File No. 11-92-528-ST

Alameda County
FEB 18 2004
Environmental Health

QUARTERLY GROUNDWATER MONITORING AND SAMPLING AT THE PROPERTY LOCATED AT 3800 FIRST STREET LIVERMORE, CALIFORNIA DECEMBER 21, 1993

PREPARED FOR:
MR. EDWIN SPENCER
880 COLUMBINE COURT
DANVILLE, CALIFORNIA 94526

BY:
SOIL TECH ENGINEERING, INC.
298 BROKAW ROAD
SANTA CLARA, CALIFORNIA 95050

SOIL TECH ENGINEERING, INC.

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SOIL TECH ENGINEERING
Soil, Foundation and Geological Engineers
298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266

December 21, 1993

File No. 11-92-528-ST

Mr. Edwin Spencer
880 Columbine Court
Danville, California 94526

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING FOR THE PROPERTY Located at 3800 First Street, in Livermore, California

Dear Mr. Spencer:

This report presents the results of quarterly groundwater monitoring and sampling conducted by Soil Tech Engineering, Inc. (STE), on November 19, 1993, at the subject site (Figure 1).

SITE DESCRIPTION:

The site is located at 3800 First Street, in Livermore, California, at the intersection of First Street and Portola Avenue (Figure 1). The triangular-shaped parcel is bordered to the north by Portola Avenue, to the east and south First Street and a light industrial complex to the west. Currently, the site is used as an auto dealership. A site map (Figure 2) shows the location of the building, the former fuel storage tanks and the locations of three on-site monitoring wells.

PREVIOUS INVESTIGATION:

In December 1992, three underground storage tanks were removed by Alpha Geo Services (AGS) (2,000 gallon and 550 gallon gasoline and 550 gallon waste oil tanks). Laboratory results of soil samples taken beneath the tank detected moderate levels of TPH as gasoline [98 milligrams per kilogram (mg/Kg)], and BTEX concentrations were less than 1 mg/Kg in the gasoline tanks area. The waste oil tank excavation area showed very low levels of TPH as diesel (1.6 mg/Kg), Toluene, Ethylbenzene and Total Xylenes were less than 0.1 mg/Kg. The concentrations of TOG was 95 mg/Kg. No Volatile Organic Compounds (VOC's) were detected in the waste oil soil sample.

Soil Tech Engineering, Inc. (STE) conducted a remedial excavation and a preliminary soil and groundwater assessment at the site in July 1993.

The results of the remedial excavation activities and the preliminary site assessment were as follows:

- The site is immediately underlain by native soils consisting predominantly of interbedded sandy gravelly silty clay.
- The confirmatory soil samples taken after additional excavation of the former fuel tank areas detected no TPHg, BTEX or TOG. This indicated that most of the grossly contaminated soil was removed.

- Laboratory chemical analyses of soil samples collected from borings detected none of the petroleum hydrocarbons constituents analyzed. Gasoline and the BTEX compounds were not detected in the selected soil samples analyzed.

- Groundwater was encountered between the depths of 47 and 65 feet while drilling. The water samples from three on-site wells detected no TPH, BTEX or VOC's.

- The groundwater flow was toward southerly direction.

The detail of the remedial excavation activities and the preliminary site assessment is described in the STE's report dated August 16, 1993.

SCOPE OF PRESENT WORK:

The scope of present work consist of:

- Monitored wells STMW-1, STMW-2 and STMW-3 for presence of any free floating product (FFP) and measured the depth-to-water table.

- Purged the monitoring wells prior to sampling.

- Sampled the monitoring wells STMW-1, STMW-2 and STMW-3.

- Submitted water sample to a state-certified laboratory for chemical analyzed of Total Petroleum Hydrocarbons as diesel and gasoline (TPHd and TPHg), Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), Total Oil and Grease (TOG) and Volatile Organic Compounds (VOC's) per EPA Methods 5030/8015/602, 3510/5520 and 601.
- Reviewed results and prepared a report of the investigation.

CURRENT FIELD WORK:

GROUNDWATER MONITORING:

On November 19, 1993, STE staff monitored the three on-site wells (STMW-1, STMW-2 and STMW-3) to measure water depth and check for the presence of FFP and/or petroleum odor. No FFP or petroleum odor were detected during monitoring of wells STMW-1, STMW-2 and STMW-3. The water table depths ranged from 41.35 to 50.27 feet below ground surface. Table 1 summarizes the depth of groundwater measurements and observations made.

