil Company  
Mr. Tom Callaghan, Regional Water Quality Control Board



**GeoStrategies Inc.**

**SITE UPDATE**

Former Shell Service Station  
2800 Telegraph Avenue  
Oakland, California  
WIC 204-5508-2303

761001-12

April 15, 1991

RECEIVED

APR 15 1991



**GeoStrategies Inc.**

2140 WEST WINTON AVENUE  
HAYWARD, CALIFORNIA 94545

**GETTLER-RYAN INC.**

GENERAL CONTRACTORS

(415) 352-4800

April 15, 1991

Gettler-Ryan Inc.  
2150 West Winton Avenue  
Hayward, California 94545

Attn: Mr. John Werfal

Re: SITE UPDATE  
Former Shell Service Station  
2800 Telegraph Avenue  
Oakland, California

Gentlemen:

This Site Update has been prepared by GeoStrategies Inc. (GSI) and presents the results of the 1991 first quarter ground-water sampling performed by Gettler-Ryan Inc. (G-R) for the above referenced site (Plate 1). The scope of work presented in this document was performed at the request of Shell Oil Company. Field work and laboratory analysis methods were performed to comply with current State of California Water Resources Control Board guidelines.

#### **SITE BACKGROUND**

There are currently a total of eleven ground-water monitoring wells (Wells S-1 through SR-1) and one recovery well (SR-1) at the site (Plate 2). These wells were installed between the second quarter of 1988 and the fourth quarter of 1989. Four underground storage tanks were removed from the site in late 1988. Wells S-1 through S-3 and SR-1 are onsite. Wells S-4 through S-11 are offsite. These wells have been installed to evaluate the vertical and horizontal extent of petroleum hydrocarbons in the soil and upper water-bearing zone beneath the site.

Quarterly monitoring and sampling of wells began in 1989. Ground-water samples have been analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) according to EPA Method 8015 (Modified) and Benzene, Toluene, Ethylbenzene, and Xylenes (BTEX) according to EPA Method 8020.

761001-12

# GeoStrategies Inc.

Gettler-Ryan Inc.  
April 15, 1991  
Page 2

## CURRENT QUARTERLY SAMPLING RESULTS

### Potentiometric Data

Prior to ground-water sampling, depth to water-level measurements were obtained in each monitoring well using an electronic oil-water interface probe. Static ground-water levels were measured from the surveyed top of well box and recorded to the nearest 0.01 foot. Corresponding elevations relative to Mean Sea Level (MSL) are presented in Table 1. Water-level data were used to construct a quarterly potentiometric map (Plate 3). Shallow ground-water flow is generally to the south at a calculated gradient of 0.017.

### Floating Product Measurements

Each well was checked for the presence of floating product using an electronic oil-water interface probe. A clear acrylic bailer was used to confirm probe results. Floating product was observed in Well S-3 this quarter.

### Ground-water Analytical Data

Ground-water samples were collected on January 22, 1991. The samples were analyzed for TPH-Gasoline according EPA Method 8015 (Modified) and BTEX according to EPA Method 8020 by International Technology (IT), a State of California certified laboratory located in San Jose, California.

TPH-Gasoline was detected in Wells S-6 through S-8 and S-11 at concentrations ranging from 0.82 to 2.2 ppm. Benzene concentrations detected in Wells S-6 through S-8, S-10 and S-11 ranged from 0.0007 to 0.44 ppm. These data are summarized in Table 1 and included in Appendix A. A chemical concentration map for TPH-Gasoline and benzene are presented on Plate 4. Historical chemical analytical data are presented on Table 2.

# GeoStrategies Inc.


Gettler-Ryan Inc.  
April 15, 1991  
Page 3


## Quality Control

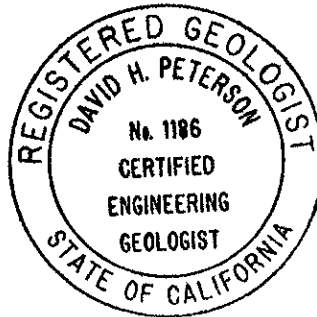
Quality Control (QC) samples for this quarter's sampling included a trip blank, field blank, and duplicate sample (SD-1). These samples were prepared in the laboratory and field using organic-free water to evaluate laboratory and field handling procedures of samples and assess analytical precision. The results of QC sample analyses are presented in Table 1.

If you have any questions, please call.

