

GENERAL INSTRUCTIONS, PURPOSE AND APPLICABILITY OF THIS FORM: Completion of this form is required under s. NR 724.13(3), Wis. Adm. Code. A narrative report or letter containing the equivalent information required in this form may be submitted in lieu of the actual form. Failure to submit this form as required is a violation of s. NR 724.13(3), Wis. Adm. Code, and is subject to the penalties in s. 292.99, Wis. Stats. This form must be submitted every six months for soil or groundwater remediation projects that report operation and maintenance progress in accordance with s. NR 724.13(3), Wis. Adm. Code.

Note: Long-term monitoring results submitted in accordance with s. NR 724.17(3), Wis. Adm. Code are required to be submitted within 10 business days of receiving sampling results and are not required to be submitted using this form. However, portions of this form require monitoring data summary information that may be based on information previously submitted in accordance with s. NR 724.17(3), Wis. Adm. Code.

Note: Responsible parties should check with the State Project Manager assigned to the site to determine if this form is required to be submitted at sites responded to under the Federal Comprehensive Environmental Response and Compensation Act (commonly known as Superfund) or an equivalent State lead Superfund response.

Note: Responsible parties should check with the State Project Manager assigned to the site to determine if any of the information required in this form may be omitted or changed and obtain prior written approval for any omissions or changes.

Submission of this form is not a substitute for reporting required by Department programs such as Waste Water or Air Management. Personally identifiable information on this form is not intended to be used for any other purpose than tracking progress of the remediation by the Bureau for Remediation and Redevelopment.

Personal information collected will be used for administrative purposes and may be provided to requesters to the extent required by Wisconsin's Open Records Law (ss. 19.31-19.39, Wis. Stats.). Unless otherwise noted, all citations refer to Wisconsin Administrative Code.

Note: There is a separate semi-annual report required under s. NR 700.11(1), Wis. Adm. Code. Reporting under that provision is through an internet-based form:

<http://dnr.wi.gov/topic/Brownfields/documents/regs/NR700progreport.pdf>

Section GI - General Site Information

A. General Information

1. Site name
 Milwaukee Fabricare

2. Reporting period from: 01/01/2017 To: 12/31/2017 Days in period: 365

3. Regulatory agency (enter DNR, DATCP and/or other) 4. BRRTS ID No. (2 digit program-2 digit county-6 digit site specific)
 DNR 02-41-548258

5. Site location

Region	County	Address					
Southeast Region	Milwaukee	4419 W. Fond du Lac Ave					
Municipality name <input checked="" type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village		Township	Range	<input checked="" type="radio"/> E <input type="radio"/> W	Section	¼	¼ ¼
Milwaukee		07 N	21	OW	11	NE	SE

6. Responsible party

Name	7. Consultant		
Gregg Margulis	<input type="checkbox"/> Select if the following information has changed since the last submittal		
Mailing address	Company name		
3637 W. Sherbrooke Drive Mequon, WI 53092	KPRG and Associates, Inc		
Phone number	Mailing address	Phone number	
(262) 242-1215	14665 W. Lisbon Rd, Suite 1A Brookfield, WI 53005	(262) 781-0475	

8. Contaminants
 Tetrachloroethene (PCE)

9. Soil types (USCS or USDA)
 Clay and sand, followed by silty clay, with clay beneath that

10. Hydraulic conductivity(cm/sec): 1.094 x 10⁻⁷ to 4.233 x 10⁻⁷
 11. Average linear velocity of groundwater (ft/yr) 0.00646 to 0.0427

12. If soil is treated ex situ, is the treatment location off site? Yes No

If yes, give location: Region _____ County _____

Municipality name <input type="radio"/> City <input type="radio"/> Town <input type="radio"/> Village	Township	Range	<input type="radio"/> E <input type="radio"/> W	Section	¼	¼ ¼
	N		OW			

Site name: Milwaukee Fabricare

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Days in period: 365

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B. Remediation Method

Only submit sections that apply to an individual site. Check all that apply:

- Groundwater extraction (submit a completed Section GW-1).
- Free product recovery (submit a completed Section GW-1).
- In situ air sparging (submit a completed Section GW-2).
- Groundwater natural attenuation (submit a completed Section GW-3).
- Other groundwater remediation method (submit a completed Section GW-4).
- Soil venting (including soil vapor extraction building venting and bioventing submit a completed Section IS-1).
- Soil natural attenuation (submit a completed Section IS-2).
- Other in situ soil remediation method (submit a completed Section IS-3).
- Biopiles (submit a completed Section ES-1).
- Landspreading/thinspreading of petroleum contaminated soil (submit a completed Section ES-2).
- Other ex situ remediation method (submit a completed Section ES-3).
- Site is a landfill (submit a completed Section LF-1).

