

91 JUL -3 11:11:33

July 2, 1991

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

Reference: Shell Service Station  
999 San Pablo Avenue  
Albany, California  
WIC 204-0079-0109

Mr. Wistar:

Enclosed is a copy of the June 28, 1991 Site Update report for the above referenced location. The report presents the results of the ground-water sampling conducted during the second quarter of 1991.

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

Sincerely,

John Werfal  
Project Manager

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



**GeoStrategies Inc.**

**SITE UPDATE**

Shell Service Station  
999 San Pablo Avenue  
Albany, California  
WIC 204-0079-0109

766601-7

June 28, 1991

RECEIVED

JUL 1 1991



**GeoStrategies Inc.**

2140 WEST WINTON AVENUE  
HAYWARD, CALIFORNIA 94545

**GETTLER-RYAN, INC.** 415.302.4800

GENERAL CONTRACTORS

June 28, 1991

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

Attn: Mr. John Werfal

Re: SITE UPDATE  
Shell Service Station  
999 San Pablo Avenue  
Albany, California

Gentlemen:

This Site Update has been prepared by GeoStrategies Inc. (GSI) and presents the results of the 1991 second 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 seven ground-water monitoring wells (Wells S-1 through S-7) at the site (Plate 2). These wells were installed between the first and third quarters of 1990. Wells S-1 through S-3 are onsite. Wells S-4 through S-7 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 the first quarter of 1990. 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.

766601-7

# GeoStrategies Inc.

Gettler-Ryan Inc.  
June 28, 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  $\pm 0.01$  foot. Elevations referenced to Mean Sea Level (MSL) are presented in Table 1. Water-level data collected on May 13, 1991 were used to construct the quarterly potentiometric map on Plate 3. Shallow ground-water flow is generally to the west and northwest at a calculated average gradient of 0.026.

### 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-5 this quarter.

### Ground-water Analytical Data

Ground-water samples were collected on May 13, 1991. The samples were analyzed for TPH-Gasoline according to 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-1 through S-3 and S-6 at concentrations ranging from 1.5 to 23. parts per million (ppm). Benzene concentrations detected in Wells S-1 through S-3, and S-6 ranged from 0.020 to 3.9 ppm. These data are summarized in Table 2 and included in Appendix A. A chemical concentration map for TPH-Gasoline and benzene is presented on Plate 4. Historical chemical analytical data are presented in Table 3.

# GeoStrategies Inc.

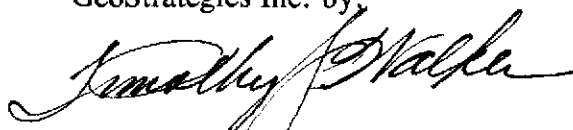
Gettler-Ryan Inc.  
June 28, 1991  
Page 3

## Quality Control

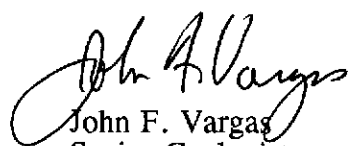
Quality Control (QC) samples for this quarter's sampling included a trip blank (TB) and a duplicate sample (SD-4). The trip blank, prepared in the laboratory using organic-free water, and the duplicate sample, collected as a split (second) sample from Well S-4, were analyzed to evaluate laboratory and field handling procedures of samples. The results of QC sample analyses are presented in Table 2.

If you have any questions, please call.

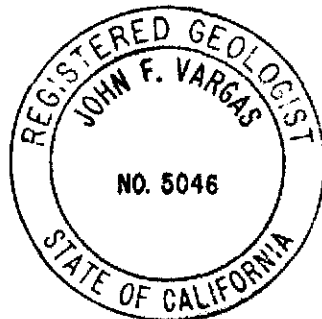
GeoStrategies Inc. by



Timothy J. Walker  
Geologist



John F. Vargas  
Senior Geologist  
R.G. 5046



TJW/JFV/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: 

