



United States Steel Corporation – Midwest Plant
 U. S. Highway 12
 Portage, IN 46368

VIA ELECTRONIC SUBMITTAL

September 30, 2021

Mr. Jason House
 Office of Water Quality
 Indiana Department of Environmental Management (IDEM)
 100 North Senate Avenue – Post Office Box 6015
 Indianapolis, IN 46206

Subject: United States Steel Corporation – Midwest Plant (Midwest)
 NPDES Permit IN0000337
 Outfall 004 Discoloration

Dear Mr. House:

This letter is the written follow up for the discoloration observed at Outfall 004 on Sunday September 26, 2021 at Midwest. This letter also satisfies Part IX.28 of the Midwest Consent Decree United States v. United States Steel Corporation, 2:18-CV-127 JD (Consent Decree).

Midwest is in the process of completing our investigation into this issue, but sampling results show there was not a violation of permit parameters and there were no visible adverse impacts to the environment, aquatic life or wildlife. This is based upon both grab and composite samples taken during and after event. The samples taken were analyzed for permit parameters as well as iron, which is not a permit parameter. Results from the samples were received Monday afternoon (9/27/2021). The sampling results were provided to IDEM and USEPA. The sampling results did show there was elevated amounts of iron. The elevated iron was determined to be the contributing factor to the color of the discharge. Analytical results for iron at the final Outfall 004 are summarized below.

24-hr composite Samples for Iron	Outfall 004	
Date	Concentration (mg/l)	Loading (lbs/day)
7:00 am 9/25/21 - 7:00 am 9/26/21	0.28	31
7:00 am 9/26/21 - 7:00 am 9/27/21	5.7	598
7:00 am 9/27/21 - 7:00 am 9/28/21	2.0	226
7:00 am 9/28/21 - 7:00 am 9/29/21	0.93	116



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Description of event:

On Sunday September 26, 2021, a discoloration was observed at Outfall 004. At approximately 6:55 pm CDT, U. S. Steel Management received a call from IDEM concerning an issue at Outfall 004. Shortly after that the call from IDEM, the National Park Service called and inquired if there were any issues at Midwest or outfalls. An investigation into the matter was started immediately. The United States Coast Guard contacted U. S. Steel Security about the incident around 7:17 pm CDT.

Once Midwest confirmed the discoloration at Outfall 004, proper notifications were started. At the time of the notifications, it was uncertain what was causing the discoloration. Out of an abundance of caution, the 24-hour reporting requirements commenced as required in part II.C.3 of the Consent Decree. Notifications were made to the following: Indiana Department of Environmental Protection (IDEM), National Response Center (NRC), United States Environmental Protection Agency (USEPA), Indiana Dunes National Park, Town of Ogden Dunes Fire Chief, U. S. Coast Guard, Indiana American Water, City of Portage, Senator Karen Tallian, Port of Indiana, Porter County Sherriff's Office, Michigan City Water Department, East Chicago Water Department, and Hammond Water Works.

At this time Midwest has reviewed information and determined there are different contributing factors to this event. These factors are discussed below and how those items impacted the operations at the Final Treatment Plan.

First, the sludge bed levels in the sedimentation basins at the Final Treatment Plant were decreasing on Sunday (9/26/21) morning around 8:00 am CDT. The decrease in sludge levels correspond to a decrease in solids loading coming to the plant due to various operations within Midwest being on a scheduled downturn. As sludge levels continued to decrease, the wastewater Operator (Operator) determined there would need to be acid added to the treatment system to depress the pH at the equalization basins which would then result in more lime (solids) addition.

Next, when the Operator went to add acid to the wastewater treatment system the sulfuric acid supply levels were too low to allow for an adequate feed of acid. The low supply of sulfuric acid was due to an acid delivery that was scheduled for Friday September 24, 2021 was not completed by the chemical vendor. The Operator contacted the pickle lines at around noon for them to supply some acid from the pickle operations to supplement for the sulfuric acid.

Then at approximately 1:10 pm CDT, the EQ Basin pH started to drop. In response to the dropping pH, lime addition was increased. At approximately 3:00 pm CDT, one of the rotodip lime feeders became plugged, so the operator mitigated the plugged line by opening the manual



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feed to add additional lime. The Operator cleaned the rotodip feed line to restore proper operation. The Operator then noticed that both rotodips were maxed out and that the recirculation feed was darker than normal. The Operator realized the acid (approx. 7% HCL) feed from pickle line was being overfed to the system and contacted the pickle line to shut off the acid. The acid was shut off at approximately 3:20 pm CDT. It is estimated that approximately 14,000 gallons of acid was fed from the pickle line during this time. Based upon recent usage that amount is consistent with the daily acid demand of the treatment plant. In this event the investigation has noted one difference - the rate of the acid feed from the pickle line was faster than in usual operations.

Also, the spence blower, which supplies aeration to the EQ Basin, failed at approximately 4:30 pm CDT. Electricians were contacted and the Operator switched to backup plant air to maintain aeration. The spence blower was back in operation at approximately 6:00 pm CDT.

Once the acid from the pickle line was shut off and lime feeders returned to operation, the water within the Final Treatment Plant began to improve gradually until approximately 3:00 am CDT Monday (9/27/21) morning. At that time, the water started to deteriorate again due to incoming wastewater being relatively neutral in pH and very little lime was being added.

Operations at Midwest were idled until the Final Treatment Plant could stabilize operations. A delivery of sulfuric acid arrived Monday (9/27/21) at Midwest around 10:00 am CDT. The sulfuric acid was immediately fed into the Final Treatment Plant. The water gradually improved and at approximately 3:00 pm CDT, the discoloration ceased. Based upon a review of available operations information it is estimated the discoloration at Outfall 004 started around 3:00 pm CDT on 9/26/21 and ended around 3:00 pm CDT on 9/27/21. Operations at Midwest remained down until Tuesday (9/28/21) morning, when a slow and methodical startup of operations commenced. The Midwest plant was back to normal operations at 7:00 am CDT Wednesday (9/29/21) morning.

Since the investigation is ongoing, the corrective actions identified so far include the following:

- Improve coordination for sulfuric acid deliveries with suppliers
- Develop a process and procedure for using acid in the wastewater treatment system from alternative sources
- Review internal operating communication procedures and revise if necessary

If other correction actions are found in the investigation those will be identified going forward.

If you have any questions about this matter, please call me at (219) 763-5022 or email me at tlsullivan@uss.com.



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Sincerely,

A handwritten signature in black ink that reads "Tim Sullivan". The signature is written in a cursive style with a large initial 'T'.

Tim Sullivan
Environmental Manager
United States Steel Corporation
Midwest Plant