James P. Bowers, PE
R. William Rudolph, Jr., PE

ALCO
HAZMAT

94 JUN 14 PM 2:40

June 13, 1994
SCI 469.009

Mr. Robert Mibach
Director, Physical Plant
Peralta Community College District
333 East 8th Street
Oakland, California 94606

Quarterly Groundwater Monitoring
May 1994 Event
College of Alameda
555 Atlantic Avenue
Alameda, California

Dear Mr. Mibach:

This letter records the results of the May 1994 groundwater monitoring event for the referenced site. Monitoring has been implemented in accordance with Regional Water Quality Control Board and Alameda County Health Care Services Agency (ACHCSA) guidelines due to the presence of petroleum hydrocarbons in the soil beneath previous underground fuel storage tanks.

Groundwater Level Measurements and Sampling

Groundwater level measurements from all five wells were obtained on May 3, 1994 and June 2, 1994. Groundwater elevation contours from June 2, 1994 are presented on the Site Plan, Plate 1.

The sampling event was performed between May 3 and May 5, 1994. Initially, the slow recharging wells, MW-1 and MW-3, were purged by bailing them dry with a disposable bailer. Wells MW-2 and MW-5 were purged by bailing with a disposable bailer until temperature, pH, and conductivity measurements had stabilized. Well MW-4 is being sampled semi-annually and was not sampled during this event. Well sampling forms are attached.

The samples were retained in glass containers pre-cleaned by the supplier in accordance with EPA protocol. The samples were placed in an ice chest and transmitted to Curtis and Tompkins, Ltd., a State of California Department of Health Services certified analytical laboratory. The testing program for this event included analyses for total extractable hydrocarbons (TEH), benzene, toluene, ethylbenzene, and xylenes (BTEX), and oil and grease. The results of all analytical testing events are presented in Table 1.

Analytical test reports and Chain-of-Custody forms are attached.

Conclusions and Recommendations

A. Groundwater Flow Direction and Gradient

Groundwater level data indicates that groundwater currently flows in a north-northwest direction at a gradient of about 1 percent. Groundwater elevation data is summarized in Table 2.

B. Former Fuel Oil Tank Area

Petroleum hydrocarbons were not detected during this event in the groundwater at well MW-1, near the previous fuel oil tank. Low concentrations of TEH have been detected during previous events. However, it does not appear that groundwater has been significantly impacted by previous tank releases.

C. Former Waste Oil Tank Area

Extractable hydrocarbons reported as diesel were detected in the groundwater samples obtained from wells MW-3 and MW-5, near the former waste oil tank area. However, the analytical laboratory has indicated that the sample chromatograms more closely resemble a hydraulic oil standard rather than a diesel standard.

D. Former Gasoline Tank Area

A 550 gallon fiberglass storage tank used to store gasoline was removed from the site in 1991. The dispenser, which was situated directly over the top of the tank, was also removed. No visible signs of deterioration of the tank nor piping system were observed.

TVH as gasoline and BTXE were not detected in the soil samples obtained following tank removal. Water, which accumulated in the excavation, did contain levels of TVH as gasoline and BTXE. The excavation was purged of water once and the water was manifested to the Alviso Independent Oil Treatment facility.

A monitoring well, MW-2, was subsequently installed near the tank area to evaluate groundwater quality. TVH as gasoline and BTXE were not detected in the soil sample analyzed from the well boring. Groundwater monitoring has been performed for 6 consecutive quarters and TVH as gasoline and BTXE have never been detected in the well.

Very low concentrations of extractable hydrocarbons reported as diesel were detected in a groundwater sample obtained from MW-2.

Petroleum hydrocarbons were previously undetected in well MW-2. We judge that this result is not associated with a release from the former gasoline tank.

Based on the soil and groundwater data generated to date, we recommend that the gasoline tank area be considered for closure by the ACHCSA. A summary of analytical test data for samples obtained from the former gasoline tank area are presented in Tables 1 and 3.

