Beggs, Tauren R - DNR

From: Mark McColloch <MSM@shanwil.com>
Sent: Tuesday, October 06, 2015 12:37 PM
To: Beggs, Tauren R - DNR
Subject: United Dry Cleaners - Off Site Well and SVE System
Attachments: United_Sep_2015_Tables.pdf; United_Proposed_Off-site well.pdf

Tauren,

I have secured the access agreement and scheduled the drill crew – installation of the offsite well is scheduled for Tuesday 10/13 (see attached)

Also attached is a summary table showing groundwater and soil gas sample results through August 2015.

Although PCE remains above the ES, concentrations at the source area (MW-1, MW-2, MW-3, and MW-5) have declined significantly. However, PCE at down gradient wells MW-6 and MW-7 has only declined a slightly. Samples will be collected from all wells, including proposed off-site well MW-10, in November 2015 and February 2016.

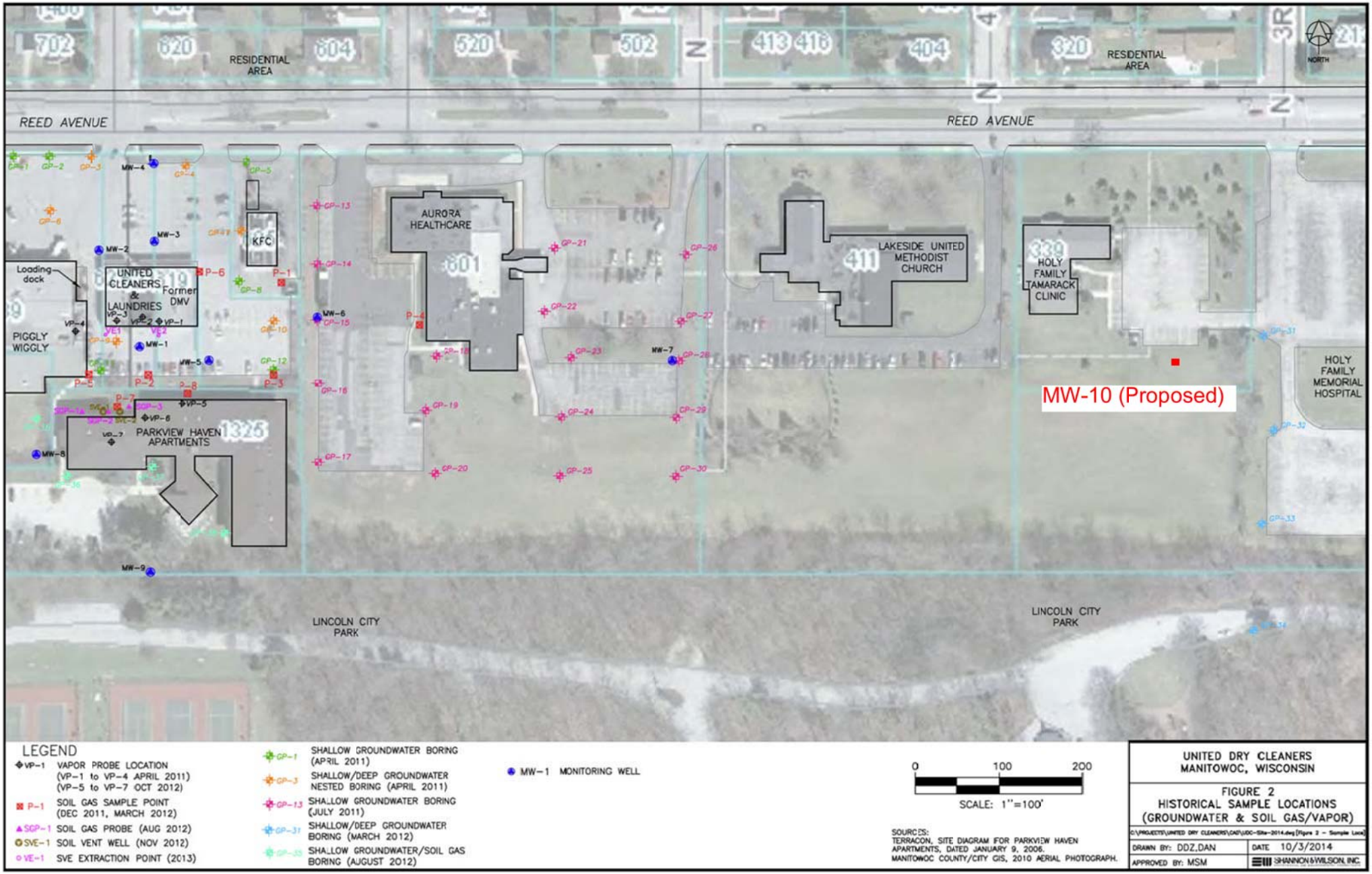
PCE concentrations in soil gas increased slightly between Feb and Aug 2015, but remain below the VRSL. The SSDS at the Parkview Haven apartment building has remaining off-site since early August (4 weeks prior to sample collection).