GeoStrategies Inc. by,

  
Cliff M. Garratt  
Hydrogeologist

  
David H. Peterson  
Senior Geologist  
C.E.G. 1186



CMG/DHP/kjj

- Plate 1. Vicinity Map
- Plate 2. Site Plan
- Plate 3. Potentiometric Map
- Plate 4. TPH-Gasoline/Benzene Concentration Map

Appendix A: Analytical Laboratory Report and Chain-of-Custody

QC Review: JLP/dhp

761001-12

TABLE 1

GROUND-WATER CHEMICAL DATA

WELL NO	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)	WELL ELEV (FT)	STATIC WATER ELEV (FT)	PRODUCT THICKNESS (FT)	DEPTH TO WATER (FT)	pH	TEMPERATURE (F)	CONDUCTIVITY (UMHOS/cm)
S-1	22-Jan-91	31-Jan-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	35.31	24.71	----	10.60	6.34	64.8	476
S-2	22-Jan-91	31-Jan-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	33.91	23.57	----	10.34	6.60	66.3	603
S-3	----	----	----	----	----	----	----	33.56	23.44	0.15	10.24	----	----	----
S-4	22-Jan-91	31-Jan-91	<0.05	<0.0005	<0.0005	<0.0005	0.0029	34.08	23.21	----	10.87	6.59	69.0	441
S-5	22-Jan-91	31-Jan-91	<0.05	<0.0005	<0.0005	<0.0005	0.0010	33.42	22.97	----	10.45	7.11	68.4	130
S-6	22-Jan-91	31-Jan-91	2.2	0.44	0.015	<0.01	0.059	32.59	22.57	----	10.02	6.65	68.0	774
S-7	22-Jan-91	31-Jan-91	1.2	0.077	0.027	0.057	0.16	33.33	21.56	----	11.77	6.56	66.4	758
S-8	22-Jan-91	31-Jan-91	0.82	0.017	0.037	0.030	0.12	31.97	21.21	----	10.76	6.76	68.7	484
S-9	22-Jan-91	31-Jan-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	31.86	20.82	----	11.04	6.56	68.7	690
S-10	22-Jan-91	31-Jan-91	<0.05	0.0007	0.0082	0.0022	0.014	32.95	22.90	----	10.05	6.63	66.2	221

CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS

Benzene 0.001 ppm      Ethylbenzene 0.68 ppm      Xylenes 1.750 ppm

CURRENT DHS ACTION LEVELS

Toluene 0.100 ppm

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline

PPM = Parts per Million

SF = Field Blank

SD = Duplicate Sample

TB = Trip Blank

Note: 1. All data shown as <x are reported as ND (none detected).

2. Water level elevations referenced to mean sea level (MSL). Elevations are corrected for free product using a correction factor of 0.8.

3. DHS Action Levels and MCLs are subject to change pending State review.

4. Physical parameter measurements represent stabilized values during well purging.

TABLE 2

## HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	E.B. (PPM)	XYLENES (PPM)	TPH-D (PPM)	OIL (PPM)
02-May-88	S-1	<0.05	0.5	<0.001	----	<0.004	<1.	<5.
08-Nov-88	S-1	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
02-May-89	S-1	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Aug-89	S-1	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-1	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
16-Jan-90	S-1	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
13-Apr-90	S-1	<0.050	<0.0005	0.0006	<0.0005	<0.001	N/A	N/A
05-Jul-90	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
12-Oct-90	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
22-Jan-91	S-1	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
02-May-88	S-2	1.6	0.079	0.089	----	0.048	N/A	N/A
08-Nov-88	S-2	0.2	0.022	0.001	0.016	0.008	N/A	N/A
02-May-89	S-2	2.2	0.5	0.052	0.12	0.18	N/A	N/A
03-Aug-89	S-2	0.43	0.073	0.001	0.014	0.007	N/A	N/A
03-Oct-89	S-2	0.37	0.012	0.019	0.013	0.078	N/A	N/A
16-Jan-90	S-2	0.42	0.075	0.0099	0.032	0.052	N/A	N/A
13-Apr-90	S-2	0.34	0.063	0.0025	0.019	0.015	N/A	N/A
05-Jul-90	S-2	0.10	0.01	<0.0005	0.0018	0.002	N/A	N/A
12-Oct-90	S-2	<0.05	0.0020	<0.0005	<0.0005	<0.0005	N/A	N/A
22-Jan-91	S-2	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
02-May-88	S-3	46.	2.7	10.	----	10.	N/A	N/A
02-May-89	S-3	47.	2.0	6.0	1.7	7.2	N/A	N/A
13-Apr-90	S-3	16.	0.54	2.4	0.81	3.9	N/A	N/A
05-Jul-90	S-3	16.	0.42	1.7	0.64	3.1	N/A	N/A
08-Nov-88	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
22-Feb-89	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
02-May-89	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Aug-89	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-4	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
16-Jan-90	S-4	<0.050	<0.0005	<0.0005	<0.0005	0.001	N/A	N/A
13-Apr-90	S-4	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
05-Jul-90	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
12-Oct-90	S-4	<0.05	0.0010	0.0047	0.0010	0.0032	N/A	N/A
22-Jan-91	S-4	<0.05	<0.0005	<0.0005	<0.0005	0.0029	N/A	N/A
08-Nov-88	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
22-Feb-89	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
02-May-89	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Aug-89	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-5	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
16-Jan-90	S-5	<0.050	<0.0005	<0.0005	<0.0005	0.001	N/A	N/A
13-Apr-90	S-5	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
05-Jul-90	S-5	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A

