MEMORANDUM

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SMARTER ENVIRONMENTAL SOLUTIONS

To: Billy Meyer

From: Christie Zawtocki, PE
Greg Kanellis, PE

Date: September 19, 2017

Project: One Hour Martinizing Site, DSCA ID #DC320013
1103 W Club Blvd, Durham, NC

Subject: Project Update

Hart & Hickman, PC (H&H) is submitting this update regarding activities completed at the One Hour Martinizing site between March 2017 and August 2017. The additional assessment activities included the following:

- March 2017 – soil gas and indoor air sampling at 1419 and 1421 Dollar Ave
- July 2017 – limited groundwater monitoring event
- July 2017 – soil gas sampling near two commercial buildings north of the source property (Northgate Auto Service and Northgate Mall)
- August 2017 – soil gas sampling at one residential property (1421 Dollar Ave) east of the source property

A brief summary of these assessment activities and results is provided below.

March 2017 Soil Gas and Indoor Air Sampling Activities and Results

As discussed in the previous project update dated March 7, 2017, PCE groundwater concentrations increased in January 2017 in monitoring wells MW-14S and MW-16S located on residential properties to the east of the former dry-cleaning facility. Due to these increases, the DSCA Program decided to collect soil gas samples on three residential properties (1417, 1419, and 1421 Dollar Ave) and indoor air samples from two residences (1419 and 1421 Dollar Ave) as a conservative measure to re-evaluate potential vapor intrusion risk.

In March 2017, H&H collected soil gas samples from three permanent soil gas monitoring points on the 1417 (SV-37S), 1419 (SV-18), and 1421 Dollar Ave (SV-19) properties and collected indoor air samples from the basements and first floors of the 1419 and 1421 Dollar Ave residences. H&H collected two 7-day indoor air samples from each residence using passive Radiello sampling devices between March 22 and 29, 2017. At each residence, one sample was collected from the first floor (1419-UP & 1421-UP), and one sample was collected from the basement (1419-DOWN & 1421-DOWN). The soil gas and indoor air samples were analyzed for

PCE, trichloroethylene (TCE), cis-1,2-dichloroethylene (cis-1,2-DCE), trans-1,2-dichloroethylene (trans-1,2-DCE), and vinyl chloride (VC).

Similar to historical results, high PCE concentrations were detected in each of the soil gas samples with concentrations ranging from 18,000 µg/m^3 (SV-19 at 1421 Dollar Ave) to 150,000 µg/m^3 (SV-18 at 1419 Dollar Ave). PCE concentrations in SV-18 and SV-19 were within the range of historical data, and the concentration in SV-37S was slightly higher. Low estimated concentrations of TCE were also detected in SV-18 and SV-37S. The calculated carcinogenic risks and non-carcinogenic hazard index values associated with the detected soil gas concentrations exceeded 1.0E-05 and 1, respectively. The soil gas sampling results are summarized in Table 1 and presented on Figure 1. T

Indoor air samples collected from the 1419 and 1421 Dollar Ave residences only contained low concentrations of PCE ranging from 0.17 µg/m^3 (1419-UP) to 2.2 µg/m^3 (1421-UP). The calculated risks associated with the detected indoor air samples were well within acceptable levels. Indoor air at the 1417 Dollar Avenue residence has previously been assessed on three occasions in 2010 and 2015, and the concentrations were within acceptable levels. The indoor air sampling results for 1419 and 1421 Dollar Ave are summarized in Table 2 and presented on Figure 2.

July 2017 Groundwater Sampling Activities and Results

On July 6, 2017, H&H completed a limited groundwater sampling event to evaluate groundwater concentrations to the east and southeast of the source property where previous PCE concentration increases were observed. Activities included collecting groundwater samples from monitoring wells MW-7, MW-14S, MW-16S, and MW-17S. Figure 3 depicts the monitoring well locations.

The groundwater samples were analyzed for volatile organic compounds (VOCs). Field measurements of dissolved oxygen (DO), oxidation-reduction potential (ORP), temperature, pH, and conductivity were also collected. The VOC analytical results for the sampled monitoring wells are summarized in Table 3, along with historical data. The results for the field parameters are summarized in Table 4.

The primary constituent of concern at the site is the dry-cleaning solvent PCE. PCE was detected in monitoring wells MW-14S (east of the source property) and MW-16S (southeast of the source property). PCE was not detected in monitoring wells MW-7 or MW-17S. A graph of PCE concentration versus time for impacted wells MW-14S and MW-16S is provided in Attachment A. As shown in the graphs, PCE concentrations in monitoring wells MW-14S and MW-16S appear to be increasing over time. In MW-14S, PCE concentrations increased from 0.805 µg/L in January 2017 to 2.02 µg/L in July 2017. In MW-16S, PCE concentrations increased from 0.420 µg/L in January 2017 to 0.532 µg/L in July 2017. The PCE degradation product TCE was detected at a low concentration of 0.00153 µg/L in monitoring well MW-14S. No other PCE degradation products were detected in samples collected during the July 2017 sampling event.

Due to the limited number of monitoring wells sampled, PCE groundwater plume maps were not prepared; however, the sampling results are shown on Figure 4.

July 2017 Soil Gas Sampling Activities and Results

In July 2017, H&H installed and sampled five temporary soil gas monitoring points to evaluate potential vapor intrusion risks at two properties located to the north of the One Hour Martinizing source property. The properties that were evaluated included commercial properties at 1056 West Club Boulevard (Northgate Mall) and 1130 West Club Boulevard (Northgate Auto Service). The soil gas samples were analyzed for PCE, TCE, cis-1,2-DCE, trans-1,2-DCE, and VC.

Northgate Mall (1056 West Club Boulevard) – Three soil gas samples (SV-58 through SV-60) were collected in the parking lot area south of the Macy's building. PCE was detected in each sample at concentrations ranging from 100 µg/m^3 (SV-58) to 210 µg/m^3 (SV-60). Risk calculations indicated acceptable levels (carcinogenic risk <1.0E-05 and HI <1) under the current non-residential use and potential future residential use scenarios; thus, there are no unacceptable exposure risks.

Northgate Auto Service (1130 West Club Boulevard) – One soil gas sample (SV-56) was collected adjacent to the commercial building located north of the source property. H&H attempted to collect a second sample (SV-57), but water entered the sampling point and prohibited sampling. PCE was detected in sample SV-56 at a concentration of 160 µg/m^3. Degradation products cis-1,2-DCE, trans-1,2-DCE, and VC were detected at concentrations of 84 µg/m^3, 23 µg/m^3, and 330 µg/m^3, respectively. Risk calculations indicated acceptable levels under the current non-residential use; thus, there are no current unacceptable exposure risks.

The soil gas sampling results are summarized in Table 1 and presented on Figure 1. Based on the results, no additional vapor intrusion assessment activities are planned for these properties.

August 2017 Soil Gas Sampling Activities and Results

In August 2017, H&H collected soil gas samples from two permanent soil gas monitoring points (SV-22S & SV-24S) to evaluate current soil gas concentrations on the 1421 Dollar Ave property near the adjacent 1425 Dollar Ave property due to increased groundwater concentrations observed during the July 2017 sampling event (discussed above). PCE was detected in each sample at concentrations of 74 µg/m^3 (SV-24S) and 1,100 µg/m^3 (SV-22S). Risk calculations indicated acceptable levels (carcinogenic risk <1.0E-05 and HI <1) under the current residential use scenario; thus, no additional sampling is planned. The soil gas sampling results are summarized in Table 1 and presented on Figure 1.

Future Sampling Activities

The following additional sampling activities are planned through January 2018.

