UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO ATTENTION OF
ECW-15J

VIA EMAIL

Mr. Tom Maicher
Environmental Manager
Cleveland Cliffs Burns Harbor
250 West U.S. Highway 12
Burns Harbor, IN 46304

Subject: May 25, 2022 Reconnaissance Inspection Report for Cleveland-Cliffs Burns Harbor, NPDES Permit Number IN0000175

Dear Mr. Maicher:

Enclosed, please find a copy of the U.S. Environmental Protection Agency Inspection Report that describes and documents the activities at Cleveland-Cliffs Burns Harbor, LLC on May 25, 2022.

The purpose of the reconnaissance inspection at Cleveland-Cliffs Burns Harbor, LLC was to discuss and observe the Ammonia Treatment System, among other topics.

If you have any questions or concerns regarding this letter, or the inspection report, please contact Joan Rogers at (312) 886-2785 or at rogers.joan@epa.gov.

Sincerely,

Bahr, Ryan
Digitally signed by Bahr, Ryan
Date: 2022.07.13 08:01:37 -05'00'

Ryan J. Bahr, Section 2 Supervisor
Water Enforcement and Compliance Assurance Branch

Enclosure

cc: Nicholas Ream, Environmental Engineer
Indiana Department of Environmental Management

Jason House, Branch Chief of Wastewater Compliance
Indiana Department of Environmental Management

Ramelito Biscocho, Wastewater Inspector
Indiana Department of Environmental Management

Kelly Paulson, Wastewater Inspector
Indiana Department of Environmental Management

Morgan Swanson, Environmental Engineer
Cleveland-Cliffs Burns Harbor

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:
May 25, 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
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Facility Representatives:
Tom Maicher, Manager of the Environmental Plant 219-787-4961
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Morgan Swanson, Environmental Engineer 219-787-2646
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Patrick Gorman, Operator
Patrick.gorman@ClevelandCliffs.com

Vinod Barot, Senior Environmental Engineer 219-787-2120
Vinod.barot@ClevelandCliffs.com

Report Prepared by:
Joan Rogers

Inspector Signature/Date: JOAN ROGERS Digitally signed by JOAN ROGERS Date: 2022.07.12 17:11:17 -05'00'

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

Approver Signature/Date: Bahr, Ryan Digitally signed by Bahr, Ryan Date: 2022.07.13 08:00:29 -05'00'

1. BACKGROUND

The purpose of this report is to describe and document the reconnaissance inspection at the Cleveland Cliffs Burns Harbor facility on May 25, 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 May 27, 2016 and expires on June 30, 2021. A permit renewal application has been submitted to IDEM. The facility was previously owned by ArcelorMittal and was known as ArcelorMittal Burns Harbor.

The inspection on May 25, 2022 was a Compliance Evaluation Reconnaissance Inspection to discuss and observe the cyanide destruction system. The inspectors also wanted to observe the new ammonia treatment process, the Deerfield Pond, and the outfalls while on site.

2. SITE INSPECTION

Site Entry and Opening Conference

Arrival Time:	9:40 A.M.
Presented credentials?	Yes.
Credentials presented to whom and at what time?	9:40 A.M. to Tom Maicher, Pat Gorman, Morgan Swanson, and Vinod Barot.
Was an opening conference held? With whom?	Yes. Ms. Swanson, Mr. Maicher, Mr. Gorman, 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, and Ms. Kelly Paulson, followed Ms. Swanson to the Environmental Services Building conference room from the main office where EPA and IDEM inspectors received their visitor badges. The inspection team explained that the focus of the inspection was to discuss the cyanide destruction system, but other areas would also be discussed and observed.

Selenium Analysis

The conversation began with an update on the changes to the selenium analysis method. In a review of the sample analysis methods by IDEM, they identified that Microbac Laboratory was using the incorrect method for selenium analysis. They were using the 200.7 method, but the approved method is 200.8. Microbac Laboratory is changing their practices to use the 200.8 method and they are rerunning all holds that they have. They currently have approximately two weeks of samples that they will rerun.

Outfalls 002 and 003

At the April 2022 inspection, IDEM observed foam in Outfall 002 and foam and a petroleum odor at Outfall 003. Immediately after that inspection, CCBH personnel took samples of the foam from inside the boom at Outfall 002 and a sample of the foam from Outfall 003. The samples were sent to Microbac Laboratory for analysis.

CCBH personnel believe that the material is organic material from the bottom of the harbor that is stirred up. Ms. Swanson will forward the lab analysis.

On May 27, 2022, Ms. Swanson sent the lab analysis. The lab analysis showed high levels of solids, and detectable amounts of aluminum, aresenic, barium, beryllium, calcium, chromium, cobalt, copper, iron, lead, magnesium, manganese, nickel, potassium, vanadium, and zinc. Outfall 002 does not have effluent limits for any of these parameters.

