

WATER DIVISION CONCURRENCE SHEET FOR ENFORCEMENT CORRESPONDENCE

1. DESCRIPTION

Timeline	Due Date 2018-02-21
Originated by	Dean Maraldo on 2018-02-14
Permittee/Facility	U.S. Steel Minntac Tailings Basin
Subject/Rec. Action	Memo: Document Review and Identification of Areas of Concern
File Location	WECAB Sharepoint Case Folder MN0057207

2. SIGN-OFF

<p>Route Internally To</p> <p>*NOTE: Per WECA & OECA Standard Operating Procedures, States and Tribes must be notified prior to issuing the following actions: 308s, AOs, APOs. The name of the person notified must be recorded above. These documents may not be transmitted unless notification has been documented.</p>	<p>WECA WATER DIVISION</p> <table style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">Originator: Dean Maraldo</td> <td style="width: 15%;">Initials: <i>DM</i></td> <td style="width: 35%;">Date: 2/14/18</td> </tr> <tr> <td>Section Chief: Ryan Bahr</td> <td>Initials: <i>RB</i></td> <td>Date: 3/13/18</td> </tr> <tr> <td>Branch Chief: Pat Kuefler</td> <td>Initials:</td> <td>Date:</td> </tr> </table>	Originator: Dean Maraldo	Initials: <i>DM</i>	Date: 2/14/18	Section Chief: Ryan Bahr	Initials: <i>RB</i>	Date: 3/13/18	Branch Chief: Pat Kuefler	Initials:	Date:
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<p>Route Externally To</p>	<p>OFFICE OF REGIONAL COUNSEL ORC review not needed.</p> <p>OFFICE OF REGIONAL ADMINISTRATOR ORA review not needed.</p>									

3. SCANNING

Return for Scanning to	Dean Maraldo		
Scanned by whom?		Date PDF to Staff and CCs	
Special Instructions			

4. MAILING

Mailed by whom?	Date Mailed
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5. DATA ENTRY

ICIS Data Entry	ICIS entry not needed.
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6. RETURN HARD COPY

Return Folder to Originator	Dean Maraldo	Returned By Whom?	Date Returned
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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:
WC-15J

MEMORANDUM

DATE: February 14, 2018

SUBJECT: U.S. Steel – Minntac Tailings Basin Facility: Document Review Findings and Identification of Areas of Concern

FROM: Dean Maraldo, Environmental Scientist *DM*
Water Enforcement and Compliance Assurance Branch

TO: Ryan Bahr, Chief, Water Enforcement and Compliance Assurance Branch, Section 2 *RAB*
Patrick F. Kuefler, Chief, Water Enforcement and Compliance Assurance Branch

CC: Deborah Carlson, Associate Regional Counsel
Office of Regional Counsel

On September 12-13, 2017, I conducted an NPDES Compliance Sampling Inspection at the U.S. Steel – Minntac Tailings Basin Facility, in Mountain Iron, Minnesota. After the inspection, I reviewed sample analytical results, inspection notes, photographs, and information and documents provided by USS during and after the inspection, including DMRs, permit applications, site map, *Groundwater Flow and Sulfate Transport Modeling Report (CRA, 2013a)*, SC&R reports, Dark River Seep Collection reports, and the Storm Water Pollution Prevention Plan (SWPPP). Specific details regarding review of the *Groundwater Flow and Sulfate Transport Modeling Report*, Conestoga Rover & Associates’ memorandum “*Estimate of Time of Travel between the Tailings Basin and the Twin Lakes*” (2013b), and the SWPPP are provided below in Section I. Findings and identification of Areas of Concern, based on the document review and review of the Compliance Sampling Inspection Report, are summarized in Section II, below.

I. DOCUMENT REVIEW

Review of USS Groundwater Reports

The *Groundwater Flow and Sulfate Transport Modeling Report (CRA, 2013a)*, for the Minntac Tailings Basin, was prepared for U.S. Steel (“USS”) by Conestoga-Rovers & Associates. Conclusions of the report include:

- “Sulfate concentrations ranging up to 10 mg/L can be considered naturally occurring and unrelated to the Minntac Tailings Basin.” (page 4)
- “The Minntac Tailings Basin serves as the source of water for these three watersheds [Sand River, Dark River, and Johnson Creek].” (page 10)
- “Groundwater primarily discharges to wetlands and eventually to surface water bodies (i.e., the rivers and the lakes), and further downstream to the Sand River.” (page 11)
- “Seeps exist along the perimeter dike due to: 1) the elevated water levels in the Tailings Basin pools, and 2) the permeability of the perimeter dike allows sporadic surface seeps along the toe of the dike, which are now being collected by the SC & R system.” (page 14)

The presence of elevated levels of pollutants, including sulfate, in wetlands adjacent to SC&R containment structure, is consistent with the conclusions in Conestoga Rover & Associates' memorandum "Estimate of Time of Travel between the Tailings Basin and the Twin Lakes" (2013b), prepared on behalf of USS. The memorandum concluded "particles reaching the sheet-pile wall move downward from the shallow overburden into the deep overburden to pass under the sheet-pile wall, which extends through the shallow overburden only. The particles then move upwards back into the shallow overburden before discharging to the wetland area. Particles reach the location of the SC&R system in approximately 8 to 14 years, as occurs under historical conditions. Particles reaching the wetland area do so in approximately 10 to 25 years, and these particles reach piezometer nest PZ-12S/I/D in approximately 9 to 24 years." During the inspection, Ms. Bartovich (USS) added that the seep collection systems were "designed to collect upper seep flow, not designed to capture deeper flow."