C. General Effectiveness Evaluation for All Active Systems

If the remediation is active (not natural attenuation), complete this subsection.

1. Is the system operating at design rates and specifications? Yes No

If the answer is no, explain whether or not modifications are necessary to achieve the goal that was previously established in design.

2. Are modifications to the system warranted to improve effectiveness Yes No

If yes, explain:

3. Is natural attenuation an effective low cost option at this time? Yes No

4. Is closure sampling warranted at this time? Yes No

5. Are there any modifications that can be made to the remediation to improve cost effectiveness? Yes No

If yes, explain:

D. Economic and Cost Data to Date

1. Total investigation cost: \$64,806.00

2. Implementation costs (design, capital and installation costs, excluding investigation costs): \$295,665.18

3. Total costs during the previous reporting period: \$160,625.74

4. Total costs during this reporting period: \$199,845.44

5. Total anticipated costs for the next reporting period: \$6,000.00

6. Are any unusual or one-time costs listed in the reporting periods covered by D.3., D.4. or D.5. above? Yes No

If yes, explain:

7. If closure is anticipated within 12 months, estimated costs for project closeout: _____

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Reporting period from: 01/01/2017 To: 12/31/2017

Days in period: 365

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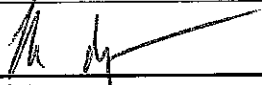
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E: Name(s), Signature(s) and Date of Person(s) Submitting Form

Legibly print name, date and sign. Only persons qualified to submit reports under ch. NR 712 Wis. Adm. Code are to sign this form for sites with any ongoing active remediation, monitoring or an investigation. Other persons may sign this form for sites with no response activities during the six month reporting period.

Registered Professional Engineers:

I hereby certify that I am a registered professional engineer in the State of Wisconsin, registered in accordance with the requirements of ch. A-E 4, Wis. Adm. Code; that this document has been prepared in accordance with the rules of Professional Conduct in ch. A-E 8, Wis. Adm. Code; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Print name	Title
Josh Davenport	Senior Engineer
Signature 	Date
	1/11/19

Hydrogeologists:

I hereby certify that I am a hydrogeologist as that term is defined in s. NR 712.03(1), Wis. Adm. Code, and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Print name	Title
Signature	Date

Scientists:

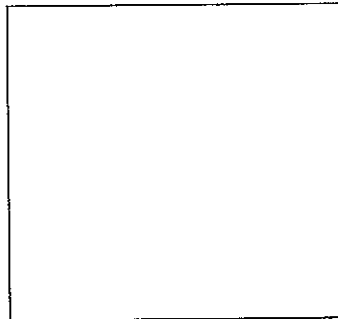
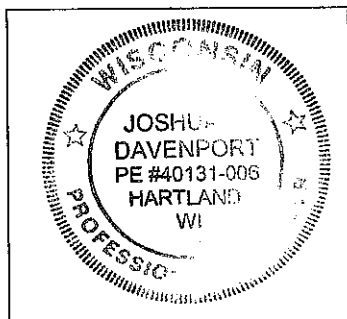
I hereby certify that I am a scientist as that term is defined in s. NR 712.03(3), Wis. Adm. Code, and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements in chs. NR 700 to 726, Wis. Adm. Code.

Print name	Title
Signature	Date

Other Persons:

Print name	Title
Signature	Date

Professional Seal(s), if applicable:



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Days in period: 365

Section GW-4. Other Groundwater Remediation Methods

A. Effectiveness Evaluation

1. If free product is not present, determine the single contaminant that requires the greatest percent reduction to achieve ch. NR 140 ES and PAL. Perform this calculation for all contaminants that were present at the site that have ch. NR 140 standards. Use the highest contaminant concentration measured in any sampling points during reporting period. If free product is present, write "FREE PRODUCT" in A.1.a.

a. Contaminant: Tetrachloroethene

b. Percent reduction necessary: 99.83 %

c. Maximum contaminant concentration level in any monitoring well: 2,970 µg/L

2. Is the size of the plume: Increasing Stabalized Decreasing ?

3. Describe the method used to remediate groundwater at the site:

The injections were performed using direct push technology (DPT) on June 19-21, 2017. The injection consisted of 28 injection points spaced approximately 10 feet apart with an injection interval of 7-20 feet below ground surface (bgs) for each point. Each point consisted of driving geoprobe rods to approximately twenty feet below ground surface (bgs) where the injection was started. The rods were raised in one foot intervals to seven feet below ground surface until all the injectate was injected into the formation.

