

**CWA COMPLIANCE EVALUATION INSPECTION REPORT
U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION 5**

Purpose:

Compliance Evaluation Reconnaissance Inspection

Facility:

Cleveland Cliffs Burns Harbor, LLC
250 US-12
Burns Harbor, Indiana 46304
Porter County
41.625, -87.117

NPDES Permit Number:

IN0000175

Date of Inspection:

October 13, 2022

EPA Representatives:

Joan Rogers, Environmental Scientist 312-886-2785
Rogers.joan@epa.gov

State Representatives:

Nicholas Ream, Indiana Department of Environmental Management 219-730-1691
Wastewater Inspector
nream@idem.IN.gov

Ramelito Biscocho, Indiana Department of Environmental Management 219-464-0233
Wastewater Inspector
rbiscoch@idem.in.gov

Kelly Paulson, Indiana Department of Environmental Management 219-464-0233
Environmental Manager 2
kpaulson@idem.in.gov

Alyssa Ruthkay, Indiana Department of Environmental Management 219-464-0233
Environmental Manager 2
aruthkay@idem.in.gov

Facility Representatives:

Morgan Swanson, Environmental Engineer 219-787-2646
Morgan.swanson@ClevelandCliffs.com

Joyce Casillas

Joyce.casillas@ClevelandCliffs.com

Vinod Barot, Senior Environmental Engineer
Vinod.barot@ClevelandCliffs.com

219-787-2964

Report Prepared by:
Joan Rogers

Inspector Signature/Date: JOAN ROGERS
Digitally signed by JOAN ROGERS
Date: 2022.11.21 10:42:20 -06'00'

Approver Name and Title: Ryan Bahr, Supervisor, Section 2, WECAB

Approver Signature/Date: Ryan Bahr
Digitally signed by Ryan Bahr
Date: 2022.11.21 10:57:21 -06'00'

1. BACKGROUND

The purpose of this report is to describe and document the reconnaissance inspection at the Cleveland Cliffs Burns Harbor facility on October 13, 2022. This inspection was performed pursuant to Section 308(a) of the Federal Water Pollution Control Act, as amended. This was a joint inspection by EPA and the Indiana Department of Environmental Management (IDEM).

The Cleveland Cliffs Burns Harbor (CCBH) facility is one of the largest fully integrated steel mills in North America, with the capacity to produce approximately 5 million tons of raw steel per year. They operate under NPDES Permit No. IN0000175, which was issued on January 1, 2022, and expires on December 31, 2026.

The inspection on October 13, 2022 was a Compliance Evaluation Reconnaissance Inspection to discuss their ammonia treatment system. The inspectors also wanted to observe the outfalls while on site.

2. SITE INSPECTION

Site Entry and Opening Conference

Arrival Time:	9:00 A.M.
Presented credentials?	Yes.
Credentials presented to whom and at what time?	9:18 A.M. to Morgan Swanson, Joyce Casillas, and Vinod Barot.
Was an opening conference held? With whom?	Yes. Ms. Swanson, Ms. Casillas, and Mr. Barot.
If photographs or documents were taken, does the facility consider any to be Confidential Business Information (CBI)?	No.
Which information does the facility consider to be CBI?	None.
EPA vehicle parked in approved location?	Yes.
Location where EPA vehicle was parked?	Environmental Services Building.

EPA inspector, Ms. Joan Rogers, and IDEM inspectors Mr. Nick Ream, Mr. Ramelito Biscocho, Ms. Kelly Paulson, and Ms. Alyssa Ruthkay, followed Ms. Swanson to the Environmental Services Building conference room from the main office after EPA and IDEM inspectors received their visitor badges. During the opening conference at 9:30 A.M., the inspection team explained that the focus of the inspection was to discuss the ammonia treatment system, but other areas would also be discussed and observed.

Ammonia Treatment

Per the Consent Decree (CD), the ammonia treatment unit was required to be operational during the CD compliance period of June 1, 2022, through September 15, 2022. The ammonia treatment unit was operational by June 1, 2022 and was still operational on the day of the inspection. During the compliance period, US Water Services Corporation (new owner of the Ramboll Americas O&M Solutions, LLC) engineers ran the ammonia treatment system and Cleveland-Cliff's operators assisted and learned. After the compliance period ended, US Water Services Corporation engineers switched functions with the Cleveland-Cliffs operators. From September 15, 2022, through December 1, 2022, Cleveland-Cliff's operators will run the ammonia treatment system and the US Water Services Corporation engineers will watch and assist. The hope is that Cleveland-Cliff's operators will be able to run the ammonia treatment system in 2023.

Ms. Swanson stated that the equipment for the ammonia treatment unit will not need to be removed over the winter. CCBH intends to build a building around the unit before it becomes operational in June 2023.

CCBH representatives stated that the ammonia treatment system is doing well. They have been able to get approximately 95% reduction in ammonia with an average of 300 GPM of blowdown.