GROUNDWATER SAMPLING:

Following groundwater monitoring, the wells were purged at least five well volumes and sampled in accordance with STE's Standard Operation Procedures (see Appendix "C"), which contains state and local guidelines for sampling of monitoring wells.

Water samples were decanted into clean VOA vials and were sealed with Teflon lined screw caps, labeled and placed in a cool ice chest and submitted to Argon Mobile Labs, a state-certified laboratory with a chain-of-custody.

The water samples from wells STMW-1 to STMW-3 were analyzed for Total Petroleum Hydrocarbons as diesel and gasoline (TPHd and TPHg) per EPA Method 5030/8015, for Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX) per EPA Method 602, Total Oil & Grease (TOG) per EPA Methods 3510/5520 and Volatile Organic Compounds (VOC's) per EPA Method 601.

GROUNDWATER FLOW:

Water elevation data were used to determine groundwater flow direction. Table 1 summarizes the groundwater elevations. The groundwater flow direction beneath the site was in a southerly direction as of November 19, 1993 (Figure 2).

ANALYTICAL RESULTS:

Groundwater samples were analyzed by Argon Mobile Labs of Ceres, California. The three groundwater samples were analyzed TPHd, TPHg, BTEX, TOG and VOC's

Analytical results of the three groundwater samples detected no TPHd, TPHg, BTEX, TOG or VOC's above the laboratory detection limit. Copy of the analytical results and chain-of-custody docu-

mentation are attached in Appendix "D". The groundwater analytical results are summarized in Table 1.

LIMITATIONS:

This report was prepared in accordance with the currently accepted standards for environmental investigations. The contents of this report reflect the conditions of the subject site at this particular time. No other warranties, expressed or implied, as to the professional advice provided are made.

The findings of this report are based on the results of the independent laboratory analyses and are valid at the present date and conditions. However, changes in the conditions of a property can occur with the passage of time, whether they are due to natural processes or the works of man, on this property or adjacent properties.

If you have any questions or require additional information, please feel free to contact our office at your convenience.

Sincerely,

SOIL TECH ENGINEERING, INC.

NOORI AMELI
PROJECT ENGINEER

LAWRENCE KOO, P. E.
C. E. #34928

FRANK HAMEDI-FARD
GENERAL MANAGER

File No. 11-92-528-ST

A P P E N D I X "A"

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File No. 11-92-528-ST

TABLE 1
GROUNDWATER MONITORING DATA
MEASUREMENT IN FEET

Date	Well No./ Elevation	Depth-to-Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
7/27/93	STMW-1 (101.51)	60.00	55.99	None	None
	STMW-2 (95.82)	65.00	54.27	None	None
	STMW-3 (98.85)	45.52	45.69	None	None
11/19/93	STMW-1 (101.51)	45.11	56.40	None	None
	STMW-2 (95.82)	41.35	54.47	None	None
	STMW-3 (98.85)	50.27	48.58	None	None

FFP - Free Floating Product

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TABLE 2
GROUNDWATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/L)

Date	Well No.	TPHd	TPHg	B	T	E	X	TOG	VOC's
7/29/93	STMW-1	NA	ND	ND	ND	ND	ND	NA	ND
	STMW-2	NA	ND	ND	ND	ND	ND	NA	ND
	STMW-3	ND	ND	ND	ND	ND	ND	ND	ND
11/19/93	STMW-1	ND	ND	ND	ND	ND	ND	ND	ND
	STMW-2	ND	ND	ND	ND	ND	ND	ND	ND
	STMW-3	ND	ND	ND	ND	ND	ND	ND	ND

VOC's - Volatile Organic Compounds
TPHd - Total Petroleum Hydrocarbons as diesel
TPHg - Total Petroleum Hydrocarbons as gasoline
BTEX - Benzene, Toluene, Ethylbenzene, Total Xylenes
TOG - Total Oil and Grease
ND - Not Detected (Below Laboratory Detection Limit)

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A P P E N D I X "B"

