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Alameda County Department of Environmental Health 1131 Harbor Bay Parkway, 2<sup>nd</sup> Floor Alameda, CA 94502

Attention: Barney Chan

Subject: Soil Boring Results Former St. Francis Pie Shop UST Site 1125 67<sup>th</sup> Street, Oakland, California

Ladies and Gentlemen:

Gribi Associates is pleased to submit this letter on behalf of Mr. John Buschini for the former St. Francis Pie Shop underground storage tank (UST) site located at 1125 67<sup>th</sup> Street in Oakland, California. This report provides results from a recent soil boring investigation and proposes locations for five previously-approved groundwater monitoring wells on the site.

On December 18 and 19, 2006, Gribi Associates suppervised the drilling and sampling of 12 soil borings, B-8 through B-19, at the subject site in Oakland, California. Attached herein please find the following summary documents:

Table 1:	Soil Hydrocarbon Analytical Results
Table 2:	Groundwater Hydrocarbon Analytical Results
Figure 1:	Site Vicinity Map
Figure 2:	Site Plan
Figure 3:	Cross Sections Location Map
Figure 4:	Cross Sections
Figure 5:	Soil & Groundwater Hydrocarbon Results
Figure 6:	Groundwater MTBE Results
Figure 7:	Groundwater Benzene Results
Figure 8:	Proposed Monitoring Well Locations

Results of the investigation seem to indicate the following:

- 1. Although groundwater entered a couple of the borings slowly (overnight), we were able to sample groundwater in all borings after coring to only 20 feet in depth.
- 2. A larger fraction of sandy soils was encountered in borings on the McDonald's site

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(borings B17, B18 and B19) than in borings on the project site. Soils in these borings exhibited more field evidence of hydrocarbons (odors and staining) than did soils in borings on the project site.

- 3. Hydrocarbon contamination from the project site UST appears to be limited primarily to groundwater MTBE impacts, with no significant soil hydrocarbon impacts and no significant groundwater TPH-G and BTEX impacts.
- 4. Soil and groundwater TPH-G and BTEX impacts appear to have originated from the former gas station on the McDonald's property, and not from the former project site UST.

Based on these results, we have proposed locations for five groundwater monitoring wells, in accordance with the previously-approved workplan (see Figure 8). Two of these wells, MW-1 and MW-2, will be sited in the former UST source area, and three of the wells, MW-3, MW-4 and MW-5, will be sited on the expected downgradient (west-southwest) side of the site. As specified in the workplan, these wells will be installed to about 20 feet in depth using direct push coring equipment. The wells will be installed and sampled in accordance with generally accepted guidelines and protocols, and results from these activities will be reported in a subsequent Remedial Investigation report.

We appreciate the opportunity to present this workplan for your review. Please call if you have questions or require additional information. We look forward to working with you on this important project.

Very truly yours,

James E. Gribi Professional Geologist California No. 5843

JEG/ct Enclosure



## Table 1 SOIL HYDROCARBON ANALYTICAL RESULTS

St. Francis Pie Shop

Sample ID	Sample Depth	Concentration, milligrams per kilogram (mg/kg)							
		TPH-D	TPH-G	В	Т	E	X	Oxygenates	
B-8-11'	11.0 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-8-18'	18.0 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	<b>0.017</b> MTBE	
B-9-7.5	7.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-9-11.5	11.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	0.017 MTBE	
B-10-7.5'	7.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-10-19'	19 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-11-10'	10.0 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-11-17'	17.0 feet	<5.0	< 0.50	< 0.0020	0.0021	0.0040	0.012	All ND	
B-12-3.0'	3.0 feet	<5.0	1.2	0.010	< 0.0020	0.021	< 0.0040	0.0095 TAME	
								0.23 MTBE	
B-12-7.5'	7.5 feet	<5.0	190	0.015	< 0.0020	0.43	0.33	All ND	
B-12-15.5'	15.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	0.020 TAME	
								<b>0.22</b> TBA	
								0.68 MTBE	
B-13-3.0'	3.0 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-13-6.0'	6.0 feet	<5.0	11	< 0.0020	< 0.0020	0.0081	< 0.0040	0.0096 MTBE	
B-13-11.5'	11.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	0.0071 TAME	
								<b>0.10</b> TBA	
								0.210 MTBE	
B-14-7.5'	7.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-14-15.0'	15.0 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-15-3.5'	3.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	0.0070 TAME	
								<b>0.13</b> TBA	
								<b>0.16</b> MTBE	
B-15-6.0'	6.0 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	0.0084 TAME	
								<b>0.10</b> TBA	
								0.22 MTBE	
B-15-11.5'	11.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	0.014 TAME	
								0.47 MTBE	
B-16-4.0	4.0 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-16-9.5'	9.5 feet	<5.0	180	< 0.0020	< 0.0020	0.18	< 0.0040	<b>0.081</b> MTBE	
B-16-15.0'	15.0 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	0.018	0.013 MTBE	
B-17-7.5'	7.5 feet	69	55	0.0095	0.0022	0.19	0.019	<b>0.12</b> TBA	
								0.060 MTBE	
B-17-11.5	11.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	0.0042	0.0046	<b>0.69</b> TBA	
								0.014 MTBE	

