HydroSolutions of California, Inc.
P.O. Box 922 • 13975 Wings of Morning
Nevada City, California 95959
(916) 478-1260 • Fax (916) 478-1264

October 15, 1997

Susan Hugo
Alameda County Department of Environmental Health
1131 Harbor Bay Parkway
Alameda, California 94502-6577

SUBJECT: DIRECT MEASUREMENT FOR PATHWAY SCREENING
4800 SAN PABLO AVENUE
EMERYVILLE, CALIFORNIA

RRSP: 96286-06-47

Dear Susan:

HydroSolutions of California, Inc. (HSCI) recommended direct measurement of soil-gas along the exposure pathway (sediment profile) as a means to confirm the actual presence/absence of the exposure route and estimate maximum exposure concentrations. The Alameda County Environmental Health (County) requested that direct measurements be collected at different depths and locations. Three locations; 1) adjacent B-2, 2) adjacent B-3 and 3) adjacent WB-14 were sampled twice. Ravi, Madhulla and yourself were present during the first sampling event (August 21, 1997). The second sampling event was completed August 28, 1997.

A geoprobe sampling rig was utilized to penetrate a probe to a 3, 6 and 9 foot depth. At each depth interval, a soil-gas sample was extracted by inducing 40 kPa to 60 kPa vacuum to the sampling probe. A vacuum pump was used to induce a vacuum great enough to remove soil-gas. The majority of sediment encountered during this sampling event was silt and silty clay. Actual soil-gas was sampled by turning off a valve which de-activated the vacuum pump and attached a three liter summa canister to the probe. The valve of the summa canister was then opened to facilitate soil-gas sample collection. The canister filled until the vacuum induced in the sample location was equal to the vacuum inside the canister.

Subsequent to completing sample collection at each sample interval, the hose was disposed, probe tip cleaned with soap and water and distilled water rinse and a new hose re-attached to the collection mechanism.

Figure 1 illustrates the location of each soil-gas sampling point. A soil-gas chemical data table illustrates laboratory results from each sample location. Sample locations, SG-15, SG-16 and SG-17 were sampled August 21, 1997. Sample locations, SG-18, SG-19 and SG-20 were sampled August 28, 1997.

Presence of benzene in soil-gas is not detectable above the nine foot depth. Due to no detectable benzene existing at the six and three foot depths, it is apparent that there is no recognized completed exposure pathway to ambient and in-door air. Confirmation in this conclusion is supported by consistent laboratory results spatially (six locations) and at different times (August 21 and 28, 1997).

Based on the above soil-gas data, conclusions of the RBCA evaluation previously completed (RRSP: 96286-06-42) do not represent actual conditions. Due to no detectable levels of benzene at the three and six foot depth, HSCI recommends no further assessment or remedial action at the subject property.

If you have questions, please contact me. The final document requesting closure of assessment and remediation activities at the subject property will be submitted next week. I would like to incorporate your comments in this final document therefore let us talk later this week.

Respectfully submitted,

Stephen J. Baker
Project Manager

Attachment: Figure 1. Soil-gas Confirmation Samples
Soil-gas Chemical Data

		TPH-G	BENZENE	TOLUENE	XYLENES	ETHYL-BENZENE
SG-15-3		ND	ND	ND	ND	ND
SG-15-6		ND	ND	ND	ND	ND
SG-15-9		376	ND	ND	ND	ND
SG-16-3		ND	ND	ND	ND	ND
SG-16-6		ND	ND	ND	ND	ND
SG-16-9		644	5.6	ND	ND	ND
SG-17-3		ND	ND	ND	ND	ND
SG-17-5.5		ND	ND	ND	ND	ND
SG-18-3		ND	ND	ND	ND	ND
SG-18-6		ND	ND	ND	ND	ND
SG-18-9		ND	ND	ND	ND	ND
SG-19-3		ND	ND	ND	ND	ND
SG-19-6		ND	ND	ND	ND	ND
SG-19-9		103	ND	10.6	2.5	14.4
SG-20-3		ND	ND	ND	ND	ND
SG-20-5		240	ND	1.1	1.2	4.2
REPORT LIMIT		200	5.0	5.0	5.0	5.0

NOTE:

SOIL-GAS SAMPLES COLLECTED IN 6 LITER SUMMA CANISTERS. GENERALLY, A 40-60 kPa VACUUM. SAMPLES WERE DELIVERED THE SAME DAY TO A CALIFORNIA CERTIFIED LABORATORY. ANALYSES INCLUDED TO3 (GC EQUIPPED WITH A PID) FOR BTXE AND TO3 (GC EQUIPPED WITH A FID) FOR TPH-G.

