gettler — ryan inc.
general contractors

August 16, 1991

Mr. Rick Mueller
City of Pleasanton
Pleasanton Fire Department
Post Office Box 520
Pleasanton, California 94566-0802

Reference: SHELL SERVICE STATION
3790 HOPYARD ROAD
PLEASANTON, CALIFORNIA
WIC 204-6138-0501

Mr. Mueller:

As requested by Mr. Jack Brastad of Shell Oil Company, we are forwarding a copy of the August 12, 1991 Site Update report prepared for the above referenced location. The report presents the results of the ground-water sampling conducted during the second quarter of 1991.

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

Sincerely,

John Werfal
Project manager

enclosure

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

2150 west winton avenue • hayward, california 94545-1210 • (415) 783-7500

GeoStrategies Inc.

SITE UPDATE

Shell Service Station
3790 Hopyard Road
Pleasanton, California
WIC 204-6138-0501

763201-10

August 12, 1991

GeoStrategies Inc.
2140 WEST WINTON AVENUE
HAYWARD, CALIFORNIA 94545

August 12, 1991

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

Attn: Mr. John Werfal

Re: SITE UPDATE
Shell Service Station
3790 Hopyard Road
Pleasanton, 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 nine monitoring wells and three recovery wells in the site vicinity; Wells S-2 through S-10 and SR-1 through SR-3 (Plate 2). These wells were installed between 1986 and 1989 by EMCON Associates, Woodward-Clyde Consultants, Pacific Environmental Group, and GSI. The old underground storage tanks were replaced in August 1988. Wells S-2 through S-5 and SR-1 through SR-3 are onsite. Wells S-6 through S-10 are offsite. These wells were installed to evaluate the vertical and horizontal extent of petroleum hydrocarbons in soils and shallow groundwater beneath the site.

Quarterly monitoring and sampling of wells began in 1988. 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 from each monitoring well using an electronic oil-water interface probe. Static ground-water levels were measured from the surveyed top of well box and recorded to the nearest 0.01 foot. Corresponding elevations, referenced to Mean Sea Level (MSL) datum are presented in Table 1. Water-level data were used to construct a quarterly potentiometric map (Plate 3). Based on potentiometric data, shallow ground-water flow is to the southeast at a calculated gradient of 0.02.

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 not observed in the wells this quarter.

Ground-water Analytical Data

Ground-water samples were collected on June 26, 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-2, S-4, S-5, S-6, S-10, and SR-3 at concentrations ranging from 0.05 to 1.3 parts per million (ppm). Benzene concentrations detected in these same wells, and in Wells SR-1 and SR-2 ranged from 0.0006 to 0.25 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. Historical chemical analytical data are presented in Table 3.

Quality Control

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

If you have any questions, please call.

GeoStrategies Inc. by,

Ellen C. Fostersmith

Ellen C. Fostersmith
Geologist

John F. Vargas

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

John F. Vargas
Senior Geologist
R.G. 5046

ECF/JFV/kjj

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

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

QC Review: JLP/dhp

763201-10

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-2	26-Jun-91	3	33.9	329.21	15.31	----	313.90	4	6.74	68.5	4580
S-3	26-Jun-91	3	34.8	327.67	13.34	----	314.33	5	6.85	68.0	4620
S-4	26-Jun-91	3	35.4	328.53	14.75	----	313.78	2	6.87	67.7	4210
S-5	26-Jun-91	3	34.2	329.66	17.11	----	312.55	5	6.88	66.3	2360
S-6	26-Jun-91	3	34.1	327.62	15.32	----	312.30	5	6.89	64.8	2380
S-7	26-Jun-91	3	34.6	328.67	17.40	----	311.27	5	6.83	65.9	4160
S-8	26-Jun-91	3	33.8	327.00	15.46	----	311.54	5	6.68	66.3	4890
S-9	26-Jun-91	3	34.8	328.24	18.18	----	310.06	5	6.53	66.7	4370
S-10	26-Jun-91	3	34.1	326.55	14.44	----	312.11	5	6.67	64.9	2410
SR-1	26-Jun-91	4	35.2	329.78	16.99	----	312.79	5	6.56	67.2	4790
SR-2	26-Jun-91	4	35.1	328.35	15.08	----	313.27	5	6.70	66.6	4430
SR-3	26-Jun-91	4	34.9	329.11	15.23	----	313.88	5	6.77	69.2	4230

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

TABLE 2

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
S-2	26-Jun-91	28-Jun-91	0.05*	0.0063	<0.0005	0.0033	0.0019
S-3	26-Jun-91	28-Jun-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-4	26-Jun-91	01-Jul-91	0.22	0.014	<0.0005	0.034	0.017
S-5	26-Jun-91	05-Jul-91	1.3	0.25	0.062	0.12	0.16
S-6	26-Jun-91	28-Jun-91	0.12*	0.0038	0.0008	<0.0005	0.0017
S-7	26-Jun-91	28-Jun-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-8	26-Jun-91	28-Jun-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-9	26-Jun-91	28-Jun-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
S-10	26-Jun-91	28-Jun-91	0.05	0.0018	0.0058	0.0019	0.013

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

SD = Duplicate Sample
SF = Field Blank
TB = Trip Blank

Note: 1. All data shown as <x is 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.