Back pressure was encountered during the injection event. As a result, adjustments were made to the injection solution to minimize the back pressure and the quantity of injection solution being pushed up the injection bore hole. The adjustment consisted of reducing the volume of water and increasing the injectate concentration. Therefore, eleven of the injection points were injected with 145 gallons of 12% ABC+ and zero valent iron, fifteen injection points were injected with 75 gallons of 24% ABC+ and zero valent iron, and two points were injected with 150 gallons of 24% ABC+ and zero valent iron (further discussion of these two points is below). The same quantity of ABC+ and zero valent iron were injected; only the volume of water was reduced to minimize back pressure. A total of 3,020 gallons of ABC+ and zero valent iron solution were injected.

The remediation proposal proposed a total of 30 injection points, however only 28 injection points were performed. Two injection points were eliminated due to the location of underground utilities. The injectate volume for the eliminated points was added to the adjacent injection points.

Monitoring of each injection point and the ambient air did not identify any adverse conditions. As a result, the injection was able to proceed without incident.

4. List any additional information required by the DNR for this method for this site:

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B. Additional Attachments

Attach the following:

- Groundwater contour map.
- Groundwater contaminant distribution map (may be combined with contour map).
- When contaminants are aerobically biodegradable, attach a dissolved oxygen in groundwater map (dissolved oxygen may be combined with the contaminant data on a single map).
- Graph of contaminant concentrations versus time for the contaminant listed in A.1.a. (above) for the monitoring point with the greatest level of contamination.
- Groundwater contaminant chemistry table.
- Groundwater elevations table.
- Any other attachments required by the DNR for this remediation method.

Section IS-3, Other In Situ Soil Remediation Methods

A. Effectiveness Evaluation

1. Describe the method used to remediate soil at the site:

The unsaturated soil at the site was treated with sodium permanganate through subsurface injection.

The injections were performed using direct push technology (DPT) on March 15, 16, and 20, 2017. The injection consisted of 82 injection points spaced approximately 6 feet apart with an injection interval of 0-8 feet below ground surface (bgs) for each point. Each point consisted of driving geoprobe rods to approximately eight feet below ground surface (bgs) where the injection was started. The rods were raised in one foot intervals to as close to the ground surface as possible until all the injectate was injected. Each point was injected with 80 gallons of a 6.5% sodium permanganate solution for a total of 6,660 gallons of sodium permanganate solution injected.

The remediation proposal proposed a total of 84 injection points, however only 82 injection points were performed. Two injection points were eliminated due to space and equipment restrictions. The injectate for the eliminated points was added to the adjacent injection points.

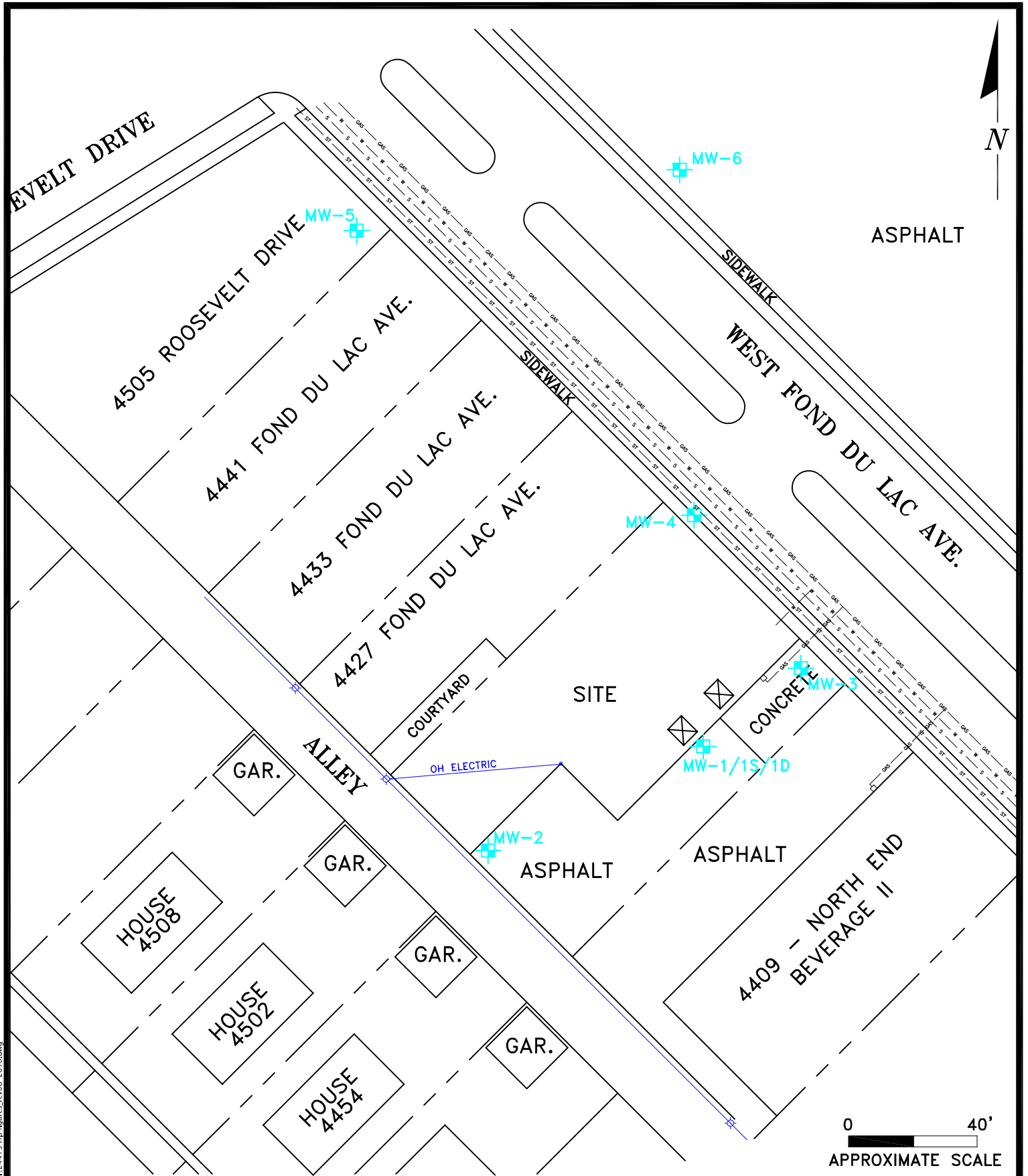
Monitoring of each injection point and the ambient air did not identify any adverse conditions. As a result, the injection was able to proceed without incident.

