

4080-D Pike Lane, Concord, OA 94520

O (413/071-23/67

November 15, 1988 Job No. 203 425 5003

Mr. Peter Brodeur Circle K Corporation 3437 Myrtle Ave., Suite 440 North Highland, CA 94560

Subject: Soil Sampling for Tank Excavation at the Former Thrifty

Service Station at 2504 Castro Valley Boulevard in

Castro Valley, California.

Dear Mr. Brodeur:

This letter report presents the findings of the two phases of soil sampling conducted by Groundwater Technology, Inc. (GTI) at the above-mentioned site during underground storage tank removal operations. During both sampling rounds, soil samples were collected in clean brass sample tubes. These tubes were driven into the soil then removed and sealed. The sample tubes were labeled and placed in an iced cooler for transport to GT Environmental Laboratory (GTEL) in Concord, California for analysis. During the first sampling round, a single sample of the free water in the tank excavation pit was collected in a 40-milliliter clean glass vial with a Teflon^R lined, air-tight screw cap. Proper chain-of-custody documentation was maintained and copies of the chain-of-custody forms are attached to the laboratory reports. Samples were analyzed under priority one services to allow for a 24-hour turn around time.

The soil samples taken from within the tank pit excavation were collected by sampling material dug from the bottom of the pit.

Native soil from a depth of between 14- and 15-feet below grade was brought to the surface in the backhoe shovel and the sample tube driven into this soil. Field OVM readings tended to be highest by the northeast corner of the excavation.

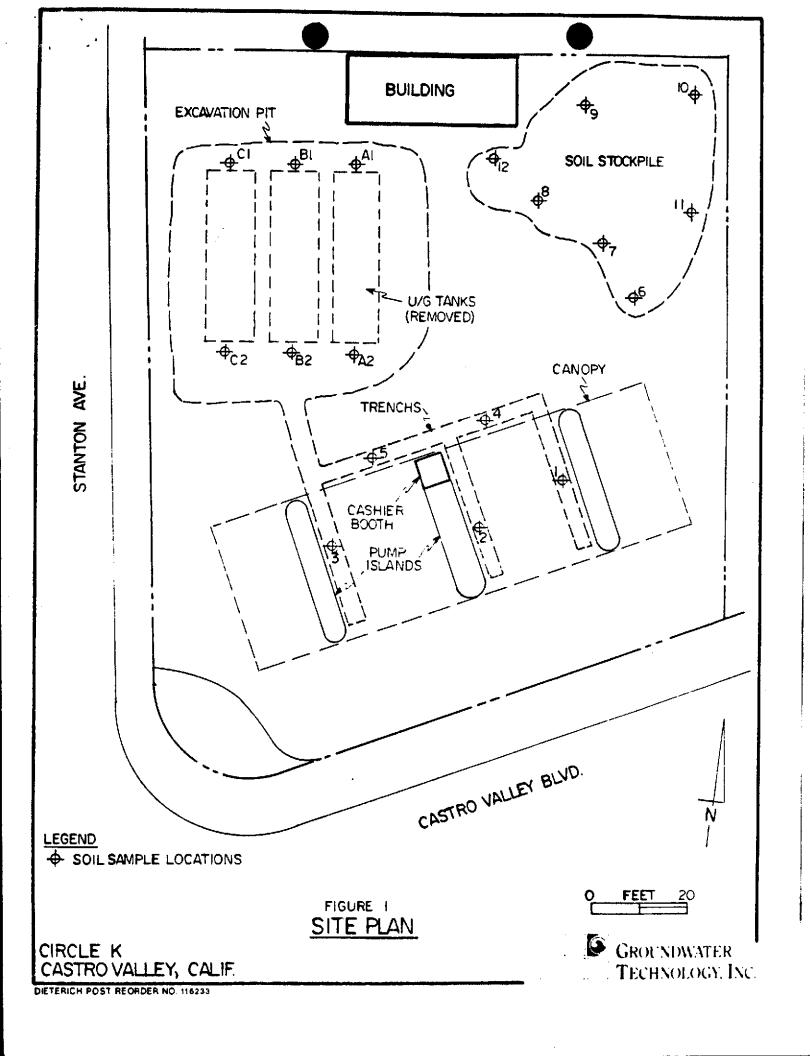
Mr. Peter Brodeur November 15, 1988 Page 2