## Table 1 SOIL HYDROCARBON ANALYTICAL RESULTS

St. Francis Pie Shop

	Sample Depth	Concentration, milligrams per kilogram (mg/kg)							
Sample ID		TPH-D	TPH-G	В	Т	E	X	Oxygenates	
B-18-7.5'	7.5 feet	550	100	0.27	0.034	0.85	13.9	<b>0.24</b> TBA	
								0.44 MTBE	
B-18-11'	11.0 feet	100	220	0.21	0.047	1.2	6.7	<b>0.20</b> TBA	
								0.36 MTBE	
B-18-19'	19.0 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-19-7.5'	7.5 feet	<5.0	< 0.50	< 0.0020	< 0.0020	< 0.0020	< 0.0040	All ND	
B-19-10'	10.0 feet	89	38	0.0068	0.0059	0.38	0.28	All ND	
B-19-15'	15.0 feet	<5.0	< 0.50	0.0033	< 0.0020	0.0056	0.0049	All ND	
Soil	Soil ESL		400	0.51	9.3	32	11	110 TBA	
								0.25 MTBE	

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel

 $\mathbf{B} = \mathbf{B}\mathbf{e}\mathbf{n}\mathbf{z}\mathbf{e}\mathbf{n}\mathbf{e}$ 

T = Toluene

E = Ethylbenzene

X = Xylenes

<0.50 = Not detected above the expressed value.

ESL = Shallow Soil Environmental Screening Levels for evaluation of commercial/industrial land use, where groundwater is not a current or potential drinking water source, as contained in *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, Interim Final, February 2005, Appendix 1, Tables B-2. Note that we used either the Groundwater Protection ESL or the Vapor Intrusion into Buildings ESL, whichever is lower.

## Table 2 GROUNDWATER HYDROCARBON ANALYTICAL RESULTS

St. Francis Pie Shop

	Sample	Concentration, micrograms per liter (ug/l)							
Sample ID	Depth	TPH-D	TPH-G	В	Т	E	X	Oxygenates	
B-8-GW		<50	570	<0.50	<0.50	<0.50	<1.0	<b>43</b> TAME <b>1,800</b> MTBE	
B-9-GW		<50	<50	< 0.50	0.66	< 0.50	<1.0	<b>44</b> MTBE	
B-10-GW		<50	140	<0.50	<0.50	<<0.50	<1.0	<ul><li><b>4.3</b> TAME</li><li><b>420</b> MTBE</li></ul>	
B-11-GW		<50	420	<0.50	<0.50	2.3	4.1	29 TAME 1,300 MTBE	
B-12-GW		230	600	38	<0.50	34	29	230 MTBE	
B-13-GW		510	210	2.5	1.2	14	<1.0	7.5 TAME 280 MTBE	
B-14-GW		<50	270	< 0.50	< 0.50	2.0	3.3	19 MTBE	
B-15-GW		700	530	1.6	<0.50	<0.50	<0.50	32 TAME 1,900 MTBE	
B-16-GW		960	2,100	42	< 0.50	28	8.9	<b>78</b> MTBE	
B-17-GW		640	2,400	26	<0.50	49	4.8	9,300 TBA 270 MTBE	
B-18-GW		0.33	4,100	430	21	130	486	180 MTBE	
B-19-GW		3,500	29,000	380	36	1,400	1,900	All ND	
Groundwa	ater ESL	2,500	5,000	540	380,000	170,000	160,000	130,000 TBA 26,000 MTBE	

TPH-G = Total Petroleum Hydrocarbons as Gasoline

TPH-D = Total Petroleum Hydrocarbons as Diesel

 $\mathbf{B} = \mathbf{B}\mathbf{e}\mathbf{n}\mathbf{z}\mathbf{e}\mathbf{n}\mathbf{e}$ 

T = Toluene

- E = Ethylbenzene
- X = Xylenes
- <0.50 = Not detected above the expressed value.

ESL = Groundwater Environmental Screening Levels for evaluation of commercial/industrial land use, where groundwater is not a current or potential drinking water source, as contained in *Screening for Environmental Concerns at Sites with Contaminated Soil and Groundwater*, San Francisco Bay Regional Water Quality Control Board, Interim Final, February 2005, Appendix 1, Table F-1b. Note that we did not use the Aquatic Toxicity ESL, since there are no surface water bodies in the site area, rather we used Gross Contamination Ceiling Level ESLs for TPH-D and TPH-G, and Vapor Intrusion into Buildings ESLs for BTEX and Oxygenates.