E. Future Monitoring

In accordance with the monitoring schedule, the next monitoring event will occur in August 1994. During this event, we propose to obtain water level readings from all the wells and samples from wells MW-1, MW-3, MW-4 and MW-5. The groundwater samples will be analyzed for total extractable hydrocarbons, total oil and grease, and BTXE. If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

R. William Rudolph
Geotechnical Engineer 741 (expires 12/31/96)

MFW:JNA:RWR:jmw

2 copies submitted

Attachments:
- Table 1 - Contaminant Concentrations in Groundwater
- Table 2 - Groundwater Elevations
- Table 3 - Contaminant Concentrations in Soil Near the Former Gasoline Tank Area
- Plate 1 - Site Plan
- Plate 2 - Study Area Plan
- Analytical Test Report
- Chain-of-Custody Record
- Well Sampling Forms

cc: Ms. Juliet Shin
Alameda County Health Care Services Agency
Hazardous Materials Division
80 Swan Way, Room #200
Oakland, California 94621

Table 1.
Contaminant Concentrations in Groundwater

	Sampling Date	TVH (ug/l)	TEH Kerosene Range (ug/l)	TEH Diesel Range (ug/l)	TOG (mg/l)	Benzene (ug/l)	Toluene (ug/l)	Ethyl-Benzene (ug/l)	Total Xylenes (ug/l)	EPA 8010 Chemicals
Fuel Oil Tank Area										
MW-1	02/19/92	--	<50	94	--	<0.5	<0.5	<0.5	<0.5	--
	06/29/92	--	<50	110	--	<0.5	<0.5	<0.5	<0.5	--
	09/29/92	--	<50	<50	--	<0.5	<0.5	<0.5	<0.5	--
	12/22/92	--	<50	180	--	<0.5	<0.5	<0.5	<0.5	--
	01/26/94	--	60	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	05/04/94	--	<50	<50	<5	<0.5	<0.5	<0.5	<0.5	--
MW-4	01/26/94	--	<50	<50	<5	<0.5	<0.5	<0.5	<0.5	--
Gasoline Tank Area										
Tank Excavation	08/15/91	800	--	--	--	78	99	10	52	--
MW-2	02/19/92	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--
	06/29/92	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--
	09/29/92	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--
	12/22/92	<50	--	--	--	<0.5	<0.5	<0.5	<0.5	--
	01/25/94	--	<50	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	05/04/94	--	*	50	<5	<0.5	<0.5	<0.5	<0.5	--
Waste Oil Tank Area										
MW-3	02/19/92	<5000+	680	<50	<5	<50	<50	<50	84	ND
	06/29/92	<50	*	190	<5	<0.5	<0.5	<0.5	<0.5	ND
	09/29/92	<50	*	410	<5	<0.5	<0.5	<0.5	<0.5	ND
	12/21/92	<500	*	400	<5	<5	<5	<5	<5	ND
	01/26/94	--	70	<50	<5	<0.5	<0.5	<0.5	0.8	--
	05/05/94	--	<50	140	<5	<0.5	<0.5	<0.5	<0.5	--
MW-5	01/25/94	--	*	5,200++	<5	<0.5	<0.5	<0.5	<0.5	--
	05/04/94	--	*	3,500++	<5	<0.5	<0.5	<0.5	<0.5	--

TVH = Total volatile hydrocarbons as gasoline, EPA 8015/5030 modified
TEH = Total extractable hydrocarbons, EPA 3550/8015 modified
TOG = Total oil and grease, EPA 3550 and SMWW 17:5520 B&F
ug/l = Micrograms per liter or parts per billion (ppb)
mg/l = Milligrams per liter or parts per million (ppm)
-- = Test not requested
+ = Sample diluted due to foaming during purge and trap extraction
ND = Not detected at or above reporting limits. Reporting limits vary from 1.0 to 20 ug/l. See test reports for individual reporting limits.
* = Quantitated as diesel range
++ = Laboratory indicates that the sample chromatogram resembles hydraulic oil.

