November 20, 1991

Mr. Larry Seto
Alameda County Environmental Health
80 Swan Way, Room 200
Oakland, CA 94621

RE; Status of Livermore Arcade Project

Dear Mr. Seto:

I am writing, at your request, to summarize what has occurred at the Livermore Arcade Shopping Center (the Site). H+GCL detected tetrachloroethene (PCE) contamination in the groundwater beneath the Site. The plume was defined through the installation of fifteen ground water monitoring wells in accordance with Regional Water Quality Control Board (RWQCB) and Alameda County Environmental Health Department requirements. All wells were set at a depth fifty-five to sixty-five feet. The groundwater static level was at an approximate depth of forty feet. The plume extended from Mike's Cleaner's to 900 feet north of the Site.

A 36 hour pump test was performed and aquifer characteristics were calculated from that data. A pump and treat remediation system was chosen as the best alternative method to control and eliminate the PCE groundwater contamination. A groundwater extraction system utilizing three extraction wells was designed. Liquid phase carbon absorption filters were chosen as the appropriate method to treat the extracted groundwater. The treated groundwater would be discharged into the sanitary sewer under the conditions of a discharge permit obtained from the City of Livermore. For a more detailed description of the remediation plan, please refer to H+GCL letters to Gil Wistar, dated December 4, 1990, and to Rico Duarzo, of the RWQCB, dated November 19, 1990. The H+GCL remediation plan was approved by both Alameda County and the RWQCB.

A quarterly monitoring program began in March, 1991. In June, 1991, H+GCL observed that groundwater levels were decreasing. Earlier this month we found all of our monitoring wells to be dry. No groundwater samples could be collected. Alameda County Zone 7 (Zone 7) was contacted. They reported that because of the on-going draught conditions their artificial recharge program has been temporarily discontinued. California Water Service (CWS) reported that they have significantly increased the volume of water pumped from groundwater wells in the Livermore area. CWS will continue the increased pumping until December 1, 1991.

At this time the groundwater level is at least 25 feet lower than the level sustained over the past several years. If the drought conditions continue into 1992, the artificial recharge program of Zone 7 will not continue and CWS may be forced to continue heavy pumping to meet their demands. Under these conditions, Zone 7 estimates that the groundwater elevation could drop another fifteen feet.

H+GCL would like to meet with the RWQCB and Alameda County Environmental Health to discuss alternative actions to be taken at the Site. Lester Feldman of RWQCB indicated in a telephone conversation with H+GCL on November 19, 1991, that CWS wells #3 and #8 should be tested for PCE. In addition, he suggested that a deeper monitoring well be installed at the Site in the vicinity of Mike's Cleaners. He said that soil samples and a groundwater sample should be collected and analyzed for PCE to determine what conditions exist in the subsurface at this time.

H+GCL has contacted CWS to obtain permission to sample their wells and we hope to complete that task by the end of next week. H+GCL is reluctant to drill a deeper well at this time. CWS well logs indicate that a thick yellow clay zone may be immediately below our wells. This clay zone may be acting as a aquiclude. Penetrating the clay zone may allow the PCE to move into the deeper aquifer.

H+GCL is preparing a comprehensive plan of action. An interim remediation plan will be designed to operate under the irregular and rapidly changing groundwater conditions at the Site. These tasks should be performed within the next month. We would appreciate your attention in this matter as we prepare to implement our plan of action.

Please contact Michael Wright or Karl Novak if you have any questions or comments.

Sincerely,

H+GCL, Inc.

Michael Wright
Project Geologist

MW:sh
Project No.
MW1/Livermore Arcade/Summary Letter

June 30, 1992

Mr. Lester Feldman
Regional Water Quality Control Board (RWQCB)
2101 Webster Street, Suite 200
Oakland, California 94612

RE: Livermore Arcade

Dear Mr. Feldman:

As we discussed during our telephone conversation of June 25, 1992, H+GCL is conducting a soil-vapor extraction (SVE) pilot study at the Livermore Arcade Shopping Center (the Arcade) in Livermore, California. We have been collecting extracted vapor samples from the SVE system to calculate the effectiveness of SVE in removing PCE from the vadose zone beneath the Arcade. As of the date of this letter, H+GCL has collected and analyzed four sets of vapor samples. The analytical results are presented in the table 1.

The analysis of the vapor samples identified components of gasoline and common constituents of gasoline (i.e., benzene, toluene), as well as PCE and other chlorinated hydrocarbons.

We are also interested in the effect of the SVE system in reducing PCE concentration in the groundwater. Recent groundwater analysis results are presented in table 2. See attached figure for groundwater sampling locations.

The groundwater analysis results do not show a reduction in PCE concentrations when compared to previously documented PCE concentrations at those locations. More sampling over time will be required. An alarming increase in benzene concentrations was detected in this latest sampling event.

