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

April 13, 1989
SCI 209.006

Ms. Susan Brown
C & H Development Company
3744 Mt. Diablo Boulevard, Suite 301
Lafayette, California 94549

Groundwater Monitoring Well Sampling and Analysis
Sampling No. 2
150th Avenue & East 14th Street Project
San Leandro, California

Dear Ms. Brown,

This letter records the results of services provided by Subsurface Consultants, Inc. (SCI) regarding the sampling and analysis of water from the monitoring well installed at the referenced site. Details of well installation, and previous analytical test results were recorded in a letter dated April 27, 1988.

On January 31, 1989, a groundwater sample was obtained from the well. Prior to sampling, the well was purged of all water using a Teflon bailer. A Teflon sampling device was subsequently used to obtain a groundwater sample for analysis. The water sample was retained in borosilicate vials, precleaned by the supplier. The water samples were refrigerated in an ice chest on-site, and remained under refrigeration until delivered to the analytical laboratory.

Analytical Testing

The groundwater sample was transmitted to Curtis & Tompkins, Ltd., a laboratory certified by the California Department of Health Services to conduct hazardous waste and water testing. The sample was tested for (1) total volatile hydrocarbons (EPA Method 8015, purge and trap extraction), (2) benzene, toluene, xylene and ethyl benzene (EPA Method 602), and (3) purgeable halocarbons (EPA Method 601). The analytical program was selected to detect the compounds encountered by analyses performed during previous studies.

The results of the chemical analyses are summarized in the following table. For completeness, we have included a summary of previous laboratory data. Laboratory test reports and Chain-of-Custody documents are attached.

	Concentration (ug/l)[5]		Regulatory Criteria[6]
	3/31/88	1/31/89	
Gasoline	29000[1]	11200[2]	
EPA 602/624 Chemicals			
Benzene	ND[3]	260[4]	0.7
Toluene	ND[3]	ND[4]	100
Xylenes	640[3]	500[4]	620
Ethylbenzene	550[3]	500[4]	680
Other EPA 624 Chemicals	ND	--	
EPA 601 Chemicals	--	ND	

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1 EPA 8015 modified, sonication extraction

2 EPA 8015 modified, purge and trap

3 EPA 624

4 EPA ~~601~~ 602

5 micrograms per liter or parts per billion (ppb)

6 Drinking Water Standard, ug/l

Conclusions

The most recent set of analyses indicate that gasoline and several of its soluble constituents, exist at elevated concentrations in the groundwater. In general, the

concentrations are consistent with those previously detected. As discussed in our previous correspondence, we consider the analytical data to be indicative of groundwater where relatively low concentrations of gasoline contamination exist. Volatile organic compounds (EPA 601) were not present in the groundwater sample at concentrations above detection limits.

The results indicate a total volatile hydrocarbon concentration, as gasoline, of 11200 ug/l or parts per billion (ppb), which is somewhat lower, but nonetheless similar to the concentration detected previously. Benzene was detected at a concentration of 260 ppb. Xylenes and ethylbenzene were detected at concentrations of 500 ppb.

Benzene, toluene, xylene and ethylbenzene are soluble constituents of gasoline and are regulated as hazardous and/or toxic substances by State and Federal laws. Maximum allowable concentrations for drinking water (Drinking Water Standards, DWS) have been established and are presented in the preceding table. As the data indicates, xylene and ethylbenzene concentrations are slightly below DWS concentrations. However, benzene concentrations are above them.

The data generated by the analyses should be considered indicative of shallow groundwater quality near the well location. It should not be considered to represent water quality in other areas of the property.

If you have any questions regarding our services, please call.