Groundwater

The monitoring requirements associated with the UIC permit for the injection activities have been fulfilled. The DSCA Program plans to conduct a limited groundwater sampling event in January 2018 to continue to monitor PCE concentration trends. The January 2018 event will include collecting groundwater samples from the following monitoring wells:

- Source property: MW-3R, MW-4R, MW-22S/I, MW-23S/I, MW-24S
- North of source property: MW-11
- East of source property: MW-14S/I, MW-16S
- South of source property: MW-15S

The samples will be analyzed for VOCs and will be field measured for DO, ORP, temperature, pH, and conductivity.

Soil Gas

Based on the soil gas sampling results from March, July, and August 2017, no additional soil gas assessment is planned at this time. If site conditions change, the need for additional soil gas sampling will be reevaluated.

Indoor Air

Vapor intrusion mitigation system are operating at 1414 Watts St, 1419 Dollar Ave, and 1421 Dollar Ave. The systems at 1419 and 1421 Dollar Ave include telemetry (digital notification), which will notify H&H via email if the systems malfunction. Operation and maintenance of the telemetry systems will continue and will include site visits, if needed, to confirm proper operation of the systems if any notifications are received. Indoor air data for these properties confirm that the mitigation systems are effectively reducing indoor air concentrations and routine indoor air sampling is no longer necessary. Thus, additional indoor air sampling is not planned at this time. If site conditions change, the need for additional indoor air sampling will be reevaluated.

TABLES

Table 1: Analytical Data for Soil Gas **ADT 1**

DSCA ID No.: DC320013

Sample ID	Depth [feet bgs]	Sample Duration[1]	Sampling Date (mm/dd/yy)	cis-1,2-Dichloroethylene	Tetrachloroethylene	trans-1,2-Dichloroethylene	Trichloroethylene	Vinyl chloride
				[µg/m^3]				
SV-18	5	N/A	09/10/09	<1.6	105,000	<1.6	11.3	<1.0
		N/A	11/17/09	<71.7	21,435	<138	<97	<45.2
		6m	05/17/12	<1,600	2,400,000	<1,600	<2,100	<1,000
		11m	11/27/12	<63	57,000	<63	<86	<41
		N/A	01/08/13	<32	81,000	<32	<43	<20
		1h 15m	10/09/13	<4.0	1,200	<4.0	<5.4	<2.6
		1h 10m	12/18/13	<4.0	180,000	<4.0	4.7J	<2.6
		1h 22m	02/24/14	<7.9	120,000	<7.9	3.2J	<5.1
		10m	03/25/14	<4.0	74,000	<4.0	6.8	<2.6
		6m	04/21/14	<400	240,000	<400	<540	<260
		9m	07/07/14	<16	180,000	<16	<21	<10
		10m	10/06/14	<160	170,000	<160	<210	<100
		8m	01/05/15	<160	240,000	<160	180 J	<100
		7m	03/22/17	<4.0	150,000	<4.0	3.4 J	<2.6
SV-19	5	N/A	09/10/09	<13.0	3,910	<13.0	<17.6	<8.3
		16m	05/16/12	<1.6	2,100	<1.6	<2.1	<1.0
		18m	11/27/12	<6.3	2,100	<6.3	<8.6	<4.1
		N/A	01/08/13	<1.6	2,600	<1.6	<2.1	<1.0
		1h 10m	10/09/13	<4.0	15,000	<4.0	<5.4	<2.6
		1h 21m	12/18/13	<4.0	9,500	<4.0	<5.4	<2.6
		1h 16m	02/25/14	<7.9	5,500	<7.9	<11	<5.1
		10m	03/25/14	<4.0	3,400	<4.0	<5.4	<2.6
		5m	04/22/14	<7.9	6,700	<7.9	<11	<5.1
		8m	07/07/14	<0.79	1,500	<0.79	<1.1	<0.51
		10m	10/06/14	<4.0	170,000	<4.0	4.4J	<2.6
		9m	01/06/15	<79	26,000	<79	52 J	<51
		8m	03/22/17	<4.0	18,000	<4.0	<5.4	<2.6
SV-22S	8	10m	08/30/17	<0.79	1,100	<0.79	<1.1	<0.51
SV-24S	8	10m	07/07/14	<0.79	1,100	<0.79	1	<0.51
		10m	08/30/17	<0.79	74	<0.79	<1.1	<0.51
SV-37S	8	N/A	12/07/09	<0.911	8,376	<0.911	2.32J	<1.00
		7m	03/12/15	<4.0	10,000	<4.0	<5.4	<2.6
		13m	03/22/17	<4.0	24,000	<4.0	3.8 J	<2.6
SV-56	9.5	10m	07/07/17	84	160	23	<21	330
SV-58	9.5	10m	07/07/17	<1.0	100	<1.0	<1.4	<0.65
SV-59	9.5	10m	07/07/17	<2.0	210	<2.0	<2.7	<1.3
SV-60	9.5	10m	07/07/17	<1.1	110	<1.1	<1.5	<0.70
DWM Residential Soil Gas Screening Level				NE	278	NE	13.9	55.9

Notes:

1. NE = Not Established
2. Division of Waste Management (DWM) Residential and Non-Residential Soil Gas Screening Levels (SGSLs) dated October 2016 are provided for reference.
3. J flag denotes estimated concentration between laboratory reporting limit and method detection limit.

Table 2: Analytical Data for Indoor Air **ADT 2**

DSCA ID No.: DC320013

Sample ID	Sampling Date (mm/dd/yy)	Sample Location [1]	Sampling Method [2]	Sampling Duration	cis-1,2-Dichloroethylene	Tetrachloroethylene	trans-1,2-Dichloroethylene	Trichloroethylene	Vinyl chloride
					[µg/m^3]				
1419 Dollar Ave									
1419-SUMP	03/30/10	R	SU	24h	<0.0310	0.581	<0.0310	0.0318J	<0.0142
BG-1419	03/30/10		SU	24h	<0.0332	0.369	<0.0332	0.0198J	<0.0126
	01/07/11		SU	24h	<0.079	1.0	<0.079	<0.11	<0.051
	01/07/11		P	24h	<1.7 C	<1.2	<1.7	<1.0	<2.7
	03/14/11		P	30d	<0.060 C	0.35	<0.060 C	<0.036	<0.096 C
	04/14/11		P	28d	<0.060 C	0.42	<0.060 C	<0.036	<0.096 C
	12/05/12		P	30d	<0.077 C	1.2	<0.080 C	<0.035	<0.11 C
	02/01/13		P	30d	<0.074 C	0.49	<0.077 C	<0.034	<0.10 C
1419-OUT	06/02/14		P	14d	<0.16 C	1.4	<0.16 C	<0.072	<0.22 C
1419-Side out	07/29/14		P	14d	<0.16 C	0.88	<0.16 C	<0.072	<0.22 C
1419-UP	10/15/09	R	SU	24h	<1.1	1.2J	<1.1	<1.5	<0.7
	11/10/09		SU	24h	3.73	16.3	<5.15	7.52	<1.74
	11/16/09		SU	24h	0.276	9.15	<0.04	0.07J	<0.0153
	11/24/09		SU	24h	4.36	21.69	<5.15	5.91	<1.74
	12/28/09		SU	24h	<0.040	3.13	<0.0749	0.193J	<0.0141
	03/30/10		SU	24h	0.512	2.71	<0.0324	0.0501	<0.0123
	01/07/11		SU	24h	<0.079	4.8	<0.079	<0.11	<0.051
	01/07/11		P	24h	<1.7 C	5.2	<1.7 C	<1.0	<2.7 C
	03/14/11		P	30d	<0.060 C	3.1	<0.060 C	<0.036	<0.096 C
	04/14/11		P	28d	<0.060 C	4.8	<0.060 C	<0.036	<0.096 C
	10/05/11		P	34d	<0.049 C	5.8	<0.049 C	<0.029	<0.079 C
	02/13/12		P	30d	<0.060 C	6.7	<0.060 C	<0.036	<0.096 C
	05/16/12		SU	24h	<0.079	17.0	<0.079	<0.11	<0.051
	05/21/12		P	30d	<0.051 C	5.4	<0.051 C	<0.030	<0.082 C
	12/05/12		P	30d	<0.077 C	6.0	<0.080 C	<0.035	<0.11 C
	02/01/13		P	30d	<0.074 C	4.7	<0.077 C	<0.034	<0.10 C
	10/01/13		P	14d	<0.16 C	5.1	<0.17 C	<0.072	<0.22 C
	12/17/13		P	14d	<0.16 C	5.2	<0.17 C	<0.072	<0.22 C
	02/20/14		SU	24h	<0.14	4.8	<0.14	<0.19	<0.090
	03/06/14		P	14d	<0.12 C	5.7	<0.60 C	1.4	<0.077 C
	03/18/14		SU	24h	<0.14	2.2	<0.14	<0.19	<0.090
	04/01/14		P	14d	<0.12	6.5	<0.60	0.88	<0.077
	04/15/14		SU	24h	<0.14	9.6	<0.14	<0.19	<0.090
	04/29/14		P	14d	<0.12 C	6.2	<0.60 C	1.2	<0.077 C
	06/02/14		P	14d	<0.16 C	0.66	<0.16 C	<0.072	<0.22 C
	07/01/14		P	14d	<0.12 C	2.0	<0.60 C	<0.14	<0.077 C
	07/29/14		P	14d	<0.16 C	0.54	<0.16 C	<0.072	<0.22 C
	11/13/14		P	15d	<0.15 C	0.61	<0.15 C	<0.067	<0.20 C
	01/27/15		P	14d	<0.16 C	0.29	<0.16 C	<0.072	<0.22 C
	03/29/17		P	7d	<0.33 C	0.17	<0.34 C	<0.15	<0.45 C

