SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102

October 9, 2019

Ms. Louise Bardy
Voluntary Cleanup Unit Supervisor
Washington State Department of Ecology
Northwest Regional Office
31960 160th Avenue Southeast
Bellevue, Washington 98008-5452

SUBJECT: BAKKER'S FINE DRY CLEANING SITE
11855 Northeast 8th Street
Bellevue, Washington
Facility/Site ID: 92645942
Cleanup Site ID: 11074
Project Number: 1021-001

Dear Ms. Bardy:

We are writing in response to the letter the Washington State Department of Ecology (Ecology) sent to Ernie Bakker dated September 9, 2019, regarding the Bakkers' Fine Dry Cleaning Site (the Site). Bakker's Fine Dry Cleaning, Inc. (Bakker's) owns the property located at 11855 NE 8th Street in Bellevue, Washington (the Property), and formerly operated a dry cleaner on the Property.

Bakker's has retained SoundEarth Strategies, Inc. to complete a remedial investigation of the Site. Since 2016, Bakker's has completed multiple phases of investigation on- and off-Property to characterize the source, nature, and extent of contamination at the Site, including collection and analysis of soil samples, groundwater samples, and soil gas samples. The data from the completed phases of investigation are summarized in five separate tables, and the sample locations are depicted on attached Figure 1. Tables 1 through 5 are attached.

Bakker's has already completed a vapor intrusion investigation for the existing building on the Property (the Building). The investigation identified dry cleaning solvents at concentrations exceeding their respective Washington State Model Toxics Control Act (MTCA) Method B soil gas screening levels. The results from the investigation are presented in Table 5. In response, Bakker's completed an evaluation of alternative engineering control technologies that could be implemented to mitigate the risk of soil vapors intruding into the Building. A technical memorandum (Attachment A) summarizing the evaluation is enclosed. Based on the evaluation, a radon style sub-slab depressurization (SSD) system was installed beneath the Building in November 2016. The SSD system has been operational since that time. Additional sub-slab soil gas samples were collected from under the Building in August 2017, after the SSD system had been operational for several months. The samples did not contain dry cleaning solvents at concentrations exceeding their respective MTCA Method B screening levels, which demonstrates the SSD system is

effective at mitigating the vapor intrusion risk in the Building. The sample results are presented in Table 5.

There are no buildings within 100 feet to the south or west of the known contamination at the Site. There are buildings to the north and east that may be within 100 feet of contamination, but the owners of those properties have refused to grant Bakker's access to their properties to conduct a vapor intrusion investigation.

Please let us know if you require any additional information.

Respectfully,

SoundEarth Strategies, Inc.

Clare Tochilin, LG
Associate Geologist

Ryan K. Bixby, LG
Managing Principal

Attachments: Figure 1, Exploration Location Plan
Table 1, Summary of Soil Sample Results to Date – TPH and Mineral Spirits
Table 2, Summary of Soil Sample Results to Date – VOCs
Table 3, Summary of Groundwater Sample Results to Date – TPH and Mineral Spirits
Table 4, Summary of Groundwater Sample Results to Date - VOCs
Table 5, Summary of SoundEarth's Soil Vapor Results - VOCs
A, Technical Memorandum

cc: Ernest Bakker
Howard Jensen, Veris Law Group PLLC

CJT/RKB:cms

FIGURE

3/21/2019

DRAFT

PARKING LOT

N

0 20 40

LEGEND

- FIRST-PHASE SHALLOW ZONE MONITORING WELL (SOUNDEARTH 2016-2017)
- FIRST-PHASE SOIL BORING (SOUNDEARTH 2016)
- FIRST-PHASE SUB-SLAB VAPOR POINT (SOUNDEARTH 2016)
- SECOND-PHASE SHALLOW ZONE MONITORING WELL (SOUNDEARTH 2016-2017)
- SECOND-PHASE INTERMEDIATE ZONE MONITORING WELL (SOUNDEARTH 2016-2017)
- SECOND-PHASE DEEP ZONE MONITORING WELL (SOUNDEARTH 2016-2017)
- SECOND-PHASE SOIL BORING (SOUNDEARTH 2016)
- THIRD-PHASE SHALLOW ZONE MONITORING WELL (SOUNDEARTH 2019)
- THIRD-PHASE INTERMEDIATE ZONE MONITORING WELL (SOUNDEARTH 2019)
- THIRD-PHASE DEEP ZONE MONITORING WELL (SOUNDEARTH 2019)
- CURRENT BOUNDARY OF BAKKER'S PROPERTY
- PREVIOUS BOUNDARY OF BAKKER'S PROPERTY

VOLVO PROPERTY

NORTHEAST BELLEVUE-REDMOND ROAD

CONCRETE SIDEWALK

CONCRETE SIDEWALK

TRIANGLE PROPERTY

120TH AVENUE NORTHEAST

MERCEDES PROPERTY

PARKING LOT

B139/ MW-11

B141/ MW-12

B131

B132

B136

B135

B137

B143/ MW-14

B153/ MW-24

B138

B152/ MW-23

B125/ MW-07

B133

B144/ MW-15

B124

B123

CONCRETE PAD

B147/ MW-18

SG01

B134

B120

B122

B129

EXISTING BUILDING

B127/MW-09 B142/MW-13

B150/ MW-21

SG02

B140

B126/MW-08

B148/ MW-19

B121

B151/ MW-22

SG03

B146/ MW-17

B149/ MW-20

B128/ MW-10

B145/MW-16

B130

SIDEWALK

SIDEWALK

NORTHEAST 8TH STREET

CONCRETE SIDEWALK

120TH AVENUE NORTHEAST

P:\1021 BAKKER\1021-001 BAKKERS FINE DRY CLEANING\TECHNICAL\CAD\2019\CONTAINED-IN\1021-001_2019_EL.DWG

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BAKKER'S FINE DRY CLEANING PROPERTY
11855 NORTHEAST 8TH STREET
BELLEVUE, WASHINGTON
SOUNDEARTH PROJECT #1021-001

FIGURE 1
EXPLORATION LOCATION PLAN

TABLES

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Table 1
Summary of Soil Sample Results to Date - TPH and Mineral Spirits
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results (milligrams per kilogram)							
					Mineral Spirits[1]	GRPH[1]	DRPH[2]	ORPH[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
11855 Bellevue-Redmond Road												
UST Removal Excavation	3A (West Wall)	5.5-6.0	08/8-10/89	GCI	--	--	*229*	--	--	--	--	--
	4A (North Wall)	7.5-8.0			--	--	*58.6*	--	--	--	--	--
	5A (South Wall)	8.5-9.0			--	--	*18.1*	--	--	--	--	--
	6A (Floor)	12.5-13.0			--	--	*58.1*	--	--	--	--	--
	7A (East Wall)	7.5-8.0			--	--	*22.3*	--	--	--	--	--
	1B (East Wall)	6.5-7.0			--	--	*58.4*	--	--	--	--	--
	2B (North Wall, center)	8.5-9.0			--	--	*27.8*	--	--	--	--	--
	3B (West Wall)	6.5-7.0			--	--	*14.3*	--	--	--	--	--
	4B (Floor)	10.5-11.0			--	--	*21.0*	--	--	--	--	--
	5B (North Wall, W section)	4.5-5.0			--	--	<5.0	--	--	--	--	--
11968 and 11969 Bellevue-Redmond Road/11866 Northeast 8th Street												
PCA-EX 1	PCA-EX 1 (Stockpile)	NA	09/23/91	PNE	--	--	**2,100**	*280*	--	--	--	--
PCA-SS1-6.5	PCA-SS1-6.5 (East sidewall below 16-inch pipe)	6.5			--	--	Detected	--	--	--	--	--
PCA-SS2-5.5	PCA-SS2-5.5 (Northeast sidewall below 16-inch pipe)	5.5			--	<20	<40	--	--	--	--	--
PCA-SS3-5.5	PCA-SS3-5.5 (North sidewall of excavation)	5.5	09/24/91		--	--	*63*	--	--	--	--	--
PCA-SS4-5.5	PCA-SS4-5.5 (West sidewall of excavation)	5.5			--	--	<40	--	--	--	--	--
PCA-EX2-PEA	PCA-EX2-PEA (Pea gravel backfill)	NA			--	--	<40	--	--	--	--	--
PCA-MW-3.5-5'	PCA-MW-3.5-5' (MW6)	3.5-5	09/25/91		--	--	<40	--	--	--	--	--
SS5-5.5'	SS5-5.5' (East floor of excavation in peat)	5.5			--	--	<40	--	--	--	--	--
SS6-5'	SS6-5' (East sidewall below 16-inch pipe)	5			--	--	<40	--	--	--	--	--
PCA-SS7-4'	PCA-SS7-4' (Beneath 4-inch pipe)	4			--	Detected	--	--	--	--	--	--
PCA-SS8-6'	PCA-SS8-6' (West sidewall of excavation in clayey soil)	6	09/26/91		**1,400**	--	--	--	--	--	--	--
PCA-SS10-4.5'	PCA-SS10-4.5' (East sidewall of excavation in clayey soil)	4.5			<20	--	--	--	--	--	--	--
GAT1	GAT1/6-7	6-7	07/25/14	GeoSyntec	--	<3.0	*43.5*	*240*	--	--	--	--
	GAT1/7-8	7-8	07/31/14		--	<2.8	*484*	**2,840**	--	--	--	--
GAT2	GAT2/4-5	4-5	07/31/14	GeoSyntec	--	<2/4	*2.4* [J]	*27.0* [B]	--	--	--	--
	GAT2/9-10	9-10	07/25/14		--	<3.1	*144*	*224*	--	--	--	--
120th Avenue Northeast Widening Project Stage 2												
B-101E	B-101E-2.5-122011	2.5	12/20/11	GeoEngineers	<5.3	--	*42*	*130*	<0.0008	<0.004	<0.0008	<0.0008
	B-101E-7.5-122011	7.5			--	<33	<83	<170	<0.0017	<0.0084	<0.0017	<0.0017
B-102E	B-102E-2.5-122011	2.5	12/20/11	GeoEngineers	--	<29	<74	<150	--	--	--	--
	B-102E-7.5-122111	7.5	12/21/11		--	<24	<59	<120	--	--	--	--
B-103E	B-103E-5.0-122111	5.0	12/21/11	GeoEngineers	<5.2	--	<26	<51	<0.0011	<0.0057	<0.0011	<0.0011
B-104E	B-104E-2.5-121911	2.5	12/19/11	GeoEngineers	<4.1	--	<26	*61*	<0.020	<0.041	<0.041	<0.041
	B-104E-7.5-122011	7.5	12/20/11		<4.8	--	*61*	*690*	<0.020	<0.048	<0.048	<0.048
	B-104E-10.0-122011	10.0			--	--	<29	<57	--	--	--	--
B-105E	B-105E-1.5-122011	1.5	12/20/11	GeoEngineers	<4.2	--	<27	*140*	<0.001	<0.0052	<0.001	<0.001
	B-105E-7.5-122011	7.5			<5.5	--	**2,170**	*270*	<0.00095	<0.0048	<0.00095	*0.0014*
	B-105E-17.0-122011	17.0			--	--	<27	<55	--	--	--	--
MTCA Cleanup Level[4]					**100**	**100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**

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Summary of Soil Sample Results to Date - TPH and Mineral Spirits
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

DRAFT

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results (milligrams per kilogram)							
					Mineral Spirits[1]	GRPH[1]	DRPH[2]	ORPH[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
120th Avenue Northeast Widening Project Stage 2												
B-106E	B-106E-2.5-122111	2.5	12/21/11	GeoEngineers	**540**[5]	--	*73*	*230*	<0.0012	<0.006	<0.0012	<0.0012
	B-106E-5.0-122111	5.0			--	<26	<65	<130	--	--	--	--
B-107E	B-107E-2.5-122111	2.5	12/21/11	GeoEngineers	**219**	--	<30	<59	<0.001	<0.005	<0.001	<0.001
	B-107E-5.0-122111	5.0			--	<25	<63	<130	--	--	--	--
B-108E	B-108E-5.0-122211	5.0	12/22/11	GeoEngineers	--	<22	<28	*120*	<0.00095	<0.0047	<0.00095	<0.00095
	B-108E-10.0-122211	10.0			--	--	--	--	<0.001	<0.0051	<0.001	<0.001
B-109E	B-109E-2.5-122211	2.5	12/22/11	GeoEngineers	<4.8	--	<140	*1,100*	<0.00085	<0.0043	<0.00085	<0.00085
	B-109E-5.0-122211	5.0			--	--	<30	<61	--	--	--	--
B-110E	B-110E-2.5-122211	2.5	12/22/11	GeoEngineers	<6.7	--	<30	*75*	<0.00098	<0.0049	<0.00098	<0.00098
B-111E	B-111E-2.5-121911	2.5	12/19/11	GeoEngineers	--	<24	<60	<120	<0.001	<0.005	<0.001	<0.001
	B-111E-5.0-121911	5.0			<6.3	--	<31	*65*	<0.001	<0.0051	<0.001	<0.001
	B-111E-10.0-122011	10.0	12/20/11		**8,100**[5]	Detected	<2,600	<110	<0.097	<0.48	*0.24*	<0.097
B-112E	B-112E-2.5-121911	2.5	12/19/11	GeoEngineers	<4.9	--	<28	*78*	<0.020	<0.049	<0.049	<0.049
	B-112E-5.0-121911	5.0			<5.3	--	*45*	*390*	<0.020	<0.053	<0.053	<0.053
B-113E	B-113E-2.5-121911	2.5	12/19/11	GeoEngineers	--	<23	<57	<110	--	--	--	--
B-114E	B-114E-2.5-122211	2.5	12/22/11	GeoEngineers	<5.4	--	<29	<57	<0.0011	<0.0054	<0.0011	<0.0011
	B-114E-7.5-122211	7.5			--	<24	<59	<120	<0.0012	<0.0059	<0.0012	<0.0012
	B-114E-12.5-122211	12.5			--	--	--	--	<0.0011	<0.0056	<0.0011	<0.0011
B-115E	B-115E-5.0	5.0	11/30/12	GeoEngineers	<5.1	--	<29	<57	<0.00084	<0.0042	<0.00084	<0.0017
	B-115E-10.0	10			<5.2	--	<30	<61	<0.00081	<0.004	<0.00081	<0.0016
B-116E	B-116E-2.5	2.5	11/30/12	GeoEngineers	--	--	<28	*97*	<0.00092	<0.0046	<0.00092	<0.0018
	B-116E-8.0	8.0			--	--	<27	<55	<0.00079	<0.0039	<0.00079	<0.0016
B-117E	B-117E-2.5	2.5	11/30/12	GeoEngineers	<4.4	--	--	--	<0.00086	<0.0043	<0.00086	<0.0017
	B-117E-5.0	5.0			<4.4	--	--	--	<0.00088	<0.0044	<0.00088	<0.0017
B-118E	B-118E-2.5	2.5	11/30/12	GeoEngineers	<5.5	--	--	--	<0.00093	<0.0047	<0.00093	<0.0019
	B-118E-10.0	10.0			<5.3	--	--	--	<0.0008	<0.004	<0.0008	<0.0016
B-119E	B-119E-5.0	5.0	11/30/12	GeoEngineers	<4.7	--	--	--	<0.00087	<0.0043	<0.00087	<0.0017
	B-119E-10.0	10.0			<5.0	--	--	--	<0.0008	<0.004	<0.0008	<0.0016
GEIMW-1	GEIMW-1-2.5	2.5	06/18/12	GeoEngineers	<4.8	--	<140	*930*	<0.00086	<0.0043	<0.00086	<0.00086
	GEIMW-1-5.0	5.0			<6.8	--	<29	*290*	--	--	--	--
GEIMW-2	GEIMW-2-3.5	3.5	06/18/12	GeoEngineers	<6.6	--	<31	<61	<0.00098	<0.0049	<0.00098	<0.00098
	GEIMW-2-7.5	7.5			<6.5	--	<32	<63	<0.0011	<0.0053	<0.0011	<0.0011
	GEIMW-2-10.0	10.0			--	--	--	--	<0.0012	<0.0059	<0.0012	<0.0012
GEIMW-3	GEIMW-3-2.5	2.5	06/17/12	GeoEngineers	<5.6	--	<28	<57	<0.00095	<0.0048	<0.00095	<0.00095
	GEIMW-3-12.5	12.5			--	--	--	--	<0.00095	<0.0048	<0.00095	<0.00095
GEIMW-4	GEIMW-4-2.5	2.5	06/17/12	GeoEngineers	<5.6	--	<28	*150*	<0.0010	<0.0050	<0.0010	<0.0010
	GEIMW-4-12.5	12.5			--	--	--	--	<0.00092	<0.0046	<0.00092	<0.00092
	GEIMW-4-17.5	17.5			--	--	--	--	<0.00088	<0.0044	<0.00088	<0.00088
TUP-SW1	TUP-SW1-5.0	5.0	10/01/14	GeoEngineers	--	<11	--	--	--	--	--	--
TUP-SW2	TUP-SW2-4.0	4.0	10/01/14	GeoEngineers	--	<4.4	--	--	--	--	--	--
	TUP-SW2-8.0	8.0			--	<4.4	--	--	--	--	--	--
MTCA Cleanup Level[4]					**100**	**100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**

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					Mineral Spirits[1]	GRPH[1]	DRPH[2]	ORPH[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
120th Avenue Northeast Widening Project Stage 2												
TUP-SE	TUP-SE-4.0	4.0	10/02/14	GeoEngineers	--	<5.2	<29	*72*	--	--	--	--
	TUP-SE-8.0	8.0			--	<5.9	<31	<62	<0.02	<0.059	<0.059	<0.118
PTHL-W	PTHL-W-12+50-5.0	5.0	10/02/14	GeoEngineers	--	<8.9	--	--	--	--	--	--
	PTHL-W-12+50-8.0	8.0			--	<6.1	--	--	--	--	--	--
PTHL-S	PTHL-S-98+50-4.0	4.0	10/03/14	GeoEngineers	--	<36	--	--	--	--	--	--
	PTHL-S-98+50-8.0	8.0			--	<5.2	--	--	--	--	--	--
PTHL-N	PTHL-N-103+50-5.0	5.0	10/03/14	GeoEngineers	--	<6.0	--	--	--	--	--	--
	PTHL-N-103+50-10.0	10.0			--	<5.5	--	--	--	--	--	--
	PTHL-N-103+50-14.0	14.0			--	<4.2	--	--	--	--	--	--
PTHL-SH1	PTHL-SH1-6.0	6.0	10/23/14	GeoEngineers	--	<5.1	<48	*270*	<0.02	<0.051	<0.051	<0.102
	PTHL-SH1-9.0	9.0			--	<7.2	<31	<62	<0.02	<0.072	<0.072	<0.072
PTHL-SH2	PTHL-SH2-4.0	4.0	10/23/14	GeoEngineers	--	<4.4	<28	<57	<0.02	<0.044	<0.044	<0.088
	PTHL-SH2-8.0	8.0			--	<5.0	<30	<60	<0.02	<0.05	<0.05	<0.1
EX-100	EX-100+60-5.0	5	12/12/14	GeoEngineers	<5.7	--	--	--	--	--	--	--
EX-101	EX-101+00-3.0	3	12/12/14	GeoEngineers	<26	--	--	--	--	--	--	--
	EX-101+00-6.0	6			<15	--	--	--	--	--	--	--
	EX-101+20-5.0	5			*98*	--	--	--	--	--	--	--
	EX-101+40-5.0	5	12/15/14		<9.2	--	--	--	--	--	--	--
	EX-101+60-5.0	5			<11	--	--	--	--	--	--	--
	EX-101+80-4.0	4	12/17/14		<6.6	--	--	--	--	--	--	--
EX-102	EX-102+00-6.0	6	12/17/14	GeoEngineers	<5.4	--	--	--	--	--	--	--
	EX-102+20-8.0	8			<5.3	--	--	--	--	--	--	--
	EX-102+40-5.0	5			<5.0	--	--	--	--	--	--	--
	EX-102+60-7.0	7			<4.7	--	--	--	--	--	--	--
	EX-102+80-4.0	4	12/18/14		<5.7	--	--	--	--	--	--	--
	EX-102+80-8.0	8			<5.2	--	--	--	--	--	--	--
BASE-6	BASE-6-102+25-10.0	10	12/17/14	GeoEngineers	<4.4	--	<28	<56	--	--	--	--
JX3-103	JX3-103+00-3.0	3	01/08/15	GeoEngineers	**4,500**	--	--	--	--	--	--	--
	JX3-103+00-8.0	8			**2,600**	--	--	--	--	--	--	--
EX-JUT-101	EX-JUT-101+10-6.0	6	01/13/15	GeoEngineers	<4.2	--	--	--	--	--	--	--
	EX-JUT-101+30-4.0	4			<4.3	--	--	--	--	--	--	--
	EX-JUT-101+50-4.0	4			<4.2	--	--	--	--	--	--	--
	EX-JUT-101+90-5.0	5			<3.7	--	--	--	--	--	--	--
	EX-JUT-101+70-6.0	6			<4.3	--	--	--	--	--	--	--
MTCA Cleanup Level[4]					**100**	**100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**