Throughout the subsurface investigation, H+GCL has provided groundwater data to Alameda County, Hazardous Materials Division (Alameda County) as evidence that the large gasoline plume present beneath the eastern portion of the Arcade site has resulted from an off-site source.

These recent vapor and groundwater analytical results suggest that petroleum hydrocarbons may be inhibiting the success of this PCE clean up effort. In addition, a trace amount of toluene was detected in the latest groundwater sample collected from CWS-8.

Grubb & Ellis has responded quickly and responsibly to provide the necessary groundwater data to prove that the gasoline source is from an off-site source south/southeast of the Arcade site. Grubb & Ellis has acted quickly and responsibly to control and reduce the PCE contamination to acceptable levels. We are requesting that action be taken to positively identify the source of the gasoline release, and that the responsible party begin remedial action immediately. Grubb & Ellis also requests that the RWQCB issue a letter acknowledging that the gasoline plume is from an off-site source and that Grubb & Ellis will not be held responsible for the gasoline clean-up.

If we can provide any additional information or assist you in any way, please let us know. Thank you for your attention in this matter.

Sincerely,

H^+GCL

Michael Wright
Project Manager/Geologist

MW:sh

cc: Larry Seto, Alameda County
Rico Duazo, RWQCB
John Hyjer, Grubb & Ellis

Arcade Feasibility/48016.12
L0630 Livermore Arcade

TABLE 1

SVE PILOT TEST-VOLATILE ORGANICS ANALYSIS RESULTS

COMPOUNDS	CONCENTRATIONS (ppm)			
	May 19, 1992	June 1, 1992	June 11, 1992	June 25, 1992
Benzene	NA	NA	1.00	1.70
cis-1,2,DCE	0.590	2.17	3.43	5.52
PCE	142	177	194	196
TCE	0.850	1.69	1.72	2.46
1,2-dichloropropane	0.060	0.42	1.10	---
1,2 DCA	ND	ND	---	0.77
2,2,3 Trimethylpentane	NA	NA	262	479
Methylcyclohexane	NA	NA	241	422
2,3 Dimethylhexane	NA	NA	156	---
Cyclohexane	NA	NA	142	276
2 Methylpentene	NA	NA	137	252
2 Methylhexane	NA	NA	130	246
3 Methylhexane	NA	NA	122	---
Hexane	NA	NA	117	252
2 Methylpentane	NA	NA	---	545
Methylpentane	NA	NA	104	243
2 Methylbutane	NA	NA	90.1	260
Total C3-C10 Range Hydrocarbons	134	1123	2774	9882

ND: None Detected

NA: Not Analyzed

--- : not identified

* Potential interference from co-eluding non-target compound

TABLE 2

GROUNDWATER ANALYSIS

	SAMPLE LOCATIONS				
	MW-7	MW-17	MW-18	CWS-3	CWS-8
COMPOUNDS	CONCENTRATIONS (ppb)				
Bromochloromethane	ND	ND	ND	0.2	ND
Bromodichloromethane	ND	ND	ND	20	ND
Benzene	1000	870	ND	ND	ND
Bromoform	ND	ND	1	1.4	ND
Chloroform	ND	ND	ND	21	0.4
Dibromochloromethane	ND	ND	ND	12	ND
Ethylbenzene	93	56	ND	ND	ND
Tetrachloroethene	120	1300	170	ND	ND
Trichloroethene	110	150	1	ND	ND
Toluene	29	40	ND	ND	0.3
Total Xylene Isomers	92	71	ND	ND	ND
cis-1,2 - Dichloroethene	630	600	ND	ND	ND
Semi Quantified C5-C13 Hydrocarbon Matrix	18,000	6,000	ND	NA	NA