Table 2: Analytical Data for Indoor Air **ADT 2**

DSCA ID No.: DC320013

Sample ID	Sampling Date (mm/dd/yy)	Sample Location [1]	Sampling Method [2]	Sampling Duration	cis-1,2-Dichloroethylene	Tetrachloroethylene	trans-1,2-Dichloroethylene	Trichloroethylene	Vinyl chloride
					[µg/m^3]				
1419-DOWN	10/15/09	R	SU	24h	<1.1	6.1	<1.1	<1.5	<0.7
	11/10/09		SU	24h	<55.09	54.2	<106.21	63.39J	<35.006
	11/16/09		SU	24h	0.165	8.47	<0.0346	0.0468J	<0.014
	11/24/09		SU	24h	4.4	18	<5.15	5.9	<1.74
	12/28/09		SU	24h	<0.03	1.78	<0.030	0.021J	<0.0114
	03/30/10		SU	24h	<0.0347	2.83	<0.0347	0.0219J	<0.0132
	01/07/11		SU	24h	<0.079	5.2	<0.079	<0.11	<0.051
	01/07/11		P	24h	<1.7 C	5.7	<1.7 C	<1.0	<2.7 C
	03/14/11		P	30d	<0.060 C	6.6	<0.060 C	<0.036	<0.096 C
	04/14/11		P	28d	<0.060 C	8.6	<0.060 C	<0.036	<0.096 C
	10/05/11		P	34d	<0.049 C	12	<0.049 C	<0.029	<0.079 C
	02/13/12		P	30d	<0.060 C	5.1	<0.060 C	<0.036	<0.096 C
	05/16/12		SU	24h	<0.079	12	<0.079	<0.11	<0.051
	05/21/12		P	30d	<0.051 C	10	<0.051 C	<0.030	<0.082 C
	12/05/12		P	30d	<0.077 C	7.3	<0.080 C	<0.035	<0.11 C
	02/01/13		P	30d	<0.074 C	6.3	<0.077 C	<0.034	<0.10 C
	10/01/13		P	14d	<0.16 C	6.1	<0.17 C	<0.072	<0.22 C
	12/17/13		P	14d	<0.16 C	6.2	<0.17 C	<0.072	<0.22 C
	02/20/14		SU	24h	<0.14	9.8	<0.14	<0.19	<0.090
	03/06/14		P	14d	<0.12 C	7.7	<0.60 C	<0.14	<0.077 C
	03/18/14		SU	24h	<0.14	2.0	<0.14	<0.19	<0.090
	04/01/14		P	14d	<0.12	5.5	<0.60	<0.14	<0.077
	04/15/14		SU	24h	<0.14	24	<0.14	<0.19	<0.090
	04/29/14		P	14d	<0.12 C	5.9	<0.60 C	<0.14	<0.077 C
	06/02/14		P	14d	<0.16 C	0.77	<0.16 C	<0.072	<0.22 C
	07/01/14		P	14d	<0.12 C	3.5	<0.60 C	<0.14	<0.077 C
	07/29/14		P	14d	<0.16 C	0.60	<0.16 C	<0.072	<0.22 C
	11/13/14		P	15d	<0.15 C	0.67	<0.15 C	<0.067	<0.20 C
	01/27/15		P	14d	<0.16 C	0.28	<0.16 C	<0.072	<0.22 C
	03/29/17		P	7d	<0.33 C	0.18	<0.34 C	<0.15	<0.45 C
1421 Dollar Ave									
BG-1421	03/02/10		SU	24h	<0.0270	0.0626	<0.0270	0.0109J	<0.0103
1421-OUT	06/02/14		P	14d	<0.16 C	1.4	<0.16 C	<0.072	<0.22 C

Table 2: Analytical Data for Indoor Air **ADT 2**

DSCA ID No.: DC320013

Sample ID	Sampling Date (mm/dd/yy)	Sample Location [1]	Sampling Method [2]	Sampling Duration	cis-1,2-Dichloroethylene	Tetrachloroethylene	trans-1,2-Dichloroethylene	Trichloroethylene	Vinyl chloride
					[µg/m^3]				
1421-UP	10/06/09	R	SU	24h	<1.1	4.70	<1.1	<1.5	<1.8653
	11/10/09		SU	24h	<2.93	6.24	<5.55	8.59	<1.8653
	11/16/09		SU	24h	0.14	2.23	<0.03	0.045J	<0.01265
	11/24/09		SU	24h	4.76	10.85	<5.15	8.06	<1.738
	12/28/09		SU	24h	<0.0345	0.64	<0.0345	0.03J	0.01661J
	01/13/10		SU	24h	<0.029	0.98	<0.029	0.0334J	<0.011
	03/02/10		SU	24h	<0.0297	0.564	<0.0297	0.0125J	<0.0113
	06/03/10		SU	24h	<0.0352	1.07	<0.0352	0.0302J	<0.0134
	01/07/11		SU	24h	0.36	2.2	<0.079	<0.11	<0.051
	01/07/11		P	24h	<1.7 C	2.3	<1.7 C	<1.0	<2.7 C
	04/14/11		P	28d	<0.049 C	3.7	<0.049 C	<0.029	<0.079 C
	02/13/12		P	30d	<0.060 C	1.1	<0.060 C	<0.036	<0.096 C
	05/16/12		SU	24h	0.75	2.5	<0.079	<0.11	<0.051
	05/21/12		P	30d	<0.054 C	1.6	<0.054 C	<0.032	<0.087 C
	12/05/12		P	30d	<0.077 C	6.7	<0.080 C	<0.035	<0.110 C
	02/01/13		P	30d	<0.074 C	2.1	<0.077 C	<0.034	<0.100 C
	09/19/13		P	13.3 d	<0.17 C	7.2	<0.17 C	<0.076	<0.23 C
	12/17/13		P	14 d	<0.16 C	13	<0.17 C	<0.072	<0.22 C
	02/25/14		SU	24h	<0.14	1.3	<0.14	<0.19	<0.090
	03/11/14		P	14d	<0.12 C	1.7	<0.60 C	1.0	<0.077 C
	03/18/14		SU	24h	<0.14	0.47	<0.14	<0.19	<0.090
	04/01/14		P	14d	<0.12 C	1.1	<0.60 C	0.98	<0.60 C
	04/22/14		SU	24h	<0.14	1.9	<0.14	<0.19	<0.090
	05/06/14		P	14d	0.37 C	2.0	<0.60 C	0.47	<0.077 C
	06/02/14		P	14d	<0.16 C	1.6	<0.16 C	<0.072	<0.22 C
	07/01/14		P	14d	0.50 C	2.5	<0.56 C	0.75	<0.072 C
	07/31/14		P	14d	<0.16 C	1.2	<0.16 C	<0.072	<0.22 C
	10/28/14		P	14d	<0.16 C	11	<0.16 C	<0.072	<0.22 C
	01/27/15		P	14d	<0.16 C	0.41	<0.16 C	<0.072	<0.22 C
	04/28/15		P	14d	<0.16 C	0.45	<0.16 C	<0.072	<0.22 C
	07/21/15		P	14d	<0.16 C	2.9	<0.16 C	<0.072	<0.22 C
	10/19/15		P	14d	<0.16 C	2.4	<0.16 C	<0.072	<0.22 C
	01/19/16		P	14d	<0.16 C	0.24	<0.16 C	<0.072	<0.22 C
	03/29/17		P	7d	<0.31 C	2.2	<0.33 C	<0.14	<0.44 C