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					Mineral Spirits[1]	GRPH[1]	DRPH[2]	ORPH[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
120th Avenue Northeast Widening Project Stage 2												
EX-JUT-102	EX-JUT-102+10-4.0	4	01/13/15	GeoEngineers	<3.9	--	--	--	--	--	--	--
	EX-JUT-102+30-5.0	5	03/17/15		<5.4	<5.4	--	--	--	--	--	--
	EX-JUT-102+50-4.0	4			<4.9	<4.9	--	--	--	--	--	--
	EX-JUT-102+70-5.0	**5**	03/18/15		**2,500**	--	--	--	--	--	--	--
	EX-JUT-102+90-5.0	5			**410**	--	--	--	--	--	--	--
EX-JUT-103	EX-JUT-103+10-5.0	5	03/18/15	GeoEngineers	<5.4	<5.4	--	--	--	--	--	--
Sidewall-5	Sidewall-5-101+75-4.0	4	01/13/15	GeoEngineers	<4.1	--	--	--	--	--	--	--
Sidewall-6	Sidewall-6-101+00-5.0	5	01/13/15	GeoEngineers	*4.4*	--	<29	<58	--	--	--	--
EX-W-12	EX-W-12+70-4.0	4	10/03/15	GeoEngineers	<6.4	<6.4	--	--	--	--	--	--
	EX-W-12+40-4.0	4	11/03/15		<5.4	<5.4	--	--	--	--	--	--
EX-W-13	EX-W-13+60-7.0	7	01/22/15	GeoEngineers	<5.2	--	--	--	--	--	--	--
	EX-W-13+80-7.0	7			<9.1	--	--	--	--	--	--	--
	EX-W-13+30-6.0	6	09/03/15		<5.7	<5.7	--	--	--	--	--	--
	EX-W-13+00-4.0	4	10/03/15		<7.1	<7.1	--	--	--	--	--	--
EX-W-100	EX-W-100+40-5.0	5	01/29/15	GeoEngineers	<8.4	--	--	--	--	--	--	--
	EX-W-100+60-5.0	5			<4.4	--	*690*	*570*	--	--	--	--
	EX-W-100+80-4.0	4			<6.3	--	*140*	*99*	--	--	--	--
EX-W-101	EX-W-101+00-4.0	4	01/29/15	GeoEngineers	<22	--	--	--	--	--	--	--
	EX-W-101+20-5.0	5	02/02/15		**190**	<10	--	--	--	--	--	--
	EX-W-101+40-6.0	6			<5.1	*6.5*	--	--	--	--	--	--
	EX-W-101+80-4.0	4	02/03/15		<4.3	<4.3	--	--	--	--	--	--
EX-W-102	EX-W-102+00-4.0	4	02/03/15	GeoEngineers	<6.1	<6.1	--	--	--	--	--	--
	EX-W-102+30-4.0	4	03/02/15		<6.8	<6.8	--	--	--	--	--	--
	EX-W-102+50-5.0	5	04/02/15		<5.6	<5.6	--	--	--	--	--	--
EX-SdSwr-102	EX-SdSwr-102+00-8.0	8	02/03/15	GeoEngineers	<6.8	--	--	--	--	--	--	--
BASE-5-101	BASE-5-101+60-5.0	5	02/03/15	GeoEngineers	*27*	<5.2	<30	*130*	--	--	--	--
EX-wLat-1	EX-wLat-1-101+38-6.0	6	02/05/15	GeoEngineers	<5.3	--	--	--	--	--	--	--
	EX-wLat-1-101+65-3.0	3	02/10/15		**600**	--	--	--	--	--	--	--
EX-wLat-2	EX-wLat-2-101+38-4.0	4	02/05/15	GeoEngineers	<6.3	<6.3	--	--	--	--	--	--
	EX-wLat-2-101+65-5.0	5	02/10/15		**470**	--	--	--	--	--	--	--
EX-Storm-12	EX-Storm-12+50-5.0	5	02/03/15	GeoEngineers	<9.7	<9.7	--	--	--	--	--	--
EX-Storm-13	EX-Storm-13+00-4.0	4	03/03/15	GeoEngineers	<9.7	<9.7	--	--	--	--	--	--
	EX-Storm-13+50-3.0	3	03/03/15	GeoEngineers	<4.8	<4.8	<28	*110*	--	--	--	--
EX-Storm-14	EX-Storm-14+00-4.0	4	03/03/15	GeoEngineers	<5.1	<5.1	--	--	--	--	--	--
	EX-Storm-14+50-4.0	4	04/03/15		<5.9	<5.9	--	--	--	--	--	--
	EX-Storm-14+70-4.0	4	05/03/15		<4.7	<4.7	--	--	--	--	--	--
	EX-Storm-14+80-3.0	3			<4.5	<4.5	--	--	--	--	--	--
	EX-Storm-14+90-3.0	3	06/03/15		<5.5	<5.5	--	--	--	--	--	--
EX-Storm-15	EX-Storm-15+00-4.0	4	03/04/15	GeoEngineers	<4.8	<4.8	--	--	--	--	--	--
EX-StormLat-15	EX-StormLat-15+50-2.0	2	03/25/15	GeoEngineers	<4.4	<4.4	--	--	--	--	--	--
EX-W-12	EX-W-12+20-4.0	4	03/11/15	GeoEngineers	<8.2	<8.2	--	--	--	--	--	--
NEW-JX3	NEW-JX3-B-8.0	8	03/16/15	GeoEngineers	<5.0	<5.0	--	--	--	--	--	--
	NEW-JX3-S-6.0	6			<6.7	<6.7	--	--	--	--	--	--
	NEW-JX3-W-6.0	6			<5.2	<5.2	--	--	--	--	--	--
EX-Storm-101	EX-Storm-101+50-4.0	4	03/25/15	GeoEngineers	<4.6	<4.6	--	--	--	--	--	--
EX-Storm-102	EX-Storm-102+00-4.0	4	03/27/15	GeoEngineers	<6.2	--	--	--	--	--	--	--
	EX-Storm-102+50-4.0	4			<5.6	--	--	--	--	--	--	--
	EX-Storm-102+80-4.0	4			**3,600**	--	--	--	--	--	--	--
MTCA Cleanup Level[4]					**100**	**100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**

SoundEarth Strategies

Table 1
Summary of Soil Sample Results to Date - TPH and Mineral Spirits
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

DRAFT

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results (milligrams per kilogram)							
					Mineral Spirits[1]	GRPH[1]	DRPH[2]	ORPH[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
SoundEarth 2016 SSI												
B120	B120-03	3	03/15/16	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B120-06	6			<50[2,6]	--	--	--	--	--	--	--
B121	B121-05	5	03/15/16	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B121-10	10			<50[2,6]	--	--	--	--	--	--	--
B122	B122-02.5	2.5	03/15/16	SoundEarth	**2,200**[2,6]	--	--	--	--	--	--	--
	B122-07.5	7.5			**4,800**[2,6]	--	--	--	--	--	--	--
	B122-10	10			<50[2,6]	--	--	--	--	--	--	--
	B122-13	13			<50[2,6]	--	--	--	--	--	--	--
B125	B125-06	6	03/16/16	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
B126	B126-03	3	03/16/16	SoundEarth	**310**[2,6]	--	--	--	--	--	--	--
	B126-06	6			<50[2,6]	--	--	--	--	--	--	--
	B126-13	13			<50[2,6]	--	--	--	--	--	--	--
	B126-20	20			<50[2,6]	--	--	--	--	--	--	--
B127	B127-10	10	03/18/16	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B127-15	15			<50[2,6]	--	--	--	--	--	--	--
	B127-20	20			<50[2,6]	--	--	--	--	--	--	--
	B127-35	35			<50[2,6]	--	--	--	--	--	--	--
B128	B128-05	5	03/18/16	SoundEarth	*86*[2,6]	--	--	--	--	--	--	--
	B128-07.5	7.5			<50[2,6]	--	--	--	--	--	--	--
	B128-15	15			<50[2,6]	--	--	--	--	--	--	--
	B128-25	25			<50[2,6]	--	--	--	--	--	--	--
MTCA Cleanup Level[4]					**100**	**100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**
SoundEarth 2017 SSI												
B129	B129-10.0	10	01/30/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B129-20.0	20			<50[2,6]	--	--	--	--	--	--	--
B130	B130-05.0	5	01/30/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B130-07.5	7.5			<50[2,6]	--	--	--	--	--	--	--
	B130-07.5	10			<50[2,6]	--	--	--	--	--	--	--
B131	B131-03.0	3	01/30/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B131-05.0	5			<50[2,6]	--	--	--	--	--	--	--
B132	B132-02.5	3	01/30/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B132-05.5	5.5			<50[2,6]	--	--	--	--	--	--	--
	B132-07.5	7.5			<50[2,6]	--	--	--	--	--	--	--
B133	B133-07.5	7.5	01/30/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B133-10.0	10			<100[2,6]	--	--	--	--	--	--	--
	B133-15.0	15			<50[2,6]	--	--	--	--	--	--	--
B134	B134-05.0	5	01/30/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B134-10.5	10.5			<50[2,6]	--	--	--	--	--	--	--
	B134-15.0	15			<50[2,6]	--	--	--	--	--	--	--
B135	B134-02.5	2.5	01/31/17	SoundEarth	NR[x,2,6]	--	--	--	--	--	--	--
	B134-05.0	5			*61*[2,6]	--	--	--	--	--	--	--
	B134-06.5	6.5			<50[2,6]	--	--	--	--	--	--	--
B136	B136-05.0	5	01/31/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B136-10.0	10			<50[2,6]	--	--	--	--	--	--	--
B137	B137-07.0	7	01/31/17	SoundEarth	**190**[2,6]	--	--	--	--	--	--	--
	B137-10.0	10			<50[2,6]	--	--	--	--	--	--	--
B139	B139-02.5	2.5	02/01/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B139-07.5	7.5			NR[x,2,6]	--	--	--	--	--	--	--
	B139-10.0	10			NR[x,2,6]	--	--	--	--	--	--	--
B140	B140-02.5	2.5	02/02/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B140-05	5			<50[2,6]	--	--	--	--	--	--	--
B141	B141-02.5	2.5	02/02/17	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B141-05	5			<50[2,6]	--	--	--	--	--	--	--
B143	B143-02.5	2.5	02/04/2017	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B143-07.5	7.5			<50[2,6]	--	--	--	--	--	--	--
	B143-10	10			<50[2,6]	--	--	--	--	--	--	--
B144	B144-02.5	2.5	02/04/2017	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B144-07.5	7.5			<50[2,6]	--	--	--	--	--	--	--
	B144-10	10			<50[2,6]	--	--	--	--	--	--	--
MTCA Cleanup Level[4]					**100**	**100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**

SoundEarth Strategies

DRAFT

Table 1
Summary of Soil Sample Results to Date - TPH and Mineral Spirits
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results (milligrams per kilogram)							
					Mineral Spirits[1]	GRPH[1]	DRPH[2]	ORPH[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
SoundEarth 2019 RI												
B146	B146-10	10	02/14/19	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B146-20	20			<50[2,6]	--	--	--	--	--	--	--
	B146-25	25			<50[2,6]	--	--	--	--	--	--	--
B147	B147-10	10	02/14/19	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B147-20	20			<50[2,6]	--	--	--	--	--	--	--
	B147-25	25			<50[2,6]	--	--	--	--	--	--	--
B148	B148-05	5	02/15/19	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	B148-10	10			<50[2,6]	--	--	--	--	--	--	--
	B148-20	20			<50[2,6]	--	--	--	--	--	--	--
	B148-25	25			<50[2,6]	--	--	--	--	--	--	--
B149	B149-05	5	02/18/19	SoundEarth	**180**[2,6]	--	--	--	--	--	--	--
	B149-15	15			<50[2,6]	--	--	--	--	--	--	--
	B149-25	25			<50[2,6]	--	--	--	--	--	--	--
	B149-35	35			<50[2,6]	--	--	--	--	--	--	--
	B149-45	45			<50[2,6]	--	--	--	--	--	--	--
	B149-55	55			<50[2,6]	--	--	--	--	--	--	--
	B149-60	60			<50[2,6]	--	--	--	--	--	--	--
	B149-65	65			<50[2,6]	--	--	--	--	--	--	--
MTCA Cleanup Level[4]					**100**	**100**	**2,000**	**2,000**	**0.03**	**7**	**6**	**9**

NOTES:

Bold denotes concentration exceeds MTCA cleanup level.

Italics denote concentration exceeds the laboratory reporting limits but is below the MTCA cleanup level.

Stoddard solvent, a trade name for mineral spirits, was used in operations at Bakkers Drycleaning (Geotech Consultants Closure Report, Multiple Underground Storage Tanks, August 17, 1989). Laboratory analytical results reported as Mineral Spirits represent stoddard solvent according to the laboratory.

TPH samples collected between 12/19/11 through 6/18/12 were analyzed by NWTPH-HCID with acid/silica gel clean-up or NWTPH-Dx with acid/silica gel clean-up.

[1]Analyzed by Method NWTPH-Gx.

[2]Analyzed by Method NWTPH-Dx.

[3]BTEX compounds were analyzed by EPA Methods 8021 or 8260.

[4]MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Cleanup Levels for Soil, revised November 2007.

[5]The hydrocarbons detected in this sample were identified by the laboratory as mineral spirits (Stoddard Solvent).

[6]Sample extracts were passed through a silica gel column prior to analysis.

Laboratory Notes:

[a]Analyte was detected in the associated method blank.

[i]Detected result is between the sample specific method detection limit and laboratory reporting limit.

[x]The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

-- = not analyzed/not applicable/unknown

< = not detected at a concentration exceeding the laboratory reporting limit

bgs = below ground surface

BTEX = benzene, toluene, ethylbenzene, and total xylenes

DRPH = diesel-range petroleum hydrocarbons

EPA = U.S. Environmental Protection Agency

GCI = Geotech Consultants, Inc. of Bellevue, Washington

GeoEngineers = GeoEngineers, Inc.

GRPH = gasoline-range petroleum hydrocarbons

HCID = hydrocarbon identification

MTCA = Washington State Model Toxics Control Act

NR = Not reported, sample chromatographic pattern does not resemble mineral spirits

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

PNE = Pacific Northern Environmental Corp.

SoundEarth = SoundEarth Strategies, Inc.

SSI = Supplemental Subsurface Investigation

TPH = total petroleum hydrocarbons

UST = underground storage tank

WAC = Washington Administrative Code

SoundEarth Strategies

Table 2
Summary of Soil Sample Results to Date - VOCs
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

DRAFT

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results[1] (milligrams per kilogram)								
					PCE	TCE	1,1-DCE	Trans-1,2-DCE	Cis-1,2-DCE	Vinyl Chloride	1,1,1-TCA	1,1-DCA	EDC
11855 Bellevue-Redmond Road													
UST Removal Excavation	6A (Floor)	12.5-13.0	08/8-10/89	GCI	<1	<1	<1	<1	--	--	<1	<1	<1
11968 and 11969 Bellevue-Redmond Road/11866 Northeast 8th Street													
PCA-SS8-6'	PCA-SS8-6' (West sidewall of excavation in clayey soil)	6	09/26/91	PNE	<50	<50	<50	<50	--	--	<50	<50	<50
120th Avenue Northeast Widening Project Stage 2													
B-101E	B-101E-2.5-122011	2.5	12/20/11	GeoEngineers	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
	B-101E-7.5-122011	7.5			<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017	<0.0017
B-103E	B-103E-5.0-122111	5.0	12/21/11	GeoEngineers	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
B-105E	B-105E-1.5-122011	1.5	12/20/11	GeoEngineers	*0.0036*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	B-105E-7.5-122011	7.5			<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095
B-106E	B-106E-2.5-122111	2.5	12/21/11	GeoEngineers	**0.084**	*0.0035*	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
B-107E	B-107E-2.5-122111	2.5	12/21/11	GeoEngineers	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B-108E	B-108E-5.0-122211	5.0	12/22/11	GeoEngineers	*0.0018*	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095
	B-108E-10.0-122211	10.0			<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
B-109E	B-109E-2.5-122211	2.5	12/22/11	GeoEngineers	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085	<0.00085
B-110E	B-110E-2.5-122211	2.5	12/22/11	GeoEngineers	*0.023*	*0.0016*	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098
B-111E	B-111E-2.5-121911	2.5	12/19/11	GeoEngineers	*0.0015*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	B-111E-5.0-121911	5.0			*0.004*	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	B-111E-10.0-122011	10.0	12/20/11		<0.097	<0.097	<0.097	<0.097	<0.097	<0.097	<0.097	<0.097	<0.097
B-114E	B-114E-2.5-122211	2.5	12/22/11	GeoEngineers	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
	B-114E-7.5-122211	7.5			<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
	B-114E-12.5-122211	12.5			<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
B-115E	B-115E-5.0	5.0	11/30/12	GeoEngineers	<0.00084	<0.00084	<0.00084	<0.00084	<0.00084	<0.00084	*0.0013*	<0.00084	<0.00084
	B-115E-10.0	10.0			*0.0098*	*0.0028*	<0.00081	<0.00081	*0.0025*	<0.00081	*0.00082*	*0.0011*	<0.00081
B-116E	B-116E-2.5	2.5	11/30/12	GeoEngineers	<0.00092	<0.00092	<0.00092	<0.00092	<0.00092	<0.00092	<0.00092	<0.00092	<0.00092
	B-116E-8.0	8.0			<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079	<0.00079
B-117E	B-117E-2.5	2.5	11/30/12	GeoEngineers	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086
	B-117E-5.0	5.0			<0.00088	<0.00088	<0.00088	<0.00088	<0.00088	<0.00088	<0.00088	<0.00088	<0.00088
B-118E	B-118E-2.5	2.5	11/30/12	GeoEngineers	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093	<0.00093
	B-118E-10.0	10.0			<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
B-119E	B-119E-5.0	5.0	11/30/12	GeoEngineers	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087	<0.00087
	B-119E-10.0	10.0			<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008	<0.0008
GEIMW-1	GEIMW-1-2.5	2.5	06/18/12	GeoEngineers	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086	<0.00086
GEIMW-2	GEIMW-2-3.5	3.5	06/18/12	GeoEngineers	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098	<0.00098
	GEIMW-2-7.5	7.5			<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011	<0.0011
	GEIMW-2-10.0	10.0			<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012	<0.0012
GEIMW-3	GEIMW-3-2.5	2.5	06/17/12	GeoEngineers	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095	<0.00095
	GEIMW-3-12.5	12.5			<0.00082	<0.00082	<0.00082	<0.00082	<0.00082	<0.00082	<0.00082	<0.00082	<0.00082
GEIMW-4	GEIMW-4-2.5	2.5	06/17/12	GeoEngineers	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010
	GEIMW-4-12.5	12.5			<0.00092	<0.00092	<0.00092	<0.00092	<0.00092	<0.00092	<0.00092	<0.00092	<0.00092
	GEIMW-4-17.5	17.5			<0.00088	<0.00088	<0.00088	<0.00088	<0.00088	<0.00088	<0.00088	<0.00088	<0.00088
MTCA Cleanup Level					**0.05**[2]	**0.03**[2]	**4,000**[3]	**1,600**[3]	**160**[3]	**0.67**[4]	**2**[2]	**16,000**[3]	**11**[4]

SoundEarth Strategies

Table 2
Summary of Soil Sample Results to Date - VOCs
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