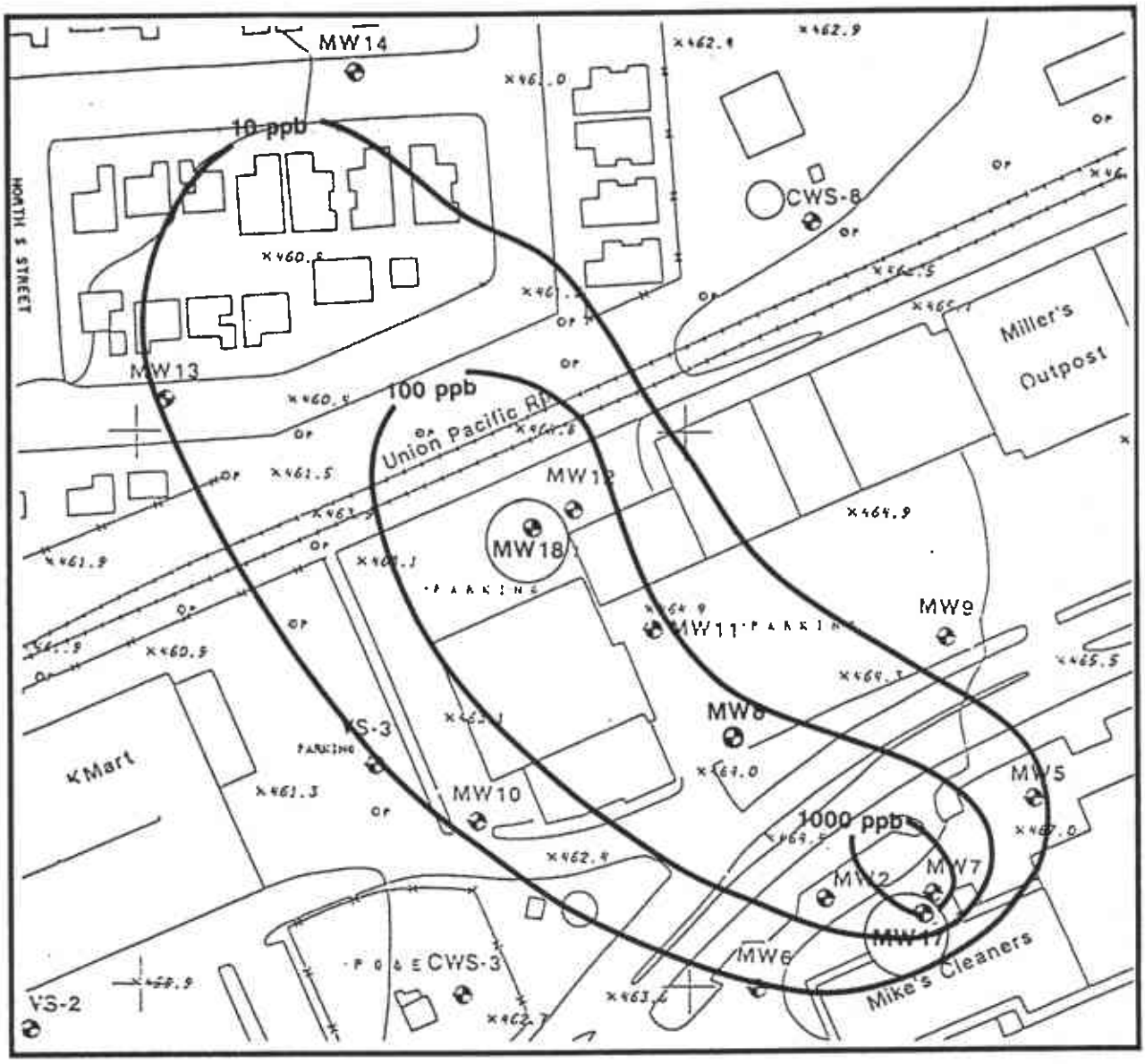
ND: None Detected

NA: Not Analyzed

CWS: California Water Service Well

MW: H^+GCL Monitor Well

Figure 4: PCE Ground Water Plume



Legend

MW-10 — H+GCL Monitoring Well

VS-1 — Versar Monitoring Well

CWS-3 — California Water Service Well

10 ppb — PCE Concentration Contours 1990-1991 (parts per billion)

MW-17 — Latest Monitoring Well

Scale: 0 100 feet 200 feet

N

Analytical Report

LOG NO: E91-06-341

Received: 17 JUN 91
Mailed : 25 JUN 91

Mr. Karl Novak
Hygienetics
2200 Powell Street Suite 880
Emeryville, California 94608

Project: Arcade (SPB)

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND[redacted] SAMPLES	DATE SAMPLED
06-341-1	SPB-1 (mw-16)	17 JUN 91
06-341-2	[redacted]	17 JUN 91

PARAMETER	06-341-1	06-341-2
TPH-Volatile/BTEX	06.18.91	06.19.91
Date Analyzed	100	100
Dilution Factor, Times	2200	2000
[redacted]/L	2600	330
Ethylbenzene, ug/L	5300	1300
Toluene, ug/L	20000	3400
Total Xylene Isomers, ug/L	64000	14000
C4 to C12 Hydrocarbons, ug/L		

L. Lessley

Sim D. Lessley, Ph.D., Laboratory Director

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To Terrence Fox	From Eva Chu
Co. Ultramar	Co. Ala. Co. Health
Dept.	Phone # (510) 271-4530
Fax # (209) 583-3282	Fax # (510) 569-4757

