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

March 8, 1993
SCI 430.014

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Ms. Jennifer Eberle
Alameda County Health Care Services Agency
80 Swan Way, Room 200
Oakland, California 94621

no lab data.

Quarterly Groundwater Monitoring
February 1993
Floor Drain Sump
13th and Jefferson Streets
Oakland, California

Dear Ms. Eberle:

This letter records the results of the February 1993 groundwater sampling and analytical testing event performed by Subsurface Consultants, Inc. (SCI) for DCA[1] contamination at the referenced site. Well locations are shown on the attached Site Plan, Plate 1.

Background

SCI previously documented the removal of a concrete floor drain sump and associated contaminated soils in a report dated September 24, 1990. A groundwater contamination assessment report by SCI dated July 8, 1991, presents the monitoring well installation details.

Soil contamination resulting from underground gasoline storage tanks near the intersection of 13th and Jefferson Streets also occurred in the area. Remediation activities for this condition are detailed in our report dated December 6, 1990. Analytical test results from previous quarterly groundwater sampling events for the gasoline contamination were most recently presented in a letter dated January 8, 1993.

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[1] DCA = 1,2-Dichloroethane

Quarterly Monitoring

Groundwater monitoring at the site has been performed quarterly over the past two years. Groundwater level measurements are summarized in Table 1. Groundwater surface contours for the latest event, February 2, 1993, are shown on Plate 1. Groundwater flow patterns have remained relatively consistent during recent monitoring events.

Prior to sampling, the wells were purged of at least 4 well volumes of water using a disposable bailer. The purged water was disposed of in the existing groundwater treatment plant on-site. During this event, Wells 48 and 54 were sampled.

The water samples were retained in pre-cleaned containers, placed in an iced cooler, and kept refrigerated until delivery to the analytical laboratory. The samples were accompanied by chain-of-custody records, copies of which are attached.

Analytical testing was performed by Eureka Laboratories, Inc., a State of California Department of Health Services certified analytical laboratory for the tests performed. Water samples were analytically tested for the following:

> Volatile Organic Chemicals, sample preparation and analysis using EPA method 5030 (purge and trap) and 8010 (gas chromatograph coupled to an electrolytic conductivity detector).

Water samples from the wells have also been analyzed in the past for total volatile hydrocarbons (EPA 8015/5030), total extractable hydrocarbons (EPA 8015/3550), hydrocarbon oil and grease (SMWW 17:5520 E&F) and benzene, toluene, xylene and ethylbenzene (EPA 8020), because these compounds were associated with the gasoline tank and sump releases. The analytical test results are summarized in Tables 2 and 3.

Volatile organic chemicals (VOC) have not been detected in Wells 47, 49, 54, and 59 for at least the past 4 quarters. For this reason, a request to modify the groundwater monitoring program was submitted to the Alameda County Health Care Services Agency (ACHCSA) in a letter dated January 21, 1993. The ACHCSA subsequently granted our request to cease monitoring of Wells 47 and 59 for VOCs but, required that Wells 48 and 54 be monitored on a quarterly basis.

abandoned.

not discussed SCI requested suggested to continue to monitor MW 48 only

Well 49 was abandoned on December 18, 1992, because of construction activities in the area. Well abandonment activities are summarized in a letter dated January 11, 1993.

Conclusions

The groundwater level data indicates that the groundwater flow direction is toward the northwest at a gradient of approximately 0.7 percent. Groundwater flow direction and gradient remain consistent with previous measurements.

The results of the latest sampling event indicate that chloroform was present in Well 54 at a concentration of 1.1 ug/l. No other volatile organic chemicals (EPA 8010) were present at concentrations in excess of analytical detection limits, in the wells being monitored. Monitoring for volatile organic chemicals will continue on a quarterly basis.

If you have any questions, please call.

Yours very truly,

Subsurface Consultants, inc.

