GeoStrategies Inc.

L.O.P

March 23, 1993

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:

As requested by Mr. Dan Kirk of Shell Oil Company, we are forwarding a copy of **the March 23, 1993 Quarterly Report** for the above referenced location. The report presents the results of the ground-water sampling conducted during the first quarter of 1993.

If you have any questions, please call.

Sincerely,

Ellen Fostersmith

Ellen Fostersmith
Geologist

EF/

cc: Mr. Dan Kirk, Shell Oil Company
Mr. Lester Feldman, Regional Water Quality Control Board

:ellens\666-s.wp

GeoStrategies Inc.

March 23, 1993

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

Attn: Mr. Dan Kirk

Re: QUARTERLY REPORT
Shell Service Station
999 San Pablo Avenue
Albany, California
WIC# 204-0079-0109

Mr. Kirk:

This Quarterly Report has been prepared by GeoStrategies Inc. (GSI) and presents the results of the 1993 first quarter sampling for the above referenced site (Plate 1). Sampling data were furnished by the Shell Oil Company sampling contractor.

EXECUTIVE SUMMARY

- Groundwater samples were collected from the monitoring well network on January 19, 1993.
- Site data support the conclusion that the free product observed in Well S-5 originated from an off-site source, possibly from the ARCO Service Station located south of the Shell site.
- Historically, groundwater elevation data have indicated the presence of a groundwater mound near the northeast corner of the site. This mound may originate from water infiltration associated with the on-site car wash and/or other sources.

766601-14

SITE DESCRIPTION

There are currently seven monitoring wells at the site; Wells S-1 through S-7 (Plate 2). These wells were installed in 1990.

CURRENT QUARTER SAMPLING RESULTS

Depth to water-level measurements were obtained in each monitoring well on January 19, 1993. Static ground-water levels were measured from the surveyed top of each well box and recorded to the nearest $\pm$0.01 foot. Water-level elevations, referenced to Mean Sea Level (MSL) datum and the stabilized values of measured physical parameters are presented in Table 1. Water-level data were used to construct a quarterly potentiometric map (Plate 2). Shallow ground-water flow is generally to the west at an approximate hydraulic gradient of 0.04.

Each well was checked for the presence of floating product. Floating product was observed in Well S-5 at a measured thickness of 3.96 feet.

Ground-water samples were collected on January 19, 1993. Samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline), according to EPA Method 8015 (Modified) and for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) according to EPA Method 8020. Sample S-8 was collected as a duplicate sample for Well S-1. The ground-water samples were analyzed by Anametrix Inc., a California State-certified laboratory located in San Jose, California. The laboratory analytical report and Chain-of-Custody form are presented in Appendix A. These data are summarized and included with the historical chemical analytical data presented in Table 2. A chemical isoconcentration map for benzene is presented on Plate 3.

DISCUSSION

Groundwater samples collected from Shell's monitoring well network indicate the presence of two hydrocarbon plumes. The first plume appears to be located in the northern portion of the Shell site adjacent to Shell's underground storage tanks. The second plume is located on the southern fringe of the Shell site extending across Marin Avenue. The following factors support the conclusion that the second (southern) plume originated from an off-site source.

1. Contaminant concentrations increase moving north to south from Well S-3 to S-6 to S-5.

2. A well (RW-1) installed on the ARCO site located approximately 25 feet south of S-5 has reportedly contained free product in excess of 3 feet.

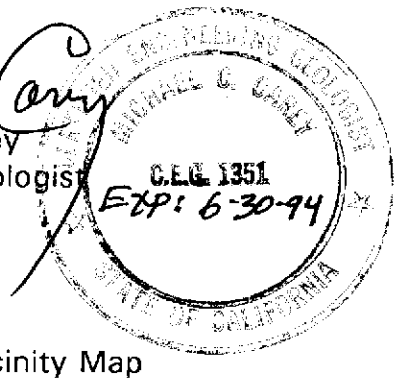
Groundwater elevation data collected at the Shell site has consistently indicated the presence of a groundwater mound across the eastern portion of the site. This mound may be the result of water infiltration associated with the on-site car wash and/or other sources. The expected groundwater flow direction is to the west towards San Francisco Bay. The reported groundwater flow direction beneath the ARCO station located across Marin Avenue has been to the west.

If you have any questions, please call.

GeoStrategies Inc. by,

Ellen C. Fostersmith
Geologist

Michael C. Carey
Engineering Geologist
C.E.G. 1351



ECF/MCC/rmt

Plate 1. Vicinity Map
Plate 2. Site Plan/Potentiometric Map
Plate 3. Benzene Isoconcentration Map

Appendix A: Blaine Tech Services Inc. Sampling Report

QC Review MW

766601-14

TABLES

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)
S-1	19-Jan-93	3	11.96	42.73	6.54	----	36.19
S-2	19-Jan-93	3	12.14	40.73	5.82	----	34.91
S-3	19-Jan-93	3	12.20	41.46	6.12	----	35.34
S-4	19-Jan-93	3	14.08	41.10	5.86	----	35.24
S-5	19-Jan-93	3	----	39.99	12.36	3.96	30.80
S-6	19-Jan-93	3	15.24	40.12	4.84	----	35.28
S-7	19-Jan-93	3	15.06	40.10	8.68	----	31.42

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 fator = 0.80).