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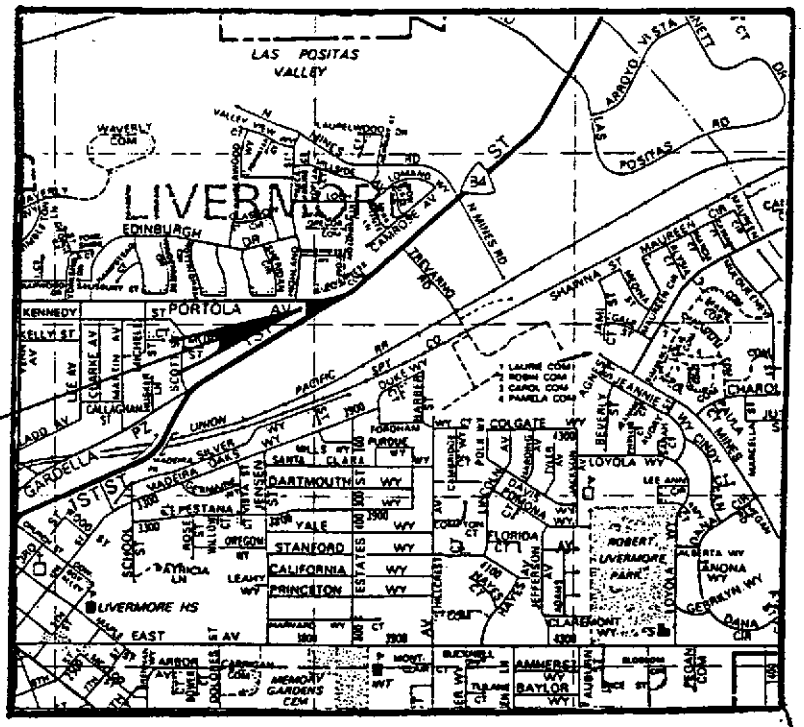

Site Location

Thomas Brothers Map 1993 Edition
San Francisco, Alameda
and Contra Costa Counties

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Figure 1

SOIL TECH ENGINEERING, INC.

M1

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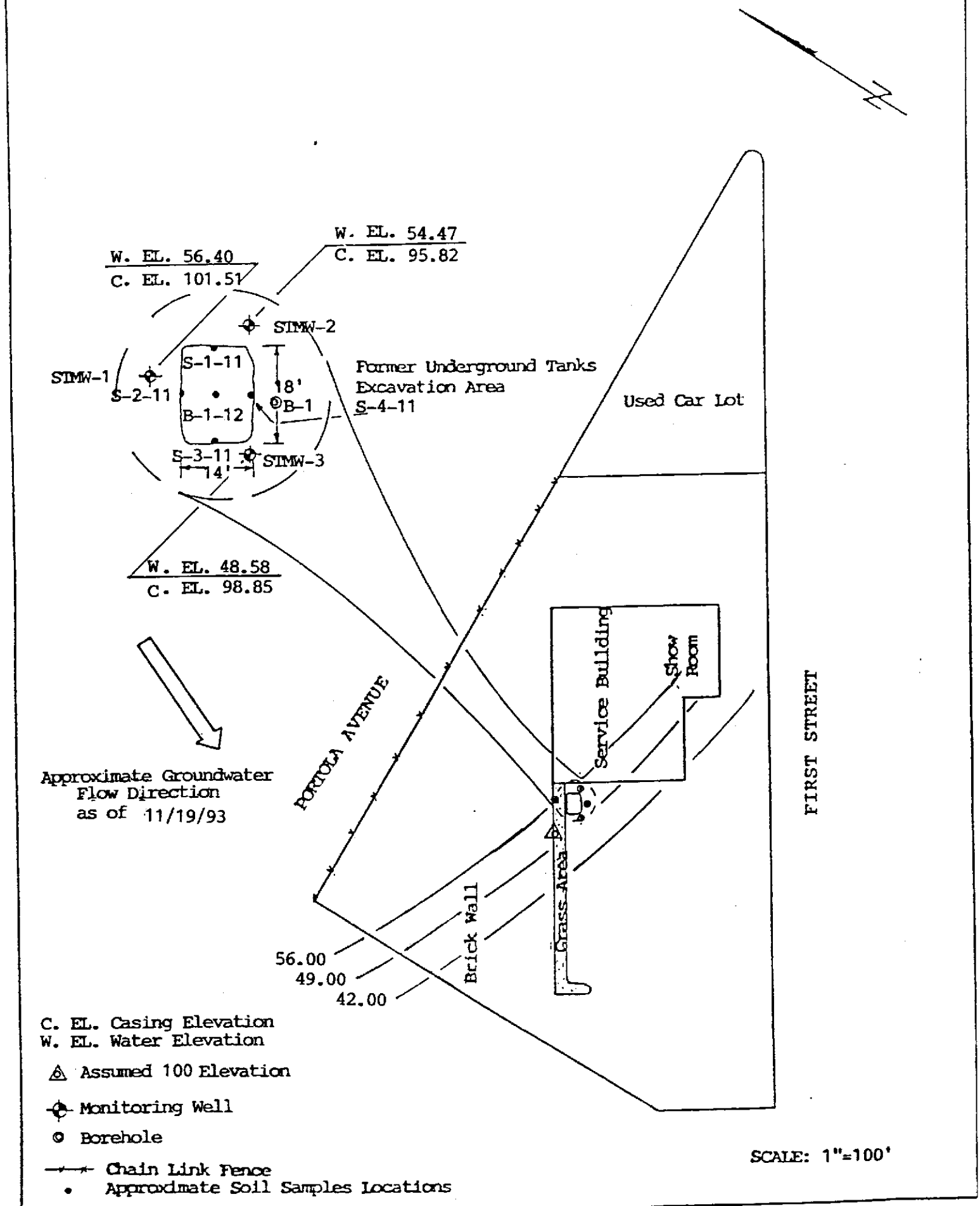