TABLE 2

GROUND-WATER ANALYSIS DATA

WELL NO	SAMPLE DATE	ANALYZED DATE	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHYLBENZENE (PPM)	XYLENES (PPM)
SR-1	26-Jun-91	28-Jun-91	<0.05	0.0050	<0.0005	0.0005	<0.0005
SR-2	26-Jun-91	28-Jun-91	<0.05	0.0006	<0.0005	0.0017	<0.0005
SR-3	26-Jun-91	28-Jun-91	0.24	0.048	0.0042	0.015	0.020
SD-2	26-Jun-91	28-Jun-91	0.05*	0.0039	<0.0005	0.0014	0.0011
SF-5	26-Jun-91	28-Jun-91	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
TB	----	28-Jun-91	<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)	ETHLYBENZENE (PPM)	XYLENES (PPM)
06-Nov-87	S-1	0.92	0.230	<0.005	0.150	0.150
14-Feb-88	S-1	3.5	1.3	<0.04	0.5	0.5
06-Nov-87	S-2	16.0	0.87	0.10	2.7	2.7
14-Feb-88	S-2	1.8	0.44	<0.01	0.14	0.14
13-Oct-88	S-2	0.55	0.11	0.001	0.045	0.015
31-Jan-89	S-2	0.62	0.17	0.002	0.062	0.014
07-Mar-89	S-2	1.90	0.26	0.27	0.13	0.26
26-Jun-89	S-2	0.32	0.088	0.001	0.032	0.010
08-Sep-89	S-2	0.23	0.08	0.001	0.030	0.015
14-Dec-89	S-2	0.16	0.056	0.0005	0.021	0.003
05-Mar-90	S-2	0.71	0.057	<0.0005	<0.0005	0.088
14-Jun-90	S-2	0.11	0.039	0.0005	0.011	0.002
02-Oct-90	S-2	0.29	0.084	0.0017	0.16	0.0081
18-Dec-90	S-2	0.061	0.018	0.0014	0.0022	0.0024
20-Mar-91	S-2	0.11	0.03	0.0022	0.01	0.0070
26-Jun-91	S-2	0.05*	0.0063	<0.0005	0.0033	0.0019
14-Feb-88	S-3	<0.05	<0.0005	<0.001	<0.004	<0.004
13-Oct-88	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
31-Jan-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
07-Mar-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
26-Jun-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-3	<0.05	<0.0005	<0.001	<0.001	<0.003
14-Dec-89	S-3	<0.05	<0.0005	<0.0005	<0.0005	<0.001
05-Mar-90	S-3	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-3	<0.5	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-3	<0.05	<0.0005	<0.0005	<0.0005	0.0010

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
18-Dec-90	S-3	<0.05	<0.0005	0.0016	<0.0005	0.0020
20-Mar-91	S-3	0.07	0.0023	0.0089	0.0040	0.023
26-Jun-91	S-3	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
14-Feb-88	S-4	5.1	0.16	0.008	0.73	0.73
13-Oct-88	S-4	0.53	0.024	0.001	0.025	0.016
31-Jan-89	S-4	1.1	0.033	0.002	0.020	0.024
07-Mar-89	S-4	0.65	0.037	0.001	0.035	0.027
26-Jun-89	S-4	0.67	0.11	<0.001	0.085	0.071
08-Sep-89	S-4	0.38	0.032	<0.001	0.036	0.026
14-Dec-89	S-4	0.21	0.021	<0.0005	0.030	0.023
05-Mar-90	S-4	0.35	0.043	<0.0005	0.024	0.047
14-Jun-90	S-4	0.43	0.074	<0.0005	0.071	0.046
02-Oct-90	S-4	0.70	0.074	0.0022	0.10	0.055
18-Dec-90	S-4	1.4	0.18	0.0029	0.28	0.23
20-Mar-91	S-4	1.2	0.10	<0.002	0.21	0.13
26-Jun-91	S-4	0.22	0.014	<0.0005	0.034	0.017
14-Feb-88	S-5	1.0	0.04	0.086	0.180	0.180
13-Oct-88	S-5	0.56	0.066	0.020	0.018	0.036
31-Jan-89	S-5	0.18	0.027	0.008	0.009	0.013
07-Mar-89	S-5	3.8	0.52	0.53	0.26	0.57
26-Jun-89	S-5	<0.05	0.0038	<0.001	0.002	<0.003
08-Sep-89	S-5	0.11	0.025	0.002	0.002	0.012
14-Dec-89	S-5	1.7	0.30	0.086	0.067	0.14
05-Mar-90	S-5	1.1	0.10	0.11	0.079	0.24
14-Jun-90	S-5	0.6	0.094	0.036	0.04	0.062
02-Oct-90	S-5	4.5	1.4	0.16	0.26	0.30
20-Nov-90	S-5	16.	4.6	0.72	0.79	1.0

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
18-Dec-90	S-5	25.	7.6	1.1	1.3	2.3
20-Mar-91	S-5	0.31	0.039	0.012	0.018	0.03
26-Jun-91	S-5	1.3	0.25	0.062	0.12	0.16
13-Oct-88	S-6	1.1	0.0130	0.001	0.042	0.033
31-Jan-89	S-6	0.34	0.0038	<0.001	0.008	0.003
07-Mar-89	S-6	0.19	0.0038	<0.001	0.007	0.003
26-Jun-89	S-6	0.48	0.015	<0.001	0.006	<0.003
08-Sep-89	S-6	0.27	0.0013	0.001	0.007	<0.003
15-Dec-89	S-6	0.32	0.0010	<0.0005	0.0026	<0.001
06-Mar-90	S-6	0.42	0.0031	<0.0005	0.014	<0.001
14-Jun-90	S-6	0.37	0.0037	0.0009	0.0048	0.003
02-Oct-90	S-6	0.19	0.0066	0.0016	0.0019	0.0028
18-Dec-90	S-6	0.43	0.010	0.0007	0.0016	0.0015
20-Mar-91	S-6	0.13*	0.0066	0.0006	0.0007	0.003
26-Jun-91	S-6	0.12*	0.0038	0.0008	<0.0005	0.0017
13-Oct-88	S-7	<0.05	0.0006	0.001	<0.001	<0.003
31-Jan-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
07-Mar-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
26-Jun-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-7	<0.05	<0.0005	<0.001	<0.001	<0.003
15-Dec-89	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.001
06-Mar-90	S-7	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-7	<0.05	<0.0005	0.0006	<0.0005	0.0009
18-Dec-90	S-7	<0.05	0.0005	<0.0005	<0.0005	0.00086
20-Mar-91	S-7	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
26-Jun-91	S-7	<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)	ETHLYBENZENE (PPM)	XYLENES (PPM)
07-Mar-89	S-8	<0.05	0.0012	0.001	<0.001	<0.003
26-Jun-89	S-8	<0.05	0.0008	0.001	<0.001	<0.003
08-Sep-89	S-8	<0.05	<0.0005	<0.001	<0.001	<0.003
14-Dec-89	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.001
05-Mar-90	S-8	<0.050	<0.0005	0.0005	<0.0005	<0.001
14-Jun-90	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
18-Dec-90	S-8	<0.05	0.0029	0.0070	0.0010	0.0064
20-Mar-91	S-8	0.05*	0.0008	0.0016	0.0026	0.0052
26-Jun-91	S-8	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
07-Mar-89	S-9	<0.05	<0.0005	<0.001	<0.001	<0.003
26-Jun-89	S-9	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-9	<0.05	0.0017	0.002	<0.001	<0.003
15-Dec-89	S-9	<0.05	0.0005	<0.0005	<0.0005	<0.001
06-Mar-90	S-9	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
18-Dec-90	S-9	<0.05	0.020	0.027	0.0071	0.035
20-Mar-91	S-9	0.07*	0.0007	0.0007	<0.0005	0.0010
26-Jun-91	S-9	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
11-Aug-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003
08-Sep-89	S-10	<0.05	<0.0005	<0.001	<0.001	<0.003
15-Dec-89	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.001
06-Mar-90	S-10	<0.050	<0.0005	<0.0005	<0.0005	<0.001
14-Jun-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.001
02-Oct-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	0.0010

