

**From:** [Symons, Brian D](#)  
**To:** [Sager, John E - DNR](#)  
**Cc:** [Saari, Christopher A - DNR](#); [Waite, Brian A - DNR](#); [Krul, Steve](#); [Kramka, Larry](#); [Jamie Mehle \(SWLP\)](#); [Joscelyn Skandel \(SWLP\)](#); [Gregory Prom \(MP\)](#)  
**Subject:** RE: [External] Remedial Action Construction Completion  
**Date:** Wednesday, May 29, 2024 10:19:53 AM  
**Attachments:** [MW-4B Well Construction Form.pdf](#)  
[As-Built Drawing B-5 Cross Sections Former Hortonsphere As-Built.pdf](#)

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Foth investigated the well construction at MW-4B, discussed this with Heather Hallett (Foth Project Geologist), and determined that the well was installed consistent with WDNR comments. After reviewing the MW-4B Well Construction Form (attached), Foth determined that the groundwater monitoring well construction shown on As-Built Drawing B-5 was not correct. Attached is a revised version of As-Built Drawing B-5 - Cross Sections Former Hortonsphere for your reference.

SWL&P and Foth are still considering your request for additional site investigation, the scope of such an investigation (e.g., field screening, soil borings, groundwater monitoring wells), and the potential timing for that investigation. SWL&P's response to those comments will be provided in a separate response.

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**From:** Sager, John E - DNR <John.Sager@wisconsin.gov>  
**Sent:** Wednesday, May 29, 2024 10:41 AM  
**To:** Gregory Prom (MP) <gprom@mnpower.com>  
**Cc:** Saari, Christopher A - DNR <christopher.saari@wisconsin.gov>; Waite, Brian A - DNR <brian.waite@wisconsin.gov>; Krul, Steve <Steve.Krul@foth.com>; Kramka, Larry <Larry.Kramka@foth.com>; Symons, Brian D <Brian.Symons@Foth.com>; Jamie Mehle (SWLP) <JMehle@swlp.com>; Joscelyn Skandel (SWLP) <jskandel@swlp.com>  
**Subject:** [External] Remedial Action Construction Completion

Greg,

This email is a follow-up to our call on May 15, 2024 regarding the Upland Remedial Action Construction Completion report submitted for the SWL&P MGP site. Below are some comments concerning the remedial action construction that we discussed:

The excavation of the Horton sphere area has shown significant migration of contamination into the Miller Creek formation clay. This contradicts Foth's assertion that the low permeability of the Miller Creek prevented migration of contamination into the Miller Creek formation. As a result the conceptual site model used to facilitate design of the remedial action appears in need of modification. Additional site investigation is necessary to determine

the degree and extent of contamination that has migrated into the Miller Creek formation in the area and down gradient of the former Horton sphere and potentially in other areas of the site. This is a requirement of Wisconsin Administrative Code ch. NR 716. Investigation and potentially evaluation of remediation options will be necessary prior to closure of the site. We discussed various ways this additional investigation may be conducted due to the heavy use of the properties involved. This may include an initial investigation using in situ screening. This may need to be followed up with additional permanent monitoring wells to determine degree and extent of contamination. We also discussed timing of the additional investigation. Waiting until additional information is gathered from the remedial action system prior to conducting additional investigation may be acceptable but this issue should be addressed as soon as practical. Also, considering the new information concerning migration of contaminants into the Miller Creek formation, SWL&P should reassess other areas of the site to determine if additional investigation is needed. The DNR expects a work plan be submitted as soon as practical to address the above.

The groundwater sample results presented during the meeting included results from the replacement monitoring well MW-4B. This well appears to have been installed with its screened interval and filter pack extending into the ORC amended backfill for the Horton sphere excavation. It is our opinion this situation could allow groundwater, treated with ORC to enter the filter pack and screen of the well. Based on our previous discussions and comments expressed by the DNR in previous letters, the DNR expected this well be installed below the excavation and ORC backfill to evaluate groundwater contaminant concentrations vertically. With the investigation activities discussed above the DNR expects a piezometer be installed at the location of MW-4B (and potentially other areas of the site) to evaluate the vertical extent of contamination. This work could be conducted following an initial assessment.

Please contact me if you have any questions.