2. List all information required by the DNR for this remediation method for this site:

B. Additional Attachments

Attach the following to this form:

- Any other attachments required by the DNR for this remediation method.



ENVIRONMENTAL CONSULTATION & REMEDIATION

K P R G

KPRG and Associates, inc.

14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

414 Plaza Drive, Suite 106 Westmont, Illinois 60559 Telephone 630-325-1300 Facsimile 630-325-1593

SITE MAP

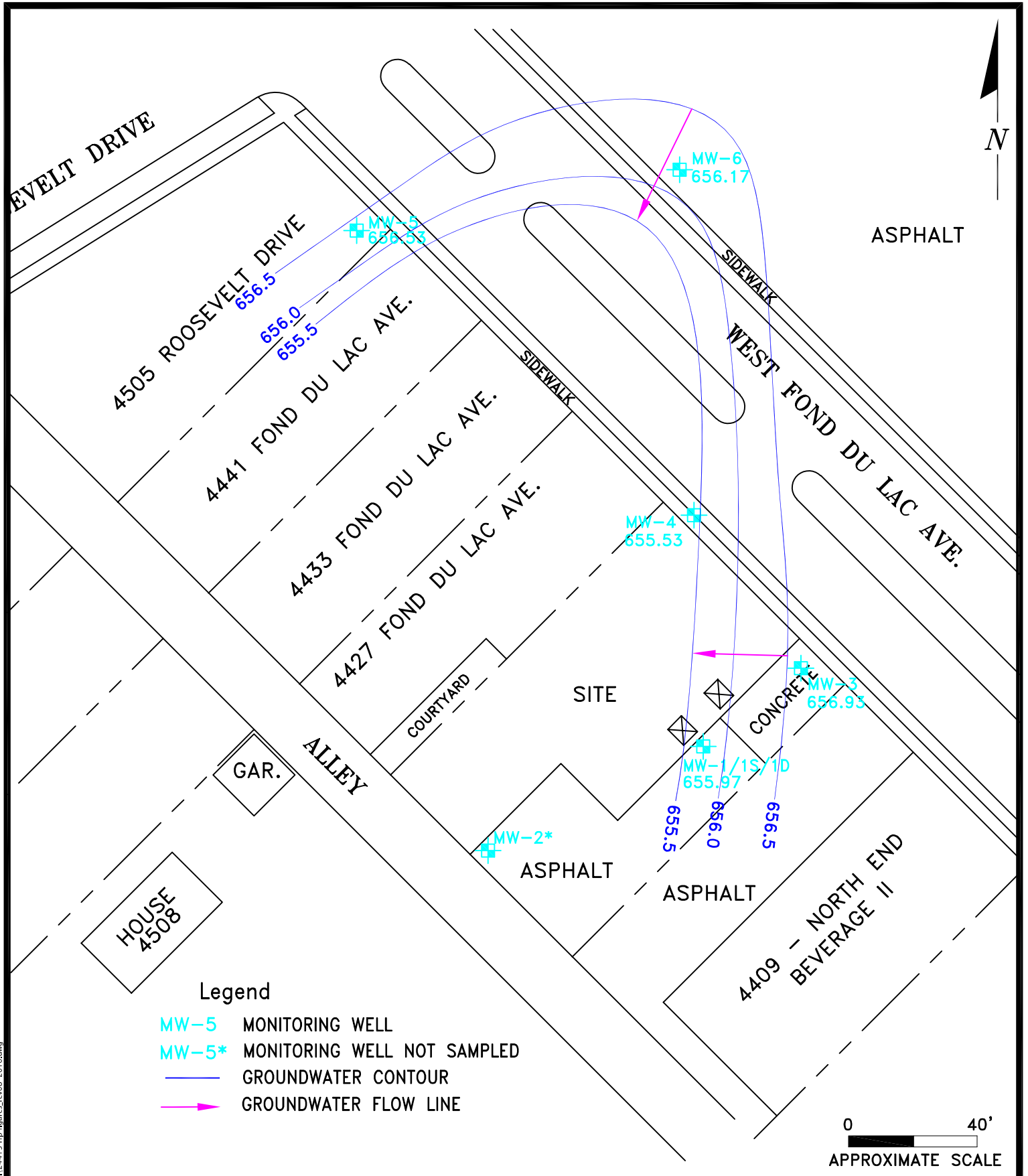
MILWAUKEE FABRICARE, INC.
4419 WEST FOND DU LAC AVENUE

Scale: 1" = 40'

Date: October 12, 2018

KPRG Project No. 24413

FIGURE 1



ENVIRONMENTAL CONSULTATION & REMEDIATION

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14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