James P. Bowers
Geotechnical Engineer 157 (expires 3/31/95)

MK:JPB:egh

Attachments: Table 1 - Groundwater Elevation Data

Table 2 - Petroleum Hydrocarbon Concentrations in Groundwater

Table 3 - Halogenated Volatile Organic Chemical Concentrations in Groundwater

Plate 1 - Site Plan
Chain-of-Custody Records
Analytical Test Reports

1 copy: Ms. Lois Parr
Oakland Redevelopment Agency
City of Oakland
1333 Broadway, Suite 900
Oakland, California 94612

1 copy: Ms. Julie Carver
Environmental Affairs
City of Oakland
1333 Broadway, Suite 800
Oakland, California 94612

1 copy: Mr. Eddy So
Regional Water Quality Control Board
2101 Webster Street, Room 500
Oakland, California 94612

1 copy: Mr. Donnell Choy
Office of City Attorney
City of Oakland
505 14th Street, 12th Floor
Oakland, California 94612

Table 1. Groundwater Elevation Data

Well	Date	TOC[1] Elevation (ft)	Groundwater Depth[2] (ft)	Groundwater Elevation (ft)
MW-47	09/24/90	100.50	27.28	73.22
	10/04/90		27.32	73.18
	12/03/90		27.38	73.12
	01/21/91		27.17	73.33
	03/13/91		26.85	73.65
	04/03/91		26.38	74.12
	06/13/91		28.39	72.11
	09/10/91		27.08	73.42
	12/12/91		27.95	72.55
	04/17/92		26.18	74.32
	07/28/92		26.48	74.02
	11/03/92		26.86	73.64
	02/02/93		24.96	75.54
MW-48	07/18/90	102.40	29.08	73.32
	10/04/90		29.29	73.11
	12/03/90		29.28	73.12
	01/21/91		29.03	73.37
	03/13/91		28.72	73.68
	04/03/91		28.24	74.16
	06/13/91		29.47	72.93
	09/10/91		28.94	73.46
	12/12/91		30.39	72.01
	04/17/92		28.07	74.33
	07/28/92		28.32	74.08
	11/03/92		28.74	73.66
	02/02/93		26.65	75.75
MW-49	12/03/90	101.73	28.44	73.29
	01/21/91		28.20	73.53
	03/13/91		27.79	73.94
	04/03/91		27.28	74.45
	06/13/91		27.66	74.07
	09/10/91		28.04	73.69
	12/12/91		30.45	71.28
	04/17/92		27.26	74.64
	11/03/92		27.84	73.89
	12/18/92	Well Abandoned		
MW-51	10/04/90	102.64	28.57	74.07
	12/03/90		28.57	74.07
	01/21/91		28.44	74.20
	03/13/91		27.76	74.88
	04/03/91		27.32	75.32
	06/13/91		28.82	73.82
	09/10/91		28.00	74.64
MW-52	10/04/90	102.44	28.41	74.03
	12/03/90		28.38	74.06
	01/21/91		28.24	74.20
	03/13/91		27.57	74.87
	04/03/91		27.16	75.28
	06/13/91		29.41	73.03
	09/10/91		27.85	74.59

Table 1. Groundwater Elevation Data (continued)

Well	Date	TOC[1] Elevation (ft)	Groundwater Depth[2] (ft)	Groundwater Elevation (ft)
MW-53	09/24/90	101.28	27.44	73.84
	10/04/90		27.50	73.78
	12/03/90		27.46	73.82
	01/21/91		28.00	73.28
	03/13/91		27.00	74.28
	06/13/91		27.61	73.67
	08/12/91	Well Abandoned		
MW-54	09/24/90	100.78	27.01	73.77
	10/04/90		27.30	73.48
	12/03/90		27.01	73.77
	01/21/91		27.28	74.64
	03/13/91	101.92[3]	27.40	74.52
	06/13/91		28.93	72.99
	09/10/91		27.66	74.26
	12/12/91		28.88	73.04
	04/17/92		26.82	75.10
	11/03/92		27.54	74.38
	02/02/93		25.54	76.38
MW-59	02/12/91	100.37	27.45	72.92
	03/13/91		27.60	72.77
	04/03/91		27.36	73.01
	06/13/91		28.01	72.36
	09/10/91		28.00	72.37
	12/12/91		28.53	71.84
	04/17/92		26.91	73.46
	07/28/92		27.27	73.10
	11/03/92		27.56	72.81
	02/02/93		24.74	75.63