Table 2.
Groundwater Elevations

Well	TOC Elevation	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
MW-1	12.16	02/24/92	1.64	10.52
		03/09/92	4.28	7.88
		03/24/92	4.33	7.83
		04/28/92	4.54	7.62
		06/29/92	5.92	6.24
		07/27/92	5.74	6.42
		08/27/92	6.04	6.12
		09/24/92	6.16	6.00
		12/16/92	6.19	5.97
		01/21/93	6.83	5.33
		02/07/94	6.01	6.15
		05/03/94	5.03	7.13
		06/02/94	5.14	7.02
MW-2	11.07	02/24/92	4.45	6.62
		03/09/92	3.70	7.37
		01/21/93	6.83	4.24
		03/24/92	3.73	7.34
		04/28/92	4.25	6.82
		06/29/92	4.40	6.67
		07/27/92	4.00	7.07
		08/27/92	4.33	6.74
		09/24/92	4.36	6.71
		12/16/92	4.08	6.99
		01/21/93	4.40	6.67
		02/07/94	3.60	7.47
		05/03/94	4.04	7.03
		06/02/94	4.17	6.90
MW-3	12.65	02/24/92	13.12	-0.47
		03/09/92	8.75	3.90
		03/24/92	6.87	5.78
		04/28/92	6.31	6.34
		06/04/92	7.10	5.55
		06/29/92	10.78	1.87
		07/27/92	6.88	5.77
		08/27/92	6.75	5.90
		09/24/92	7.38	5.27
		12/16/92	6.50	6.15
		01/21/92	10.25	2.40
		02/07/94	11.44	1.21
		05/03/94	7.02	5.63
		06/02/94	9.15	3.50
MW-4	12.22	02/07/94	5.92	6.30
		05/03/94	5.50	6.72
		06/02/94	5.17	7.05

Table 2.
Groundwater Elevations
(continued)

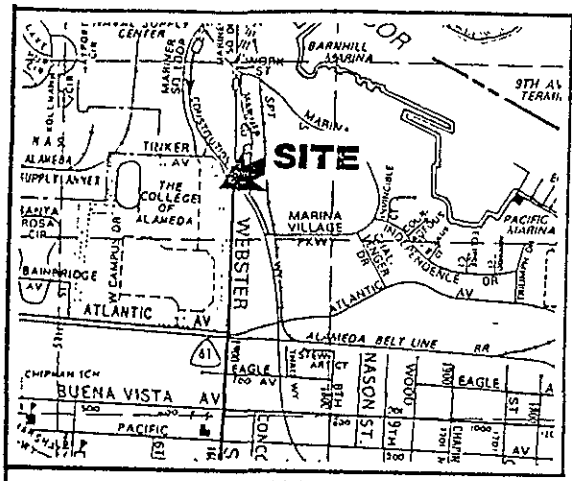
Well	TOC Elevation	Date	Groundwater Depth (feet)	Groundwater Elevation (feet)
MW-5	12.69	02/07/94	4.89	7.80
		05/03/94	4.50	8.19
		06/02/94	4.49	8.20

TOC = Top of Casing
Groundwater depth measured below TOC
TOC elevation surveyed relative to mean sea level

Table 3.
Contaminant Concentrations In Soil
Near the Former Gasoline Tank Area

Sample	Date	TVH (mg/kg)	Benzene ug/kg)	Ethyl-Toluene (ug/kg)	Total Benzene (ug/kg)	Xylenes (ug/kg)	Lead (mg/kg)
A1-1 @ 2'	August 1991	<1.0	<5.0	<5.0	<5.0	<5.0	<3.0
A1-2 @ 5'	August 1991	<1.0	<5.0	<5.0	<5.0	<5.0	15
MW 2 @ 5'	February 1992	<1.0	<5.0	<5.0	<5.0	<5.0	--

TVH = Total volatile hydrocarbons, as gasoline, EPA Method 5030/8015 modified
mg/kg = Milligrams per kilogram or parts per million (ppm)
ug/kg = Micrograms per kilogram or parts per billion (ppb)
-- = Test not requested
<1.0 = Less than detection limit shown



VICINITY MAP

APPROXIMATE SCALE (feet)

