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

ALCO
HAZMAT
94 JAN 14 AM 11:47

January 13, 1994
SCI 609.001

STID 209

Ms. Marianne Robison
Buttner Properties
600 West Grand Avenue
Oakland, California 94612

Quarterly Groundwater Monitoring
Sampling Event #3, December 1993
4055 Hubbard Street
Oakland, California

Dear Ms. Robison:

This letter presents quarterly groundwater monitoring results for the referenced site. Groundwater monitoring has been performed at the request of the Alameda County Health Care Services Agency. The location of the site is presented on Plate 1.

Groundwater Sampling

On December 23, 1993, Wells MW-1, MW-2 and MW-3 were sampled. In general, the groundwater monitoring event consisted of (1) measuring groundwater levels using an electric well sounder, (2) checking for free product, (3) purging water from each well until pH, conductivity and temperature had stabilized (approximately 3 well volumes), and (4) after the wells had recovered to at least 80 percent of their initial level, sampling the wells with new disposable bailers. The samples were retained in glass containers pre-cleaned by the supplier in accordance with EPA protocol. The containers were placed in an ice filled cooler and remained iced until delivery to the analytical laboratory. Chain-of-Custody documents accompanied the samples to the laboratory.

Analytical Testing

Analytical testing was performed by Curtis and Tompkins, Ltd., a laboratory certified by the State of California Department of Health Services for hazardous waste and water testing. A sample from each well was analyzed for the following:

1. Total volatile hydrocarbons (TVH), sample preparation and analysis using EPA Methods 5030 (purge and trap) and 8015 modified (gas chromatograph coupled to a flame ionization detector),

2. Total extractable hydrocarbons (TEH), sample preparation and analysis using EPA Methods 3550 (solvent extraction) and 8015 modified (gas chromatograph coupled to a flame ionization detector),

3. Benzene, toluene, ethylbenzene and xylene (BTEX), sample preparation and analysis using EPA methods 5030 (purge and trap) and 8020 (gas chromatograph coupled to a photo-ionization detector), and

4. Total oil and grease (TOG), sample preparation and analysis using SMWW 17:5520 B&F.

A summary of the current and previous analytical test results are presented in Table 1. The groundwater level data are presented in Table 2. Well sampling forms, analytical test reports, and Chain-of-Custody documents are attached.

Conclusions

The groundwater elevation data indicate that the local groundwater flow direction is toward the southwest at a gradient of approximately 0.7 percent as shown on Plate 1. This groundwater flow direction and gradient remains generally consistent with previous measurements.

No free product was observed during initiation of well purging. Analytical results indicate elevated concentrations of volatile and extractable range hydrocarbons in all three wells. Since the hydrocarbon concentrations are similar in each well, including the upgradient well, we judge the contamination is indicative of an upgradient source.

In accordance with the monitoring plan, the next monitoring event will occur during March 1994. If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Jeriann N. Alexander

Jeriann N. Alexander
Civil Engineer 40469 (expires 3/31/95)

JNA:RWR:sld

Attachments: Table 1 - Contaminant Concentrations in Groundwater
Table 2 - Groundwater Elevation Data
Plate 1 - Site Plan
Analytical Test Report
Chain-of-Custody Form

Distribution:

1 copy: Ms. Marianne Robison
Buttner Properties
600 West Grand Avenue
Oakland, California 94612