766601-7

TABLE 1

## FIELD MONITORING DATA

WELL NO.	MONITORING DATE	CASING DIA. (IN)	TOTAL WELL DEPTH (FT)	WELL ELEV. (FT)	DEPTH TO WATER (FT)	PRODUCT THICKNESS (FT)	STATIC WATER ELEV. (FT)	PURGED WELL VOLUMES	pH	TEMPERATURE (F)	CONDUCTIVITY ( $\mu$ MHOS/cm)
S-1	13-May-91	3	11.8	42.73	8.24	----	34.49	3	----	59.8	680
S-2	13-May-91	3	12.1	40.73	8.50	----	32.23	3	----	61.7	1098
S-3	13-May-91	3	12.2	41.46	7.90	----	33.56	2	----	64.1	815
S-4	13-May-91	3	14.1	41.10	7.44	----	33.66	3	----	64.3	655
S-5	13-May-91	3	----	39.99	14.60	6.48	30.57	----	----	----	----
S-6	13-May-91	3	15.2	40.12	7.82	----	32.30	1	----	64.2	645
S-7	13-May-91	3	15.2	40.10	10.56	----	29.54	2	----	63.9	729

- Notes:
1. Static water elevations referenced to Mean Sea Level (MSL).
  2. Physical parameter measurements represent stabilized values.
  3. pH meter malfunctioned.
  4. Static water-levels corrected for floating product (conversion factor = 0.80).

TABLE 2

## GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYSIS DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
S-1	13-May-91	17-May-91	1.5	0.020	0.0026	0.086	0.074
S-2	13-May-91	17-May-91	23.	3.9	0.23	1.1	3.2
S-3	13-May-91	16-May-91	3.3	0.030	0.0036	0.026	0.013
S-4	13-May-91	16-May-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-6	13-May-91	17-May-91	13.	0.60	0.14	0.21	0.31
S-7	13-May-91	16-May-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
SD-4	13-May-91	16-May-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	----	16-May-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

## CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS

Benzene 0.001 ppm    Xylenes 1.750 ppm    Ethylbenzene 0.680 ppm

## CURRENT DHS ACTION LEVELS

Toluene 0.1000 ppm

TPH-G = Total Petroleum Hydrocarbons as Gasoline

SD = Duplicate Sample

PPM = Parts Per Million

TB = Trip Blank

- Note: 1. All data shown as <x are reported as ND (none detected).  
 2. DHS Action Levels and MCLs are subject to change pending State review.

TABLE 3

## HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
05-Feb-90	S-1	3.1	0.056	0.037	0.11	0.097
01-May-90	S-1	4.2	0.023	<0.0025	0.116	0.32
28-Aug-90	S-1	0.80	0.0081	0.001	0.075	0.054
27-Nov-90	S-1	2.2	0.011	<0.0025	0.058	0.022
11-Feb-91	S-1	1.5	0.027	<0.0025	0.073	0.087
13-May-91	S-1	1.5	0.020	0.0026	0.086	0.074
05-Feb-90	S-2	8.7	1.6	0.058	0.16	1.0
01-May-90	S-2	11.	2.3	0.082	0.409	0.77
28-Aug-90	S-2	4.4	1.7	0.035	0.16	0.17
27-Nov-90	S-2	18.	4.3	0.20	1.5	1.7
11-Feb-91	S-2	6.8	1.1	0.047	0.17	0.62
13-May-91	S-2	23.	3.9	0.23	1.1	3.2
05-Feb-90	S-3	5.7	0.045	0.004	0.12	0.50
01-May-90	S-3	2.0	0.018	<0.0025	0.024	0.008
28-Aug-90	S-3	0.66	0.0087	0.001	0.026	0.007
27-Nov-90	S-3	1.9	0.0073	0.0030	0.0093	0.0032
11-Feb-91	S-3	1.3	0.020	<0.0025	0.0095	0.0036
13-May-91	S-3	3.3	0.030	0.0036	0.026	0.013
01-May-90	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.001
28-Aug-90	S-4	<0.05	<0.0005	0.0006	<0.0005	0.0010
27-Nov-90	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
11-Feb-91	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
13-May-91	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
28-Aug-90	S-6	5.7	0.58	0.023	0.032	0.058
27-Nov-90	S-6	8.0	0.79	0.037	0.096	0.069
11-Feb-91	S-6	12.	0.54	0.077	0.17	0.19



TABLE 3

 =====  
 HISTORICAL GROUND-WATER QUALITY DATABASE  
 =====

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
13-May-91	S-6	13.	0.60	0.14	0.21	0.31
28-Aug-90	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
27-Nov-90	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
11-Feb-91	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
13-May-91	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.0005