0 300 600

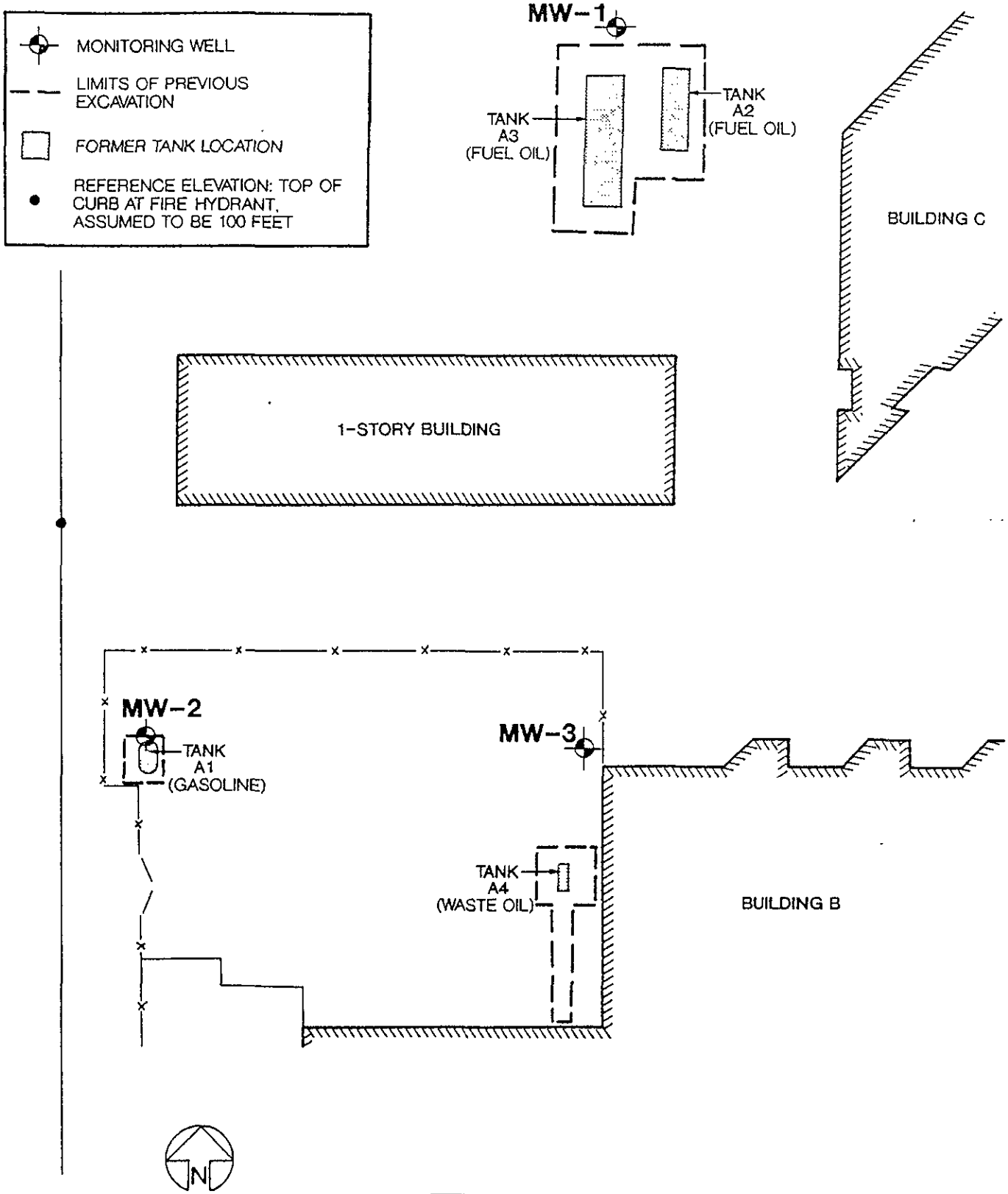
SITE PLAN

Subsurface Consultants

COLLEGE OF ALAMEDA – ALAMEDA, CA

JOB NUMBER	DATE	APPROVED
469.006	3/12/92	MW

PLATE 1



STUDY AREA PLAN

Subsurface Consultants

COLLEGE OF ALAMEDA – ALAMEDA, CA

JOB NUMBER	DATE	APPROVED
469.006	3/12/92	MW

PLATE 2

WELL SAMPLING FORM

Project Name: College of Monterey Well Number: MW 1

Job No.: 469.009 Well Casing Diameter: 2 inch

Sampled By: COLeu Date: 5/3/94

TOC Elevation: _____ Weather: Clear

Depth to Casing Bottom (below TOC) _____ feet

Depth to Groundwater (below TOC) 5.03 feet

Feet of Water in Well _____ feet

Depth to Groundwater When 80% Recovered _____ feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) _____ gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product _____

Purge Method Teflon bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	6.99	19.6	500		
2	7.10	19.4	500		

Total Gallons Purged 2 1/2 gallons

Depth to Groundwater Before Sampling (below TOC) _____ feet

Sampling Method Teflon Bailer

Containers Used 3 (40 ml) 2 (liter) _____ (pint)

5.4

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: College of Alameda Well Number: MW 2

Job No.: 469.009 Well Casing Diameter: 2 inch

Sampled By: CDM Date: 5/4/94

TOC Elevation: _____ Weather: Clear

Depth to Casing Bottom (below TOC) _____ feet

Depth to Groundwater (below TOC) 4.04 feet

Feet of Water in Well _____ feet

Depth to Groundwater When 80% Recovered _____ feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) _____ gallons

Depth Measurement Method Tape & Paste / (Electronic Sounder) / Other

Free Product _____

Purge Method _____

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	7.54	19.4	4500		
1	7.52	19.2	4500		
2	7.53	19.1	4500		
3	7.54	19.1	4500		
5	7.52	19.1	4500		

Total Gallons Purged 5 gallons

Depth to Groundwater Before Sampling (below TOC) _____ feet

Sampling Method Teflon Bailer

Containers Used 3 (40 ml) 2 (liter) _____ (pint)

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: Oilwood Manor Well Number: MW 3

Job No.: 469-009 Well Casing Diameter: 2 inch

Sampled By: CDW Date: 5/3/94

TOC Elevation: _____ Weather: Clear

Depth to Casing Bottom (below TOC) _____ feet

Depth to Groundwater (below TOC) 7.02 feet