TABLE 2

HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
05-Feb-90	S-1	3,100	56	37	110	97
01-May-90	S-1	4,200	23	<2.5	116	320
28-Aug-90	S-1	800	8.1	1	75	54
27-Nov-90	S-1	2,200	11	<2.5	58	22
11-Feb-91	S-1	1,500	27	<2.5	73	87
13-May-91	S-1	1,500	20	2.6	86	74
23-Aug-91	S-1	2,900	27	<2.5	75	18
07-Nov-91	S-1	2,900	8	2.5	46	26
28-Jan-92	S-1	2,000	11	<2.5	60	20
06-May-92	S-1	1,200	5.5	<2.5	80	36
29-Jul-92	S-1	2,000	9.4	<2.5	130	<2.5
28-Oct-92	S-1	1,300	27	3.2	72	13
19-Jan-93	S-1	1,500	13	3	29	31
05-Feb-90	S-2	8,700	1,600	58	160	1,000
01-May-90	S-2	11,000	2,300	82	409	770
28-Aug-90	S-2	4,400	1,700	35	160	170
27-Nov-90	S-2	18,000	4,300	200	1,500	1,700
11-Feb-91	S-2	6,800	1,100	47	170	620
13-May-91	S-2	23,000	3,900	230	1,100	3,200
23-Aug-91	S-2	23,000	4,400	260	1,900	2,400
07-Nov-91	S-2	40,000	4,000	160	1,020	3,400
28-Jan-92	S-2	22,000	1,600	70	420	1,700
06-May-92	S-2	20,000	2,600	110	860	1,900
29-Jul-92	S-2	42,000	5,000	160	1,100	3,500
28-Oct-92	S-2	34,000	4,800	330	1,600	2,900
19-Jan-93	S-2	20,000	2,300	370	660	1,300
05-Feb-90	S-3	5,700	45	4	120	500
01-May-90	S-3	2,000	18	<2.5	24	8
28-Aug-90	S-3	660	8.7	1	26	7
27-Nov-90	S-3	1,900	7.3	3	9.3	3.2
11-Feb-91	S-3	1,300	20	<2.5	9.5	3.6
13-May-91	S-3	3,300	30	3.6	26	13
23-Aug-91	S-3	2,000	25	4	9.3	4.5
07-Nov-91	S-3	4,000	20	3.9	5	4.9

TABLE 2

HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
28-Jan-92	S-3	2,100	21	7.6	6.7	15
06-May-92	S-3	6,600	38	51	45	65
29-Jul-92	S-3	5,800	18	12	29	60
28-Oct-92	S-3	3,000	55	11	16	32
19-Jan-93	S-3	3,100	<5	5.1	11	16
01-May-90	S-4	<50	<0.5	<0.5	<0.5	<1
28-Aug-90	S-4	<50	<0.5	0.6	<0.5	1
27-Nov-90	S-4	<50	<0.5	<0.5	<0.5	<0.5
11-Feb-91	S-4	<50	<0.5	<0.5	<0.5	<0.5
13-May-91	S-4	<50	<0.5	<0.5	<0.5	<0.5
23-Aug-91	S-4	<50	<0.5	<0.5	<0.5	<0.5
07-Nov-91	S-4	260	<0.5	<0.5	<0.5	<0.5
28-Jan-92	S-4	110*	<0.5	<0.5	<0.5	<0.5
06-May-92	S-4	54*	<0.5	<0.5	<0.5	<0.5
29-Jul-92	S-4	67	<0.5	<0.5	<0.5	<0.5
28-Oct-92	S-4	<50	<0.5	<0.5	<0.5	<0.5
19-Jan-93	S-4	86	1.2	0.7	2.7	15
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.				
07-Nov-91	S-5	FLOATING PRODUCT 5.35 FT.				
28-Jan-92	S-5	FLOATING PRODUCT 4.90 FT.				
06-May-92	S-5	FLOATING PRODUCT 5.66 FT.				
29-Jul-92	S-5	FLOATING PRODUCT 3.80 FT.				
28-Oct-92	S-5	FLOATING PRODUCT 3.81 FT.				
19-Jan-93	S-5	FLOATING PRODUCT 3.46 FT.				
28-Aug-90	S-6	5,700	580	23	32	58
27-Nov-90	S-6	8,000	790	37	96	69
11-Feb-91	S-6	12,000	540	77	170	190
13-May-91	S-6	13,000	600	140	210	310
23-Aug-91	S-6	9,800	480	80	120	150