[1] Top of Casing
[2] Depth measured below top of casing
[3] Well head damaged and repaired

Assumed datum: The elevation of the PG&E manhole in Martin Luther King, Jr. Way, near the northwest corner of the block, was assumed to have an elevation of 100 feet (see Plate 1)

Table 2. Petroleum Hydrocarbon Concentrations in Groundwater

Well	Date	O&G[1] (ug/L)	TVH[2] (ug/L)	TEH[3] (ug/L)	B[4] (ug/L)	T[5] (ug/L)	X[6] (ug/L)	E[7] (ug/L)
MW-47	04/06/90	--	ND[8]	--	ND	ND	ND	ND
	10/04/90	--	--	--	ND	ND	ND	ND
	12/03/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
	12/12/91	--	ND	--	ND	ND	ND	ND
	04/17/92	--	--	--	ND	ND	ND	ND
MW-48	04/06/90	--	ND	--	ND	ND	ND	ND
	07/18/90	ND	ND	ND	ND	ND	ND	ND
	10/04/90	--	--	110	ND	ND	ND	ND
	12/03/90	ND	ND	ND	ND	ND	ND	ND
	03/13/91	ND	ND	ND	ND	ND	ND	ND
	09/11/91	ND	ND	ND	ND	ND	ND	ND
	12/12/91	ND	ND	ND	ND	ND	ND	ND
	04/17/92	ND	--	--	ND	ND	ND	ND
MW-49	04/06/90	--	ND	--	ND	ND	ND	ND
	12/03/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
	12/12/91	--	ND	--	ND	ND	ND	ND
	04/17/92	--	--	--	ND	ND	ND	ND
	12/18/92	Well Abandoned						
MW-51	04/06/90	--	ND	--	ND	ND	ND	ND
	10/04/90	--	--	--	ND	ND	ND	ND
	12/04/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
MW-52	04/06/90	--	ND	--	ND	ND	ND	ND
	10/04/90	--	--	--	ND	ND	ND	ND
	12/04/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
MW-53	09/21/90	--	ND	--	ND	ND	ND	ND
	10/04/90	--	ND	--	ND	ND	ND	ND
	12/04/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/11/91	--	ND	--	ND	ND	ND	ND
	08/12/91	Well Abandoned						

Table 2. Petroleum Hydrocarbon Concentrations in Groundwater (continued)

MW-54	09/21/90	--	1700	--	ND	1.5	20	1.9
	10/04/90	--	1300	--	ND	0.7	12	28
	12/04/90	--	ND	--	ND	ND	ND	ND
	03/13/91	--	ND	--	ND	ND	ND	ND
	06/13/91	--	ND	--	ND	ND	ND	ND
	09/11/91	--	ND	--	ND	ND	ND	ND
	12/12/91	--	ND	--	ND	ND	ND	ND
	04/17/92	--	--	--	ND	ND	ND	ND
MW-59	03/13/91	--	ND	--	ND	ND	ND	ND

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[1] Oil and Grease
[2] Total Volatile Hydrocarbons
[3] Total Extractable Hydrocarbons
[4] Benzene
[5] Toluene
[6] Xylene
[7] Ethylbenzene
[8] ND = Non-detectable, see analytical test reports for detection limits
[9] -- Not tested