Figure 2

M2

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A P P E N D I X "C"

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File No. 11-92-528-ST

GROUNDWATER SAMPLING

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc...) was cleaned by pumping TSP water solution followed by distilled water.

Prior to purging, the well "Water Sampling Field Survey Forms" were filled out (depth to water and total depth of water column were measured and recorded). The well was then bailed or pumped to remove four to ten well volumes or until the discharged water temperature, conductivity and pH stabilized. "Stabilized" is defined as three consecutive readings within 15% of one another.

The groundwater sample was collected when the water level in the well recovered to 80% of its static level.

Forty milliliter (ml.), glass volatile organic analysis (VOA) vials with Teflon septa were used as sample containers. The groundwater sample was decanted into each VOA vial in such a manner that there was a meniscus at the top. The cap was quickly placed over the top of the vial and securely tightened. The VOA vial was then inverted and tapped to see if air bubbles were present. If none were present, the sample was labeled and refrigerated for delivery under chain-of-custody to the laboratory. The label information would include a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

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A P P E N D I X "D"

SOIL TECH ENGINEERING, INC.

Argon Mobile Labs

3008 McKittrick Ct., Suite N • Ceres, CA 95307 • (209) 537-7836

SOIL TECH ENGINEERING, INC
298 Brokaw Rd.
Santa Clara CA. 95050

Date Sampled: 11/19/93
Date Received: 11/19/93
Date Reported: 11/24/93

Project ID: 11-92-528-ST

Matrix: Water

TPH-Diesel

Sample Number	Sample Description	Detection Limit	Total Petroleum Hydrocarbons as Diesel
		ppb	ppb
T311191	STMW-1	50	<50
T311192	STMW-2	50	<50
T311193	STMW-3	50	<50

QA/QC: Blank is none detected.
108% Matrix Spike Recovery (T311201)
1.1% Duplicate Spike Deviation

Note: Analysis was performed by EPA methods 3510/TPH-LUFT
ppb = ug/L

ARGON MOBILE LABS

Hiram Cueto
Lab Director

Argon Mobile Labs

3008 McKittrick Ct., Suite N • Ceres, CA 95307 • (209) 537-7836

SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 11/19/93
Date Received: 11/19/93
Date Reported: 11/24/93

Project ID: 11-92-528-ST
Sample ID: STMW-1

Lab Number: T311191
Matrix: Water

TPH-gas/BTXE

ANALYTE	Detection Limit ppb	Sample Results ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: Blank is none detected.
91% Spike Recovery (T311145)
8.1% Duplicate Spike Deviation

Note: Analysis was performed using EPA methods 5030/8015/602
ppb = ug/L

ARGON MOBILE LABS

Hiram Cueto
Lab Director

Argon Mobile Labs

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 11/19/93
Date Received: 11/19/93
Date Reported: 11/24/93