TABLE 2

HISTORICAL GROUND-WATER QUALITY DATABASE

Sample Date	Sample Point	TPH-G (ppb)	Benzene (ppb)	Toluene (ppb)	Ethylbenzene (ppb)	Xylenes (ppb)
07-Nov-91	S-6	6,200	240	23	25	27
28-Jan-92	S-6	5,600	250	15	41	36
06-May-92	S-6	7,100	330	29	110	210
29-Jul-92	S-6	13,000	240	<50	56	78
28-Oct-92	S-6	10,000	470	210	67	170
19-Jan-93	S-6	4,800	100	26	27	45
28-Aug-90	S-7	<50	<0.5	<0.5	<0.5	<0.5
27-Nov-90	S-7	<50	<0.5	<0.5	<0.5	<0.5
11-Feb-91	S-7	<50	<0.5	<0.5	<0.5	<0.5
13-May-91	S-7	<50	<0.5	<0.5	<0.5	<0.5
23-Aug-91	S-7	<50	<0.5	<0.5	<0.5	<0.5
07-Nov-91	S-7	<50	<0.5	<0.5	<0.5	<0.5
28-Jan-92	S-7	<50	<0.5	<0.5	<0.5	<0.5
06-May-92	S-7	<50	<0.5	<0.5	<0.5	<0.5
29-Jul-92	S-7	160	<0.5	<0.5	<0.5	<0.5
28-Oct-92	S-7	<50	<0.5	<0.5	<0.5	<0.5
19-Jan-93	S-7	50	1.1	0.6	1.9	9.2

CURRENT REGIONAL WATER QUALITY CONTROL BOARD MAXIMUM CONTAMINANT LEVELS
Benzene 1 ppb Xylenes 1750 ppb Ethylbenzene 680 ppb

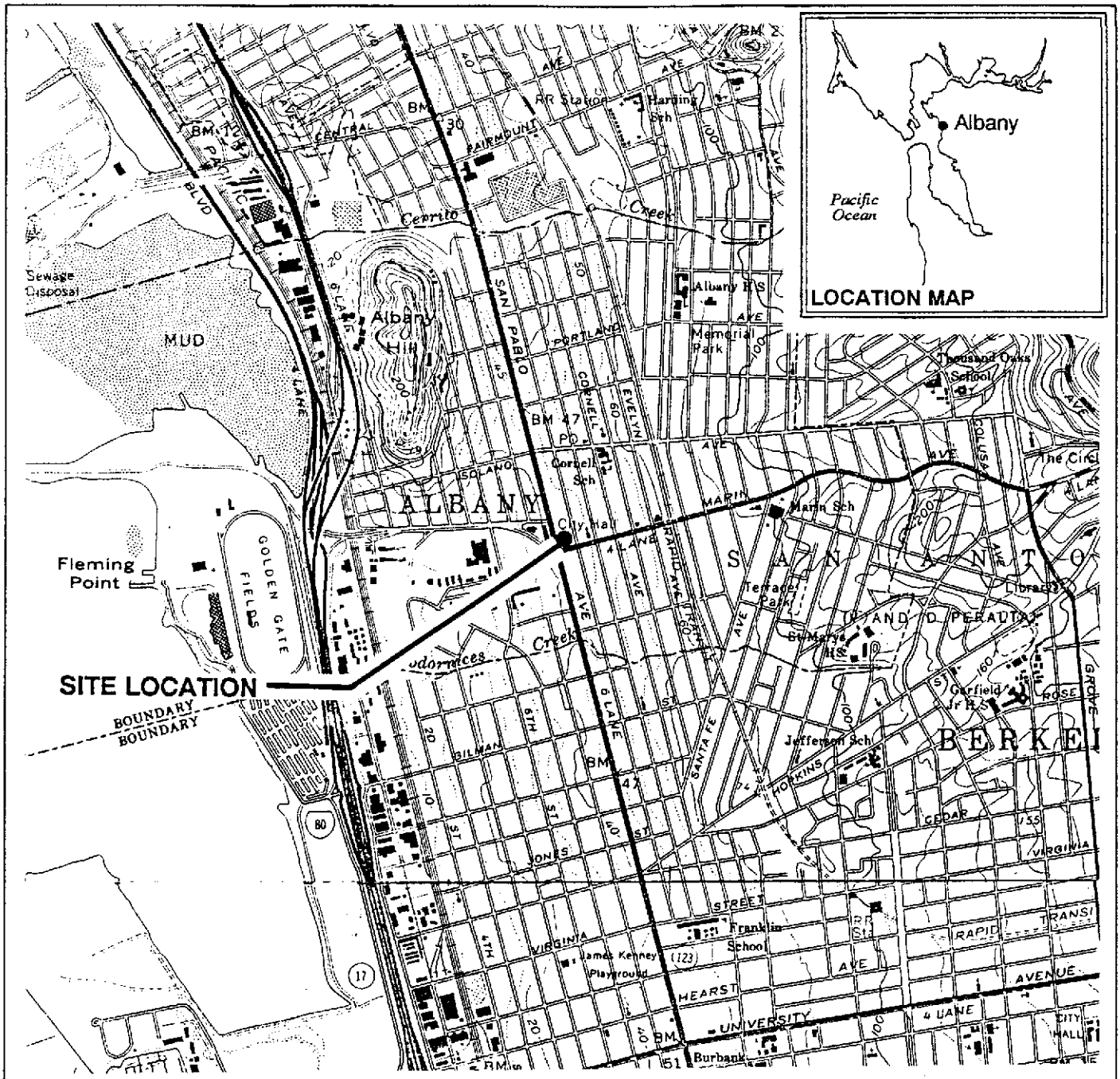
CURRENT DHS ACTION LEVELS
Toluene 100 ppb