TABLE 3

HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
18-Dec-90	S-10	<0.05	<0.0005	<0.0005	<0.0005	0.0014
20-Mar-91	S-10	<0.05	<0.0005	<0.0005	<0.0005	<0.0005
26-Jun-91	S-10	0.05	0.0018	0.0058	0.0019	0.013
11-Oct-89	SR-1	0.20	0.10	<0.001	0.010	0.010
14-Dec-89	SR-1	0.5	0.21	<0.0005	0.016	0.016
05-Mar-90	SR-1	0.064	0.020	<0.0005	0.0015	0.004
14-Jun-90	SR-1	0.06	0.017	<0.0005	0.0019	0.001
02-Oct-90	SR-1	<0.05	0.0050	<0.0005	<0.0005	<0.0005
18-Dec-90	SR-1	<0.05	0.028	0.0055	0.0045	0.0045
20-Mar-91	SR-1	<0.05*	0.0042	<0.0005	0.0014	0.0005
26-Jun-91	SR-1	<0.05	0.0050	<0.0005	0.0005	<0.0005
11-Oct-89	SR-2	0.88	<0.01	0.001	0.029	0.033
14-Dec-89	SR-2	1.1	0.017	<0.0005	0.10	0.067
05-Mar-90	SR-2	0.14	0.0030	<0.0005	0.012	0.007
14-Jun-90	SR-2	<0.05	<0.0005	<0.0005	0.0026	<0.001
02-Oct-90	SR-2	<0.05	<0.0005	<0.0005	0.0005	<0.0005
18-Dec-90	SR-2	<0.05	0.0016	0.0014	0.0016	0.0027
20-Mar-91	SR-2	0.09	0.0013	<0.0005	0.0061	0.0014
26-Jun-91	SR-2	<0.05	0.0006	<0.0005	0.0017	<0.0005
11-Oct-89	SR-3	0.50	0.092	0.010	0.043	0.10
14-Dec-89	SR-3	2.4	0.31	0.027	0.17	0.34
05-Mar-90	SR-3	0.070	0.015	0.0008	0.0058	0.010
14-Jun-90	SR-3	0.47	0.059	0.0023	0.035	0.05
02-Oct-90	SR-3	1.7	0.091	0.0062	0.0070	0.10