1 copy: ✓ Ms. Susan Hugo
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

Table 1.
Contaminant Concentrations in Water

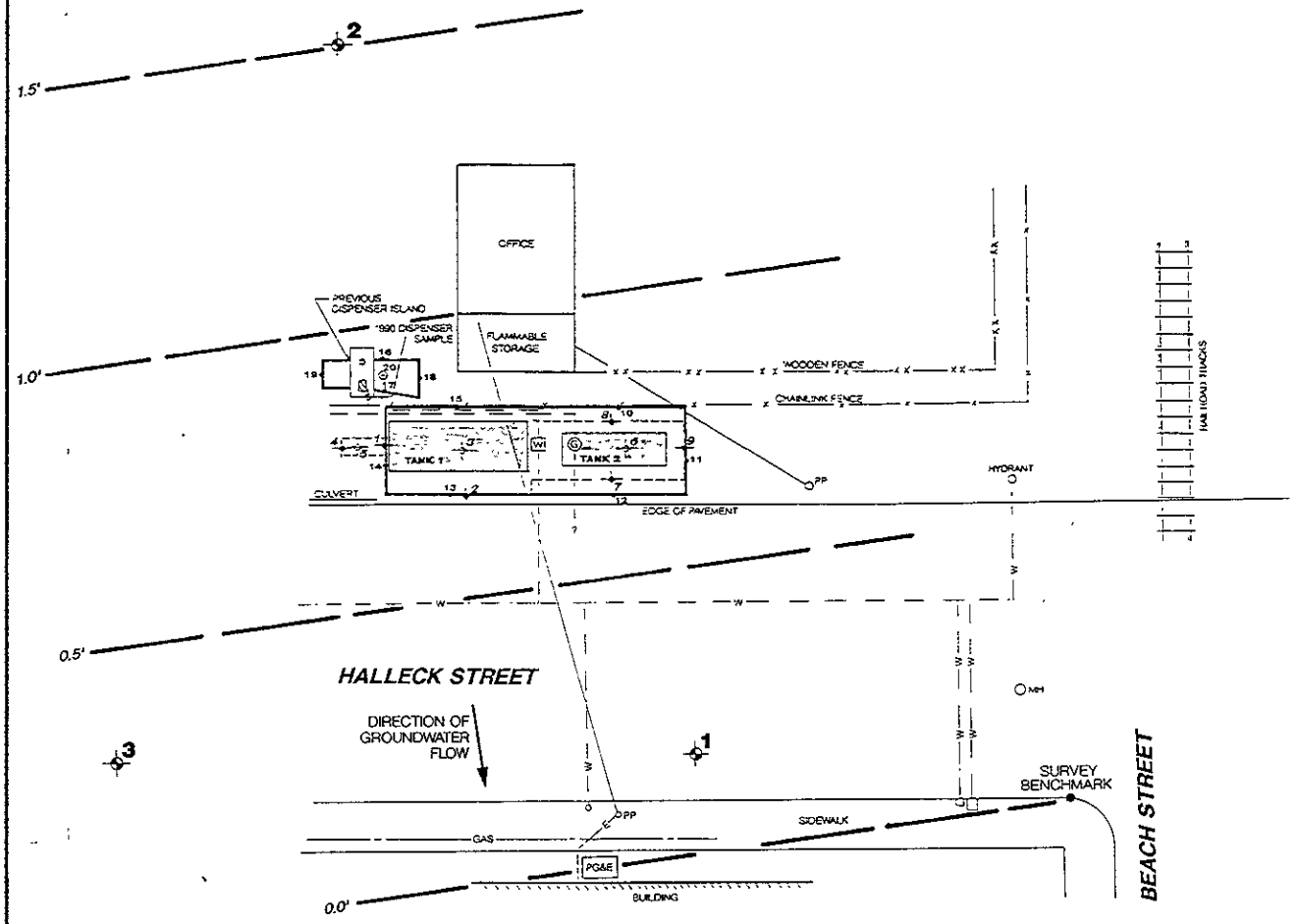
Sample Designation	Date	TVH (ug/l)	TEH (ug/l)	TOG (mg/l)	Benzene (ug/l)	Toluene (ug/l)	Xylene (ug/l)	Ethyl-benzene (ug/l)
MW-1	06/02/93	160	<50	<5	<0.5	<0.5	<0.5	<0.5
	09/15/93	120	<50	<5	<0.5	<0.5	<0.5	<0.5
	12/23/93	120	310	<5	<1.5	<0.5	<0.5	<0.5
MW-2	06/02/93	210	150	<5	<0.5	<0.5	<0.5	<0.5
	09/15/93	150	50	<5	<0.5	<0.5	<0.5	<0.5
	12/23/93	140	220	<5	<0.5	<0.5	<0.5	<0.5
MW-3	06/02/93	280	170	<5	<0.5	<0.5	<0.5	<0.5
	09/15/93	180	<50	<5	<0.5	<0.5	<0.5	<0.5
	12/23/93	190	250	<5	<0.5	<0.5	<0.5	<0.5

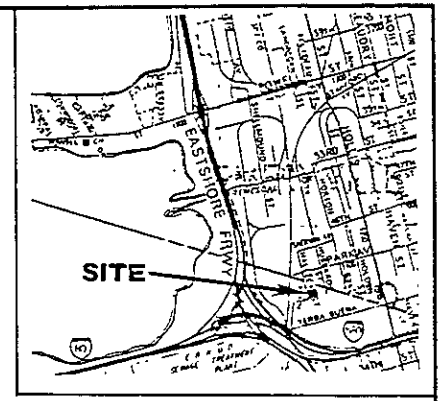
TVH = Ttotal volatile hydrocarbons
TEH = Ttotal extractable hydrocarbons
TOG = Total oil and grease
mg/l = Milligrams per liter = parts per million
ug/l = Micrograms per liter = parts per billion
<0.5 = Chemical not present at a concentration greater than the detection limit stated

Table 2. GROUNDWATER ELEVATION DATA

Well Number	TOC Elev[1] (feet)	Date	Groundwater Depth[2] (feet)	Groundwater Elevation (feet)
MW-1	3.64	06/01/93	3.63	0.01
		09/15/93	4.47	-0.83
		12/23/93	3.47	0.17
MW-2	4.95	06/01/93	3.65	1.30
		09/15/93	4.90	0.05
		12/23/93	3.45	1.50
MW-3	3.61	06/01/93	3.29	0.32
		09/15/93	4.32	-0.71
		12/23/93	3.32	0.29

[1] City of Oakland datum
[2] Measured below TOC.