TPH-G = Total Petroleum Hydrocarbons calculated as Gasoline
PPB = Parts Per Billion

Notes:

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

ILLUSTRATIONS



Base Map: USGS Topographic Map

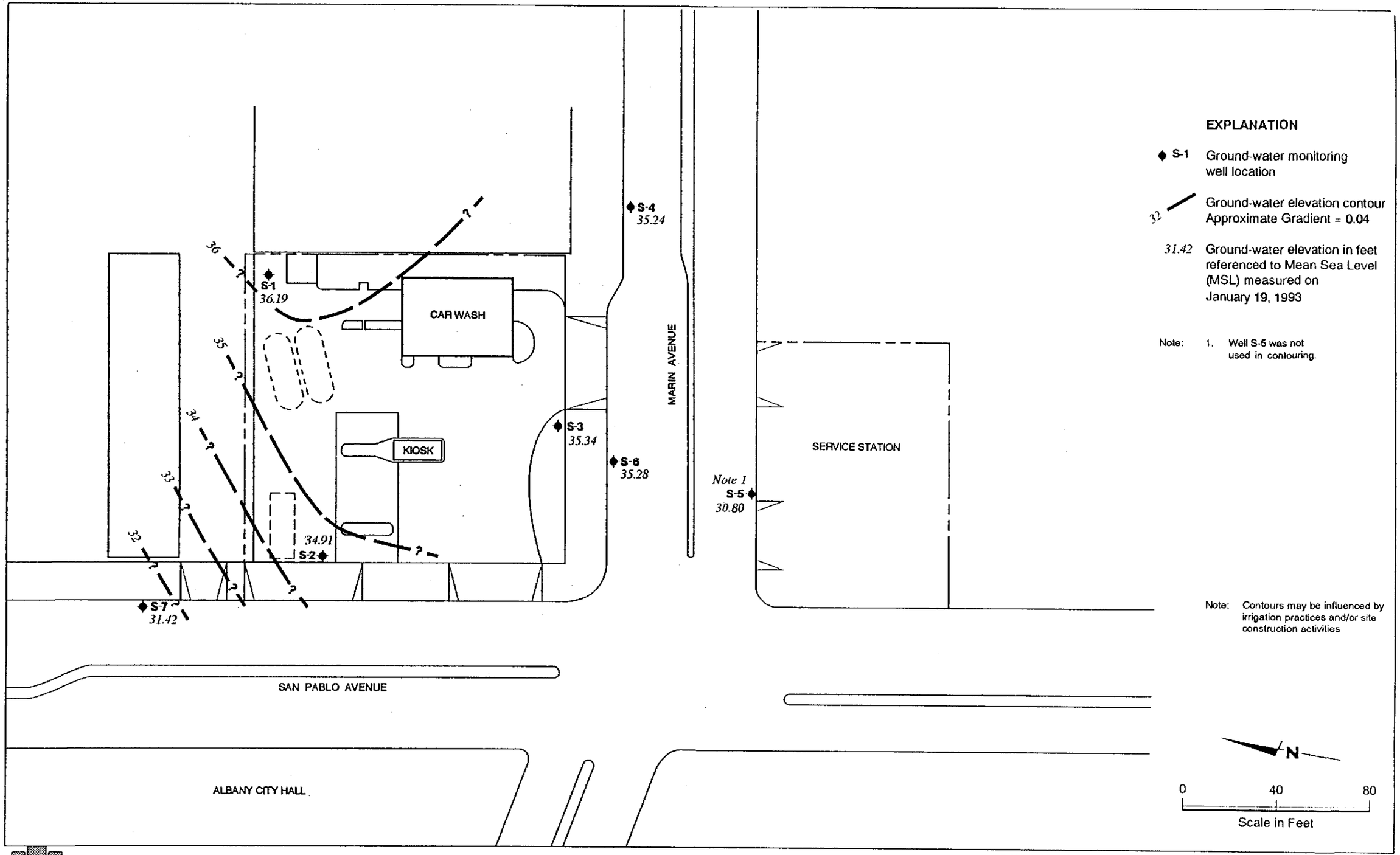
Approximate Scale : 1" = 2000'

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/POTENTIOMETRIC MAP
Shell Service Station
999 San Pablo Avenue
Albany, California