Feet of Water in Well _____ feet

Depth to Groundwater When 80% Recovered _____ feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) _____ gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product _____

Purge Method Teflon Bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	7.02	19.1	900-1000		
2	7.11	19.4	900-1000		

Total Gallons Purged _____ gallons

Depth to Groundwater Before Sampling (below TOC) _____ feet

Sampling Method _____

Containers Used 3 (40 ml) 2 (liter) _____ (pint)

Sampled at 1:30

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: Valley of Wands Well Number: MW 5

Job No.: 469.009 Well Casing Diameter: 2 inch

Sampled By: OLew Date: 5/4/94

TOC Elevation: _____ Weather: _____

Depth to Casing Bottom (below TOC) _____ feet

Depth to Groundwater (below TOC) 4.50 feet

Feet of Water in Well _____ feet

Depth to Groundwater When 80% Recovered _____ feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) _____ gallons

Depth Measurement Method Tape & Paste (Electronic Sounder) / Other

Free Product _____

Purge Method Teflon Bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	7.46	19.8	4500		
1	7.29	19.7	4500		
2	7.41	19.8	4530		
3	7.45	20.0	4520		
4	7.43	19.9	4520		

Total Gallons Purged _____ gallons

Depth to Groundwater Before Sampling (below TOC) _____ feet

Sampling Method Teflon Bailer

Containers Used 3 (40 ml) 2 (liter) _____ (pint)

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (510) 486-0900

A N A L Y T I C A L R E P O R T

Prepared for:

Subsurface Consultants
171 12th Street
Suite 201
Oakland, CA 94608

Date: 16-MAY-94
Lab Job Number: 115517
Project ID: 469.009
Location: College of Alameda

Reviewed by: Teresa K Morrison

Reviewed by: Mary Pleasant

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 115517
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 469.009
LOCATION: COLLEGE OF ALAMEDA

DATE SAMPLED: 05/04,05/94
DATE RECEIVED: 05/05/94
DATE ANALYZED: 05/11,12/94
DATE REPORTED: 05/16/94

Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)	REPORTING LIMIT (ug/L)
115517-1	MW-1	ND	ND	ND	ND	0.5
115517-2	MW-2	ND	ND	ND	ND	0.5
115517-3	MW-3	ND	ND	ND	ND	0.5
115517-4	MW-5	ND	ND	ND	ND	0.5

ND = Not detected at or above reporting limit.