VICINITY MAP

- 1990 SIDEWALL SAMPLE
- 1990 BOTTOM SAMPLE
- PREVIOUS TANK
- LIMIT OF 1990 EXCAVATION
- W WATER VALVE
- G GAS VALVE
- G GAS LINE
- W WATER LINE
- MH MANHOLE
- PP POWER POLE
- 1992 SIDEWALL SAMPLE
- 1992 BOTTOM SAMPLE
- PREVIOUS DISPENSER
- LIMIT OF 1992 EXCAVATION
- WELL LOCATION
- GROUNDWATER ELEVATION CONTOURS (feet)

APPROXIMATE SCALE (feet)

0 15 30

N

GROUNDWATER DATA DECEMBER 1993

Subsurface Consultants

4055 HUBBARD STREET – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
609.001	1/13/94	

PLATE 1

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: 05-JAN-94
Lab Job Number: 113741
Project ID: 609.001
Location: Hubbard Tank

Reviewed by:

Reviewed by:

Curtis & Tompkins, Ltd.

Client: Subsurface Consultants

Laboratory Login Number: 113741

Project Name: Hubbard Tank
Project Number: 609.001

Report Date: 05 January 94

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

Lab ID	Sample ID	Matrix	Sampled	Received	Analyzed	Result	Units	RL	Analyst	QC Batch
113741-001	MW-1	Water	23-DEC-93	23-DEC-93	03-JAN-94	ND	mg/L	5	TR	12143
113741-002	MW-2	Water	23-DEC-93	23-DEC-93	03-JAN-94	ND	mg/L	5	TR	12143
113741-003	MW-3	Water	23-DEC-93	23-DEC-93	03-JAN-94	ND	mg/L	5	TR	12143

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: Hubbard Tank
Project Number: 609.001

Laboratory Login Number: 113741
Report Date: 05 January 94

ANALYSIS: Hydrocarbon Oil & Grease (Gravimetric) **QC Batch Number: 12143**

Blank Results

Sample ID	Result	MDL	Units	Method	Date Analyzed
BLANK	ND	5	mg/L	SMWW 17:5520BF	03-JAN-94

Spike/Duplicate Results

Sample ID	Recovery	Method	Date Analyzed
BS	94%	SMWW 17:5520BF	03-JAN-94
BSD	90%	SMWW 17:5520BF	03-JAN-94

		Control Limits
Average Spike Recovery	92%	80% - 120%
Relative Percent Difference	5.1%	< 20%

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 113741
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 609.001
LOCATION: HUBBARD TANK

DATE SAMPLED: 12/23/93
DATE RECEIVED: 12/23/93
DATE EXTRACTED: 12/30/93
DATE ANALYZED: 01/03/94
DATE REPORTED: 01/05/94

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)
113741-001	MW-1	**	310+	50
113741-002	MW-2	ND	220+	50
113741-003	MW-3	**	250+	50
METHOD BLANK		ND	ND	50

** Kerosene range not reported due to overlap of hydrocarbon ranges.

ND = Not detected at or above reporting limit.

* Reporting limit applies to all analytes.

+ Does not match standard.

QA/QC SUMMARY

RPD, %	11
RECOVERY, %	69

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 113741
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 609.001
LOCATION: HUBBARD TANK

DATE SAMPLED: 12/23/93
DATE RECEIVED: 12/23/93
DATE ANALYZED: 12/29/93
DATE REPORTED: 01/05/94

Total Volatile Hydrocarbons with BTXE in Aqueous Solutions
TVH by California DOHS Method/LUFT Manual October 1989
BTXE by EPA 5030/8020

LAB ID	SAMPLE ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
113741-001	MW-1	120+	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
113741-002	MW-2	140+	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
113741-003	MW-3	190+	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)
METHOD BLANK		ND(50)	ND(0.5)	ND(0.5)	ND(0.5)	ND(0.5)

+ Does not match standard. Single peak in gas range.

ND = Not detected at or above reporting limit; Reporting limit indicated in parentheses.