PLATE **2**

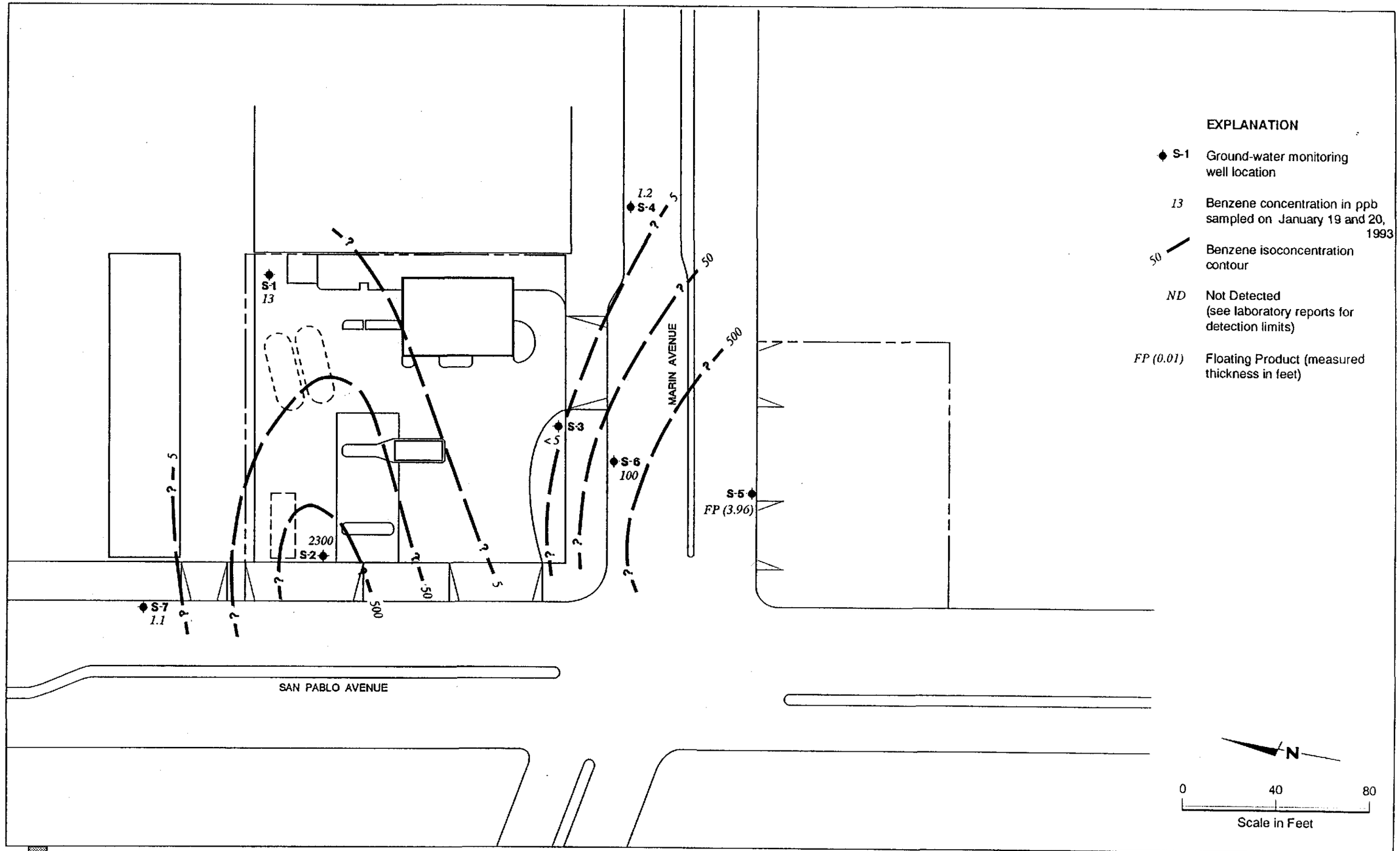
JOB NUMBER 766601-14

REVIEWED BY

DATE 3/93

REVISED DATE

REVISED DATE



GeoStrategies Inc.

BENZENE ISOCONCENTRATION MAP
Shell Service Station
999 San Pablo Avenue
Albany, California

PLATE **3**

JOB NUMBER	REVIEWED BY RG/CEG	DATE	REVISED DATE	REVISED DATE
766601-14		3/93		

APPENDIX A
BLAINE MONITORING REPORT
AND
CHAIN-OF-CUSTODY FORM

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIVE
SAN JOSE, CA 95133
(408) 995-5535
FAX (408) 293-8773

February 2, 1993

Shell Oil Company
P.O. Box 5278
Concord, CA 94520-9998

Attn: Daniel T. Kirk

SITE:
Shell WIC # 204-0079-0109
999 San Pablo Avenue
Albany, California

QUARTER:
1st quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930119-Y-1

This report contains data collected during routine inspection, gauging and sampling of groundwater monitoring wells performed by Blaine Tech Services, Inc. in response to the request of the consultant who is overseeing work at this site on behalf of our mutual client, Shell Oil Company. Data collected in the course of our field work is presented in a TABLE OF WELL GAUGING DATA. The field information was collected during our preliminary gauging and inspection of the wells, the subsequent evacuation of each well prior to sampling, and at the time of sampling.

Measurements taken include the total depth of the well and the depth to water. The surface of the water was further inspected for the presence of immiscibles which may be present as a thin film (a sheen on the surface of the water) or as a measurable free product zone (FPZ). At intervals during the evacuation phase, the purge water was monitored with instruments that measure electrical conductivity (EC), potential hydrogen (pH), temperature (degrees Fahrenheit), and turbidity (NTU). In the interest of simplicity, fundamental information is tabulated here, while the bulk of the information is turned over directly to the consultant who is making professional interpretations and evaluations of the conditions at the site.