Operational records are provided by US Water Services Corporation to CCBH via a daily email. The email is received by all CCBH personnel in operations. The emails contain information from the two 12-hour shifts. The information includes the names of the personnel who worked each shift, safety and spill incidents (if there are any), maintenance and operational notes, and adjustments that were made to the system. Additionally, the emails document the plant flows, chemical usage, chemical inventory, and ammonia removal.

Following the inspection, Ms. Swanson provided a copy of the CCBH Ammonia Treatment Daily Reports from September 1, 2022 through September 15, 2022. During a review of the reports, EPA observed that the average ammonia removal for fourteen of the fifteen days (ammonia treatment system was not functioning on 9/14/22) was 96% with an average removal of 203 pounds per day.

Following the inspection, Ms. Swanson also provided a copy of the Temporary Blowdown System Ammonia and Flow Data from June 1, 2022 through September 15, 2022. During a review of the data, EPA observed that the average ammonia removal for this time period was 94% with the lowest removal percentage of 34% and the highest of 100%

EPA also observed that these same notes were on almost each day and each shift in the CCBH Ammonia Treatment Daily Reports:

- MTR running lights are out on #1 & #3 at C-1B cooling tower.
- Cannot get to mixer control panel at T-1A & T-1B.
- T-1A mixer #1 & #4 running light is out but mixer's are on.
- Run confirm lights for all 4 soda ash mixers are out.
- Mixer #3 on soda ash tank is down until repaired

Facility Walkthrough

See Attachment A for the photolog of the photos taken during the facility walkthrough. EPA and IDEM concluded the interview portion of the inspection and stated that they would like to observe the ammonia treatment system and Outfall 002, Outfall 003, Outfall 011, and Outfall 001.

Ammonia Treatment System

EPA and IDEM arrived at the Ammonia Treatment System at 9:49 A.M. Mr. Dave Whaley, Site Supervisor, joined the inspection team and briefly explained the tanks and their functions. Mr. Whaley described these operations:

1. The blowdown flows into Tank 1A, where acid is introduced to bring the pH down to 3.5.
2. Ferric chloride is then added to reduce the iron and give the cyanide something to attach to.
3. The pH is then increased to 5.5.
4. Ferric chloride is only added if the facility expects there to be cyanide in the system. If chlorine dioxide is added for additional cyanide reduction, there are four warning lights and a horn to alert facility personnel.
5. The flow then goes to clarifiers named 2A and 2B.
6. Solids from the clarifiers goes to Tank 5A, the sludge holding tank. A centrifuge removes more liquid from the sludge and the solids are landfilled.
7. Tank 1B is used to soften the water with soda ash and bring the pH up to 10.5-11.
8. Additional sludge removal happens in clarifiers 2C and 2D.
9. The flow moves to Tank 3, where the water is heated to 120°F.
10. The flow is then lifted to cooling towers. Approximately 15-20% of the ammonia removal happens in the cooling towers.
11. Breakpoint chlorination occurs in Tank 4 and acid is introduced to bring pH down to 7.
12. The flow is then directed to Cells 6, 5, and 4 before flowing to the Secondary Wastewater Treatment Plant. At Cell 4, the ammonia removal is at least 85%.

On the day of the inspection, EPA observed that some of the solids leaving the centrifuge were not landing on the conveyor belt which dropped the solids into a storage tank. The solids were built up on the ground below the conveyor belt. Ms. Swanson stated that there were no storm sewers in the area that the solids could flow into.

Also, on the day of the inspection, Mr. Whaley stated that they have only been able to get the temperature up to 100-110°F in tank T3.

The inspection team observed a process diagram on the wall of the operational office. IDEM inspectors took a photo of this diagram.

Outfall 002

The inspectors followed the facility personnel to Outfall 002 and arrived at 10:32 A.M. Prior to the July inspection, Mr. Barot designed and installed a spray bar at the head of the outfall structure. The spray consisted of recirculated lake water and was intended to knock down the foam in the outfall. Since then, Mr. Barot designed and installed a second spray bar closer to the end of the outfall structure. This spray bar is intended to knock down any foam that escapes the first spray bar. Both spray bars run continuously and Mr. Barot checks on the spray bars daily.

On the day of the inspection there was a small amount of foam on the outside of the permanent boom within the outfall structure and a very small amount of foam observed at the soft boom outside the outfall structure.

Outfall 003

The inspectors followed the facility personnel to Outfall 003 and arrived at 10:55 A.M. The inspectors did not observe any issues with Outfall 003 on the day of the inspection.

At this time, EPA and IDEM inspectors ended the inspection early to investigate issues with another facility nearby. EPA and IDEM inspectors provide a closing conference to Ms. Swanson, Mr. Barot, and Ms. Casillas and exited the facility at 11:16 A.M.

3. DOCUMENTS RECEIVED FROM FACILITY

- None

4. AREAS OF CONCERN

- A. A small amount of foam is still leaving the Outfall 002 structure.

5. LIST OF ATTACHMENTS

- A) Photolog