Review of SWPPP

During the inspection, USS provided electronic copies of background information related to the SWPPP. In response to my October 6, 2017, request for the complete SWPPP for the Tailings Basin facility, USS provided additional documentation, including the SWPPP, dated December 1993, in an email on October 9, 2017. The SWPPP consists of an assortment of documents from 2009 and earlier, and focused on mine areas. According to the introduction section of the SWPPP, USS applied for coverage under the already expired Minnesota General Storm Water Permit for Industrial Activity (G610000) for the Tailings Basin facility in 2003. However, MPCA never reissued General Permit G610000, and did not authorize industrial storm water discharge from the Tailings Basin facility. In 2011, MPCA issued General Permit MNR050000 for Industrial Stormwater Multi-Sector (ISW). The 2011 ISW required "All existing facilities with a primary SIC code and/or narrative activity seeking authorization to discharge industrial storm water under this permit, or that is seeking a conditional exclusion for No Exposure, shall submit an application to the Agency for authorization..." According to the documents reviewed, USS did not apply for coverage for the Tailings Basin facility under the 2011 ISW. In 2015, MPCA reissued the ISW (MNR050000). The 2015 ISW superseded the previous general permit (MNR050000) and required "All existing facilities with a primary SIC code and/or narrative activity seeking authorization to discharge industrial storm water under this permit, or that is seeking a conditional exclusion for No Exposure, shall submit an application to the Agency for authorization." According to the documents reviewed, USS did not apply for coverage for the Tailings Basin facility under the currently effective 2015 ISW. Industrial storm water SWPPP requirements were not included in 1987 individual NPDES permit, or 2010 SDS permit for the Tailings Basin facility. Based on review of documents received during the inspection, USS has not been issued an NPDES industrial storm water permit for the Tailings Basin facility.

I reviewed and assessed the SWPPP, provided by USS, for compliance with 2015 ISW requirements. The SWPPP does not address the requirements included in the following 2015 ISW permit parts:

- PART IV.A.8-13; B.1-5, 7. STORMWATER POLLUTION PREVENTION PLAN (SWPPP);
- PART V. A. BENCHMARK MONITORING REQUIREMENTS; and
- PART VII. G. SECTOR-SPECIFIC REQUIREMENTS.

The SWPPP does not appear to address industrial storm water at the Tailings Basin facility, including storm water runoff from the network of on-site haul and access roads constructed of waste rock, where discharge is composed entirely of storm water and not combined with mine drainage. Section 1.0, paragraph 1, of the SWPPP states that the "plan will focus on operations at the site that are not actually inside the pits or tailings basin."

II. FINDINGS

Area of Concern	Finding	Permit/Regulatory Reference
<p>Industrial Storm Water Permit Coverage & SWPPP</p>	<ul style="list-style-type: none"> • Based on review of documents received during the inspection, USS has not been issued an NPDES industrial storm water permit for the Tailings Basin facility. • The SWPPP does not appear to address industrial storm water at the Tailings Basin facility, including storm water runoff from on-site haul and access roads constructed of waste rock, where discharge is composed entirely of storm water and not combined with mine drainage. • The SWPPP does not address the requirements included in the following 2015 ISW permit parts: <ul style="list-style-type: none"> ▪ PART IV.A.8-13; B.1-5, 7; ▪ PART V. A; and ▪ PART VII. G. 	<p>General Permit MNR050000 for Industrial Storm Water Multi-Sector (ISW).</p>
<p>Potential for Discharge Over and Through Sheet-Pile, Catch Basins 11&12</p>	<p>EPA Compliance Sampling Inspection Observations:</p> <ul style="list-style-type: none"> • Sheet pile in the vicinity of SC&R Catch Basin-12, was cut very low, just above grade. • Observed water staining on sheet pile at SC&R Catch Basin-11, at level of handling holes. • No discharge of wastewater over or through sheet pile was observed during the inspection. However, the inspection was conducted during dry weather. These areas should be observed during wet weather to make sure overtopping, due to low-cut sheet pile, and discharge through sheet pile handling holes, is not occurring. 	<p>NPDES Permit MN0057207, Part II.A.2.</p>
<p>Wastewater Discharging Through and Under Tailings Basin Containment Dike</p>	<ul style="list-style-type: none"> • NPDES permit authorizes and sets effluent limitations for seep discharges from outfalls 020 and 030 only. • EPA Compliance Sampling Inspection results confirm elevated levels of multiple pollutants, including sulfate, at Tailings Basin perimeter dike surface water seep discharge locations [S01, S02, S03, S04 (formerly Outfall 020), S06, S07, S09, S11, and S13], when compared to the USS background area sample location (S08). • EPA Compliance Sampling Inspection results confirm elevated levels of multiple pollutants, including sulfate, exist in wetlands adjacent to the SC&R seep containment system, and surface waters adjacent to the east and west Tailings Basin dikes. Findings are consistent with Conestoga Rover & Associates' (CRA) <i>Groundwater Flow and Sulfate Transport Modeling Report</i> (2013a), prepared on behalf of USS. The report concluded that the "Minntac Tailings Basin serves as the source of water for these three watersheds [referring to Sand River, Dark River, and Johnson 	<p>NPDES Permit MN0057207, Part I.B; NPDES Permit MN0057207, Part II.A.2.</p>