TABLE OF WELL GAUGING DATA

WELL I.D.	WELL DIAMETER (inches)	DATA COLLECTION DATE	MEASUREMENTS REFERENCED TO	QUALITATIVE OBSERVATIONS (sheen)	DEPTH TO FIRST IMMISCIBLE LIQUID (FPZ) (feet)	THICKNESS OF IMMISCIBLE LIQUID ZONE (feet)	VOLUME OF IMMISCIBLES REMOVED (ml)	DEPTH TO WATER (feet)	DEPTH TO WELL BOTTOM (feet)
S-1 *	3	01-19-93	GRADE	--	NONE	--	--	6.54	11.96
S-2	3	01-19-93	GRADE	--	NONE	--	--	5.82	12.14
S-3	3	01-19-93	GRADE	--	NONE	--	--	6.12	12.20
S-4	3	01-19-93	GRADE	--	NONE	--	--	5.86	14.08
S-5	3	01-19-93	GRADE	FREE PRODUCT	8.4	3.96	--	12.36	--
S-6	3	01-19-93	GRADE	--	NONE	--	--	4.84	15.24
S-7	3	01-19-93	GRADE	--	NONE	--	--	8.68	15.06

* Sample S-8 was a duplicate taken from well S-1.

STANDARD PROCEDURES

Evacuation

Groundwater wells are thoroughly purged before sampling to insure that the sample is collected from water that has been newly drawn into the well from the surrounding geologic formation. The selection of equipment to evacuate each well is based on the physical characteristics of the well and what is known about the performance of the formation in which the well has been installed. There are several suitable devices which can be used for evacuation. The most commonly employed devices are air or gas actuated pumps, electric submersible pumps, and hand or mechanically actuated bailers. Our personnel frequently employ USGS/Middleburg positive displacement pumps or similar air actuated pumps which do not agitate the water standing in the well.

Normal evacuation removes three case volumes of water from the well. More than three case volumes of water may be removed in cases where more evacuation is needed to achieve stabilization of water parameters. Less than three case volumes of water may be obtained in cases where the well dewaters and does not recharge to 80% of its original volume within two hours and any additional time our personnel have reason to remain at the site. In such cases, our personnel return to the site within twenty four hours and collect sample material from the water which has recharged into the well case.

Decontamination

All apparatus is brought to the site in clean and serviceable condition. The equipment is decontaminated after each use and before leaving the site.

Free Product Skimmer

The column headed, VOLUME OF IMMISCIBLES REMOVED (ml) is included in the TABLE OF WELL GAUGING DATA to cover situations where a free product skimming device must be removed from the well prior to gauging. Skimmers are installed in wells with a free product zone on the surface of the water. The skimmer is a free product recovery device which often prevents normal well gauging and free product zone measurements. The 2.0" and 3.0" PetroTraps fall into the category of devices that obstruct normal gauging. In cases where the consultant elects to have our personnel pull the skimmers out of the well and gauge the well, our personnel perform the additional task of draining the accumulated free product out of the PetroTrap before putting it back in the well. This recovered free product is measured and logged in the VOLUME OF IMMISCIBLES REMOVED column. Gauging at such site is performed in accordance with specific directions from the professional consulting firm overseeing work at the site on Shell's behalf.

Sample Containers

Sample material is collected in specially prepared containers which are provided by the laboratory that performs the analyses.

Sampling

Sample material is collected in stainless steel bailer type devices normally fitted with both a top and a bottom check valve. Water is promptly decanted into new sample containers in a manner which reduces the loss of volatile constituents and follows the applicable EPA standard for handling volatile organic and semi-volatile compounds.

Following collection, samples are promptly placed in an ice chest containing prefrozen blocks of an inert ice substitute such as Blue Ice or Super Ice. The samples are maintained in either an ice chest or a refrigerator until delivered into the custody of the laboratory.

Sample Designations

All sample containers are identified with a site designation and a discrete sample identification number specific to that particular groundwater well. Additional standard notations (e.g. time, date, sampler) are also made on the label. Either the requested analyses or the specific analytes are written on the sample label (e.g. TPH-G, BTEX).

Chain of Custody

Samples are continuously maintained in an appropriate cooled container while in our custody and until delivered to the laboratory under a standard Shell Oil Company chain of custody. If the samples are taken charge of by a different party (such as another person from our office, a courier, etc.) prior to being delivered to the laboratory, appropriate release and acceptance records are made on the chain of custody (time, date, and signature of the person releasing the samples followed by the time, date and signature of the person accepting custody of the samples).

Hazardous Materials Testing Laboratory

The samples obtained at this site were delivered to Anametrix, Inc. in San Jose, California. Anametrix, Inc. is a California Department of Health Services certified Hazardous Materials Testing Laboratory and is listed as DOHS HMTL #1234.