1255 Powell Street
Emeryville, CA 94608

415/428-2300
Fax: 415/547-3643

BCA B C Analytical

GENERAL DATA	CWS-8A	MW-1	MW-1	MW-1	MW-2	MW-2	MW-2
Laboratory	BCA	BCA	BCA	BCA	BCA	BCA	BCA
Date Sampled	11/26/91	3/23/90	3/23/90	4/10/90	3/24/90	3/24/90	4/10/90
H+GCL I.D. No.	CWS-8A	M1(A)	M1(B)	MW-1	M2(B)	M2(A)	MW-2
Lab I.D. No.	11-649-2	03-827-1	03-827-4	04-206-3	03-827-5	03-827-2	04-206-2
COMPOUNDS							
Alcohol(C6H120)							
Benzene	<.5		11,000.0	14,000.0	<1.0		<5.0
1,1 Dichloroethene	<.5		<100.0	<100.0	<1.0		<5.0
Bis(2-ethylhexyl)phthalate							
Bromoform	<.5		<100.0	<100.0	<1.0		<5.0
Bromochloromethane							
Bromodichloromethane	<.5		<100.0	<100.0	<1.0		<5.0
C4-C12 Hydrocarbons		84,000.0		69,000.0		100.0	60.0
C5-C9 Hydrocarbons							
C5-C13 Hydrocarbons			20,000.0	20,000.0			
C5-C15 Hydrocarbons							
C6 Hydrocarbons							
C7-C35 Hydrocarbons							
C15-C35 Hydrocarbon							
Carbon Disulfide			<100.0	<100.0	<1.0		<5.0
Chloroform	<.5		<100.0	<100.0	<1.0		<5.0
cis-1,2,-Dichloroethene	<.5		<100.0	<100.0	<1.0		<5.0
Dibromochloromethane	<.5		<100.0	<100.0	<1.0		<5.0
Dichlorodifluoromethane	<.5						
Diflorochloromethane							
Ethylbenzene	<.5		3,400.0	3,500.0	<1.0		<5.0
Methylene chloride	<.5		<100.0	<100.0	<1.0		<5.0
Phenol							
Toluene	<.5		22,000.0	25,000.0	<1.0		<5.0
Tetrachloroethene	<.5		<100.0	<100.0	330.0		350.0
trans-1,2-Dichloroethene	<.5		<100.0	<100.0	<1.0		<5.0
Trichloroethene	<.5		<100.0	<100.0	<1.0		<5.0
Xylene	<.5		20,000.0	20,000.0	<1.0		<5.0

Table 4 - Organic Chemicals in Ground Water (ug/L)

GENERAL DATA	Boring 1	Boring 2	CWS-3	CWS-3	CWS-3A	CWS-8	CWS-8
Laboratory	BCA	BCA	BCA	BCA	BCA	BCA	BCA
Date Sampled	5/25/90	5/25/90	2/4/92	3/3/92	11/26/91	2/4/92	3/3/92
H+GCL I.D. No.	B1	B2	CWS-3	CWS-3	CWS-3A	CWS-8B	CWS-8
Lab I.D. No.	05-801-1	05-801-2	02-035-1	03-065-1	11-649-1	02-035-2	03-065-2
COMPOUNDS							
Alcohol(C6H120)							
Benzene	<50.0	<5.0	<.2	<.2	<.5	<.2	<.2
1,1 Dichloroethene	<50.0	<5.0	<.2	<.2	<.5	<.2	<.2
Bis(2-ethylhexyl)phthalate							
Bromoform	<50.0	<5.0	<.2	<.2	<.5	<.2	<.2
Bromochloromethane			<.2	<.2		<.2	0.8
Bromodichloromethane	<50.0	<5.0	<.2	0.5	<.5	<.2	<.2
C4-C12 Hydrocarbons							
C5-C9 Hydrocarbons							
C5-C13 Hydrocarbons							
C5-C15 Hydrocarbons							
C6 Hydrocarbons							
C7-C35 Hydrocarbons							
C15-C35 Hydrocarbon							
Carbon Disulfide	<50.0	<5.0					
Chloroform	<50.0	<5.0	<.2	0.7	<.5	0.3	0.4
cis-1,2,-Dichloroethene	79.0	<5.0	<.2	<.2	<.5	<.2	<.2
Dibromochloromethane	<50.0	<5.0	<.2	0.2	<.5	<.2	<.2
Dichlorodifluoromethane					<.5		
Diflorochloromethane							
Ethylbenzene	<50.0	<5.0	<.2	<.2	<.5	<.2	<.2
Methylene chloride	<50.0	<5.0	<1.0	<1.0	<.5	<1.0	<1.0
Phenol							
Toluene	<50.0	<5.0	<.2	<.2	<.5	<.2	<.2
Tetrachloroethene	**5,800.0**	**820.0**	**<.2**	**<.2**	<.5	<.2	<.2
trans-1,2-Dichloroethene	<50.0	<5.0	<.2	<.2	<.5	<.2	<.2
Trichloroethene	140.0	<5.0	<.2	<.2	<.5	<.2	<.2
Xylene	<50.0	<5.0	<.2	<.2	<.5	<.2	<.2

Table 4 - Organic Chemicals in Ground Water (ug/L)

