

McKnight, Kevin - DNR

From: Kurt McClung <kmclung@keyengineering.com>
Sent: Wednesday, August 16, 2017 2:07 PM
To: McKnight, Kevin - DNR
Cc: David Voss III; David Buck; Darcy Gravelle; luke@multistoragewi.com
Subject: Realty Opus Menasha Soil and Groundwater sampling results
Attachments: FIG 2 - VOCs.pdf; FIG 3 - PAHs.pdf; 1707-0331-0001 GW Table 7-26-17.xlsx

Hi Kevin:

I attached a draft figure that illustrates VOCs in soil and another draft figure that illustrates PAHs and metals in soil.

The attached table presents the groundwater sampling analytical results for the small-diameter wells installed in July 2017:

- no detections for any VOCs were observed,
- no exceedances of the NR 140 Enforcement Standard, and
- three low-level exceedances of the NR 140 PAL are presented for three PAHs at the east side of the site.

Based on the results, I believe a Case Closure Request would be reasonable next step.

Please share your opinion whether you believe the results support closure and registry on the GIS. In your opinion, do you believe development of this property could begin immediately? The developer wants confirmation that they are free to break ground.

Thanks,

Kurt McClung, PG, PE

Senior Engineer

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A Division of SET Environmental Inc.

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Milwaukee, Wisconsin 53202

LEGEND

- SOIL BORING LOCATION
- MONITORING WELL LOCATION
- △ SUB-SLAB VAPOR LOCATION
- X TEST PIT LOCATION
- PROPERTY BOUNDARY
- - - - - FORMER STRUCTURE (RAZED 2016)