Table 3.
Halogenated Volatile Organic Chemical Concentrations in Groundwater

Well	Date	1,2 DCA[1] (ug/L)[3]	1,2 DCE[2] (ug/L)	Chloroform (ug/L)	Other EPA 8010 (ug/L)
MW-29	01/04/91	ND[4]	ND	ND	ND
MW-31	01/04/91	ND	ND	10	ND
MW-45	01/04/91	ND	ND	ND	ND
MW-46	01/04/91	ND	ND	ND	ND
MW-47	12/03/90	ND	11	ND	ND
	01/04/91	16	ND	ND	ND
	03/13/91	6.7	ND	ND	ND
	06/13/91	ND	ND	ND	ND
	09/11/91	ND	ND	ND	ND
	12/12/91	ND	ND	ND	ND
	04/17/92	ND	ND	ND	ND
	07/28/92	ND	ND	ND	ND
	11/03/92	ND	ND	ND	ND
MW-48	10/04/90	60	ND	ND	ND
	12/03/90	31	ND	ND	ND
	01/04/91	15	ND	ND	ND
	03/13/91	30	ND	ND	ND
	06/19/91	6.1	ND	ND	ND
	09/11/91	5.3	ND	ND	ND
	12/12/91	16	ND	ND	ND
	04/17/92	1	ND	ND	ND
	07/28/92	ND	ND	ND	ND
	11/03/92	ND	ND	ND	ND
	02/03/93	ND	ND	ND	ND
MW-49	12/03/90	ND	ND	ND	ND
	03/03/91	ND	ND	ND	ND
	06/13/91	5.0	ND	ND	ND
	09/11/91	ND	ND	ND	ND
	12/12/91	ND	ND	ND	ND
	04/17/92	ND	ND	ND	ND
	11/03/92	ND	ND	ND	ND
	12/18/92	Well Abandoned			
MW-51	12/04/90	ND	ND	ND	ND
	06/13/91	ND	ND	1.0	ND
MW-52	12/04/90	ND	ND	1.3	ND
	06/13/91	ND	ND	2.0	ND
MW-53	10/04/90	ND	ND	1.2	ND
	12/04/90	ND	ND	1.9	ND
	03/13/91	ND	ND	2.0	ND
	06/13/91	ND	ND	8.0	ND
	08/12/91	Well abandoned			

VOC data

Table 3. Halogenated Volatile Organic Chemical Concentrations in Groundwater (continued)

Well	Date	1,2 DCA[1] (ug/L)[3]	1,2 DCE[2] (ug/L)	Chloroform (ug/L)	Other EPA 8010 (ug/L)
MW-54	10/04/90	ND	ND	1.6	ND
	12/04/90	ND	ND	1.5	ND
	01/04/91	ND	ND	ND	ND
	03/13/91	ND	ND	ND	ND
	06/13/91	ND	ND	1.0	ND
	11/03/92	ND	ND	ND	ND
	02/02/93	ND	ND	1.1	ND
MW-59	03/13/91	ND	ND	ND	ND
	04/03/91	ND	ND	ND	ND
	09/11/91	ND	ND	ND	ND
	12/12/91	ND	ND	ND	ND
	04/17/92	ND	ND	ND	ND
	07/28/92	ND	ND	ND	ND
	11/03/92	ND	ND	ND	ND

[1] 1,2 Dichloroethane
[2] 1,2 Dichloroethene
[3] Micrograms/liter = parts per billion
[4] None detected, see test reports for detection limits

14TH STREET

MARTIN LUTHER KING JR. WAY

JEFFERSON STREET

PG&E

59

47

48

54

49
WELL ABANDONED
12/18/92

75.5'

76.0'

76.5'

DIRECTION OF
GROUNDWATER
FLOW

EXTENT OF BASEMENT

13TH STREET

TEST BORING/MONITORING WELL

PROPERTY LINE

APPROXIMATE EXTENT OF GASOLINE CONTAMINATED SOIL REMEDIATION

PREVIOUS FLOOR DRAIN SUMP

GROUNDWATER CONTOURS (feet)
2/2/93

TRUE NORTH

REFERENCE NORTH

APPROXIMATE SCALE (feet)

0 50 100

SITE PLAN

Subsurface Consultants

13TH & JEFFERSON – OAKLAND, CA

JOB NUMBER	DATE	APPROVED
430.014	1/13/93	

PLATE 1