Area of Concern	Finding	Permit/Regulatory Reference
	<p>Creek], and "Groundwater primarily discharges to wetlands and eventually to surface water bodies (i.e., the rivers and the lakes), and further downstream to the Sand River."</p> <ul style="list-style-type: none"> • Seeps to surface water occur "along the perimeter dike due to: 1) the elevated water levels in the Tailings Basin pools, and 2) the permeability of the perimeter dike allows sporadic surface seeps along the toe of the dike." (CRA, 2013a). • EPA Compliance Sampling Inspection results indicate additional Tailings Basin seep discharges to wetlands in Township 59N, Range 18W, Sections 6, 7, 10, 15, 19, 24, 30, and Timber Creek. The permit does not mention seep discharges to wetlands in these sections or to Timber Creek, and does not authorize or set effluent limitations for these seep discharges. 	
<p>Pollutants Bypassing SC&R Containment</p>	<ul style="list-style-type: none"> • EPA Compliance Sampling Inspection results confirm elevated levels of multiple pollutants, including sulfate, exist in wetlands adjacent to the SC&R seep containment system. USS modeling suggests the presence of elevated levels of pollutants, including sulfate, in wetlands adjacent to SC&R containment structure, is the result of pollutant particles moving downward from the shallow overburden into the deep overburden and passing "under the sheet-pile wall, which extends through the shallow overburden only. The particles then move upwards back into the shallow overburden before discharging to the wetland area." (CRA, 2013b) • During EPA's Compliance Sampling Inspection Ms. Bartovich (USS) stated that the seep collection systems were "designed to collect upper seep flow, not designed to capture deeper flow." 	<p>NPDES Permit MN0057207, Part II.A.2</p>
<p>Source of Wastewater Not Identified in Permit</p>	<ul style="list-style-type: none"> • During EPA's Compliance Sampling Inspection Mr. Moe (USS) identified the Dark River Pond as a source for Seep C. The permit does not mention the Dark River Pond in its description of sources of wastewater. 	<p>NPDES Permit MN0057207, Part I.A.</p>
<p>Receiving Waters Not Identified in Permit</p>	<ul style="list-style-type: none"> • The permit identifies only the Dark and Sand Rivers as surface waters authorized to receive wastewater discharges. The permit states that "discreet seepage areas have been identified along the toe of the dam on the west side ([Township 59N, Range 18W], NW1/4, Section 18), and east side ([Township 59N, Range 18W], Sections 10 and 15) of the tailings basin." The permit authorized discharge from "Two of the largest seepage points" on the west and east sides (outfall 020, and outfall 030). EPA sampling results indicate additional Tailings Basin seep discharges to wetlands in Township 59N, Range 18W, Sections 6, 7, 10, 15, 19, 24, 30, and Timber Creek. The permit does not identify Timber Creek or wetlands in these sections as waters authorized to receive discharges from the Tailings Basin. 	<p>NPDES Permit MN0057207, Part I.A.</p>

II. REFERENCES

CRA (2013a). *Groundwater Flow and Sulfate Transport Modeling Report, Minntac Tailings Basin*, U. S. Steel Corporation Mountain Iron, Minnesota. June 2013.

CRA (2013b). *Estimate of Time of Travel between the Tailings Basin and the Twin Lakes Minntac Tailings Basin*, United States Steel Corporation, Mountain Iron, Minnesota. July 2013.

Hatch (2014). *Minntac Western Seepage Collection System – Phase 2 Report*. United States Steel Corporation, Mountain Iron, Minnesota. March 2014.

MPCA (1987). NPDES/SDS Permit MN0057207. U.S. Steel Minntac Tailings Basin. Minnesota. September 30, 1987.

MPCA (1989). NPDES/SDS Permit MN0057207, Permit Modification. U.S. Steel Minntac Tailings Basin. Minnesota. February 23, 1989.

MPCA (2010). NPDES/SDS Permit MN0057207, Permit Modification. U.S. Steel Minntac Tailings Basin. Minnesota. April 13, 2010.

MPCA (2011). NPDES/SDS Multi-Sector General Permit (MNR050000) for Industrial Stormwater Activity. Minnesota. May 19, 2011.

MPCA (2015). NPDES/SDS General Permit MNR050000 for Industrial Stormwater Multi-Sector (ISW). Minnesota. April 5, 2015.