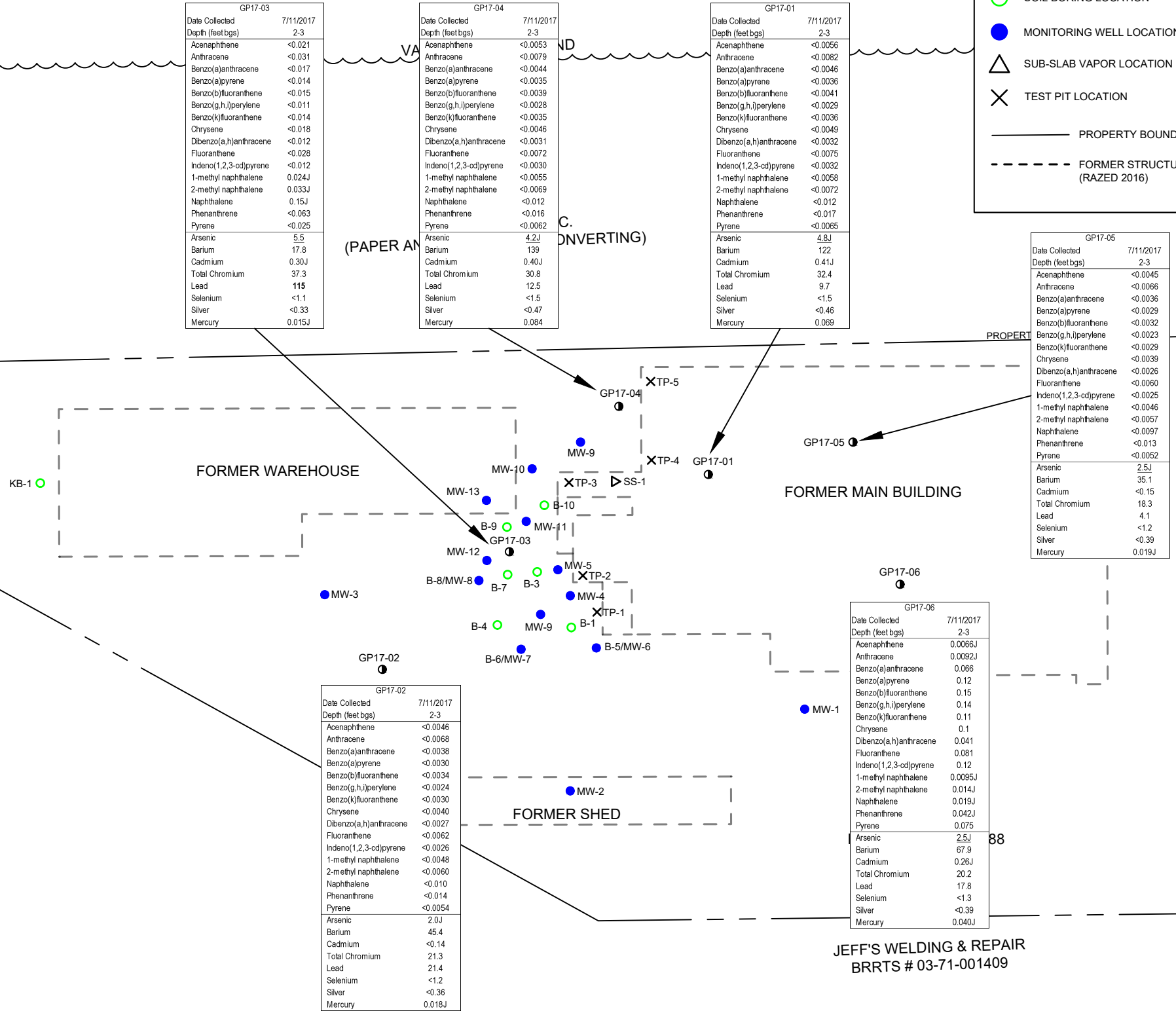
GP17-03	
Date Collected	7/11/2017
Depth (feet bgs)	2-3
Acenaphthene	<0.021
Anthracene	<0.031
Benzo(a)anthracene	<0.017
Benzo(a)pyrene	<0.014
Benzo(b)fluoranthene	<0.015
Benzo(g,h,i)perylene	<0.011
Benzo(k)fluoranthene	<0.014
Chrysene	<0.018
Dibenzo(a,h)anthracene	<0.012
Fluoranthene	<0.028
Indeno(1,2,3-cd)pyrene	<0.012
1-methyl naphthalene	0.024J
2-methyl naphthalene	0.033J
Naphthalene	0.15J
Phenanthrene	<0.063
Pyrene	<0.025
Arsenic	5.5
Barium	17.8
Cadmium	0.30J
Total Chromium	37.3
Lead	115
Selenium	<1.1
Silver	<0.33
Mercury	0.015J

GP17-04	
Date Collected	7/11/2017
Depth (feet bgs)	2-3
Acenaphthene	<0.0053
Anthracene	<0.0079
Benzo(a)anthracene	<0.0044
Benzo(a)pyrene	<0.0035
Benzo(b)fluoranthene	<0.0039
Benzo(g,h,i)perylene	<0.0028
Benzo(k)fluoranthene	<0.0035
Chrysene	<0.0046
Dibenzo(a,h)anthracene	<0.0031
Fluoranthene	<0.0072
Indeno(1,2,3-cd)pyrene	<0.0030
1-methyl naphthalene	<0.0055
2-methyl naphthalene	<0.0069
Naphthalene	<0.012
Phenanthrene	<0.016
Pyrene	<0.0062
Arsenic	4.2J
Barium	139
Cadmium	0.40J
Total Chromium	30.8
Lead	12.5
Selenium	<1.5
Silver	<0.47
Mercury	0.084

GP17-01	
Date Collected	7/11/2017
Depth (feet bgs)	2-3
Acenaphthene	<0.0056
Anthracene	<0.0082
Benzo(a)anthracene	<0.0046
Benzo(a)pyrene	<0.0036
Benzo(b)fluoranthene	<0.0041
Benzo(g,h,i)perylene	<0.0029
Benzo(k)fluoranthene	<0.0036
Chrysene	<0.0049
Dibenzo(a,h)anthracene	<0.0032
Fluoranthene	<0.0075
Indeno(1,2,3-cd)pyrene	<0.0032
1-methyl naphthalene	<0.0058
2-methyl naphthalene	<0.0072
Naphthalene	<0.012
Phenanthrene	<0.017
Pyrene	<0.0065
Arsenic	4.8J
Barium	122
Cadmium	0.41J
Total Chromium	32.4
Lead	9.7
Selenium	<1.5
Silver	<0.46
Mercury	0.069

