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GeoStrategies Inc.

March 2, 1993

Hazardous Materials Specialist
City of Pleasanton
Pleasanton Fire Department
Post Office Box 520
Pleasanton, California 94566-0802

Reference: Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC 204-6138-0907

Gentlemen:

As requested by Mr. Dan Kirk of Shell Oil Company, we are forwarding a copy of the March 2, 1993 Quarterly Report prepared for the above referenced location. The report documents 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

enclosure

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

:ellens\633-s.wp(ef)

GeoStrategies Inc.

March 2, 1993

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

Attn: Mr. Dan Kirk

Re: QUARTERLY REPORT
Shell Service Station
5251 Hopyard Road
Pleasanton, California
WIC# 204-6138-0907

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

- TPH-G and BTEX were not detected (ND) in groundwater samples from six of the eight site wells during the first quarter of 1993.
- TPH-Gasoline and BTEX concentrations in Wells S-1 and S-3 have declined by approximately one order of magnitude over the past year.
- Benzene has been ND in four wells (S-2, S-6, S-7, and S-8) for the last fourteen consecutive quarters and in Well S-4 for the last seven consecutive quarters.
- The dissolved hydrocarbon plume is well defined and does not appear to be migrating off-site.

763301-17

- Between October 1992 and January 1993, groundwater elevations rose by approximately 0.31 to 1.2 feet.

- GSI recommends reducing the sampling frequency for Wells S-2, S-4, and S-7 to annually.

SITE DESCRIPTION

There are currently eight ground-water monitoring wells at the site; Wells S-1 through S-8 (Plate 2). There are also three vadose zone wells; Wells V-1 through V-3. These wells were installed between 1988 and 1989 by Pacific Environmental Group and GSI. The old underground storage tanks were replaced in January 1988.

CURRENT QUARTER SAMPLING RESULTS

Depth to water-level measurements were obtained in each monitoring well on January 23, 1993. Static ground-water levels were measured from the surveyed top of each well box and recorded to the nearest $\pm$0.01 foot. Between October 1992 and January 1993, groundwater elevations rose by approximately 0.31 to 1.2 feet. 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 to the north-northwest at an approximate hydraulic gradient of 0.003.

Each well was checked for the presence of floating product. Floating product was not observed in the wells this quarter.

Ground-water samples were collected on January 23, 1993. Samples were analyzed for Total Petroleum Hydrocarbons calculated as Gasoline (TPH-Gasoline) and as Diesel (TPH-Diesel) according to EPA Method 8015 (Modified) and for Benzene, Toluene, Ethylbenzene and Xylenes (BTEX) according to EPA Method 8020. 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. A chemical isoconcentration map for benzene is presented on Plate 3. Historical chemical analytical data are presented in Table 2.

DISCUSSION

The dissolved hydrocarbon plume appears to be delineated on-site and does not appear to be migrating offsite. Concentrations of BTEX have been ND in Wells S-2, S-4, S-6, S-7, and S-8 for at least two consecutive quarters. TPH-Gasoline and BTEX concentrations in Wells S-1 and S-3 have declined by approximately one order of magnitude over the past year. Based on observed plume distribution and historical contaminant concentrations GSI recommends reducing the sampling frequency for Wells S-2, S-4 and S-7 to annually. The technical rationale for this recommendation is as follows:

- TPH-Gasoline and Benzene have been ND in Wells S-2, S-4, and S-7 for at least seven consecutive quarters.
- TPH-Gasoline and BTEX concentrations have declined by approximately one order of magnitude over the past year.
- Wells S-5, S-6, and S-8 will serve as cross- and downgradient monitoring points.
- Based on the last seven quarters of sampling data, the plume does not appear to be migrating.

If you have any questions, please call.

GeoStrategies Inc. by,

Ellen C. Fostersmith

Ellen C. Fostersmith
Geologist

Michael Carey

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

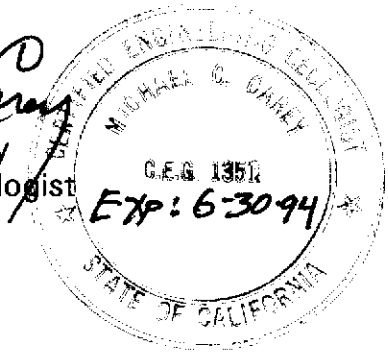

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Plate 1. Vicinity Map
Plate 2. Site Plan/Potentiometric Map
Plate 3. Benzene Isoconcentration Map

Appendix A: Blaine Monitoring Report and Chain-of-Custody

QC Review: _____

763301-17

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	TEMP (F)	CONDUCTIVITY (uHMOS/cm)	TURBIDITY (NTU)
S-1	23-Jan-93	3	29.88	326.73	7.96	----	318.77	3	7.2	67.4	2800	>200
S-2	23-Jan-93	3	24.61	326.69	8.10	----	318.49	3	7.1	64.2	4600	5.25
S-3	23-Jan-93	3	24.86	327.38	8.81	----	318.57	3	7.2	61.8	2700	148.5
S-4	23-Jan-93	3	24.56	327.38	8.32	—	319.06	3	7.2	63.2	1600	3.76
S-5	23-Jan-93	3	24.74	327.76	8.88	----	318.88	3	7.1	63.8	1400	5.40
S-6	23-Jan-93	3	26.09	326.56	7.82	----	318.74	3	7.2	65.6	700	>200
S-7	23-Jan-93	3	25.42	326.49	8.06	----	318.43	3	7.1	68.2	2900	7.73
S-8	23-Jan-93	3	25.26	325.32	7.00	—	318.32	3	7.1	65.8	8200	36.7

NTU = Nephelometric turbidity units.