Because the SVE system remains on-site, it may not be a bad idea to run it 2 to 3 months to see what happens with groundwater. SVE operation may also help with vapor intrusion issues for the apartment building. I could re-start the SVE system next week, and then turn if off in early late December or early January (should be off at least 30 days prior to Feb 2016 soil gas sample collection). The only additional cost would be electricity (around $750 per month).

I am interested in your thoughts.

SHANNON & WILSON, INC.
GEOTECHNICAL AND ENVIRONMENTAL CONSULTANTS

Mark S. McColloch, P.G. | Senior Associate
2110 Luann Lane Suite 101
Madison, Wisconsin 53713
www.shannonwilson.com
Phone: (608) 442-5223 ext 8157
Fax: (608) 442-9013
Direct: (314) 564-8157
E-mail: msm@shanwil.com



LEGEND

- VP-1 VAPOR PROBE LOCATION (VP-1 to VP-4 APRIL 2011) (VP-5 to VP-7 OCT 2012)
- P-1 SOIL GAS SAMPLE POINT (DEC 2011, MARCH 2012)
- SGP-1 SOIL GAS PROBE (AUG 2012)
- SVE-1 SOIL VENT WELL (NOV 2012)
- VE-1 SVE EXTRACTION POINT (2013)
- GP-1 SHALLOW GROUNDWATER BORING (APRIL 2011)
- GP-3 SHALLOW/DEEP GROUNDWATER NESTED BORING (APRIL 2011)
- GP-13 SHALLOW GROUNDWATER BORING (JULY 2011)
- GP-31 SHALLOW/DEEP GROUNDWATER BORING (MARCH 2012)
- GP-33 SHALLOW GROUNDWATER/SOIL GAS BORING (AUGUST 2012)
- MW-1 MONITORING WELL

0 100 200

SCALE: 1"=100'

SOURCES:
TERRACON, SITE DIAGRAM FOR PARKVIEW HAVEN APARTMENTS, DATED JANUARY 9, 2006.
MANITOWOC COUNTY/CITY GIS, 2010 AERIAL PHOTOGRAPH.

UNITED DRY CLEANERS
MANITOWOC, WISCONSIN

FIGURE 2
HISTORICAL SAMPLE LOCATIONS
(GROUNDWATER & SOIL GAS/VAPOR)

C:\PROJECTS\UNITED DRY CLEANERS\CAD\UDC-Site-2014.dwg [Figure 2 - Sample Locs]

DRAWN BY: DDZ,DAN	DATE 10/3/2014
APPROVED BY: MSM	SHANNON & WILSON, INC.