DRAFT

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results[1] (milligrams per kilogram)								
					PCE	TCE	1,1-DCE	Trans-1,2-DCE	Cis-1,2-DCE	Vinyl Chloride	1,1,1-TCA	1,1-DCA	EDC
120th Avenue Northeast Widening Project Stage 2													
Sidewall-98+60	Sidewall-98+60	4	02/12/14	GeoEngineers	<0.00083	<0.00083	<0.00083	--	<0.00083	<0.00083	<0.00083	--	--
BASE-1	BASE-1-13+50-10.0	10	05/11/14	GeoEngineers	<0.00072	<0.00072	<0.00072	--	<0.00072	<0.00072	<0.00072	--	--
TUP-SW1	TUP-SW1-5.0	5.0	10/01/14	GeoEngineers	<0.0018	ND	--	ND	ND	ND	ND	ND	--
TUP-SW2	TUP-SW2-4.0	4.0	10/01/14	GeoEngineers	<0.00075	ND	--	ND	ND	ND	ND	ND	--
	TUP-SW2-8.0	8.0			<0.00074	ND	--	ND	ND	ND	ND	ND	--
TUP-SE	TUP-SE-4.0	4.0	10/02/14	GeoEngineers	<0.00089	ND	--	ND	ND	ND	ND	ND	--
	TUP-SE-8.0	8.0			<0.0009	ND	--	ND	ND	ND	ND	ND	--
TUP-NE	TUP-NE-5.0	5.0	10/01/14	GeoEngineers	--	ND	--	ND	ND	ND	ND	ND	--
	TUP-NE-8.0	8.0			--	ND	--	ND	ND	ND	ND	ND	--
TUP-NW	TUP-NW-4.0	4.0	10/01/14	GeoEngineers	--	ND	--	ND	ND	ND	ND	ND	--
	TUP-NW-8.0	8.0			--	ND	--	ND	ND	ND	ND	ND	--
PTHL-W	PTHL-W-12+50-5.0	5.0	10/02/14	GeoEngineers	<0.0012	ND	--	ND	ND	ND	ND	ND	--
	PTHL-W-12+50-8.0	8.0			<0.00067	ND	--	ND	ND	ND	ND	ND	--
PTHL-S	PTHL-S-98+50-4.0	4.0	10/03/14	GeoEngineers	<0.0046	ND	--	ND	ND	ND	ND	ND	--
	PTHL-S-98+50-8.0	8.0			<0.00052	ND	--	ND	ND	ND	ND	ND	--
PTHL-N	PTHL-N-103+50-5.0	5.0	10/03/14	GeoEngineers	<0.00093	ND	--	ND	ND	ND	ND	ND	--
	PTHL-N-103+50-10.0	10.0			<0.00089	ND	--	ND	ND	ND	ND	ND	--
	PTHL-N-103+50-14.0	14.0			<0.00068	ND	--	ND	ND	ND	ND	ND	--
PTHL-SH1	PTHL-SH1-6.0	6.0	10/23/14	GeoEngineers	--	ND	--	ND	ND	ND	ND	ND	--
	PTHL-SH1-9.0	9.0			--	ND	--	ND	ND	ND	ND	ND	--
PTHL-SH2	PTHL-SH2-4.0	4.0	10/23/14	GeoEngineers	--	ND	--	ND	ND	ND	ND	ND	--
	PTHL-SH2-8.0	8.0			--	ND	--	ND	ND	ND	ND	ND	--
BASE-2	BASE-2-99+50-7.0	7	11/23/14	GeoEngineers	<0.0022	<0.0022	<0.0022	--	<0.0022	<0.0022	<0.0022	--	--
EX-100	EX-100+60-5.0	5	12/12/14	GeoEngineers	<0.00093	<0.00093	<0.00093	--	<0.00093	<0.00093	<0.00093	--	--
EX-101	EX-101+00-3.0	3	12/12/14	GeoEngineers	<0.0032	<0.0032	<0.0032	--	<0.0032	<0.0032	<0.0032	--	--
	EX-101+00-6.0	6			<0.0011	<0.0011	<0.0011	--	<0.0011	<0.0011	<0.0011	--	--
	EX-101+20-5.0	5			<0.12	<0.12	<0.12	--	<0.12	<0.12	<0.12	--	--
	EX-101+40-5.0	5	12/15/14		<0.00079	<0.00079	*0.0011*	--	*0.0011*	*0.0011*	<0.00079	--	--
	EX-101+60-5.0	5			<0.00086	<0.00086	<0.00086	--	<0.00086	<0.00086	*0.00097*	--	--
	EX-101+80-4.0	4	12/17/14		<0.00092	<0.00092	<0.00092	--	*0.051*	*0.051*	<0.00092	--	--
EX-102	EX-102+00-6.0	6	12/17/14	GeoEngineers	<0.00088	<0.00088	<0.00088	--	<0.00088	<0.00088	<0.00088	--	--
	EX-102+20-8.0	8			<0.0011	<0.0011	<0.0011	--	<0.0011	<0.0011	<0.0011	--	--
	EX-102+40-5.0	5			<0.00081	<0.00081	<0.00081	--	<0.00081	<0.00081	<0.00081	--	--
	EX-102+60-7.0	7			<0.00077	<0.00077	<0.00077	--	<0.00077	<0.00077	<0.00077	--	--
	EX-102+80-4.0	4	12/18/14		<0.0011	<0.0011	<0.0011	--	<0.0011	<0.0011	<0.0011	--	--
	EX-102+80-8.0	8			<0.00096	<0.00096	<0.00096	--	<0.00096	<0.00096	<0.00096	--	--
JX3-103	JX3-103+00-3.0	3	01/08/15	GeoEngineers	<0.050	<0.050	<0.050	<0.050	<0.050	--	--	--	--
	JX3-103+00-8.0	8			<0.044	<0.044	<0.044	<0.044	<0.044	--	--	--	--
EX-SdSwr-102	EX-SdSwr-102+00-8.0	8	02/03/15	GeoEngineers	**2.8**	*0.0043*	*0.0028*	*0.0028*	*0.0028*	--	--	--	--
EX-wLat-1	EX-wLat-1-101+38-6.0	6	02/05/15	GeoEngineers	**0.14**	*0.0031*	<0.00081	<0.00081	<0.00081	--	--	--	--
	EX-wLat-1-101+65-3.0	3			**0.062**	<0.059	<0.059	<0.059	<0.059	--	--	--	--
EX-wLat-2	EX-wLat-2-101+65-5.0	5	02/10/15	GeoEngineers	<0.060	<0.060	<0.060	<0.060	<0.060	--	--	--	--
	EX-wLat-2-101+38-4.0	4	05/02/15		*0.0087*	<0.00092	<0.00092	--	<0.00092	<0.00092	<0.00092	--	--
EX-Storm-102	EX-Storm-102+80-4.0	4	03/27/15	GeoEngineers	<0.047	<0.047	<0.047	<0.047	<0.047	--	--	--	--
Sidewall-6-101	Sidewall-6-101+00-5.0	5	01/13/15	GeoEngineers	<0.00059	<0.00059	<0.00059	--	<0.00059	<0.00059	<0.00059	--	--
EX-W-100	EX-W-100+60-5.0	5	01/29/15	GeoEngineers	<0.0078	<0.0078	<0.0078	--	<0.0078	<0.0078	<0.0078	--	--
	EX-W-100+80-4.0	4			<0.0010	<0.0010	<0.0010	--	<0.0010	<0.0010	<0.0010	--	--
	EX-W-100+40-5.0	5			<0.0010	<0.0010	<0.0010	--	<0.0010	<0.0010	<0.0010	--	--
MTCA Cleanup Level					**0.05**[2]	**0.03**[2]	**4,000**[3]	**1,600**[3]	**160**[3]	**0.67**[4]	**2**[2]	**16,000**[3]	**11**[4]

SoundEarth Strategies

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Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
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DRAFT

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results[1] (milligrams per kilogram)								
					PCE	TCE	1,1-DCE	Trans-1,2-DCE	Cis-1,2-DCE	Vinyl Chloride	1,1,1-TCA	1,1-DCA	EDC
120th Avenue Northeast Widening Project Stage 2													
EX-W-101	EX-W-101+00-4.0	4	01/29/15	GeoEngineers	<0.0029	<0.0029	<0.0029	--	<0.0029	<0.0029	<0.0029	--	--
	EX-W-101+20-5.0	5	02/02/15		*0.0018*	<0.00081	<0.00081	--	<0.00081	<0.00081	<0.00081	--	--
	EX-W-101+40-6.0	6			*0.019*	*0.0020*	<0.00089	--	*0.0057*	*0.0057*	<0.00089	--	--
	EX-W-101+80-4.0	4	03/02/15		<0.0010	<0.0010	<0.0010	--	*0.0084*	*0.0084*	<0.0010	--	--
EX-W-102	EX-W-102+00-4.0	4	03/02/15	GeoEngineers	<0.00092	<0.00092	<0.00092	--	*0.0090*	*0.0090*	<0.00092	--	--
	EX-W-102+30-4.0	4			<0.0011	<0.0011	<0.0011	--	<0.0011	<0.0011	<0.0011	--	--
	EX-W-102+50-5.0	5	04/02/15		<0.0010	<0.0010	<0.0010	--	<0.0010	<0.0010	<0.0010	--	--
BASE-5-101	BASE-5-101+60-5.0	5	03/02/15	GeoEngineers	*0.0057*	*0.0032*	*0.0069*	--	*0.0086*	*0.0086*	<0.00074	--	--
EX-W-11	EX-W-11+85-4.0	4	03/19/15	GeoEngineers	*0.00012*	<0.0010	<0.0010	--	<0.0010	<0.0010	<0.0010	--	--
EX-W-12	EX-W-12+20-4.0	4	11/03/15	GeoEngineers	*0.017*	<0.0012	<0.0012	--	<0.0012	<0.0012	<0.0012	--	--
EX-Storm-13	EX-Storm-13+50-3.0	3	03/03/15	GeoEngineers	<0.00083	<0.00083	<0.00083	--	*0.0011*	*0.0011*	<0.00083	--	--
EX-Storm-15	EX-Storm-15+00-4.0	4	06/03/15	GeoEngineers	*0.0047*	<0.00083	<0.00083	--	<0.00083	<0.00083	<0.00083	--	--
EX-StormLat-15	EX-StormLat-15+50-2.0	2	03/25/15	GeoEngineers	*0.0081*	*0.0013*	<0.00075	--	<0.00075	<0.00075	<0.00075	--	--
Sidewall-5-101	Sidewall-5-101+75-4.0	4	01/13/15	GeoEngineers	<0.00069	<0.00069	<0.00069	--	<0.00069	<0.00069	<0.00069	--	--
EX-JUT-101	EX-JUT-101+10-6.0	6	01/13/15	GeoEngineers	<0.00069	<0.00069	<0.00069	--	<0.00069	<0.00069	<0.00069	--	--
	EX-JUT-101+30-4.0	4			<0.00067	<0.00067	<0.00067	--	<0.00067	<0.00067	<0.00067	--	--
	EX-JUT-101+50-4.0	4			<0.00070	<0.00070	<0.00070	--	<0.00070	<0.00070	<0.00070	--	--
	EX-JUT-101+70-6.0	6			<0.00066	<0.00066	<0.00066	--	*0.00078*	*0.00078*	<0.00066	--	--
	EX-JUT-101+90-5.0	5			<0.00061	<0.00061	<0.00061	--	<0.00061	<0.00061	<0.00061	--	--
EX-JUT-102	EX-JUT-102+10-4.0	4	01/13/15	GeoEngineers	<0.00069	<0.00069	<0.00069	--	<0.00069	<0.00069	<0.00069	--	--
	EX-JUT-102+30-5.0	5	03/17/15		<0.00092	<0.00092	<0.00092	--	<0.00092	<0.00092	<0.00092	--	--
	EX-JUT-102+50-4.0	4			<0.00095	<0.00095	<0.00095	--	<0.00095	<0.00095	<0.00095	--	--
	EX-JUT-102+70-5.0	5	03/18/15		<0.053	<0.053	<0.053	<0.053	<0.053	--	--	--	--
	EX-JUT-102+90-5.0	5			<0.044	<0.044	<0.044	<0.044	<0.044	--	--	--	--
EX-JUT-103	EX-JUT-103+10-5.0	5	03/18/15	GeoEngineers	<0.00084	<0.00084	<0.00084	--	<0.00084	<0.00084	<0.00084	--	--
EX-Storm-12	EX-Storm-12+50-5.0	5	02/03/15	GeoEngineers	<0.0012	<0.0012	<0.0012	--	<0.0012	<0.0012	<0.0012	--	--
EX-Storm-13	EX-Storm-13+00-4.0	4	03/03/15	GeoEngineers	<0.0021	<0.0021	<0.0021	--	<0.0021	<0.0021	<0.0021	--	--
EX-Storm-14	EX-Storm-14+00-4.0	4	03/03/15	GeoEngineers	<0.00078	<0.00078	<0.00078	--	<0.00078	<0.00078	<0.00078	--	--
	EX-Storm-14+50-4.0	4	04/03/15		<0.00090	<0.00090	<0.00090	--	<0.00090	<0.00090	<0.00090	--	--
	EX-Storm-14+70-4.0	4	05/03/15		<0.00078	<0.00078	<0.00078	--	<0.00078	<0.00078	<0.00078	--	--
	EX-Storm-14+80-3.0	3			<0.00086	<0.00086	<0.00086	--	<0.00086	<0.00086	<0.00086	--	--
	EX-Storm-14+90-3.0	3	06/03/15		<0.00089	<0.00089	<0.00089	--	<0.00089	<0.00089	<0.00089	--	--
EX-Storm-101	EX-Storm-101+50-4.0	4	03/25/15	GeoEngineers	<0.00078	<0.00078	<0.00078	--	<0.00078	<0.00078	<0.00078	--	--
EX-Storm-102	EX-Storm-102+00-4.0	4	03/27/15	GeoEngineers	<0.00084	<0.00084	<0.00084	--	<0.00084	<0.00084	<0.00084	--	--
	EX-Storm-102+50-4.0	4			<0.0010	<0.0010	<0.0010	--	<0.0010	<0.0010	<0.0010	--	--
NEW-JX3	NEW-JX3-B-8.0	8	03/16/15	GeoEngineers	<0.00087	<0.00087	<0.00087	--	<0.00087	<0.00087	<0.00087	--	--
	NEW-JX3-S-6.0	6			<0.0010	<0.0010	<0.0010	--	<0.0010	<0.0010	<0.0010	--	--
	NEW-JX3-W-6.0	6			<0.00083	<0.00083	<0.00083	--	<0.00083	<0.00083	<0.00083	--	--
BASE-6-102	BASE-6-102+25-10.0	10	12/17/14	GeoEngineers	<0.00077	<0.00077	<0.00077	--	<0.00077	<0.00077	<0.00077	--	--
MH3-103	MH3-103+00-7.0	7	07/01/15	GeoEngineers	<0.00073	<0.00073	<0.00073	--	<0.00073	<0.00073	<0.00073	--	--
EX-W-13	EX-W-13+60-7.0	7	01/22/15	GeoEngineers	<0.00078	<0.00078	<0.00078	--	<0.00078	<0.00078	<0.00078	--	--
	EX-W-13+80-7.0	7			<0.0015	<0.0015	<0.0015	--	<0.0015	<0.0015	<0.0015	--	--
EX-W-102	EX-W-102+30-4.0	4	03/02/15	GeoEngineers	<0.0011	<0.0011	<0.0011	--	<0.0011	<0.0011	<0.0011	--	--
	EX-W-102+50-5.0	5	04/02/15		<0.0010	<0.0010	<0.0010	--	<0.0010	<0.0010	<0.0010	--	--
EX-W-11	EX-W-11+65-4.0	4	03/19/15	GeoEngineers	<0.00091	<0.00091	<0.00091	--	<0.00091	<0.00091	<0.00091	--	--
MTCA Cleanup Level					**0.05**[2]	**0.03**[2]	**4,000**[3]	**1,600**[3]	**160**[3]	**0.67**[4]	**2**[2]	**16,000**[3]	**11**[4]

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DRAFT

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results[1] (milligrams per kilogram)								
					PCE	TCE	1,1-DCE	Trans-1,2-DCE	Cis-1,2-DCE	Vinyl Chloride	1,1,1-TCA	1,1-DCA	EDC
SoundEarth 2016 SSI													
B122	B122-02.5	2.5	03/15/16	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B122-07.5	7.5			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B122-13	13			<0.025	**0.088**	<0.05	--	*3.1*	<0.05	--	--	--
B123	B123-10	10	03/15/16	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B124	B124-08	8	03/15/16	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B125	B125-06	6	03/16/16	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B125-08	8			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B125-20	20			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B126	B126-03	3	03/16/16	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B126-06	6			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B126-13	13			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B126-20	20			*0.027*	*0.025*	<0.05	--	<0.05	<0.05	--	--	--
B127	B127-10	10	03/18/16	SoundEarth	**0.25**	**0.032**	<0.05	--	<0.05	<0.05	--	--	--
	B127-15	15			**120**	**1.1**	<0.05	--	*0.076*	<0.05	--	--	--
	B127-20	20			**0.64**	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B127-35	35			**0.076**	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B128	B128-05	5	03/18/16	SoundEarth	**620**	**8.4**	*2.3*	--	*1.4*	<0.05	--	--	--
	B128-07.5	7.5			**2.1**	**0.99**	*0.21*	--	*1.2*	<0.05	--	--	--
	B128-15	15			**11**	**1.3**	*0.12*	--	*1.1*	<0.05	--	--	--
	B128-25	25			**1.6**	**0.26**	<0.05	--	*1.1*	<0.05	--	--	--
SoundEarth 2017 SSI													
B129	B129-10.0	10	01/30/17	SoundEarth	**0.075**	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B129-20.0	20			**0.55**	**0.17**	<0.05	--	*0.12*	<0.05	--	--	--
B130	B130-10.0	10	01/30/17	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B130-16.0	16			**0.45**	*0.022*	<0.05	--	<0.05	<0.05	--	--	--
	B130-20.0	20			**1.5**	**0.058**	<0.05	--	<0.05	<0.05	--	--	--
B131	B131-03.0	3	01/30/17	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B131-05.0	5			*0.041*	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B132	B132-02.5	2.5	01/30/17	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B132-05.5	5.5			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B132-07.5	7.5			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B135	B135-02.5	2.5	01/31/17	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B135-05.0	5			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B135-06.5	6.5			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B136	B136-05.0	5	01/31/17	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B136-10.0	10			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B137	B137-07.0	7	01/31/17	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B137-10.0	10			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B138	B138-03.0	3	01/31/17	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B138-08.0	8			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B138-10.0	10			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
MTCA Cleanup Level					**0.05**[2]	**0.03**[2]	**4,000**[3]	**1,600**[3]	**160**[3]	**0.67**[4]	**2**[2]	**16,000**[3]	**11**[4]

SoundEarth Strategies

Table 2
Summary of Soil Sample Results to Date - VOCs
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

DRAFT

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results[1] (milligrams per kilogram)								
					PCE	TCE	1,1-DCE	Trans-1,2-DCE	Cis-1,2-DCE	Vinyl Chloride	1,1,1-TCA	1,1-DCA	EDC
SoundEarth 2017 SSI													
B139	B139-02.5	2.5	02/1/17	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B139-07.5	7.5			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B139-10.0	10			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B140	B140-15	15	02/2/17	SoundEarth	**0.060**	**0.067**	<0.05	--	<0.05	<0.05	--	--	--
	B140-20	20			*0.049*	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B141	B141-02.5	2.5	02/2/17	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B141-05	5			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B142	B142-11	11	02/03/17	SoundEarth	**0.11**	**0.34**	<0.05	--	<0.05	<0.05	--	--	--
	B142-17.5	17.5			*0.044*	*0.025*	<0.05	--	<0.05	<0.05	--	--	--
	B142-20	20			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B142-35	35			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B142-45	45			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B143	B143-02.5	2.5	02/04/2017	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B143-07.5	7.5			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B143-10	10			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B144	B144-02.5	2.5	02/04/2017	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B144-07.5	7.5			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B144-10	10			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B145	B145-05	5	02/20/2017	SoundEarth	**350**	**10**	*1.6*	<0.05	*2.6*	<0.5	**79**	<0.5	<0.5
	B145-15	15			**2.8**	**2.4**	<0.05	<0.05	*0.52*	<0.05	*0.79*	*0.10*	<0.05
	B145-20	20			*0.033*	**0.38**	*0.10*	<0.05	*1.8*	<0.05	<0.05	*0.44*	<0.05
	B145-22.5	22.5			*0.034*	*0.026*	*0.11*	*0.061*	*5.9*	<0.05	*0.16*	*0.70*	<0.05
	B145-30	30			**0.43**	**0.070**	<0.05	<0.05	*0.12*	<0.05	<0.05	<0.05	<0.05
	B145-35	35			**0.52**	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B145-45	45			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B145-48	48			**10**	**0.043**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B145-60	60			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B145-65	65			*0.040*[ht]	<0.02[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]
	B145-70	70			<0.025[ht]	<0.02[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]	<0.05[ht]
	B145-80	80			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B145-90	90			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MTCA Cleanup Level					**0.05**[2]	**0.03**[2]	**4,000**[3]	**1,600**[3]	**160**[3]	**0.67**[4]	**2**[2]	**16,000**[3]	**11**[4]
SoundEarth 2019 RI													
B146	B146-10	10	02/14/19	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B146-20	20			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B146-25	25			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B147	B147-10	10	02/14/19	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B147-20	20			<0.025	<0.02	<0.05	--	0.060	<0.05	--	--	--
	B147-25	25			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B148	B148-05	5	02/15/19	SoundEarth	<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B148-10	10			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B148-20	20			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
	B148-25	25			<0.025	<0.02	<0.05	--	<0.05	<0.05	--	--	--
B149	B149-05	5	02/18/19	SoundEarth	*0.035*	<0.02	<0.05	<0.05	<0.05	<0.05	*0.11*	<0.05	<0.05
	B149-15	15			**0.43**	**0.13**	<0.05	<0.05	*0.11*	<0.05	<0.05	<0.05	<0.05
	B149-25	25			*0.041*	**0.045**	<0.05	<0.05	*0.14*	<0.05	<0.05	*0.051*	<0.05
	B149-35	35			*0.049*	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B149-45	45			**0.80**	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B149-55	55			**0.43**	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B149-60	60			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B149-65	65			*0.025*	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MTCA Cleanup Level					**0.05**[2]	**0.03**[2]	**4,000**[3]	**1,600**[3]	**160**[3]	**0.67**[4]	**2**[2]	**16,000**[3]	**11**[4]

SoundEarth Strategies

Table 2
Summary of Soil Sample Results to Date - VOCs
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

DRAFT

Sample Location	Sample ID	Depth/ Elevation (feet bgs)	Date	Collected by	Analytical Results[1] (milligrams per kilogram)								
					PCE	TCE	1,1-DCE	Trans-1,2-DCE	Cis-1,2-DCE	Vinyl Chloride	1,1,1-TCA	1,1-DCA	EDC
SoundEarth 2019 RI													
B150	B150-10	10	02/19/19	SoundEarth	<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B150-15	15			**0.53**	**0.057**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B150-20	20			**0.20**	**0.075**	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B150-30	30			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B150-40	40			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B150-50	50			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B150-60	60			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B150-70	70			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B150-80	80	02/21/19		<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B150-90	90			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B151	B151-02.5	2.5	02/22/19	SoundEarth	<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B151-10	10			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B151-20	20			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B151-25	25			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B151-35	35			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B151-45	45			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B151-55	55			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B152	B152-07.5	7.5	03/06/19	SoundEarth	<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B152-10	10			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B152-15	15			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B152-25	25			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B152-35	35			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B152-45	45			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B152-60	60			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
B153	B153-07.5	7.5	03/07/19	SoundEarth	<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B153-10	10			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B153-15	15			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B153-25	25			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B153-35	35			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B153-45	45			<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	B153-60	60	03/08/19		<0.025	<0.02	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
MTCA Cleanup Level					**0.05**[2]	**0.03**[2]	**4,000**[3]	**1,600**[3]	**160**[3]	**0.67**[4]	**2**[2]	**16,000**[3]	**11**[4]

NOTES:

Bold denotes concentration exceeds MTCA cleanup level.