GENERAL DATA	MW-3	MW-3	MW-3	MW-4	MW-5	MW-6	MW-6
Laboratory	BCA	BCA	BCA	BCA	BCA	BCA	BCA
Date Sampled	3/23/90	3/23/90	4/10/90	5/30/90	5/30/90	6/4/90	3/5/91
H+GCL I.D. No.	M3(A)	M3(B)	MW-3	MW-4	MW-5	MW-6	MW-6
Lab I.D. No.	03-827-3	03-827-6	04-206-1	05-880-1	05-880-2	06-048-6	03-113-1
COMPOUNDS							
Alcohol(C6H120)							
Benzene		<1.0	<1.0	<1.0	400.0	<1.0	<1.0
1,1 Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bis(2-ethylhexyl)phthalate							
Bromoform		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Bromochloromethane							
Bromodichloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
C4-C12 Hydrocarbons	<50.0		<50.0			<50.0	
C5-C9 Hydrocarbons							
C5-C13 Hydrocarbons							
C5-C15 Hydrocarbons					500.0		
C6 Hydrocarbons							
C7-C35 Hydrocarbons							
C15-C35 Hydrocarbon							
Carbon Disulfide		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloroform		<1.0	<1.0	<1.0	<1.0	<1.0	1.0
cis-1,2,-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dibromochloromethane		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dichlorodifluoromethane							
Diflorochloromethane							
Ethylbenzene		<1.0	<1.0	<1.0	31.0	<1.0	<1.0
Methylene chloride		<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
Phenol							
Toluene		<1.0	<1.0	<1.0	22.0	<1.0	<1.0
Tetrachloroethene		**<1.0**	**<1.0**	**<1.0**	**2.0**	**35.0**	**43.0**
trans-1,2-Dichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichloroethene		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Xylene		<1.0	<1.0	<1.0	45.0	<1.0	<1.0

Table 4 - Organic Chemicals in Ground Water (ug/L)

GENERAL DATA	MW-6	MW-7	MW-7	MW-7	MW-8	MW-9	MW-9
Laboratory	BCA	BCA	BCA	BCA	BCA	BCA	BCA
Date Sampled	7/25/91	6/4/90	3/5/91	7/26/91	7/26/90	7/26/90	3/5/91
H+GCL I.D. No.	MW-6	MW-7	MW-7	MW-7	MW-8	MW-9	MW-9
Lab I.D. No.	07-597-4	06-048-7	03-113-2	07-618-1	07-628-7	07-682-6	03-113-3
COMPOUNDS							
Alcohol(C6H120)							
Benzene	<.5	63.0	<20.0	31.0	<1.0	<1.0	<1.0
1,1 Dichloroethene	<.5	<10.0	<20.0	<20.0	<1.0	<1.0	<1.0
Bis(2-ethylhexyl)phthalate							
Bromoform	<.5	<10.0	<20.0	<20.0	<1.0	2.0	<1.0
Bromochloromethane							
Bromodichloromethane	<.5	<10.0	<20.0	<20.0	2.0	10.0	<1.0
C4-C12 Hydrocarbons		12,000.0					
C5-C9 Hydrocarbons		30.0					
C5-C13 Hydrocarbons							
C5-C15 Hydrocarbons							
C6 Hydrocarbons							
C7-C35 Hydrocarbons							
C15-C35 Hydrocarbon							
Carbon Disulfide	<.5	<10.0	<20.0	<20.0	<1.0	<1.0	<1.0
Chloroform	1.1	<10.0	<20.0	<20.0	2.0	20.0	2.0
cis-1,2,-Dichloroethene	<.5	140.0	37.0	120.0	6.0	<1.0	<1.0
Dibromochloromethane	<.5	<10.0	<20.0	<20.0	<1.0	7.0	<1.0
Dichlorodifluoromethane							
Diflorochloromethane							
Ethylbenzene	<.5	<10.0	<20.0	<20.0	<1.0	3.0	<1.0
Methylene chloride	<2.0	<10.0	<100.0	<100.0	<5.0	<5.0	<5.0
Phenol							
Toluene	<.5	11.0	<20.0	<20.0	<1.0	<1.0	<1.0
Tetrachloroethene	**74.0**	**900.0**	**1,700.0**	**1,600.0**	**580.0**	**<1.0**	**<1.0**
trans-1,2-Dichloroethene	<.5	<10.0	<20.0	<20.0	<1.0	<1.0	<1.0
Trichloroethene	<.5	26.0	190.0	230.0	17.0	<1.0	<1.0
Xylene	<.5	840.0	<20.0	<20.0	<1.0	<1.0	<1.0

Table 4 - Organic Chemicals in Ground Water (ug/L)