414 Plaza Drive, Suite 106 Westmont, Illinois 60559 Telephone 630-325-1300 Facsimile 630-325-1593

GROUNDWATER FLOW MAP
November 2017

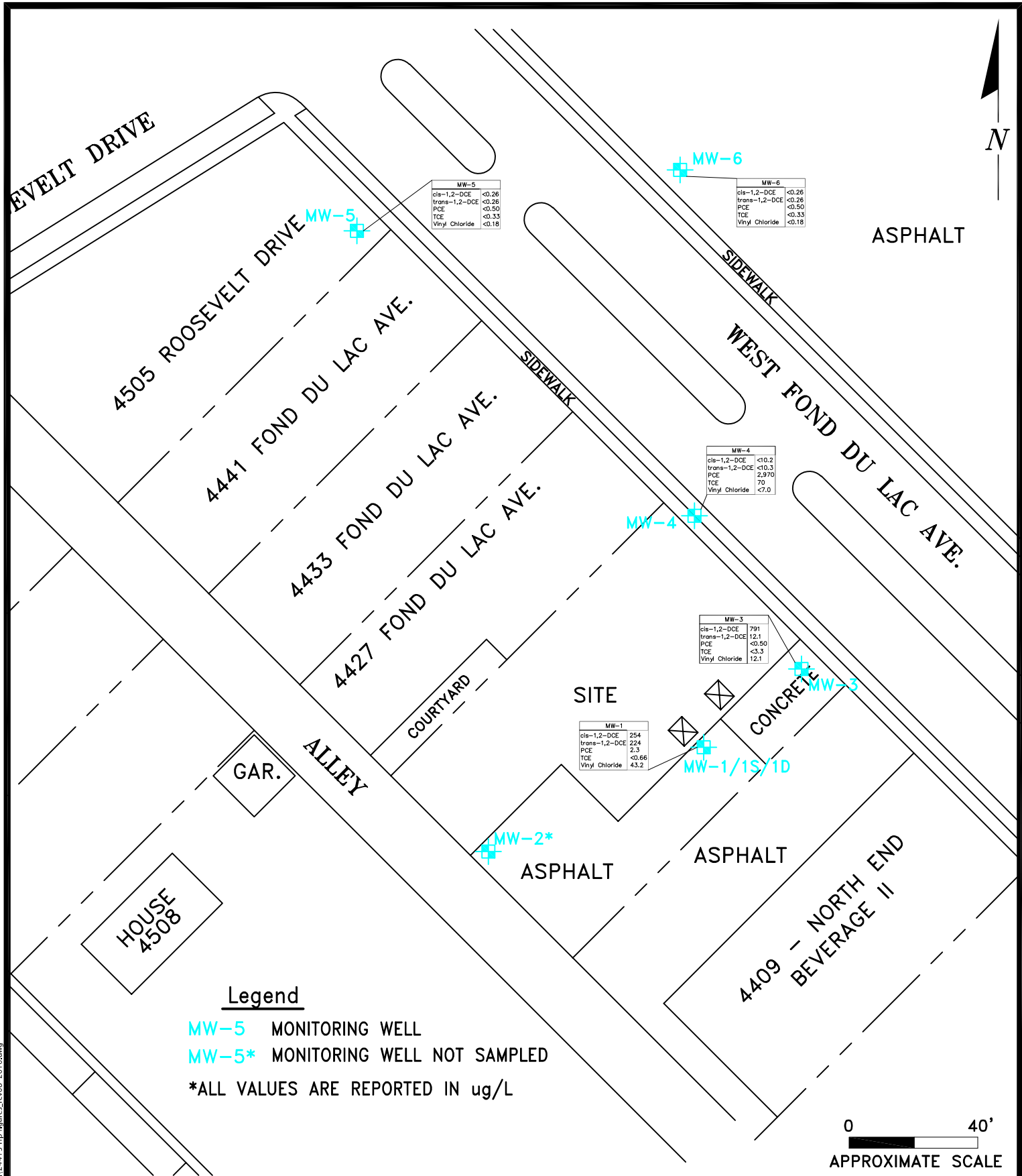
MILWAUKEE FABRICARE, INC.
4419 WEST FOND DU LAC AVENUE

Scale: 1" = 40'

Date: October 12, 2018

KPRG Project No. 24413

FIGURE 2



ENVIRONMENTAL CONSULTATION & REMEDIATION

K P R G

KPRG and Associates, inc.

14665 West Lisbon Road, Suite 2B Brookfield, Wisconsin 53005 Telephone 262-781-0475 Facsimile 262-781-0478