TABLE 3

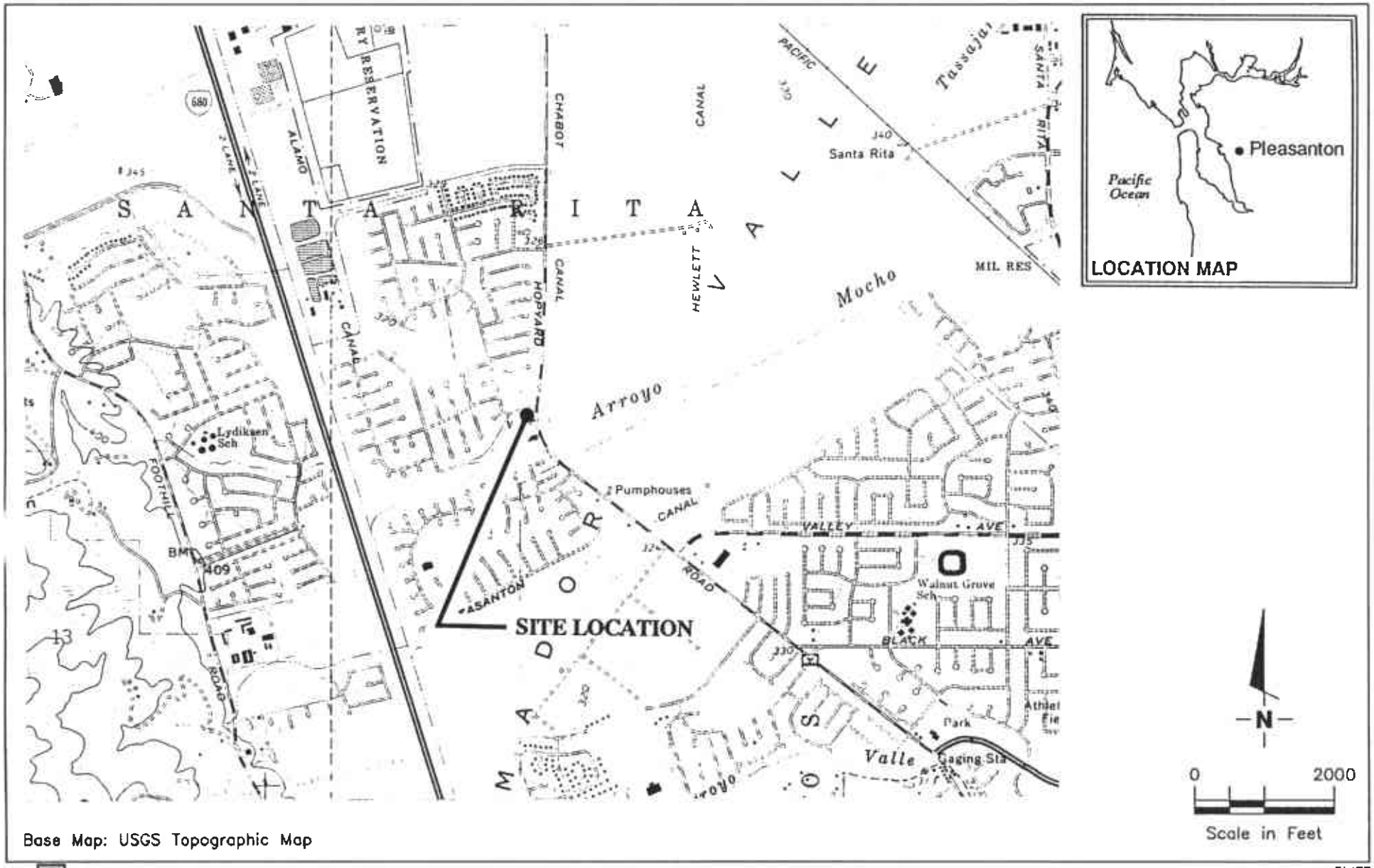
HISTORICAL GROUND-WATER QUALITY DATABASE

SAMPLE DATE	SAMPLE POINT	TPH-G (PPM)	BENZENE (PPM)	TOLUENE (PPM)	ETHLYBENZENE (PPM)	XYLENES (PPM)
18-Dec-90	SR-3	0.14	0.010	0.0008	0.0075	0.014
20-Mar-91	SR-3	1.35	0.97	0.0036	0.064	0.079
26-Jun-91	SR-3	0.24	0.048	0.015	0.020	N/A
26-Jun-91	SR-3	0.24	0.048	0.0042	0.015	0.020

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
* 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.
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).



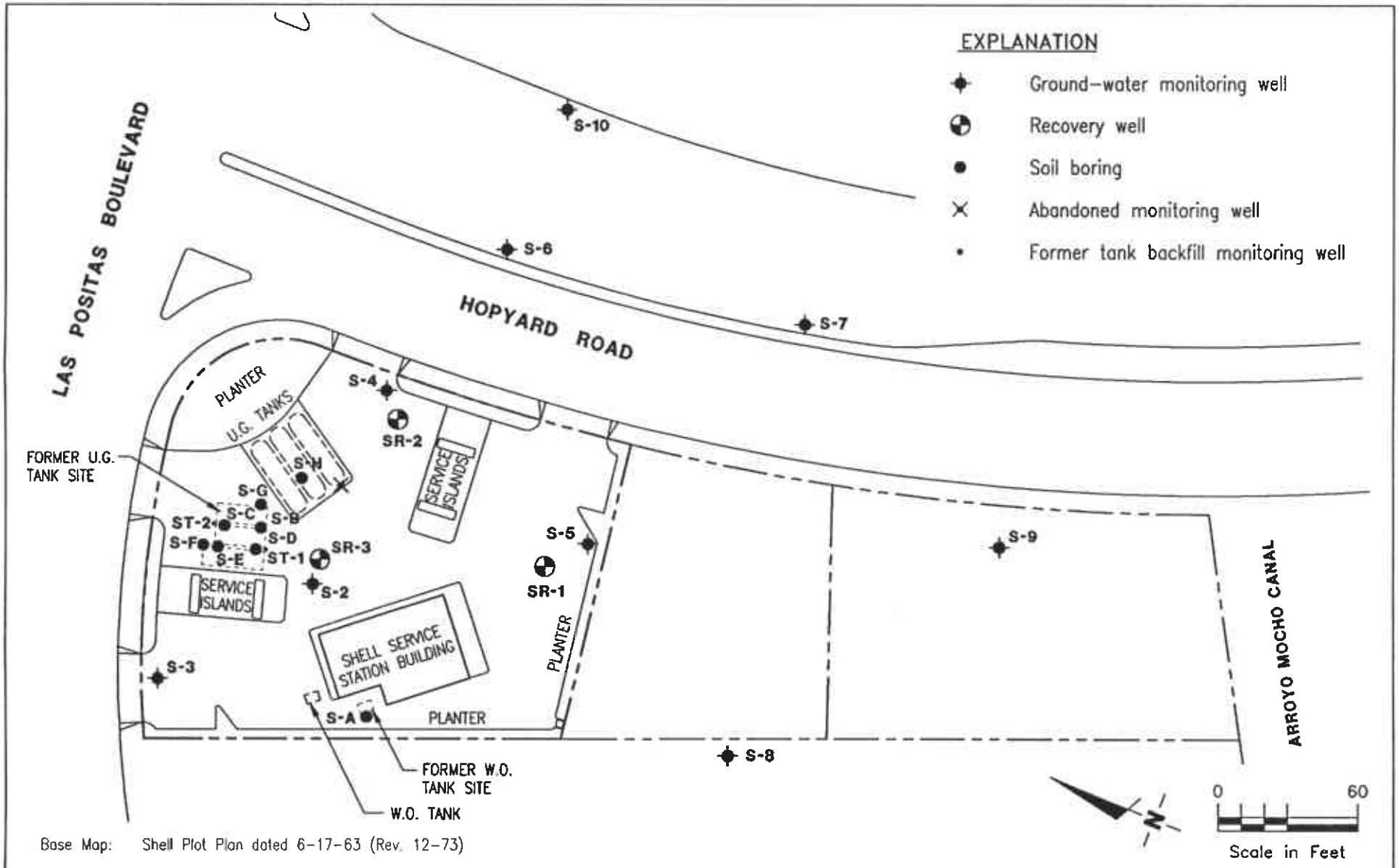
Base Map: USGS Topographic Map

GeoStrategies Inc.

