File No. 8-90-421-SI

QUARTERLY GROUNDWATER MONITORING AND SAMPLING AT PLAZA CAR WASH LOCATED AT 400 SAN PABLO AVENUE ALBANY, CALIFORNIA NOVEMBER 22, 1991

PREPARED FOR:
MR. MURRAY STEVENS
KAMUR INDUSTRIES
2351 SHORE LINE DRIVE
ALAMEDA, CALIFORNIA 94501

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

November 22, 1991

File No. 8-90-421-SI

Kamur Industries
2351 Shoreline Drive
Alameda, California 94501

ATTENTION: MR. MURRAY STEVENS

SUBJECT: QUARTERLY GROUNDWATER MONITORING AND SAMPLING FOR KAMUR INDUSTRIES AT PLAZA CAR WASH Located at 400 San Pablo Avenue, in Albany, California

Dear Mr. Stevens:

This report presents the results of the second quarterly groundwater sampling conducted by Soil Tech Engineering, Inc. (STE), on November 4, 1991, at the subject site (Figure 1).

Four monitoring wells (MW-2, MW-3, STMW-1 and STMW-2) are located on-site and well OTMW-5 is off-site (See Figure 2). This quarterly well monitoring and sampling was conducted in accordance with STE's recommendations made in "Report of Supplemental Subsurface Investigations", dated May 14, 1991. During this quarter's reporting period, the following field activities were performed:

- Monitored the depth to water in all shallow groundwater wells at the site and in the one off-site well.

- Purged each monitoring well prior to sampling.

- Sampled each monitoring well that did not contain free floating petroleum product (FFP).

- Submitted water samples to a state-certified laboratory to be analyzed for Total Petroleum Hydrocarbons as gasoline (TPHg) and for aromatic hydrocarbons: Benzene, Toluene, Ethylbenzene, and Total Xylenes (BTEX).

- Reviewed results and prepared a report of the investigation.

GROUNDWATER MONITORING:

On November 4, 1991, STE staff monitored the four on-site wells and one off-site well to measure water depth and check for the presence of free floating petroleum product (FFP) and/or petroleum odor. Table 1 summarizes the depth to groundwater measurements and observations made. The groundwater elevation data showed the direction of the groundwater flow, based on November 1991 measurements, to be north to northwest (Figure 2).

GROUNDWATER SAMPLING:

Following groundwater monitoring, each well was purged at least three well volumes and sampled in accordance with STE's Standard Operating Procedures (see Appendix "B"), which follow state and local guidelines for sampling monitoring wells. The samples were submitted for analyses to a California state-certified laboratory, accompanied by chain-of-custody. The samples were analyzed for TPHg and for BTEX per modified EPA Methods 5030/8020.

ANALYTICAL RESULTS:

All wells continued to show the presence of petroleum hydrocarbon constituents. TPHg ranged from 0.97 milligrams per liter (mg/L) to a maximum of 102.7 mg/L; Benzene ranged from 0.1 to 38.8 mg/L; Toluene ranged from 0.019 to 19.1 mg/L; Ethylbenzene ranged from below detection limits to a maximum of 3.2 mg/L; and Xylenes ranged from 0.013 to 8.3 mg/L.

The analytical results are presented in Table 2. The chain-of-custody records and analytical report are included in Appendix "C".

DISCUSSION:

A comparison of the recent analytical results with the July 1991 results showed a decrease in TPHg levels in wells STMW-1 and MW-2; whereas, a slight increase was detected in well STMW-2 and OTMW-5. Toluene, Ethylbenzene, and Xylenes concentrations decreased in wells STMW-1, STMW-2, MW-2 and OTMW-5. However, a substantial increase in the levels of TPHg and BTEX were noted in well MW-3.

The increase in TPHg and BTEX levels in well MW-3 appears to be because of the recent extraction of a large volume of groundwater by PG&E downgradient of well MW-3. In mid-October, PG&E was in the process of replacing a gas line west of the property line on Adams Street and had to extract more than 20,000

gallons of groundwater. Thus, the extraction of the shallow groundwater has resulted in the lateral migration of a contaminated plume towards MW-3.

