GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

December 26, 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 of copy of the December 26, 1991 Site Update report for the above referenced location. The report presents the results of the ground-water sampling conducted during the fourth quarter of 1991.

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

Sincerely,

Ellen Fostersmith

Ellen Fostersmith
Geologist

cc: Mr. Paul Hayes, Shell Oil Company
Mr. Tom Callaghan, Regional Water Quality Control Board

GeoStrategies Inc.

SITE UPDATE

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

766601-8

December 26, 1991

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545
(510) 352-4800

December 26, 1991

Shell Oil Company
P.O. Box 5278
Concord, California 94520

Attn: Mr. E. Paul Hayes

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 fourth 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 January and August, 1990. Wells S-1 through S-3 are onsite, and Wells S-4 through S-7 are offsite. In addition, seven exploratory soil borings (S-A through S-G) have been drilled onsite. These wells and borings have been drilled and 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 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.

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. Elevations referenced to Mean Sea Level (MSL) are presented in Table 1. Water-level data collected on November 7, 1991 were used to construct the quarterly potentiometric map (Plate 3). Shallow ground-water flow is generally radially outward from Well S-1 at a calculated on-site gradient of approximately 0.02, with flow mainly toward the south and west.

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 at a measured thickness of 5.35 feet.

Ground-water Analytical Data

Ground-water samples were collected on November 7, 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-4 and S-6 at concentrations ranging from 0.26 to 40. parts per million (ppm). Benzene was detected in Wells S-1 through S-3 and S-6 at concentrations ranging from 0.0080 to 4.0 ppm. These data are summarized in Table 2 and included in Appendix A. Chemical isoconcentration maps for TPH-Gasoline and benzene are presented on Plates 4 and 5, respectively. Historical chemical analytical data are presented in Table 3.

Quality Control

Quality Control (QC) samples for this quarter's sampling included a duplicate sample (SD-2) which was collected as a split (second) sample to evaluate laboratory analytical precision. The results of QC sample analyses are presented in Table 2.

If you have any questions, please call.

GeoStrategies Inc. by,

Stephen J. Carter
Project Manager

John F. Vargas
Senior Geologist
R.G. 5046

REGISTERED GEOLOGIST
JOHN F. VARGAS
NO. 5046
STATE OF CALIFORNIA

SJC/JFV/dls

Plate 1. Vicinity Map
Plate 2. Site Plan
Plate 3. Potentiometric Map
Plate 4. TPH-G Isoconcentration Map
Plate 5. Benzene Isoconcentration Map

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

QC Review: RAL

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 (uMHOS/cm)
S-1	07-Nov-91	3	11.8	42.73	8.30	----	34.43	2	7.04	68.3	544
S-2	07-Nov-91	3	12.2	40.73	8.61	----	32.12	2	6.66	69.8	855
S-3	07-Nov-91	3	12.2	41.46	7.91	----	33.55	2	6.93	70.8	614
S-4	07-Nov-91	3	14.1	41.10	8.32	----	32.78	2	6.60	69.5	356
S-5	07-Nov-91	3	----	39.99	15.10	5.35	29.17	----	----	----	----
S-6	07-Nov-91	3	15.3	40.12	10.86	----	29.26	2	7.34	70.2	538
S-7	07-Nov-91	3	15.2	40.10	11.48	----	28.62	2	6.39	69.8	606

Notes: 1. Static water elevations referenced to Mean Sea Level (MSL).
2. Physical parameter measurements represent stabilized values.
3. 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	07-Nov-91	13-Nov-91	2.9	0.0080	0.0025	0.046	0.026
S-2	07-Nov-91	14-Nov-91	40.	4.0	0.16	1.02	3.4
S-3	07-Nov-91	13-Nov-91	4.0	0.020	0.0039	0.0050	0.0049
S-4	07-Nov-91	13-Nov-91	0.26*	<0.0005	<0.0005	<0.0005	<0.0005
S-6	07-Nov-91	14-Nov-91	6.2	0.24	0.023	0.025	0.028
S-7	07-Nov-91	13-Nov-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
SD-2	07-Nov-91	14-Nov-91	42.	4.0	0.17	1.04	3.4

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
PPM = Parts Per Million

SD = Duplicate Sample
SF = Field Blank
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.