Italics denote concentration exceeds the laboratory reporting limit but is below the MTCA cleanup level.

[1]Analyzed by EPA Method 8260B. For samples dated 12/19/11 through 06/18/12, only volatiles with detections are listed; all other volatiles including vinyl chloride were non-detect for the samples. Soil samples dated 10/01/14 through 10/23/14 were analyzed for the following HVOCs: vinyl chloride, chloroethane, trans-1,2-DCE, 1,1-DCA, (cis) 1,2-DCE, 1,1,1-TCA, TCE, 1,1,2-TCA, and PCE. HVOCs were not detected above laboratory RLs for the analytes; the RL value shown for HVOCs is for PCE.

[2]MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 740-1 Method A Cleanup Levels for Soil, revised November 2007.

[3]MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC Master Table, Soil, Method B, Non Cancer, CLARC Website <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>. Updated August 2015.

[4]MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC Master Table, Soil, Method B, Cancer, CLARC Website <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>. Updated August 2015.

Laboratory Note:

[ht]The analysis was performed outside the method or client-specified holding time requirement.

-- = not analyzed/not applicable/unknown
< = not detected at a concentration exceeding the laboratory reporting limit
bgs = below ground surface
CLARC = Cleanup Levels and Risk Calculations
DCA = dichloroethane
DCE = dichloroethene
EDC = 1,2-dichloroethane
EPA = U.S. Environmental Protection Agency
GCI = Geotech Consultants, Inc. of Bellevue, Washington
GeoEngineers = GeoEngineers, Inc.
HVOCs = halogentated volatile organic compounds
MTCA = Washington State Model Toxics Control Act
NA = not applicable
ND = non-detect
PCE = tetrachloroethene
PNE = Pacific Northern Environmental Corp.
SoundEarth - SoundEarth Strategies, Inc.
TCA = trichloroethane
TCE = trichloroethene
UST = underground storage tank
VOC = volatile organic compound
WAC = Washington Administrative Code

SoundEarth Strategies

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Table 3
Summary of Groundwater Sample Results to Date - TPH and Mineral Spirits
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

Sample Location	Sample ID	Date	Collected by	Analytical Results (micrograms per liter)							
				Mineral Spirits[1]	GRPH[1]	DRPH[2]	ORPH[2]	Benzene[3]	Toluene[3]	Ethylbenzene[3]	Total Xylenes[3]
11968 and 11969 Bellevue-Redmond Road/11866 Northeast 8th Street											
GAT1	GAT1/GW14[4]	07/25/14	GeoSyntec	--	<100	*0.11 J*	*0.31 J,B*	*0.76 J*	*1.2 J*	<0.33	--
	GAT1/GW8	07/31/14		--	<50.0	*0.088 J*	*0.25 J,B*	*0.23 J*	<0.11	<0.16	--
GAT2	GAT2/GW12[4]	07/25/14	GeoSyntec	--	*190*	*0.17 J*	*0.42 B*	*0.21 J*	*0.87 J*	*0.17 J*	--
	GAT2/GW5	07/31/14		--	<50.0	*0.13 J*	*0.33 J,B*	<0.15	<0.11	<0.16	--
	GAT2/GW5 (dup)			--	<50.0	*0.14 J*	*0.34 J,B*	*0.17 J*	<0.11	<0.16	--
120th Avenue Northeast Widening Project Stage 2											
B-101E	B-101E-122011-GW	12/20/11	GeoEngineers	<100	--	<280	<440	<0.2	<1.0	<0.2	1.00
B-103E	B-103E-122111-GW	12/21/11	GeoEngineers	<100	--	<270	<440	<0.2	<1.0	<0.2	0.49
B-104E	B-104E-122011-GW	12/20/11	GeoEngineers	<100	--	<440	**1,300**	<1.0	1.5	<1.0	1.9
B-105E	B-105E-122011-GW	12/20/11	GeoEngineers	<100	--	<270	<430	<0.2	<1.0	<0.2	0.48
B-110E	B-110E-122211-GW	12/22/11	GeoEngineers	**1,200**	--	<270	<430	<10	<50	<10	<20
B-111E	B-111E-122211-GW	12/22/11	GeoEngineers	*900*	--	<570	<490	*1.5*	*3.6*	*5*	*4.5*
B-114E	B-114E-122211-GW	12/22/11	GeoEngineers	<100	--	<170	<270	*0.26*	<1.0	<0.2	*1.10*
B-115E	B-115E-GW	11/30/12	GeoEngineers	<100	--	<300	**550**	<0.2	<1.0	<0.2	<0.6
B-116E	B-116E-GW	11/30/12	GeoEngineers	<100	--	--	--	*0.33*	<1.0	<0.2	<0.4
B-117E	B-117E-GW	11/30/12	GeoEngineers	<100	--	<270	<430	<0.2	<1.0	<0.2	<0.6
B-118E	B-118E-GW	11/30/12	GeoEngineers	<100	--	--	--	<0.2	<1.0	<0.2	<0.6
B-119E	B-119E-GW	11/30/12	GeoEngineers	<100	--	--	--	<0.2	<1.0	<0.2	<0.6
GEIMW-1	GEIMW-1	07/09/12	GeoEngineers	<100	--	<260	<410	<0.2	<1.0	<0.2	<0.6
GEIMW-2	GEIMW-2	07/09/12	GeoEngineers	<100	--	<260	<410	<0.2	<1.0	<0.2	<0.6
GEIMW-3	GEIMW-3	07/09/12	GeoEngineers	<100	--	<260	<410	<0.2	<1.0	<0.2	<0.6
GEIMW-4	GEIMW-4	07/09/12	GeoEngineers	<100	--	<260	<410	<0.2	<1.0	<0.2	<0.6
MW-1	MW-1	05/91	PNE	--	**3,000**	ND[5]		*4*	*19*	*147*	*247*
		10/91		--	<1000	ND[5]		<1	*5*	*5*	*15*
		07/09/12	GeoEngineers	<100	--	<260	<410	<0.2	<1.0	<0.2	*0.23*
	GS6-072414[4]	07/24/14	GeoSyntec	--	*104*	*0.22 J*	*0.22 J,B*	<0.15	*0.17 J*	<0.16	--
	GS6-080114	08/01/14		--	*99.7 J*	*0.24 J*	*0.27 J,B*	<0.15	*0.13 J*	<0.16	--
MW-3	MW-3	05/91	PNE	--	**27,000**	--	--	**36**	*140*	*85*	*360*
		10/91		**5,000**	**3,000**	--	--	<1	<1	<1	*1*
	GS9-072514[4]	07/25/14	GeoSyntec	--	<50.0	*0.57*	*0.70 B*	<0.15	<0.11	<0.16	--
	GS9-080114	08/01/14		--	<50.0	*0.42*	*0.58*	<0.15	<0.11	<0.16	--
120th Avenue Northeast Widening Project Stage 2											
MW-5	MW-5	07/09/12	GeoEngineers	<100	--	<260	<410	<0.2	<1.0	<0.2	<0.6
MW-6	MW-6	10/91	PNE	--	<1,000	<1[5]		**22**	<1	<1	*1*
	GS10-072414[4]	07/24/14	GeoSyntec	--	<50.0	*0.32 J*	*0.28 J,B*	<0.15	<0.11	<0.16	--
	GS10 (dup)[4]			--	*53.9 J*	*0.27 J*	*0.26 J,B*	<0.15	<0.11	<0.16	--
	GS10-080114	08/01/14		--	*65.0 J*	*0.36 J*	*0.30 J,B*	<0.15	<0.11	<0.16	--
	GS10 (dup)			--	*58.0 J*	*0.46*	*0.35 J,B*	<0.15	<0.11	<0.16	--
SoundEarth 2016/2017 SSI											
MW-07	MW-7-20160405	04/05/16	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	MW-07-20170224	02/24/17		<50[2]	--	--	--	--	--	--	--
MW-08	MW-8-20160405	04/05/16	SoundEarth	*430 x[2,6]*	--	--	--	--	--	--	--
	MW-08-20170224	02/24/17		*390 x[2]*	--	--	--	--	--	--	--
MW-09	MW-9-20160405	04/05/16	SoundEarth	<50[2,6]	--	--	--	--	--	--	--
	Decommissioned										
MW-10	MW-10-20160405	04/05/16	SoundEarth	**1,700 x[2,6]**	--	--	--	--	--	--	--
	MW-10-20170224	02/24/17		**1,700 x[2]**	--	--	--	--	--	--	--
MW-11	MW-11-20170224	02/24/17	SoundEarth	<50[2]	--	--	--	--	--	--	--
MW-12	MW-12-20170224	02/24/17	SoundEarth	<50[2]	--	--	--	--	--	--	--
MW-13	MW-13-20170224	02/24/17	SoundEarth	<50[2]	--	--	--	--	--	--	--
	MW-13-20170503	05/03/17		<250[2]	--	--	--	--	--	--	--
MW-14	MW-14-20170224	02/24/17	SoundEarth	*180 x[2]*	--	--	--	--	--	--	--
MW-15	MW-15-20170224	02/24/17	SoundEarth	<50[2]	--	--	--	--	--	--	--
MW-16	MW-16-20170224	02/24/17	SoundEarth	*71 x[2]*	--	--	--	--	--	--	--
	MW-16-20170503	05/03/17		<250[2]	--	--	--	--	--	--	--
MTCA Cleanup Level[7]				**1,000**		**500**	**500**	**5**	**1,000**	**700**	**1,000**

NOTES:

Bold denotes concentration exceeds MTCA cleanup level.

Italics denote concentration exceeds the laboratory reporting limit but is below the MTCA cleanup level.

Stoddard solvent, a trade name for mineral spirits, was used in operations at Bakkers Drycleaning (Geotech Consultants Closure Report, Multiple Underground Storage Tanks, August 17, 1989). Laboratory analytical results reported as Mineral Spirits represent stoddard solvent according to the laboratory.

[1]Analyzed by NWTPH-Gx.

[2]Analyzed by Method NWTPH-Dx.

[3]BTEX compounds were analyzed by EPA Methods 8021 or 8260.

[4]The sample was received by the laboratory outside of acceptable temperature range.

[5]Analyzed by NWTPH-HCID.

[6]Sample extracts were passed through a silica gel column prior to analysis.

[7]MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater, revised November 2007.

Laboratory Notes:

[B]Analyte was detected in the associated method blank.

[J]Detected result is between the sample specific method detection limit and laboratory reporting limit.

[x]The sample chromatographic pattern does not resemble the fuel standard used for quantitiation.

-- = not analyzed/not applicable/unknown

< = not detected at a concentration exceeding the laboratory reporting limit

BTEX = benzene, toluene, ethylbenzene, and total xylenes

DRPH = diesel-range petroleum hydrocarbons

dup = duplicate

EPA = United States Environmental Protection Agency

GRPH = gasoline-range petroleum hydrocarbons

HCID = hydrocarbon identification

MTCA = Washington State Model Toxics Control Act

ND = non-detect

NWTPH = Northwest Total Petroleum Hydrocarbon

ORPH = oil-range petroleum hydrocarbons

SSI = Supplemental Subsurface Investigation

TPH = total petroleum hydrocarbons

WAC = Washington Administrative Code

SoundEarth Strategies

Table 4
Summary of Groundwater Sample Results to Date - VOCs
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

DRAFT

Sample Location	Sample ID	Date	Collected By	Analytical Results[1][2] (micrograms per liter)							
				PCE	TCE	1,1-DCE	Trans-1,2-DCE	Cis-1,2-DCE	Vinyl Chloride	1,1,1-TCA	1,1-DCA
11968 and 11969 Bellevue-Redmond Road/11866 Northeast 8th Street											
MW-1	MW1	10/91	PNE	**7**	**9**	34	--	--	--	--	--
	GS6-072414[3]	07/24/14	GeoSyntec	*1.2*	*1.1*	--	--	--	**0.5**	--	--
	GS6-080114	08/01/14		< 0.16	*0.94*	--	--	--	**0.40**[d]	--	--
MW-3	GS9-072514[3]	07/25/14	GeoSyntec	*1.5*	*0.45*	--	--	--	<0.20	--	--
	GS9-080114	08/01/14		*1.2*	*0.46*	--	--	--	<0.082	--	--
MW-6	GS10-072414[3]	07/24/14	GeoSyntec	< 0.16	<0.091	--	--	--	**1.1**	--	--
	GS10 (dup)[3]			< 0.16	<0.091	--	--	--	**1.0**	--	--
	GS10-080114	08/01/14		< 0.16	<0.091	--	--	--	**0.79**	--	--
	GS10 (dup)			< 0.16	<0.091	--	--	--	**0.94**	--	--
GAT1	GAT1/GW14[3]	07/25/14	GeoSyntec	< 0.31	*0.38*[d]	--	--	--	<0.16		
	GAT1/GW8	07/31/14		< 0.16	*1.3*	--	--	--	**0.47**	--	--
GAT2	GAT2/GW12[3]	07/25/14	GeoSyntec	< 0.16	<0.091	--	--	--	<0.20	--	--
	GAT2/GW5	07/31/14		< 0.16	<0.091	--	--	--	<0.20	--	--
	GAT2/GW5 (dup)			< 0.16	<0.091	--	--	--	<0.20	--	--
120th Avenue Northeast Widening Project Stage 2											
B-101E	B-101E-122011-GW	12/20/11	GeoEngineers	*0.34*	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2
B-103E	B-103E-122111-GW	12/21/11	GeoEngineers	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2
B-105E	B-105E-122011-GW	12/20/11	GeoEngineers	*0.38*	*0.37*	--	<0.2	*1.0*	<0.2	<0.2	<0.2
B-110E	B-110E-122211-GW	12/22/11	GeoEngineers	**1,000**	**100**	--	<10	**21**	<10	<10	<10
B-111E	B-111E-122211-GW	12/22/11	GeoEngineers	**15**	**12**	--	*0.2*	**27**	**0.41**	<1.0	0.38
B-114E	B-114E-122211-GW	12/22/11	GeoEngineers	<0.2	<0.2	--	<0.2	*2.4*	**2.8**	<0.2	3.6
B-115E	B-115E-GW	11/30/12	GeoEngineers	*1.7*	*1.1*	--	<0.2	*5.0*	<0.2	*1.6*	1.9
B-116E	B-116E-GW	11/30/12	GeoEngineers	<0.2	<0.2	--	<0.2	*0.89*	**0.3**	<0.2	0.74
B-117E	B-117E-GW	11/30/12	GeoEngineers	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2
B-118E	B-118E-GW	11/30/12	GeoEngineers	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2
B-119E	B-119E-GW	11/30/12	GeoEngineers	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2
GEIMW-1	GEIMW-1	07/09/12	GeoEngineers	<0.2	<0.2	--	<0.2	*1.4*	**4.9**	<0.2	0.29
GEIMW-2	GEIMW-2	07/09/12	GeoEngineers	<0.2	<0.2	--	<0.2	*1.2*	<0.2	<0.2	<0.2
GEIMW-3	GEIMW-3	07/09/12	GeoEngineers	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2
GEIMW-4	GEIMW-4	07/09/12	GeoEngineers	<0.2	<0.2	--	<0.2	<0.2	<0.2	<0.2	<0.2
MW-1	MW-1	07/09/12	GeoEngineers	*0.79*	*0.65*	--	<0.2	*1.6*	**1.0**	<0.2	<0.2
MW-5	MW-5	07/09/12	GeoEngineers	<0.2	<0.2	--	<0.2	*0.26*	**0.4**	<0.2	0.53
SoundEarth 2016/2017 SSI											
MW-07	MW-7-20160405	04/05/16	SoundEarth	<1	<1	<1	--	<1	<0.2	--	--
	MW-07-20170224	02/24/17		<1	<1	--	<1	<1	<0.2	--	--
MW-08	MW-8-20160405	04/05/16	SoundEarth	**4,400**	**230**	*1.4*	--	**140**	**0.70**	--	--
	MW-08-20170224	02/24/17		**2,100**	**130**	--	<1	**95**	**1.6**	--	--
MW-09	MW-9-20160405	04/05/16	SoundEarth	**5.8**	*1.8*	<1	--	<1	<0.2	--	--
	Decommissioned										
MW-10	MW-10-20160405	04/05/16	SoundEarth	**10,000**	**12,000**	**11,000**	--	**51,000**	**67**	--	--
	MW-10-20170224	02/24/17		**4,200**	**15,000**	**--**	**440**[j]	**38,000**	**28**	--	--
MW-11	MW-11-20170224	02/24/17	SoundEarth	*1.1*	<1	--	<1	<1	<0.2	--	--
MW-12	MW-12-20170224	02/24/17	SoundEarth	<1	<1	--	<1	<1	<0.2	--	--
MW-13	MW-13-20170224	02/24/17	SoundEarth	**11**	<1	--	<1	<1	<0.2	--	--
	MW-13-20170503	05/03/17		**14**	<1	--	<1	<1	<0.2	--	--
MW-14	MW-14-20170224	02/24/17	SoundEarth	<1	**18**	**--**	<1	**220**	**59**	--	--
MW-15	MW-15-20170224	02/24/17	SoundEarth	<1	<1	--	<1	*2.3*	<0.2	--	--
MW-16	MW-16-20170224	02/24/17	SoundEarth	**16**	<1	**--**	<1	<1	<0.2	--	--
	MW-16-20170503	05/03/17		3.6	<1	**--**	<1	<1	<0.2	--	--
MTCA Cleanup Level				**5**[4]	**5**[4]	**400**[5]	**160**[5]	**16**[5]	**0.2**[4]	**200**[4]	**1,600**[5]

NOTES:

Bold denotes concentration exceeds MTCA cleanup level.

Italics denote concentration exceeds the laboratory reporting limit but is below the MTCA cleanup level.

[1]Analyzed by EPA Method 8260B.

[2]Only constituents with postive detections in one or more samples are presented in this table.

[3]The sample was received by the laboratory outside of acceptable temperature range.

[4]MTCA Cleanup Regulation, Chapter 173-340-900 of WAC, Table 720-1 Method A Cleanup Levels for Groundwater, revised November 2007.

[5]MTCA Cleanup Regulation, Chapter 173-340 of WAC, CLARC Master Table, Groundwater, Method B, Non Cancer, CLARC Website <https://fortress.wa.gov/ecy/clarc/CLARCHome.aspx>. Updated August 2015.

Laboratory Note:

[j]Detected result is between the sample specific method detection limit and laboratory reporting limit.

-- = not analyzed/not applicable/unknown

< = not detected at a concentration exceeding the laboratory reporting limit

CLARC = Cleanup Levels and Risk Calculations

DCA = Dichloroethane

DCE = dichloroethene

dup = duplicate

EPA = U. S. Environmental Protection Agency

MTCA = Washington State Model Toxics Control Act

PCE = tetrachloroethene

SoundEarth = SoundEarth Strategies, Inc.

SSI = Supplemental Subsurface Investigation

TCA = trichloroethane

TCE = trichloroethene

VOC = volatile organic compound

WAC = Washington Administrative Code

SoundEarth Strategies

Table 5
Summary of SoundEarth's Soil Vapor Results - VOCs
Bakker's Fine Dry Cleaning, Inc.
11855 Bellevue-Redmond Road
Bellevue, Washington

DRAFT

Sample Location	Sample ID	Sample Date	Collected by	Analytical Results[1] (µg/m^3)					
				PCE	TCE	1,1-DCE	cis-1,2-DCE	1,1-DCA	Vinyl Chloride
SG01	SG01-20160405	04/05/16	SoundEarth	**3,000**	<13	<9.9	<9.9	<10	<6.4
	SG01-20170809	08/09/17	SoundEarth	<6.8	<5.4	<4	<4	<4	<2.6
SG02	SG02-20160405	04/05/16	SoundEarth	*270*	**17**	<0.4	*1.2*	<0.4	<0.26
	SG02-20170809	08/09/17	SoundEarth	<6.8	<5.4	<4	<4	<4	<2.6
SG03	SG03-20160405	04/05/16	SoundEarth	*150*	**32**	*12*	*130*	**71**	<0.26
	SG03-20170809	08/09/17	SoundEarth	*8.3*	<5.4	<4	<4	<4	<2.6
MTCA Method B Soil Gas Screening Levels				**321**[2]	**12.3**[2]	**3,050**[3]	**NE**	**52.1**[2]	**9.33**[2]

NOTES:

Sample analysis performed by Friedman & Bruya, Inc. of Seattle, Washington.

Bold denotes concentration exceeds MTCA Method B Soil Gas Screening Level.

Italics denote concentration exceeds the laboratory reporting limit but is below the MTCA screening level.

[1]Analyzed by EPA Method Modified TO-15.

[2]MTCA Method B Sub-Slab Soil Gas Screening Levels, Cancer, Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State, October 2009 and updated in April 2015.

[3]MTCA Method B Sub-Slab Soil Gas Screening Levels, Noncancer, Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State, October 2009 and updated in April 2015.

< = not detected at a concentration exceeding the laboratory reporting limit

µg/m^3 = micrograms per cubic meter

DCA = dichloroethane

DCE = dichloroethene

EPA = U.S. Environmental Protection Agency

MTCA = Washington State Model Toxics Control Act

NE - not established

PCE = tetrachloroethene

SoundEarth = SoundEarth Strategies, Inc.