The groundwater was treated by carbon adsorption and sampled prior to discharge into El Cerrito Creek. It is our understanding that PG&E obtained temporary approval from the California Regional Water Quality Control Board for the discharge of groundwater.

RECOMMENDATION:

Since all wells continue to show levels of petroleum hydrocarbon constituents, STE recommends continuing quarterly monitoring for two more quarters. The proposed program should then be evaluated at the end of the proposed one-year sampling period.

LIMITATIONS:

This report and the associated work have been provided in accordance with the general principles and practices currently employed in the environmental consulting profession. The contents of this report reflect the conditions of the site at this particular time. The findings of this report are based on:

1) The observations of field personnel.

2) The results of laboratory analyses performed by a state-certified laboratory.

It is possible that variations in the soil and groundwater could exist beyond the points explored in this investigation. Also, changes in groundwater conditions of a property can occur with the passage of time due to variations in rainfall, temperature, regional water usage and other natural processes or the works of man on this property or adjacent properties.

This report is issued with the understanding that it is the responsibility of the owner or his/her representative to ensure that the information and recommendations contained herein are called to the attention of the Local Environmental Agency.

The services that STE provided have been in accordance with generally accepted environmental professional practices for the nature and conditions of the work completed in the same or similar localities, at the time the work was performed. This report is not meant to represent a legal opinion. No other warranty, expressed or implied, is made.

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

Sincerely,

SOIL TECH ENGINEERING, INC.

FRANK HAMEDI-FARD
GENERAL MANAGER

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

TABLE 1
GROUNDWATER MONITORING DATA
(Measured in Feet)

Well No./ (Elevation)	Date	Depth-to Water	Groundwater Elevation	FFP Thickness	Petroleum Odor
STMW-1	3/11/91	5.29	95.33	None	None
(100.62)	7/03/91	5.83	94.79	None	Mild
	11/04/91	5.83	94.79	None	Mild
STMW-2	3/11/91	5.25	95.38	None	None
(100.63)	7/03/91	4.75	95.88	None	Mild
	11/04/91	5.92	94.71	None	Mild
MW-2	3/11/91	4.29	95.07	None	Mild
(99.36)	7/03/91	5.83	93.53	None	Strong
	11/04/91	4.79	94.57	None	Mild
MW-3	3/11/91	4.67	95.42	Trace	Moderate
(100.09)	7/03/91	5.75	94.34	Trace	Mild
	11/04/91	5.67	94.42	Trace	Strong
OTMW-5	3/11/91	5.02	95.85	None	Mild
(100.87)	7/03/91	5.75	95.12	None	Mild
	11/04/91	5.77	95.10	None	Mild

FFP = Free Floating Product

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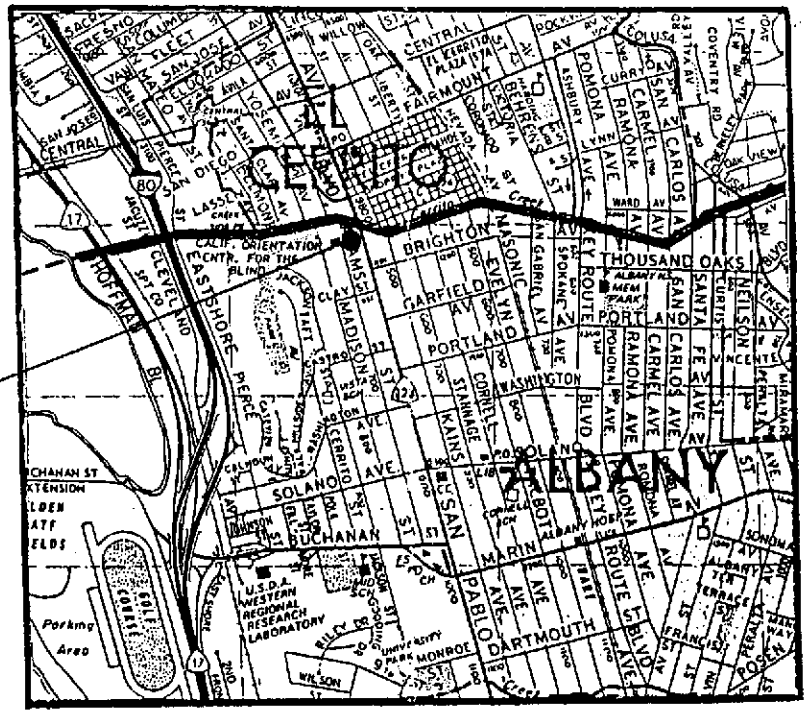
TABLE 2
WATER ANALYTICAL RESULTS
IN
MILLIGRAMS PER LITER (mg/L)