VICINITY MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE
1

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
7632		2/91	



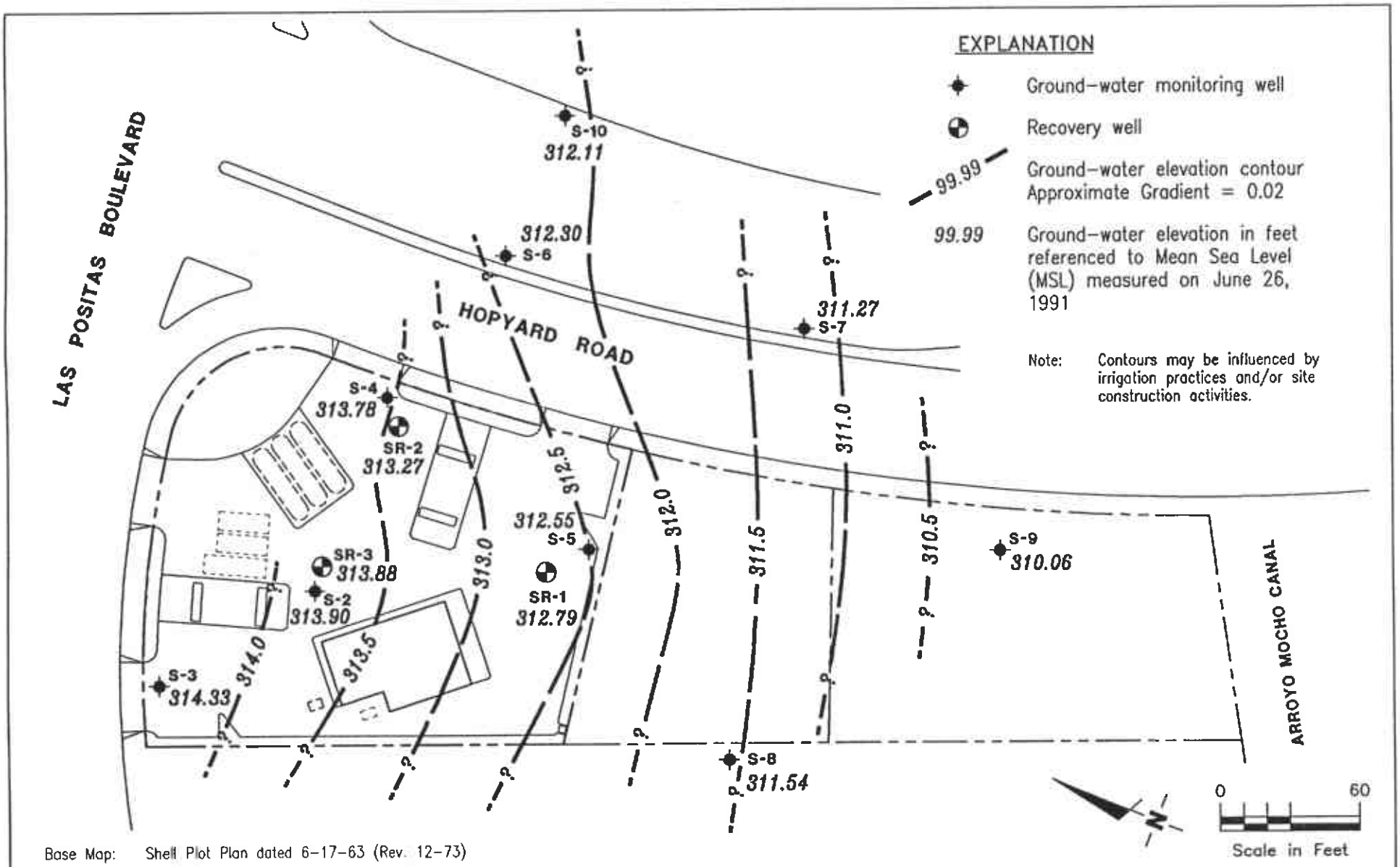
Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GeoStrategies Inc.

SITE PLAN
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE **2**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-10	TFS	8/91	