TCE = trichloroethene

VOC = volatile organic compound

ATTACHMENT A
TECHNICAL MEMORANDUM

SoundEarth Strategies, Inc.
2811 Fairview Avenue East, Suite 2000
Seattle, Washington 98102

T E C H N I C A L M E M O R A N D U M

DATE: November 2, 2016

TO: Bakker's Fine Dry Cleaning, Inc. c/o Howard Jensen

FROM: Suzy Stumpf

SUBJECT: **EVALUATION OF VAPOR INTRUSION MITIGATION MEASURES**

SoundEarth Strategies, Inc. (SoundEarth), on behalf of Bakker's Fine Dry Cleaning, Inc. (Bakker's), has evaluated potential vapor intrusion mitigation measures for the property located at 11855 Northeast Bellevue-Redmond Road in Bellevue, Washington (Property). The Property location is shown on Figure 1. This technical memorandum summarizes the results of our evaluation and identifies a preferred vapor intrusion mitigation measure.

Previous investigations conducted at the Property identified tetrachloroethene (PCE), trichloroethene (TCE), and 1,1-dichloroethane (1,1-DCA) in soil gas at concentrations exceeding screening levels published by the Washington State Department of Ecology (Ecology) in its *Guidance for Evaluating Soil Vapor Intrusion in Washington State: Investigation and Remedial Action* (April 2015).

In order to protect future occupants of the building on the Property (Building) and reduce the risk of future claims by third parties for injury or damages caused by exposure to hazardous substances released at or from the dry cleaning facility that formerly operated on the Property, SoundEarth completed an evaluation of engineering control technologies that could be implemented to effectively mitigate the risk of soil vapors intruding into the Building.

SoundEarth evaluated the following engineering control technologies for the Property:

- A "radon style" sub-slab depressurization system (SSD) system.
- A soil vapor extraction (SVE) system.
- A vapor barrier.
- A positive-pressure system supplemental to the existing heating, ventilation, and air conditioning (HVAC) system.

The evaluation involved performing pilot tests of two of the alternate engineering control technologies. The results of the evaluation indicate a radon style SSD system is the preferred vapor intrusion mitigation measure for the Property.

PILOT TEST SETUP AND METHODS

In September and October 2016, SoundEarth conducted pilot tests for a radon style SSD system and an SVE system.

Pilot Test for Radon Style SSD System

On September 22, three test sumps were installed through the concrete floor of the Building: one on the northwest wall (SSDS01), one near the midpoint of the east wall (SSDS02), and one near the corner of the north/northwest walls (SSDS03). Figure 2 shows the locations of the test sumps.

On September 23, a diagnostic fan was mounted to each test sump to apply vacuum pressure. The diagnostic fan was equipped to measure vacuum, air flow, and volatile organic compounds in the recovered air stream. Flow was allowed to stabilize prior to collecting test well and observation well measurements during each vacuum step. Air flow rates were interpolated from the fan performance curve. Observation points (OBS01 through OBS10) were installed using a rotary hammer drill with a 0.5-inch-diameter drill bit. The observation points were used to monitor the amount of vacuum observed at varying distances from the test sump. The three sub-slab vapor points (SG01 through SG03) installed in April 2016 were used to monitor changes in soil vapor concentrations over time. Figure 2 shows the location of the observation points and sub-slab vapor points.

Pilot Test for SVE System

On September 30, three additional observation points (OBS11 through OBS13) were installed. Figure 3 shows the location of the additional observation points.

On October 4, a vacuum truck was used to apply vacuum pressure through an instrument train with a bleed-air assembly, which was equipped to measure vacuum, temperature, and flow rates. When the vacuum truck, instrument train, and bleed-air assembly were used, the pilot test was performed by incrementally increasing the applied vacuum to the test sump by closing the manual air dilution valve on the instrument train. The pilot test commenced with the manual air dilution valve fully open to apply minimum vacuum to the test sump. Subsequent vacuum steps involved closing the manual air dilution valve incrementally and allowing the flow to stabilize prior to collecting test well and observation well measurements during each incremental vacuum step. Air flow rates were measured using rotameters.

Samples of extracted vapor were analyzed for PCE, TCE, 1,1-dichloroethane (1,1-DCA), cis-1,2-dichloroethene, 1,1-dichloroethene (1,1-DCE), and vinyl chloride using U.S. Environmental Protection Agency Method 8260C.

PILOT TEST RESULTS

The results of the pilot test are presented below.

Applied Vacuums and Air Flow Rates

Tables 1 through 6 summarize the vacuum and flow applied to the test sumps during pilot testing. For the pilot test of the radon style SSD system, air flow rates from the test sumps were estimated from the

AMG Force diagnostic fan performance curve. For the pilot test of the SVE system, air flow rates were estimated using data gathered from a set of rotameters (King or Omega) and corrected for pressure and temperature by the following equation:

$$Q_c = Q_i \times \sqrt{\frac{SG\ x(T + 460)}{36 \times (P + 14.7)}}$$

Where: Qc = Air flow rate corrected for temperature and pressure (scfm)

Qi = Air flow rate indicated on rotameter (scfm)

SG = specific gravity of gas at standard temperature and pressure

T = operating temperature (°F)

P = operating back pressure (psig)

Standard conditions for the rotameter are 14.7 psia and 70°F.

Notes:
°F = degrees Fahrenheit
psia = pounds per square inch absolute
psig = pounds per square inch gage
scfm = standard cubic feet per minute

Pilot Test Results for SSDS01

Test sump SSDS01 was subject to the pilot test of the radon style SSD system.

The maximum vacuum achievable at test sump SSDS01 with the diagnostic fan was 3.6 inches of water (iow) with a corresponding estimated air flow rate of 104.6 standard cubic feet per minute (scfm). A summary of the radon style SSD system pilot test results are presented in Table 1. The following observation points were used to evaluate the range of influence of the vacuum applied at test sump SSDS01: OBS01, OBS02, OBS03, OBS04, OBS05, SG01, and SG02. A significant vacuum influence[1] was observed at OBS04 (50 feet from SSDS01), OBS01 (5 feet from SSDS01), OBS02 (10 feet from SSDS01), and OBS03 (40 feet from SSDS01). Nonsignificant vacuums were observed at SG01 (20 feet from SSDS01), SG02 (30 feet from SSDS01), and OBS05 (60 feet from SSDS01). The radon style SSD system pilot test results for SSDS01 are presented in Table 2 and shown on Figure 2.

Pilot Test Results for SSDS02

Test sump SSDS02 was subject to the pilot test of the radon style SSD system and the pilot test of the SVE system.

In the radon style SSD system pilot test, the maximum vacuum achievable at test sump SSDS02 with the diagnostic fan was 4.2 iow with a corresponding estimated air flow rate of 71.8 scfm. A summary of the

[1] An observed vacuum influence is considered significant if 1 percent of the applied vacuum is measured in the observation or monitoring point.

radon style SSD system pilot test results are presented in Table 1. The following observation points were used to evaluate the range of influence of the vacuum applied at test sump SSDS02: OBS02, OBS03, OBS05, OBS06, OBS07, OBS08, and SG03. A significant vacuum influence was observed at OBS02 (60 feet from SSDS02), OBS06 (5 feet from SSDS02), OBS07 (20 feet from SSDS02), OBS03 (30 feet from SSDS02), OBS08 (40 feet from SSDS02), OBS05 (52 feet from SSDS02), and OBS02 (60 feet from SSDS02). A nonsignificant vacuum was observed at SG03 (10 feet from SSDS02). The radon style SSD system pilot test results for SSDS02 are presented in Table 3 and shown on Figure 2.

In the SVE system pilot test, air flow rates between 22 and 254 scfm were observed at SSDS02 at vacuums between 7 and 17 iow. A summary of the SVE system pilot test results for SSDS02 are presented in Table 5. The pilot test consisted of three main steps with 10, 15, and 20 iow applied at test sump SSDS02. The following observation points were used to evaluate the range of influence of the vacuum applied at test sump SSDS02: SSDS01, SG01, SG02, SG03, OBS11, OBS12, and OBS13. Observation points OBS11 through OBS13 (all placed along the perimeter of the Building) were selected to determine whether the pressure field from a stronger vacuum would extend out to the perimeter of the Building and allow for a reduction in the number of sub-slab penetrations and collection sumps. The higher vacuum yielded higher air flow rates beneath the slab, but did not extend the negative pressure field beneath the slab out to the perimeter of the Building. These results are presented in Table 6 and shown on Figure 3.

Pilot Test Results for SSDS03

Test sump SSDS03 was subject to the pilot test of the radon style SSD system.

The maximum vacuum achievable at test sump SSDS03 with the diagnostic fan was 4.0 iow with a corresponding estimated air flow rate of 88.4 scfm. A summary of the radon style SSD system pilot test results are presented in Table 1. The following observation points were used to evaluate the range of influence of the vacuum applied at test sump SSDS03: OBS02, OBS03, OBS08, OBS09, OBS10, and SG02. A significant vacuum influence was observed at OBS09 (10 feet from SSDS03). Nonsignificant vacuums were observed at SG02 (5 feet from SSDS03), OBS08 (20 feet from SSDS03), OBS10 (30 feet from SSDS03), and OBS03 (47 feet from SSDS03). The radon style SSD system pilot test results for SSDS02 are presented in Table 4 and shown on Figure 2.

Laboratory Analytical Results

On September 23, 2016, air samples were collected from all three test sumps. The laboratory analytical results indicated that PCE was detected at all three test sumps, and TCE and cis-1,2-dichloroethene were detected in the air sample from test sump SSDS02. The highest concentrations were detected in the air sample from test sump SSDS02. All three samples were below the laboratory detection limits for 1,1-

DCE, 1,1-DCA[2], and vinyl chloride. The laboratory analytical results are presented on Table 7. The laboratory analytical report is provided in Attachment A.

EVALUATION OF ALTERNATIVE VAPOR INTRUSION MITIGATION MEASURES

SoundEarth evaluated four alternative mitigation measures that have proven effective at preventing the intrusion of chlorinated volatile organic compounds (CVOCs) through soil vapors. SoundEarth considered whether specific constraints at the Property could result in any of the potential mitigation measures being technically or administratively infeasible to implement or having substantial costs without proportional benefit. A detailed description of the four alternatives is provided below.

Alternative 1—Radon Style SSD System

Alternative 1 involves the installation of an SSD system to induce air flow and apply a negative pressure beneath the existing concrete slab. This type of system is commonly referred to as a "radon style" depressurization system because the system design is similar to how radon gas is managed at residential and commercial properties. The radon style SSD system is a low vacuum and moderate air flow type of system. Figure 4 provides a conceptual layout of a radon style SSD system.

During the pilot test of a radon style SSD system, an air flow rate of 71.8 to 104.6 scfm was observed when a relatively low vacuum (3.6 to 4.2 iow) was applied beneath the Building slab. A significant vacuum influence was observed approximately 50 to 60 feet from test sumps SSDS01 and SSDS02, but the sub-slab communication between test sump SSDS03 and its observation points was significantly reduced in the northeast corner of the Building. Due to these observations, a radius of influence of 40 feet is estimated for soil vapor extraction points placed throughout the majority of the Building, but a reduced radius of influence of 20 feet is estimated for soil vapor extraction points placed in the northeast corner of the Building. Using these estimates, a conceptual layout of a radon style SSD system at the Property would include five vapor extraction points in the locations shown on Figure 4.

If a radon style SSD system were installed, the recovered vapors would be monitored monthly during the system's operation to assess the effectiveness of the system and ensure compliance with Puget Sound Clean Air Agency (PSCAA) air discharge requirements. The air emissions of the conceptual radon style SSD system for the Property were evaluated based on the average flow rate and average concentration of CVOCs observed during the pilot test. The estimated annual emissions are well below

[2] 1,1-DCA was detected in sub-slab vapor points SG02 and SG03, but it was not detected above the laboratory detection limit in any of the extracted vapor samples collected during the pilot test. The EPA Method 8260c laboratory detection limits for PCE, TCE, via-1,2-DCE, 1,1-DCA, and vinyl chloride are higher than the MTCA soil gas screening levels. It is possible that 1,1-DCA and vinyl chloride were present in the extracted vapor samples, but at concentrations below the laboratory detection limit.

the thresholds that would require a permit for discharging air to the atmosphere. Performance monitoring would also be performed semiannually to monitor the concentration of CVOCs in soil gas.

Key assumptions for a radon style SSD system include the following:

- Based on the pilot test results, the estimated radius of influence for each vapor extraction point is 40 feet, except under the northeast portion of the Building, where the radius of influence is estimated at 20 feet. A total of five vapor extraction points will be equipped with individual extraction fans. The fans will be mounted on the roof of the Building.
- Soil generated by installation of the soil vapor extraction points will be drummed, characterized, and properly disposed of at an approved landfill facility.
- The emissions from the extracted soil vapors will be modeled before the SSD system is put into use to document that an air discharge permit from PSCAA and/or pretreatment of the generated vapor is not necessary.
- Monthly site visits will be conducted to perform periodic system maintenance and collect effluent air samples to confirm compliance with PSCAA regulations.
- Semiannual monitoring will be conducted to measure the concentration of CVOCs in soil gas for a period of five years.
- The SSD system will be operated for five years. The actual time frame will depend on when the concentrations of CVOCs in soil vapors beneath the Building are reduced to levels no longer requiring the SSD system.
- The equipment and air discharge stacks will be roof-mounted. The above-grade piping will be located along the foundation perimeter and painted to blend with the wall or beams.
- System installation activities will occur before a tenant moves into the Building. Bakker's will grant access to install the soil vapor extraction points and associated equipment.
- The estimated time frame for installation of the SSD system is one to two weeks.

The cost associated with designing and installing a radon style SSD system, plus five years of operating, maintaining, and monitoring the system, is approximately $164,000. Table 8 provides a breakdown of these costs.

Alternative 2—SVE System

Alternative 2 involves the installation of an SVE system to induce air flow and remove CVOCs from beneath the existing concrete slab. Figure 5 provides a conceptual layout of an SVE system.

Based on the results of the SVE pilot test, a high air flow rate of 250 scfm was observed when a relatively moderate vacuum (16.5–17 iow) was applied beneath the Building slab, but a significant vacuum influence was not observed along the perimeter of the Building or in the test sump locations. Based on

the radius of influence observed during the SVE pilot test, an SVE system for the Building would include four 20-foot horizontal extraction lines installed beneath the slab.

If an SVE system were installed, the recovered vapors would be monitored monthly during the system's operation to assess the effectiveness of the system and ensure compliance with PSCAA requirements. Greater vapor recovery would be anticipated with the application of a stronger vacuum and higher air flow rate. Emission calculations would need to be completed for an SVE system to ensure treatment is not required prior to discharging to the atmosphere. Performance monitoring would also be performed semiannually to monitor the concentrations of CVOCs in soil gas.

Key assumptions for an SVE system include the following:

- Based on the pilot test results, the estimated radius of influence for each horizontal vapor extraction line is 20 feet. A total of four horizontal vapor extraction lines will be plumbed to an extraction header and then to a blower.
- Soil generated by installation of the vapor extraction lines will be drummed, characterized, and properly disposed of at an approved landfill facility. For purposes of cost estimating, it is assumed that the generated soil will be granted a Contained-Out determination from Ecology.
- The emissions from the extracted soil vapors will be sampled to evaluate whether an air discharge permit from PSCAA and/or pretreatment of the generated vapors will be necessary.
- Monthly site visits will be conducted to perform periodic system maintenance and collect effluent air samples to confirm compliance with PSCAA regulations.
- Semiannual monitoring will be conducted to measure the concentrations of CVOCs in soil gas for a period of five years.
- The SVE system will be operated for five years. The actual time frame will depend on when the concentrations of CVOCs in soil vapors beneath the Building are reduced to levels no longer requiring the SVE system.
- The equipment and air discharge stacks will be installed along the perimeter of the Building, and on the roof to the extent practical.
- System installation activities will occur before a tenant moves into the Building. Bakker's will grant access to install the horizontal SVE lines and associated equipment.
- The estimated time frame for installation of the SVE system is two to three weeks.

The cost associated with designing and installing an SVE system, plus five years of operating, maintaining, and monitoring the system, is approximately $340,000. Table 9 provides a breakdown of these costs.

Alternative 3—Vapor Barrier

Alternative 3 involves the installation of a vapor barrier to prevent soil vapors from intruding through the concrete slab into the Building. The vapor barrier would be created by sealing penetrations in the concrete slab and applying a liquid product, Retro-Coat, to the exposed floor surface of the Building. Sealing the penetrations and covering the floor surface will eliminate the vapor migration pathway from soil gas to indoor air. Figure 6 provides a conceptual layout of a vapor barrier system.

Application of the vapor barrier involves prepping the existing concrete slab surface by power washing, shot blasting, or sanding to create a clean surface to which the Retro-Coat can bond. All floor penetrations and large cracks or holes will be sealed prior to applying the Retro-Coat Primer. A 6-millimeter-thick coat of the primer will be applied and allowed to dry. Next, a 20-millimeter-thick layer of the Retro-Coat will be applied and allowed to cure. The Retro-Coat surface can withstand heavy foot traffic and light machine traffic, such as shop forklifts.

Retro-Coat is manufactured by LandScience Technologies and extensive research and development for this product indicates that it is resistant to aggressive chemicals such as PCE, TCE, and other CVOCs. The product is available in multiple colors and can be augmented to create no-slip areas near entrances and exits.

Limited maintenance of a vapor barrier is required. Periodic inspections are necessary to ensure continued protection from vapor migration, and care should be taken to clean up chemical spills, avoid contact with abrasive material that can scratch or gouge the barrier, and to prevent metal wheels or equipment tracks from marring the barrier surface.

Key assumptions for a vapor barrier include the following:

- The estimate is based on sealing 8,000 square feet of concrete slab. The application includes prepping the existing concrete slab, removing carpet surfaces, and applying a 6-millimeter-thick layer of Retro-Coat Primer and a 20-millimeter-thick layer of Retro-Coat.
- All equipment, furniture, and materials will be removed from the floor surface before installation of the vapor barrier commences.
- Semiannual performance monitoring will be conducted to measure the concentrations of CVOCs in indoor air for a period of five years. A total of three samples will be collected (ambient and indoor air) during each sampling event.
- There is a one-year warranty on the vapor barrier from the time of its installation.
- Maintenance of the vapor barrier is not included in the cost estimate.
- Installation of the vapor barrier will occur before a tenant moves into the Building. Bakker's will grant access to install the vapor barrier.

- The estimated time frame for installation of the vapor barrier is two to three weeks.

The cost associated with designing and installing a vapor barrier, plus five years of monitoring, is approximately $167,000. Table 10 provides a breakdown of these costs.

Alternative 4—Positive Pressure HVAC System

Alternative 4 involves the installation of an HVAC system to maintain positive pressure within the Building. The main transport of CVOCs from soil gas to indoor air is advective flow or diffusion, which is driven by pressure and/or density differences. If the air pressure is greater beneath the concrete slab than inside the Building, then air will want to move from under the slab where there is higher pressure into the Building where there is lower pressure in an attempt to reach equilibrium. The positive pressure HVAC system will maintain a higher air pressure in the Building relative to atmospheric pressure. This will ensure that a positive pressure gradient is maintained within the Building, therefore eliminating the transport of contaminated vapors from beneath the slab into the Building. Figure 7 provides a conceptual layout of a positive pressure HVAC system.

Key assumptions for positive pressure HVAC system include the following:

- The Building's existing HVAC system will remain operational during and after installation of the positive pressure HVAC system.
- The HVAC contractor will design a positive pressure system for the Building, apply for the necessary permits, and schedule all the required permit inspections.
- Installation of the positive pressure HVAC system will occur before a tenant moves into the Building. Bakker's will grant access to install the positive pressure HVAC system.
- Semiannual performance monitoring will be conducted to measure the concentrations of CVOCs in indoor air for a period of five years. A total of three samples will be collected (ambient and indoor air) during each sampling event.
- The positive pressure HVAC system will require quarterly maintenance by the HVAC contractor.
- The estimated time frame for installation of the positive pressure HVAC system is two to three weeks.

The cost associated with designing and installing a positive pressure HVAC system, plus five years of operating, maintaining, and monitoring the system, is approximately $198,000. Table 11 provides a breakdown of these costs.

PREFERRED ALTERNATIVE

All four of the alternatives are proven engineering control technologies that provide a solution for mitigating vapor intrusion at the Property. Alternatives 1, 2, and 3 are more feasible to implement before the planned tenant occupancy date of December 1, 2016. Equipment lead times, permitting, and

slab preparation for Alternative 4 could preclude this alternative from being implemented before the planned tenant occupancy date.

Alternatives 1 and 2 physically remove harmful vapors from beneath the Building slab; Alternatives 3 and 4 do not. Alternative 1 is far less expensive than Alternative 2. The preliminary design parameters for the Building favor Alternative 1, and the pilot test results indicate that a lower vacuum and moderate air flow beneath the slab can effectively mitigate and remove soil vapors accumulating beneath the Building foundation. Alternative 1 is the least disruptive to the Building, requires only five concrete cores and five roof penetrations, and can be implemented in one to two weeks.

Alternative 2 is the most expensive alternative, and it requires cutting the concrete slab and excavating trenches for the horizontal SVE lines inside the Building and a main trench leading to the vacuum blower. This will require removal of all carpet and refinishing of all floors.

While the cost of implementing Alternative 3 is only slightly higher than Alternative 1, it requires significantly more preparation time than Alternative 1 and 2 to remove all carpeting and sand blast the existing concrete slab to prepare the surface for application of the floor sealant.

The cost to implement Alternative 4 is higher than Alternatives 1 and 3, but less expensive than Alternative 2. This alternative is technically feasible to implement; however, this alternative involves introducing high air flows from outside air to the Building to increase fresh air exchange and create a positive pressure inside the Building. For tenant comfort and climate control, this air would need to be tempered and high air flow rates associated with this design can be disruptive to tenant operations. Because Alternative 4 would need to be designed and permitted before installation, it is unlikely it could be implemented before December 1, which would mean delaying the tenant occupancy date.