Well No.	Date	TPHg	B	T	E	X
STMW-1	3/13/91	0.85	0.1	0.007	ND	0.15
	7/03/91	5.1	1.8	0.5	0.095	0.56
	11/04/91	2.05	0.76	0.054	ND	0.056
STMW-2	3/13/91	0.17	0.001	0.0017	ND	0.028
	7/03/91	1.8	0.64	0.048	0.044	0.094
	11/04/91	2.14	1.00	0.057	0.003	0.019
MW-2	3/13/91	25.0	2.6	4.4	ND	5.8
	7/03/91	21.0	2.8	3.2	ND	4.3
	11/04/91	3.58	1.7	0.119	0.009	0.056
MW-3	3/13/91	47.0	9.1	9.9	0.27	8.11
	7/03/91	40.0	12.0	4.5	1.2	4.0
	11/04/91	102.7	38.8	19.1	3.2	8.3
OTMW-5	3/13/91	0.12	0.046	0.012	0.001	0.004
	7/03/91	0.81	0.32	0.043	0.016	0.043
	11/04/91	0.97	0.100	0.019	0.005	0.013

TPHg = Total Petroleum Hydrocarbons as gasoline
BTEX = Benzene, Toluene, Ethylbenzene, Xylenes
ND = Not Detected (Below Detection Limit)



THOMAS BROS. MAP, 1982 EDITION
ALAMEDA COUNTY

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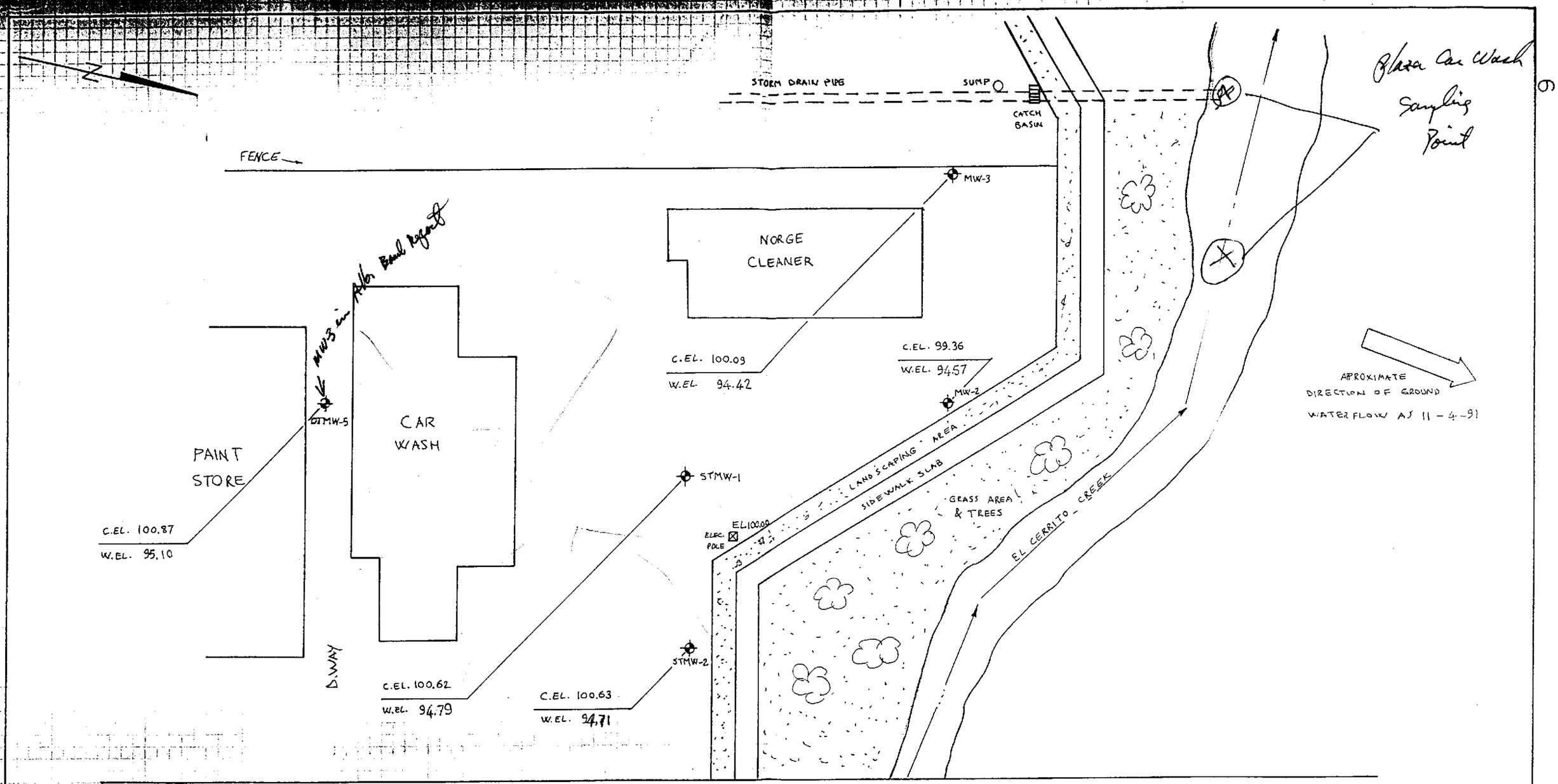
Figure 1: Vicinity Map