TABLE 2

 =====  
 HISTORICAL GROUNDWATER QUALITY DATABASE  
 -----

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	E.B. (PPM)	XYLENES (PPM)	TPH-D (PPM)	OIL (PPM)
12-Oct-90	S-5	<0.05	0.0005	0.0026	0.0005	0.0017	N/A	N/A
22-Jan-91	S-5	<0.05	<0.0005	<0.0005	<0.0005	0.0010	N/A	N/A
08-Nov-88	S-6	5.5	1.7	0.02	0.02	0.12	N/A	N/A
22-Feb-89	S-6	6.0	2.4	0.05	0.11	0.3	N/A	N/A
02-May-89	S-6	9.1	3.7	0.12	0.28	0.3	N/A	N/A
03-Aug-89	S-6	7.1	2.4	<0.05	0.07	<0.2	N/A	N/A
03-Oct-89	S-6	5.9	1.6	0.033	0.058	0.10	N/A	N/A
16-Jan-90	S-6	5.9	1.8	0.15	0.16	0.41	N/A	N/A
13-Apr-90	S-6	5.9	1.8	0.07	0.02	0.16	N/A	N/A
05-Jul-90	S-6	4.2	1.2	0.02	0.03	0.08	N/A	N/A
12-Oct-90	S-6	1.7	0.39	0.0065	0.0036	0.016	N/A	N/A
22-Jan-91	S-6	2.2	0.44	0.015	<0.01	0.059	N/A	N/A
08-Nov-88	S-7	2.6	0.088	0.43	0.086	0.43	N/A	N/A
22-Feb-89	S-7	0.8	0.025	0.027	0.029	0.17	N/A	N/A
02-May-89	S-7	0.8	0.032	0.014	0.021	0.11	N/A	N/A
03-Aug-89	S-7	5.0	0.66	0.38	0.23	0.71	N/A	N/A
03-Oct-89	S-7	0.96	0.11	0.008	0.013	0.046	N/A	N/A
16-Jan-90	S-7	0.23	0.0010	0.0018	0.0031	0.017	N/A	N/A
13-Apr-90	S-7	0.32	0.0051	0.0008	0.0023	0.012	N/A	N/A
05-Jul-90	S-7	0.27	0.0055	0.001	0.0006	0.005	N/A	N/A
12-Oct-90	S-7	0.63	0.043	0.0053	0.0048	0.012	N/A	N/A
22-Jan-91	S-7	1.2	0.077	0.027	0.057	0.16	N/A	N/A
03-Aug-89	S-8	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-8	1.6	0.022	0.11	0.053	0.24	N/A	N/A
16-Jan-90	S-8	2.0	0.040	0.15	0.090	0.40	N/A	N/A
13-Apr-90	S-8	1.6	0.027	0.071	0.048	0.21	N/A	N/A
05-Jul-90	S-8	1.5	0.025	0.075	0.067	0.25	N/A	N/A
12-Oct-90	S-8	1.0	0.017	0.031	0.034	0.12	N/A	N/A
22-Jan-91	S-8	0.82	0.017	0.037	0.030	0.12	N/A	N/A
03-Aug-89	S-9	1.6	0.032	0.12	0.052	0.25	N/A	N/A
03-Oct-89	S-9	<0.05	<0.0005	0.001	<0.001	0.003	N/A	N/A
16-Jan-90	S-9	<0.050	<0.0005	<0.0005	<0.0005	0.001	N/A	N/A
13-Apr-90	S-9	<0.050	0.0007	0.0023	<0.0005	0.003	N/A	N/A
05-Jul-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
12-Oct-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
22-Jan-91	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
03-Aug-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
03-Oct-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003	N/A	N/A
16-Jan-90	S-10	<0.050	<0.0005	<0.0005	<0.0005	0.001	N/A	N/A
13-Apr-90	S-10	<0.050	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A
05-Jul-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.001	N/A	N/A



TABLE 2

 =====  
 HISTORICAL GROUNDWATER QUALITY DATABASE  
 -----

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	E.B. (PPM)	XYLENES (PPM)	TPH-D (PPM)	OIL (PPM)
12-Oct-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005	N/A	N/A
22-Jan-91	S-10	<0.05	0.0007	0.0082	0.0022	0.014	N/A	N/A
16-Oct-89	S-11	0.65	0.042	0.047	0.024	0.16	N/A	N/A
16-Jan-90	S-11	0.35	0.027	0.035	0.020	0.11	N/A	N/A
13-Apr-90	S-11	0.90	0.057	0.11	0.037	0.24	N/A	N/A
05-Jul-90	S-11	2.0	0.11	0.21	0.093	0.53	N/A	N/A
12-Oct-90	S-11	1.2	0.14	0.10	0.064	0.22	N/A	N/A
22-Jan-91	S-11	1.4	0.085	0.093	0.088	0.30	N/A	N/A

