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September 19, 2018 – Delivered electronically only

Ms. Karen Kirchner, RPM
U.S. EPA Region 5
77 W. Jackson Blvd. (SR-6J)
Chicago, IL 60604
Kirchner.Karen@epa.gov

SUBJECT: Recommendation for Modification of Long-Term Monitoring Plan for N. W. Mauthe Superfund Site, 725 S. Outagamie St., Appleton, WI
WDNR BRRTS #:02-45-000127

Dear Ms. Kirchner:

Since 1998, the Wisconsin Department of Natural Resources (DNR) has been responsible for the operation and maintenance (O&M) of the N. W. Mauthe Superfund site (Site) and long-term monitoring plan (LTMP). As detailed in the June 1998 Scope of Work (SOW), eleven groundwater monitoring wells were sampled quarterly for Volatile Organic Compounds (VOCs), cyanide and metals starting in February 1997 and included W-2, W-8, W-15, MW-101, MW-102, MW-103, MW-104, MW-105, MW-106, MW-107 and MW-108.

Since 1998, the DNR installed additional groundwater monitoring points and proposed modifications to the groundwater monitoring plan based on data trends where needed to balance the need for long-term groundwater monitoring with evolving trends of the groundwater concentrations. The purpose of this letter is to again recommend appropriate modifications to the LTMP. The 2018 proposed modifications are described after the summary of modifications to the LTMP proposed in 1999, 2003 and 2007.

I appreciate your review of this history and proposed modifications and request a response by November 19, 2018. A meeting can be scheduled to discuss the proposal if desired.

1999 Change to LTMP

In a letter dated December 3, 1999, Jennifer Huffman, former DNR project manager, requested a reduction in the required monitoring as summarized:
1. Eliminate quarterly copper, zinc, mercury and cyanide sampling at all site wells.
2. Reduce the frequency of monitoring for VOCs from quarterly to annual at W-2, W-8, W-15, MW-101, MW-102, MW-103, MW-104, MW-106 and MW-108.
3. Eliminate weekly testing of Total Suspended Solids (TSS) on the treated effluent.

In a letter dated January 18, 2000, Dion Novak, former U.S. Environmental Protection Agency (USEPA) remedial project manager (RPM), approved of the request.

DNR implemented the following LTMP between January 2000 and March 2003:
- Cadmium, total chromium and manganese analyzed quarterly at all wells.
- VOCs analyzed annually at all wells except MW-107.
- VOCs analyzed quarterly at MW-107.

2003 Change to LTMP

I assumed project management of this Site for DNR in 2000. In a letter dated March 24, 2003, I requested another reduction in the required monitoring as summarized:

4. Elimination of quarterly cadmium sampling at all site wells.
5. Reduction in the frequency from quarterly to annual sampling of manganese at all site wells.
6. Reduction in the frequency from quarterly to annual sampling of total chromium at the following wells: W-2, W-8, W-15, MW-101, MW-102, MW-105, MW-106 and MW-108.
7. Elimination of the annual VOC sampling at the following wells: W-2, W-8, W-15, MW-101, MW-102, MW-103, MW-104, MW-105, MW-106 and MW-108.

In a letter dated April 17, 2003, Mazin Enwiya, former USEPA RPM, approved of the request.

DNR implemented the following LTMP between June 2003 and August 2007:

- Manganese analyzed annually at all wells.
- Total chromium analyzed annually at W-2, W-8, W-15, MW-101, MW-102, MW-105, MW-106 and MW-108.
- Total chromium analyzed quarterly at MW-103, MW-104 and MW-107.
- VOCs analyzed quarterly at MW-107.

2007 Change to LTMP

In May 2006, DNR installed five source area wells and added the wells to the sampling schedule: MW-109, MW-110, MW-111, MW-112 and MW-113. The data from these wells has been submitted to USEPA in the O&M progress reports. Groundwater from these wells have been analyzed for total (dissolved) chromium, hexavalent chromium, copper, cyanide, manganese, mercury and zinc. Chromium is above the DNR 1992 preventive action limit (PAL) in all five wells. Cyanide was present above the PAL in MW-110 and MW-112. Copper, mercury and zinc were not above standards.

Based on the data collected, it appeared that MW-109 through MW-113 should be added to the LTMP and that the frequency of sampling of some contaminants at previously existing wells should be reduced.