## Current Regional Water Quality Control Board Maximum Contaminant Levels

Benzene 0.001 ppm    Xylenes 1.750 ppm    Ethylbenzene 0.680 ppm

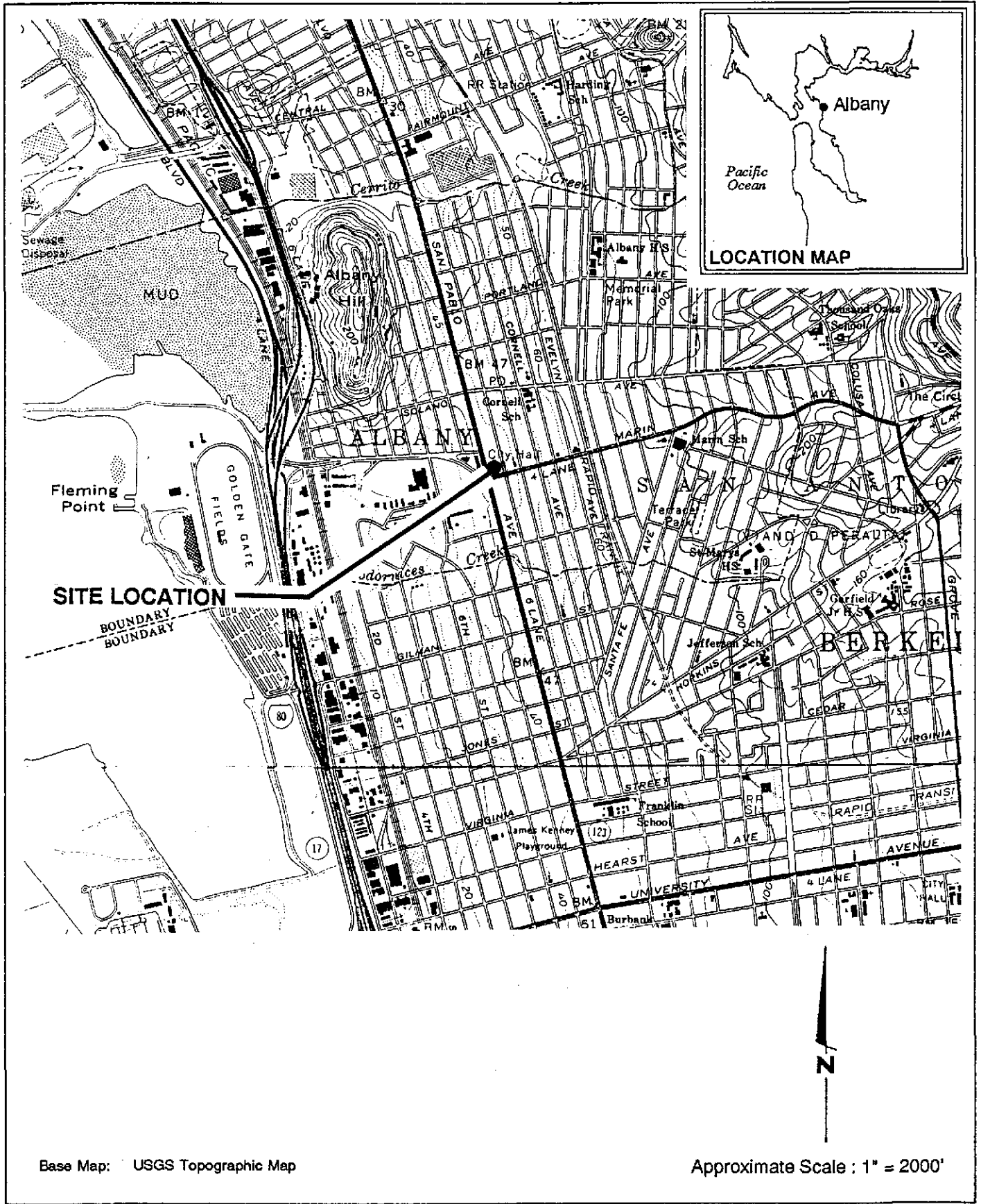
Current DHS Action Levels    Toluene 0.1000 ppm

TPH-G - Total Petroleum Hydrocarbons calculated as Gasoline

PPM - Parts Per Million

NOTE: 1. DHS Action levels and MCL's are subject to change pending  
State of California review.

2. All data shown as &lt;X are reported as ND (none detected).



GeoStrategies Inc.