Table 1
Historic Groundwater Sample Results
United Laundries and Dry Cleaners, Inc., 623 Reed Avenue, Manitowoc, Wisconsin

Sample Date / Analyte	Units	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	PAL	ES
January 25, 2006												
Tetrachloroethene (PCE)	µg/l	**180**	--	--	--	--	--	--	--	--	0.5	5
March 19, 2010												
Tetrachloroethene (PCE)	µg/l	**120**	**41**	**17**	--	--	--	--	--	--	0.5	5
1,1,1 Trichloroethane	µg/l	<1.8	**<0.50>**	**<0.37>**	--	--	--	--	--	--	40	200
October 5, 2010												
Tetrachloroethene (PCE)	µg/l	**58.4**	**62.1**	**11.8(12.0)**	**5.2**	**41.1**	--	--	--	--	0.5	5
Trichloroethene (TCE)	µg/l	***0.67 J***	<0.48	<0.48	<0.48	<0.48	--	--	--	--	0.5	5
1,1,1 Trichloroethane	µg/l	<0.90	**1.7**	<0.90	<0.90	<0.90	--	--	--	--	40	200
April 27, 2011												
Tetrachloroethene (PCE)	µg/l	**87.4(83.1)**	**71.0**	**9.9**	***3.1***	**40.5**	--	--	--	--	0.5	5
Trichloroethene (TCE)	µg/l	***0.93 J***	<0.48	<0.48	<0.48	<0.48	--	--	--	--	0.5	5
1,1,1 Trichloroethane	µg/l	<0.90	**1.3**	<0.90	<0.90	<0.90	--	--	--	--	40	200
December 21, 2011												
Tetrachloroethene (PCE)	µg/l	--	--	--	--	--	**32.1(30.6)**	**23.9**	--	--	0.5	5
Methylene Chloride	µg/l	--	--	--	--	--	**0.46**	<0.43	--	--	0.5	5
November 14, 2012												
Tetrachloroethene (PCE)	µg/l	--	--	--	--	--	--	--	**13.6(14.2)**	<0.45	0.5	5`
November 19, 2013												
Tetrachloroethene (PCE)	µg/l	**72.7**	**35.2**	**8.4**	***1.1***	**35.1(31.5)**	**28.9**	**15.5**	**9.6**	<0.45	0.5	5
Trichloroethene (TCE)	µg/l	***0.97 J***	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	<0.36	0.5	5
1,1,1 Trichloroethane	µg/l	**0.59 J**	**0.59 J**	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	<0.44	40	200
February 11, 2014												
Tetrachloroethene (PCE)	µg/l	**30.7(31.5)**	**36.7**	--	<0.47	--	**34.6**	**26.0**	**8.2**	--	0.5	5
Trichloroethene (TCE)	µg/l	<0.36	<0.36	--	<0.36	--	<0.36	<0.36	<0.36	--	0.5	5
1,1,1 Trichloroethane	µg/l	<0.44	**0.55 J**	--	<0.44	--	<0.44	<0.44	<0.44	--	40	200

Table 1
Historic Groundwater Sample Results
United Laundries and Dry Cleaners, Inc., 623 Reed Avenue, Manitowoc, Wisconsin

Sample Date / Analyte	Units	MW-1	MW-2	MW-3	MW-4	MW-5	MW-6	MW-7	MW-8	MW-9	PAL	ES
May 14, 2014												
Tetrachloroethene (PCE)	µg/l	**27.0(27.3)**	**15.9**	**5.7**	***0.96***	**27.4**	**24.7**	**10.3**	***3.7***	<0.45	0.5	5
August 19, 2014												
Tetrachloroethene (PCE)	µg/l	**25.5**	**10.8**	***4.8***	***0.69 J***	**18.7(17.9)**	**22.7**	**21.4**	***2.1***	<0.45	0.5	5
1,2-Dichlorobenzene	µg/l	<0.50	<0.50	<0.50	**1.1**	<0.50	<0.50	<0.50	<0.50	<0.50	60	600
November 25, 2014												
Tetrachloroethene (PCE)	µg/l	**19.5**	**9.2**	**6.8**	<0.50	**10.3**	**36.3**	**21.4(20.8)**	***3.5***	<0.50	0.5	5
February 25, 2015												
Tetrachloroethene (PCE)	µg/l	**20.3**	**8.4**	**7.1**	<0.50	**11.1**	**30.1(30.1)**	**22.7**	***3.0***	--	0.5	5
May 14, 2015												
Tetrachloroethene (PCE)	µg/l	**16.1**	**18.6**	**7.4**	<0.50	**9.9**	**33.9**	**22.4(21.4)**	***2.8***	<0.50	0.5	5
August 31, 2015												
Tetrachloroethene (PCE)	µg/l	**12.6(12.9)**	**9.0**	**6.8**	<0.50	**9.1**	**29.8**	**22.1**	***2.6***	<0.50	0.5	5
Methyl-tert-butyl ether	µg/l	**0.18 J**	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	12	60