Project ID: 11-92-528-ST
Sample ID: STMW-2

Lab Number: T311192
Matrix: Water

TPH-gas/BTXE

ANALYTE	Detection Limit ppb	Sample Results ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: 88% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/602
ppb = ug/L

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd
Santa Clara, CA 95050

Date Sampled: 11/19/93
Date Received: 11/19/93
Date Reported: 11/24/93

Project ID: 11-92-528-ST
Sample ID: STMW-3

Lab Number: T311193
Matrix: Water

TPH-gas/BTXE

ANALYTE	Detection Limit ppb	Sample Results ppb
Total Petroleum Hydrocarbons as Gasoline	50	<50
Benzene	0.5	<0.5
Toluene	0.5	<0.5
Xylenes	0.5	<0.5
Ethylbenzene	0.5	<0.5

QA/QC: 97% Surrogate Spike Recovery

Note: Analysis was performed using EPA methods 5030/8015/602
ppb = ug/L

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd.
Santa Clara, CA 95050

Date Sampled: 11/19/93
Date Received: 11/19/93
Date Reported: 11/24/93

Project ID: 11-92-528-ST

Matrix: Water

TOTAL OIL & GREASE

Sample Number	Sample Description	Detection Limit	Gravimetric Waste Oil as Petroleum Oil
		ppm	ppm
T311191	STMW-1	5.0	<5.0
T311192	STMW-2	5.0	<5.0
T311193	STMW-3	5.0	<5.0

QA/QC: Freon Blank is none detected.
109% Matrix Spike Recovery T311191
94% Duplicate Spike Recovery

Note: Analysis was performed by standard EPA methods 3510/5520
ppm = mg/L

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Hiram Cueto
Lab Director

Argon Mobile Labs

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd.
Santa Clara, CA 95050

Date Sampled: 11/19/93
Date Received: 11/19/93
Date Analyzed: 11/29/93

Project ID: 11-92-528-ST
Sample ID: STMW-1

Lab No: T311191
Matrix: Water

601 Halogenated Volatile Organics

	Det. Lim. (ppb)	Results (ppb)
Bromodichloromethane	1.0	ND
Bromoform	2.0	ND
Bromomethane	0.8	ND
Carbon Tetrachloride	1.2	ND
Chlorobenzene	2.5	ND
Chloroethane	5.2	ND
Chloroform	0.5	ND
2-Chloroethylvinyl ether	1.3	ND
Chloromethane	0.8	ND
Dibromochloromethane	0.9	ND
Dibromomethane	0.9	ND
1,2-Dichlorobenzene	1.5	ND
1,3-Dichlorobenzene	3.2	ND
1,4-Dichlorobenzene	2.4	ND
Dichlorodifluoromethane	2.0	ND
1,1-Dichloroethane	0.7	ND
1,2-Dichloroethane	0.3	ND
1,1-Dichloroethylene	1.3	ND
t-1,2-Dichloroethylene	1.0	ND
Dichloromethane	5.0	ND
1,2-Dichloropropane	4.0	ND
t-1,3-Dichloropropylene	3.4	ND
1,1,2,2-Tetrachloroethane	0.3	ND
1,1,1,2-Tetrachloroethane	0.3	ND
Tetrachloroethylene	0.3	ND
1,1,1-Trichloroethane	0.3	ND
1,1,2-Trichloroethane	0.2	ND
Trichloroethylene	1.2	ND
Trichlorofluoromethane	3.0	ND
Trichloropropane	3.0	ND
Vinyl Chloride	1.8	ND