Notes: 1. Static water elevations referenced to Mean Sea Level (MSL).
2. Physical parameter measurements represent stabilized values.

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)	TPH-D (PPB)	OIL (PPB)
06-Jan-88	S-1	600	220	<5	----	<20	<50	<200
14-Dec-88	S-1	17,000	5,100	40	570	200	8,000	N/A
30-Mar-89	S-1	8,200	2,900	<20	330	160	3,600	N/A
20-Jul-89	S-1	21,000	6,200	1,500	1,100	700	8,500	N/A
16-Oct-89	S-1	16,000	3,900	890	1,200	900	11,000	N/A
05-Jan-90	S-1	8,200	2,300	100	660	320	6,500	N/A
11-Apr-90	S-1	11,000	3,000	120	830	520	N/A	N/A
12-Jul-90	S-1	20,000	4,400	960	1,300	1,200	8,000	N/A
25-Oct-90	S-1	6,000	1,400	140	600	320	3,500	N/A
25-Jan-91	S-1	2,500	460	<25	130	36	1,500	N/A
16-Apr-91	S-1	6,700	2,600	14	580	250	2,600*	N/A
24-Jul-91	S-1	8,800	2,300	30	640	220	3,800*	N/A
18-Oct-91	S-1	12,000	3,600	380	990	580	3,300*	N/A
23-Jan-92	S-1	1,600	450	3	120	17	890	N/A
27-Apr-92	S-1	1,100+	610	<10	110	10	500*	N/A
21-Jul-92	S-1	5,100	1,900	54	430	140	290@	N/A
16-Oct-92	S-1	13,000	3,200	310	780	360	390@	N/A
23-Jan-93	S-1	2,300	640	<5	110	13	30**	N/A
11-May-89	S-2	<50	<0.5	<1	<1	<3	<100	N/A
20-Jul-89	S-2	<50	<0.5	<1	<1	<3	<100	N/A
16-Oct-89	S-2	<50	<0.5	<1	<1	<3	<100	N/A
05-Jan-90	S-2	<50	<0.5	<0.5	<0.5	<1	<100	N/A
11-Apr-90	S-2	<50	<0.5	<0.5	<0.5	<1	N/A	N/A
12-Jul-90	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
25-Oct-90	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
25-Jan-91	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
16-Apr-91	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
24-Jul-91	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
18-Oct-91	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
23-Jan-92	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
27-Apr-92	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
17-Jul-92	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
16-Oct-92	S-2	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)	TPH-D (PPB)	OIL (PPB)
23-Jan-93	S-2	<50	<0.5	<0.5	<0.5	<0.5	140++	N/A
11-May-89	S-3	2,600	330	14	220	200	1,400	N/A
20-Jul-89	S-3	9,700	2,300	30	880	160	2,200	N/A
16-Oct-89	S-3	3,400	700	8	360	60	2,800	N/A
05-Jan-90	S-3	860	140	1.6	78	2	1,600	N/A
11-Apr-90	S-3	1,000	210	<2	150	13	N/A	N/A
12-Jul-90	S-3	2,800	490	8.5	210	81	2,000	N/A
24-Oct-90	S-3	1,200	120	<2.5	82	5.1	860	N/A
25-Jan-91	S-3	870	230	<2.5	130	<2.5	330	N/A
16-Apr-91	S-3	190	12	0.8	6.2	1.5	140*	N/A
24-Jul-91	S-3	1,700	450	4.4	150	2.9	1,200*	N/A
18-Oct-91	S-3	1,900	370	3.1	120	220	500	N/A
23-Jan-92	S-3	2,000	580	3	200	<0.5	650*	N/A
27-Apr-92	S-3	1,100	150	<3	76	14	230*	N/A
17-Jul-92	S-3	810	200	<2.5	57	3.8	58	N/A
16-Oct-92	S-3	440	79	1.8	18	4.6	190@	N/A
23-Jan-92	S-3	670	79	1.5	46	15	170**	N/A
11-May-89	S-4	<50	<0.5	<1	<1	<3	<100	N/A
20-Jul-89	S-4	<50	<0.5	<1	<1	<3	<100	N/A
16-Oct-89	S-4	<50	<0.5	<1	<1	<3	<100	N/A
05-Jan-90	S-4	<50	<0.5	<0.5	<0.5	<1	<100	N/A
11-Apr-90	S-4	<50	<0.5	<0.5	<0.5	<1	N/A	N/A
12-Jul-90	S-4	<50	<0.5	1.7	<0.5	2.1	<50	N/A
25-Oct-90	S-4	<50	<0.5	<0.5	<0.5	0.6	<50	N/A
25-Jan-91	S-4	<50	<0.5	1.5	<0.5	2.8	<50	N/A
16-Apr-91	S-4	<50	0.7	<0.5	<0.5	<0.5	<50	N/A
24-Jul-91	S-4	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
18-Oct-91	S-4	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
23-Jan-92	S-4	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
27-Apr-92	S-4	<500	<0.5	<0.5	<0.5	<0.5	<50	N/A
17-Jul-92	S-4	<500	<0.5	<0.5	<0.5	<0.5	74	N/A
16-Oct-92	S-4	<500	<0.5	<0.5	<0.5	<0.5	<50	N/A
23-Jan-93	S-4	<500	<0.5	<0.5	<0.5	<0.5	94++	N/A
11-May-89	S-5	50	<0.5	<1	1	3	<100	N/A