* Compounds detected and calculated as low boiling hydrocarbons consist of compounds eluting within the chromatographic range of gasoline, but are not characteristic of the standard gasoline standard pattern.

766601-9

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
23-Aug-91	S-1	2.9	0.027	<0.0025	0.075	0.018
07-Nov-91	S-1	2.9	0.0080	0.0025	0.046	0.026
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
23-Aug-91	S-2	23.	4.4	0.26	1.9	2.4
07-Nov-91	S-2	40.	4.0	0.16	1.02	3.4
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
23-Aug-91	S-3	2.0	0.025	0.0040	0.0093	0.0045
07-Nov-91	S-3	4.0	0.020	0.0039	0.0050	0.0049
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

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
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
23-Aug-91	S-4	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
07-Nov-91	S-4	0.26&	<0.0005	<0.0005	<0.0005	<0.0005
01-May-90	S-5	Floating Product 0.64 ft				
28-Aug-90	S-5	Floating Product 3.51 ft				
27-Nov-90	S-5	Floating Product 4.71 ft				
11-Feb-91	S-5	Floating Product 5.57 ft				
13-May-91	S-5	Floating Product 6.48 ft				
23-Aug-91	S-5	Floating Product 5.50 ft				
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
13-May-91	S-6	13.	0.60	0.14	0.21	0.31
23-Aug-91	S-6	9.8	0.48	0.08	0.12	0.15
07-Nov-91	S-6	6.2	0.24	0.023	0.025	0.027
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
23-Aug-91	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
07-Nov-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

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

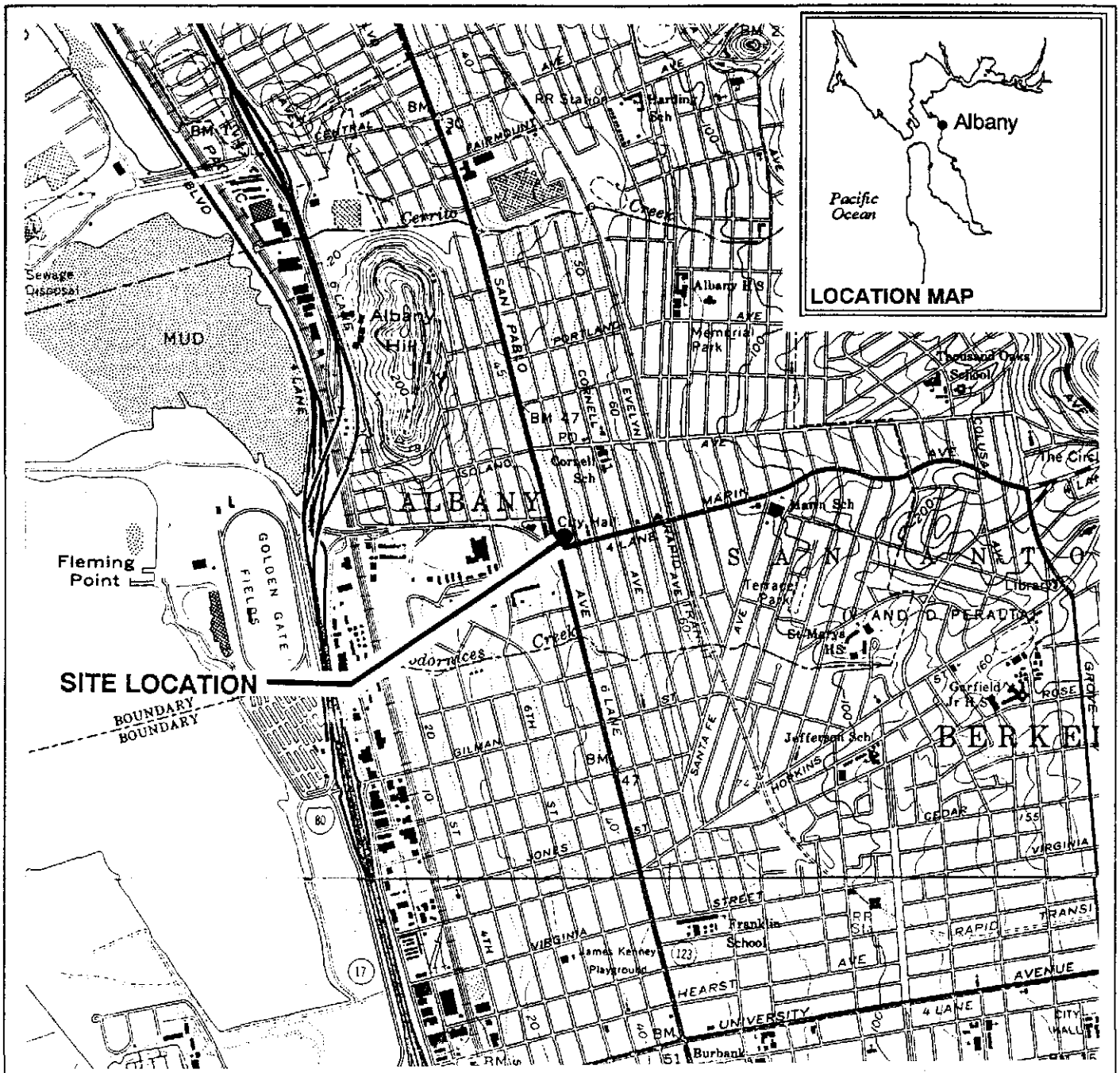
SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)