Objective Information Collection

Blaine Tech Services, Inc. performs specialized environmental sampling and documentation as an independent third party. In order to avoid compromising the objectivity necessary for the proper and disinterested performance of this work, Blaine Tech Services, Inc.

performs no consulting and does not become involved in the marketing or installation of remedial systems of any kind. Blaine Tech Services, Inc. is concerned only with the generation of objective information, not with the use of that information to support evaluations and recommendations concerning the environmental condition of the site. Even the straightforward interpretation of objective analytical data is better performed by interested regulatory agencies, and those engineers and geologists who are engaged in the work of providing professional opinions about the site and proposals to perform additional investigation or design remedial systems.

Reportage

Submission of this report and the attached laboratory report to interested regulatory agencies is handled by the consultant in charge of the project. Any professional evaluations or recommendations will be made by the consultant under separate cover.

Please call if we can be of any further assistance.

Richard C. Blaine

RCB/kkl

attachments: chain of custody
certified analytical report

cc: GeoStrategies, Inc.
2140 W. Winton Ave.
Hayward, CA 94545
ATTN: Ellen Fostersmith

9307226 (18)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No:_____

Date:
Page 1 of 1

Site Address: 999 San Pablo Ave. Albany CA.
WIC#: 204-0079-0109.
Shell Engineer: Daniel T Kick. Phone No.: 510 Fax #: 675-6171
Consultant Name & Address: Blaine Tech Services
Consultant Contact: Glen Bennett. Phone No.: 408 Fax #: 995-5535
Comments:
Sampled by: Joe Carrera
Printed Name: JOE CARRERA.

LAB: Anametrix

Analysis Required

Sample ID	Date	Sludge	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	Combination TPH 8015 & BTEX 8020			Asbestos	Container Size	Preparation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(1) S-1	1-19			X		3	X		X											
(2) S-2	1-19			X		3	X		X											
(3) S-3	1-19			X		3	X		X											
(4) S-4	1-19			X		3	X		X											
(5) S-6	1-19			X		3	X		X											
(6) S-7	1-20			X		3	X		X											
(7) S-8	1-19			X		3	X		X											
(8) Trip Blank	1-19			X		2	X		X											

CHECK ONE (1) BOX ONLY — C1/D1

- Quarterly Monitoring ☒ 6441
- Site Investigation ☐ 6441
- Soil Closure/Disposal ☐ 6442
- Water Closure/Disposal ☐ 6443
- Soil/Air Rem. or Sys. O & M ☐ 6443
- Water Rem. or Sys. O & M ☐ 6443
- Other ☐

TURN AROUND TIME

- 24 hours ☐
- 48 hours ☐
- 72 hours ☐
- 5 days ☐
- 10 days ☒ (Normal)
- Other ☐ ____

NOTE: Notify Lab as soon as Possible of 24/48 hrs. TAT.

Relinquished By (signature): Joe Carrera	Printed Name: JOE CARRERA	Date: 1-21-93	Received (signature): Kenny S. Garrison	Printed Name: KENNY S. GARRISON	Date: 1-21-93
Relinquished By (signature): Kenny S. Garrison	Printed Name: KENNY S. GARRISON	Time: 1510	Received (signature): Maria Barajas	Printed Name: Maria Barajas	Time: 1310
Relinquished By (signature):	Printed Name:	Date:	Received (signature):	Printed Name:	Date:
		Time:			Time:

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

ANAMETRIX INC
Environmental & Analytical Chemistry

Part of INCHCAPE ENVIRONMENTAL

REPORT

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9301226
Date Received : 01/21/93
Project ID : 204-0079-0109
Purchase Order: MOH-B813

The following samples were received at Anametrix, Inc. for analysis :

ANAMETRIX ID	CLIENT SAMPLE ID
9301226- 1	S-1
9301226- 2	S-2
9301226- 3	S-3
9301226- 4	S-4
9301226- 5	S-6
9301226- 6	S-7
9301226- 7	S-8
9301226- 8	T. BLANK

This report consists of 6 pages not including the cover letter, and is organized in sections according to the specific Anametrix laboratory group or section which performed the analysis(es) and generated the data. The Report Summary that precedes each section will help you determine which Anametrix group is responsible for those test results, and will bear the signatures of the department supervisor and the chemist who have reviewed the analytical data. Please refer all questions to the department supervisor who signed the form.

Anametrix is certified by the California Department of Health Services (DHS) to perform environmental testing under Certificate Number 1234. A detailed list of the approved fields of testing can be obtained by calling our office, or the DHS Environmental Laboratory Accreditation Program at (415)540-2800.

If you have any further questions or comments on this report, please give us a call as soon as possible. Thank you for using Anametrix.