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)	TPH-D (PPB)	OIL (PPB)
20-Jul-89	S-5	<50	10	<1	<1	<3	<100	N/A
16-Oct-89	S-5	<50	<0.5	<1	<1	<3	<100	N/A
05-Jan-90	S-5	<50	<0.5	<0.5	<0.5	<1	<100	N/A
11-Apr-90	S-5	<50	0.5	3.4	0.8	4	N/A	N/A
12-Jul-90	S-5	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
25-Oct-90	S-5	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
25-Jan-91	S-5	<50	<0.5	<0.5	<0.5	0.7	<50	N/A
16-Apr-91	S-5	<50	<0.5	<0.5	<0.5	0.8	<50	N/A
24-Jul-91	S-5	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
18-Oct-91	S-5	120^	43	<0.5	1	0.7	<50	N/A
23-Jan-92	S-5	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
27-Apr-92	S-5	50	<0.5	<0.5	<0.5	0.6	<50	N/A
17-Jul-92	S-5	<50	<0.5	<0.5	<0.5	<0.5	70	N/A
16-Oct-92	S-5	230	13	<0.5	4.9	4.3	57	N/A
23-Jan-93	S-5	<50	<0.5	<0.5	<0.5	<0.5	150++	N/A
15-Nov-89	S-6	<50	<0.5	<0.5	<0.5	<1	<100	N/A
05-Jan-90	S-6	<50	<0.5	0.5	<0.5	<1	<100	N/A
11-Apr-90	S-6	<50	<0.5	<0.5	<0.5	<1	N/A	N/A
12-Jul-90	S-6	<50	<0.5	0.5	<0.5	0.6	<50	N/A
25-Oct-90	S-6	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
25-Jan-91	S-6	<50	<0.5	1.7	<0.5	2.8	<50	N/A
16-Apr-91	S-6	<50	<0.5	<0.5	<0.5	0.6	<50	N/A
24-Jul-91	S-6	<50	<0.5	<0.5	<0.5	0.5	<50	N/A
18-Oct-91	S-6	<50	<0.5	<0.5	<0.5	0.5	<50	N/A
23-Jan-92	S-6	<50	<0.5	<0.5	<0.5	0.5	<50	N/A
27-Apr-92	S-6	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
17-Jul-92	S-6	400	<0.5	<0.5	<0.5	<0.5	130	N/A
16-Oct-92	S-6	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
23-Jan-93	S-6	<50	<0.5	<0.5	<0.5	<0.5	230++	N/A
15-Nov-89	S-7	<50	<0.5	<0.5	<0.5	<1	<100	N/A
05-Jan-90	S-7	<50	<0.5	<0.5	<0.5	<1	<100	N/A
11-Apr-90	S-7	<50	<0.5	<0.5	<0.5	<1	N/A	N/A
12-Jul-90	S-7	<50	<0.5	0.6	<0.5	0.7	N/A	N/A
25-Oct-90	S-7	<50	<0.5	0.5	<0.5	1	<50	N/A

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPB)	BENZENE (PPB)	TOLUENE (PPB)	ETHYLBENZENE (PPB)	XYLENES (PPB)	TPH-D (PPB)	OIL (PPB)
25-Jan-91	S-7	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
16-Apr-91	S-7	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
24-Jul-91	S-7	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
18-Oct-91	S-7	<50	<0.5	<0.5	<0.5	<0.5	140&	N/A
23-Jan-92	S-7	<50	<0.5	<0.5	<0.5	<0.5	140&	N/A
27-Apr-92	S-7	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
17-Jul-92	S-7	<50	<0.5	1.8	0.6	4.1	<50	N/A
16-Oct-92	S-7	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
23-Jan-93	S-7	<50	<0.5	<0.5	<0.5	<0.5	110++	N/A
15-Nov-89	S-8	<50	<0.5	<0.5	<0.5	<1	<100	N/A
05-Jan-90	S-8	<50	<0.5	<0.5	<0.5	<1	<100	N/A
11-Apr-90	S-8	<50	<0.5	<0.5	<0.5	<1	N/A	N/A
12-Jul-90	S-8	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
25-Oct-90	S-8	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
25-Jan-91	S-8	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
16-Apr-91	S-8	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
24-Jul-91	S-8	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
18-Oct-91	S-8	<50	<0.5	<0.5	<0.5	<0.5	360&	N/A
23-Jan-92	S-8	<50	<0.5	<0.5	<0.5	<0.5	90	N/A
27-Apr-92	S-8	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
21-Jul-92	S-8	53	<0.5	1	<0.5	1.8	<50	N/A
16-Oct-92	S-8	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
23-Jan-93	S-8	<50	<0.5	<0.5	<0.5	<0.5	<50	N/A
14-Dec-88	V-1	770	6.4	21	9	87	4,500	N/A
14-Dec-88	V-2	160	3.8	<1	<1	4	1,000	N/A
14-Dec-88	V-3	140	9	<1	<1	3	800	N/A