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 <X are reported as ND (none detected).



Base Map: USGS Topographic Map

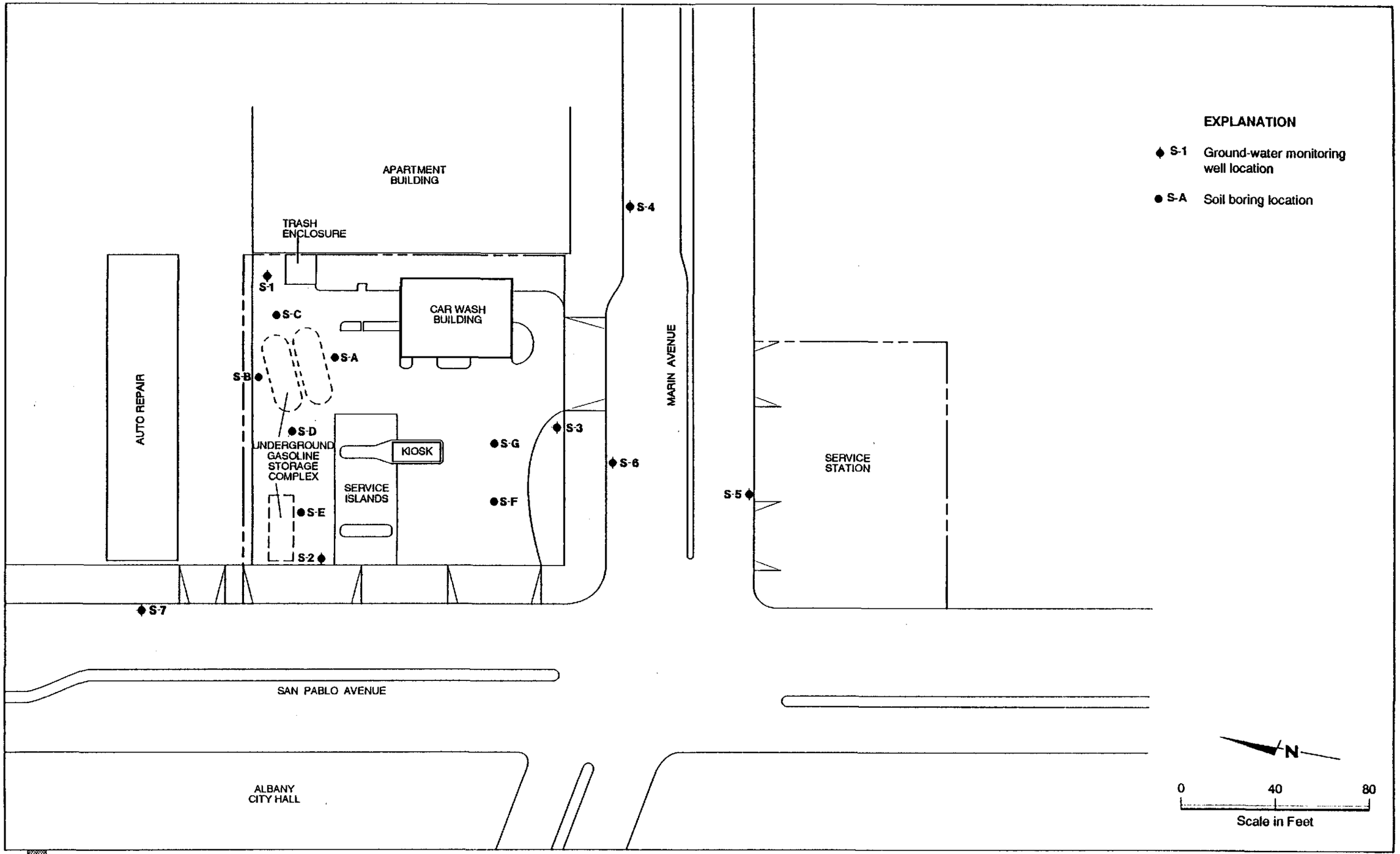
Approximate Scale : 1" = 2000'