GENERAL DATA	MW-9	MW-10	MW-10	MW-11	MW-12	MW-13	MW-13
Laboratory	BCA	BCA	BCA	BCA	BCA	BCA	BCA
Date Sampled	7/25/91	8/25/90	7/26/91	8/25/90	9/6/90	9/24/90	9/28/90
H+GCL I.D. No.	MW-9	MW10-A & B	MW-10	MW11-A & B	MW-12	MW-13	MW-13
Lab I.D. No.	07-597-3	08-592-2	07-618-2	08-592-1	09-101-1	09-477-1	09-598-1
COMPOUNDS							
Alcohol(C6H120)							
Benzene	<.5	<1.0	<1.0	<5.0	<.5	<1.0	<1.0
1,1 Dichloroethene	<.5	<1.0	<1.0	<5.0	<.5	<1.0	<1.0
Bis(2-ethylhexyl)phthalate							
Bromoform	<.5	<1.0	<1.0	<5.0	<.5	<1.0	<1.0
Bromochloromethane							
Bromodichloromethane	<.5	<1.0	<1.0	<5.0	<.5	<1.0	<1.0
C4-C12 Hydrocarbons							
C5-C9 Hydrocarbons							
C5-C13 Hydrocarbons							
C5-C15 Hydrocarbons							
C6 Hydrocarbons							
C7-C35 Hydrocarbons							
C15-C35 Hydrocarbon							
Carbon Disulfide	<.5	<1.0	<1.0	<5.0	<.5	<1.0	<1.0
Chloroform	1.0	<1.0	<1.0	<5.0	1.0	<1.0	<1.0
cis-1,2,-Dichloroethene	<.5	<1.0	<1.0	<5.0	<.5	<1.0	<1.0
Dibromochloromethane	<.5	<1.0	<1.0	<5.0	<.5	<1.0	<1.0
Dichlorodifluoromethane							
Diflorochloromethane							
Ethylbenzene	<.5	<1.0	<1.0	<5.0	<.5	<1.0	<1.0
Methylene chloride	<2.0	<5.0	<5.0	<20.0	<2.0	<5.0	<5.0
Phenol							
Toluene	<.5	<1.0	<1.0	<5.0	1.4	<1.0	<1.0
Tetrachloroethene	<.5	**35.0**	**22.0**	**100.0**	**170.0**	**23.0**	**36.0**
trans-1,2-Dichloroethene	<.5	<1.0	<1.0	<5.0	<.5	<1.0	<1.0
Trichloroethene	<.5	<1.0	<1.0	<5.0	1.1	<1.0	<1.0
Xylene	0.7	<1.0	<1.0	<5.0	<.5	<1.0	<1.0

Table 4 - Organic Chemicals in Ground Water (ug/L)

GENERAL DATA	MW-13	MW-13	MW-14	MW-14	MW-14	MW-15	MW-17	MW-17	MW-18
Laboratory	BCA	BCA	BCA	BCA	BCA	BCA	C & T	BCA	BCA
Date Sampled	3/5/91	7/25/91	9/24/90	3/5/91	7/25/91	10/10/90	1/21/92	3/3/92	3/3/92
H+GCL I.D. No.	MW-13	MW-13	MW-14	MW-14	MW-14	MW-15	1210500	MW-17	MW-18
Lab I.D. No.	03-113-4	07-597-2	09-477-2	03-113-5	07-597-1	10-242-1	106331-1	03-065-4	03-065-5
COMPOUNDS									
Alcohol(C6H120)								10.0	
Benzene	<1.0	<.5	<1.0	<1.0	<.5	<1.0	1.0	59.0	<1.0
1,1 Dichloroethene	<1.0	<.5	<1.0	<1.0	<.5	<1.0	<1.0	190.0	<1.0
Bis(2-ethylhexyl)phthalate								20.0	<4.0
Bromoform	<1.0	<.5	<1.0	<1.0	<.5	<1.0	<1.0	<5.0	<1.0
Bromochloromethane									
Bromodichloromethane	<1.0	<.5	<1.0	<1.0	<.5	<1.0	<1.0	<5.0	<1.0
C4-C12 Hydrocarbons									
C5-C9 Hydrocarbons									
C5-C13 Hydrocarbons									
C5-C15 Hydrocarbons									
C6 Hydrocarbons									
C7-C35 Hydrocarbons								1,000.0	
C15-C35 Hydrocarbon									500.0
Carbon Disulfide	<1.0	<.5	<1.0	<1.0	<.5	<1.0			
Chloroform	<1.0	<.5	<1.0	<1.0	<.5	<1.0	<1.0	<5.0	<1.0
cis-1,2,-Dichloroethene	<1.0	<.5	5.0	<1.0	2.1	<1.0	12.0	190.0	<1.0
Dibromochloromethane	<1.0	<.5	<1.0	<1.0	<.5	<1.0	<1.0	<5.0	<1.0
Dichlorodifluoromethane								<5.0	7.0
Diflorochloromethane					20.0				
Ethylbenzene	<1.0	<.5	<1.0	<1.0	<.5	<1.0	<1.0	<5.0	<1.0
Methylene chloride	<5.0	<2.0	<5.0	6.0	<2.0	<5.0	1.1	<5.0	<1.0
Phenol								5.0	<5.0
Toluene	<1.0	<.5	<1.0	<1.0	<.5	<1.0	<1.0	<5.0	<1.0
Tetrachloroethene	**34.0**	**30.0**	**5.0**	**<1.0**	**1.1**	**<1.0**	**49.0**	**540.0**	**200.0**
trans-1,2-Dichloroethene	<1.0	<.5	<1.0	<1.0	<.5	<1.0	<1.0	<5.0	<1.0
Trichloroethene	<1.0	<.5	1.0	<1.0	0.7	<1.0	1.1	70.0	2.0
Xylene	<1.0	<.5	<1.0	<1.0	<.5	<1.0	<1.0	<5.0	<1.0