TABLE 2

HISTORICAL GROUNDWATER QUALITY DATABASE

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

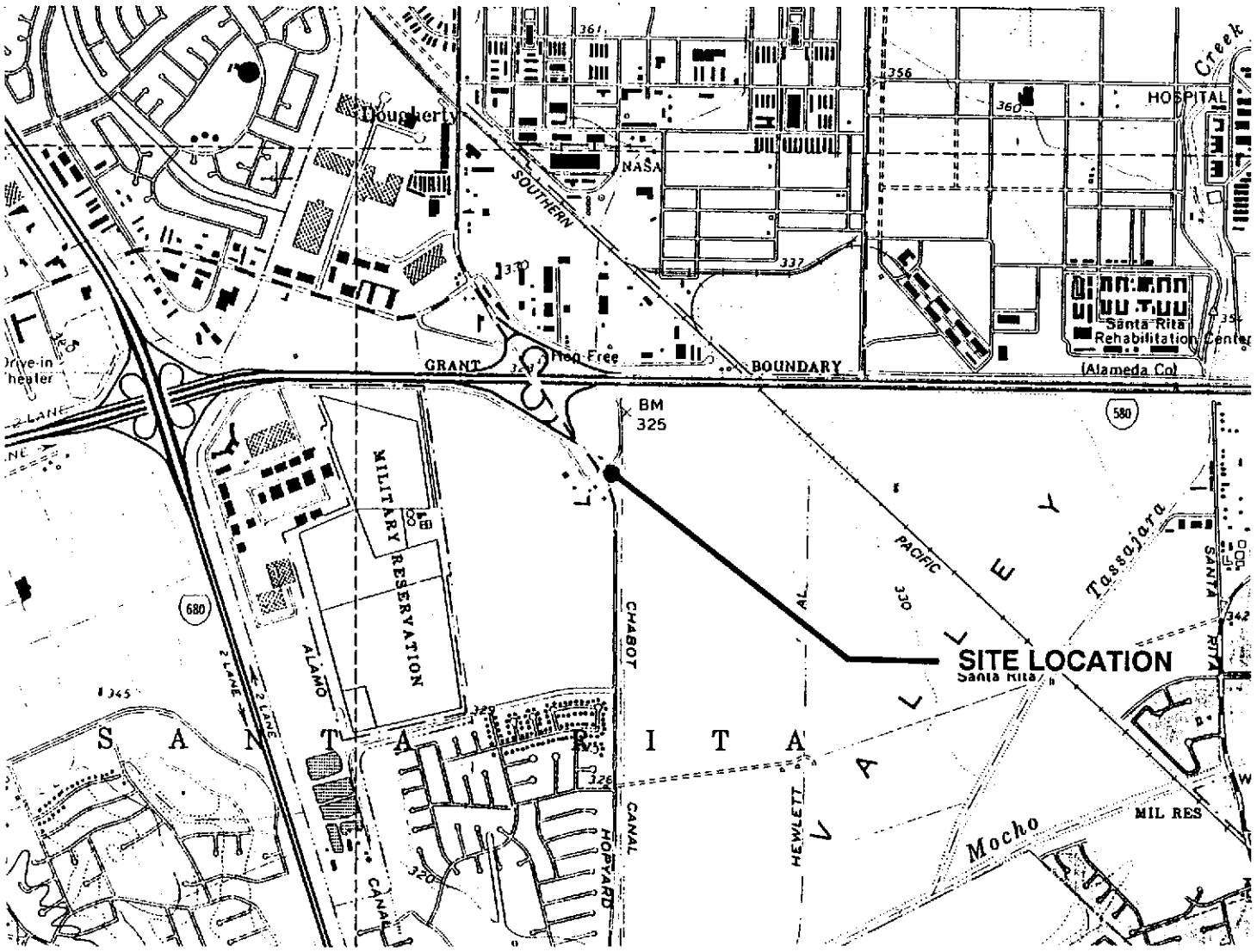
CURRENT DHS ACTION LEVELS
Toluene 100 ppb

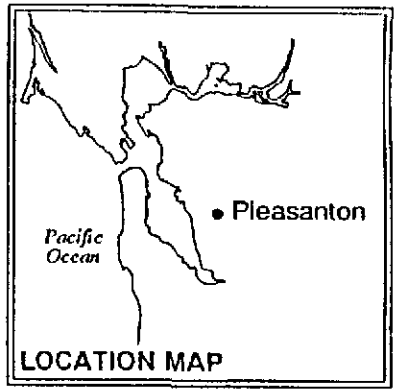
TPH-G	=	Total Petroleum Hydrocarbons calculated as Gasoline
TPH-D	=	Total Petroleum Hydrocarbons calculated as Diesel
PPB	=	Parts Per Billion
N/A	=	Not Analyzed

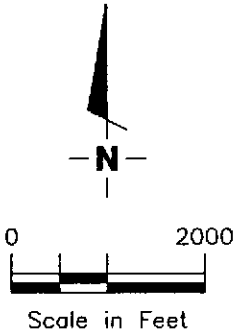
*	=	Compounds detected and calculated as diesel appear to be the less volatile constituents of gasoline.
**	=	Concentration reported as diesel primarily due to combination of diesel and a heavier petroleum product.
^	=	Compounds detected and calculated as low boiling hydrocarbons consist of compounds eluting within the chromatographic range of gasoline, but are not characteristic of the standard gasoline pattern.
&	=	Compounds detected and calculated as low boiling hydrocarbons consist of compounds eluting within the chromatographic range of diesel, but are not characteristic of the standard diesel pattern.
+	=	The chromatographic pattern of the purgeable hydrocarbons found in the sample is similar to the pattern of weathered gasoline.
+ +	=	*Concentration reported as diesel primarily* due to presence of a heavier petroleum product.
@	=	Concentration reported as diesel is primarily due to the presence of a lighter petroleum product, possibly gasoline or kerosene.

Notes:

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).
3. Ethylbenzene and Xylenes were combined in January 1988 in Well S-1.