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John Sager

Hydrogeologist – Remediation and Redevelopment Program

Wisconsin Department of Natural Resources

1701 N. 4<sup>th</sup> St.

Superior, WI 54880

Phone: (715) 919-7239

[john.sager@wisconsin.gov](mailto:john.sager@wisconsin.gov)



[dnr.wi.gov](http://dnr.wi.gov)



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Route To: Watershed/Wastewater  Waste Management   
Remediation/Redevelopment  Other

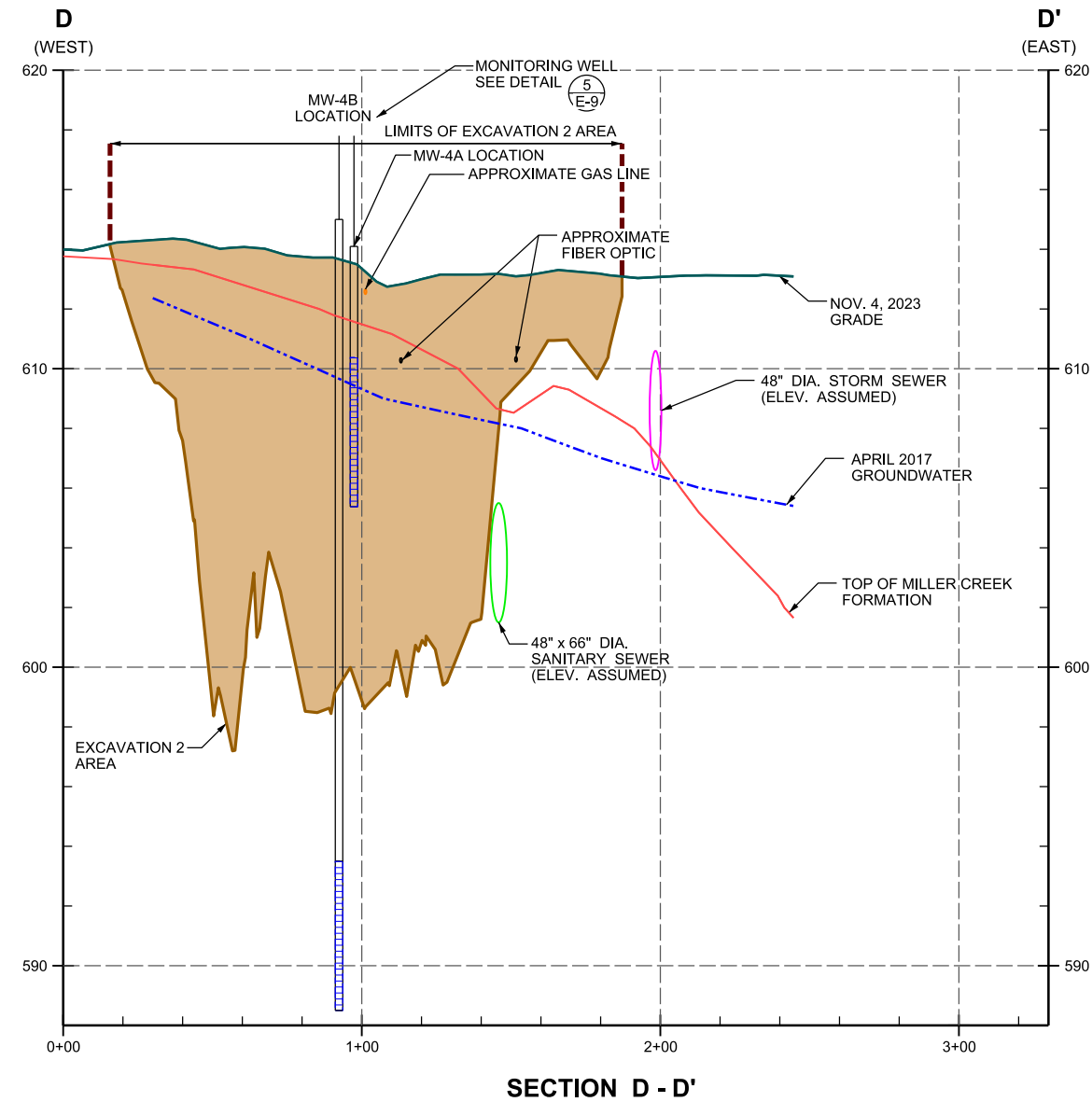
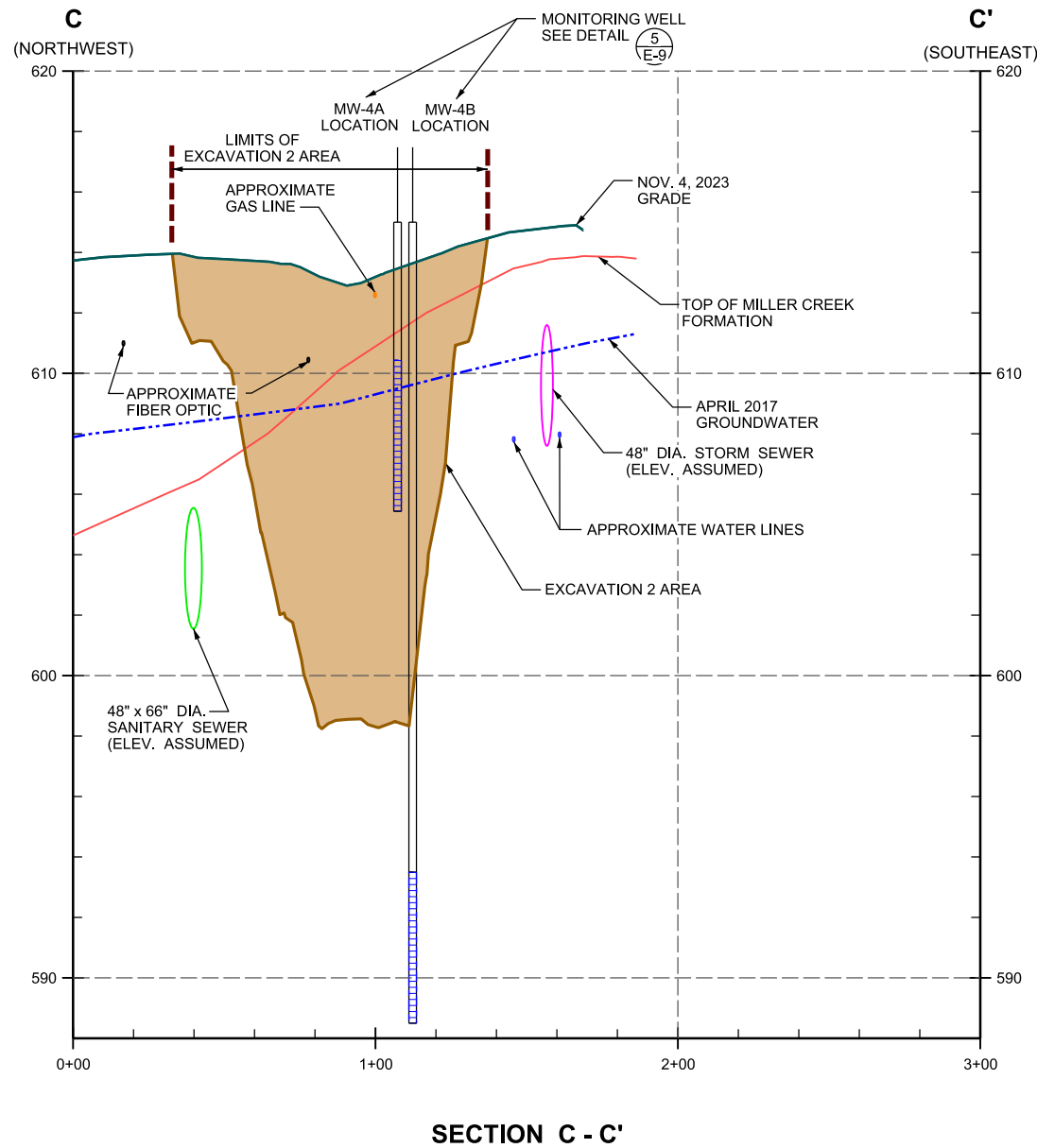
Facility/Project Name Superior Water Light and Power		Local Grid Location of Well _____ ft. <input type="checkbox"/> N. _____ ft. <input type="checkbox"/> E. <input type="checkbox"/> S. _____ ft. <input type="checkbox"/> W.		Well Name <b>MW-4B</b>	
Facility License, Permit or Monitoring No. 02-16-275446		Local Grid Origin <input type="checkbox"/> (estimated: <input type="checkbox"/> ) or Well Location <input checked="" type="checkbox"/> Lat. _____ " Long. _____ " or		Wis. Unique Well No. <b>WD998</b> DNR Well Number _____	
Facility ID		St. Plane <u>307,962.70</u> ft. N, <u>154,084.22</u> ft. E. S/C/N		Date Well Installed 08/03/2023	
Type of Well		Section Location of Waste/Source _____ 1/4 of _____ 1/4 of Sec. _____, T. _____ N, R. _____ <input type="checkbox"/> E <input type="checkbox"/> W		Well Installed By: (Person's Name and Firm) Todd Schmalfeldt	
Distance from Waste/ Source 0 ft.	Enf. Stds. Apply <input type="checkbox"/>	Location of Well Relative to Waste/Source u <input type="checkbox"/> Upgradient s <input type="checkbox"/> Sidegradient d <input type="checkbox"/> Downgradient n <input type="checkbox"/> Not Known		Gov. Lot Number _____	
				Cascade	