Yours very truly,

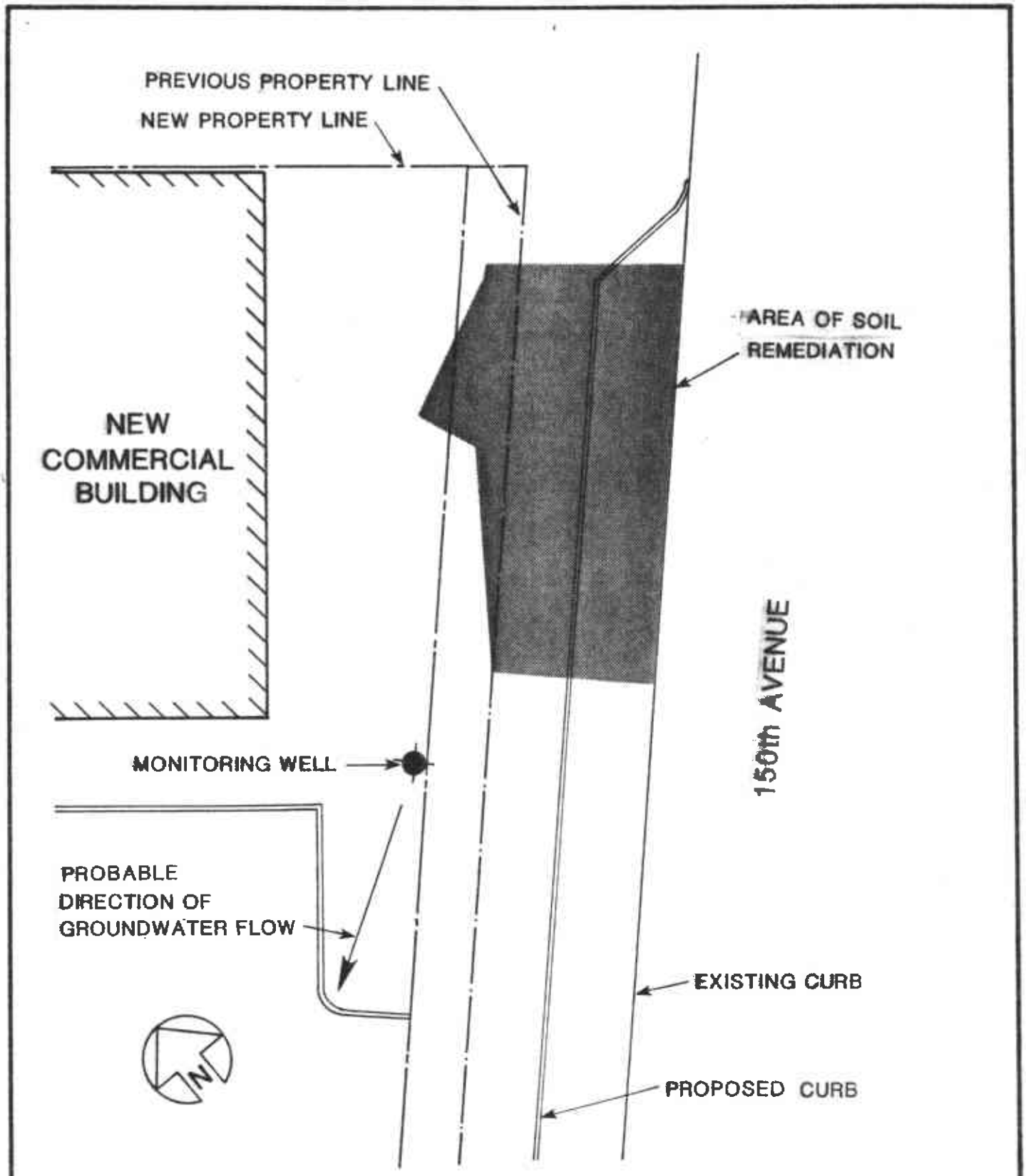
Subsurface Consultants, Inc.