TPH-G - Total Petroleum Hydrocarbons as Gasoline

PPM - Parts per Million

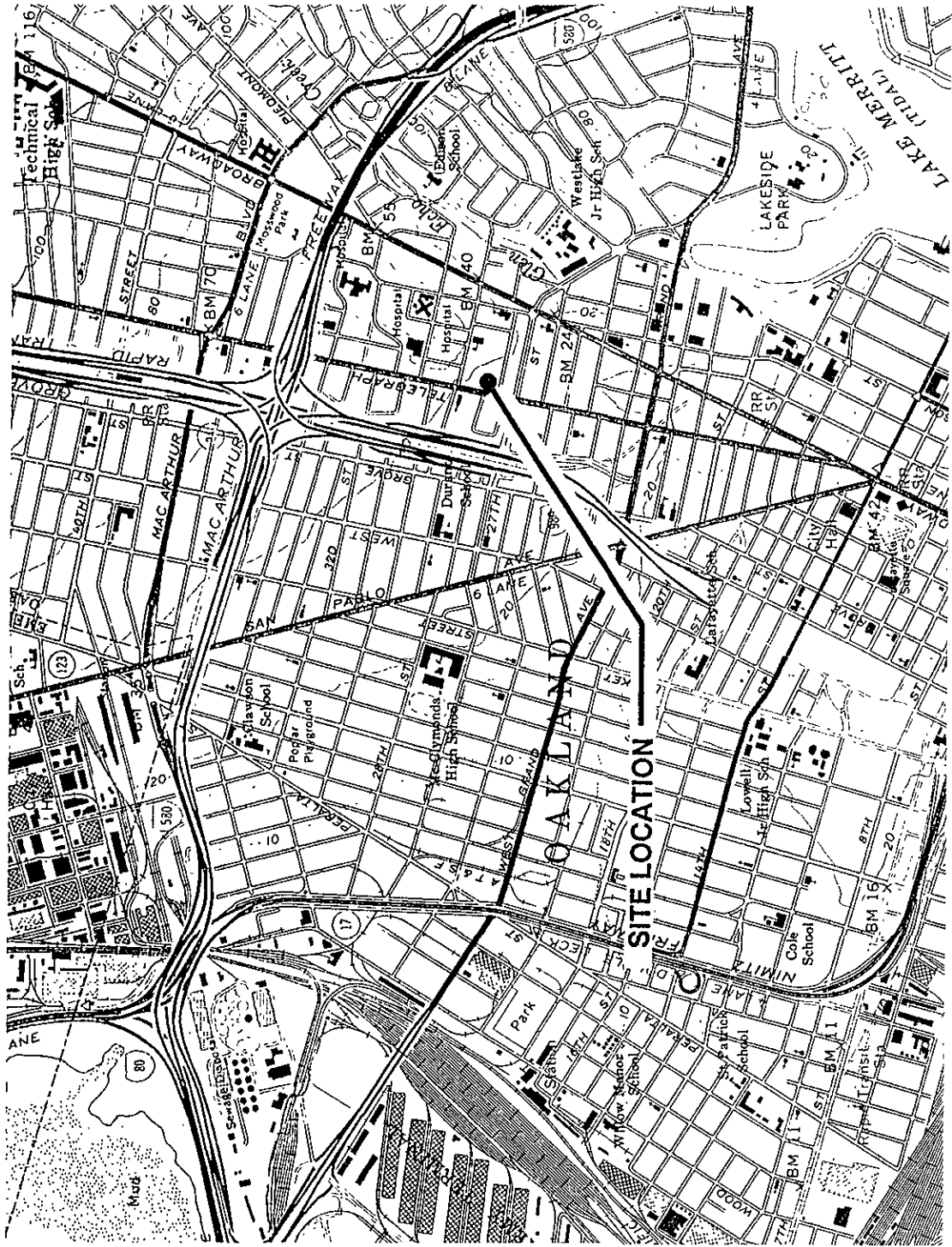
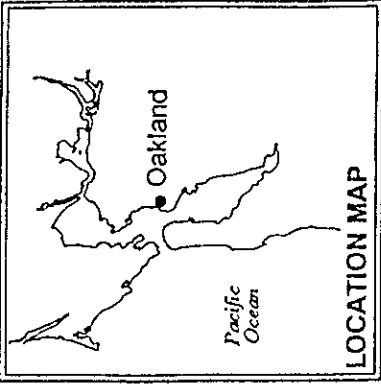
E.B. - Ethylbenzene

TPH-D - Total Petroleum Hydrocarbons as Diesel

NOTE: 1. All data shown as <X are reported as ND (none detected)  
 2. Ethylbenzene and Xylenes were combined prior to May 1989

**GeoStrategies Inc.**

ILLUSTRATIONS



Base Map: USGS Topographic Map



GeoStrategies Inc.