QA/QC: 83% Surrogate Spike Recovery Bromochloromethane
Note: ppb = ug/L

Argon Mobile Labs

Hiram Cueto
Lab Director

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd.
Santa Clara, CA 95050

Date Sampled: 11/19/93
Date Received: 11/19/93
Date Analyzed: 11/29/93

Project ID: 11-92-528-ST
Sample ID: STMW-2

Lab No: T311192
Matrix: Water

601 Halogenated Volatile Organics

	Det. Lim. (ppb)	Results (ppb)
Bromodichloromethane	1.0	ND
Bromoform	2.0	ND
Bromomethane	0.8	ND
Carbon Tetrachloride	1.2	ND
Chlorobenzene	2.5	ND
Chloroethane	5.2	ND
Chloroform	0.5	ND
2-Chloroethylvinyl ether	1.3	ND
Chloromethane	0.8	ND
Dibromochloromethane	0.9	ND
Dibromomethane	0.9	ND
1,2-Dichlorobenzene	1.5	ND
1,3-Dichlorobenzene	3.2	ND
1,4-Dichlorobenzene	2.4	ND
Dichlorodifluoromethane	2.0	ND
1,1-Dichloroethane	0.7	ND
1,2-Dichloroethane	0.3	ND
1,1-Dichloroethylene	1.3	ND
t-1,2-Dichloroethylene	1.0	ND
Dichloromethane	5.0	ND
1,2-Dichloropropane	4.0	ND
t-1,3-Dichloropropylene	3.4	ND
1,1,2,2-Tetrachloroethane	0.3	ND
1,1,1,2-Tetrachloroethane	0.3	ND
Tetrachloroethylene	0.3	ND
1,1,1-Trichloroethane	0.3	ND
1,1,2-Trichloroethane	0.2	ND
Trichloroethylene	1.2	ND
Trichlorofluoromethane	3.0	ND
Trichloropropane	3.0	ND
Vinyl Chloride	1.8	ND

QA/QC: 80% Surrogate Spike Recovery Bromochloromethane
Note: ppb = ug/L

Argon Mobile Labs

Hiram Cueto
Lab Director

Argon Mobile Labs

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SOIL TECH ENGINEERING, INC.
298 Brokaw Rd.
Santa Clara, CA 95050

Date Sampled: 11/19/93
Date Received: 11/19/93
Date Analyzed: 11/29/93

Project ID: 11-92-528-ST
Sample ID: STMW-3

Lab No: T311193
Matrix: Water

601 Halogenated Volatile Organics

	Det. Lim. (ppb)	Results (ppb)
Bromodichloromethane	1.0	ND
Bromoform	2.0	ND
Bromomethane	0.8	ND
Carbon Tetrachloride	1.2	ND
Chlorobenzene	2.5	ND
Chloroethane	5.2	ND
Chloroform	0.5	ND
2-Chloroethylvinyl ether	1.3	ND
Chloromethane	0.8	ND
Dibromochloromethane	0.9	ND
Dibromomethane	0.9	ND
1,2-Dichlorobenzene	1.5	ND
1,3-Dichlorobenzene	3.2	ND
1,4-Dichlorobenzene	2.4	ND
Dichlorodifluoromethane	2.0	ND
1,1-Dichloroethane	0.7	ND
1,2-Dichloroethane	0.3	ND
1,1-Dichloroethylene	1.3	ND
t-1,2-Dichloroethylene	1.0	ND
Dichloromethane	5.0	ND
1,2-Dichloropropane	4.0	ND
t-1,3-Dichloropropylene	3.4	ND
1,1,2,2-Tetrachloroethane	0.3	ND
1,1,1,2-Tetrachloroethane	0.3	ND
Tetrachloroethylene	0.3	ND
1,1,1-Trichloroethane	0.3	ND
1,1,2-Trichloroethane	0.2	ND
Trichloroethylene	1.2	ND
Trichlorofluoromethane	3.0	ND
Trichloropropane	3.0	ND
Vinyl Chloride	1.8	ND

QA/QC: 116% Surrogate Spike Recovery Bromochloromethane
Note: ppb = ug/L

Argon Mobile Labs

Hiram Cueto
Lab Director

PROJ. NO.	NAME
11-92-528-ST	3800 First st. LIVERMORE

SAMPLERS: *(Signature)* N. Amrollo

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG/BTE&X	TPHD	TO&G	BOLO			REMARKS
1	11/19/93	14^{37}		✓	STMW-1	4	✓	✓	✓	✓			
2	11/19/93	15^{-4}		✓	STMW-2	4	✓	✓	✓	✓			
3	11/19/93	15^{20}		✓	STMW-3	4	✓	✓	✓	✓			

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
N. Amrollo	11/19/93 15^{40}	Miriam Cueto			
Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*
Relinquished by: *(Signature)*	Date / Time	Received for Laboratory by: *(Signature)*	Date / Time	Remarks	

SOIL TECH ENGINEERING
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