Soil samples taken from the product line trenches fall into two categories. Samples 1, 2, and 3 were taken from the trenches parallel to the pump islands. These samples were taken from a depth of approximately 2-feet below grade. The sample tubes were driven into the relatively undisturbed native soil exposed during trenching and all possessed a noticeable petroleum odor. Samples 4 and 5 were taken from the trench that runs perpendicular to the pump islands. These samples were taken at approximately grade surface of the clayey gravel exposed in the trench. This material was exposed by Sacramento Equipment when the overlying asphalt was removed. The fill was left in place to allow heavy equipment to drive across the trench. This fill is not representative of conditions below the trench and as such, samples 4 and 5 were not analyzed.

Samples 6 through 12 were taken from the excavated soils stock pile by simply driving the sample tube into the mound at a height approximately 4- to 6-feet above grade. The soil pile appeared to be comprised primarily of sand (backfill from around the tanks presumably) with large chunks of native clayey soil interspersed. Sample 12 was taken from material newly removed from the excavation pit. The entire stock pile possessed a strong gasoline odor. Please note that during the second site visit on November 11, 1988, the pile was being actively adjusted. As such, samples taken from an area along the southern edge of the stock pile may no longer reflect the nature of material now present at that location.

Figure 1 shows the approximate location of all samples collected. Analytical results for benzene, toluene, ethylbenzene, and xylenes (BTEX) and total petroleum hydrocarbons as gasoline (TPH-Gas) are attached.





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Of the soil samples taken from the excavation pit, only one, C1 taken from the northwest corner of the pit has detectable levels of hydrocarbon compounds. This sample showed 1 milligram per kilogram (ppm) each of toluene and xylenes with an additional 3 ppm of miscellaneous hydrocarbons for a total TPH-gasoline of 5 ppm. Samples 1, 2 and 3 show a range of concentrations. The western most trench (sample 3) is the cleanest with only 20 ppm of TPH-Gas. The other two trenches show 320 ppm of TPH-Gas. In all the trenches, the miscellaneous hydrocarbon concentration far outweighs the concentration of any and all the BTEX compounds.

The 7 samples taken from the soil stock pile show generally high concentrations of contaminants. With the exception of sample 11, all samples display TPH-Gas concentrations between 350 and 1400 ppm. Again, the greatest concentrations are for the miscellaneous hydrocarbons.

The single water sample taken from the tank pit indicates a TPH-Gas concentration of 130,000 microgram per liter (ppb) with a nearly equal division between total BTEX and miscellaneous hydrocarbons. The indicated benzene concentrations is 12,000 ppb.

The normal action levels for TPH-Gas in soil is 100 ppm, though this can be changed by the local regulatory agency. Any detectable level of benzene in groundwater is usually above the active level.



Mr. Peter Brodeur November 15, 1988 Page 4

If you have any questions concerning this project, please contact us at our Concord office (415) 671-2387.

Sincerely,

GROUNDWATER TECHNOLOGY, INC.

Glen L. Mitchell Project Geologist

Attachments

cc: Mr. Pete DiAmico Thrifty Oil

> Mr. Terry Masters Sacramento Equipment

GLM:lf LR5003A



Page 1 of 1

MORK ORD4:8811196

CLIENT: Greg Hoehn

Broundwater Technology, Inc.

4088 Pike Lane

Concord, CA 94520

PROJECT#: 283-425-5883-4

LOCATION: 2594 Castro Valley Blvd.

Castro Valley, CA

SAMPLED: 11/10/88

BY: D. Kaufman

RECEIVED: 11/11/88

BY: E. Larsen

ANALYZED: 11/11/67

BY: Re

MATRIX: Water

TEST RESULTS

UNITS: ug/L (ppb)

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0. 5	63,000	,			
1	67,000				
1	130,000	,		(M)) U :
		67,000	67,000	67,000	61,000

NDL = Method Detection Limit; compound below this level would not be detected. Results rounded to two significant figures.

Modified EPA Method 5030/ 8020/8015

SAFY KHALIFA, Ph.D., Director

Page 1 of 2

WORK ORD#:8811105

CLIENT: Breg Hoehn

Groundwater Technology, Inc.

4080 Pike Lane

Concord, CA 94528

PROJECT#: 203-475-5003-3

LOCATION: 2504 Castro Valley Blvd.