VICINITY MAP  
 Former Shell Service Station  
 2800 Telegraph Avenue  
 Oakland, California

JOB NUMBER  
 7610

REVIEWED BY

DATE  
 3/91

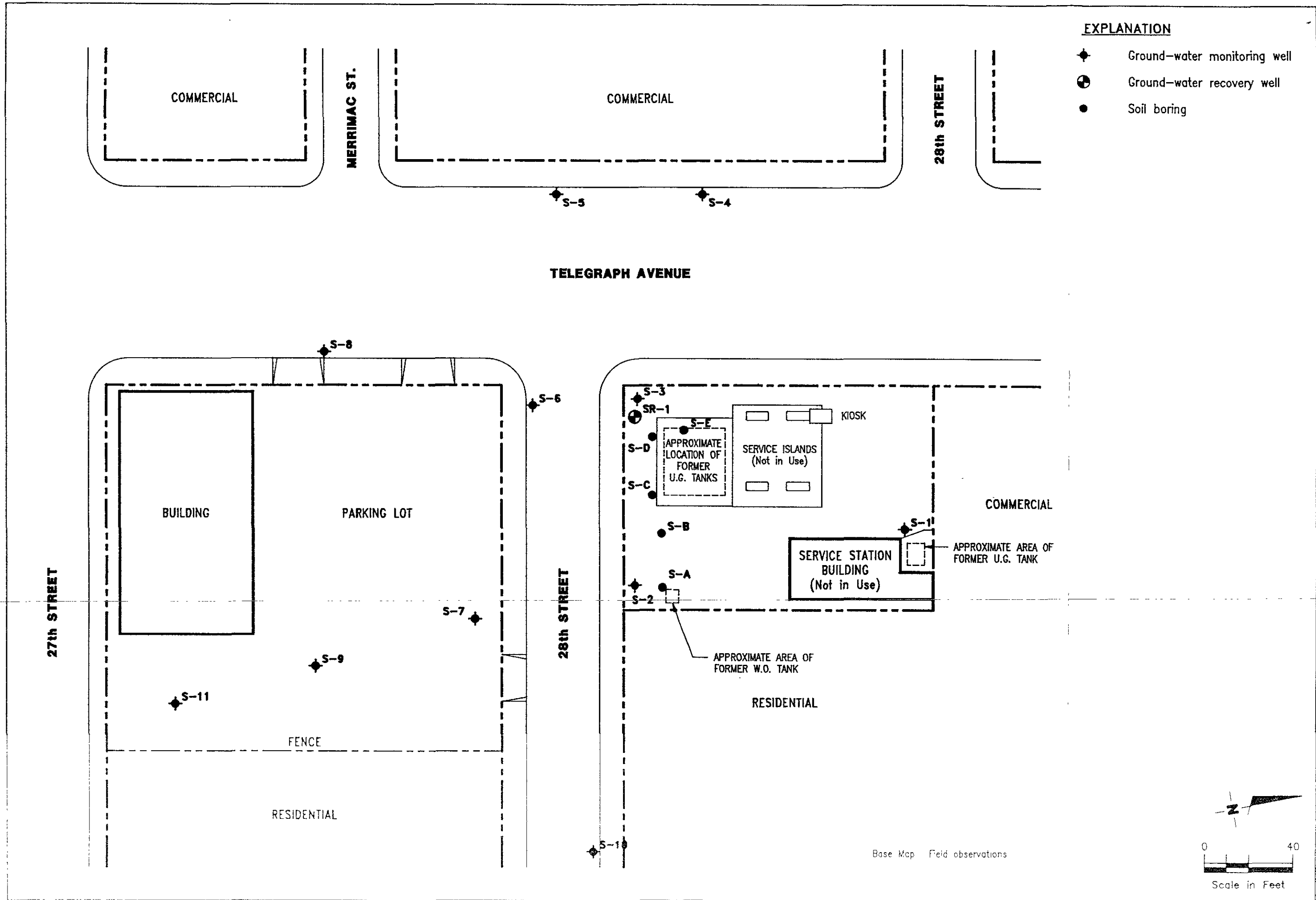
REVISED DATE

PLATE

1

EXPLANATION

- ◆ Ground-water monitoring well
- ⊕ Ground-water recovery well
- Soil boring



**SITE PLAN**  
 Former Shell Service Station  
 2800 Telegraph Avenue  
 Oakland, California

GeoStrategies Inc.