Table 2: Analytical Data for Indoor Air **ADT 2**

DSCA ID No.: DC320013

Sample ID	Sampling Date (mm/dd/yy)	Sample Location [1]	Sampling Method [2]	Sampling Duration	cis-1,2-Dichloroethylene	Tetrachloroethylene	trans-1,2-Dichloroethylene	Trichloroethylene	Vinyl chloride
					[µg/m^3]				
1421-DOWN	10/06/09	R	SU	24h	<21.7	86.4	<21.7	18.9J	<13.9
	11/10/09		SU	24h	<2.77	9.5	<5.15	<3.8	<1.738
	11/16/09		SU	24h	0.07	3.32	<0.03	0.0430J	<0.0128
	11/24/09		SU	24h	3.84	11.53	<5.15	7.0	<1.738
	12/28/09		SU	24h	<0.033	0.71	<0.033	0.0215J	0.01536J
	01/13/10		SU	24h	<0.0298	1.32	<0.030	0.0327J	<0.01132
	03/02/10		SU	24h	<0.0279	0.927	<0.0279	0.0119J	<0.0106
	06/03/10		SU	24h	<0.0348	2.44	<0.035	0.0184	<0.01324
	01/07/11		SU	24h	0.11	2.9	<0.079	<0.11	<0.051
	01/07/11		P	24h	<1.7 C	3.5	<1.7	<1.0	<2.7
	04/14/11		P	28d	<0.049 C	7.0	<0.049 C	<0.029	<0.079 C
	02/13/12		P	30d	<0.060 C	1.9	<0.060 C	<0.036	<0.096 C
	05/16/12		SU	24h	0.21	5.6	<0.079	<0.11	<0.051
	05/21/12		P	30d	<0.054 C	4.3	<0.054 C	<0.032	<0.087 C
	12/05/12		P	30d	<0.077 C	11	<0.080 C	<0.035	<0.110 C
	02/01/13		P	30d	<0.074 C	3.5	<0.077 C	<0.034	<0.100 C
	09/19/13		P	13.3 d	<0.17 C	13	<0.17 C	<0.076	<0.23 C
	12/17/13		P	14 d	<0.16 C	27	<0.17 C	<0.072	<0.22 C
	02/25/14		SU	24h	<0.14	1.9	<0.14	<0.19	<0.090
	03/11/14		P	14d	<0.12 C	2.6	<0.60 C	26	<0.077 C
	03/18/14		SU	24h	<0.14	0.41	<0.14	<0.19	<0.090
	04/01/14		P	14d	<0.12 C	1.7	<0.60	<0.14 C	<0.077 C
	04/22/14		SU	24h	<0.14	4.8	<0.14	<0.19	<0.090
	05/06/14		P	14d	<0.12 C	2.4	<0.60 C	<0.14	<0.077 C
	06/02/14		P	14d	<0.16 C	3.6	<0.16 C	<0.072	<0.22 C
	07/01/14		P	14d	<0.11 C	3.5	<0.56 C	<0.13	<0.072 C
	07/31/14		P	14d	<0.16 C	1.9	<0.16 C	<0.072	<0.22 C
	10/28/14		P	14d	<0.16 C	18	<0.16 C	<0.072	<0.22 C
	01/27/15		P	14d	<0.16 C	0.36	<0.16 C	<0.072	<0.22 C
	04/28/15		P	14d	<0.16 C	0.79	<0.16 C	<0.072	<0.22 C
	07/21/15		P	14d	<0.16 C	8.3	<0.16 C	<0.072	<0.22 C
	10/19/15		P	14d	<0.16 C	1.7	<0.16 C	<0.072	<0.22 C
	01/19/16		P	14d	<0.16 C	0.21	<0.16 C	<0.072	<0.22 C
	03/29/17		P	7d	<0.31C	1.7	<0.33 C	<0.14	<0.44 C
DWM Residential IASLs					NE	8.34	NE	0.417	1.68

Notes:

1. "R" denotes residence.
2. "SU" denotes Summa canister. "P" denotes passive sampler.
3. Division of Waste Management (DWM) Residential and Non-Residential Indoor Air Screening Levels (IASLs) at Target Risk = 1.0E-05 dated October 2016 are provided for reference.
4. NE = Not Established
5. J denotes estimated concentration between laboratory reporting limit and method detection limit.
6. C denotes estimated concentration due to calculated sampling rate.
7. Additional vapor mitigation measures were completed at 1419 & 1421 Dollar Ave on May 12, 2014.

Table 3: Analytical Data for Groundwater **ADT 3**

DSCA ID No.: DC320013

Groundwater Sampling Point	Sampling Date (mm/dd/yy)	Benzene	cis-1,2-Dichloroethylene	Ethylbenzene	Methyl tert-butyl ether (MTBE)	Naphthalene	Tetrachloroethylene	Toluene	trans-1,2-Dichloroethylene	Trichloroethylene	Vinyl chloride	Xylenes (total)	1,2-Dichloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethylene	Acetone	Chloroform	2-Butanone (MEK)	Bromodichloromethane
		[mg/L]																			
DSCA Site No. DC320013 Permanent Monitoring Wells																					
MW-7	01/16/08	**0.0049**	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.005	<0.01	<0.001
	02/24/09	**0.0046**	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.005	<0.01	<0.001
	05/15/09	**0.0069**	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.005	<0.01	<0.001
	08/04/09	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.005	<0.001
	08/22/13	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.050	<0.001
	07/08/14	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	07/06/17	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
MW-14S	11/10/09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	NA	<0.01
	05/18/12	<0.001	<0.001	<0.001	<0.001	<0.005	**0.023**	<0.005	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.005	<0.01	<0.001
	08/22/13	<0.001	<0.001	<0.001	<0.001	<0.005	**0.112**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.050	<0.001
	12/20/13	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0312**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.050	<0.001
	02/27/14	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0706**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.050	<0.001
	03/27/14	<0.001	<0.001	<0.001	<0.001	<0.005	**0.146**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	04/24/14	<0.001	0.00293	<0.001	<0.001	<0.005	**0.0368**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	07/09/14	<0.001	0.00234	<0.001	<0.001	<0.005	**0.0554**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	10/07/14	<0.001	0.00240	<0.001	<0.001	<0.005	**0.108**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	01/05/15	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0606**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	04/21/15	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0257**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	07/07/15	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0884**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	10/06/15	<0.001	<0.001	<0.001	<0.001	<0.001	**0.186**	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.005	<0.001	<0.025	0.00366	<0.025	<0.001
	01/05/16	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0386**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	01/24/17	<0.001	<0.001	<0.001	<0.001	<0.005	**0.805**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	07/06/17	<0.001	<0.001	<0.001	<0.001	<0.005	**2.02**	<0.001	<0.001	0.00153	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001