414 Plaza Drive, Suite 106 Westmont, Illinois 60559 Telephone 630-325-1300 Facsimile 630-325-1593

Groundwater Contaminant Distribution Map
November 20, 2017

MILWAUKEE FABRICARE, INC.
4419 WEST FOND DU LAC AVENUE

Scale: 1" = 40'

Date: October 12, 2018

KPRG Project No. 24413

FIGURE 3

Figure 4. Section GW-4. Graph of Contaminant Concentration Versus Time

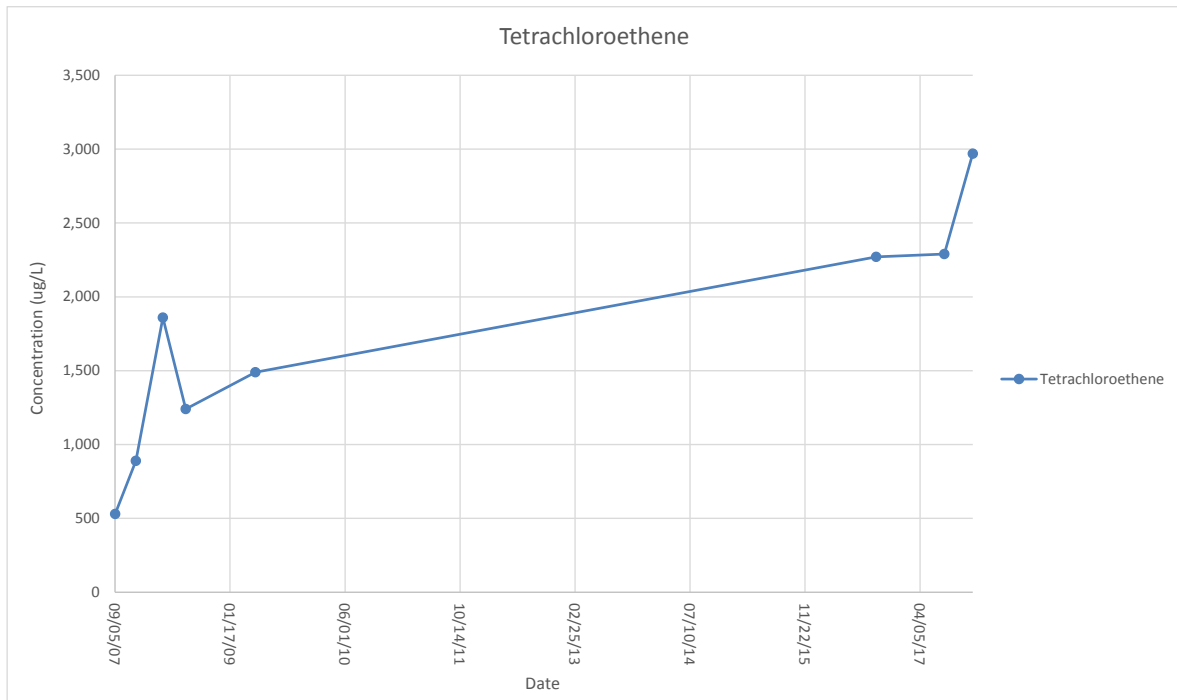


Table 1. Summary of Groundwater Analytical Results for Detected CVOC's - Milwaukee Fabricare, Milwaukee, WI