GeoStrategies Inc.

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

PLATE **1**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
7666		1/90		

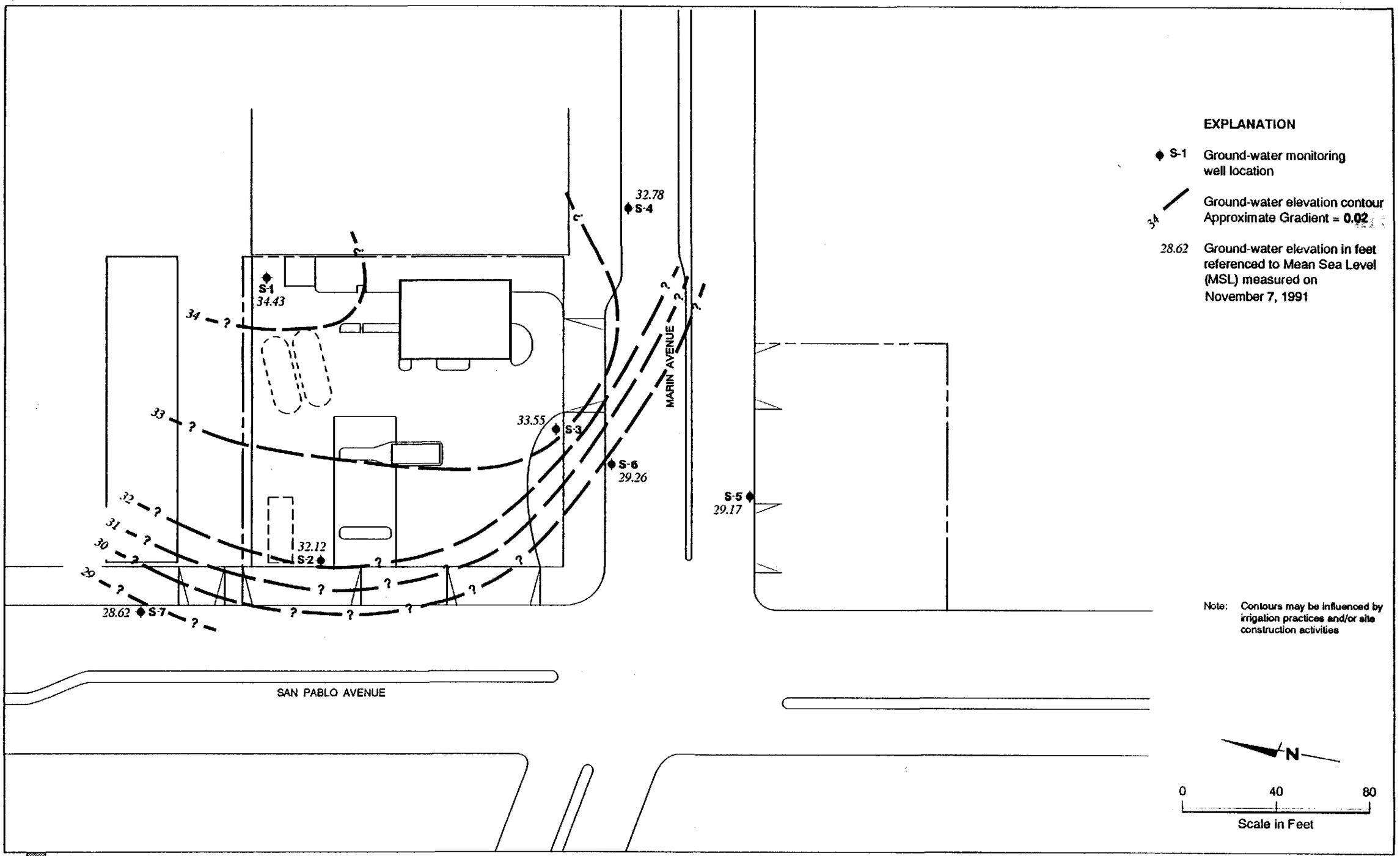


GeoStrategies Inc.

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

PLATE **2**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
766601-9	CES	12/91		