Table 3: Analytical Data for Groundwater **ADT 3**

DSCA ID No.: DC320013

Groundwater Sampling Point	Sampling Date (mm/dd/yy)	Benzene	cis-1,2-Dichloroethylene	Ethylbenzene	Methyl tert-butyl ether (MTBE)	Naphthalene	Tetrachloroethylene	Toluene	trans-1,2-Dichloroethylene	Trichloroethylene	Vinyl chloride	Xylenes (total)	1,2-Dichloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloroethane	1,1-Dichloroethylene	Acetone	Chloroform	2-Butanone (MEK)	Bromodichloromethane
		[mg/L]																			
MW-16S	11/10/09	<0.01	<0.01	<0.01	<0.01	<0.01	**0.0706**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	NA	<0.01	NA	<0.01
	05/18/12	<0.001	<0.001	<0.001	<0.001	<0.005	**0.083**	<0.005	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.005	<0.01	<0.001
	01/03/13	<0.001	<0.001	<0.001	<0.001	<0.005	**0.096**	<0.005	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	<0.005	<0.01	<0.001
	08/21/13	<0.001	<0.001	<0.001	<0.001	<0.005	**0.103**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.050	<0.001
	12/19/13	<0.001	<0.001	<0.001	<0.001	<0.005	**0.112**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.050	<0.001
	02/27/14	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0444**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.050	<0.001
	03/27/14	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0250**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	04/23/14	<0.001	<0.001	<0.001	<0.001	<0.005	**0.110**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	07/10/14	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0552**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	10/06/14	<0.001	<0.001	<0.001	<0.001	<0.005	**0.0356**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	01/06/15	<0.001	<0.001	<0.001	<0.001	<0.005	**0.291**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	04/21/15	<0.001	0.00104	<0.001	<0.001	<0.005	**0.196**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	07/07/15	<0.001	<0.001	<0.001	<0.001	<0.005	**0.185**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	10/06/15	<0.001	<0.001	<0.001	<0.001	<0.001	**0.0149**	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.005	<0.001	<0.025	0.00377	<0.025	<0.001
	01/05/16	<0.001	<0.001	<0.001	<0.001	<0.005	**0.279**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	01/24/17	<0.001	<0.001	<0.001	<0.001	<0.005	**0.420**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	07/06/17	<0.001	<0.001	<0.001	<0.001	<0.005	**0.532**	<0.001	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
MW-17S	11/25/09	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.005	<0.001	<0.001	<0.001	<0.003	<0.001	<0.001	<0.001	<0.001	<0.001	<0.05	0.017	<0.01	<0.001
	08/21/13	<0.001	<0.001	<0.001	<0.001	<0.005	**0.00271**	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.050	<0.001
	07/09/14	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
	07/06/17	<0.001	<0.001	<0.001	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.025	<0.001	<0.050	<0.001
NC 2L Standard		0.001	0.07	0.6	0.02	0.006	0.0007	0.6	0.1	0.003	0.00003	0.5	0.0004	0.20	0.0002	0.0006	0.350	6.0	0.07	4.0	0.0006

Notes:

1. **Bold** concentration exceeds NC 2L Groundwater Quality Standard (April 2013) or Interim Maximum Allowable Concentration (if 2L Standard not established).
2. J flag denotes estimated concentration between laboratory reporting limit and method detection limit.
3. NA = Not Analyzed; N/A = Not Available; BDL = Below Detection Limit (detection limits not available); NE = Not Established

Table 3(1): Analytical Data for Groundwater (User Specified Chemicals) **ADT 3(1)**

DSCA ID No.: DC320013

Groundwater Sampling Point	Sampling Date (mm/dd/yy)	Chlorobenzene	Chloroethane	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Diisopropyl ether	Isopropylbenzene	n-Propylbenzene	p-Isopropyltoluene	1,1,1,2-Tetrachloroethane	4-Methyl-2pentanone (MIBK)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloropropane	Chloromethane	Dichlorodifluoromethane	Trichlorofluoromethane	Carbon Disulfide	Methylene Chloride
		[mg/L]																				
DSCA Site No. DC320013 Permanent Monitoring Wells																						
MW-7	01/16/08	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.49	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.005	<0.005	NA	<0.005
	02/24/09	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.50	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.005	<0.005	NA	<0.005
	05/15/09	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.51	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.005	<0.005	NA	<0.005
	08/04/09	<0.001	<0.001	NA	NA	NA	<0.001	NA	<0.001	<0.52	<0.001	<0.005	NA	NA	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.002
	08/22/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.53	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/08/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.54	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/06/17	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.54	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
MW-14S	11/10/09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.102	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	05/18/12	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.103	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.005
	08/22/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.104	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	12/20/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.105	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	02/27/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.106	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	03/27/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.107	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	04/24/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002`	<0.001	<0.001	<0.108	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/09/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.109	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	10/07/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.110	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	01/05/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.111	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	04/21/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.112	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/07/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.113	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	10/06/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.114	<0.001	<0.025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	01/05/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.115	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	01/24/17	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.116	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/06/17	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.116	**0.00108**	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005

Table 3(1): Analytical Data for Groundwater (User Specified Chemicals) **ADT 3(1)**

DSCA ID No.: DC320013

Groundwater Sampling Point	Sampling Date (mm/dd/yy)	Chlorobenzene	Chloroethane	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	Diisopropyl ether	Isopropylbenzene	n-Propylbenzene	p-Isopropyltoluene	1,1,1,2-Tetrachloroethane	4-Methyl-2pentanone (MIBK)	1,2,4-Trimethylbenzene	1,3,5-Trimethylbenzene	1,2-Dichlorobenzene	1,4-Dichlorobenzene	1,2-Dichloropropane	Chloromethane	Dichlorodifluoromethane	Trichlorofluoromethane	Carbon Disulfide	Methylene Chloride
		[mg/L]																				
MW-16S	11/10/09	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.159	<0.01	NA	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	05/18/12	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.160	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.005
	01/03/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.161	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	NA	<0.005
	08/21/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.162	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	12/19/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.163	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	02/27/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.164	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	03/27/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.165	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	04/23/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.166	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/10/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.167	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	10/06/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.168	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	01/06/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.169	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	04/21/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.170	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/07/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.171	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	10/06/15	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.172	<0.001	<0.025	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	01/05/16	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.173	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	01/24/17	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.174	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/06/17	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.174	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
MW-17S	11/25/09	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.190	<0.001	<0.01	<0.001	<0.001	<0.001	<0.001	<0.001	<0.0025	<0.005	<0.005	NA	<0.005
	08/21/13	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.191	<0.001	<0.005	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/09/14	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.192	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
	07/06/17	<0.001	<0.001	<0.001	<0.001	<0.001	<0.002	<0.001	<0.001	<0.192	<0.001	<0.010	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.005
NC 2L Standard		0.050	3.0	0.070	0.070	0.070	0.070	0.070	0.070	0.025	0.0010	0.10	0.4	0.4	0.02	0.0060	0.0006	0.003	1.0	2.0	0.7	0.005

Notes:

1. **Bold** concentration exceeds NC 2L Groundwater Quality Standard (April 2013) or Interim Maximum Allowable Concentration (if 2L Standard not established).
2. J flag denotes estimated concentration between laboratory reporting limit and method detection limit.
3. NA = Not Analyzed; N/A = Not Available; BDL = Below Detection Limit (detection limits not available); NE = Not Established