After evaluating the costs, feasibility, and implementabilty of all alternatives, Alternative 1 will most effectively mitigate potential intrusion of soil gas to indoor air, it is the least expensive alternative, and it can be implemented before the planned tenant occupancy date.

CONCLUSIONS AND RECOMMENDATIONS

The pilot tests indicates that a radon style SSD system, which utilizes low vacuum and moderate air flow rates, will be capable of mitigating the risk of soil vapor intrusion inside the Building. Based on the radius of influence observed during the pilot test, the system would include five vapor extraction points located along the perimeter of the Building. Figure 4 shows a conceptual layout of a radon style SSD system for the Property. The costs associated with the design, installation, and five years of operational monitoring of the radon style SSD system is approximately $164,000 (Table 8). It is estimated that one to two weeks would be required to install the system, which would allow for its installation prior to the tenant's expected occupancy date of December 1.

Attachments: Figure 1, Property Location Map
Figure 2, Radon Style SSD System Pilot Test Locations and Results
Figure 3, SVE Pilot Test Locations and Results
Figure 4, Conceptual Layout of Radon Style SSD System
Figure 5, Conceptual Layout of SVE System
Figure 6, Conceptual Layout of Vapor Barrier
Figure 7, Conceptual Layout of Positive Pressure HVAC System
Table 1, Summary of Radon Style SSD System Pilot Test Results
Table 2, Summary of Radon Style Observed Vacuum—SSDS01
Table 3, Summary of Radon Style Observed Vacuum—SSDS02
Table 4, Summary of Radon Style Observed Vacuum—SSDS03
Table 5, Summary of SVE Pilot Test Results—SSDS02
Table 6, Summary of SVE Observed Vacuum—SSDS02
Table 7, Extracted Vapor Analytical Summary
Table 8, Alternative 1, Radon Style SSD System Cost Estimate
Table 9, Alternative 2, SVE System Cost Estimate
Table 10, Alternative 3, Vapor Barrier Cost Estimate
Table 11, Alternative 4, Positive Pressure HVAC System Cost Estimate
Attachment A, Laboratory Analytical Report

EAM/SES:jac/dnm

FIGURES

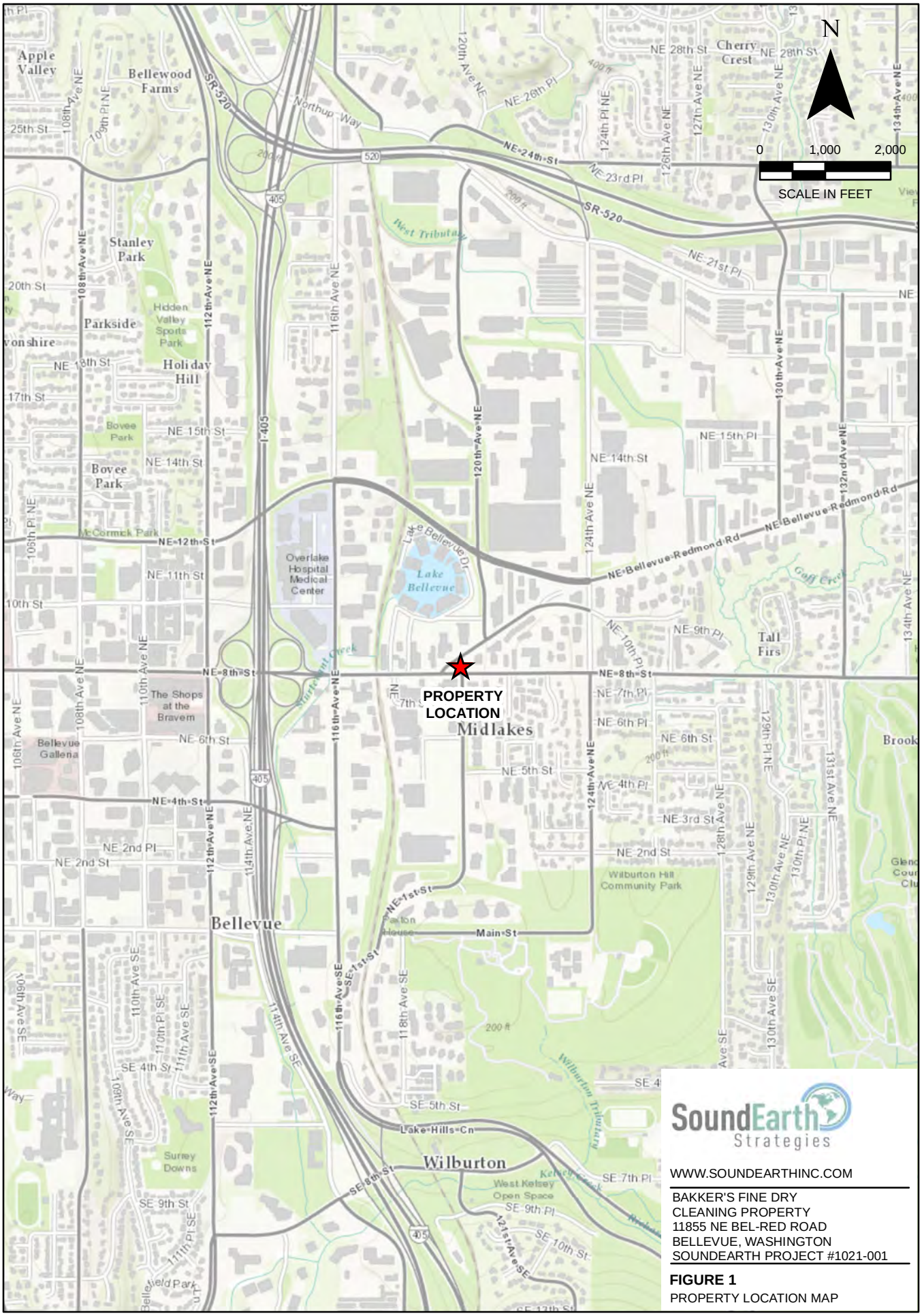

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FIGURE 1
PROPERTY LOCATION MAP

11/3/2016

P:\1021 BAKKER\1021-001 BAKKERS FINE DRY CLEANING\TECHNICAL\CAD\2016\SSDSMEMO FIGS\1021-001_2016_FS_FIG2.DWG

N

0 5 10

APPROXIMATE SCALE IN FEET

SG01

SSDS01

OBS02

OBS04

OBS01

OBS05

OBS03

OBS08

OBS09

SG02

SSDS03

EXISTING BUILDING

SSDS02

OBS07

SG03

OBS06

OBS10

LEGEND

SG03	SUB-SLAB VAPOR POINT
SSDS03	SUB-SLAB DEPRESSURIZATION POINT
OBS10	OBSERVATION POINT
	DEMONSTRATED 1% OF APPLIED VACUUM
	PARTIAL INFLUENCE
	NO INFLUENCE
	PROPERTY BOUNDARY
SS	SANITARY SEWER
SW	STORMWATER
	NEW PROPOSED PROPERTY BOUNDARY

NOTE: SUB-SLAB VAPOR POINTS SG02 AND SG03 UPDATED TO REFLECT ACCURATE LOCATION

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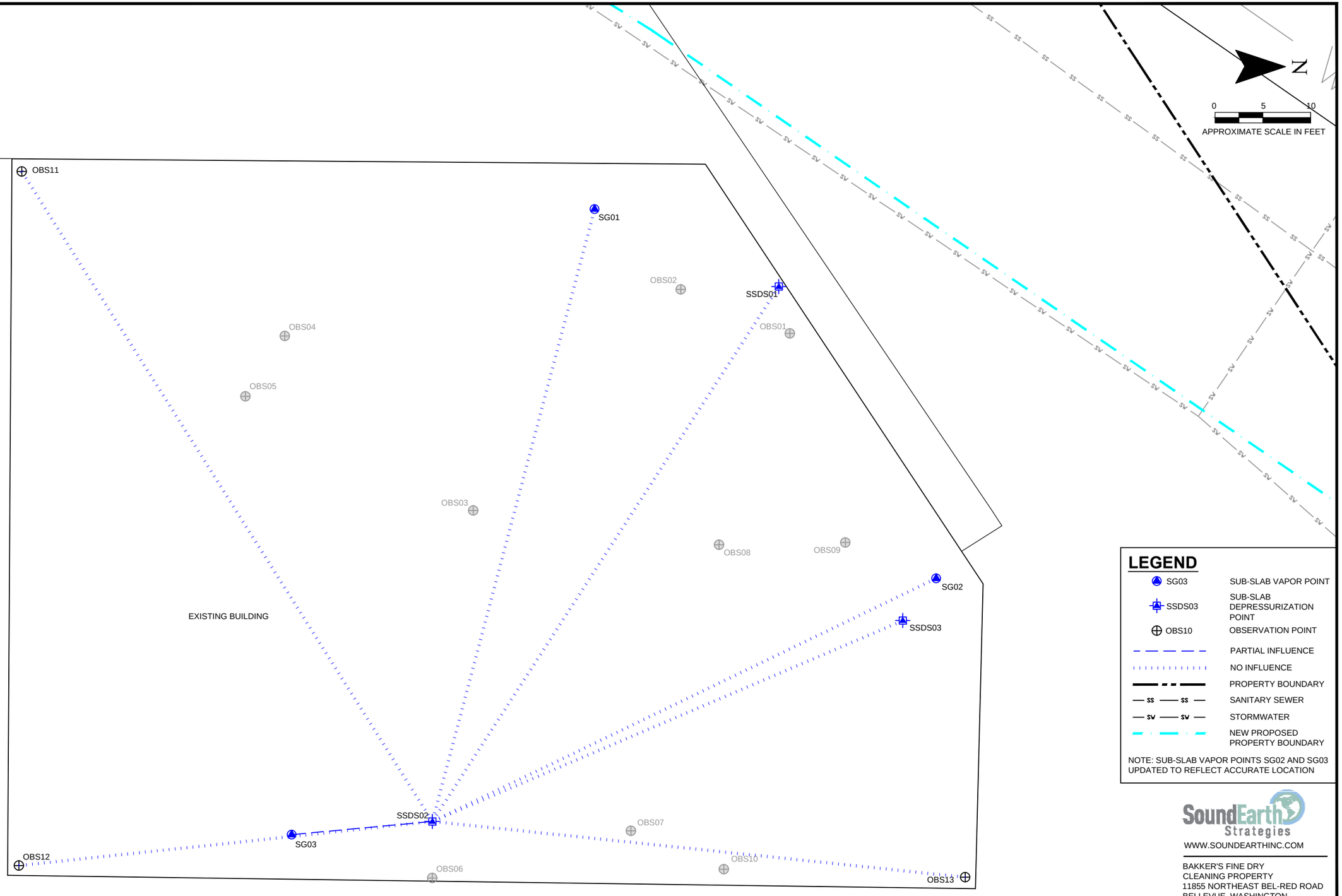
FIGURE 2

RADON STYLE SSD PILOT TEST
LOCATIONS AND RESULTS

11/3/2016

P:\1021 BAKKER\1021-001 BAKKERS FINE DRY CLEANING\TECHNICAL\CAD\2016\SSDSWMEMO FIGS\1021-001_2016_FS_FIG3.DWG



LEGEND

SG03	SUB-SLAB VAPOR POINT
SSDS03	SUB-SLAB DEPRESSURIZATION POINT
OBS10	OBSERVATION POINT
	PARTIAL INFLUENCE
	NO INFLUENCE
	PROPERTY BOUNDARY
ss	SANITARY SEWER
sw	STORMWATER
	NEW PROPOSED PROPERTY BOUNDARY

NOTE: SUB-SLAB VAPOR POINTS SG02 AND SG03 UPDATED TO REFLECT ACCURATE LOCATION

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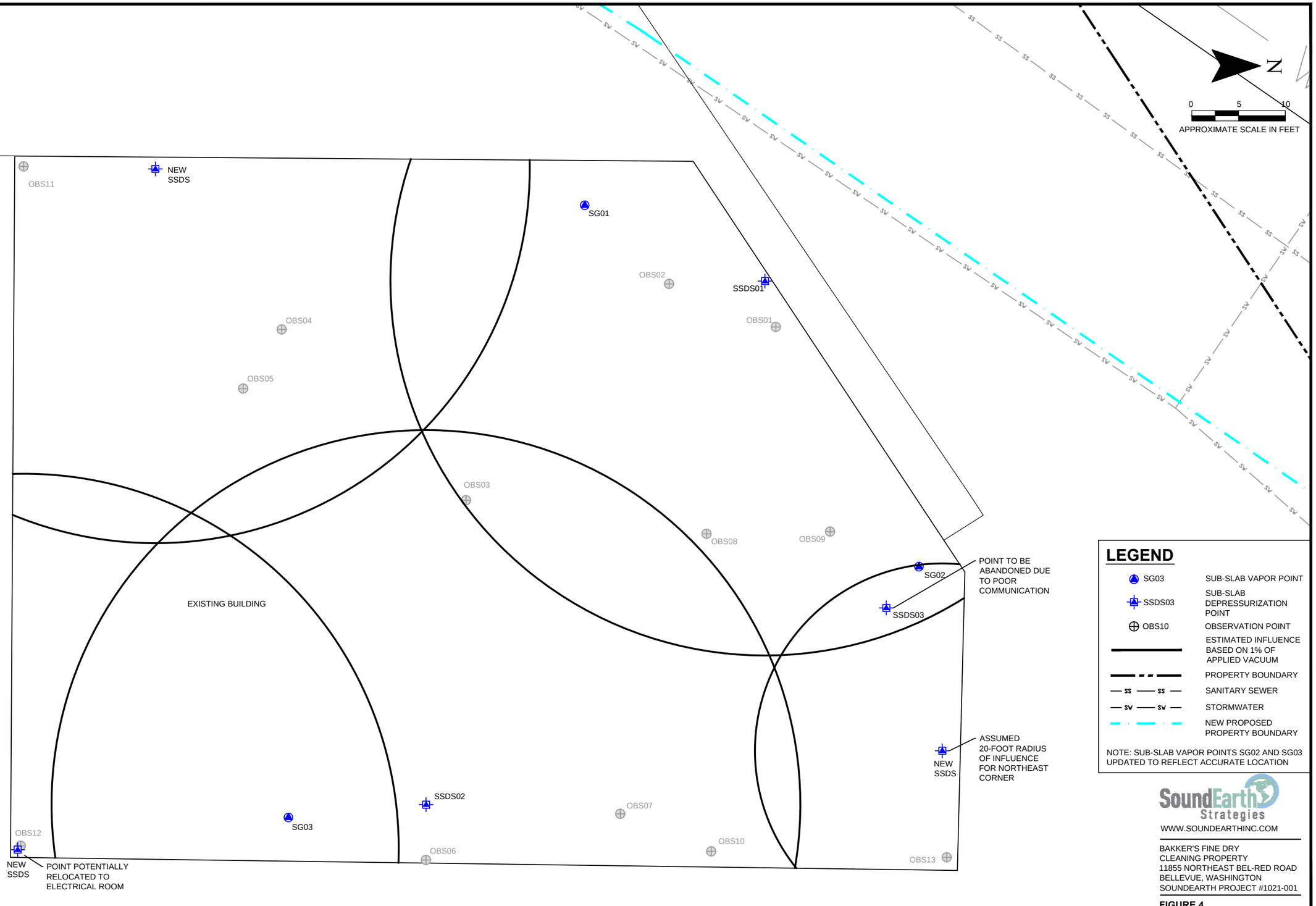
FIGURE 3

SVE PILOT TEST LOCATIONS AND RESULTS

11/3/2016

P:\1021 BAKKER\1021-001 BAKKERS FINE DRY CLEANING\TECHNICAL\CAD\2016\SSDSMEMO FIGS\1021-001_2016_FS_FIG4.DWG



LEGEND

SG03	SUB-SLAB VAPOR POINT
SSDS03	SUB-SLAB DEPRESSURIZATION POINT
OBS10	OBSERVATION POINT
	ESTIMATED INFLUENCE BASED ON 1% OF APPLIED VACUUM
	PROPERTY BOUNDARY
SS	SANITARY SEWER
SW	STORMWATER
	NEW PROPOSED PROPERTY BOUNDARY

NOTE: SUB-SLAB VAPOR POINTS SG02 AND SG03 UPDATED TO REFLECT ACCURATE LOCATION

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FIGURE 4
CONCEPTUAL LAYOUT OF A RADON STYLE SSD SYSTEM

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P:\1021 BAKKER\1021-001 BAKKERS FINE DRY CLEANING\TECHNICAL\CAD\2016\SSDS\MEMO FIGS\1021-001_2016_FS_FIG5.DWG

N

0 5 10

APPROXIMATE SCALE IN FEET

OBS11

SG01

OBS02

SSDS01

POINT TO BE ABANDONED

OBS04

OBS01

OBS05

OBS03

OBS08

OBS09

SG02

POINT TO BE ABANDONED

SSDS03

EXISTING BUILDING

POINT TO BE ABANDONED

SSDS02

SG03

OBS07

OBS10

OBS12

OBS06

OBS13

LEGEND

SG03	SUB-SLAB VAPOR POINT
SSDS03	SUB-SLAB DEPRESSURIZATION POINT
OBS10	OBSERVATION POINT
	HORIZONTAL SOIL VAPOR EXTRACTION LINES
	ESTIMATED INFLUENCE
	PROPERTY BOUNDARY
SS	SANITARY SEWER
SW	STORMWATER
	NEW PROPOSED PROPERTY BOUNDARY

NOTE: SUB-SLAB VAPOR POINTS SG02 AND SG03 UPDATED TO REFLECT ACCURATE LOCATION

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FIGURE 5

CONCEPTUAL LAYOUT OF SVE SYSTEM

11/3/2016

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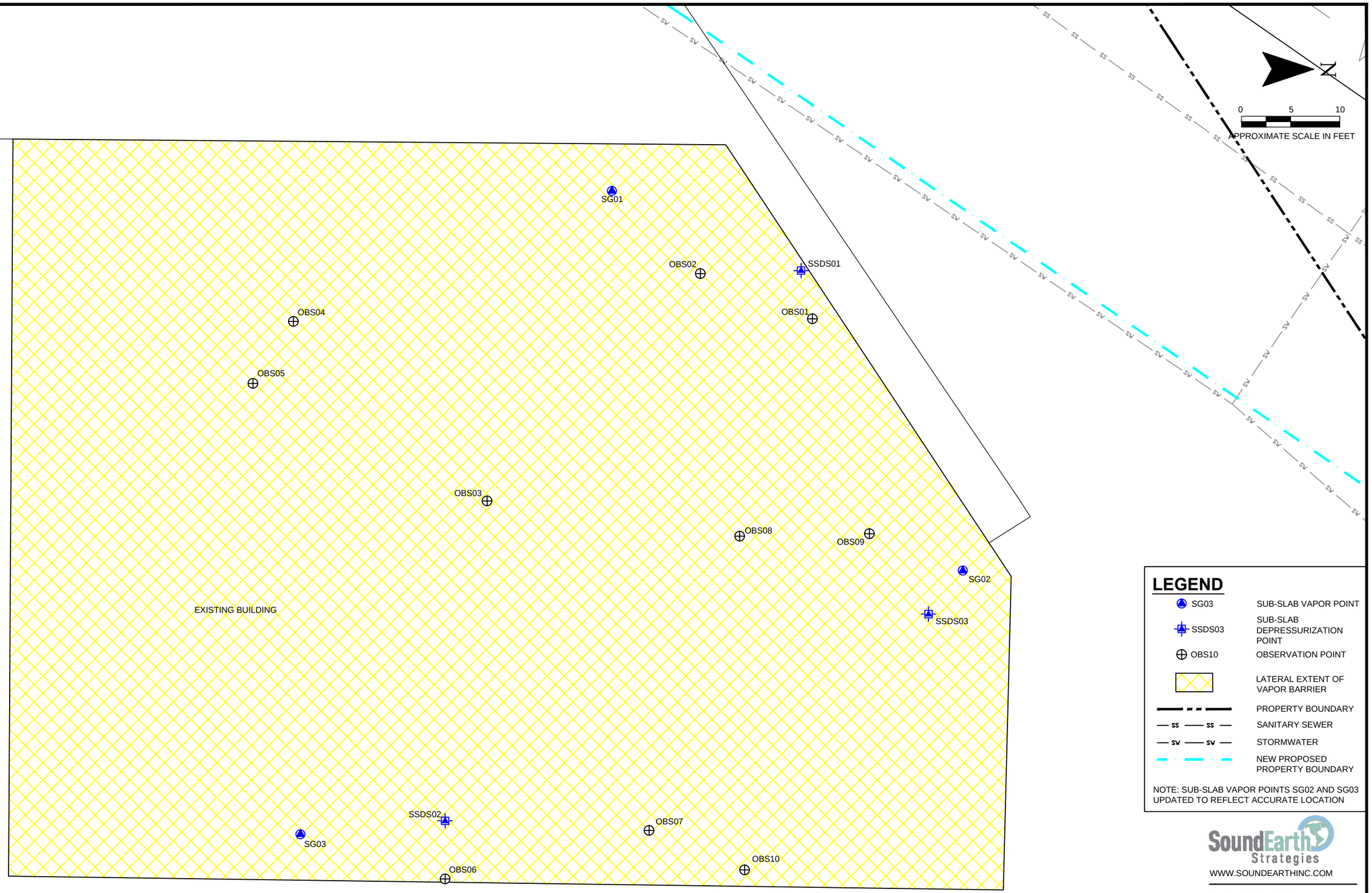