SG-15, 16 AND 17 SAMPLED AUGUST 21, 1997. SG-18, 19 AND 20 SAMPLED AUGUST 28, 1997.

Title: SOIL-GAS CHEMICAL DATA

Project No.: 95286

HydroSolutions of California, Inc.
5917 Moss Creek Circle, Suite 2
Fair Oaks, California
(916) 967-1222

Site: 4800 SAN PABLO AVENUE
EMERYVILLE, CALIFORNIA

Scale: NONE

Date: 10-14-97

NOTES:

Exploratory drilling completed December 23, 1993 and June 16-17, 1994.

A Geoprobe system was used as the coring device for B-1 through B-6. A hollow stem augur was utilized for WB-7 through B-13.

Groundwater was encountered in boring, B-6, at 8.5 feet. Borings, B-1 through B-5 did not penetrate groundwater.

Soil samples analyzed for total petroleum hydrocarbons, benzene, toluene, xylene, ethylbenzene, oil & grease, and soluble lead (B-1 through B-6).

Ground water monitoring wells designated as WB-__ . All wells except WB-14 are 30 feet deep, perforated between the 20 and 30 foot depths, gravel pack to 18 foot depth and grouted to the ground surface. A locking well head is constructed at grade for each well.

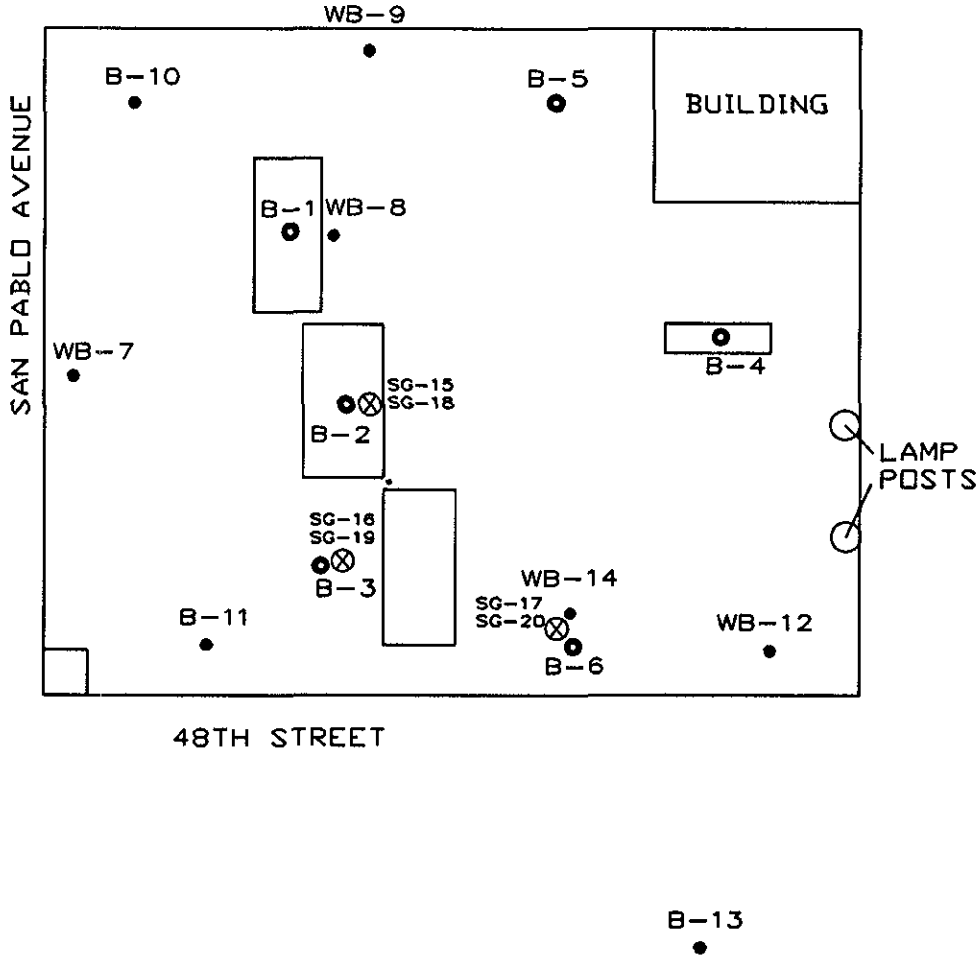
Well, WB-14, is 12 feet in depth, perforated between 7 and 12 feet, gravel packed to a 5 foot depth and grouted to the ground surface.