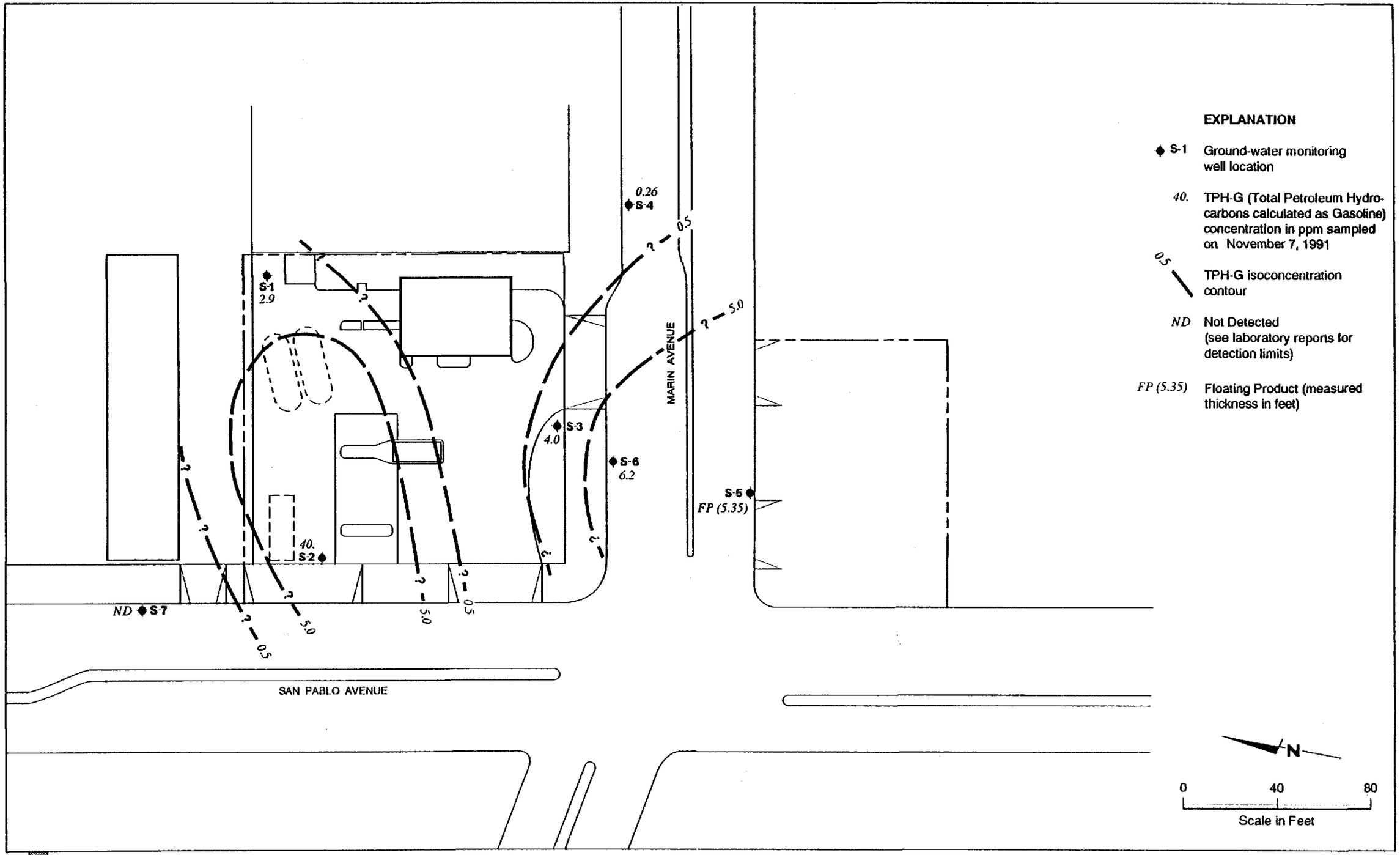


GeoStrategies Inc.

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

PLATE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE	REVISED DATE
766601-9	RKS	12/91		