GP17-05	
Date Collected	7/11/2017
Depth (feet bgs)	2-3
Acenaphthene	<0.0045
Anthracene	<0.0066
Benzo(a)anthracene	<0.0036
Benzo(a)pyrene	<0.0029
Benzo(b)fluoranthene	<0.0032
Benzo(g,h,i)perylene	<0.0023
Benzo(k)fluoranthene	<0.0029
Chrysene	<0.0039
Dibenzo(a,h)anthracene	<0.0026
Fluoranthene	<0.0060
Indeno(1,2,3-cd)pyrene	<0.0025
1-methyl naphthalene	<0.0046
2-methyl naphthalene	<0.0057
Naphthalene	<0.0097
Phenanthrene	<0.013
Pyrene	<0.0052
Arsenic	2.5J
Barium	35.1
Cadmium	<0.15
Total Chromium	18.3
Lead	4.1
Selenium	<1.2
Silver	<0.39
Mercury	0.019J

	Non-Industrial Direct Contact RCL (mg/kg)	Industrial Direct Contact RCL (mg/kg)	Protection of Groundwater RCL (mg/kg)	Background Threshold Value (mg/kg)
Acenaphthene	3,440	33,000	---	---
Anthracene	17,200	100,000	196.9492	---
Benzo(a)anthracene	0.147	2.1	---	---
Benzo(a)pyrene	0.015	0.211	0.47	---
Benzo(b)fluoranthene	0.148	2.11	0.4793	---
Benzo(g,h,i)perylene	---	---	---	---
Benzo(k)fluoranthene	1.48	21.1	---	---
Chrysene	14.8	211	0.1446	---
Dibenzo(a,h)anthracene	0.015	0.211	---	---
Fluoranthene	2,290	22,000	88.8778	---
Indeno(1,2,3-cd)pyrene	0.148	2.11	---	---
1-methyl naphthalene	15.6	53.1	---	---
2-methyl naphthalene	229	2,200	---	---
Naphthalene	5.15	26	0.6582	---
Phenanthrene	---	---	---	---
Pyrene	1,720	16,500	54.5455	---
Arsenic	0.613	2.39	0.584	8.0
Barium	15,300	100,000	164.8	364
Cadmium	70	799	0.752	1.0
Total Chromium	---	---	360,000	44
Lead	400	800	27	52
Selenium	391	5,110	0.52	---
Silver	391	5,110	0.8491	---
Mercury	3.13	3.13	0.208	---



GP17-02	
Date Collected	7/11/2017
Depth (feet bgs)	2-3
Acenaphthene	<0.0046
Anthracene	<0.0068
Benzo(a)anthracene	<0.0038
Benzo(a)pyrene	<0.0030
Benzo(b)fluoranthene	<0.0034
Benzo(g,h,i)perylene	<0.0024
Benzo(k)fluoranthene	<0.0030
Chrysene	<0.0040
Dibenzo(a,h)anthracene	<0.0027
Fluoranthene	<0.0062
Indeno(1,2,3-cd)pyrene	<0.0026
1-methyl naphthalene	<0.0048
2-methyl naphthalene	<0.0060
Naphthalene	<0.010
Phenanthrene	<0.014
Pyrene	<0.0054
Arsenic	2.0J
Barium	45.4
Cadmium	<0.14
Total Chromium	21.3
Lead	21.4
Selenium	<1.2
Silver	<0.36
Mercury	0.018J