Ms. Swanson stated that facility personnel check Outfall 002 every day. The boom was moved to the inside of the outfall structure so that a vac truck could be utilized to clean out any foam that is seen. Facility personnel have never seen the foam outside the boom at Outfall 002. Any foam that is vacuumed out of the outfall structure is deposited in the Dirty Industrial Wastewater sewer for treatment at the Secondary Wastewater Treatment Plant (SWTP).

The result from the foam sample at Outfall 003 was analyzed for oil and grease. Ms. Swanson stated that they believe the foam was dust that settled on the surface and mixed into the water. They do not know where the dust came from, and the facility is working

with their contractor on the dust suppression at the facility. She stated she would send the sample analysis to the inspectors.

On May 27, 2022, Ms. Swanson sent the Microbac Laboratory report. The sample result was less than the reporting limit (<5.0 mg/L) for oil and grease. Ms. Swanson stated that facility personnel inspect the outfall every day.

Junction Box Diversion

In the Storm Water Ditch Ammonia-N Study, CCBH stated that they intend to install a diversion structure inside the Junction Box just downstream of the SWTP. This diversion will keep flow inside the Junction Box from contacting the closed-off stubs of piping that lead to the Storm Ditch. This work is a precautionary effort in case the stubs are not watertight.

As of the day of this inspection, measurements have been taken for the creation of the diversion structure. It is anticipated that the diversion structure will be installed in the fall of 2022. Mr. Gorman stated that when the diversion structure is installed, CCBH will notify EPA and IDEM.

Ammonia Treatment

Per the Consent Decree, the Ammonia Treatment unit is required to be ready by June 1, 2022 and operated through September 15, 2022. Mr. Maicher stated that the facility is working to have it operational on time. They were able to test it approximately two weeks ago during a situation when they thought they might have generated cyanide.

Mr. Maicher provided a process flow diagram for the Temporary Blast Furnace Treatment.

Deerfield Pond

The Deerfield Pond is still taking leachate from the landfill. But Phase 1 of the landfill is almost capped, and Phase 2 will be opened soon. The Deerfield Pond will take the leachate from Phase 2 once that section is opened. CCBH wants to divert the leachate directly to Wastewater Pump Station 2 and is in discussion with IDEM on the permitting for that change.

Cyanide Sampling

EPA and IDEM requested six months of cyanide testing. Ms. Swanson had the May 2022 Blast Furnace Closed Water Pump Station (BFCWPS) Operator Cyanide and Ammonia Sampling Cheat Sheets. EPA and IDEM reviewed these cheat sheets. The inspectors observed:

1. On some logs, the operator's initials were not present.
2. Sometimes there was sampling conducted at Cell #4 and sometimes there wasn't.
3. There were different versions of the form.

Ms. Swanson stated that the values from the cheat sheets are transferred to BFCWPS Cyanide Destruct System Log Sheets. These log sheets were not in her office and Ms. Swanson stated they were kept at the SWTP. She stated that she would email the six months of cheat sheets (December 2021-May 2022) and the BFCWPS Cyanide Destruct System Log Sheets for May 11-13, 2022.

The inspectors also requested clarification on the facility's practice of increased sampling when cyanide analysis showed elevated cyanide.

On May 27, 2022, Ms. Swanson provided the requested log and cheat sheets and the answer to the question of the standard practice for increased sampling when cyanide was elevated. Her response was, "Per BH procedures, the cyanide destruct system is to be activated when bench test at BFCWPS first finds cold well cyanide at 3.0 mg/L or above. Two-hour testing is also required upon this result. Supervisors have discretion to request either action begin without a 3.0 mg/l result."

EPA reviewed the emailed documents and noted similar observations to what was observed during the inspection (operator initials missing, different forms, etc.). EPA also observed that in the BFCWPS Operator Cyanide and Ammonia Sampling Cheat Sheets for December 2021, there were many days when cyanide was over 3.0ppm and the facility did not sample every two hours. In fact, the only day when the sampling was increased to every two hours was in the early hours of December 1, 2021 (highlighted below). Facility personnel stated that the two-hour sampling might be done at the SWTP, though. Facility personnel also stated that the cyanide destruct system was in operation during this time. There were no dates in January through May 2022 when cyanide was elevated to 3.0ppm or more.