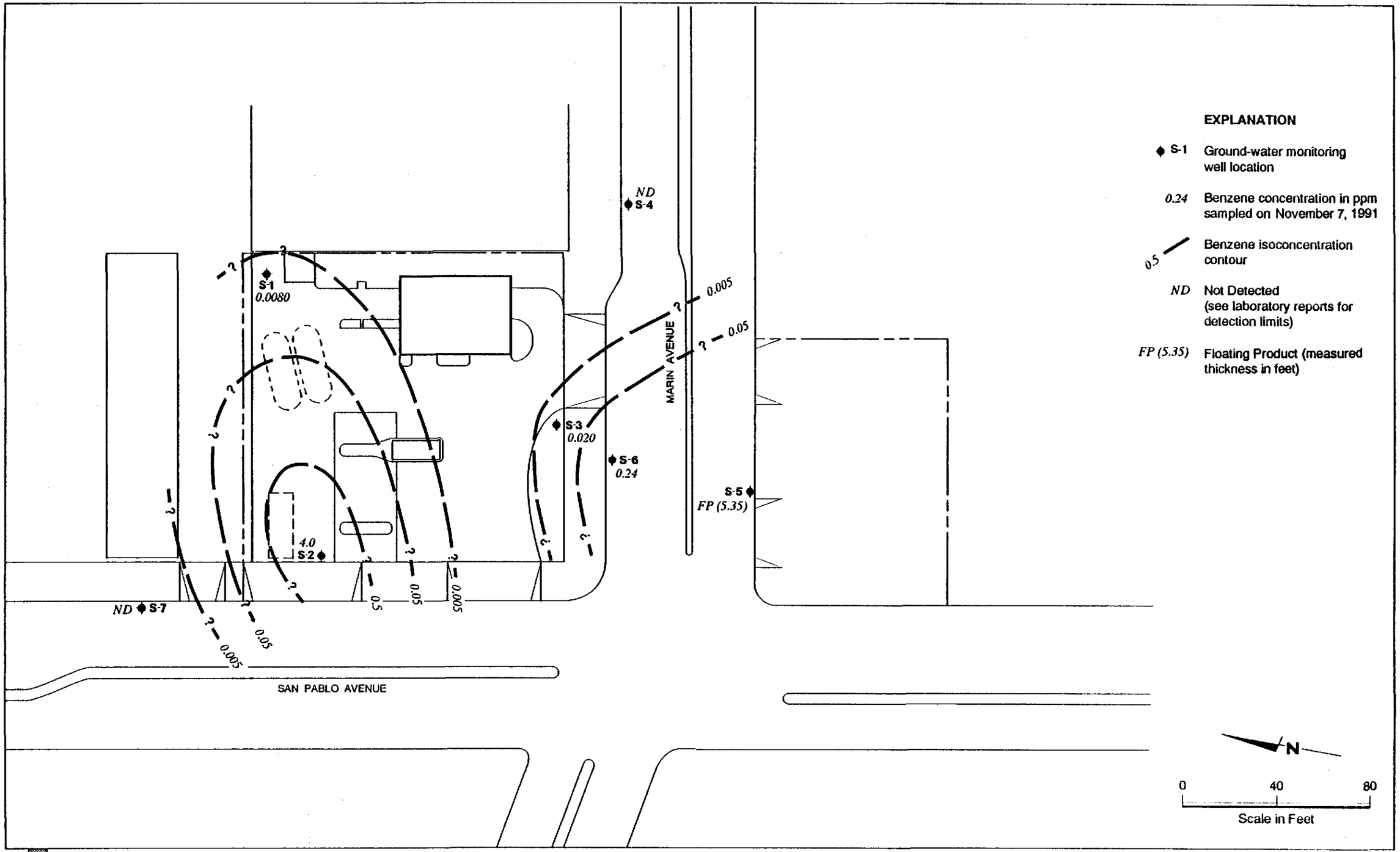


GeoStrategies Inc.

TPH-G Isoconcentration Map
Shell Service Station
999 San Pablo Avenue
Albany, California

PLATE **4**

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
766601-9	CFS	12/91		



GeoStrategies Inc.

Benzene Isoconcentration Map
Shell Service Station
999 San Pablo Avenue
Albany, California

PLATE **5**

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
766601-9	EFS	12/91		

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

RECEIVED
NOV 25 1991
GETTLER-RYAN INC.
GENERAL CONTRACTORS

CERTIFICATE OF ANALYSIS

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

Date: 11/21/91

~~Work Order: T1-11-081~~ 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, Alb
Date Received: 11/08/91
Number of Samples: 8
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Richard Jacobs
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-1**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111081-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/13/91
Low Boiling Hydrocarbons	Mod.8015		11/13/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	2.9
BTEX		
Benzene	0.0025	0.0080
Toluene	0.0025	0.0025
Ethylbenzene	0.0025	0.046
Xylenes (total)	0.0025	0.026

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	107.
1,3-Dichlorobenzene (BTEX)	103.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-2**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111081-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/14/91
Low Boiling Hydrocarbons	Mod.8015		11/14/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	40.
BTEX		
Benzene	0.0025	4.0
Toluene	0.0025	0.16
Ethylbenzene	0.0025	1.02
Xylenes (total)	0.0025	3.4

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	*115.
1,3-Dichlorobenzene (BTEX)	103.

*Surrogate elevated due to hydrocarbon interferences.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-3**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111081-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/13/91
Low Boiling Hydrocarbons	Mod.8015		11/13/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	4.0
BTEX		
Benzene	0.0025	0.020
Toluene	0.0025	0.0039
Ethylbenzene	0.0025	0.0050
Xylenes (total)	0.0025	0.0049

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	*126.
1,3-Dichlorobenzene (BTEX)	95.