Vicinity Map  
 Shell Service Station  
 999 San Pablo Avenue  
 Albany, California

PLATE

1

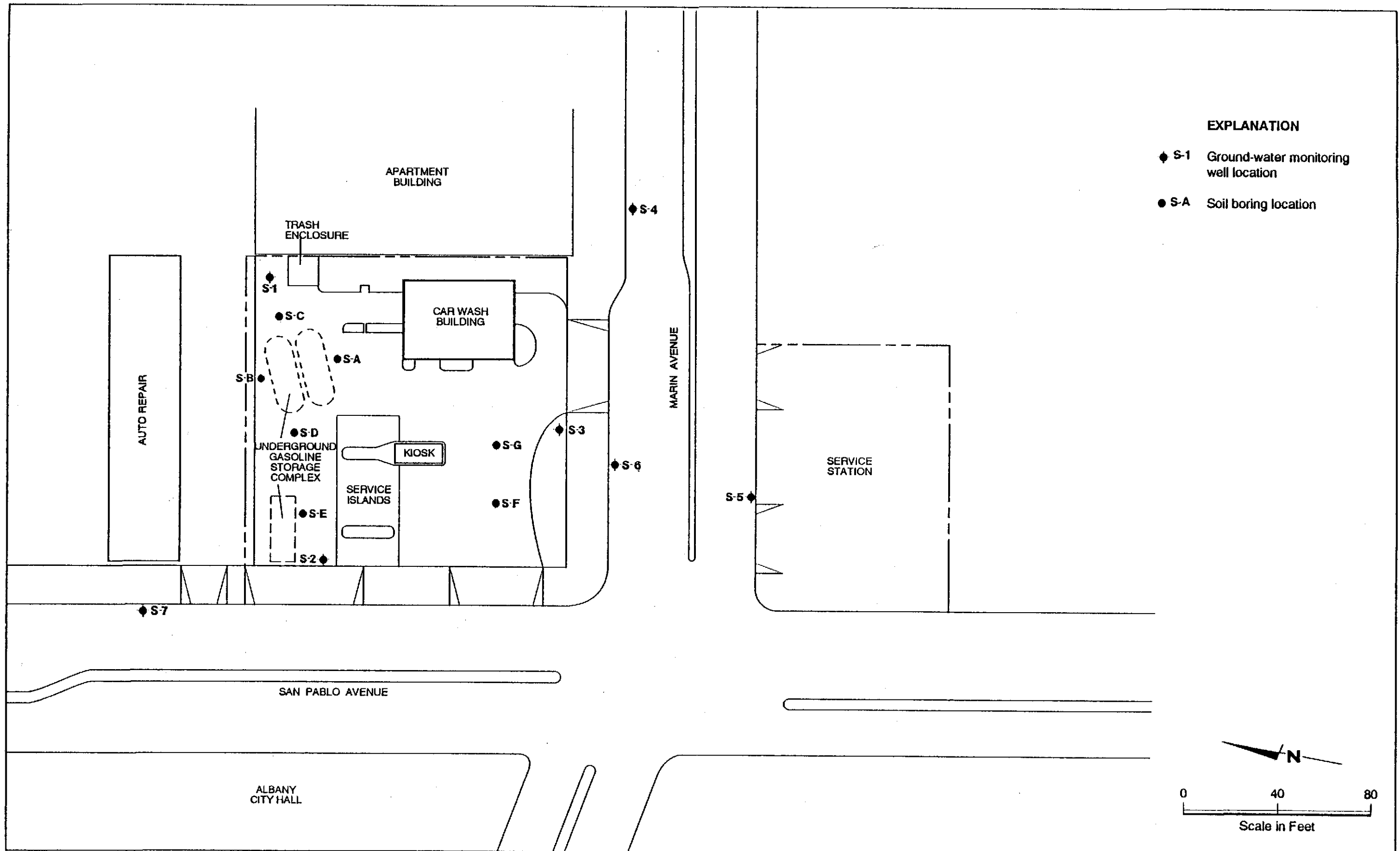
JOB NUMBER  
7666

REVIEWED BY

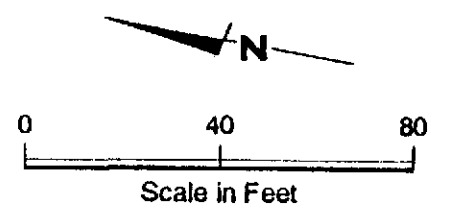
DATE  
1/90

REVISED DATE

REVISED DATE



- EXPLANATION**
- ◆ S-1 Ground-water monitoring well location
  - S-A Soil boring location