Sarah Schoen, Ph.D.
Laboratory Director

01-29-93
Date

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9301226
Date Received : 01/21/93
Project ID : 204-0079-0109
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9301226- 1	S-1	WATER	01/19/93	TPHg/BTEX
9301226- 2	S-2	WATER	01/19/93	TPHg/BTEX
9301226- 3	S-3	WATER	01/19/93	TPHg/BTEX
9301226- 4	S-4	WATER	01/19/93	TPHg/BTEX
9301226- 5	S-6	WATER	01/19/93	TPHg/BTEX
9301226- 6	S-7	WATER	01/20/93	TPHg/BTEX
9301226- 7	S-8	WATER	01/19/93	TPHg/BTEX
9301226- 8	T. BLANK	WATER	01/19/93	TPHg/BTEX

REPORT SUMMARY
ANAMETRIX, INC. (408)432-8192

MR. GLEN BENNETT
BLAINE TECH
985 TIMOTHY STREET
SAN JOSE, CA 95133

Workorder # : 9301226
Date Received : 01/21/93
Project ID : 204-0079-0109
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

- No QA/QC problems encountered for these samples.

Department Supervisor — Date 1/29/93

Chemist — Date 1-29-93

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9301226
Matrix : WATER
Date Sampled : 01/19/93

Project Number : 204-0079-0109
Date Released : 01/29/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# S-1 -01	Sample I.D.# S-2 -02	Sample I.D.# S-3 -03	Sample I.D.# S-4 -04	Sample I.D.# S-6 -05
Benzene	0.5	13	2300	ND	1.2	100
Toluene	0.5	3.0	370	5.1	0.7	26
Ethylbenzene	0.5	29	660	11	2.7	27
Total Xylenes	0.5	31	1300	16	15	45
TPH as Gasoline	50	1500	20000	3100	86	4800
% Surrogate Recovery		104%	94%	94%	95%	89%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		01/28/93	01/28/93	01/28/93	01/27/93	01/28/93
RLMF		5	100	10	1	25

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Charles M Burch 1-29-93
Analyst Date

Cheryl Balmer 1/29/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS
(GASOLINE WITH BTEX)
ANAMETRIX, INC. - (408) 432-8192

Anametrix W.O.: 9301226
Matrix : WATER
Date Sampled : 01/19-20/93

Project Number : 204-0079-0109
Date Released : 01/29/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# S-7 -06	Sample I.D.# S-8 -07	Sample I.D.# T. BLANK -08	Sample I.D.# S-4 BLANK	Sample I.D.# S-6 BLANK
Benzene	0.5	1.1	11	ND	ND	ND
Toluene	0.5	0.6	2.7	ND	ND	ND
Ethylbenzene	0.5	1.9	24	ND	ND	ND
Total Xylenes	0.5	9.2	26	ND	ND	ND
TPH as Gasoline	50	50	1100	ND	ND	ND
% Surrogate Recovery		94%	100%	71%	120%	93%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		01/27/93	01/28/93	01/27/93	01/27/93	01/28/93
RLMF		1	2	1	1	1

ND - Not detected at or above the practical quantitation limit for the method.
TPHg - Total Petroleum Hydrocarbons as gasoline is determined by GCFID using modified EPA Method 8015 following sample purge and trap by EPA Method 5030.
BTEX - Benzene, Toluene, Ethylbenzene, and Total Xylenes are determined by modified EPA Method 8020 following sample purge and trap by EPA Method 5030.
RLMF - Reporting Limit Multiplication Factor.

Anametrix control limits for surrogate p-Bromofluorobenzene recovery are 53-147%.

All testing procedures follow California Department of Health Services (Cal-DHS) approved methods.

Charlotte Burch 1-29-93
Analyst Date

Cheryl Bateman 1/29/93
Supervisor Date

TOTAL VOLATILE HYDROCARBON MATRIX SPIKE REPORT
EPA METHOD 5030 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : 204-0079-0109 S-4
Matrix : WATER
Date Sampled : 01/19/93
Date Analyzed : 01/27/93

Anametrix I.D. : 9301226-04
Analyst : CMB
Supervisor : [illegible]
Date Released : 01/29/93
Instrument I.D.: HP12

COMPOUND	SPIKE AMT (ug/L)	SAMPLE CONC (ug/L)	REC MS (ug/L)	%REC MS	REC MD (ug/L)	%REC MD	RPD	%REC LIMITS
BENZENE	20.0	1.2	15.1	70%	15.9	74%	5%	49-159
TOLUENE	20.0	0.7	15.7	75%	16.6	80%	6%	53-156
ETHYLBENZENE	20.0	2.7	19.3	83%	20.1	87%	4%	54-151
TOTAL XYLENES	20.0	15.0	31.8	84%	31.9	85%	0%	56-157
p-BFB				89%		85%		53-147

* Quality control established by Anametrix, Inc.

TOTAL VOLATILE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 5030 WITH GC/PID
ANAMETRIX, INC. (408) 432-8192

Sample I.D.	: LAB CONTROL SAMPLE	Anametrix I.D.	: LCSW0128
Matrix	: WATER	Analyst	: EMB
Date Sampled	: N/A	Supervisor	:
Date Analyzed	: 01/28/93	Date Released	: 01/29/93
		Instrument ID	: HP12

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	13.8	69%	49-159
Toluene	20.0	15.0	75%	53-156
Ethylbenzene	20.0	15.7	78%	54-151
TOTAL Xylenes	20.0	15.7	78%	56-157
P-BFB			88%	53-147

* Limits established by Anametrix, Inc.