Parameter Name	ES	PAL	B-4 / W	B-7 / W	MW-1								
			08/30/06	08/16/07	09/05/07	12/05/07	03/31/08	07/09/08	05/07/09	01/27/11	09/26/16	07/19/17	11/20/17
Chloromethane	3.0	0.3	0.44 J	<0.24	<1.2	<2.4	<4.8	<2.4	<2.4	<u>12.2J</u>	NA	<100	<1.0
cis-1,2-Dichloroethene	70	7.0	<0.50	12	<4.1	<8.3	28.4	11.6	10.7	<16.6	55.0	<u>24000</u>	254.0
trans-1,2-Dichloroethene	100	20	<0.50	1.7	<4.4	<8.9	<17.8	<8.9	<8.9	<17.8	7.0 J	454	224
Tetrachloroethene	5.0	0.5	36	1.9	<u>1.400</u>	<u>970</u>	<u>2,460</u>	<u>1,190</u>	<u>2,040</u>	<u>1,280</u>	<u>1,590</u>	<u><100</u>	2.3
Trichloroethene	5.0	0.5	<0.20	2.1	<u>16</u>	<u>12</u>	<u>85</u>	<u>33</u>	<u>50</u>	<u>55</u>	<u>82</u>	<66.1	<0.66
Vinyl chloride	0.2	0.02	<0.20	<0.18	<0.90	<1.8	<3.6	<1.8	<1.8	<3.6	<3.5	<35.1	<u>43.2</u>

Parameter Name	ES	PAL	MW-1S		MW-1D						
			01/27/11	09/27/16	09/05/07	12/05/07	03/31/08	07/09/08	05/07/09	01/27/11	09/26/16
Chloromethane	3.0	0.3	3.0	NA	<1.2	<2.4	<0.24	0.28 J	<0.24	<0.24	NA
cis-1,2-Dichloroethene	70	7.0	<0.83	<0.26	<0.83	<0.83	<0.83	<0.83	<0.83	<0.83	<0.26
trans-1,2-Dichloroethene	100	20	<0.89	<0.26	<0.89	<0.89	<0.89	<0.89	<0.89	<0.89	<0.26
Tetrachloroethene	5.0	0.5	0.84J	0.66 J	3.2	<u>5.6</u>	2.5	2.0	3.3	2.1	1.1
Trichloroethene	5.0	0.5	<0.48	<0.33	<0.48	<u><0.48</u>	<0.48	<0.48	<0.48	<0.48	<0.33
Vinyl chloride	0.2	0.02	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18

Parameter Name	ES	PAL	MW-2						MW-3							
			09/05/07	12/05/07	03/31/08	07/09/08	05/07/09	09/26/16	09/05/07	12/05/07	03/31/08	07/09/08	05/07/09	09/26/16	07/19/17	11/20/17
Chloromethane	3.0	0.3	<0.24	NS	<0.24	<0.24	<0.24	NA	<0.24	<0.24	<0.24	<0.24	<0.24	NA	<2.5	<5.0
cis-1,2-Dichloroethene	70	7.0	<0.83	NS	<0.83	<0.83	<0.83	<0.26	0.88	<0.83	0.84 J	1.0	<0.83	25.7	33.5	791
trans-1,2-Dichloroethene	100	20	<0.89	NS	<0.89	<0.89	<0.89	<0.26	<0.89	<0.89	<0.89	<0.89	<0.89	0.57 J	<1.3	12.1
Tetrachloroethene	5.0	0.5	0.75	NS	1.5	1.2	1.0	2.7	<u>120</u>	<u>120</u>	<u>139</u>	<u>109</u>	<u>77.8</u>	<u>80.4</u>	<u>54.1</u>	<5.0
Trichloroethene	5.0	0.5	<0.48	NS	<0.48	<0.48	<0.48	0.66 J	<u>6.1</u>	<u>5.1</u>	<u>6.5</u>	<u>6.3</u>	<u>2.5</u>	<u>17.2</u>	<u>20.3</u>	<3.3
Vinyl chloride	0.2	0.02	<0.18	NS	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18	<0.88	<u>12.1</u>