**GSI** GeoStrategies Inc.

**Site Plan**  
 Shell Service Station  
 999 San Pablo Avenue  
 Albany, California

PLATE  
**2**

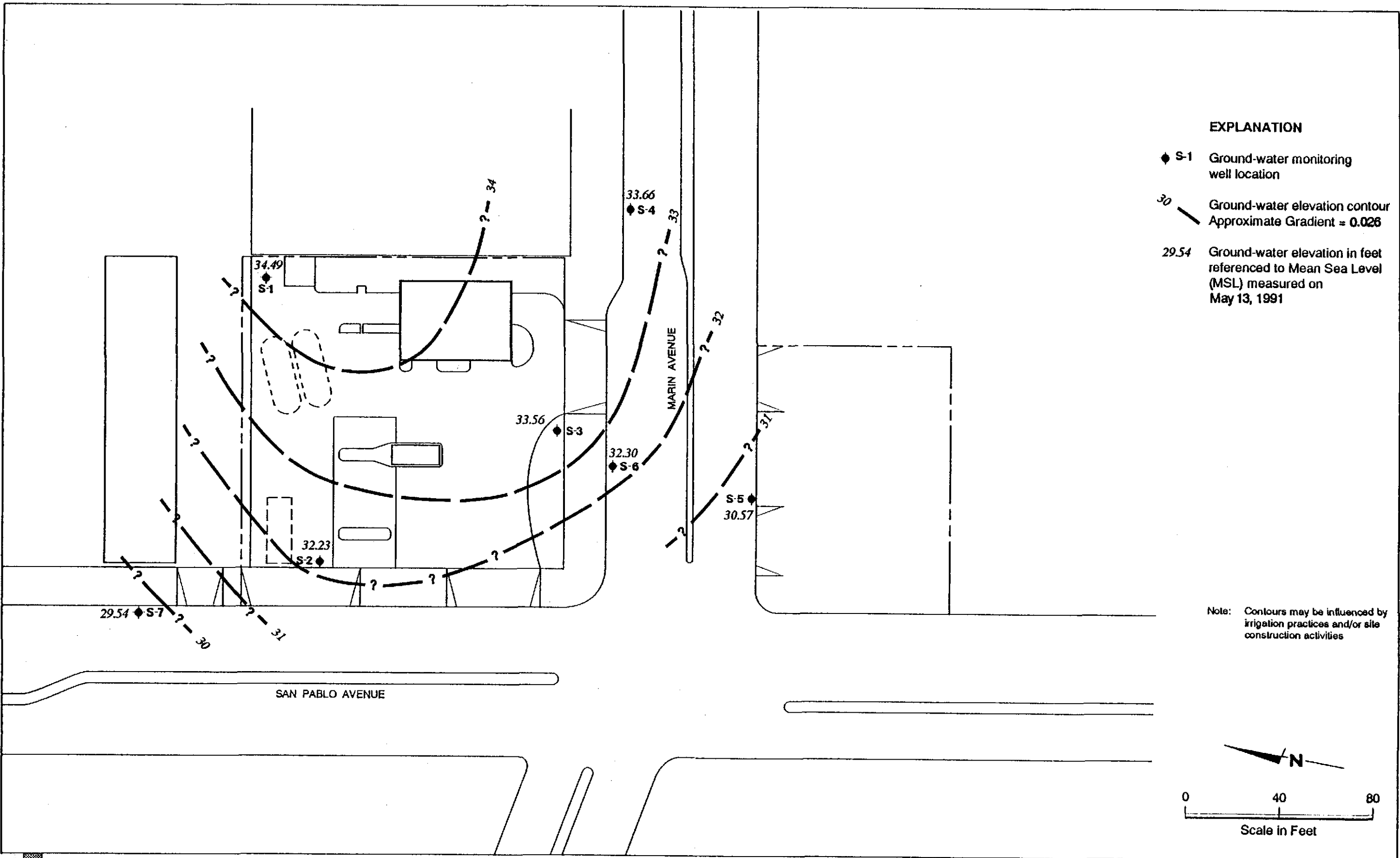
JOB NUMBER  
 766601-7

REVIEWED BY  
*[Signature]*

DATE  
 06/91

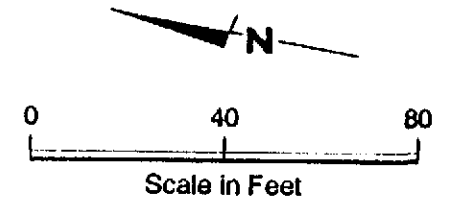
REVISED DATE

REVISED DATE



- EXPLANATION**
- ◆ S-1 Ground-water monitoring well location
  - 30 Ground-water elevation contour  
Approximate Gradient = 0.026
  - 29.54 Ground-water elevation in feet referenced to Mean Sea Level (MSL) measured on May 13, 1991