GP17-06	
Date Collected	7/11/2017
Depth (feet bgs)	2-3
Acenaphthene	0.0066J
Anthracene	0.0092J
Benzo(a)anthracene	0.066
Benzo(a)pyrene	0.12
Benzo(b)fluoranthene	0.15
Benzo(g,h,i)perylene	0.14
Benzo(k)fluoranthene	0.11
Chrysene	0.1
Dibenzo(a,h)anthracene	0.041
Fluoranthene	0.081
Indeno(1,2,3-cd)pyrene	0.12
1-methyl naphthalene	0.0095J
2-methyl naphthalene	0.014J
Naphthalene	0.019J
Phenanthrene	0.042J
Pyrene	0.075
Arsenic	2.5J
Barium	67.9
Cadmium	0.26J
Total Chromium	20.2
Lead	17.8
Selenium	<1.3
Silver	<0.39
Mercury	0.040J

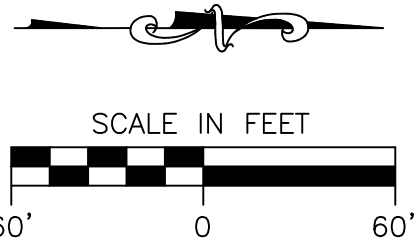


FIGURE 3
SOIL SAMPLING ANALYTICAL RESULTS MAP - PAHs & METALS
REALTY OPUS, 867 W. VALLEY RD
MENASHA, WISCONSIN

DESIGNED BY KMJ	DATE 8/7/17
DRAWN BY RJN	PROJECT SET: 1608-0053-0002
APPROVED BY KWW	SHEET NO.
CADFILE G:\Projects\1608-0053-002 Realty Opus Menasha\2017-7-14\Base Map.dwg	
XREF LMAN	

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Groundwater Analytical Table