In a letter dated August 31, 2007 to David Seely, former USEPA RPM, I requested modification of the required monitoring as summarized:

8. Addition of semi-annual analysis for total chromium at MW-109 through MW-113 based on detections between 1 and 140 milligrams per liter (mg/L) at each well since installation in May 2006.
9. Reduction in the frequency of analysis of total (dissolved) chromium at MW-103, MW-104 and MW-107 from quarterly to semi-annual based on the clay geology and ten-year sampling history.
10. Continued annual analysis of total chromium at MW-101 and MW-102. MW-101 is located immediately adjacent to the west groundwater collection trench. MW-102 is located immediately adjacent to manhole no. 2 and the southeast and central groundwater collection trenches. These two wells may act as early indicator wells for potential migration.
11. Reduction in the frequency of analysis of total chromium at W-2, W-8, W-15, MW-105, MW-106 and MW-108 from annual to every four years based on the clay geology, ten-year sampling history and lack of PAL exceedances for seven or more years in these wells.
12. Addition of semi-annual analysis for cyanide at MW-110 and MW-112 based on detections above the PAL since installation in May 2006.

13. Addition of annual analysis for cyanide at MW-111 based on detections below the PAL since installation in May 2006.
14. Addition of semi-annual analysis for VOCs at MW-109 through MW-113 based on detections above PALs at each well since installation in May 2006.
15. Reduction in the frequency of analysis of VOCs at MW-107 from quarterly to semi-annual based on the clay geology and ten-year sampling history.
16. Reduction in the frequency of analysis of manganese at all wells from annual to every four years. Although manganese was routinely detected above the PAL, the trend is sporadic and does not appear to be related to the contamination from the plating operations. Continued monitoring may assist in evaluation of natural attenuation at the Site.

DNR did not receive a written response from USEPA.

DNR implemented the following LTMP beginning in September 2007:

- Manganese analyzed every four years at all wells.
- Total (dissolved) chromium analyzed every four years at W-2, W-8, W-15, MW-105, MW-106 and MW-108.
- Total (dissolved) chromium analyzed annually at MW-101 and MW-102.
- Total (dissolved) chromium analyzed semi-annually at MW-103, MW-104, MW-107, MW-109, MW-110, MW-111, MW-112 and MW-113.
- Cyanide analyzed annually at MW-111.
- Cyanide analyzed semi-annually at MW-110 and MW-112.
- VOCs analyzed semi-annually at MW-107, MW-109, MW-110, MW-111, MW-112 and MW-113.

2018 Proposal for Change to LTMP and Reporting

In October 2017, I met internally with Gary Edelstein, DNR Engineer for the Site since the 1980's. The purpose of the meeting was to transition engineering and Superfund process support from Mr. Edelstein to Angie Carey prior to his retirement. During that meeting, we discussed that it appears appropriate to reduce routine groundwater monitoring and reporting and propose to begin implementation of this schedule with the October 2018 through September 2019 O&M contract year.

LTMP

DNR recommends and would like your concurrence on the following:

17. Continued analysis for manganese every four years at all wells.
18. Continued analysis for total (dissolved) chromium every four years at perimeter wells W-2, W-8, W-15, MW-105, MW-106 and MW-108.
19. Reduction in analysis for total (dissolved) chromium from semi-annually or annually to every two years in March/April at MW-101, MW-102, MW-103, MW-104, MW-107, MW-109, MW-110, MW-111, MW-112 and MW-113.
20. Reduction in analysis for cyanide from semi-annually or annually to every two years in March/April at MW-110, MW-111 and MW-112.
21. Reduction in analysis for VOCs from semi-annually to every two years in March/April at MW-107, MW-109, MW-110, MW-111, MW-112 and MW-113.

All wells will continue to be inspected annually.

A spreadsheet summarizing the proposed LTMP is attached for your use (Table 4 – August 2018, *Groundwater Monitoring Wells and Piezometers Sampling Frequency*). Please reference *Operation & Maintenance Report No. 57* (Terracon, May 1, 2018):

- Figures 6 through 6 of Appendix A for chromium verses time and VOC verses time graphs, and
- Tables 5 and 6 of Appendix B for historical metals and VOC concentrations at the wells discussed above.

Reporting

Operation and maintenance progress reports (O&M Reports) have been submitted to DNR following a groundwater sampling event that communicate groundwater data as well as a status update on the groundwater collection and treatment system since transfer of the system to the DNR in 1998 (quarterly through 2007 and semi-annually thereafter). A duplicate copy of each O&M Report is mailed from DNR to USEPA. In addition, for several years, the analytical lab sheets from groundwater monitoring have been emailed to DNR upon receipt for early review and included in the next O&M Report for the file.