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



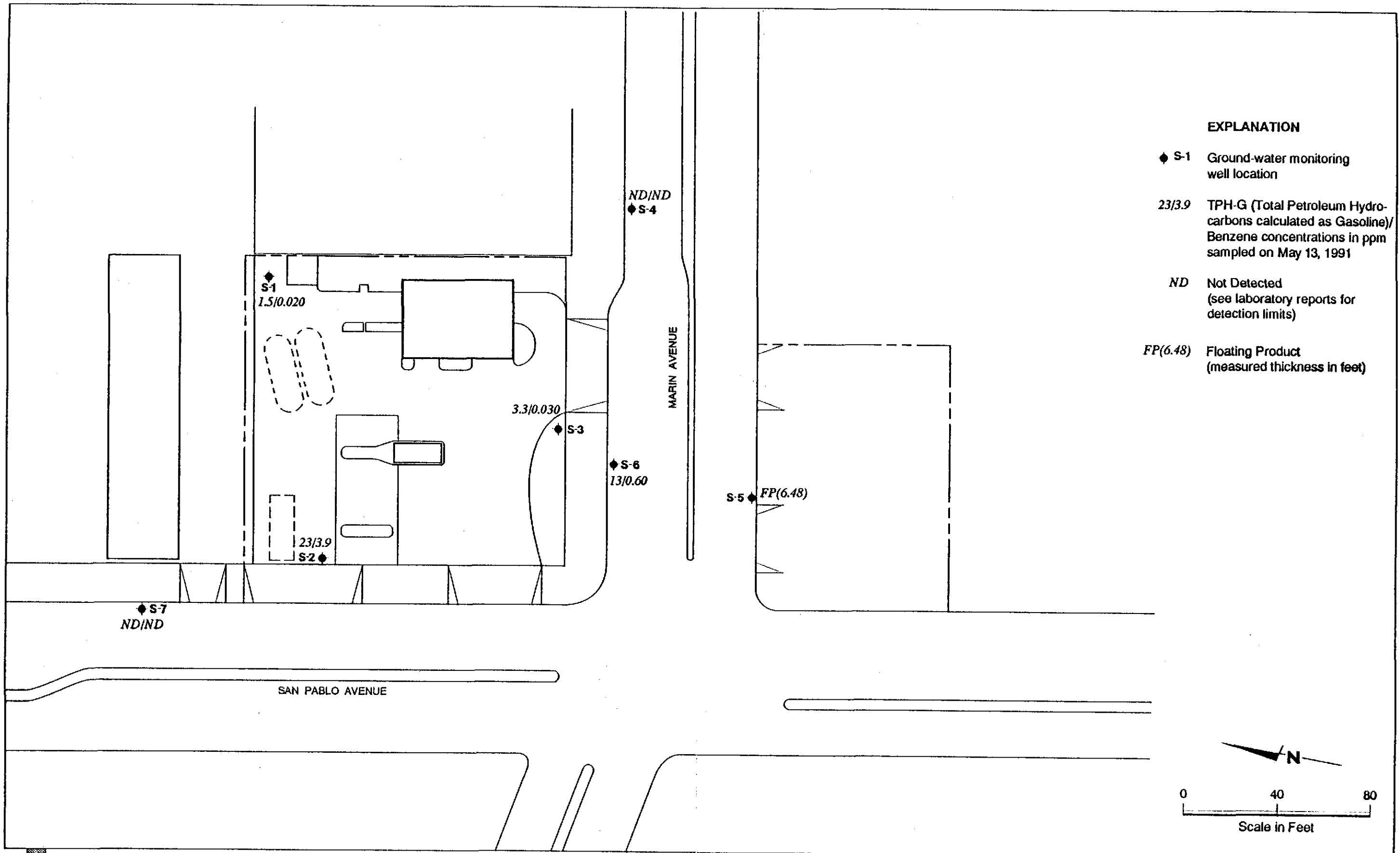
**GSI** GeoStrategies Inc.