Multi Storage LL Company
867 Valley Road
Menasha, Wisconsin

PARAMETERS	SAMPLE IDENTIFICATION		NR 140	
	GP17-01	GP17-02	ES	PAL
Date Collected	07/11/2017	07/11/2017	---	---
Detected VOCs (µg/l)				
Benzene	<0.50	<0.50	5	0.5
Bromobenzene	<0.23	<0.23	---	---
Bromochloromethane	<0.34	<0.34	---	---
Bromodichloromethane	<0.50	<0.50	0.6	0.06
Bromoform	<0.50	<0.50	4.4	0.44
Bromomethane	<2.4	<2.4	10	1
n-Butylbenzene	<0.50	<0.50	---	---
sec-Butylbenzene	<2.2	<2.2	---	---
tert-Butylbenzene	<0.18	<0.18	---	---
Carbon tetrachloride	<0.50	<0.50	5	0.5
Chlorobenzene	<0.50	<0.50	---	---
Chloroethane	<0.37	<0.37	400	80
Chloroform	<2.5	<2.5	6	0.6
Chloromethane	<0.50	<0.50	30	3
2-Chlorotoluene	<0.50	<0.50	---	---
4-Chlorotoluene	<0.21	<0.21	---	---
1,2-Dibromo-3-chloropropane	<2.2	<2.2	0.2	0.02
Dibromochloromethane	<0.50	<0.50	60	6
1,2-Dibromoethane	<0.18	<0.18	0.05	0.005
Dibromomethane	<0.43	<0.43	---	---
1,2,-Dichlorobenzene	<0.50	<0.50	600	60
1,3,-Dichlorobenzene	<0.50	<0.50	600	120
1,4,-Dichlorobenzene	<0.50	<0.50	75	15
Dichlorodifluoromethane	<0.22	<0.22	1000	200
1,1-Dichloroethane	<0.24	<0.24	850	85
1,2-Dichloroethane	<0.17	<0.17	5	0.5
1,1-Dichloroethene	<0.41	<0.41	7	0.7
cis-1,2,-Dichloroethene	<0.26	<0.26	70	7
trans-1,2-Dichloroethene	<0.26	<0.26	100	20
1,2-Dichloropropane	<0.23	<0.23	5	0.5
1,3-Dichloropropane	<0.50	<0.50	---	---
2,2 Dichloropropane	<0.48	<0.48	---	---
1,1-Dichloropropene	<0.44	<0.44	---	---
cis-1,3-Dichloropropene	<0.50	<0.50	0.4	0.04
trans-1,3 Dichloropropene	<0.23	<0.23	0.4	0.04
Diisopropyl ether	<0.50	<0.50	---	---
Ethylbenzene	<0.50	<0.50	700	140
Hexachloro-1,3-butadiene	<2.1	<2.1	---	---
Isopropylbenzene	<0.14	<0.14	---	---
p-Isopropyltoluene	<0.50	<0.50	---	---
Methylene Chloride	<0.23	<0.23	5	0.5
Methyl-tert-butyl ether	<0.17	<0.17	60	12
Naphthalene	<2.5	<2.5	100	10
n-Propylbenzene	<0.50	<0.50	---	---
Styrene	<0.50	<0.50	100	10
1,1,1,2-Tetrachloroethane	<0.18	<0.18	70	7
1,1,2,2-Tetrachloroethane	<0.25	<0.25	0.2	0.02
Tetrachloroethene	<0.50	<0.50	5	0.5
Toluene	<0.50	<0.50	800	160
1,2,3-Trichlorobenzene	<2.1	<2.1	---	---
1,2,4-Trichlorobenzene	<2.2	<2.2	70	14
1,1,1-Trichloroethane	<0.50	<0.50	200	40
1,1,2-Trichloroethane	<0.20	<0.20	5	0.5
Trichloroethene	<0.33	<0.33	5	0.5
Trichlorofluoromethane	<0.18	<0.18	3,490	698
1,2,3-Trichloropropane	<0.50	<0.50	60	12
1,2,4-Trimethylbenzene	<0.50	<0.50	---	---
1,3,5-Trimethylbenzene	<0.50	<0.50	---	---
Vinyl chloride	<0.18	<0.18	0.2	0.02
o/m&p-Xylene	<1.50	<1.50	2,000	400
PAHs (µg/l)				
Acenaphthene	0.0082J	<0.0061	---	---
Acenaphthylene	<0.0050	0.0078J	---	---
Anthracene	<0.010	<0.010	3,000	600
Benzo(a)anthracene	<0.0076	0.010J	---	---
Benzo(a)pyrene	<0.011	0.034J	0.2	0.02
Benzo(b)fluoranthene	<0.0057	0.049	0.2	0.02
Benzo(g,h,i)perylene	0.014J	0.040	---	---
Benzo(k)fluoranthene	<0.0076	0.036J	---	---
Chrysene	<0.013	0.054J	0.2	0.02
Dibenzo(a,h)anthracene	<0.010	<0.010	---	---
Fluoranthrene	0.011J	0.070	400	80
Fluorene	<0.0080	<0.0080	400	80
Indeno(1,2,3-cd)pyrene	<0.018	0.028J	---	---
1-Methyl Naphthalene	0.041	0.013J	---	---
2-Methyl Naphthalene	0.059	0.019J	---	---
Naphthalene	0.036J	0.026J	100	10
Phenanthrene	0.028J	0.036J	---	---
Pyrene	0.018J	0.076	250	50
RCRA Metals (ug/l)				
Arsenic	<8.3	<8.3	10	1
Barium	80.0	80.7	2,000	400
Cadmium	<1.3	<1.3	5	0.5
Total Chromium	<2.5	<2.5	100	10
Lead	<4.3	<4.3	15	1.5
Selenium	<16.6	<16.6	50	10
Silver	<3.3	<3.3	50	10
Mercury	<0.13	<0.13	2	0.2

Notes:

Bold concentrations exceed NR 140 ES

Italicized concentrations exceed NR 140 PAL

--- - not analyzed, not applicable or no standard established

ES - enforcement standard

J - Results between the limit of detection and limit of quantitation

PAHs - polynuclear aromatic hydrocarbons

PAL - preventive action limit

µg/l - micrograms per liter

VOCs - volatile organic compounds