Collected soil-gas samples from the 3, 6 and 9 foot depth intervals in probes placed adjacent B-2 sand B-3.

Collected soil-gas samples from the 3 and 5-5.5 foot depth intervals in probes placed adjacent WB-14.

Probes SG-15, SG-18 and SG-17 were placed August 21, 1997.

Probes SG-18, SG-19 and SG-20 were placed August 28, 1997.



EXPLANATION

B-5 BORING

WB-7 GROUNDWATER MONITOR WELL

SG-15 SG-18 SOIL-GAS SAMPLING POINTS

0 20 40 feet

APPROXIMATE SCALE

HydroSolutions of California, Inc. 5617 Moss Creek Circle, Suite 2 Fair Oaks, California 95628-2714 (916) 967-1222	Title: SOIL-GAS CONFIRMATION SAMPLES Site: 4800 SAN PABLO AVENUE EMERYVILLE, CALIFORNIA	Project Number: 95286 Date: October 14, 1997 Scale: AS SHOWN	FIGURE 1

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Steve Baker	Date Sampled:	08-21-97
	Hydrosolutions	Date Received:	08-21-97
	P.O. Box 922	BTEX Analyzed:	08-21,22-97
	Nevada City, CA 95959	TPHg Analyzed:	08-21,22-97
Project :	96286/PABLO	Matrix:	Air

	Benzene mg/M^3	Toluene mg/M^3	Ethyl-benzene mg/M^3	Total Xylenes mg/M^3	TPHg mg/M^3
Reporting Limit:	5.0	5.0	5.0	5.0	200
SAMPLE Laboratory Identification					
S6-15-3 A0897505	ND	ND	ND	ND	ND
S6-15-6 A0897506	ND	ND	ND	ND	ND
S6-15-9 A0897507	ND	ND	ND	ND	376
S6-16-3 A0897508	ND	ND	ND	ND	ND
S6-16-6 A0897509	ND	ND	ND	ND	ND
S6-16-9 A0897510	5.6	ND	ND	ND	644
S6-17-3 A0897511	ND	ND	ND	ND	ND
S6-17-5.5 A0897512	ND	ND	ND	ND	ND

mg/M^3 = milligrams per cubic meter.
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, total xylene isomers are analyzed by using TO3 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are analyzed by using TO3, which utilizes a GC equipped with an FID.

Laboratory Representative

09-10-97
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Steve Baker	Date Sampled:	08-28-97
	Hydrosolutions	Date Received:	08-28-97
	P.O. Box 922	BTEX Analyzed:	08-29,09-04-97
	Nevada City, CA 95959	TPHg Analyzed:	08-29,09-04-97
Project :	95286/PABLO	Matrix:	Air

	Benzene mg/M^3	Toluene mg/M^3	Ethyl-benzene mg/M^3	Total Xylenes mg/M^3	TPHg mg/M^3
Reporting Limit:	0.5	0.5	0.5	0.5	20
SAMPLE Laboratory Identification					
S6-18-3 A0897627	ND	ND	ND	ND	ND
S6-18-9 A0897629	ND	ND	ND	ND	ND
S6-19-3 A0897630	ND	ND	ND	ND	ND
S6-19-9 A0897632	ND	10.6	2.5	14.4	103
S6-20-3 A0897633	ND	ND	ND	ND	ND
S6-20-5 A0897634	ND	1.1	1.2	4.2	240

mg/M^3 = milligrams per cubic meter.
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, total xylene isomers are analyzed by using TO3 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are analyzed by using TO3, which utilizes a GC equipped with an FID.

Laboratory Representative

09-10-97
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Steve Baker	Date Sampled:	08-28-97
	Hydrosolutions	Date Received:	08-28-97
	P.O. Box 922	BTEX Analyzed:	09-09-97
	Nevada City, CA 95959	TPHg Analyzed:	09-09-97
Project :	95286/PABLO	Matrix:	Air

	Benzene mg/M^3	Toluene mg/M^3	Ethyl-benzene mg/M^3	Total Xylenes mg/M^3	TPHg mg/M^3
Reporting Limit:	2.7	2.7	2.7	2.7	109
SAMPLE Laboratory Identification					
S6-18-6 A0897628	ND	ND	ND	ND	ND

mg/M^3 = milligrams per cubic meter.
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, total xylene isomers are analyzed by using TO3 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are analyzed by using TO3, which utilizes a GC equipped with an FID.