JOB NUMBER 766601-7  
REVIEWED BY *wtj*

Potentiometric Map  
Shell Service Station  
999 San Pablo Avenue  
Albany, California

DATE 06/91  
REVISED DATE  
REVISED DATE

PLATE  
**3**



- EXPLANATION**
- ◆ S-1 Ground-water monitoring well location
  - 23/3.9 TPH-G (Total Petroleum Hydrocarbons calculated as Gasoline)/ Benzene concentrations in ppm sampled on May 13, 1991
  - ND Not Detected (see laboratory reports for detection limits)
  - FP(6.48) Floating Product (measured thickness in feet)



TPH-G/Benzene Concentration Map  
 Shell Service Station  
 999 San Pablo Avenue  
 Albany, California

PLATE  
**4**

JOB NUMBER  
 766601-7

REVIEWED BY

DATE  
 06/91

REVISED DATE

REVISED DATE



INTERNATIONAL  
TECHNOLOGY  
CORPORATION

# ANALYTICAL SERVICES

RECEIVED

MAY 30 1991

GETTLER-RYAN INC.  
GENERAL CONTRACTORS

## CERTIFICATE OF ANALYSIS

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

Date: 05/29/91

Work Order: T1-05-153

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

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3666,999 San Pablo Ave,Alby  
Date Received: 05/14/91  
Number of Samples: 8  
Sample Type: aqueous

### TABLE OF CONTENTS FOR ANALYTICAL RESULTS

<u>PAGES</u>	<u>LABORATORY #</u>	<u>SAMPLE IDENTIFICATION</u>
2	T1-05-153-01	S-1
3	T1-05-153-02	S-2
4	T1-05-153-03	S-3
5	T1-05-153-04	S-4
6	T1-05-153-05	S-6
7	T1-05-153-06	S-7
8	T1-05-153-07	SD-4
9	T1-05-153-08	Trip Blank
11	T1-05-153-09	Quality Control

Reviewed and Approved:

  
Suzanne Veaudry  
Project Manager

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

Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave,Alby

Work Order: T1-05-153

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-1

SAMPLE DATE: 05/13/91

LAB SAMPLE ID: T105153-01

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: cool pH&lt;2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/17/91
Low Boiling Hydrocarbons	Mod.8015		05/17/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	1.5
BTEX		
Benzene	0.0005	0.020
Toluene	0.0005	0.0026
Ethylbenzene	0.0005	0.086
Xylenes (total)	0.0005	0.074

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	121.
1,3-Dichlorobenzene (BTEX)	108.

Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave,Alby

Work Order: T1-05-153

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-2

SAMPLE DATE: 05/13/91

LAB SAMPLE ID: T105153-02

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: cool pH&lt;2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/17/91
Low Boiling Hydrocarbons	Mod.8015		05/17/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	23.
BTEX		
Benzene	0.01	3.9
Toluene	0.01	0.23
Ethylbenzene	0.01	1.1
Xylenes (total)	0.01	3.2

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	110.
1,3-Dichlorobenzene (BTEX)	104.



Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave,Alby

Work Order: T1-05-153

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-3

SAMPLE DATE: 05/13/91

LAB SAMPLE ID: T105153-03

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: cool pH&lt;2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/16/91
Low Boiling Hydrocarbons	Mod.8015		05/16/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	3.3
BTEX		
Benzene	0.0025	0.030
Toluene	0.0025	0.0036
Ethylbenzene	0.0025	0.026
Xylenes (total)	0.0025	0.013

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	89.
1,3-Dichlorobenzene (BTEX)	92.

Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave,Alby

Work Order: T1-05-153

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-4

SAMPLE DATE: 05/13/91

LAB SAMPLE ID: T105153-04

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: cool pH&lt;2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/16/91
Low Boiling Hydrocarbons	Mod.8015		05/16/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	73.
1,3-Dichlorobenzene (BTEX)	102.

Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave,Alby

Work Order: T1-05-153

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-6

SAMPLE DATE: 05/13/91

LAB SAMPLE ID: T105153-05

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: cool pH&lt;2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/17/91
Low Boiling Hydrocarbons	Mod.8015		05/17/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	13.
BTEX		
Benzene	0.01	0.60
Toluene	0.01	0.14
Ethylbenzene	0.01	0.21
Xylenes (total)	0.01	0.31

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	128.
1,3-Dichlorobenzene (BTEX)	102.

Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave, Alby

IT ANALYTICAL SERVICES  
SAN JOSE, CA

Work Order: T1-05-153

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-7

SAMPLE DATE: 05/13/91

LAB SAMPLE ID: T105153-06

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: cool pH&lt;2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		
Low Boiling Hydrocarbons	Mod.8015		05/16/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	70.
1,3-Dichlorobenzene (BTEX)	101.

Company: Shell Oil Company  
 Date: 05/29/91  
 Client Work ID: GR3666,999 San Pablo Ave,Alby

IT ANALYTICAL SERVICES  
 SAN JOSE, CA

Work Order: T1-05-153

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: SD-4  
 SAMPLE DATE: 05/13/91  
 LAB SAMPLE ID: T105153-07  
 SAMPLE MATRIX: aqueous  
 RECEIPT CONDITION: cool pH<2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/16/91
Low Boiling Hydrocarbons	Mod.8015		05/16/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	66.
1,3-Dichlorobenzene (BTEX)	99.

Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave,Alby

Work Order: T1-05-153

## TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: Trip Blank

SAMPLE DATE: not spec

LAB SAMPLE ID: T105153-08

SAMPLE MATRIX: aqueous

RECEIPT CONDITION: cool pH&lt;2

## RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		05/16/91
Low Boiling Hydrocarbons	Mod.8015		05/16/91

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

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	75.
1,3-Dichlorobenzene (BTEX)	103.

Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave,Alby

Work Order: T1-05-153

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control

SAMPLE DATE: not spec

LAB SAMPLE ID: T105153-09A

EXTRACTION DATE:

ANALYSIS DATE: 05/14/91

ANALYSIS METHOD: 8020

## QUALITY CONTROL REPORT

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Analyses

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	MS Result	MSD Result	MS %Rec	MSD %Rec	RPD
Benzene	ND<0.5	50.0	49.6	51.0	99.	102.	3.
Toluene	ND<0.5	50.0	48.6	49.7	97.	99.	2.
Ethylbenzene	ND<0.5	50.0	51.1	52.4	102.	105.	3.
Total Xylenes	ND<0.5	150.	138.	140.	92.	93.	1.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	86.	93.

Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave,Alby

Work Order: T1-05-153

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control

SAMPLE DATE: not spec

LAB SAMPLE ID: T105153-09B

EXTRACTION DATE:

ANALYSIS DATE: 05/16/91

ANALYSIS METHOD: 8020

## QUALITY CONTROL REPORT

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Analyses

RESULTS in Micrograms per Liter

PARAMETER	Sample Amt	Spike Amt	MS Result	MSD Result	MS %Rec	MSD %Rec	RPD
Benzene	ND<0.5	50.0	51.4	50.4	103.	101.	2.
Toluene	ND<0.5	50.0	50.9	50.5	102.	101.	1.
Ethylbenzene	ND<0.5	50.0	51.6	51.1	103.	102.	1.
Total Xylenes	ND<0.5	150.	176.	175.	117.	117.	0

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	100.	101.



Company: Shell Oil Company

Date: 05/29/91

Client Work ID: GR3666,999 San Pablo Ave,Alby

Work Order: T1-05-153

---

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 Co.

JOB NO.

JOB LOCATION

999 San Pablo Av

CITY

Albany

PHONE NO. (415) 783-7500

AUTHORIZED

Tom Paulson

DATE 5-13-91

P.O. NO. 3666.01

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
S-1	3	liquid	5-13-91 / 1020	THC(gas)BTXE	Cool / OK
S-2	↓	↓	↓ / 1225	↓	↓
S-3			↓ / 1220		
S-4			↓ / 1310		
S-6			↓ / 1240		
S-7			↓ / 1835		
SD-4			↓ / -		
Trip Blank			1		

RELINQUISHED BY:

*[Signature]* 5-13-91 1430

RECEIVED BY:

Refrig #1 5-13-91 1430

RELINQUISHED BY:

Refrig 5-14-91 1430

RECEIVED BY:

*[Signature]* 5-14-91 1430

RELINQUISHED BY:

*[Signature]* 5-14-91 1530

RECEIVED BY LAB:

*[Signature]* 5-14-91 1530

DESIGNATED LABORATORY:

IT (SCV)

DHS #

137

REMARKS:

Normal TAT

WIC# 204-0079-0109

Exp: 5461

Engr: Brastad

DATE COMPLETED

5-13-91

FOREMAN

*[Signature]*