PAL - Preventive Action Limit per Wisconsin Admin. Code sec. NR 141.10.
ES - Enforcement Standard per Wisconsin Admin. Code sec. NR 141.10.
< - Not Detected at or above adjusted reporting limit.
J - Estimated concentration above the adjusted method detection limit and below the adjusted reporting limit.
Duplicate sample results are shown in parenthesis.

Concentrations exceeding the PAL are in italics.
Concentrations exceeding the ES have been shaded.

Table 2
Results for Subfloor Probes – Parkview Haven Apartment Building
United Laundries and Dry Cleaners, Inc., 623 Reed Avenue, Manitowoc, Wisconsin

			Sample Location	**VP-5**	**VP-5**	**VP-5**	**VP-5**	**VP-5**	**Dup-1**
			Sample Date	**Oct-12**	**Nov-13**	**Feb-14**	**Feb-15**	**Aug-15**	
			Sample Depth (ft.)	**< 1.0**	**< 1.0**	**< 1.0**	**< 1.0**	**< 1.0**	
Constituents	**Vapor Risk Screening Level (1)**	**Vapor Action Level (2)**	**Attenuation Factor (3)**	**sub-slab basement**	**sub-slab basement**	**sub-slab basement**	**sub-slab basement**	**sub-slab basement**	
cis-1,2-Dichloroethene	--	NA	0.03	<7	<0.67	<0.67	<0.094	<0.085	<0.085
trans-1,2-Dichloroethene	--	NA	0.03	<7	<0.67	<0.67	<0.077	<0.13	<0.13
Tetrachloroethene (PCE)	206.67	6.2	0.03	**1,310**	**689**	**1.61**	**5.2**	**22.1**	**22.9**
Trichloroethene (TCE)	13	0.39	0.03	<7	<0.67	**11.6**	<0.062	<0.070	<0.070
Vinyl Chloride	21.67	0.65	0.03	<7	<0.67	<0.65	<0.069	<0.10	<0.10
			Sample Location	**VP-6**	**VP-6**	**VP-6**	**VP-6**	**VP-6**	
			Sample Date	**Oct-12**	**Nov-13**	**Feb-14**	**Feb-15**	**Aug-15**	
			Sample Depth (ft.)	**< 1.0**	**< 1.0**	**< 1.0**	**< 1.0**	**< 1.0**	
Constituents	**Vapor Risk Screening Level (1)**	**Vapor Action Level (2)**	**Attenuation Factor (3)**	**sub-slab hallway**	**sub-slab hallway**	**sub-slab hallway**	**sub-slab hallway**	**sub-slab hallway**	
cis-1,2-Dichloroethene	--	NA	0.03	<0.90	<0.63	<0.67	<0.067	<0.082	
trans-1,2-Dichloroethene	--	NA	0.03	<0.90	<0.63	<0.67	<0.057	<0.13	
Tetrachloroethene (PCE)	206.67	6.2	0.03	**31**	**6.2**	<0.67	**0.15**	**5.7**	
Trichloroethene (TCE)	13	0.39	0.03	<0.90	<0.63	<0.68	<0.046	<0.068	
Vinyl Chloride	21.67	0.65	0.03	<0.90	<0.63	<0.65	<0.05	<0.10	
			Sample Location	**VP-7**	**Dup-1**	**VP-7**	**VP-7**	**VP-7**	**VP-7**
			Sample Date	**Oct-12**		**Nov-13**	**Feb-14**	**Feb-15**	**Aug-15**
			Sample Depth (ft.)	**< 1.0**		**< 1.0**	**< 1.0**	**< 1.0**	**< 1.0**
Constituents	**Vapor Risk Screening Level (1)**	**Vapor Action Level (2)**	**Attenuation Factor (3)**	**sub-slab hallway**		**sub-slab hallway**	**sub-slab hallway**	**sub-slab hallway**	**sub-slab hallway**
cis-1,2-Dichloroethene	--	NA	0.03	<7	<7	<0.67	<0.67	<0.069	<0.41
trans-1,2-Dichloroethene	--	NA	0.03	<7	<7	<0.67	<0.67	<0.057	<0.64
Tetrachloroethene (PCE)	206.67	6.2	0.03	**327**	**319**	**619**	<0.67	**16.7**	**48.9**
Trichloroethene (TCE)	13	0.39	0.03	<7	<7	<0.67	<0.68	<0.048	<0.34
Vinyl Chloride	21.67	0.65	0.03	<7	<7	<0.67	<0.65	<0.05	<0.50