Castro Valley, CA

SAMPLED: 11/10/88

BY: D. Kaufman

RECEIVED: 11/11/88

BY: E. Larsen

ANALYZED: 11/11/8/

BY: RC

MATRIX: Soil

TEST RESULTS

UNITS: mg/kg (ppm)

COMPOUNDS	I MOL ILAB I II.D		I 82A I SSIA2	83A S\$481	84A \$5#82	85A I SSEC I
Benzene	6.5	40.5	<0.5	<0.5	K1.5	40.5
Toluene	0. 5			1	١	1/
Ethylbenzene	0. 5					40.5
Iylenes	0.5					-30.5 - 1 - 1/
Total BTEX	0.5	1	1	4	\checkmark	2
Misc. Hydrocarbons (C4-C12)	1.0	<(۷۱	21	41	3
Fotal Petroleum Hydrocarbons as Gasoline	1.0	ر ا	ر ا	۷١	۷(5
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MDL = Method Detection Limit; compound below this level would not be detected. Results rounded to two significant figures.

METHOD:

Modified EPA Method 5030/8020/8015

Page 2 of 2

CLIENT: Greg Hoehn PROJECT#: 293-475-5003-3

LOCATION: 2504 Castro Valley Blvd.

Castro Valley, DA

TEST RESULTS

MATRIX: Soil

UNITS: mg/kg (ppm)

COMPOUNDS		LAB #	 	96A SSEC2	
Benzene	€.5			< 0.5	-
Toluene	8. 5			1	
Ethylbenzene	0.5				
Xylenes	0. 5				
Total BTEX	0.5			1	
Misc. Hydrocarbons (C4-C12)	1.0		4	۷1	
Total Petroleum Hydrocarbons as Basoline	1.0			<i>د</i> ر /	j
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NDL = Method Detection Limit! compound below this level would not be detected. Results rounded to two significant figures.

METHOD:

Modified EPA Method 5030/8020/8015

SAFY KHALIFA, Ph.D., Director

Page 1 of 2 MORK ORD#:8811134

CLIENT: Paul Horton

Groundwater Technology, Inc.

4080 Pike Lm. Concord, CA 94520

PROJECT#: 283-425-5003-5 LOCATION: Castro Valley, CA

SAMPLED: 11/11/88

BY: 6. Miller

RECEIVED: 11/11/88

BY: K. Fillinger BY: RC

ANALYZED: 11/1/5/

MATRIX: Soil

UNITS:

mg/kg (ppm)

COMPOUNDS	1	ADL.	ILAB I		91 1	A 1	6 2A	1	8 3A 3	1	84 R 6	1	0 5A 7	
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Ethylbenzene		0.5			9		1		l		عم	34	10	
Xylenes		6. 5		5	18	.J	b		1		180		110	
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MDL = Method Detection Limit; compound below this level would not be detected. Results rounded to two significant figures.

METHOD:

Modified EPA Method 5830/8020/8015

TEST RESULTS

SAFY KHALIFA, Ph.D., Director

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Page 2 of 2

CLIENT: Paul Horton
PROJECT9: 203-425-5003-5
LOCATION: Castro Valley, CA

MATRIX: Soil

TEST RESULTS

UNITS: mg/kg (ppm)

COMPOUNDS	1	MOL	ILAB #	1	0 6A 8	1	07A 9	i I	68A 10	1	0 9A	1	10A 12	1
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Xylenes		0. 5		8	11		٦,		58		(41	v
Total BTEX		6. 5		110	>		7 G		74	→	3	v	72	
Misc. Hydrocarbons (C4-C12)		i		leci)		30		1000	•	le	,	28C)
Total Petroleum Hydrocarbons as Gasoline		1	•	721	,	(وا0 ر		1100	·	9	•	350) ·

 $\mathtt{MDL} = \mathtt{Method}$ Detection Limit; compound below this level would not be detected. Results rounded to two significant figures.

METHOD:

Modified EPA Method 5030/8020/8015

SAFY KHALIFA, Ph.D., Director



4080-C Pike Lane Concord, CA 94520 415-685-7852

800-544-3422 (In CA) 800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

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CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

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4080-C Pike Lane Concord, CA 94520 415-685-7852

800-544-3422 (In CA) 800-423-7143 (Outside CA)

CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

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