Table 4: Analytical Data for Natural Attenuation Parameters **ADT 4**

DSCA ID No.: DC320013

Sample ID	Sampling Date (mm/dd/yy)	Dissolved oxygen (DO)	Nitrate	Sulfate	Major Cations	Methane	Ferrous Iron	Oxidation reduction potential (ORP)	Alkalinity	Chloride (optional)	Conductivity	pH	Temperature	Turbidity	Total organic carbon (TOC)	Ethane	Ethene	Total Iron
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mV	mg/L	mg/L	µs/cm^2	std unit	° C	NTU	mg/L	mg/L	mg/L	mg/L
MW-7	08/22/13	1.55	NA	NA	NA	NA	NA	140.3	NA	NA	98	5.83	19.69	NA	NA	NA	NA	NA
	07/08/14	2.58	NA	NA	NA	NA	NA	199.0	NA	NA	95	5.54	23.38	NA	NA	NA	NA	NA
	07/06/17	2.08	NA	NA	NA	NA	NA	114.8	NA	NA	139.6	5.47	19.67	4.91	NA	NA	NA	NA
MW-14S	05/18/12	NA	NA	NA	NA	<0.010	NA	NA	NA	11	NA	NA	NA	NA	NA	<0.013	<0.013	NA
	08/22/13	3.39	NA	NA	NA	<0.005	NA	0.4	NA	NA	213	6.54	20.95	NA	1.97	<0.005	<0.005	5.23
	12/20/13	5.13	NA	NA	NA	0.0176	NA	123.8	NA	NA	132	6.26	15.30	NA	NA	0.0441	<0.005	NA
	02/27/14	5.95	NA	NA	NA	0.0189	NA	194.4	NA	NA	102	5.94	12.50	NA	NA	<0.005	<0.005	3.71
	03/27/14	5.14	NA	NA	NA	<0.005	NA	185.8	NA	NA	101	5.97	12.73	NA	1.29	<0.005	<0.005	2.94
	04/24/14	5.25	NA	NA	NA	0.00718	NA	-36.3	NA	NA	85	7.62	16.35	NA	1.29	<0.005	<0.005	8.14
	07/09/14	3.49	NA	NA	NA	0.00823	NA	95.6	NA	NA	86	5.81	23.83	NA	<1.0	<0.005	<0.005	5.53
	10/07/14	4.68	NA	NA	NA	0.0304	NA	141.0	NA	NA	59	6.07	16.97	NA	1.52	<0.005	<0.005	51.1
	01/05/15	4.79	NA	NA	NA	0.00551	NA	91.7	NA	NA	63	6.15	14.89	NA	3.84	<0.005	<0.005	21.9
	04/21/15	5.08	NA	NA	NA	0.0124	NA	99.3	NA	NA	61	6.13	16.72	NA	1.10	<0.005	<0.005	17.9
	07/07/15	4.11	NA	NA	NA	0.0214	NA	165.3	NA	NA	90	5.83	23.11	NA	1.41	<0.005	<0.005	12.1
	10/06/15	4.16	NA	NA	NA	0.0152	NA	100.7	NA	NA	74	6.24	17.41	NA	<1.0	<0.005	<0.005	16.3
	01/05/16	2.71	NA	NA	NA	0.0254	NA	124.6	NA	NA	56	6.55	11.27	NA	8.61	<0.005	<0.005	16.5
	01/24/17	4.70	NA	NA	NA	NA	NA	23.2	NA	NA	58.3	6.12	15.2	190	NA	NA	NA	8.89
	07/06/17	3.85	NA	NA	NA	NA	NA	86.6	NA	NA	70.4	6.12	19.67	374	NA	NA	NA	NA
MW-16S	05/18/12	NA	NA	NA	NA	<0.010	NA	NA	NA	7.2	NA	NA	NA	NA	NA	<0.013	<0.013	NA
	08/21/13	4.40	NA	NA	NA	<0.005	NA	201.0	NA	NA	80	5.74	20.89	NA	1.35	<0.005	<0.005	8.99
	12/19/13	3.89	NA	NA	NA	<0.005	NA	108.0	NA	NA	82	5.96	15.69	NA	NA	<0.005	<0.005	NA
	02/27/14	8.16	NA	NA	NA	<0.005	NA	278.3	NA	NA	87	6.33	14.30	NA	1.14	<0.005	<0.005	107
	03/27/14	6.60	NA	NA	NA	<0.005	NA	207.6	NA	NA	82	6.12	13.85	NA	<1.0	<0.005	<0.005	5.03
	04/23/14	4.25	NA	NA	NA	<0.005	NA	-6.5	NA	NA	86	7.68	18.14	NA	1.15	<0.005	<0.005	2.13
	07/10/14	3.49	NA	NA	NA	<0.005	NA	31.9	NA	NA	83	6.06	21.49	NA	1.60	<0.005	<0.005	3.79
	10/06/14	5.95	NA	NA	NA	<0.005	NA	190.2	NA	NA	81	6.33	18.91	NA	2.57	<0.005	<0.005	35.6
	01/06/15	6.53	NA	NA	NA	<0.005	NA	89.2	NA	NA	42	6.61	14.57	NA	2.15	<0.005	<0.005	91.6
	04/21/15	4.88	NA	NA	NA	<0.005	NA	79.5	NA	NA	65	6.08	17.81	NA	5.01	<0.005	<0.005	28.7
	07/07/15	4.96	NA	NA	NA	<0.005	NA	209.2	NA	NA	82	5.7	18.80	NA	1.50	<0.005	<0.005	3.15
	10/06/15	NA	NA	NA	NA	<0.005	NA	NA	NA	NA	NA	NA	NA	NA	2.06	<0.005	<0.005	36.1
	01/05/16	4.77	NA	NA	NA	<0.005	NA	134.6	NA	NA	74	6.50	11.02	NA	1.30	<0.005	<0.005	4.94
	01/24/17	8.25	NA	NA	NA	NA	NA	178.6	NA	NA	52.9	6.11	15.50	9.50	NA	NA	NA	0.781
	07/06/17	4.26	NA	NA	NA	NA	NA	146.4	NA	NA	58.9	5.55	19.22	>1,000	NA	NA	NA	NA
MW-17S	08/21/13	2.55	NA	NA	NA	NA	NA	47.8	NA	NA	245	6.18	22.55	NA	NA	NA	NA	NA
	07/09/14	1.32	NA	NA	NA	NA	NA	62.3	NA	NA	211	6.12	18.46	NA	NA	NA	NA	NA
	07/06/17	0.56	NA	NA	NA	NA	NA	-24.7	NA	NA	160.9	6.49	20.83	38.3	NA	NA	NA	NA

Note: NA denotes not analyzed; ND denotes non-detect; NR denotes ferrous iron measurement not recordable due to poor visibility in water sample

FIGURES

SV-58 (7/7/17)	
PCE	100

SV-59 (7/7/17)	
PCE	210

SV-60 (7/7/17)	
PCE	110

SV-56 (7/7/17)	
PCE	160
cis-1,2-DCE	84
trans-1,2-DCE	23
VC	330

SV-22S (8/30/17)	
PCE	1,100

SV-24S (8/30/17)	
PCE	74

SV-19 (3/22/17)	
PCE	18,000

SV-18 (3/22/17)	
PCE	150,000

SV-37S (3/22/17)	
PCE	24,000
TCE	3.8 J

NORTHGATE AUTO SERVICE
(1130 W. CLUB)

RESTAURANT
(1129 W. CLUB)

TRIANGLE FAMILY CHURCH
(1414 WATTS)

RESIDENCE
(1425 DOLLAR)

RESIDENCE
(1421 DOLLAR)

RESIDENCE
(1419 DOLLAR)

RESIDENCE
(1417
DOLLAR)