A. Protective pipe, top elevation	_____ 616.63 ft. MSL		1. Cap and lock? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
B. Well casing, top elevation	_____ 616.17 ft. MSL		2. Protective cover pipe: a. Inside diameter: _____ 8.0 in. b. Length: _____ 5.0 ft. c. Material: Steel <input checked="" type="checkbox"/> 04 Other <input type="checkbox"/> _____ d. Additional protection? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes, describe: _____ N
C. Land surface elevation	_____ 613.5 ft. MSL		3. Surface seal: Bentonite <input type="checkbox"/> 30 Concrete <input checked="" type="checkbox"/> 01 Other <input type="checkbox"/> _____
D. Surface seal, bottom	_____ ft. MSL or _____ ft.		4. Material between well casing and protective pipe: Bentonite <input checked="" type="checkbox"/> 30 Other <input type="checkbox"/> _____
12. USCS classification of soil near screen: GP <input type="checkbox"/> GM <input type="checkbox"/> GC <input type="checkbox"/> GW <input type="checkbox"/> SW <input type="checkbox"/> SP <input type="checkbox"/> SM <input type="checkbox"/> SC <input type="checkbox"/> ML <input type="checkbox"/> MH <input type="checkbox"/> CL <input type="checkbox"/> CH <input type="checkbox"/> Bedrock <input type="checkbox"/>			5. Annular space seal: a. Granular/Chipped Bentonite <input checked="" type="checkbox"/> 33 b. _____ Lbs/gal mud weight . . . Bentonite-sand slurry <input type="checkbox"/> 35 c. _____ Lbs/gal mud weight . . . Bentonite slurry <input type="checkbox"/> 31 d. _____ % Bentonite . . . Bentonite-cement grout <input type="checkbox"/> 50 e. <u>3.135</u> Ft <sup>3</sup> volume added for any of the above f. How installed: Tremie <input type="checkbox"/> 01 Tremie pumped <input type="checkbox"/> 02 Gravity <input type="checkbox"/> 08
13. Sieve analysis attached?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		6. Bentonite seal: a. Bentonite granules <input type="checkbox"/> 33 b. <input type="checkbox"/> 1/4 in. <input checked="" type="checkbox"/> 3/8 in. <input type="checkbox"/> 1/2 in. Bentonite chips <input checked="" type="checkbox"/> 32 c. _____ Other <input type="checkbox"/> _____
14. Drilling method used:	Rotary <input type="checkbox"/> 50 Hollow Stem Auger <input type="checkbox"/> 41 Other <input type="checkbox"/> _____		7. Fine sand material: Manufacturer, product name & mesh size a. _____ b. Volume added _____ ft <sup>3</sup>
15. Drilling fluid used: Water <input checked="" type="checkbox"/> 02 Air <input type="checkbox"/> 01 Drilling Mud <input type="checkbox"/> 03 None <input type="checkbox"/> 99			8. Filter pack material: Manufacturer, product name & mesh size a. <u>Red Flint</u> b. Volume added <u>0.9</u> ft <sup>3</sup>
16. Drilling additives used? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No			9. Well casing: Flush threaded PVC schedule 40 <input checked="" type="checkbox"/> 23 Flush threaded PVC schedule 80 <input type="checkbox"/> 24 Other <input type="checkbox"/> _____
Describe _____ N			10. Screen material: <u>PVC</u> a. Screen Type: Factory cut <input checked="" type="checkbox"/> 11 Continuous slot <input type="checkbox"/> 01 Other <input type="checkbox"/> _____ b. Manufacturer <u>Johnson Screen</u> c. Slot size: <u>0.010</u> in. d. Slotted length: <u>5.0</u> ft.
17. Source of water (attach analysis, if required): _____ potable		11. Backfill material (below filter pack): None <input checked="" type="checkbox"/> 14 Other <input type="checkbox"/> _____	
E. Bentonite seal, top	_____ 610.5 ft. MSL or _____ 3.0 ft.		
F. Fine sand, top	_____ 594.5 ft. MSL or _____ 19.0 ft.		
G. Filter pack, top	_____ 594.0 ft. MSL or _____ 19.5 ft.		
H. Screen joint, top	_____ 593.5 ft. MSL or _____ 20.0 ft.		
I. Well bottom	_____ 588.5 ft. MSL or _____ 25.0 ft.		
J. Filter pack, bottom	_____ 588.5 ft. MSL or _____ 25.0 ft.		
K. Borehole, bottom	_____ 588.5 ft. MSL or _____ 25.0 ft.		
L. Borehole, diameter	_____ 6.0 in.		
M. O.D. well casing	_____ 2.00 in.		
N. I.D. well casing	_____ 1.03 in.		