DIRECTION OF GROUND WATER FLOW

400 SAN PABLO AVE. ' ALBANY CA

1"=30'	PROJECT NO 8-90-421-SI	FIG-2
DRAWN BY N.A.		11-4-91

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798 BROKAW RD. SANTA CLARA, CA 95050

GROUNDWATER SAMPLING

Prior to collection of groundwater samples, all of the sampling equipment (i.e. bailer, cables, bladder pump, discharge lines and etc...) were cleaned by pumping a 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, 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 is decanted into each VOA vial in such a manner that there is a meniscus at the top. The cap is quickly placed over the top of the vial and securely tightened. The VOA vial is then inverted and tapped to see if air bubbles are present. If none are present, the sample is labeled and refrigerated for delivery under chain-of-custody to the laboratory. Label information includes a sample identification number, job identification number, date, time, type of analysis requested, and the sampler's name.

ENVIRONMENTAL ANALYSIS REPORT

CARTER ANALYTICAL LABORATORY, INC.

590 DIVISION STREET • CAMPBELL, CA 95008 • (408) 364-3030 • FAX (408) 866-0319

ANALYSIS REPORT
FOR

Soil Tech Engineering
298 Brokaw Road
Santa Clara, CA 95050

CONTACT: Frank Hamide **DATE:** 11-11-91

CHAIN OF CUSTODY ID NO: 8-90-421-SI **ORDER NO:** 11822-TD **P.O. NO:** 8-90-421-SI

SITE DESCRIPTION: 490 San Pablo Ave.
Albany

SAMPLE DESCRIPTION:

Water
Sampled: 11-04-91
Received: 11-06-91
Analyzed: 11-08-91
Number of Samples: 10

REQUESTED ANALYSIS:

Methods: Total Petroleum Hydrocarbons as Gasoline (TPH-G) and Benzene, Toluene, Ethyl Benzene, and Xylenes (BTEX).

The analyses reported are considered accurate. Should you wish further support for the reported data, submit your requirements in writing within 10 days. It is Carter Analytical Labs intent to give you complete satisfaction. Please reference the order number when communicating with us. The invoice is due and payable within 30 days from invoice date.