Table 2
Results for Subfloor Probes – Parkview Haven Apartment Building
United Laundries and Dry Cleaners, Inc., 623 Reed Avenue, Manitowoc, Wisconsin

			Sample Location	**VP-5**	**VP-5**	**VP-5**	**VP-5**	**VP-5** / **Dup-1**
			Sample Location	**Basement**	**Basement**	**Basement**	**Basement**	**Basement**
			Sample Date	**Oct-12**	**Nov-13**	**Feb-14**	**Feb-15**	**Aug-15**
			Sample Depth (ft.)	**0**	**0**	**0**	**0**	**0**
Constituents	**Vapor Risk Screening Level [1]**	**Vapor Action Level [2]**	**Attenuation Factor [3]**	--	**PH Basement (Indoor Air)**	--	**PH Basement (Indoor Air)**	**PH Basement (Indoor Air)**
cis-1,2-Dichloroethene	--	NA	--	--	--	--	<0.065	<0.082
trans-1,2-Dichloroethene	--	NA	--	--	--	--	<0.055	<0.13
Tetrachloroethene (PCE)	--	6.2	--	--	--	--	**0.42**	**3.8**
Trichloroethene (TCE)	--	0.39	--	--	--	--	**0.031**	**0.069**
Vinyl Chloride	--	0.65	--	--	--	--	<0.046	<0.10

Notes:

1 **Vapor Risk Screening Level** (VRSL) = Vapor Action Level (VAL) ÷ Attenuation Factor (AF) per Wisconsin Department of Natural Resources Quick Look-Up Table, dated June 2015.
2 **Vapor Action Level** (VAL) for Residential Land Use per Wisconsin Department of Natural Resources Quick Look-Up Table, dated June 2015.
3 **Attenuation Factor** (AF) = 0.03 for sub-floor vapor for Residential/Small Commercial Buildings per Wisconsin Department of Natural Resources Quick Look-Up Table, dated June 2015

Concentrations exceeding the VRSL are shaded.
< Below reporting limit
All units are reported in parts per billion by volume (ppbv)
VP -Vapor Probe
DUP-1 -Field duplicate

Table 3
Results for Soil Gas Probes – Parkview Haven Apartment Building
United Laundries and Dry Cleaners, Inc., 623 Reed Avenue, Manitowoc, Wisconsin