*Surrogate elevated due to hydrocarbon interferences.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-4**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111081-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/13/91
Low Boiling Hydrocarbons	Mod.8015		11/13/91

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.26	&
BTEX			
Benzene	0.0005	None	
Toluene	0.0005	None	
Ethylbenzene	0.0005	None	
Xylenes (total)	0.0005	None	

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	101.
1,3-Dichlorobenzene (BTEX)	97.

Comments:
& Compounds detected and calculated as low boiling hydrocarbons consist of compounds eluting within the chromatographic range of gasoline, but are not characteristic of the standard gasoline standard pattern.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **S-4 MS/MSD**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111081-04D**
EXTRACTION DATE:
ANALYSIS DATE: **11/14/91**
ANALYSIS METHOD: **Mod. 8015**

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
Gasoline	262.	500.	640.	630.	76.	74.	2.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	104.	104.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-6**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111081-05**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/14/91
Low Boiling Hydrocarbons	Mod.8015		11/14/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	1.0	6.2
BTEX		
Benzene	0.01	0.24
Toluene	0.01	0.023
Ethylbenzene	0.01	0.025
Xylenes (total)	0.01	0.028

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	107.
1,3-Dichlorobenzene (BTEX)	94.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-7**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111081-06**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/13/91
Low Boiling Hydrocarbons	Mod.8015		11/13/91

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)	102.
1,3-Dichlorobenzene (BTEX)	97.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **SD-2**
SAMPLE DATE: **11/07/91**
LAB SAMPLE ID: **T111081-07**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		11/14/91
Low Boiling Hydrocarbons	Mod.8015		11/14/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	2.5	42.
BTEX		
Benzene	0.025	4.0
Toluene	0.025	0.17
Ethylbenzene	0.025	1.04
Xylenes (total)	0.025	3.4

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	*115.
1,3-Dichlorobenzene (BTEX)	103.

