R. William Rudolph, Jr., PE
Thomas E. Cundey, PE
Jeriann N. Alexander, PE

October 16, 1995
SCI 609.001

Ms. Susan Hugo
Alameda County Health Care Services Agency
1131 Harbor Bay Parkway
Alameda, California 94501

Quarterly Groundwater Monitoring and
Request for Site Closure
4055 Hubbard Street
Oakland, California

Dear Ms. Hugo:

This letter presents the results of the August 1995 groundwater monitoring event at the referenced site. Groundwater monitoring is being performed at the request of the Alameda County Health Care Services Agency. The program was modified beginning with the November 1994 event to consist of quarterly monitoring of wells MW-1 and MW-3, and semiannual monitoring of well MW-2. The location of the site is presented on Plate 1.

Groundwater Sampling

On August 15, 1995, wells MW-1 and MW-3 were sampled. The groundwater monitoring event consisted of (1) measuring groundwater levels using an electronic well sounder, (2) checking for free product, (3) purging water from each well until pH, conductivity and temperature 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. For this event samples from wells MW-1, and MW-3 were 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), and

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).

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 for this event are attached.

Conclusions

The groundwater data presented in Table 2 indicates that the groundwater gradient remains generally consistent with previous measurements. The gradient is relatively flat and tends toward the west. The groundwater gradient and flow contours for this event are shown on Plate 1.

TVH was detected in well MW-3 at 91 ug/l. TVH was not detected in well MW-1, nor was TEH detected in either well.

Request for Site Closure

One 4000 gallon and one 1000 gallon underground storage tanks were removed from the site in July 1990. The following November, the former tank area was overexcavated to the limits practical (approximately 150 cubic yards removed) and the excavation was backfilled with clean import material. Three monitoring wells were installed to assess groundwater quality in the tank area.

Quarterly groundwater monitoring has occurred for 9 consecutive quarters, commencing in June 1993. During the study TVH has decreased from a maximum of 280 ug/L to a maximum of 91 ug/L, TEH has not been detected in the last two quarters, and benzene was not detected in the first 5 events which lead to its elimination for analysis. No free product has been observed during any groundwater monitoring event. Since the source of contamination has been largely removed, petroleum hydrocarbon concentrations have consistently been detected at similar concentrations upgradient of the former tank

area, and contaminant levels have significantly decreased over the last 2 years, Subsurface Consultants, Inc. requests, on behalf of Buttner Properties, that this site be considered for closure.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, Inc.

Jeriann N. Alexander
Civil Engineer 40469 (expires 3/31/99)