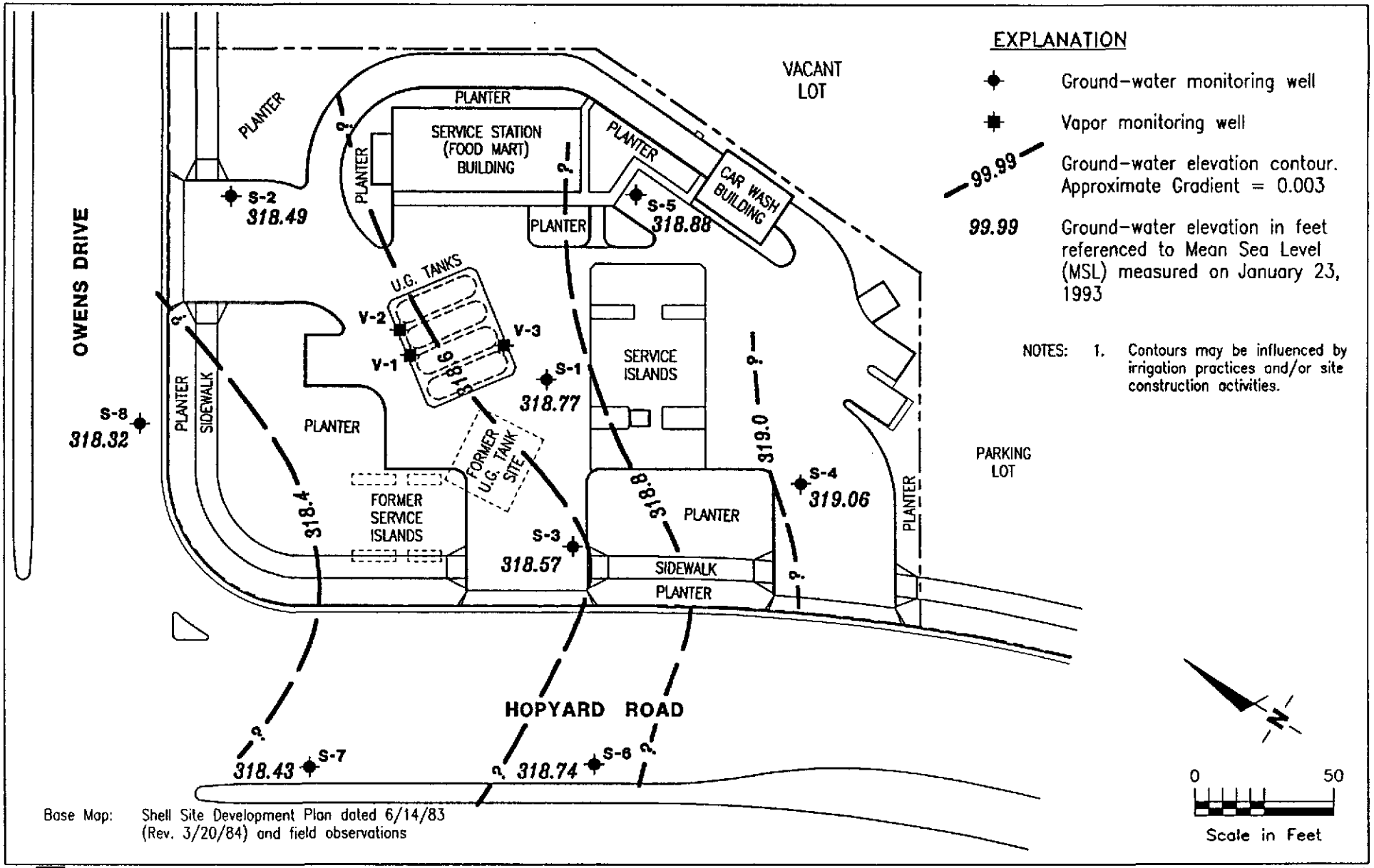
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
Shell Service Station
5251 Hopyard Road
Pleasanton, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7633		12/90	