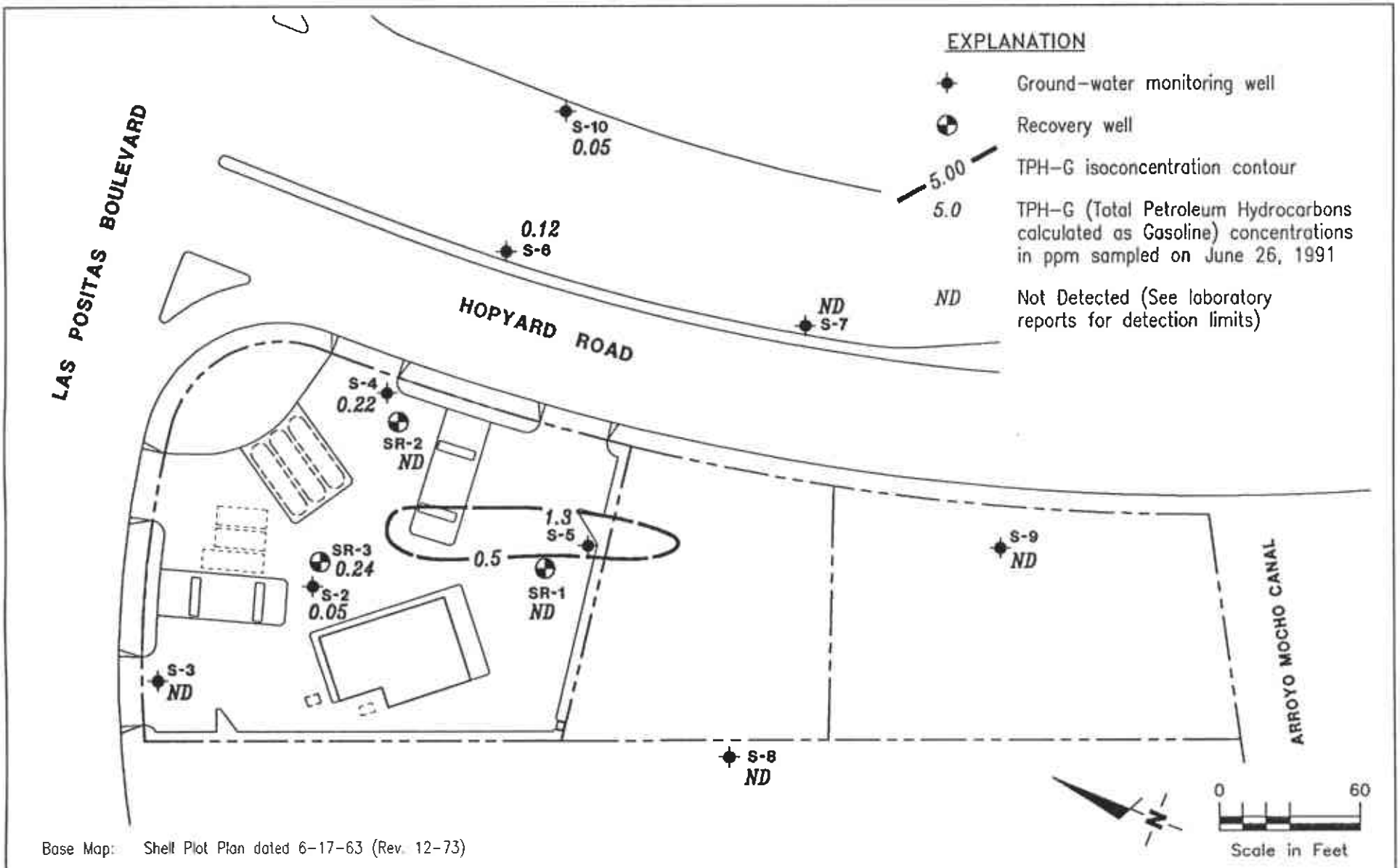


GeoStrategies Inc.

POTENTIOMETRIC MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE
3

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-10	CPS	8/91	



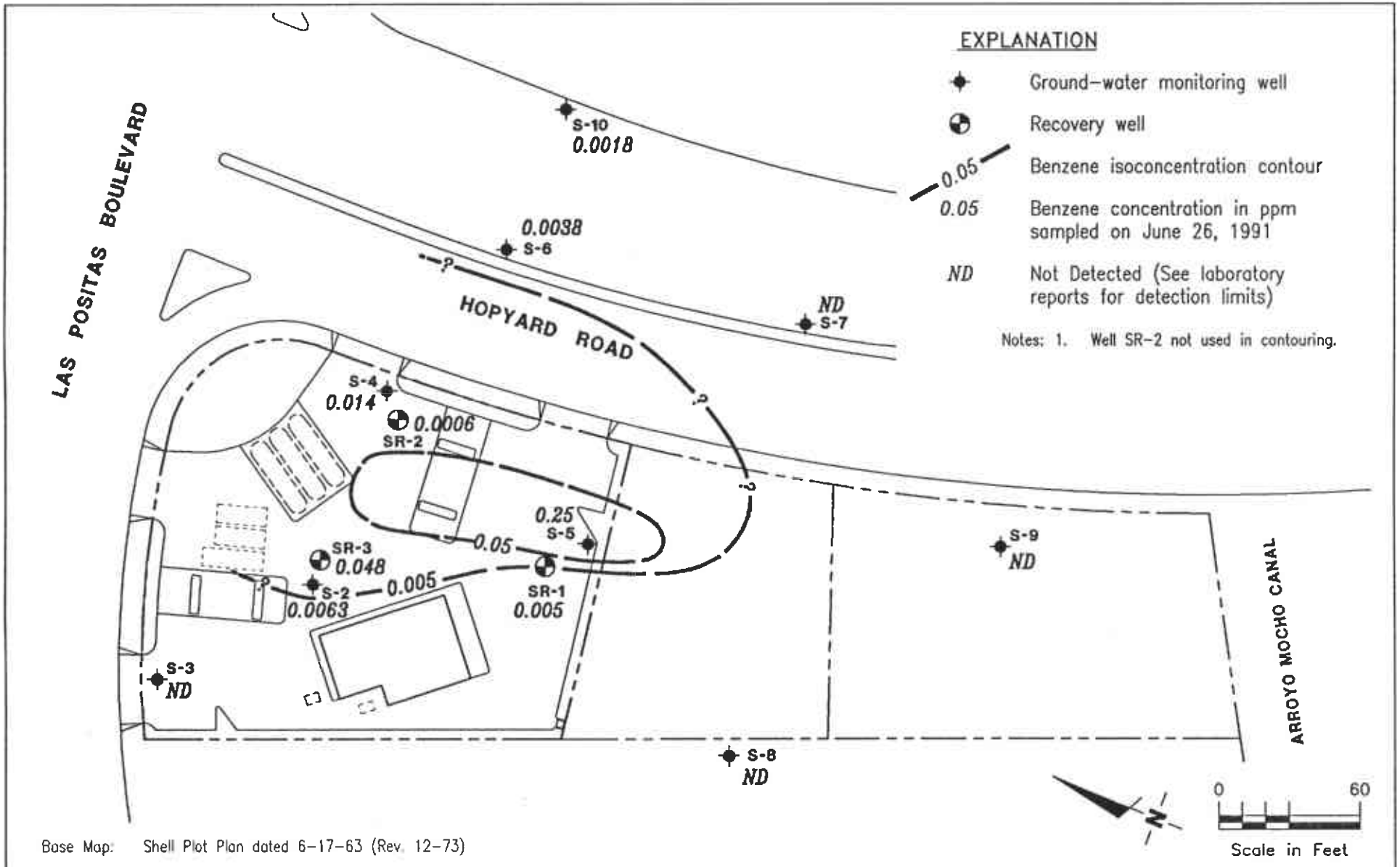
Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GeoStrategies Inc.