Parameter Name	ES	PAL	MW-4							MW-5				MW-6				
			09/05/07	12/05/07	03/31/08	07/09/08	05/07/09	09/26/16	07/19/17	11/20/17	05/07/09	09/26/16	07/19/17	11/20/17	05/07/09	09/26/16	07/19/17	11/20/17
Chloromethane	3.0	0.3	<0.24	<2.4	<2.4	<2.4	<1.2	NA	<20.0	<20.0	2.0	NS	<0.50	2.1	<0.24	NS	<0.50	<0.50
cis-1,2-Dichloroethene	70	7.0	8.4	9.0	<8.3	10.1	10.1	<10.2	<10.2	<10.2	<0.83	NS	<0.26	<0.26	<0.83	NS	<0.26	<0.26
trans-1,2-Dichloroethene	100	20	<4.4	<8.9	<8.9	<8.9	<4.4	<10.3	<10.3	<10.3	<0.89	NS	<0.26	<0.26	<0.89	NS	<0.26	<0.26
Tetrachloroethene	5.0	0.5	<u>530</u>	<u>890</u>	<u>1,860</u>	<u>1,240</u>	<u>1,490</u>	<u>2,270</u>	<u>2,290</u>	<u>2,970</u>	<0.45	NS	<0.50	<0.50	<0.45	NS	<0.50	<0.50
Trichloroethene	5.0	0.5	<u>79</u>	<u>92</u>	<u>136</u>	<u>117</u>	<u>97</u>	<u>75</u>	<u>67</u>	<u>70</u>	<0.48	NS	<0.33	<0.33	<0.48	NS	<0.33	<0.33
Vinyl chloride	0.2	0.02	<0.18	<1.8	<1.8	<1.8	<0.90	<7.0	<7.0	<7.0	<0.18	NS	<0.18	<0.18	<0.18	<0.18	<0.18	<0.18

Note: All values are in ug/L
Bold - Exceeds WI NR 140 ES (Enforcement Standard)
Bold - Exceeds WI NR 140 PAL (Preventive Action Limit)
 NA - Not Analyzed
 NS - Not Sampled, well not accessible at time of sampling

Table 2. Water Level Elevation Table - Milwaukee Fabricare

WELL	Elev USGS Datum	9/5/2007		12/5/2007		3/31/2008		7/9/2008	
		Depth to Water	Water Elev	Depth to Water	Water Elev	Depth to Water	Water Elev	Depth to Water	Water Elev
MW-1	663.43	5.33	658.10	6.45	656.98	5.12	658.31	6.26	657.17
MW-1S	663.53*	NI	NI	NI	NI	NI	NI	NI	NI
MW-1D	663.62	10.61	653.01	10.87	652.75	19.00	644.62	16.42	647.20
MW-2	662.85	5.43	657.42	NM	NM	4.15	658.70	5.08	657.77
MW-3	662.79	5.54	657.25	5.78	657.01	5.70	657.09	5.70	657.09
MW-4	662.92	6.82	656.10	7.60	655.32	6.63	656.29	7.21	655.71
MW-5	663.64	NI	NI	NI	NI	NI	NI	NI	NI
MW-6	662.95	NI	NI	NI	NI	NI	NI	NI	NI

WELL	Elev USGS Datum	5/7/2009		1/27/2011		9/10/2013		9/27/2016	
		Depth to Water	Water Elev	Depth to Water	Water Elev	Depth to Water	Water Elev	Depth to Water	Water Elev
MW-1	663.43	5.03	658.40	6.65	656.78	6.99	656.44	6.09	652.31
MW-1S	663.53*	NI	NI	16.11	647.42	9.12	654.41	7.49	656.04
MW-1D	663.62	22.61	641.01	16.22	647.40	10.91	652.71	10.84	630.17
MW-2	662.85	4.45	658.40	NS	NS	5.15	657.70	4.81	653.59
MW-3	662.79	4.91	657.88	NS	NS	5.95	656.84	5.87	652.01
MW-4	662.92	7.30	655.62	NS	NS	8.12	654.80	7.51	648.11
MW-5	663.64	4.67	658.97	NS	NS	7.50	656.14	6.71	652.26
MW-6	662.95	5.50	657.45	NS	NS	6.95	656.00	NM	NM

WELL	Elev USGS Datum	7/19/2017		11/20/2017	
		Depth to Water	Water Elev	Depth to Water	Water Elev
MW-1	663.43	5.34	658.09	7.46	655.97
MW-1S	663.53*	NM	NM	NM	NM
MW-1D	663.62	NM	NM	NM	NM
MW-2	662.85	NM	NM	4.23	658.62
MW-3	662.79	6.27	656.52	6.46	656.33
MW-4	662.92	7.09	655.83	7.39	655.53
MW-5	663.64	6.68	656.96	7.11	656.53
MW-6	662.95	5.91	657.04	6.78	656.17

Notes: All Depths are in feet below top of casing. All Elevations are in feet above mean sea level.

NI - Not Installed

NM - Not Measured, well not accessible at time of sampling

* - Well elevation is approximate, top of casing is not surveyed