James P. Bowers
Geotechnical Engineer 157 (expires 3/31/91)

JPB:RWR:ew

Attachments: Site Plan
Analytical Test Results
Chain-of-Custody Record

4 copies submitted



MONITORING WELL LOCATION

Subsurface Consultants

150th AVE. & E.14th ST. - SAN LEANDRO, CA

JOB NUMBER	DATE	APPROVED
209.006	4/26/88	

PLATE 1

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

LABORATORY NUMBER: 16738
CLIENT: SUBSURFACE CONSUTLTANTS
JOB NUMBER: 209.006
JOB LOCATION: 150TH & E. 14TH

DATE RECEIVED: 02-01-89
DATE ANALYZED: 02-07-89
DATE REPORTED: 02-09-89

Total Volatile Hydrocarbons (TVH) by EPA 8015
Benzene, Toluene, Ethyl Benzene, Xylenes by EPA 602/8020
Extraction by EPA 5030 Purge and Trap

LAB ID	CLIENT ID	TVH AS GASOLINE (ug/L)	BENZENE (ug/L)	TOLUENE (ug/L)	ETHYL BENZENE (ug/L)	TOTAL XYLENES (ug/L)
16738-1	W1	11,200	260	ND(20)	500	500

ND = None Detected; Limit of detection is indicated in parentheses.

QA/QC SUMMARY

%RPD	7	--	<1	10	2
%RECOVERY	99	97	98	97	95

LABORATORY DIRECTOR

Curtis & Tompkins, Ltd., Analytical Laboratories. Since 1878
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LABORATORY NUMBER: 16738
CLIENT: SUBSURFACE CONSULTANTS
JOB #:209.006/150TH & E. 14TH
CLIENT ID: W1

DATE RECEIVED: 02-01-89
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EPA 601
Purgeable Halocarbons in Water

Compound	Result ug/L	LOD ug/L
chloromethane	ND	1
bromomethane	ND	1
vinyl chloride	ND	1
chloroethane	ND	1
methylene chloride	ND	1
trichlorofluoromethane	ND	1
1,1-dichloroethene	ND	1
1,1-dichloroethane	ND	1
trans-1,2-dichloroethene	ND	1
chloroform	ND	1
freon 113	ND	1
1,2-dichloroethane	ND	1
1,1,1-trichloroethane	ND	1
carbon tetrachloride	ND	1
bromodichloromethane	ND	1
1,2-dichloropropane	ND	1
cis-1,3-dichloropropene	ND	1
trichloroethylene	ND	1
1,1,2-trichloroethane	ND	1
trans-1,3-dichloropropene	ND	1
dibromochloromethane	ND	1
2-chloroethylvinyl ether	ND	1
bromoform	ND	1
tetrachloroethene	ND	1
1,1,2,2-tetrachloroethane	ND	1
chlorobenzene	ND	1
1,3-dichlorobenzene	ND	1
1,2-dichlorobenzene	ND	1
1,4-dichlorobenzene	ND	1

ND = None Detected. Limit of detection (LOD) in last column.

QA/QC:

Duplicate: Relative % Difference	7
Average Spike Recovery %	86

Subsurface Consultants

CHAIN OF CUSTODY RECORD & ANALYTICAL TEST REQUEST

16738

Project Name: 150th + E. 14th

SCI Job Number: 209.006

Project Contact at SCI: JIM BOWERS

Sampled By: F. VELEZ

Analytical Laboratory: CURTIS + TOMPKINS, LTD

Analytical Turnaround: RAPID : (5 DAY)

Sample ID	Sample Type[1]	Container Type[2]	Sampling Date	Hold	Analysis	Analytical Method
W1	W	V (3)	1/31/89		TVH w/ BTXE AND EPA 601	

* * * * * *

Released by: _____ Date: 1/31/89

Released by Courier: _____ Date: _____

Received by Laboratory: _____ Date: 1/31/89

Relinquished by Laboratory: _____ Date: _____

Received by: _____ Date: _____

[1] Sample Type: W = water, S = soil, O = other (specify)
[2] Container Type: V = VOA, P = plastic, G = glass, T = brass tube, O = other (specify)

Notes to Laboratory:
-Notify SCI if there are any anomalous peaks on GC or other scans
-Questions/clarifications...contact SCI at (415) 268-0461