MM: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

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

Table 1.
Contaminant Concentrations in Groundwater

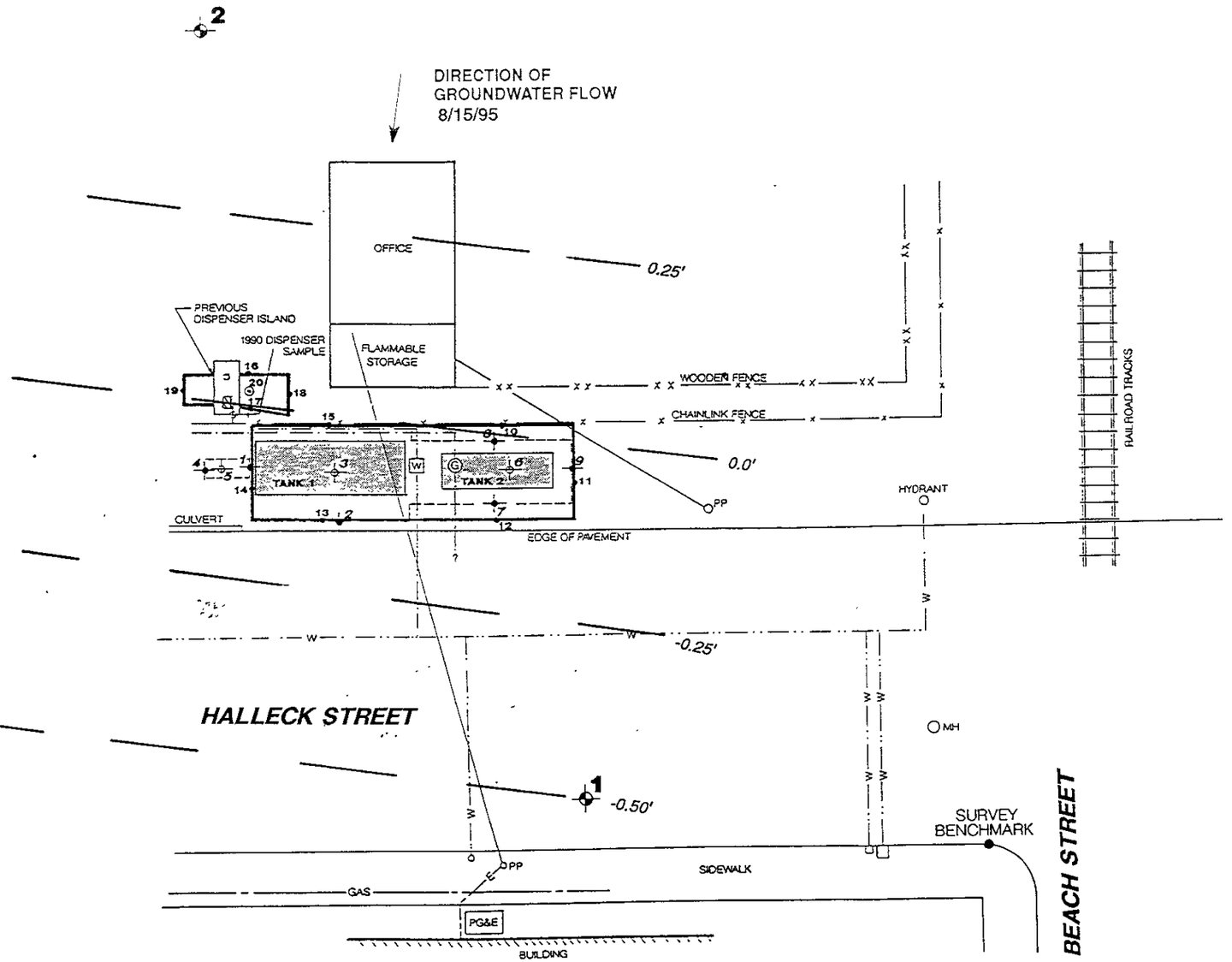
Designation	Date	TVH (ug/l)	TEH (ug/l)	TOG (mg/l)	Benzene (ug/l)	Toluene (ug/l)	Xylene (ug/l)	Ethyl benzene (ug/l)	Lead (ug/l)
MW-1	6/2/93	160	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	9/15/93	120	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	12/23/93	120	310	<5	<1.5	<1.5	<1.5	<1.5	--
	4/5/94	130	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	8/26/94	74	560	<5	<0.5	<0.5	<0.5	<0.5	--
	11/11/94	140	<50	--	--	--	--	--	<3.0
	2/17/95	<50	230	--	--	--	--	--	--
	5/15/95	66	<50	--	--	--	--	--	--
	8/15/95	<50	<50	--	--	--	--	--	--
MW-2	6/2/93	210	150	<5	<0.5	<0.5	<0.5	<0.5	--
	9/15/93	150	50	<5	<0.5	<0.5	<0.5	<0.5	--
	12/23/93	140	220	<5	<1.5	<1.5	<1.5	<1.5	--
	4/5/94	150	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	8/26/94	70	590	<5	<0.5	<0.5	<0.5	<0.5	--
	11/11/94	--	--	--	--	--	--	--	<3.0
	2/17/95	<50	230	--	--	--	--	--	--
	5/15/95	78	<50	--	--	--	--	--	--
MW-3	6/2/93	280	170	<5	<0.5	<0.5	<0.5	<0.5	--
	9/15/93	180	<50	<5	<0.5	<0.5	<0.5	<0.5	--
	12/23/93	190	250	<5	<1.5	<1.5	<1.5	<1.5	--
	4/5/94	240	280	<5	<0.5	<0.5	<0.5	<0.5	--
	8/26/94	130	520	<5	<0.5	<0.5	<0.5	<0.5	--
	11/11/94	170	<50	--	--	--	--	--	<3.0
	2/17/95	120	170	--	--	--	--	--	--
	5/15/95	130	<50	--	--	--	--	--	--
	8/15/95	91	<50	--	--	--	--	--	--