QA/QC SUMMARY

RPD, %	1
RECOVERY, %	104

11374|

CHAIN OF CUSTODY FORM

PAGE OF

PROJECT NAME: Hubbard Street

JOB NUMBER: 609.001 LAB: Curtis & Tompkins

PROJECT CONTACT: Jeriann Alexander TURNAROUND: Normal

SAMPLED BY: Fernando Velez REQUESTED BY: Jeriann Alexander

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX: WATER	SOIL	WASTE	AIR	CONTAINERS: 3 VOA	LITER	PINT	TUBE	METHOD PRESERVED: HCL	H_2SO_4	HNO_3	ICE	NONE	SAMPLING DATE: MONTH	DAY	YEAR	TIME	NOTES	ANALYSIS REQUESTED: 8TVH/BTXE	10.1 & 602	TEH
	MW-1	X					1			X			X		12	23	93	1400		X		
-1	"	X					1				X		X		12	23	93	1400			X	
	"	X					1						X		12	23	93	1400				X
	MW-2	X				3				X			X		12	23	93	1530		X		
-2	"	X					1				X		X		12	23	93	1530			X	
	"	X					1						X		12	23	93	1530				X
	MW-3	X				3				X			X		12	23	93	1445		X		
-3	"	X					1				X		X		12	23	93	1445			X	
	"	V					1						X		12	23	93	1445				X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
[signature] 12-23-93	3:45		
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
		Teresa K. Morris	12/23/93 3:45pm

COMMENTS & NOTES:

Subsurface Consultants, Inc.

171 12TH STREET, SUITE 201, OAKLAND, CALIFORNIA 94607

(510) 268-0461 • FAX: 510-268-0137

WELL SAMPLING FORM

Project Name: 4055 Hubbard St Well Number: MW-1

Job No.: 609.001 Well Casing Diameter: 2 inch

Sampled By: F. Velez Date: 12-23-93

TOC Elevation: 3.64 Weather: _____

Depth to Casing Bottom (below TOC) 20.25' feet

Depth to Groundwater (below TOC) 3.47' feet

Feet of Water in Well 16.78 feet

Depth to Groundwater When 80% Recovered 6.83 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.74 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product None

Purge Method Disposible bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp ~~°C~~ °F	Conductivity (micromhos/cm)	Salinity S%	Comments
1	6.62	61.1	1.61 X1000		Clear
3	6.92	60.4	1.48 X1000		"
5	7.03	60.6	1.43 X1000		Semi-clear
7	7.06	60.8	1.45 X1000		"
9	7.08	60.5	1.45 X1000		"
11	7.13	59.6	1.43 X1000		"

Total Gallons Purged 12 – 7.16 – 58.8 – 1.47 X1000 12 gallons

Depth to Groundwater Before Sampling (below TOC) 4.28' feet

Sampling Method Disposible bailer

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

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: 4055 Hubbard St Well Number: MW-2

Job No.: 609.001 Well Casing Diameter: 2 inch

Sampled By: F. Velez Date: 12-23-93

TOC Elevation: 4.95 Weather: clear

Depth to Casing Bottom (below TOC) 15.13' feet

Depth to Groundwater (below TOC) 3.45' feet

Feet of Water in Well 11.68 feet

Depth to Groundwater When 80% Recovered 5.79 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.91 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product None

Purge Method Disposible Bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°C) °F	Conductivity (micromhos/cm)	Salinity S%	Comments
1	15.99	57.1	1.06X1000		clear
3	15.99	54.3	1.08X1000		"
5	15.98	54.5	1.04X1000		"
7	15.99	54.3	1.04X1000		"
9	15.98	54.9	1.02X1000		"

Total Gallons Purged 9 gallons

Depth to Groundwater Before Sampling (below TOC) 3.50' feet

Sampling Method Disposible bailer

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

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE

WELL SAMPLING FORM

Project Name: 4055 Hubbard St Well Number: MW-3

Job No.: 609.001 Well Casing Diameter: 2 inch

Sampled By: E. Vebb Date: 12-23-93

TOC Elevation: 3.61 Weather: Clear

Depth to Casing Bottom (below TOC) 15.13' feet

Depth to Groundwater (below TOC) 3.32' feet

Feet of Water in Well 11.81 feet

Depth to Groundwater When 80% Recovered 5.68' feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.93 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product None

Purge Method Disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°F)	Conductivity (micromhos/cm)	Salinity S%	Comments
1	16.20	57.9	1.20 X1000		Clear
3	16.19	58.2	1.16 X1000		"
5	16.15	58.6	1.19 X1000		"
7	16.12	59.5	1.16 X1000		"
9	16.09	59.6	1.17 X1000		"

Total Gallons Purged 9 gallons

Depth to Groundwater Before Sampling (below TOC) 5.78' feet

Sampling Method Disposable bailer

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

Subsurface Consultants	JOB NUMBER	DATE	APPROVED	PLATE