TPH-G ISOCONCENTRATION MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE **4**

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-10	EPS	8/91	



Base Map: Shell Plot Plan dated 6-17-63 (Rev. 12-73)

GeoStrategies Inc.

BENZENE ISOCONCENTRATION MAP
Shell Service Station
3790 Hopyard Road
Pleasanton, California

PLATE 5

JOB NUMBER	REVIEWED BY	DATE	REVISED DATE
763201-10	EFS	8/91	

APPENDIX A
ANALYTICAL LABORATORY REPORT
AND CHAIN-OF-CUSTODY

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

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

Date: 07/11/91

Work Order: T1-06-295

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

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3632, 3790 Hopyard, Plsntn
Date Received: 06/26/91
Number of Samples: 9
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-295

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-2**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106295-01**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH > 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.05	&
BTEX			
Benzene	0.0005	0.0063	
Toluene	0.0005	None	
Ethylbenzene	0.0005	0.0033	
Xylenes (total)	0.0005	0.0019	

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	103.
1,3-Dichlorobenzene (BTEX)	102.

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: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-295

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-3**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106295-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

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)	98.
1,3-Dichlorobenzene (BTEX)	97.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-295

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-4**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106295-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		07/01/91
Low Boiling Hydrocarbons	Mod.8015		07/01/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	**0.22**
BTEX		
Benzene	0.0005	**0.014**
Toluene	0.0005	**None**
Ethylbenzene	0.0005	**0.034**
Xylenes (total)	0.0005	**0.017**

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	114*.
1,3-Dichlorobenzene (BTEX)	96.

*Surrogate recovery due to hydrocarbon interference.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-295

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: S-5
SAMPLE DATE: 06/26/91
LAB SAMPLE ID: T106295-04
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		07/05/91
Low Boiling Hydrocarbons	Mod.8015		07/05/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.25	1.3
BTEX		
Benzene	0.0025	0.25
Toluene	0.0025	0.062
Ethylbenzene	0.0025	0.12
Xylenes (total)	0.0025	0.16

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	120*.
1,3-Dichlorobenzene (BTEX)	109.

*Surrogate recovery due to hydrocarbon interference.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-295

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-6**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106295-05**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons calculated as Gasoline	0.05	**0.12**	&
BTEX			
Benzene	0.0005	**0.0038**	
Toluene	0.0005	**0.0008**	
Ethylbenzene	0.0005	**None**	
Xylenes (total)	0.0005	**0.0017**	

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	103.
1,3-Dichlorobenzene (BTEX)	99.

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.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-295

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: S-7
SAMPLE DATE: 06/26/91
LAB SAMPLE ID: T106295-06
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH > 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

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)	100.
1,3-Dichlorobenzene (BTEX)	98.

682-1-E

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-295

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-8**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106295-07**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

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)	101.
1,3-Dichlorobenzene (BTEX)	96.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-295

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-9**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106295-08**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

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)	97.
1,3-Dichlorobenzene (BTEX)	96.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-295

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **S-10**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106295-09**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.05
BTEX		
Benzene	0.0005	0.0018
Toluene	0.0005	0.0058
Ethylbenzene	0.0005	0.0019
Xylenes (total)	0.0005	0.013

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	101.
1,3-Dichlorobenzene (BTEX)	103.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-295

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T106295-10A
EXTRACTION DATE:
ANALYSIS DATE: 06/27/91
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	ND<50.	500.	376.	414.	75.	83.	10.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	101.	107.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-295

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T106295-10B**
EXTRACTION DATE:
ANALYSIS DATE: **07/01/91**
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	ND<50.	500.	402.	411.	80.	82.	2.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	113.	113.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-295

TEST NAME: **Spike and Spike Duplicates**

SAMPLE ID: **Quality Control**
SAMPLE DATE: **not spec**
LAB SAMPLE ID: **T106295-10C**
EXTRACTION DATE:
ANALYSIS DATE: **07/02/91**
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	47.6	49.7	95.	99.	4.
Toluene	ND<0.5	50.0	50.5	51.	101.	102.	1.
Ethyl benzene	ND<0.5	50.0	51.3	51.3	103.	103.	0.
Xylenes	ND<0.5	150.	150.	152.	100.	101.	1.

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

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-295

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.