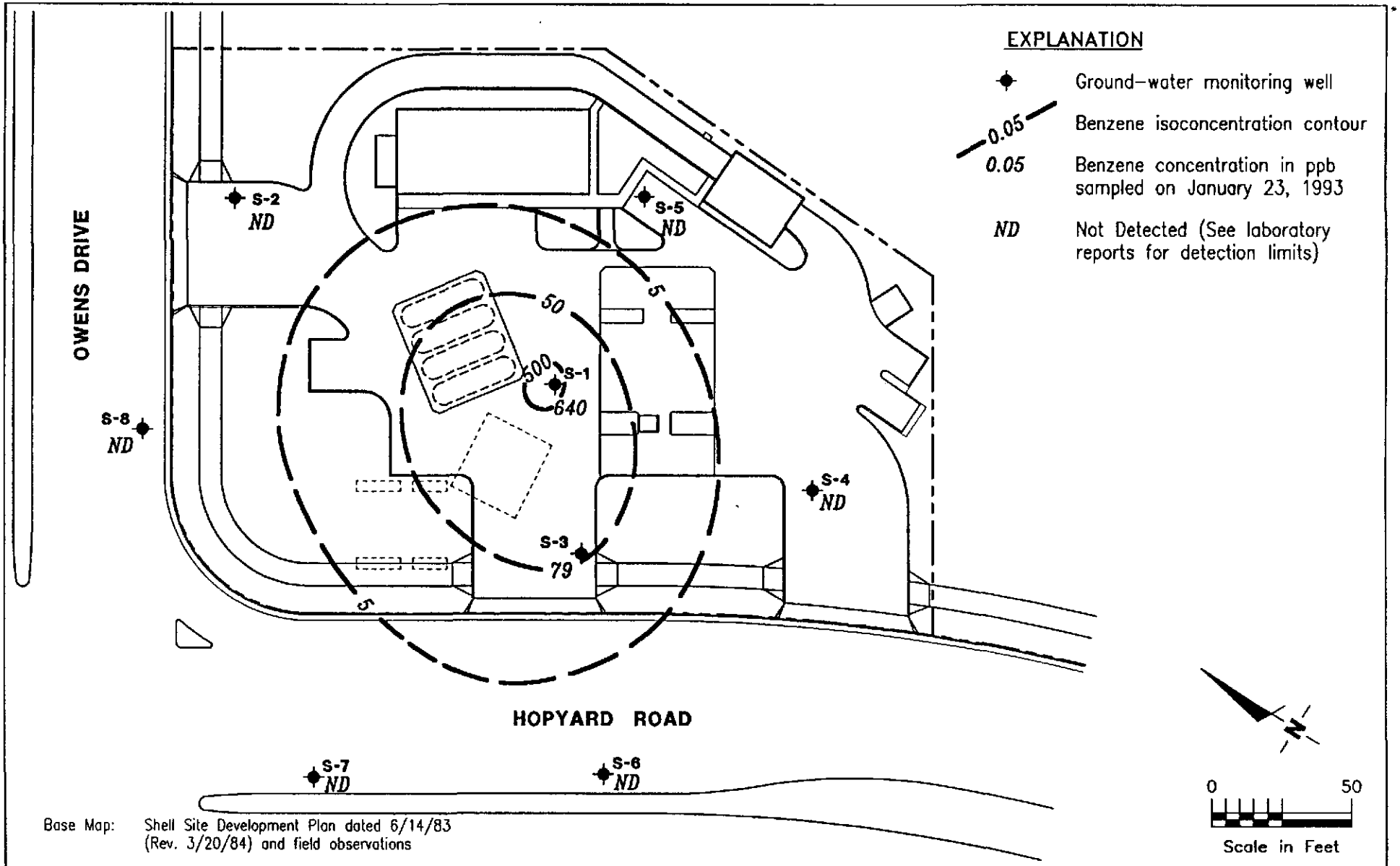


GeoStrategies Inc.

SITE PLAN/POTENTIOMETRIC MAP
Shell Service Station
5251 Hopyard Road
Pleasanton, California

PLATE 2

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763301-17	CY	3/93	



GeoStrategies Inc.

BENZENE ISOCONCENTRATION MAP
Shell Service Station
5251 Hopyard Road
Pleasanton, California

PLATE 3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763301-17		3/93	

BLAINE
TECH SERVICES INC.

985 TIMOTHY DRIV
SAN JOSE CA 9513
(408) 995-553
FAX (408) 293-877

February 3, 1993

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

Attn: Daniel T. Kirk

SITE:
Shell WIC # 204-6138-0907
5251 Hopyard Road
Pleasanton, California

QUARTER:
1st quarter of 1993

QUARTERLY GROUNDWATER SAMPLING REPORT 930123-N-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	01-22-93	GRADE	ODOR	NONE	--	--	7.96	29.98
S-2	3	01-22-93	GRADE	--	NONE	--	--	8.10	24.61
S-3	3	01-22-93	GRADE	ODOR	NONE	--	--	8.81	24.86
S-4	3	01-22-93	GRADE	--	NONE	--	--	8.32	24.56
S-5	3	01-22-93	GRADE	--	NONE	--	--	8.88	24.74
S-6 *	3	01-22-93	GRADE	--	NONE	--	--	7.82	26.09
S-7	3	01-22-93	GRADE	--	NONE	--	--	8.06	25.42
S-8	3	01-22-93	GRADE	--	NONE	--	--	7.00	25.26

* Sample DUP was a duplicate sample taken from well S-6.

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.

James Keller for:
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

(18) 9301267 (10/2)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 1-23-93
Page 1 of 2

Site Address: 5251 HOPYARD, PLEASANTON CA

WIC#: 204-6138-0907

Shell Engineer: DAN KIRK — Phone No.: 510 FAX#: 675-6171

Consultant Name & Address: BLAINE TECH SERVICES 985 TIMOTHY DR. SAN JOSE CA 95133

Consultant Contact: GLEN BENNETT — Phone No.: 408 FAX#: 995-5535

Comments: BTS #930123-N-1

Sampled by: [signature]

Printed Name: NATE OVERMEYER

LAB: ANAMETRIX

Sample ID	Date	Sludge	Soil	Water	Air	No. of conts.
(1) S-1	1/23/93			X		4
(2) S-2	"			"		"
(3) S-3	"			"		"
(4) S-4	"			"		"
(5) S-5	"			"		"
(6) S-6	"			"		"
(7) S-7	"			"		"
(8) S-8	"			"		"

Analysis Required

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
	X				X				40ml VOA	HCL	N
	X				X				"	"	"
	X				X				"	"	"
	X				X				"	"	"
	X				X				"	"	"
	X				X				"	"	"
	X				X				"	"	"
	X				X				"	"	"

CHECK ONE (1) BOX ONLY — C/O# — TURN AROUND TIME

- Quarterly Monitoring — 6411 — 24 hours ☐
- Site Investigation — 6441 — 48 hours ☐
- Soil Closure/Disposal — 6443 — 10 days ☑ (Normal)
- Water Closure/Disposal — 6443 — Other ☐
- Soil/Air Rem. or Sys. O & M — 6442
- Water Rem. or Sys. O & M — 6443
- Other ☐

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

MATERIAL DESCRIPTION: GROUNDWATER

SAMPLE CONDITION/ COMMENTS

Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time
[signature]	NATE OVERMEYER	1-25-93	1335	Jenny S. Carrizosa	JENNY S. CARRIZOSA	1-25-93	1300
Jenny S. Carrizosa	JENNY S. CARRIZOSA	1-25-93	1310	Maria Barajas	Maria Barajas	1/25/93	1310
Relinquished By (signature)	Printed Name	Date	Time	Received (signature)	Printed Name	Date	Time