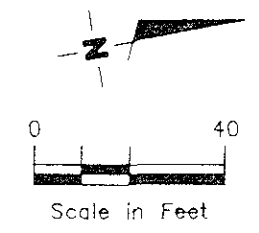
REVISED DATE

DATE 3/91

REVIEWED BY DHP

JOB NUMBER 761001-12

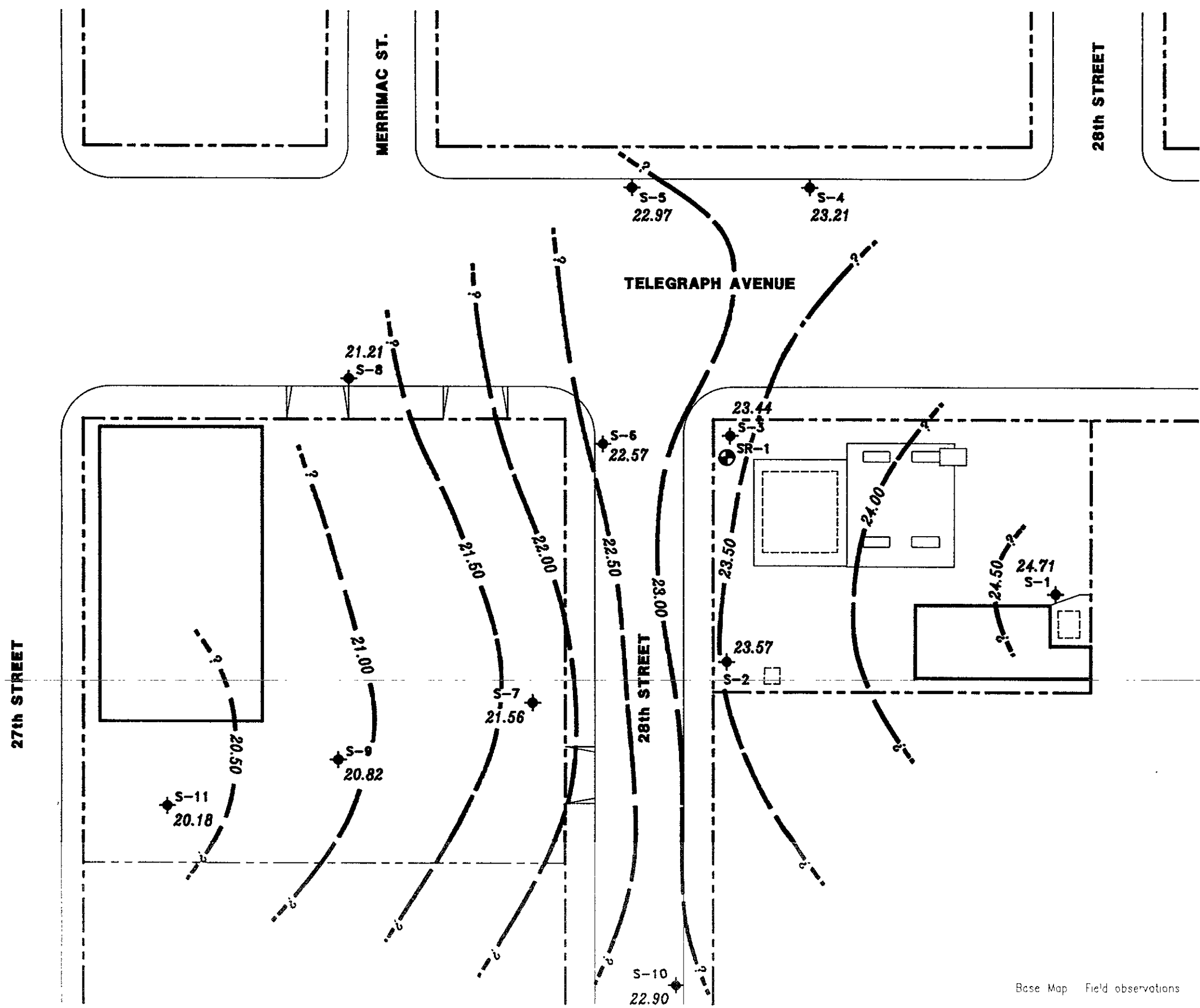
Base Map Field observations



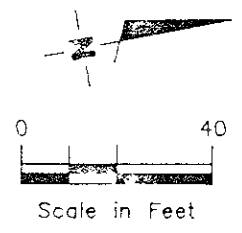
EXPLANATION

- ◆ Ground-water monitoring well
- ⊕ Ground-water recovery well
- - - 99.99 Ground-water elevation contour  
Approximate Gradient = 0.017
- 99.99 Ground-water elevation in feet  
referenced to Mean Sea Level  
(MSL) measured on January 22,  
1991

Note: Contours may be influenced by irrigation practices and/or site construction activities.



Base Map Field observations



POTENTIOMETRIC MAP  
Former Shell Service Station  
2800 Telegraph Avenue  
Oakland, California

GeoStrategies Inc.