FORMER ONE HOUR
MARTINIZING FACILITY

W. CLUB BOULEVARD

WATTS STREET

DOLLAR AVENUE

SV-11, SV-14, SV-17, SV-16, SV-15, SV-8I, SV-8S, SV-55S/I, SV-27S/D, SV-28D, SV-29S/D, SV-30S, SV-33, SV-32, SV-36S/D, SV-35S, SV-34S/D, SV-37S/D, SV-48S/D, SV-49S/D, SV-50, SV-57, SV-56, SV-58, SV-59, SV-60, SV-43S, SV-42S, SV-22, SV-24, SV-21S/D, SV-25S/D, SV-20S/D, SV-19, SV-23, SV-31, SV-26S/D, SV-18, SV-41S/D, SV-40S/D, SV-39

LEGEND

SOURCE PROPERTY BOUNDARY

NON-SOURCE PROPERTY BOUNDARY

SOIL GAS MONITORING POINT

SAMPLE ID & DATE

CONSTITUENT

CONCENTRATION ($\mu g/m^3$)

NOTES:

1. SOIL GAS SAMPLES WERE COLLECTED USING 1-LITER SUMMA CANISTERS.
2. ONLY DETECTED CONSTITUENTS ARE SHOWN ON FIGURE.
3. PCE = TETRACHLOROETHYLENE
   DCE = DICHLOROETHYLENE
   VC = VINYL CHLORIDE
4. SV-57 WAS NOT SAMPLED DUE TO PRESENCE OF WATER IN THE SAMPLING POINT.

N

APPROXIMATE
0 50 100
SCALE IN FEET

TITLE

SUBSURFACE SOIL GAS CONTAMINANT CONCENTRATION MAP

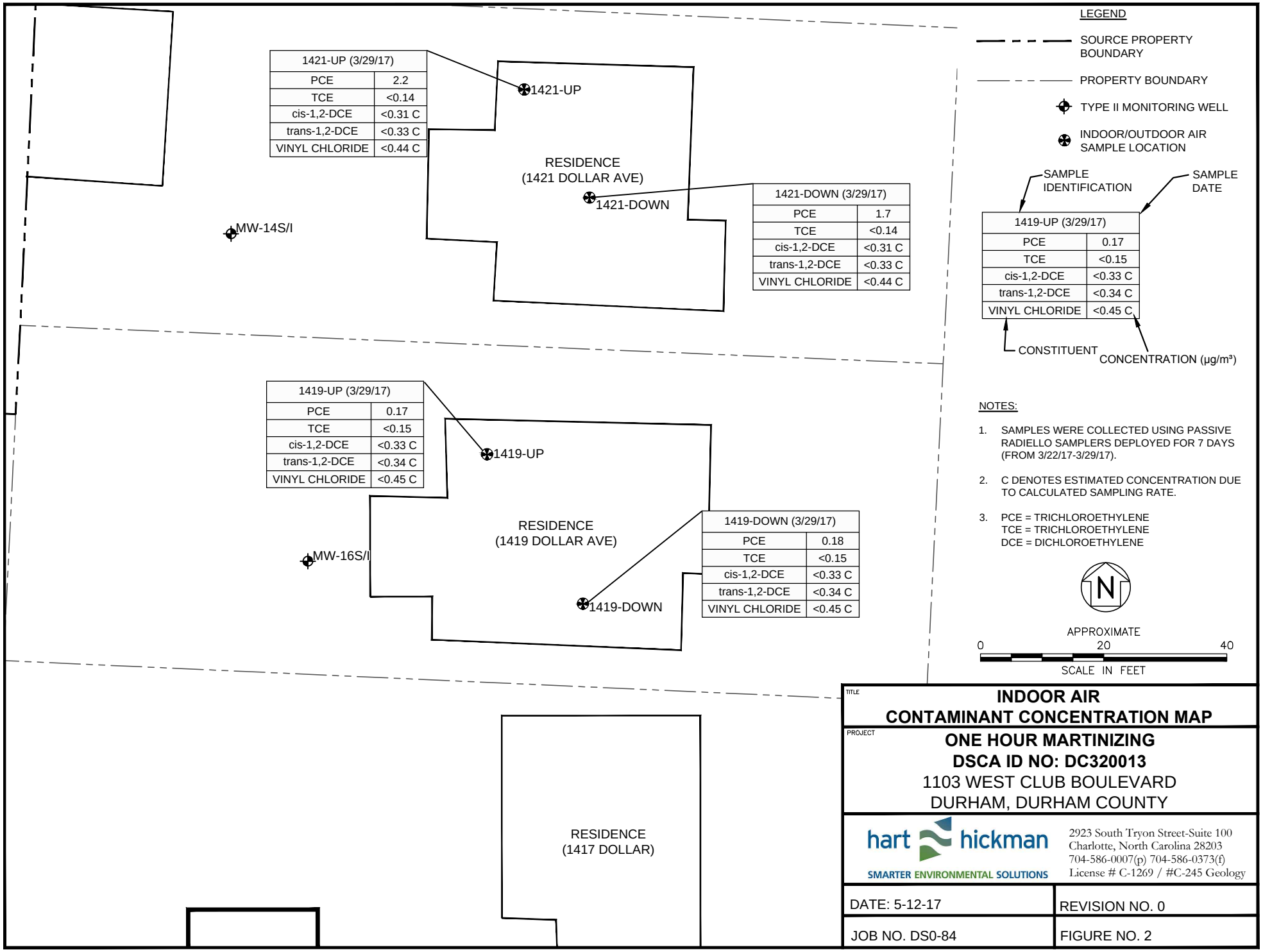
PROJECT

ONE HOUR MARTINIZING
DSCA ID NO: DC320013
1103 WEST CLUB BLVD
DURHAM, DURHAM COUNTY

hart hickman
SMARTER ENVIRONMENTAL SOLUTIONS
2923 South Tryon Street-Suite 100
Charlotte, North Carolina 28203
704-586-0007(p) 704-586-0373(f)
License # C-1269 / #C-245 Geology

DATE: 9-15-17 | REVISION NO. 0

JOB NO. DS0-84 | FIGURE NO. 1



NOTES:

1. SAMPLES WERE COLLECTED USING PASSIVE RADIELLO SAMPLERS DEPLOYED FOR 7 DAYS (FROM 3/22/17-3/29/17).
2. C DENOTES ESTIMATED CONCENTRATION DUE TO CALCULATED SAMPLING RATE.
3. PCE = TRICHLOROETHYLENE
   TCE = TRICHLOROETHYLENE
   DCE = DICHLOROETHYLENE

TITLE
INDOOR AIR CONTAMINANT CONCENTRATION MAP

PROJECT
ONE HOUR MARTINIZING
DSCA ID NO: DC320013
1103 WEST CLUB BOULEVARD
DURHAM, DURHAM COUNTY

hart hickman
SMARTER ENVIRONMENTAL SOLUTIONS
2923 South Tryon Street-Suite 100
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704-586-0007(p) 704-586-0373(f)
License # C-1269 / #C-245 Geology

DATE: 5-12-17	REVISION NO. 0
JOB NO. DS0-84	FIGURE NO. 2

PARKING DECK

NORTHGATE MALL

NORTHGATE AUTO SERVICE (1130 W. CLUB)

MW-13

MW-11

MW-12

W. CLUB BOULEVARD

FORMER ONE HOUR MARTINIZING FACILITY

MW-10

RESTAURANT (1129 W. CLUB)

MW-3R

MW-24S

MW-3I

MW-4R

MW-4I

MW-22I

MW-22S

MW-23S

MW-23I

MW-14S/I

MW-21

RESIDENCE (1425 DOLLAR)

RESIDENCE (1421 DOLLAR)

MW-7

TRIANGLE FAMILY CHURCH (1414 WATTS)

MW-15S/I

MW-16S/I

RESIDENCE (1419 DOLLAR)

MW-19

RESIDENCE (1417 DOLLAR)

MW-17S/I

MW-6

MW-18

RESIDENCE (1417 WATTS)

RESIDENCE (1415 WATTS)

RESIDENCE (1413 WATTS)

RESIDENCE (1413 DOLLAR)

RESIDENCE (1410 WATTS)