Laboratory Representative

09-10-97
Date Reported

EXCELCHEM
ENVIRONMENTAL LABS

500 Giuseppe Court, Suite 9
Roseville, CA 95678
Phone#: (916) 773-3664 Fax#: (916) 773-4784

ANALYSIS REPORT

Attention:	Mr. Steve Baker	Date Sampled:	08-28-97
	Hydrosolutions	Date Received:	08-28-97
	P.O. Box 922	BTEX Analyzed:	09-09-97
	Nevada City, CA 95959	TPHg Analyzed:	09-09-97
Project :	95286/PABLO	Matrix:	Air

	Benzene mg/M^3	Toluene mg/M^3	Ethyl-benzene mg/M^3	Total Xylenes mg/M^3	TPHg mg/M^3
Reporting Limit:	6.0	6.0	6.0	6.0	239
SAMPLE Laboratory Identification					
S6-19-6 A0897631	ND	ND	ND	ND	ND

mg/M^3 = milligrams per cubic meter.
ND = Not detected. Compound(s) may be present at concentrations below the reporting limit.

ANALYTICAL PROCEDURES

BTEX-- Benzene, toluene, ethylbenzene, total xylene isomers are analyzed by using TO3 which utilizes a gas chromatograph (GC) equipped with a photoionization detector (PID).

TPHg--Total petroleum hydrocarbons as gasoline (low-to-medium boiling points) are analyzed by using TO3, which utilizes a GC equipped with an FID.

Laboratory Representative

09-10-97
Date Reported

Excelchem
Environmental Labs

500 Giuseppe Court, Suite 9
Roseville, CA 95678
(916) 773-3664

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

897111

Project Manager: S. BAKER
Phone #: 916-478-1260
Company/Address: PO Box 922, Nevada City CA
FAX #: 1264
Project Number: 96286
P.O.#:
Project Name: PABLO
Project Location: 4800 SAN PABLO AVE, Emeryville
Sampler Signature: [signature]

ANALYSIS REQUEST

Sample ID	Sampling DATE	Sampling TIME	Container: Summa canister	Method Preserved: NONE	Matrix: Soil-Gas	BTEX/TPH as Gasoline (602/8020/8015) (TO14)		TAT: STANDARD SERVICE (2wk)
SG-15-3	8/21/97		X	X	X	X	A0897505	X
SG-15-6	↓		↓	↓	↓	↓	506	↓
SG-15-9	↓		↓	↓	↓	↓	507	↓
SG-16-3	↓		↓	↓	↓	↓	508	↓
SG-16-6	↓		↓	↓	↓	↓	509	↓
SG-16-9	↓		↓	↓	↓	↓	510	↓
SG-17-3	↓		↓	↓	↓	↓	511	↓
SG-17-5.5	↓		↓	↓	↓	↓	A0897512	↓

Other columns printed on the form (not marked): Container: VOA, SLEEVE, 1L GLASS, 1L PLASTIC; Method Preserved: HCl, HNO3, ICE; Matrix: WATER, SOIL; BTEX (602/8020); TPH as Diesel (8015); TPH as Oil (8015); Total Oil & Grease (5520 B/E,F); Total Oil & Grease IR (5520 B/E,F,C); 96 - Hour Fish Bioassay; EPA 601/8010; EPA 602/8020; EPA 615/8150; EPA 608/8080 - Pesticides; EPA 608/8080-PCBs; EPA 624/8240; EPA 625/8270; ORGANIC LEAD; Reactivity, Corrosivity, Ignitibility; W.E.T. (✓) / TOTAL (✓): CAM - 17 Metals; EPA - Priority Pollutant Metals; LEAD (7420/7421/239.2); Cd, Cr, Pb, Zn, Ni; TAT: RUSH SERVICE (12 hr) or (24 hr); EXPEDITED SERVICE (48 hr) or (1 wk).

Relinquished by:	Date	Time	Received by:
[signature]	8/21/97	14:08	
Relinquished by	Date	Time	Received by:
Relinquished by	Date	Time	Received by Laboratory:
	8/21/97	14:08	Nandy Reece

Remarks: Please fax results

Bill To: HSCI