REVISED DATE

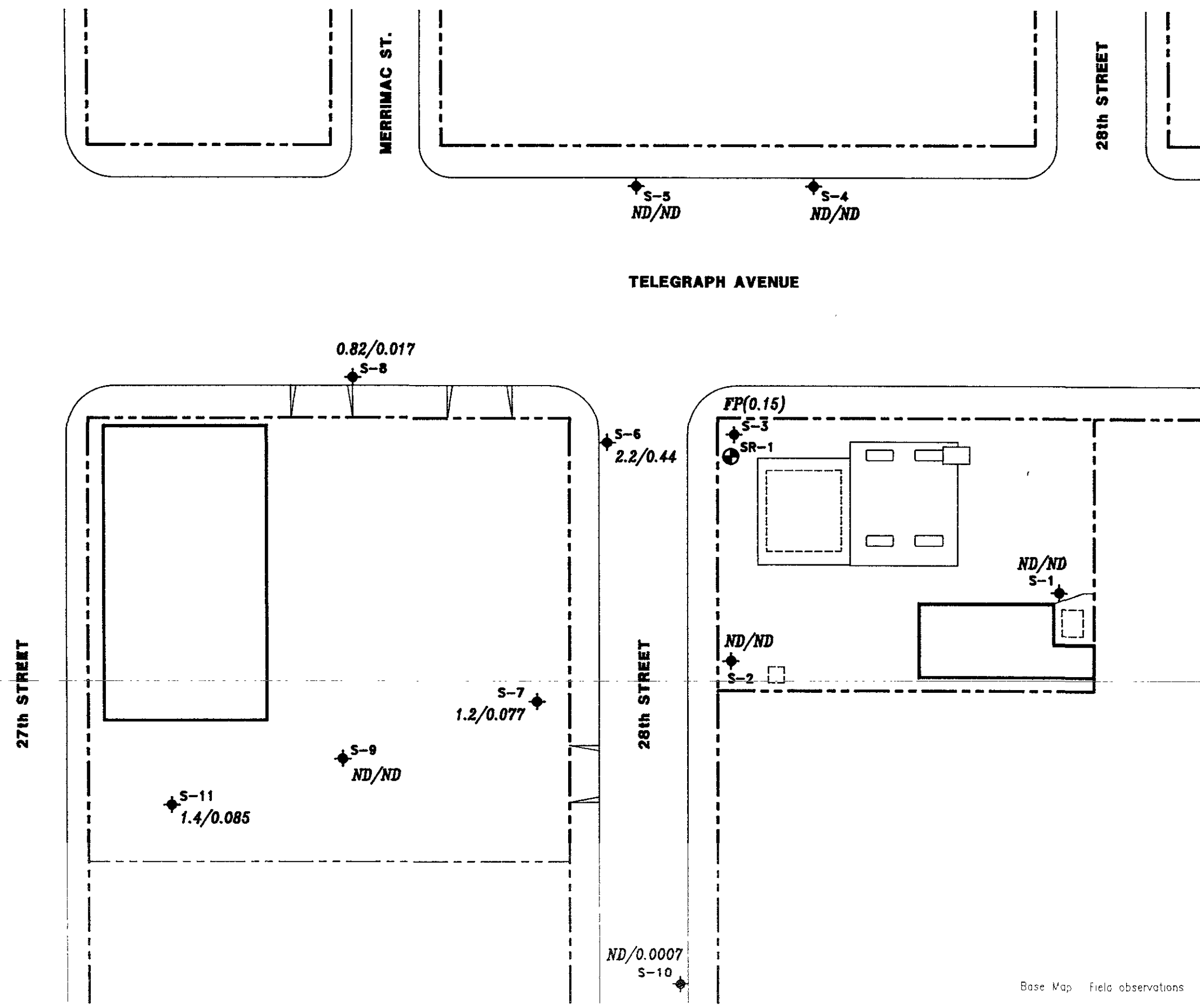
DATE 3/91

REVIEWED BY jhr

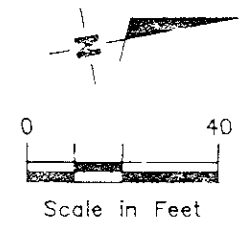
JOB NUMBER 761001-12

EXPLANATION

- ◆ Ground-water monitoring well
- ⊕ Ground-water recovery well
- 99/9.9 TPH-G (Total Petroleum Hydrocarbons calculated as Gasoline)/Benzene concentrations in ppm sampled on January 22, 1991
- ND Not Detected (See laboratory reports for detection limits)
- FP(0.15) Floating Product (thickness in feet)



Base Map Field observations



**GeoStrategies Inc.**

APPENDIX A  
LABORATORY ANALYTICAL REPORT  
CHAIN-OF-CUSTODY



INTERNATIONAL  
TECHNOLOGY  
CORPORATION

# ANALYTICAL SERVICES

## CERTIFICATE OF ANALYSIS

Shell Oil Company  
Gettler-Ryan  
2150 West Winton  
Hayward, CA 94545  
Tom Paulson

Date: 02/07/91

Work Order: T1-01-217

P.O. Number: MOH 880-021 Vendor #I0002402

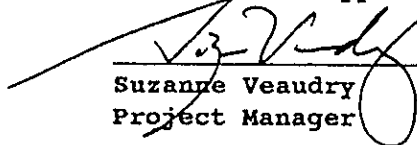
This is the Certificate of Analysis for the following samples:

Client Work ID: GR3610, 2800 Telegraph, Oklnd  
Date Received: 01/23/91  
Number of Samples: 13  
Sample Type: aqueous

### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

<u>PAGES</u>	<u>LABORATORY #</u>	<u>SAMPLE IDENTIFICATION</u>
2	T1-01-217-01	S-1
3	T1-01-217-02	S-2
4	T1-01-217-03	S-4
5	T1-01-217-04	S-5
6	T1-01-217-05	S-6
7	T1-01-217-06	S-7
8	T1-01-217-07	S-8
9	T1-01-217-08	S-9
10	T1-01-217-09	S-10
11	T1-01-217-10	S-11
12	T1-01-217-11	SD-1
13	T1-01-217-12	SF-2
14	T1-01-217-13	Trip Blank