RESIDENCE (1411 DOLLAR)

MW-20I

MW-20S

RESIDENCE (1409 DOLLAR)

WATTS STREET

DOLLAR AVENUE

RESIDENCE (1422 DOLLAR)

RESIDENCE (1420 DOLLAR)

RESIDENCE (1418 DOLLAR)

RESIDENCE (1416 DOLLAR)

RESIDENCE (1414 DOLLAR)

RESIDENCE (1412 DOLLAR)

MW-8

RESIDENCE (1410 DOLLAR)

MW-9

N. GREGSON STREET

LEGEND

SITE PROPERTY BOUNDARY

NON-SOURCE PROPERTY BOUNDARY

TYPE II MONITORING WELL

EXCAVATION AREA

NOTE:

1. DATA SOURCES: DURHAM COUNTY GIS, WITHERS & RAVENEL.

N

APPROXIMATE

0 80 160

SCALE IN FEET

TITLE

SITE MAP

PROJECT

ONE HOUR MARTINIZING
DSCA ID NO: DC320013
1103 WEST CLUB BLVD
DURHAM, NORTH CAROLINA

hart hickman
SMARTER ENVIRONMENTAL SOLUTIONS
2923 South Tryon Street-Suite 100
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704-586-0007(p) 704-586-0373(f)
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DATE: 9-15-17 | REVISION NO. 0

JOB NO. DS0-84 | FIGURE NO. 3

LEGEND

- SITE PROPERTY BOUNDARY
- NON-SOURCE PROPERTY BOUNDARY
- TYPE II MONITORING WELL
- EXCAVATION AREA

SAMPLE ID

MW-7	
PCE	<0.001
TCE	<0.001

CONCENTRATION (mg/L)

CONSTITUENT

W. CLUB BOULEVARD

WATTS STREET

DOLLAR AVENUE

RESTAURANT (1129 W. CLUB)

RESIDENCE (1415 WATTS)

RESIDENCE (1413 WATTS)

TRIANGLE FAMILY CHURCH (1414 WATTS)

FORMER ONE HOUR MARTINIZING FACILITY

RESIDENCE (1425 DOLLAR)

RESIDENCE (1421 DOLLAR)

RESIDENCE (1419 DOLLAR)

RESIDENCE (1417 DOLLAR)

RESIDENCE (1413 DOLLAR)

MW-10, MW-3I, MW-3R, MW-24S, MW-4I, MW-4R, MW-22I, MW-22S, MW-23S, MW-14S/I, MW-21, MW-23I, MW-16S/I, MW-15S/I, MW-19, MW-6, MW-18, MW-17S/I, MW-7

MW-7	
PCE	<0.001
TCE	<0.001

MW-14S	
PCE	**2.02**
TCE	0.00153

MW-16S	
PCE	**0.532**
TCE	<0.001

MW-17S	
PCE	<0.001
TCE	<0.001

NOTES:

1. GROUNDWATER SAMPLES COLLECTED ON 7/6/17.
2. **BOLD** CONCENTRATIONS EXCEED 2L STANDARDS.
3. ONLY DETECTED CONSTITUENTS SHOWN ON FIGURE.
4. PCE = TETRACHLOROETHYLENE
   TCE = TRICHLOROETHYLENE

N

APPROXIMATE

0 40 80

SCALE IN FEET

TITLE

GROUNDWATER CONTAMINANT CONCENTRATION MAP

PROJECT

ONE HOUR MARTINIZING
DSCA ID NO: DC320013
1103 WEST CLUB BLVD
DURHAM, NORTH CAROLINA

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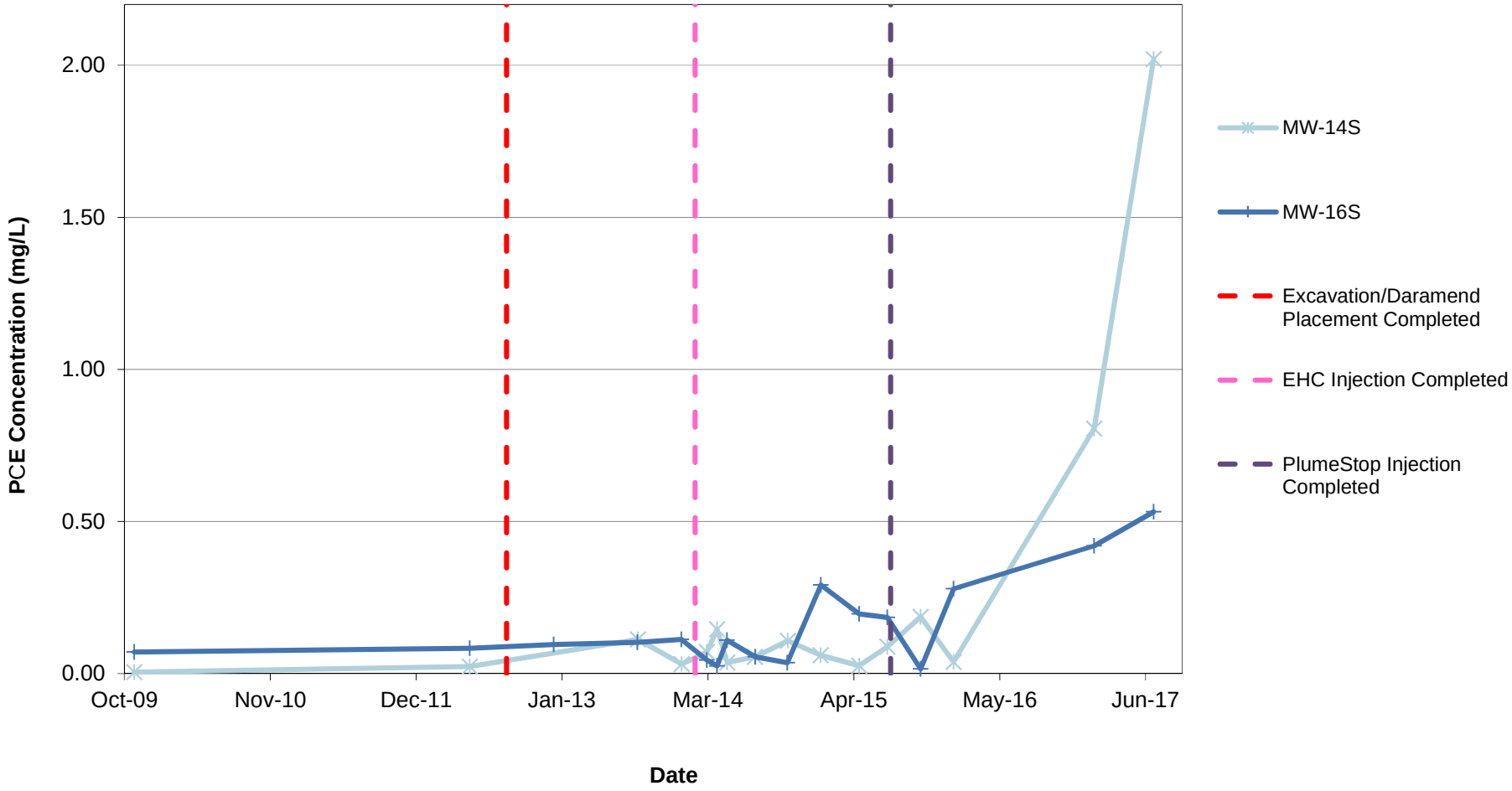
DATE: 9-15-17 | REVISION NO. 0

JOB NO. DS0-84 | FIGURE NO. 4

ATTACHMENT A

GRAPH

PCE Groundwater Concentrations vs. Time
MWs East of EHC and PlumeStop Injection Areas: MW-14S and MW-16S
One Hour Martinizing, Durham, Durham County
DSCA ID: DC320013



Note: Non-detect values are graphed as half the laboratory method detection limit.