I hereby certify that the information on this form is true and correct to the best of my knowledge.

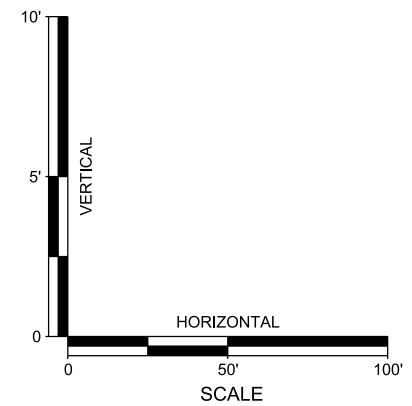
Signature: Heather L. Hallitt Firm: Foth Infrastructure & Environment, LLC Tel: 920-497-4500  
Reviewed and approved by: \_\_\_\_\_ 2121 Innovation Ct De Pere, WI 54115 Fax: \_\_\_\_\_

Please complete both Forms 4400-113A and 4400-113B and return them to the appropriate DNR office and bureau. Completion of these reports is required by chs. 160, 281, 283, 289, 291, 292, 293, 295, and 299, Wis. Stats., and ch. NR 141, Wis. Adm. Code. In accordance with chs. 281, 289, 291, 292, 293, 295, and 299, Wis. Stats., failure to file these forms may result in a forfeiture of between \$10 and \$25,000, or imprisonment for up to one year, depending on the program and conduct involved. Personally identifiable information on these forms is not intended to be used for any other purpose. NOTE: See the instructions for more information, including where the completed forms should be sent.



**NOTES:**

- SEE DRAWING B-1 FOR CROSS-SECTION LOCATION MAP.
- BACKFILL AND COMPACTION OF SOIL AND AGGREGATE BENEATH THE CITY OF SUPERIOR ROADWAYS WILL COMPLIED WITH THE CITY OF SUPERIOR REQUIREMENTS (OR WDOT REQUIREMENTS IF NO CITY REQUIREMENTS ARE PROVIDED).
- THE TOP OF MILLER CREEK FORMATION WAS DETERMINED FROM HISTORICAL SOIL BORINGS AND ALSO PRESENTED ON RA DESIGN DRAWINGS B-5 TO B-7.



REVISIONS		DATE OF PREPARATION	
NO.	DESCRIPTION	BY	DATE

RECORD DRAWING OF COMPLETED CONSTRUCTION BY: \_\_\_\_\_  
RECORD DRAWINGS OF COMPLETED CONSTRUCTION CONFORMING TO CONTRACTOR AND / OR OWNERS RECORDS. BY: \_\_\_\_\_

DATE OF PREPARATION	
BY	DATE
SURVEYED	
DRAWN	JOW JAN. 2024
DESIGNED	
CHECKED	BDS1 JAN. 2024

**CROSS-SECTIONS  
FORMER  
HORTONSHERE  
AS - BUILT**

SCALE: AS SHOWN

PROJECT ID: 18S024