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

930126? (18) (9/2)

SHELL OIL COMPANY
RETAIL ENVIRONMENTAL ENGINEERING - WEST

CHAIN OF CUSTODY RECORD
Serial No: _____

Date: 1-23-93
Page 2 of 2

Site Address: 5251 HOPYARD, PLEASANTON CA
WIC#: 204-6138-0907
Shell Engineer: DAN KIRK Phone No.: 510 ~~Fax~~ 675-6111
Consultant Name & Address: BLAINE TECH SERVICES 985 TIMOTHY DR. SAN JOSE CA 95133
Consultant Contact: GLEN BENNETT Phone No.: 408 ~~Fax~~ 995-5535
Comments: BTS #930123-N-1
Sampled by: [signature]
Printed Name: NATE OVERMEYER

LAB: ANALYTRIX

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	☐	6442
Water Rem. or Sys. O & M	☐	6443
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	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	Preservation Used	Composite Y/N	MATERIAL DESCRIPTION	SAMPLE CONDITION/ COMMENTS
(9)	DUP.	1/23/93			X		4		X				X		40 mL & 1 Liter	HCL —	N	GROUNDWATER	
(10)	TB	"			X		2						X		40 mL	HCL	N	TRIP BLANK	

Relinquished By (signature): [signature]	Printed Name: NATE OVERMEYER	Date: 1-24-93 Time: 1800	Received (signature): [signature]	Printed Name: BENNY S CARRIZOSA	Date: 1-25-93 Time: 1300
Relinquished By (signature): [signature]	Printed Name: BENNY S. CARRIZOSA	Date: 1-25-93 Time: 1310	Received (signature): [signature]	Printed Name: Maria Barajas	Date: 1/25/93 Time: 13:10
Relinquished By (signature):	Printed Name:	Date: Time:	Received (signature):	Printed Name:	Date: 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 # : 9301267
Date Received : 01/25/93
Project ID : 204-6138-0907
Purchase Order: MOH-B813

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

ANAMETRIX ID	CLIENT SAMPLE ID
9301267- 1	S-1
9301267- 2	S-2
9301267- 3	S-3
9301267- 4	S-4
9301267- 5	S-5
9301267- 6	S-6
9301267- 7	S-7
9301267- 8	S-8
9301267- 9	DUP
9301267-10	TB

This report consists of 9 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

2-8-93
Date

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

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

Workorder # : 9301267
Date Received : 01/25/93
Project ID : 204-6138-0907
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

SAMPLE INFORMATION:

ANAMETRIX SAMPLE ID	CLIENT SAMPLE ID	MATRIX	DATE SAMPLED	METHOD
9301267- 1	S-1	WATER	01/23/93	TPHd
9301267- 2	S-2	WATER	01/23/93	TPHd
9301267- 3	S-3	WATER	01/23/93	TPHd
9301267- 4	S-4	WATER	01/23/93	TPHd
9301267- 5	S-5	WATER	01/23/93	TPHd
9301267- 6	S-6	WATER	01/23/93	TPHd
9301267- 7	S-7	WATER	01/23/93	TPHd
9301267- 8	S-8	WATER	01/23/93	TPHd
9301267- 9	DUP	WATER	01/23/93	TPHd
9301267- 1	S-1	WATER	01/23/93	TPHg/BTEX
9301267- 2	S-2	WATER	01/23/93	TPHg/BTEX
9301267- 3	S-3	WATER	01/23/93	TPHg/BTEX
9301267- 4	S-4	WATER	01/23/93	TPHg/BTEX
9301267- 5	S-5	WATER	01/23/93	TPHg/BTEX
9301267- 6	S-6	WATER	01/23/93	TPHg/BTEX
9301267- 7	S-7	WATER	01/23/93	TPHg/BTEX
9301267- 8	S-8	WATER	01/23/93	TPHg/BTEX
9301267- 9	DUP	WATER	01/23/93	TPHg/BTEX
9301267-10	TB	WATER	01/23/93	TPHg/BTEX

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

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

Workorder # : 9301267
Date Received : 01/25/93
Project ID : 204-6138-0907
Purchase Order: MOH-B813
Department : GC
Sub-Department: TPH

QA/QC SUMMARY :

-The concentration reported as diesel for samples S-1 and S-3 are primarily due to the presence of a combination of diesel and a heavier petroleum product, possibly motor oil.
-The concentrations reported as diesel for samples S-2, S-4, S-5, S-6, S-7 and DUP are primarily due to the presence of a heavier petroleum product, possibly motor oil.
- Sample S-8 was not analyzed for diesel due to the breakage of the concentration tube during the preparation of the extract.

Department Supervisor 2/8/93 Date

Chemist 2.8.93 Date

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

Anametrix W.O.: 9301267
Matrix : WATER
Date Sampled : 01/23/93

Project Number : 204-6138-0907
Date Released : 02/05/93

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-5 -05
Benzene	0.5	640	ND	79	ND	ND
Toluene	0.5	ND	ND	1.5	ND	ND
Ethylbenzene	0.5	110	ND	46	ND	ND
Total Xylenes	0.5	13	ND	15	ND	ND
TPH as Gasoline	50	2300	ND	670	ND	ND
% Surrogate Recovery		93%	86%	131%	86%	85%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		02/01/93	01/30/93	01/30/93	01/30/93	01/30/93
RLMF		10	1	2	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 Rauch 2-4-93
Analyst Date

Cheryl Bateman 2/5/93
Supervisor Date

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

Anametrix W.O.: 9301267
Matrix : WATER
Date Sampled : 01/23/93

Project Number : 204-6138-0907
Date Released : 02/05/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# S-6 -06	Sample I.D.# S-7 -07	Sample I.D.# S-8 -08	Sample I.D.# DUP -09	Sample I.D.# TB -10
Benzene	0.5	ND	ND	ND	ND	ND
Toluene	0.5	ND	ND	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND	ND	ND
% Surrogate Recovery		84%	97%	95%	88%	92%
Instrument I.D.		HP12	HP12	HP12	HP12	HP12
Date Analyzed		01/30/93	01/30/93	01/30/93	01/30/93	01/29/93
RLMF		1	1	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.