Table 4 - Organic Chemicals in Ground Water (ug/L)

B C Analytical

1255 Powell Street
Emeryville, CA 94608
510/428-2300
Fax: 510/547-3643

ANALYTICAL REPORT

LOG NO: E92-06-084

Received: 03 JUN 92

Mailed: JUN 19 1992

Mr. Mike Luksic
H+GCL
2200 Powell Street, Suite 880
Emeryville, California 94608

Project: 48016-12

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-084-1	9206031115 CWS-3	03 JUN 92
06-084-2	9206031140 CWS-8	03 JUN 92

PARAMETER	06-084-1	06-084-2
EPA Method 524.2		
Date Analyzed	06.08.92	06.08.92
Date Extracted	06.08.92	06.08.92
Dilution Factor, Times	1	1
1,1,1,2-Tetrachloroethane, ug/L	<0.2	<0.2
1,1,1-Trichloroethane, ug/L	<0.2	<0.2
1,1,2,2-Tetrachloroethane, ug/L	<0.2	<0.2
1,1,2-Trichloroethane, ug/L	<0.2	<0.2
1,1-Dichloroethane, ug/L	<0.2	<0.2
1,1-Dichloroethene, ug/L	<0.2	<0.2
1,1-Dichloropropene, ug/L	<0.2	<0.2
1,2,3-Trichlorobenzene, ug/L	<0.2	<0.2
1,2,3-Trichloropropane, ug/L	<0.2	<0.2
1,2,4-Trichlorobenzene, ug/L	<0.2	<0.2
1,2,4-Trimethylbenzene, ug/L	<2	<2
1,2-Dibromo-3-chloropropane, ug/L	<0.2	<0.2
1,2-Dibromoethane, ug/L	<0.2	<0.2
1,2-Dichloroethane, ug/L	<0.2	<0.2
1,2-Dichlorobenzene, ug/L	<0.2	<0.2
1,2-Dichloropropane, ug/L	<0.2	<0.2
1,3,5-Trimethylbenzene, ug/L	<0.2	<0.2
1,3-Dichlorobenzene, ug/L	<0.2	<0.2
1,3-Dichloropropane, ug/L	<0.2	<0.2
1,4-Dichlorobenzene, ug/L	<0.2	<0.2
2,2-Dichloropropane, ug/L	<0.2	<0.2
2-Chlorotoluene, ug/L	<0.2	<0.2
4-Chlorotoluene, ug/L		

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Project: 48016-12

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-084-1	9206031115	03 JUN 92
06-084-2	9206031140	03 JUN 92

PARAMETER	06-084-1	06-084-2
Bromobenzene, ug/L	<0.2	<0.2
Bromochloromethane, ug/L	0.2	<0.2
Bromodichloromethane, ug/L	20	<0.2
Bromomethane, ug/L	<0.2	<0.2
Benzene, ug/L	<0.2	<0.2
Bromoform, ug/L	1.4	<0.2
Chlorobenzene, ug/L	<0.2	<0.2
Carbon Tetrachloride, ug/L	<0.2	<0.2
Chloroethane, ug/L	<0.2	<0.2
Chloroform, ug/L	21	0.4
Chloromethane, ug/L	<0.2	<0.2
Dibromochloromethane, ug/L	12	<0.2
Dibromomethane, ug/L	<0.2	<0.2
Ethylbenzene, ug/L	<0.2	<0.2
Hexachlorobutadiene, ug/L	<0.2	<0.2
Isopropylbenzene, ug/L	<0.2	<0.2
Methylene chloride, ug/L	<1	<1
N-Butylbenzene, ug/L	<0.2	<0.2
N-Propylbenzene, ug/L	<0.2	<0.2
Naphthalene, ug/L	<0.2	<0.2
Styrene, ug/L	<0.2	<0.2
Trichloroethene, ug/L	<0.2	<0.2
Trichlorofluoromethane, ug/L	<0.2	<0.2
Toluene, ug/L	<0.2	0.3
Tetrachloroethene, ug/L	<0.2	<0.2
Vinyl chloride, ug/L	<0.2	<0.2

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-084-1	9206031115	03 JUN 92
06-084-2	9206031140	03 JUN 92