The O&M Reports (currently semi-annual in April and October) are supplemented by monthly status reports that are required under State contract to accompany monthly invoices (Status Reports). The Status Reports describe the sampling performed in compliance with the Appleton Industrial Wastewater Discharge Permit and influent/effluent results, routine O&M actions performed (e.g., annual backflow preventer inspection, annual fire department inspection) and issues identified over the reporting period and/or maintenance performed beyond the annual O&M contract (e.g., response to power outage or system alarms, replacement of heater units, roof or gutter repairs). The information submitted in the Status Reports is also summarized in the O&M Reports.

In addition to the O&M Reports and Status Reports, DNR receives an electronic copy of reporting to the City of Appleton required under the Industrial Wastewater Discharge Permit (e.g., monthly flow, monthly effluent analytical data, annual effluent analytical data). The data is also compiled in tables included in the O&M Reports.

DNR receives invoices directly from utilities (water, sewer, gas, electric, phone) for payment and these services are not summarized or included in O&M Reports.

Assuming the proposed changes to the LTMP described above can be implemented, DNR proposes the following reporting schedule:

A. Submittal of monthly Status Reports to DNR (contract year October through September) per State contract requirements.
B. Submittal of annual (March/April) groundwater analytical lab sheets to DNR via email upon receipt.
C. Submittal of an annual O&M Report to DNR via email and a hard copy summarizing the contract year Status Reports, annual groundwater data and Industrial Wastewater Discharge Permit compliance.
    a. DNR will submit the annual O&M Report to USEPA via email only based on conversation in September 2018 that USEPA is now able to accept electronic submittals.
    b. DNR will also continue to upload the O&M Report to the DNR's Bureau for Remediation and Redevelopment Tracking System (BRRTS) on the Web under BRRTS #02-45-000127: WDNR BRRTS on the Web.

DNR requests a response if additional reporting to USEPA is preferred.

As stated above, I appreciate your review of this history and proposed modifications and request a response by November 19, 2018. Please contact me with any questions in Oshkosh by phone at 920-424-7887 or by email at jennifer.borski@wisconsin.gov.

Sincerely,

Jennifer Borski
Hydrogeologist
Remediation & Redevelopment Program

Attach: Table 4 – August 2018, *Groundwater Monitoring Wells and Piezometers Sampling Frequency*

N. W. Mauthe Superfund Site

TABLE 4 - August 2018
Groundwater Monitoring Wells and Piezometers
Sampling Frequency

Well ID	Water Level	pH	Temperature	Specific Conductivity	Dissolved Oxygen	Redox	Ferrous Iron	Chromium Total (Filtered)	Chromium Hexavalent (Unfiltered)	Manganese	Cyanide	Zinc	VOCs
W-2	A	4YR	4YR	4YR	4YR	4YR	4YR	4YR		4YR			
W-8	A	4YR	4YR	4YR	4YR	4YR	4YR	4YR		4YR			
W-15	A	4YR	4YR	4YR	4YR	4YR	4YR	4YR		4YR			
MW-101	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR			
MW-102	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR			
MW-103	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR			
MW-104	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR			
MW-105	A	4YR	4YR	4YR	4YR	4YR	4YR	4YR		4YR			
MW-106	A	4YR	4YR	4YR	4YR	4YR	4YR	4YR		4YR			
MW-107	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR			2YR
MW-108	A	4YR	4YR	4YR	4YR	4YR	4YR	4YR		4YR			
MW-109**	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR			2YR
MW-110**	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR	2YR		2YR
MW-111**	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR	2YR		2YR
MW-112**	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR	2YR		2YR
MW-113**	A	2YR	2YR	2YR	2YR	2YR	4YR	2YR		4YR			2YR
PZ-1													
PZ-2													
PZ-3													
PZ-4													
PZ-5*	A												
PZ-6*	A												
PZ-7*	A												
PZ-8*	A												

Quality Assurance/Quality Control (QA/QC) must be performed in compliance with s. NR 716.13(6), Wis. Adm. Code

A = annual (Mar/Apr)

SA - semi-annual (Mar/Apr and Sept) - Note: SA sampling proposed for elimination with 2018-2019 O&M contract. Under review by USEPA.

2YR = every two years (Mar/Apr 2019, Mar/Apr 2021, etc.) - Note: 2YR sampling proposed with 2018-2019 O&M contract. Under review by USEPA.

4YR = every four years (Mar/Apr 2019, Mar/Apr 2023, etc)

Piezometers 1-4 abandoned May 2004 (terminated in collection trenches)

Hexavalent chromium eliminated October 2006

Zinc eliminated August 2007

* installed May 2005

** installed May 2006