Hazardous Materials Certification No: 304 • Drinking Water Certification No: 953
from the
State of California • Department of Health Services

CARTER ANALYTICAL LABORTORY, INC.

590 DIVISION STREET • CAMPBELL, CA 95008 • (408) 364-3030 • FAX (408) 866-0319

Sample	Customer Label	Description
L1	STMW-1	water
L2	STMW-1	water-duplicate L1
L3	STMW-2	water
L4	STMW-2	water-duplicate L3
L5	MW-2	water
L6	MW-2	water-duplicate L5
L7	MW-3	water
L8	MW-3	water-duplicate L7
L9	OTMW-5	water
L10	OTMW-5	water-duplicate L9

Hydrocarbons and BTEX Analysis of Water

Sample Number	TPH-G (ug/L)	Benzene (ug/L)	Toluene (ug/L)	Ethyl Benzene (ug/L)	Xylenes (ug/L)
L1	2055.	760.	54.	LDL	56.
L3	2143.	1000.	57.	3.	19.
L5	3589.	1700.	119.	9.	56.
L7	102,700.	38,800.	19,100.	3,200.	8,300.
L9	971.	100.	19.	5.	13.
DL:	50.0	0.5	0.5	0.5	0.5
AR (%):	98.9	---	99.3	---	---

LDL indicates results are less than detection limit.
DL = Detection Limit
AR = Average Recovery

CARTER ANALYTICAL LABORATORY

Dr. A. Edward Robinson
Laboratory Manager

J.L. Carter
QAQC Manager

CHAIN OF CUSTODY RECORD

SO# 1182a-L1-L5 CARTER

PROJ. NO.	NAME
8-90-421-51	490 San Pablo Ave. Albany

SAMPLERS: (Signature) TV Arnold

	NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPHG/BTEX	REMARKS
L1-L2	1	11/4/91	10:30		✓	STMW-1	2	✓	
L3-L4	2	11/4/91	11:00		✓	STMW-2	2	✓	
L5-L6	3	11/4/91	11:30		✓	MW-2	2	✓	
L7-L8	4	11/4/91	12:00		✓	MW-3	2	✓	
L9-L10	5	11/4/91	12:30		✓	STMW-5	2	✓	

	Date / Time			
Relinquished by: (Signature) N. Arnold	11/6/91	13:00	Received by: (Signature) Sahr #788	Relinquished by: (Signature) AeroSpec. Del.
Relinquished by: (Signature) Deborah Richmond	11/7	3:40	Received by: (Signature)	Relinquished by: (Signature)
Relinquished by: (Signature)			Received for Laboratory by: (Signature)	

Date / Time	Receive by: (Signature)
11/6 2:48	Deborah Richmond
11/11 12:50	Deborah Richmond

Remarks: Samples recd. cold
NORMAL TURN AROUND

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

CARTER

CHAIN OF CUSTODY RECORD

PROJ. NO.	NAME
8-90-421-51	490 San Pablo Ave. Albany

SAMPLERS: *(Signature)* N Arnold

NO.	DATE	TIME	SOIL	WATER	LOCATION	CONTAINER	ANALYSES REQUESTED (2) TPH G/BTE & X	REMARKS
1	11/4/91	10:30		✓	STMW-1	2	✓	
2	11/4/91	11:00		✓	STMW-2	2	✓	
3	11/4/91	11:30		✓	MW-2	2	✓	
4	11/4/91	12:00		✓	MW-3	2	✓	
5	11/4/91	12:30		✓	9TMW	2	✓	

Relinquished by: *(Signature)*	Date / Time	Received by: *(Signature)*	Relinquished by: *(Signature)*	Date / Time	Receive by: *(Signature)*
N. Arnold	11/6/91 13:00	Soiltech #788			
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	
				NORMAL TURN AROUND	

SOIL TECH ENGINEERING

Soil, Foundation and Geological Engineers

298 BROKAW ROAD, SANTA CLARA, CA 95050 ■ (408) 496-0265 OR (408) 496-0266