Reviewed and Approved:

  
Suzanne Veaudry  
Project Manager

American Council of Independent Laboratornes  
International Association of Environmental Testing Laboratornes  
American Association for Laboratory Accreditation



Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-1

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-01

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okind

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-2

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-02

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okln

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-4

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-03

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	0.0029

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okln

Work Order: T1-01-217

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-5

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-04

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	0.0010

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okind

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-6

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-05

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	2.2
BTEX		
Benzene	0.01	0.44
Toluene	0.01	0.015
Ethylbenzene	0.01	None
Xylenes (total)	0.01	0.059

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okln

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-7

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-06

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	1.2
BTEX		
Benzene	0.0005	0.077
Toluene	0.0005	0.027
Ethylbenzene	0.0005	0.057
Xylenes (total)	0.0005	0.16

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okln

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-8

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-07

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.82
BTEX		
Benzene	0.0005	0.017
Toluene	0.0005	0.037
Ethylbenzene	0.0005	0.030
Xylenes (total)	0.0005	0.12

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-9

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-08

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None



Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okln

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-10

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-09

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	0.0007
Toluene	0.0005	0.0082
Ethylbenzene	0.0005	0.0022
Xylenes (total)	0.0005	0.014

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okind

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-11

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-10

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	1.4
BTEX		
Benzene	0.0025	0.085
Toluene	0.0025	0.093
Ethylbenzene	0.0025	0.088
Xylenes (total)	0.0025	0.30

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-01-217

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: SD-1

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-11

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okln

Work Order: T1-01-217

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: SF-2

SAMPLE DATE: 01/22/91

LAB SAMPLE ID: T101217-12

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	0.0015
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Okln

Work Order: T1-01-217

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: Trip Blank

SAMPLE DATE: not spec

LAB SAMPLE ID: T101217-13

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: Cool pH &lt; 2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		01/31/91
Low Boiling Hydrocarbons	Mod.8015		01/31/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	None
Toluene	0.0005	None
Ethylbenzene	0.0005	None
Xylenes (total)	0.0005	None

Company: Shell Oil Company

Date: 02/07/91

Client Work ID: GR3610, 2800 Telegraph, Oklnd

Work Order: T1-01-217

---

TEST CODE TPHVB TEST NAME TPH Gas,BTEX by 8015/8020

The method of analysis for low boiling hydrocarbons is taken from EPA Methods modified 8015, 8020 and 5030. The sample is examined using the purge and trap technique. Final detection is by gas chromatography using a flame ionization detector in series with a photoionization detector. The result for total low boiling hydrocarbons is calculated as gasoline. Results in soils are corrected for moisture content and are reported on a dry soil basis unless otherwise noted.

COMPANY Shell Oil Company JOB NO \_\_\_\_\_  
 JOB LOCATION 2800 Telegraph Ave  
 CITY Oakland, CA PHONE NO. (415) 783-7500  
 AUTHORIZED Tom Paulson DATE 1-22-91 P.O. NO. 3610

SAMPLE ID	NO OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
<u>S-1</u>	<u>3</u>	<u>Liquid</u>	<u>1-22-91 13:50</u>	<u>T+(C6+) B7xE</u>	<u>OLC 1001 (P) 1/23</u>
<u>S-2</u>	↓	↓	<u>14:09</u>	↓	↓
<u>S-4</u>	↓	↓	<u>12:45</u>	↓	↓
<u>S-5</u>	↓	↓	<u>13:07</u>	↓	↓
<u>S-6</u>	↓	↓	<u>11:13</u>	↓	↓
<u>S-2</u>	↓	↓	<u>19:16</u>	↓	↓
<u>S-8</u>	↓	↓	<u>10:54</u>	↓	↓
<u>S-9</u>	↓	↓	<u>19:51</u>	↓	↓
<u>S-10</u>	↓	↓	<u>110:30</u>	↓	↓
<u>S-11</u>	↓	↓	<u>10:05</u>	↓	↓
<u>SD-1</u>	↓	↓	<u>14:10</u>	↓	↓
<u>SF-2</u>	↓	↓	<u>14:10</u>	↓	↓
<u>trip blank</u>	<u>1</u>	↓	<u>1-14-91</u>	↓	↓

RELINQUISHED BY: Guadalupe Sanchez 1-22-91 15:25 RECEIVED BY: Refrigerator #1 1-22-91/526

RELINQUISHED BY: Refrig #1 1-23-91 800 RECEIVED BY: Bul Baer 1-23-91 801

RELINQUISHED BY: Bul Baer 1-23-91 1402 RECEIVED BY LAB: Jason J. Koehn 1/23/91 1402

DESIGNATED LABORATORY: IT SCU DHS #: 137

REMARKS: \_\_\_\_\_

Normal TAT WIC # 204-5508-2303

EXP CODE 5440

ENG. Drone Lundquist Jack Bostad

DATE COMPLETED 1-22-91 FOREMAN Guadalupe Sanchez