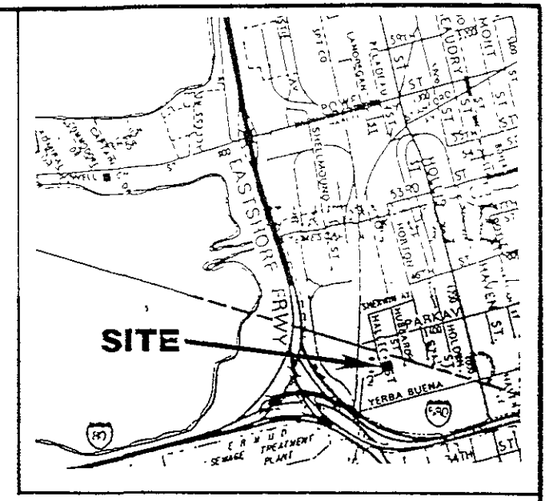
TVH = Total volatile hydrocarbons
TEH = Total extractable hydrocarbons
TOG = Total oil and grease
mg/l = Milligrams per liter = parts per million
ug/l = Micrograms per liter = parts per billion
<0.5 = Chemical not present at a concentration greater than the detection limit stated
-- = Not requested

Table 2.
Groundwater Elevation Data

Well Number	TOC Elev[1] (feet)	Date	Groundwater Depth[2] (feet)	Groundwater Elevation (feet)
MW-1	3.64	6/1/93	3.63	0.01
		9/15/93	4.47	-0.83
		12/23/93	3.47	0.17
		4/5/94	3.85	-0.21
		8/26/94	4.29	-0.65
		11/11/94	2.83	0.81
		2/17/95	3.74	-0.10
		5/15/95	3.91	-0.27
		8/15/95	4.14	-0.50
MW-2	4.95	6/1/93	3.65	1.30
		9/15/93	4.90	0.05
		12/23/93	3.45	1.50
		4/5/94	4.01	0.94
		8/26/94	4.72	0.23
		11/11/94	2.34	2.61
		2/17/95	3.80	1.15
		5/15/95	3.68	1.27
		8/15/95	4.43	0.52
MW-3	3.61	6/1/93	3.29	0.32
		9/15/93	4.32	-0.71
		12/23/93	3.32	0.29
		4/5/94	3.74	-0.13
		8/26/94	4.30	-0.69
		11/11/94	3.05	0.56
		2/17/95	3.64	-0.03
		5/15/95	3.52	-0.09
		8/15/95	4.23	-0.62

[1] City of Oakland Datum
[2] Measured below TOC





- 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

SITE PLAN

Subsurface Consultants

4055 HUBBARD STREET – OAKLAND, CA

JOB NUMBER	DATE	APPROVED	PLATE
609.001	8/29/95		1

Curtis & Tompkins, Ltd., Analytical Laboratories, Since 1878
2323 Fifth Street, Berkeley, CA 94710, Phone (415) 486-0900

ANALYTICAL REPORT

Prepared for:

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

Date: 22-AUG-95
Lab Job Number: 122205
Project ID: 609.001
Location: Hubbard Tank

Reviewed by: _____

Reviewed by: _____

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 609.001
Location: Hubbard Tank

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: LUFT

Sample #	Client ID	Batch #	Sampled	Extracted	Analyzed	Moisture
122205-001	MW-1	22671	08/15/95	08/16/95	08/21/95	
122205-002	MW-3	22671	08/15/95	08/16/95	08/21/95	

Analyte	Units	122205-001	122205-002
Diln Fac:		1	1
Diesel Range	ug/L	<50	<50
Motor Oil Range	ug/L	<1300	<1300
Surrogate			
Hexacosane	%REC	98	101

Curtis & Tompkins, Ltd

Lab #: 122205 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons			
Client:	Subsurface Consultants	Analysis Method:	CA LUFT (EPA 8015M)
Project#:	609.001	Prep Method:	3520
Location:	Hubbard Tank		
METHOD BLANK			
Matrix:	Water	Prep Date:	08/16/95
Batch#:	22671	Analysis Date:	08/19/95
Units:	ug/L		
Diln Fac:	1		

MB Lab ID: QC01613

Analyte	Result	
Diesel Range	<50	
Motor Oil Range	<1300	
Surrogate	%Rec	Recovery Limits
Hexacosane	101	60-140

Curtis & Tompkins, Ltd.