			Sample Location	**SGP-1**		**SGP-1**	**SGP-1**
			Sample Date	**Aug-12**		**Feb-15**	**Aug-15**
			Sample Depth (ft.)	**4.5-5**		**4.5-5**	**4.5-5**
Constituents	**Vapor Risk Screening Level [1]**	**Vapor Action Level [2]**	**Attenuation Factor [3]**	**Soil Gas Probe (Exterior Adjacent to Building)**			
cis-1,2-Dichloroethene	--	NA	0.01	<13.9		<0.065	<0.082
trans-1,2-Dichloroethene	--	NA	0.01	<13.9		<0.055	<0.13
Tetrachloroethene (PCE)	620	6.2	0.01	**531**		**0.86**	**19.9**
Trichloroethene (TCE)	39	0.39	0.01	<13.9		<0.044	**0.13 J**
Vinyl Chloride	65	0.65	0.01	<13.9		<0.046	<0.10
			Sample Location	**SGP-2**	**Dup-1**	**SGP-2**	**SGP-2**
			Sample Date	**Aug-12**		**Feb-15**	**Aug-15**
			Sample Depth (ft.)	**4.5-5**		**4.5-5**	**4.5-5**
Constituents	**Vapor Risk Screening Level [1]**	**Vapor Action Level [2]**	**Attenuation Factor [3]**	**Soil Gas Probe (Exterior Adjacent to Building)**			
cis-1,2-Dichloroethene	--	NA	0.01	<13.9	<13.9	<0.065	<0.085
trans-1,2-Dichloroethene	--	NA	0.01	<13.9	<13.9	<0.055	<0.13
Tetrachloroethene (PCE)	620	6.2	0.01	**3,290**	**2,610**	**1.5**	**45.1**
Trichloroethene (TCE)	39	0.39	0.01	<13.9	<13.9	<0.044	<0.070
Vinyl Chloride	65	0.65	0.01	<13.9	<13.9	<0.046	<0.10
			Sample Location	**SGP-3**		**SGP-3**	**SGP-3**
			Sample Date	**Aug-12**		**Feb-15**	**Aug-15**
			Sample Depth (ft.)	**4.5-5**		**4.5-5**	**4.5-5**
Constituents	**Vapor Risk Screening Level [1]**	**Vapor Action Level [2]**	**Attenuation Factor [3]**	**Soil Gas Probe (Exterior Adjacent to Building)**			
cis-1,2-Dichloroethene	--	NA	0.01	<13.9		<0.065	<0.085
trans-1,2-Dichloroethene	--	NA	0.01	<13.9		<0.055	<0.13
Tetrachloroethene (PCE)	620	6.2	0.01	**568**		**0.2 J**	**49.9**
Trichloroethene (TCE)	39	0.39	0.01	<13.9		<0.044	**0.081 J**
Vinyl Chloride	65	0.65	0.01	<13.9		<0.046	<0.10
			Sample Location	**Background**			
			Sample Date	**Aug-12**		**Feb-15**	**Aug-15**
Constituents	**Vapor Risk Screening Level [1]**	**Vapor Action Level [2]**	**Attenuation Factor [3]**	**Exterior Adjacent to Building Between SGP-1 and SGP-2**			
cis-1,2-Dichloroethene	--	NA	--	--		--	<0.085
trans-1,2-Dichloroethene	--	NA	--	--		--	<0.13
Tetrachloroethene (PCE)	--	6.2	--	--		--	<0.056
Trichloroethene (TCE)	--	0.39	--	--		--	<0.070
Vinyl Chloride	--	0.65	--	--		--	<0.10

Notes:

1. **Vapor Risk Screening Level** (VRSL) = Vapor Action Level (VAL) ÷ Attenuation Factor (AF) per Wisconsin Department of Natural Resources Quick Look-Up Table, dated June2015.
2. **Vapor Action Level** (VAL) for Residential Land Use per Wisconsin Department of Natural Resources Quick Look-Up Table, dated June 2015.
3. **Attenuation Factor** (AF) = 0.1 for sub-floor vapor for Residential/Small Commercial Buildings per Wisconsin Department of Natural Resources Quick Look-Up Table, dated June 2015

Concentrations exceeding the VRSL are shaded.
< Below reporting limit
J Estimated concentration at or above the LOD and below the LQD.
All units are reported in parts per billion by volume (ppbv)
SGP –Soil Gas Probe
DUP-1 -Field duplicate