LEGEND

SG03	SUB-SLAB VAPOR POINT
SSDS03	SUB-SLAB DEPRESSURIZATION POINT
OBS10	OBSERVATION POINT
	LATERAL EXTENT OF VAPOR BARRIER
	PROPERTY BOUNDARY
ss	SANITARY SEWER
sw	STORMWATER
	NEW PROPOSED PROPERTY BOUNDARY

NOTE: SUB-SLAB VAPOR POINTS SG02 AND SG03 UPDATED TO REFLECT ACCURATE LOCATION

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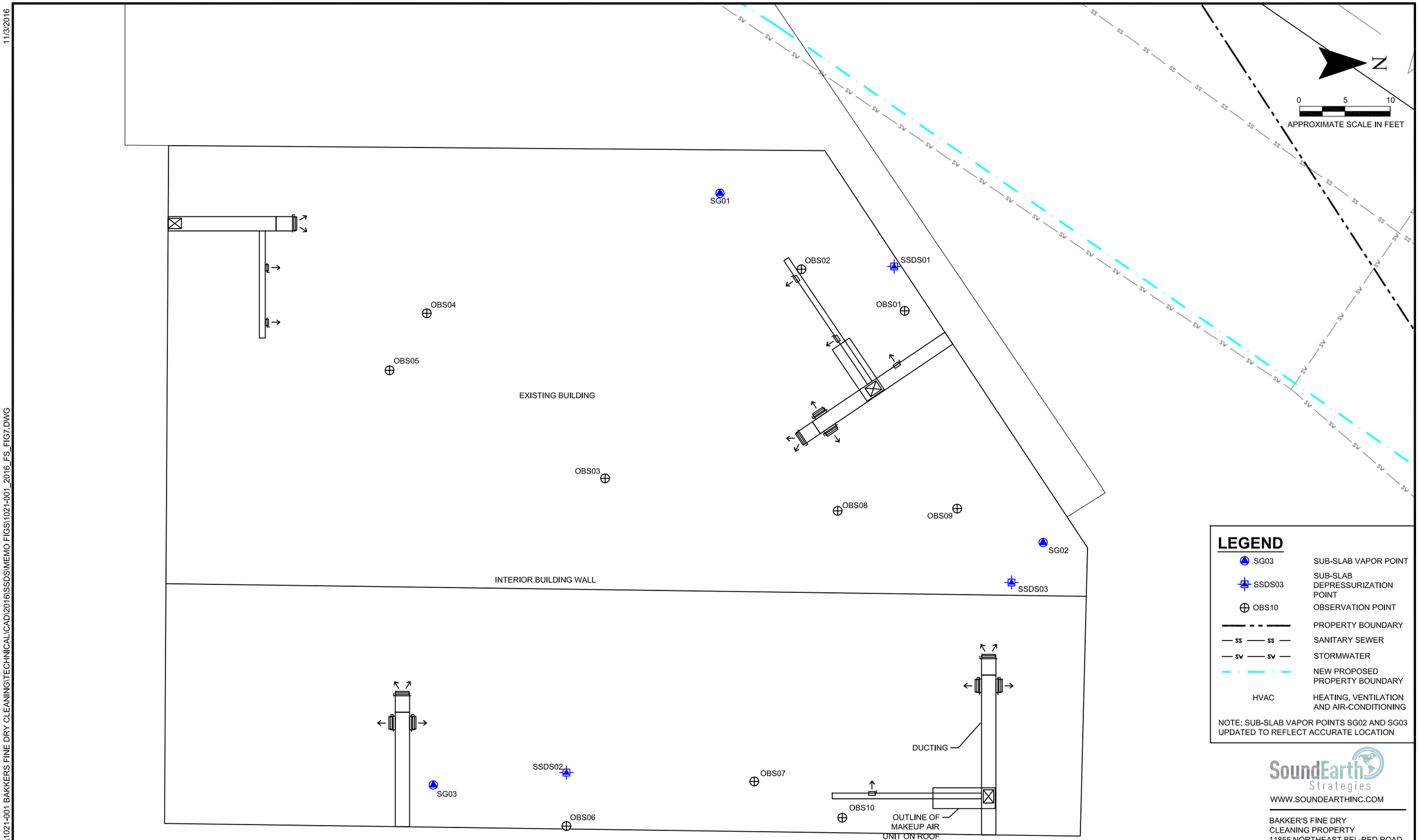
FIGURE 6
CONCEPTUAL LAYOUT OF VAPOR BARRIER

11/3/2016

P:\1021 BAKKER\1021-001 BAKKERS FINE DRY CLEANING\TECHNICAL\CAD\2016\SSDS\MEMO FIGS\1021-001_2016_FS_FIG7.DWG



LEGEND

SG03	SUB-SLAB VAPOR POINT
SSDS03	SUB-SLAB DEPRESSURIZATION POINT
OBS10	OBSERVATION POINT
	PROPERTY BOUNDARY
SS	SANITARY SEWER
SW	STORMWATER
	NEW PROPOSED PROPERTY BOUNDARY
HVAC	HEATING, VENTILATION AND AIR-CONDITIONING

NOTE: SUB-SLAB VAPOR POINTS SG02 AND SG03 UPDATED TO REFLECT ACCURATE LOCATION

PLEASE NOTE THIS IS A CONCEPTUAL LAYOUT. ACTUAL LAYOUT WOULD BE DETERMINED BY A LICENSED MECHANICAL ENGINEER.

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FIGURE 7

CONCEPTUAL LAYOUT OF POSITIVE PRESSURE HVAC SYSTEM

TABLES

SoundEarth Strategies

Table 1
Summary of Radon Style SSD System Pilot Test Results
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

Well ID SSDS01		Test Point Measurements					Instrument Train							
Date	Time	Vacuum at Test Point (iow)	PID Readings (ppm)	Temperature (°F)	Test Point Air Flow Rate (scfm)	Test Point Gate Valve Setting (% open)	Vacuum at Instrument Train (iow)	Bleed Air Temperature (°F)	Bleed Air Flow Rate (scfm)	Bleed Air Gate Valve (% open)	Blower Total Air Flow Rate (scfm)	Blower Vacuum (iow)	Rotameter Used On Test Point Leg (1, 2, or 3)	Comments
09/22/16	15:45	0.01	NM	NM	0	--	--	--	--	--	--	--	--	Ambient Conditions
	16:00	3.6	NM	NM	104.6	--	--	--	--	--	--	--	--	
	16:15	3.6	NM	NM	104.6	--	--	--	--	--	--	--	--	
09/23/16	8:10	0.01	NM	NM	0	--	--	--	--	--	--	--	--	Ambient Conditions
	8:25	3.6	NM	NM	104.6	--	--	--	--	--	--	--	--	
	8:40	3.6	NM	NM	104.6	--	--	--	--	--	--	--	--	
	8:55	3.6	NM	NM	104.6	--	--	--	--	--	--	--	--	
	9:10	3.5	NM	NM	99.2	--	--	--	--	--	--	--	--	
	9:25	3.6	3.4	NM	104.6	--	--	--	--	--	--	--	--	
	9:40	3.6	3.1	NM	104.6	--	--	--	--	--	--	--	--	
	9:55	3.6	2.3	NM	104.6	--	--	--	--	--	--	--	--	
	10:15	3.5	2.0	NM	99.2	--	--	--	--	--	--	--	--	
	10:30	3.6	1.2	NM	104.6	--	--	--	--	--	--	--	--	
Well ID SSDS02		**Test Point Measurements**					**Instrument Train**							
Date	**Time**	**Vacuum at Test Point** (iow)	**PID Readings** (ppm)	**Temperature** (°F)	**Test Point Air Flow Rate** (scfm)	**Test Point Gate Valve Setting** (% open)	**Vacuum at Instrument Train** (iow)	**Bleed Air Temperature** (°F)	**Bleed Air Flow Rate** (scfm)	**Bleed Air Gate Valve** (% open)	**Blower Total Air Flow Rate** (scfm)	**Blower Vacuum** (iow)	**Rotameter Used On Test Point Leg** (1, 2, or 3)	**Comments**
09/23/16	12:45	0.00	NM	NM	0	--	--	--	--	--	--	--	--	Ambient Conditions
	12:52	NM	0.3	NM	71.8	--	--	--	--	--	--	--	--	
	13:07	4.2	0.2	NM	71.8	--	--	--	--	--	--	--	--	
	13:22	4.2	0.3	NM	71.8	--	--	--	--	--	--	--	--	
	13:37	4.2	0.2	NM	71.8	--	--	--	--	--	--	--	--	
	13:52	4.2	0.2	NM	71.8	--	--	--	--	--	--	--	--	
Well ID SSDS03		**Test Point Measurements**					**Instrument Train**							
Date	**Time**	**Vacuum at Test Point** (iow)	**PID Readings** (ppm)	**Temperature** (°F)	**Test Point Air Flow Rate** (scfm)	**Test Point Gate Valve Setting** (% open)	**Vacuum at Instrument Train** (iow)	**Bleed Air Temperature** (°F)	**Bleed Air Flow Rate** (scfm)	**Bleed Air Gate Valve** (% open)	**Blower Total Air Flow Rate** (scfm)	**Blower Vacuum** (iow)	**Rotameter Used On Test Point Leg** (1, 2, or 3)	**Comments**
09/23/16	11:05	0.01	6.8	NM	0	--	--	--	--	--	--	--	--	Ambient Conditions
	11:27	3.9	2.6	NM	88.4	--	--	--	--	--	--	--	--	
	11:42	4.0	2.0	NM	83	--	--	--	--	--	--	--	--	
	11:57	4.0	1.0	NM	83	--	--	--	--	--	--	--	--	
	12:12	3.9	1.0	NM	88.4	--	--	--	--	--	--	--	--	
	12:27	3.9	1.0	NM	88.4	--	--	--	--	--	--	--	--	

NOTES:

-- = not applicable

°F = degrees Fahrenheit

iow = inches of water

NM = not measured

ppm = parts per million

scfm = standard cubic feet per minute

Table 2
Summary of Radon Style Observed Vacuum—SSDS01
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

Test Sump: SSDS01												
				Observation Wells and Well Head Vacuum (inches of water)								
Date	**Time**	**Well Air Valve** (% open)	**Bleed Air Valve** (% open)	**SSDS Sump**	**OBS01**	**OBS02**	**SG01**	**SG02**	**OBS03**	**OBS04**	**OBS05**	**PID Readings**
Distances to Soil Vapor Extraction Test Well (feet)				**0**	**5**	**10**	**20**	**30**	**40**	**50**	**60**	**ppm**
09/22/16	15:45	100	NM	0.01	0.0	0.01	0.01	0.01	0.01	NM	NM	NM
	16:00	NM	NM	3.6	NM - Started Test							
	16:15	100	0	3.6	0.05	0.04	0.02	0.01	0.04	NM	NM	NM
09/23/16	8:10	NM	0	0.01	0.01	0.00	0.00	0.02	0.01	NM	NM	NM
	8:25	100	0	3.6	0.05	0.05	0.02	0.00	0.04	NM	NM	NM
	8:40	100	0	3.6	0.02	0.02	0.00	0.00	0.02	NM	NM	NM
	8:55	100	0	3.6	0.08	0.03	0.03	0.02	0.03	NM	NM	NM
	9:10	100	0	3.5	0.06	0.05	0.02	0.02	0.05	NM	NM	NM
	9:25	100	0	3.6	0.03	0.02	0.00	0.01	0.01	NM	NM	3.4
	9:40	100	0	3.6	0.07	0.03	0.01	0.01	0.02	0.05	NM	3.1
	9:55	100	0	3.6	0.08	0.04	0.02	0.04	0.05	0.05	NM	2.3
	10:15	100	0	3.5	0.06	0.04	0.02	0.02	0.02	0.03	0.02	2.0
	10:30	100	0	3.6	0.04	0.02	0.00	0.01	0.00	0.04	0.01	1.2

NOTES:

Radon test fan used for pilot test.

SSDS01 sampled at 09:25, sample ID: 1021-001_SSDS01_20160923.

At 09:55 it was determined that some of the seals were leaking; seals were fixed but some prior measurements are believed to be biased low.

NM = not measured

PID = photoionization detector

ppm = parts per million

Table 3
Summary of Radon Style Observed Vacuum—SSDS02
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

Test Sump: SSDS02												
		Well Air Valve	Bleed Air Valve	Observation Wells and Well Head Vacuum (inches of water)								
Date	Time	(% open)	(% open)	SSDS Sump	OBS06	SG03	OBS07	OBS03	OBS08	OBS05	OBS02	PID Readings
Distances to Soil Vapor Extraction Test Well (feet)				0	5	10	20	30	40	52	60	ppm
09/23/16	12:45	Ambient	0	0.00	0.00	0.00	0.00	0.02	0.00	NM	NM	NM
	12:52	NM - Started Test										0.3
	13:07	100	0	4.2	0.85	0.01	0.03	0.03	0.04	0.05	0.01	0.2
	13:22	100	0	4.2	0.80	0.04	0.06	0.04	0.05	0.15	0.05	0.3
	13:37	100	0	4.2	0.80	0.05	0.06	0.05	0.04	0.15	0.05	0.2
	13:52	100	0	4.2	0.83	0.04	0.05	0.02[(1)]	0.00	0.04	0.03	0.2

NOTES:

Radon test fan used for pilot test.

SSDS02 sampled at 12:57, sample ID: 1021-001_SSDS02_20160923.

[(1)]Possible leak.

NM = not measured

PID = photoionization detector

ppm = parts per million

Table 4
Summary of Radon Style Observed Vacuum—SSDS03
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

Test Sump: SSDS03											
Date	Time	Well Air Valve (% open)	Bleed Air Valve (% open)	Observation Wells and Well Head Vacuum (inches of water)							
				SSDS Sump	SG02	OBS09	OBS08	OBS10	OBS02	OBS03	PID Readings
Distances to Soil Vapor Extraction Test Well (feet)				0	5	10	20	30	40	47	ppm
09/23/16	11:05	NM	0	0.01	0.00	0.00	0.00	0.00	0.00	0	6.8
	11:27	100	0	3.90	0.08	0.05	0.00	0.00	0.00	0	2.6
	11:42	100	0	4.00	0.08	0.07	0.03	0.00	0.00	0.02	2.0
	11:57	100	0	4.00	0.08	0.06	0.02	0.02	0.00	0.02	1.0
	12:12	100	0	3.90	0.08	0.05	0.01	0.02	0.01	0.01	1.0
	12:27	100	0	3.90	0.09	0.07	0.03	0.03	0.03	0.02	1.0

NOTES:

Radon test fan used for pilot test.

SSDS03 sampled at 11:20, sample ID: 1021-001_SSDS03_20160923.

NM = not measured

PID = photoionization detector

ppm = parts per million

Table 5
Summary of SVE Pilot Test Results—SSDS02
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

Well ID SSDS02		Test Point Measurements						Instrument Train								Rotameter Used On Test Point Leg (1, 2, or 3)	Comments
Date	Time	Vacuum at Test Point (iow)	PID Readings (ppm)	Temperature (°F)	Test Point Air Flow Rate (scfm)	Test Point Air Flow Rate (acfm)	Test Point Gate Valve Setting (% open)	Vacuum at Instrument Train (iow)	Bleed Air Temperature (°F)	Bleed Air Flow Rate (scfm)	Bleed Air Flow Rate (acfm)	Bleed Air Gate Valve (% open)	Blower Total Air Flow Rate (scfm)	Blower Total Air Flow Rate (acfm)	Blower Vacuum (iow)		
10/04/16	9:15	10	21.4	66	22	22	100	32	64	25	26	10	110	122	76	2	
	9:20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	Samples collected
	9:30	7	15.7	66	25	25	100	39	66	0	0	0	100	111	79	2	
	9:45	11	10.6	66	25	25	100	39.5	65	0	0	0	100	111	81	2	
	10:00	11	9.0	66	25	25	100	40	66	0	0	0	100	111	81	2	
	10:15	17	7.7	66	34	35	100	50	65	100	106	17	200	236	8.5 inHg	2	
	10:30	14	7.1	66	33	33	100	52	65	60	64	19	200	236	8.5 inHg	2	
	10:45	16	6.3	66	35	36	100	54	66	60	64	19	175	209	9 inHg	2	
	11:10	17	6.9	66	250	255	100	92	66	0	0	0	225	290	12 inHg	3	
	11:25	16.5	6.7	66	250	254	100	100	66	0	0	0	225	290	12 inHg	3	
	11:40	End of Test	--	--	--	--	--	--	--	--	--	--	--	--	--	--	

NOTES:

-- = no reading collected

°F = degrees Fahrenheit

acfm = actual feet per minute

inHg = inches of Mercury

iow = inches of water

ppm = parts per million

scfm = standard cubic feet per minute

SVE = soil vapor extraction

Table 6
Summary of SVE Observed Vacuum—SSDS02
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

Test Sump: SSDS02												
		Well Air Valve	Bleed Air Valve	Observation Wells and Well Head Vacuum (inches of water)								
Date	Time	(% open)	(% open)	SSDS Sump	OBS13	SSDS03	SG02	SSDS01	SG01	OBS11	OBS12	SG03
Distances to Soil Vapor Extraction Test Well (feet)				0	56	54	60	64	65	74	39	10
10/04/16	8:30	Ambient		0.03	0.00	0.00	0.00	0.00	0.00	+0.01	0.00	0.00
	9:15	Start of Test										
	9:30	100	0	7.0	0.00	0.02	0.01	0.01	0.01	0.01	0.01	0.03
	9:45	100	0	11.0	0.00	0.01	0.01	0.01	0.01	0.01	0.01	0.03
	10:00	100	0	11.0	0.00	0.01	0.00	0.00	0.01	0.00	0.00	0.02
	10:15	100	17	17.0	0.00	0.00	0.01	0.00	0.00	0.01	0.00	0.03
	10:30	100	19	14.0	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03
	10:45	100	19	16.0	0.00	0.00	0.00	0.01	0.01	0.01	0.01	0.03
	11:10	100	0	17.0	0.01	0.00	0.00	0.00	0.01	0.01	0.00	0.06
	11:25	100	0	16.5	0.01	0.00	0.01	0.01	0.00	0.00	0.01	0.05
	11:40	End of Test										

NOTE:
SVE = soil vapor extraction

SoundEarth Strategies

Table 7
Extracted Vapor Analytical Summary
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

Test Point ID	Date	Sample Location[1]	Applied Vacuum (iow)	Analytical Results[2] (micrograms per cubic meter)					
				PCE[3]	TCE[3]	1,1-DCE	Cis-1,2-DCE	1,1-DCA[3]	Vinyl Chloride[3]
SSDS01	09/23/16	SSDS01	3.6	**4,200**	<1,000	<1,000	<1,000	<1,000	<200
SSDS02		SSDS02	4.2	**22,000**	**11,000**	<1,000	15,000	<1,000	<200
SSDS03		SSDS03	3.9	**13,000**	<1,000	<1,000	<1,000	<1,000	<200
Revised Draft MTCA Soil Gas Screening Level[4]				**321**	**12.3**	**3,050**	**NE**	**52.1**	**9.33**

NOTES:

Sample analysis performed by Fremont Analytical of Seattle, Washington.

BOLD indicates concentration exceeds the Revised Draft MTCA Soil Gas Screening Level.

[1]Reference Figure 2, Sub-Slab Depressurization Pilot Test Locations and Results

[2]Analyzed by U.S. Environmental Protection Agency Method 8260C Screen.

[3]Extracted soil vapor was analyzed by EPA Method 8260c to evaluate system air emissions. The EPA Method 8260c laboratory detection limits for PCE, TCE, Cis-1,2-DCE, 1,1-DCA, and vinyl chloride are higher than the MTCA soil gas screening levels. It is possible that 1,1-DCA and vinyl chloride were present in the extracted soil vapor samples, but at concentrations below the laboratory detection limit.

[4]MTCA Method B Soil Gas Screening Levels, Table B-1, Draft Guidance for Evaluating Soil Vapor Intrusion in Washington State, October 2009. Revised and updated for Carcinogenic Potency Factors for TCE and PCE, August 2012.