INTERNATIONAL TECHNOLOGY CORPORATION

ANALYTICAL SERVICES

CERTIFICATE OF ANALYSIS

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

Date: 07/11/91

Work Order: T1-06-296 P.O. Number: MOH 880-021 Vendor #I0002402

This is the Certificate of Analysis for the following samples:

Client Work ID: GR3632, 3790 Hopyard, Plsntn
Date Received: 06/26/91
Number of Samples: 6
Sample Type: aqueous

TABLE OF CONTENTS FOR ANALYTICAL RESULTS

Reviewed and Approved:

Suzanne Veaudry
Project Manager

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-296

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: SR-1
SAMPLE DATE: 06/26/91
LAB SAMPLE ID: T106296-01
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	0.0050
Toluene	0.0005	None
Ethylbenzene	0.0005	0.0005
Xylenes (total)	0.0005	None

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	98.
1,3-Dichlorobenzene (BTEX)	97.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-296

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **SR-2**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106296-02**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	None
BTEX		
Benzene	0.0005	0.0006
Toluene	0.0005	None
Ethylbenzene	0.0005	0.0017
Xylenes (total)	0.0005	None

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

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-296

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **SR-3**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106296-03**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH < 2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

PARAMETER	DETECTION LIMIT	DETECTED
Low Boiling Hydrocarbons calculated as Gasoline	0.05	**0.24**
BTEX		
Benzene	0.0005	**0.048**
Toluene	0.0005	**0.0042**
Ethylbenzene	0.0005	**0.015**
Xylenes (total)	0.0005	**0.020**

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	108.
1,3-Dichlorobenzene (BTEX)	104.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-296

TEST NAME: **Petroleum Hydrocarbons**

SAMPLE ID: **SD-2**
SAMPLE DATE: **06/26/91**
LAB SAMPLE ID: **T106296-04**
SAMPLE MATRIX: **aqueous**
RECEIPT CONDITION: **Cool pH >2**

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

PARAMETER	DETECTION LIMIT	DETECTED	
Low Boiling Hydrocarbons calculated as Gasoline	0.05	0.05	&
BTEX			
Benzene	0.0005	0.0039	
Toluene	0.0005	None	
Ethylbenzene	0.0005	0.0014	
Xylenes (total)	0.0005	0.0011	

SURROGATES	% REC
1,3-Dichlorobenzene (Gasoline)	102.
1,3-Dichlorobenzene (BTEX)	99.

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.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Bopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-296

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: SF-5
SAMPLE DATE: 06/26/91
LAB SAMPLE ID: T106296-05
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

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)	95.
1,3-Dichlorobenzene (BTEX)	94.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-296

TEST NAME: Petroleum Hydrocarbons

SAMPLE ID: TRIP BLANK
SAMPLE DATE: not spec
LAB SAMPLE ID: T106296-06
SAMPLE MATRIX: aqueous
RECEIPT CONDITION: Cool pH < 2

RESULTS in Milligrams per Liter:

	METHOD	EXTRACTION DATE	ANALYSIS DATE
BTEX	8020		06/28/91
Low Boiling Hydrocarbons	Mod.8015		06/28/91

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)	97.
1,3-Dichlorobenzene (BTEX)	99.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICE
SAN JOSE, CA

Work Order: T1-06-296

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T106296-07A
EXTRACTION DATE:
ANALYSIS DATE: 06/27/91
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	ND<50.	500.	376.	414.	75.	83.	10.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	101.	107.

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

IT ANALYTICAL SERVICES
SAN JOSE, CA

Work Order: T1-06-296

TEST NAME: Spike and Spike Duplicates

SAMPLE ID: Quality Control
SAMPLE DATE: not spec
LAB SAMPLE ID: T106296-07B
EXTRACTION DATE:
ANALYSIS DATE: 07/01/91
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	ND<50.	500.	402.	411.	80.	82.	2.

SURROGATES	MS %Rec	MSD %Rec
1,3-Dichlorobenzene	113.	113.

IT ANALYTICAL SERVICES
SAN JOSE, CA

Company: Shell Oil Company
Date: 07/11/91
Client Work ID: GR3632, 3790 Hopyard, Plsntn

Work Order: T1-06-296

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.

T1-06-295

Gettler - Ryan Inc. — ENVIRONMENTAL DIVISION — **2539 Chain of Custody**

COMPANY: Shell — JOB NO.:

JOB LOCATION: 3790 Hopyard Rd

CITY: Pleasanton — PHONE NO.: 783-7500

AUTHORIZED: Tom Paulson — DATE: 6-26-91 — P.O. NO.: 3632.01

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
S-2	3	H_2O	6-26-91 / 1330	THC (gas) BTXE	Cool @ 6-26-91
S-3	↓	↓	/ 1151	↓	
S-4			/ 1220		
S-5			/ 1139		
S-6			/ 1001		
S-7			/ 920		
S-8			/ 846		
S-9			/ 807		
S-10			/ 1033		

RELINQUISHED BY: 6/26/91 1420 — RECEIVED BY: 6-26-91 14:2

RELINQUISHED BY: 6-26-91 1630 — RECEIVED BY:

RELINQUISHED BY: — RECEIVED BY LAB: 6-26-91 16:30

DESIGNATED LABORATORY: STL (SEA) — DHS #: 177

REMARKS: NORMAL TAT — WIC # 204-6138-0501

Eng: J Brasted

Exp 5461

DATE COMPLETED: 6-26-91 — FOREMAN:

ettler - Ryan Inc. — T1-06-296 — ENVIRONMENTAL DIVISION — 2555 Chain of Custody

MPANY Shell JOB NO.

LOCATION 3790 Hopyard Rd

TY Pleasanton PHONE NO. 783-7500

THORIZED Tom Paulson DATE 6-26-91 P.O. NO. 3632.01

SAMPLE ID	NO. OF CONTAINERS	SAMPLE MATRIX	DATE/TIME SAMPLED	ANALYSIS REQUIRED	SAMPLE CONDITION LAB ID
SR-1	3	H_2O	6-26-91 / 1137	THC(gw) BTXE	Cool 6-26-91
SR-2	↓	↓	/ 1020	↓	
SR-3			/ 1235		
SD-2			/ —		
SF-5			/ 1139		
Trip Blank	1		— / —		

LINQUISHED BY: 6/26/91 1420 RECEIVED BY: 6-26-91 1420

LINQUISHED BY: 6-26-91 1630 RECEIVED BY:

LINQUISHED BY: RECEIVED BY LAB: 6-26-91 1630

SIGNATED LABORATORY: IT (Sac.) DHS # 132

MARKS: NORMAL TAT WIC # 204-6138-0501

Eng: J Brasted

Exp: 5461

TE COMPLETED 6-26-91 FOREMAN