Reporting Limit applies to all analytes.

QA/QC SUMMARY

RPD, %	<1
RECOVERY, %	100

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 115517
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 469.009
LOCATION: COLLEGE OF ALAMEDA

DATE SAMPLED: 05/04,05/94
DATE RECEIVED: 05/05/94
DATE EXTRACTED: 05/09/94
DATE ANALYZED: 05/10/94
DATE REPORTED: 05/16/94

Extractable Petroleum Hydrocarbons in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	KEROSENE RANGE (ug/L)	DIESEL RANGE (ug/L)	REPORTING LIMIT (ug/L)
115517-1	MW-1	ND	ND	50
115517-2	MW-2	**	50 +	50
115517-3	MW-3	ND	140 +	50
115517-4	MW-5	**	3,500 +	50

ND = Not detected at or above reporting limit. Reporting limit applies to all analytes.
** Kerosene range not reported due to overlap of hydrocarbon ranges.
+ Sample chromatogram does not resemble diesel standard.

QA/QC SUMMARY:

RPD, %	4
RECOVERY, %	55

Curtis & Tompkins, Ltd

Client: Subsurface Consultants

Laboratory Login Number: 115517

Project Name: College of Alameda
Project Number: 469.009

Report Date: 16 May 94

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **METHOD: SMWW 17:5520BF**

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
115517-001	MW-1	Water	04-MAY-94	05-MAY-94	10-MAY-94	ND	mg/L	5	TR	14137
115517-002	MW-2	Water	05-MAY-94	05-MAY-94	10-MAY-94	ND	mg/L	5	TR	14137
115517-003	MW-3	Water	05-MAY-94	05-MAY-94	10-MAY-94	ND	mg/L	5	TR	14137
115517-004	MW-5	Water	05-MAY-94	05-MAY-94	10-MAY-94	ND	mg/L	5	TR	14137

ND = Not Detected at or above Reporting Limit (RL).

Curtis & Tompkins, Ltd

Q C B a t c h R e p o r t

Client: Subsurface Consultants
Project Name: College of Alameda
Project Number: 469.009

Laboratory Login Number: 115517
Report Date: 16 May 94

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **QC Batch Number: 14137**

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	10-MAY-94

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	86%	SMWW 17:5520BF	10-MAY-94
BSD	85%	SMWW 17:5520BF	10-MAY-94

		Control Limits
Average Spike Recovery	85%	80% - 120%
Relative Percent Difference	1.5%	< 20%

CHAIN OF CUSTODY FORM

PAGE 1 OF 1

PROJECT NAME: College of Alameda
JOB NUMBER: 469.009 LAB: Curtis & Tamplins
PROJECT CONTACT: Marianne Watada TURNAROUND: normal
SAMPLED BY: CDee REQUESTED BY: M. Watada

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR			CONTAINERS: VOA	LITER	PINT	TUBE			METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE		SAMPLING DATE: MONTH	DAY	YEAR	TIME			NOTES	ANALYSIS REQUESTED: TEH	Oil & Grease	BTEX
-1	MW-1	X						3	2					X			X			05	04	94					X	X	X
-2	MW-2	X						3	2					X			X			05	05	94					X	X	X
-3	MW-3	X						3	2					X			X			05	05	94					X	X	X
-4	MW-5	X						3	2					X			X			05	05	94					X	X	X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
CDee	5/5/94 2:00pm	Kathy Ok	5/5/94 1400

COMMENTS & NOTES:

115517

Subsurface Consultants, Inc.
171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607
(510) 268-0461 • FAX: 510-268-0137