< = not detected at concentration exceeding the laboratory reporting limit

-- = not applicable

DCA = dichloroethane

DCE = dichloroethene

iow - inches of water

MTCA = Washington State Model Toxics Control Act

NE = not established

PCE = tetrachloroethene

TCE = trichloroethene

Table 8
Alternative 1
Radon Sytle SSD System Cost Estimate
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

CAPITAL COST ITEM	QTY	UNIT	UNIT PRICE	COST	TOTALS
Permitting (includes labor)					
Air Discharge Permit Evaluation and Documentation	1	ls	$3,000	$ 3,000	
Soil Profile - Contained-Out Determination	1	ls	$2,500	$ 2,500	
Subtotal				*$ 5,500*	
Site Work					
Concrete Cutting/Coring	1	day	$ 1,196	$ 1,196	
Excavate sub-slab points	1	ls	$ 1,725	$ 1,725	
Hauling and disposal of unsuitable fill	1	ls	$ 5,000	$ 5,000	
Import clean fill and compaction of fill	8	bags	$ 35	$ 263	
Subtotal				*$ 8,184*	
Remediation Equipment					
Installation Oversight and Coordination	1	ls	$ 8,320	$ 8,320	
Remediation Equipment - Gages, Fittings	1	ls	$ 1,100	$ 1,100	
Mechanical work - Core roof, install fans, repair roof	1	ls	$ 12,800	$ 12,800	
Electrical work - wiring, lighting, and controls	1	ls	$ 6,500	$ 6,500	
Subtotal				*$ 28,720*	
Post-Closure Activities					
Decommission and removal of existing system	1	ls	$ 5,000	$ 5,000	
Subtotal				*$ 5,000*	
CONSTRUCTION SUBTOTAL[1]					$ 47,400
Mobilization, Contingencies and Demobilization					
Mobilization (3% of construction subtotal)				$ 1,422	
Cleanup and demobilization (3% of construction subtotal)				$ 1,422	
Subtotal				*$ 2,844*	
CONSTRUCTION TOTAL					$ 50,200
Indirect Capital Costs					
Engineering Design & Permitting (15% of construction total)				$ 7,530	
Engineering construction services (15% of construction total)				$ 7,530	
Subtotal				*$ 15,060*	
TOTAL CAPITAL COST					**$ 65,300**

O&M COST ITEM	ANNUAL COST[2]	Present Worth Cost of Annual O&M 0.6% n = 5 years
Monthly O&M costs	$ 16,500	$ 81,036
Performance Monitoring (3 samples semiannually for 5 years)	$ 3,600	$ 17,680
TOTAL PRESENT WORTH O&M COST		**$ 98,716**
TOTAL COST OF ALTERNATIVE 1		**$ 164,000**

NOTES:
[1] Annual cost is 2016 year cost.
[2] Assumes that the businesses will not be shut down to install sub-slab depressurization system.

ls = lump sum
n = number of years of operation and maintenance
O&M = operation and maintenance
QTY = quantity
SSDS = sub-slab depressurization system

Table 9
Alternative 2
SVE System Cost Estimate
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

CAPITAL COST ITEM	QTY	UNIT	UNIT PRICE	COST	TOTALS
Permitting (includes labor)					
Air Discharge Permit Evaluation and Documentation	1	ls	$3,000	$ 3,000	
Soil Profile - Contained Out Determination	1	ls	$2,500	$ 2,500	
Subtotal				*$ 5,500*	
Site Work					
Concrete Cutting/Coring	2	day	$ 1,196	$ 2,392	
Excavate trenches, Carpet Removal, Install sub-grade piping	1	ls	$ 45,000	$ 45,000	
Hauling and disposal of unsuitable fill	50	ton	$ 80	$ 4,000	
Import clean fill and compaction of fill	35	cy	$ 30	$ 1,050	
Import CDF	15	cy	$ 75	$ 1,125	
Site Restoration - Concrete and Carpet Flooring	1	ls	$ 20,000	$ 20,000	
Subtotal				*$ 73,567*	
Remediation Compound					
Installation Oversight and Coordination	1	ls	$ 18,400	$ 18,400	
Remedial skid with one regenerative blower with knockout tank, instrumentation, telemetry, above grade piping	1	ls	$ 35,000	$ 35,000	
Electrical work - system master panel, breaker panel, wiring, lighting and controls	1	ls	$ 20,000	$ 20,000	
Subtotal				*$ 73,400*	
Post-Closure Activities					
Decommission and removal of existing system	1	ls	$ 15,000	$ 15,000	
Subtotal				*$ 15,000*	
CONSTRUCTION SUBTOTAL[1]					$ 167,500
Mobilization, Contingencies and Demobilization					
Mobilization (3% of construction subtotal)				$ 5,025	
Cleanup and demobilization (3% of construction subtotal)				$ 5,025	
Subtotal				*$ 10,050*	
CONSTRUCTION TOTAL					$ 177,600
Indirect Capital Costs					
Engineering design & permitting (15% of construction total)				$ 26,640	
Engineering construction services (10% of construction total)				$ 17,760	
Subtotal				*$ 44,400*	
TOTAL CAPITAL COST					**$ 222,000**

O&M COST ITEM	ANNUAL COST[2]	Present Worth Cost of Annual O&M 0.6%
		n = 5 years
Monthly O&M costs	$ 20,500	$ 100,681
Performance Monitoring (3 samples semiannually for 5 years)	$ 3,600	$ 17,680
TOTAL PRESENT WORTH O&M COST		**$ 118,361**
TOTAL COST OF ALTERNATIVE 2		**$ 340,000**

NOTES:

[1]Annual cost is 2016 year cost.

[2]Assumes that the businesses will be shut down for ten business days to install sub-slab depressurization system.

CDF = controlled density fill
cy = bank cubic yards
ls = lump sum
n = number of years of operation and maintenance
O&M = operation and maintenance
QTY = quantity
SVE = soil vapor extraction

Table 10
Alternative 3
Vapor Barrier Cost Estimate
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

CAPITAL COST ITEM	QTY	UNIT	UNIT PRICE	COST	TOTALS
Site Work					
Carpet Removal	4,000	sf	$ 5	$ 20,000	
Application of Retro-Coat - Floor Sealant Floor Surface Preparation - sand blasting Material Cost - Standard 20 mil Installation	8,000	sf	$ 12	$ 96,000	
Performance Monitoring (three samples semiannually for five years)	10	event	$ 3,500	$ 35,000	
Installation Oversight and Coordination	1	ls	$ 16,100	$ 16,100	
Subtotal				*$ 167,100*	
CONSTRUCTION TOTAL[1,2]					$ 167,100
TOTAL COST OF ALTERNATIVE 3				**$ 167,000**	

NOTES:
[1]Annual cost is 2016 year cost.
[2]Assumes that the application process will take three weeks to prep the floor surface and/or wall surface, application of Retro-Coat, and a 14-hour cure time (temperature dependent).

ls = lump sum
mil = millimeter
QTY = quantity
sf = square feet

Table 11
Alternative 4
Positive Pressure HVAC System Cost Estimate
Bakker's Fine Dry Cleaning Property
11855 Northeast Bellevue-Redmond Road
Bellevue, Washington

CAPITAL COST ITEM	QTY	UNIT	UNIT PRICE	COST	TOTALS
Site Work					
Installation of Positive Pressure System in the Building Engineering Design (Mechanical and Structural Engineers) Permitting, Fees, Inspections Demolition of existing unit heaters Fully equipped HVAC unit complete with ducting and controls Electrical Work	1	ls	$ 94,703	$ 94,703	
Tempering Air for Building Climate Control	5	year	$ 6,750	$ 33,750	
Utilities	5	year	$ 2,400	$ 12,000	
Annual Maintenance - HVAC Contractor	5	year	$ 1,300	$ 6,500	
Performance Monitoring (three samples semiannually for five years)	10	event	$ 3,500	$ 35,000	
Installation Oversight and Coordination	1	ls	$ 16,100	$ 16,100	
Subtotal				*$ 198,053*	
CONSTRUCTION TOTAL[1,2]					$ 198,100
TOTAL COST OF ALTERNATIVE 4				**$ 198,000**	

NOTES:

[1]Annual cost is 2016 year cost.

[2]HVAC installation in the building estimated to take two weeks.

HVAC = heating, ventilation, and air-conditioning
ls = lump sum
QTY = quantity

ATTACHMENT A

LABORATORY ANALYTICAL REPORT

Friedman & Bruya, Inc. #609430

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
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October 6, 2016

Suzy Stumpf, Project Manager
SoundEarth Strategies
2811 Fairview Ave. East, Suite 2000
Seattle, WA 98102

Dear Ms Stumpf:

Included are the results from the testing of material submitted on September 26, 2016 from the SOU_ 1021-001_ 20160926, F&BI 609430 project. There are 8 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Joe Ellingson
SOU1006R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on September 26, 2016 by Friedman & Bruya, Inc. from the SoundEarth Strategies SOU_ 1021-001_ 20160926, F&BI 609430 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SoundEarth Strategies
609430 -01	1021-001_SSDS01_20160923
609430 -02	1021-001_SSDS03_20160923
609430 -03	1021-001_SSDS02_20160923

Several compounds in the 8260C laboratory control sample and laboratory control sample duplicate as well as the associated relative percent difference exceeded the acceptance criteria. The data were flagged accordingly.

All other quality control requirements were acceptable.

Analysis For Volatile Compounds By EPA Method 8260C Screen

Client Sample ID:	1021-001_SSDS01_20160923	Client:	SoundEarth Strategies
Date Received:	09/26/16	Project:	SOU_ 1021-001_ 20160926
Date Extracted:	09/26/16	Lab ID:	609430-01
Date Analyzed:	09/26/16	Data File:	092608.D
Matrix:	Air	Instrument:	GCMS9
Units:	mg/m^3	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	85	117
Toluene-d8	104	91	108
4-Bromofluorobenzene	103	76	126

Compounds:	Concentration mg/m^3	Compounds:	Concentration mg/m^3
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	4.2
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<2	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1 jl
2-Butanone (MEK)	<10 jl	1,2,3-Trichloropropane	<1 jl
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1 jl
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1 jl
Dibromomethane	<1	1,2-Dichlorobenzene	<1 jl
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10 jl
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1 jl
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1 jl
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1 jl
2-Hexanone	<10 jl		

Analysis For Volatile Compounds By EPA Method 8260C Screen

Client Sample ID:	1021-001_SSDS03_20160923	Client:	SoundEarth Strategies
Date Received:	09/26/16	Project:	SOU_ 1021-001_ 20160926
Date Extracted:	09/26/16	Lab ID:	609430-02
Date Analyzed:	09/26/16	Data File:	092609.D
Matrix:	Air	Instrument:	GCMS9
Units:	mg/m^3	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	85	117
Toluene-d8	103	91	108
4-Bromofluorobenzene	105	76	126

Compounds:	Concentration mg/m^3	Compounds:	Concentration mg/m^3
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	13
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<2	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1 jl
2-Butanone (MEK)	<10 jl	1,2,3-Trichloropropane	<1 jl
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1 jl
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1 jl
Dibromomethane	<1	1,2-Dichlorobenzene	<1 jl
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10 jl
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1 jl
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1 jl
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1 jl
2-Hexanone	<10 jl		

Analysis For Volatile Compounds By EPA Method 8260C Screen

Client Sample ID:	1021-001_SSDS02_20160923	Client:	SoundEarth Strategies
Date Received:	09/26/16	Project:	SOU_ 1021-001_ 20160926
Date Extracted:	09/26/16	Lab ID:	609430-03
Date Analyzed:	09/26/16	Data File:	092610.D
Matrix:	Air	Instrument:	GCMS9
Units:	mg/m^3	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	85	117
Toluene-d8	102	91	108
4-Bromofluorobenzene	104	76	126

Compounds:	Concentration mg/m^3	Compounds:	Concentration mg/m^3
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	22
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<2	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	15	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1 jl
2-Butanone (MEK)	12 jl	1,2,3-Trichloropropane	<1 jl
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	11	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1 jl
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1 jl
Dibromomethane	<1	1,2-Dichlorobenzene	<1 jl
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10 jl
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1 jl
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1 jl
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1 jl
2-Hexanone	<10 jl		

Analysis For Volatile Compounds By EPA Method 8260C Screen

Client Sample ID:	Method Blank	Client:	SoundEarth Strategies
Date Received:	Not Applicable	Project:	SOU_ 1021-001_ 20160926
Date Extracted:	09/26/16	Lab ID:	06-1959 mb
Date Analyzed:	09/26/16	Data File:	092607.D
Matrix:	Air	Instrument:	GCMS9
Units:	mg/m^3	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	85	117
Toluene-d8	104	91	108
4-Bromofluorobenzene	101	76	126

Compounds:	Concentration mg/m^3	Compounds:	Concentration mg/m^3
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<1	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<10 jl	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<2	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<1
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1 jl
2-Butanone (MEK)	<10 jl	1,2,3-Trichloropropane	<1 jl
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1 jl
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1 jl
Dibromomethane	<1	1,2-Dichlorobenzene	<1 jl
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10 jl
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1 jl
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1 jl
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1 jl
2-Hexanone	<10 jl		

Date of Report: 10/06/16
Date Received: 09/26/16
Project: SOU_ 1021-001_ 20160926, F&BI 609430

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY EPA METHOD 8260C SCREEN

Laboratory Code: 609430-03 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Dichlorodifluoromethane	mg/m³	<1	<1	nm
Chloromethane	mg/m³	<10	<10	nm
Vinyl chloride	mg/m³	<0.2	<0.2	nm
Bromomethane	mg/m³	<1	<1	nm
Chloroethane	mg/m³	<1	<1	nm
Trichlorofluoromethane	mg/m³	<1	<1	nm
Acetone	mg/m³	<10	<10	nm
1,1-Dichloroethene	mg/m³	<1	<1	nm
Hexane	mg/m³	<2	<2	nm
Methylene chloride	mg/m³	<5	<5	nm
Methyl t-butyl ether (MTBE)	mg/m³	<1	<1	nm
trans-1,2-Dichloroethene	mg/m³	<1	<1	nm
1,1-Dichloroethane	mg/m³	<1	<1	nm
2,2-Dichloropropane	mg/m³	<1	<1	nm
cis-1,2-Dichloroethene	mg/m³	15	13	14
Chloroform	mg/m³	<1	<1	nm
2-Butanone (MEK)	mg/m³	12	11	9
1,2-Dichloroethane (EDC)	mg/m³	<1	<1	nm
1,1,1-Trichloroethane	mg/m³	<1	<1	nm
1,1-Dichloropropene	mg/m³	<1	<1	nm
Carbon tetrachloride	mg/m³	<1	<1	nm
Benzene	mg/m³	<0.35	<0.35	nm
Trichloroethene	mg/m³	11	9.1	19
1,2-Dichloropropane	mg/m³	<1	<1	nm
Bromodichloromethane	mg/m³	<1	<1	nm
Dibromomethane	mg/m³	<1	<1	nm
4-Methyl-2-pentanone	mg/m³	<10	<10	nm
cis-1,3-Dichloropropene	mg/m³	<1	<1	nm
Toluene	mg/m³	<1	<1	nm
trans-1,3-Dichloropropene	mg/m³	<1	<1	nm
1,1,2-Trichloroethane	mg/m³	<1	<1	nm
2-Hexanone	mg/m³	<10	<10	nm
1,3-Dichloropropane	mg/m³	<1	<1	nm
Tetrachloroethene	mg/m³	22	19	15
Dibromochloromethane	mg/m³	<1	<1	nm
1,2-Dibromoethane (EDB)	mg/m³	<1	<1	nm
Chlorobenzene	mg/m³	<1	<1	nm
Ethylbenzene	mg/m³	<1	<1	nm
1,1,1,2-Tetrachloroethane	mg/m³	<1	<1	nm
m,p-Xylene	mg/m³	<2	<2	nm
o-Xylene	mg/m³	<1	<1	nm
Styrene	mg/m³	<1	<1	nm
Isopropylbenzene	mg/m³	<1	<1	nm
Bromoform	mg/m³	<1	<1	nm
n-Propylbenzene	mg/m³	<1	<1	nm
Bromobenzene	mg/m³	<1	<1	nm
1,3,5-Trimethylbenzene	mg/m³	<1	<1	nm
1,1,2,2-Tetrachloroethane	mg/m³	<1	<1	nm
1,2,3-Trichloropropane	mg/m³	<1	<1	nm
2-Chlorotoluene	mg/m³	<1	<1	nm
4-Chlorotoluene	mg/m³	<1	<1	nm
tert-Butylbenzene	mg/m³	<1	<1	nm
1,2,4-Trimethylbenzene	mg/m³	<1	<1	nm
sec-Butylbenzene	mg/m³	<1	<1	nm
p-Isopropyltoluene	mg/m³	<1	<1	nm
1,3-Dichlorobenzene	mg/m³	<1	<1	nm
1,4-Dichlorobenzene	mg/m³	<1	<1	nm
1,2-Dichlorobenzene	mg/m³	<1	<1	nm
1,2-Dibromo-3-chloropropane	mg/m³	<10	<10	nm
1,2,4-Trichlorobenzene	mg/m³	<1	<1	nm
Hexachlorobutadiene	mg/m³	<1	<1	nm
Naphthalene	mg/m³	<1	<1	nm
1,2,3-Trichlorobenzene	mg/m³	<1	<1	nm

Date of Report: 10/06/16
Date Received: 09/26/16
Project: SOU_ 1021-001_ 20160926, F&BI 609430

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY EPA METHOD 8260C SCREEN

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/m³	5	102	106	70-130	4
Chloromethane	mg/m³	5	88	90	70-130	2
Vinyl chloride	mg/m³	5	100	104	70-130	4
Bromomethane	mg/m³	5	96	108	70-130	12
Chloroethane	mg/m³	5	90	96	70-130	6
Trichlorofluoromethane	mg/m³	5	104	110	70-130	6
Acetone	mg/m³	25	58 vo	52 vo	70-130	11
1,1-Dichloroethene	mg/m³	5	94	96	70-130	2
Hexane	mg/m³	5	116	114	70-130	2
Methylene chloride	mg/m³	5	100	88	70-130	13
Methyl t-butyl ether (MTBE)	mg/m³	5	92	94	70-130	2
trans-1,2-Dichloroethene	mg/m³	5	92	94	70-130	2
1,1-Dichloroethane	mg/m³	5	92	94	70-130	2
2,2-Dichloropropane	mg/m³	5	114	126	70-130	10
cis-1,2-Dichloroethene	mg/m³	5	86	92	70-130	7
Chloroform	mg/m³	5	90	92	70-130	2
2-Butanone (MEK)	mg/m³	25	74	58 vo	70-130	24 vo
1,2-Dichloroethane (EDC)	mg/m³	5	78	76	70-130	3
1,1,1-Trichloroethane	mg/m³	5	98	102	70-130	4
1,1-Dichloropropene	mg/m³	5	96	96	70-130	0
Carbon tetrachloride	mg/m³	5	112	118	70-130	5
Benzene	mg/m³	5	88	90	70-130	2
Trichloroethene	mg/m³	5	88	90	70-130	2
1,2-Dichloropropane	mg/m³	5	92	92	70-130	0
Bromodichloromethane	mg/m³	5	94	92	70-130	2
Dibromomethane	mg/m³	5	90	86	70-130	5
4-Methyl-2-pentanone	mg/m³	25	86	70	70-130	21 vo
cis-1,3-Dichloropropene	mg/m³	5	96	94	70-130	2
Toluene	mg/m³	5	86	88	70-130	2
trans-1,3-Dichloropropene	mg/m³	5	92	88	70-130	4
1,1,2-Trichloroethane	mg/m³	5	82	78	70-130	5
2-Hexanone	mg/m³	25	78	62 vo	70-130	23 vo
1,3-Dichloropropane	mg/m³	5	86	80	70-130	7
Tetrachloroethene	mg/m³	5	90	96	70-130	6
Dibromochloromethane	mg/m³	5	90	84	70-130	7
1,2-Dibromoethane (EDB)	mg/m³	5	92	84	70-130	9
Chlorobenzene	mg/m³	5	84	84	70-130	0
Ethylbenzene	mg/m³	5	86	88	70-130	2
1,1,1,2-Tetrachloroethane	mg/m³	5	94	90	70-130	4
m,p-Xylene	mg/m³	10	86	88	70-130	2
o-Xylene	mg/m³	5	86	86	70-130	0
Styrene	mg/m³	5	84	84	70-130	0
Isopropylbenzene	mg/m³	5	88	86	70-130	2
Bromoform	mg/m³	5	86	74	70-130	15
n-Propylbenzene	mg/m³	5	86	82	70-130	5
Bromobenzene	mg/m³	5	82	78	70-130	5
1,3,5-Trimethylbenzene	mg/m³	5	84	80	70-130	5
1,1,2,2-Tetrachloroethane	mg/m³	5	74	60 vo	70-130	21 vo
1,2,3-Trichloropropane	mg/m³	5	74	58 vo	70-130	24 vo
2-Chlorotoluene	mg/m³	5	80	78	70-130	3
4-Chlorotoluene	mg/m³	5	78	76	70-130	3
tert-Butylbenzene	mg/m³	5	88	82	70-130	7
1,2,4-Trimethylbenzene	mg/m³	5	78	78	70-130	0
sec-Butylbenzene	mg/m³	5	88	82	70-130	7
p-Isopropyltoluene	mg/m³	5	82	82	70-130	0
1,3-Dichlorobenzene	mg/m³	5	68 vo	68 vo	70-130	0
1,4-Dichlorobenzene	mg/m³	5	62 vo	64 vo	70-130	3
1,2-Dichlorobenzene	mg/m³	5	66 vo	66 vo	70-130	0
1,2-Dibromo-3-chloropropane	mg/m³	5	74	58 vo	70-130	24 vo
1,2,4-Trichlorobenzene	mg/m³	5	42 vo	52 vo	70-130	21 vo
Hexachlorobutadiene	mg/m³	5	86	90	70-130	5
Naphthalene	mg/m³	5	44 vo	46 vo	70-130	4
1,2,3-Trichlorobenzene	mg/m³	5	42 vo	50 vo	70-130	17

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

609430

SAMPLE CHAIN OF CUSTODY

ME 09-26-16

Page # 1 of 1

Report To Suzy Stumpf, Joe Ellingson

Company Sound Earth

Address

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: Bakker

PO #: 1021-001

REMARKS

INVOICE TO

TURNAROUND TIME
- ☐ Standard Turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Archive Samples
- ☐ Other

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM					Notes
1021-001_SSDSOL_20160923	01 A-B		0925	Vapor	2					X							
1021-001_SSDSO3_20160923	02 T		1120	1	2					X							
1021-001_SSDSO2_20160923	03 T		1257	1	2					X							

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Joe Ellingson	SES	9.26.16	
Received by:	Eric Young	TFB	9/26	900
Relinquished by:				
Received by:				

Samples received at 20 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282