PARAMETER	06-084-1	06-084-2	
cis-1,2-Dichloroethene, ug/L	<0.2	<0.2	
cis-1,3-Dichloropropene, ug/L	<0.2	<0.2	
m- and p-Xylene Isomers, ug/L	<0.2	<0.2	
o-Xylene, ug/L	<0.2	<0.2	
p-Isopropyl toluene, ug/L	<0.2	<0.2	
sec-Butylbenzene, ug/L	<0.2	<0.2	
trans-1,2-Dichloroethene, ug/L	<0.2	<0.2	
trans-1,3-Dichloropropene, ug/L	<0.2	<0.2	
tert-Butylbenzene, ug/L	<0.2	<0.2	
Other EPA Method 524.2	---	---	
Semi-Quantified Results **			
CHCl2I, ug/L	1	---	

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

Edward Wilson, Laboratory Director

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1255 Powell Street
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ANALYTICAL REPORT

LOG NO: E92-06-152

Received: 04 JUN 92

Mailed: JUN 17 1992

Mr. Mike Luksic
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2200 Powell Street, Suite 880
Emeryville, California 94608

Project: 48016.12

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-152-1	9206041350 MW-18	04 JUN 92
06-152-2	9206041440 MW-7	04 JUN 92
06-152-3	9206041530 MW-17	04 JUN 92

PARAMETER	06-152-1	06-152-2	06-152-3
Volatile Organics (EPA 624)			
Date Analyzed	06.09.92	06.09.92	06.09.92
Date Extracted	06.09.92	06.09.92	06.09.92
Dilution Factor, Times	1	10	10
1,1,1-Trichloroethane, ug/L	<1	<10	<10
1,1,2,2-Tetrachloroethane, ug/L	<1	<10	<10
1,1,2-Trichloroethane, ug/L	<1	<10	<10
1,1-Dichloroethane, ug/L	<1	<10	<10
1,1-Dichloroethene, ug/L	<1	<10	<10
1,2-Dichloroethane, ug/L	<1	<10	<10
1,2-Dichlorobenzene, ug/L	<1	<10	<10
1,2-Dichloropropane, ug/L	<1	<10	<10
1,3-Dichlorobenzene, ug/L	<1	<10	<10
1,4-Dichlorobenzene, ug/L	<1	<10	<10
2-Chloroethylvinylether, ug/L	<1	<10	<10
2-Hexanone, ug/L	<1	<10	<10
4-Methyl-2-Pentanone, ug/L	<10	<100	<100
Acetone, ug/L	<10	<100	<100
Acrolein, ug/L	<10	<100	<100
Acrylonitrile, ug/L	<1	<10	<10
Bromodichloromethane, ug/L	<1	<10	<10
Bromomethane, ug/L	<1	1000	870
Benzene, ug/L	<1	<10	<10
Bromoform, ug/L	<1	<10	<10
Chlorobenzene, ug/L	<1	<10	<10
Carbon Tetrachloride, ug/L			

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LOG NO: E92-06-152

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Project: 48016.12

REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-152-1	9206041350 MW-18	04 JUN 92
06-152-2	9206041440 MW-7	04 JUN 92
06-152-3	9206041530 MW-17	04 JUN 92

PARAMETER	06-152-1	06-152-2	06-152-3
Chloroethane, ug/L	<1	<10	<10
Chloroform, ug/L	<1	<10	<10
Chloromethane, ug/L	<1	<10	<10
Carbon Disulfide, ug/L	<1	<10	<10
Dibromochloromethane, ug/L	<1	<10	<10
Ethylbenzene, ug/L	<1	93	56
Freon 113, ug/L	<1	<10	<10
Methyl ethyl ketone, ug/L	<20	<200	<200
Methylene chloride, ug/L	<5	<50	<50
Styrene, ug/L	<1	<10	<10
Trichloroethene, ug/L	1	110	150
Trichlorofluoromethane, ug/L	<1	<10	<10
Toluene, ug/L	<1	29	40
Tetrachloroethene, ug/L	170	120	1300
Vinyl acetate, ug/L	<1	<10	<10
Vinyl chloride, ug/L	<1	<10	<10
Total Xylene Isomers, ug/L	<1	92	71
cis-1,2-Dichloroethene, ug/L	<1	630	600
cis-1,3-Dichloropropene, ug/L	<1	<10	<10
trans-1,2-Dichloroethene, ug/L	<1	<10	<10
trans-1,3-Dichloropropene, ug/L	<1	<10	<10
Semi-Quantified Results ** C5-C13 HYDROCARBON MATRIX, ug/L	---	10000	6000

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REPORT OF ANALYTICAL RESULTS

LOG NO	SAMPLE DESCRIPTION, GROUND WATER SAMPLES	DATE SAMPLED
06-152-1	9206041350 MW-18	04 JUN 92
06-152-2	9206041440 MW-7	04 JUN 92
06-152-3	9206041530 MW-17	04 JUN 92

PARAMETER	06-152-1	06-152-2	06-152-3

** Quantification based upon comparison of total ion count of the compound with that of the nearest internal standard.

Edward Wilson, Laboratory Director

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