Charlene Burch 2-8-93
Analyst Date

Cheryl Berner 2/5/93
Supervisor Date

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

Anametrix W.O.: 9301267
Matrix : WATER
Date Sampled : N/A

Project Number : 204-6138-0907
Date Released : 02/05/93

COMPOUNDS	Reporting Limit (ug/L)	Sample I.D.# BJ2901E3 BLANK	Sample I.D.# BJ3002E3 BLANK	Sample I.D.# BF0101E3 BLANK
Benzene	0.5	ND	ND	ND
Toluene	0.5	ND	ND	ND
Ethylbenzene	0.5	ND	ND	ND
Total Xylenes	0.5	ND	ND	ND
TPH as Gasoline	50	ND	ND	ND
% Surrogate Recovery		122%	112%	112%
Instrument I.D.		HP12	HP12	HP12
Date Analyzed		01/29/93	01/30/93	02/01/93
RLMF		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 2-8-93
Analyst Date

Cheryl Balmer 2/15/93
Supervisor Date

ANALYSIS DATA SHEET - TOTAL PETROLEUM HYDROCARBONS AS DIESEL
ANAMETRIX, INC. (408) 432-8192

Anametrix W.O.: 9301267
Matrix : WATER
Date Sampled : 01/23/93
Date Extracted: 01/27/93

Project Number : 204-6138-0907
Date Released : 02/05/93
Instrument I.D.: HP23

Anametrix I.D.	Client I.D.	Date Analyzed	Reporting Limit (ug/L)	Amount Found (ug/L)
9301267-01	S-1	01/30/93	50	300
9301267-02	S-2	01/30/93	50	140
9301267-03	S-3	01/30/93	50	170
9301267-04	S-4	01/30/93	50	94
9301267-05	S-5	01/31/93	50	150
9301267-06	S-6	01/31/93	50	230
9301267-07	S-7	01/31/93	50	110
9301267-09	DUP	01/31/93	50	120
DWBL012793	METHOD BLANK	01/30/93	50	ND

Note : Reporting limit is obtained by multiplying the dilution factor times 50 ug/L.
ND - Not detected at or above the practical quantitation limit for the method.
TPHd - Total Petroleum Hydrocarbons as diesel is determined by GCFID following sample extraction by EPA Method 3510.

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

Charlotte Burch 2-8-93
Analyst Date

Cheryl Balmer 2/8/93
Supervisor Date

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

Sample I.D. : 204-6138-0907 S-6
Matrix : WATER
Date Sampled : 01/23/93
Date Analyzed : 01/30/93

Anametrix I.D. : 9301267-06
Analyst : CMB
Supervisor : [illegible]
Date Released : 02/05/93

COMPOUND	SPIKE AMT (ug/L)	SAMPLE CONC (ug/L)	MS AMT (ug/L)	% REC MS	MD AMT (ug/L)	% REC MD	RPD	% REC LIMITS
BENZENE	20.0	1.0	17.5	83%	17.9	85%	2%	49-159
TOLUENE	20.0	1.0	18.6	88%	17.8	84%	-4%	53-156
ETHYLBENZENE	20.0	1.0	19.2	91%	18.0	85%	-6%	54-151
TOTAL-XYLENES	20.0	1.0	19.2	91%	18.2	86%	-5%	56-157
p-BFB				88%		84%		53-147

* Quality control limit established by Anametrix, Inc.

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

Sample I.D.	: LAB CONTROL SAMPLE	Instrument ID	: LCSW0130
Matrix	: WATER	Analyst	: CMB
Date Sampled	: N/A	Supervisor	:
Date Analyzed	: 01/30/93	Date Released	: 02/05/93
		Instrument ID	: HP12

COMPOUND	SPIKE AMT. (ug/L)	LCS (ug/L)	REC LCS	%REC LIMITS
Benzene	20.0	17.7	89%	49-159
Toluene	20.0	18.4	92%	53-156
Ethylbenzene	20.0	18.9	95%	54-151
TOTAL Xylenes	20.0	19.2	96%	56-157
P-BFB			86%	53-147

* Limits established by Anametrix, Inc.

TOTAL EXTRACTABLE HYDROCARBON LABORATORY CONTROL SAMPLE REPORT
EPA METHOD 3510 WITH GC/FID
ANAMETRIX, INC. (408) 432-8192

Sample I.D. : LAB CONTROL SAMPLE
Matrix : WATER
Date Sampled : N/A
Date Extracted: 01/27/93
Date Analyzed : 01/31/92

Anametrix I.D. : 9301267-06
Analyst : CMB
Supervisor : [illegible]
Date Released : 02/05/93
Instrument I.D.: HP

COMPOUND	SPIKE AMT (ug/L)	LCS REC (ug/L)	% REC LCS	LCSD REC (ug/L)	% REC LCSD	RPD	% REC LIMITS
DIESEL	1250	1010	81%	980	78%	-3%	63-130

*Quality control established by Anametrix, Inc.