Lab #: 122205 BATCH QC REPORT

TEH-Tot Ext Hydrocarbons

Client: Subsurface Consultants
Project#: 609.001
Location: Hubbard Tank

Analysis Method: CA LUFT (EPA 8015M)
Prep Method: 3520

BLANK SPIKE/BLANK SPIKE DUPLICATE

Matrix: Water
Batch#: 22671
Units: ug/L
Diln Fac: 1

Prep Date: 08/16/95
Analysis Date: 08/18/95

BS Lab ID: QC01614

Analyte	Spike Added	BS	%Rec #	Limits
Diesel Range	2565	2104	82	60-140
Surrogate	%Rec	Limits		
Hexacosane	102	60-140		

BSD Lab ID: QC01615

Analyte	Spike Added	BSD	%Rec #	Limits	RPD #	Limit
Diesel Range	2565	2178	85	60-140	3	<35
Surrogate	%Rec	Limits				
Hexacosane	100	60-140				

Column to be used to flag recovery and RPD values with an asterisk
* Values outside of QC limits
RPD: 0 out of 1 outside limits
Spike Recovery: 0 out of 2 outside limits

Curtis & Tompkins, Ltd.

LABORATORY NUMBER: 122205
CLIENT: SUBSURFACE CONSULTANTS
PROJECT ID: 609.001
LOCATION: HUBBARD TANK

DATE SAMPLED: 08/15/95
DATE RECEIVED: 08/15/95
DATE ANALYZED: 08/18/95
DATE REPORTED: 08/22/95
BATCH NO: 22697

Total Volatile Hydrocarbons as Gasoline in Aqueous Solutions
California DOHS Method
LUFT Manual October 1989

LAB ID	CLIENT ID	TVH AS GASOLINE (ug/L)	REPORTING LIMIT (ug/L)
122205-001	MW-1	ND	50
122205-002	MW-3	91	50
METHOD BLANK	N/A	ND	50

ND = Not detected at or above reporting limit.

QA/QC SUMMARY: MS/MSD of sample no:122146-001

RPD, %	<1
RECOVERY, %	102

August

122205

CHAIN OF CUSTODY FORM

PAGE OF

PROJECT NAME: 4055 HUBBARD STREET

JOB NUMBER: 6009.001 LAB: CURTIS & TOMPKINS

PROJECT CONTACT: MEG MENDOZA TURNAROUND: NORMAL

SAMPLED BY: Dennis Alexander REQUESTED BY: MEG MENDOZA

LABORATORY I.D. NUMBER	SCI SAMPLE NUMBER	MATRIX						CONTAINERS						METHOD PRESERVED						SAMPLING DATE				NOTES	ANALYSIS REQUESTED	
		WATER	SOIL	WASTE	AIR			VOA	LITER	PINT	TUBE			HCL	H_2SO_4	HNO_3	ICE	NONE		MONTH	DAY	YEAR	TIME		TVH	TEH
-1	MW-1	X						3	1					X			X			08	15	95	1330		X	X
-2	MW-3	X						3	1					X			X			08	15	95	1415		X	X

CHAIN OF CUSTODY RECORD

RELEASED BY: (Signature)	DATE / TIME	RECEIVED BY: (Signature)	DATE / TIME
Dennis Alexander	8/15/95 1:30 p.m.	Damara Moore	8-15 2:30
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

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: DWA Date: 8/15/95

TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 20.00 feet

Depth to Groundwater (below TOC) 4.14 feet

Feet of Water in Well 15.86 feet

Depth to Groundwater When 80% Recovered 7.31 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 2.6 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product none

Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
2	6.95	20.0	1550		clear/no odor
4	6.97	20.5	1600		semi-clear
6	6.98	20.5	1575		murky
8	6.90	20.5	1575		↓

Total Gallons Purged 8 gallons

Depth to Groundwater Before Sampling (below TOC) 7.20 feet

Sampling Method disposable bailer

Containers Used 3 (40 ml) 1 (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: DWA Date: 8/15/95

TOC Elevation: _____ Weather: Sunny

Depth to Casing Bottom (below TOC) 15.00 feet

Depth to Groundwater (below TOC) 4.23 feet

Feet of Water in Well 10.77 feet

Depth to Groundwater When 80% Recovered 6.38 feet

Casing Volume (feet of water x Casing DIA ^{2} x 0.0408) 1.8 gallons

Depth Measurement Method Tape & Paste / Electronic Sounder / Other

Free Product none

Purge Method disposable bailer

FIELD MEASUREMENTS

Gallons Removed	pH	Temp (°c)	Conductivity (micromhos/cm)	Salinity S%	Comments
0	6.84	23.0	1425		clear/no odor
2	6.89	21.5	1400		semi-clear
4	6.89	21.0	1400		↓
6	6.91	21.0	1375		murky

Total Gallons Purged 6 gallons

Depth to Groundwater Before Sampling (below TOC) 6.38' feet

Sampling Method disposable bailer

Containers Used 3 (40 ml) 1 (liter) _____ (pint)

Subsurface Consultants

JOB NUMBER DATE APPROVED PLATE