*Surrogate elevated due to hydrocarbon interferences.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T111081-08A
EXTRACTION DATE:
ANALYSIS DATE: 11/13/91
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	40.9	41.5	82.	83.	1.
Toluene	ND<0.5	50.0	39.6	40.0	79.	80.	1.
Ethyl benzene	ND<0.5	50.0	39.2	39.5	78.	79.	1.
Xylenes	ND<0.5	150.	115.	116.	77.	77.	0

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

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 11/21/91
Client Work ID: GR3666 999 San Pablo Ave, Alb

Work Order: T1-11-081

TEST CODE QC TEST NAME Quality Control

Quality control (QC) samples are analyzed and used to assess the laboratory control measures. Routine QC samples include method blanks, spikes and duplicates. The purpose of the method blank (MB) analysis is to demonstrate that artifacts of the test do not yield false positives. The laboratory control spike (LS) and /or matrix spike (MS) analysis is used to evaluate the ability of the test to recover analytes of interest, i.e. accuracy. Accuracy is expressed as percent (%) recovery. The laboratory spike duplicate (LSD), matrix spike duplicate (MSD), or duplicate sample (DUP) is used to determine the precision of the test, by comparing the result from the original spike (or sample) to the duplicate spike (or sample). Precision is expressed as relative percent difference (RPD).

The results of appropriate QC samples from QC batches associated with the listed samples are included in this report.

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.

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No.: _____

Date: Page 1 of 1

Site Address: 999 San Pablo Av
Albany

WIC#: 204-0079-0109

Shell Engineer: S Brastad
Phone No. 685-3850
Fax #: (510) 685-3943

Consultant Name & Address: Gettler-Ryan / GeoStrategies
2150 W. Winton Ave.
Hayward, California 94545

Consultant Contact: Tom Paulson
Phone No. 783-7500
Fax #: 783-1089

Comments: GR Job# 3660.01

Sampled By: [signature]
Printed Name: Randall F Hedegaard

LAB: IT (Scv) #137

CHECK ONE (1) BOX ONLY	CT/DT
Quarterly Monitoring	☒ 5461
Site Investigation	☐ 5441
Soil for disposal	☐ 5442
Water for disposal	☐ 5443
Air Sample - Sys O&M	☐ 5452
Water Sample - Sys O&M	☐ 5453
Other	☐

TURN AROUND TIME
24 hours ☐
48 hours ☐
15 days ☒ (Normal)
Other ☐ _____
NOTE: Notify Lab as soon as possible of 24/48 hrs. TAT.

Analysis Required

Sample ID	Date	Soil	Water	Air	No. of conts.	TPH (EPA 8015 Mod. Gas)	TPH (EPA 8015 Mod. Diesel)	BTEX (EPA 8020/602)	Volatile Organics (EPA 8240)	Test for Disposal	Container Size	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
S-1	11-7-91		X		3	X		X			40ml	HCl	N	groundwater/gas	Cool
S-2						X									
S-3						X									
S-4						X									
S-6						X									
S-7						X									
SD-2						X									
Trip Blank					1	X		Broken in Transit							

Relinquished By (signature): [signature]
Printed name: Randall F Hedegaard
Date: 11-7-91 Time: 1530

Relinquished By (signature): Retry #1
Printed name:
Date: 11-8-91 Time: 0800

Relinquished By (signature): [signature]
Printed name: Frank Cline
Date: 11-8-91 Time: 1020

Received (signature): Retry G/R
Received (signature): [signature]
Received (signature): M. LaGrande

Printed name:
Printed name: F. Cline
Printed name: M. LaGRANDE

Date: 11-7-91 Time: 1530
Date: 11-8-91 Time: 0800
Date: 11-8-91 Time: 1024

THE LABORATORY MUST PROVIDE A COPY OF THIS CHAIN-OF-CUSTODY WITH INVOICE AND RESULTS

Last Revision Date: 10/15/91