Date	Time	Cyanide (ppm)
12/1/21	0100	6.5
12/1/21	0300	5.5
12/1/21	0500	4.5
No data for any testing between 0500 and 2300		
12/1/21	2300	6.0
No data for any testing between 12/1/21 at 2300 and 12/3/21 at 1500.		
12/3/21	1500	3.0
12/3/21	1900 – four hours later	2.0
12/3/21	2300	3.0
12/4/21	0300 – four hours later	3.0
12/4/21	0800 – five hours later	4.0
12/4/21	1100 – three hours later	3.0
12/4/21	1500 – four hours later	4.0
12/4/21	1900 – four hours later	4.0
12/4/21	2300 – four hours later	4.0
12/5/21	0300 – four hours later	3.0
12/5/21	0700 – four hours later	4.0
12/5/21	1130 – four and a half hours later	3.5

12/5/21	1500 – three and a half hours later	3.0
12/5/21	1900 – four hours later	3.0
12/5/21	2300 – four hours later	2.0
12/6/21	0700	5.0
12/6/21	1100 – four hours later	5.0
12/6/21	1500 – four hours later	5.5
12/6/21	1900 – four hours later	5.0
12/6/21	2300 – four hours later	5.0
12/7/21	0300 – four hours later	3.5
12/7/21	0720 – over four hours later	3.5
12/7/21	1100 – over three hours later	4.0
12/7/21	1500 – four hours later	4.0
12/7/21	1900 – four hours later	4.0
12/7/21	2300 – four hours later	4.0
12/8/21	0300 – four hours later	3.5
12/8/21	0700 – four hours later	3.0
12/8/21	1100 – four hours later	3.0
12/8/21	1500 – four hours later	2.5
12/8/21	2300	4.0
12/9/21	0300 – four hours later	4.0
12/9/21	0700 – four hours later	2.0
12/9/21	1900	5.0
12/9/21	2300 – four hours later	3.0
12/10/21	0300 – four hours later	3.0
12/10/21	0700 – four hours later	3.5
12/10/21	1500 – eight hours later	4.0
12/10/21	2300 – eight hours later	3.5
12/11/21	0700 – eight hours later	4.5
12/11/21	1500 – eight hours later	4.0
12/11/21	2300 – eight hours later	5.0
12/12/21	0700 – eight hours later	3.0
12/12/21	1500 – eight hours later	3.0
12/12/21	2300 – eight hours later	3.0
12/13/21	0700 – eight hours later	1.5
12/17/21	1500	3.5
12/17/21	2300 – eight hours later	3.0
12/18/21	1500 – sixteen hours later	1.0

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 at 11:10 A.M. and stated that they would like to observe the Deerfield Pond, the Ammonia Treatment

System, a sample taken for cyanide, Outfall 002, Outfall 003, Outfall 011, and Outfall 001.

Deerfield Pond

EPA and IDEM arrived at the Deerfield Pond at 11:14 A.M. The pond was holding 61" of water. A pressure sensor on the pump measures the head to determine the depth of the water in the pond.

Ammonia Treatment System

EPA and IDEM arrived at the Ammonia Treatment System at 11:30 A.M. Previously, dewatering boxes were used to dewater the solids from the clarifiers. Now there are centrifuges. The centrifuges remove the calcium and iron.

Blast Furnace Pump Station

EPA and IDEM observed Mr. Gorman take a sample from the cold well at 11:59 A.M. Mr. Gorman pulled the sample and performed the procedures to test for cyanide. After 15 minutes of waiting, Mr. Gorman used the colorimeter to estimate that the cyanide level was 0.6 ppm.

Outfall 002

The inspectors followed the facility personnel to Outfall 002 and arrived at 12:35 P.M. There was no foam, sheen, or odor in the water in the outfall on the day of the inspection. EPA observed the boom moved into the outfall structure.

Outfall 003

The inspectors followed the facility personnel to Outfall 003 and arrived at 12:58 P.M. EPA observed a small amount of substance on the surface to the right of the boom. There was no rainbow effect in this substance and no odor on the day of the inspection.

Outfall 011

The inspection team arrived at Outfall 011 with the facility personnel at 1:41 P.M. EPA and IDEM inspectors observed the composite sampler. The temperature on the display of the sampler was 3.4°C, and the inside temperature, as read from a thermometer in water, was 3.5°C. The refrigerator where samples are kept was 0.5°C. The inspectors noted that the tubing for the composite sampler was changed every quarter. The last four tubing changes were March 2, 2022, December 2, 2021, October 20, 2021, and August 30, 2021. The tube was not discolored on the day of the inspection, but the intake end of the tube was caught in the stream vegetation. The water by Outfall 011 was clear on the day of the inspection.

EPA, IDEM and the facility representatives discussed the progress to move the flow monitor for Outfall 011 to the sample location. Plans are being developed to construct a

bridge over the stream near the sample location so the flow measurements would be taken at the same location as the samples.

Outfall 001

At 2:02 P.M., the inspection team arrived at Outfall 001. EPA did not observe a sheen in the receiving waterbody. EPA observed that the temperature in the auto-sampler was 1°C while the display read 0.3°C. EPA observed the readings for the stream temperature (67.6°F) and pH (8.22). The inspectors noted that the tubing for the composite sampler was changed every quarter. The last four tubing changes were March 2, 2022, November 30, 2021, October 21, 2021, and August 30, 2021. The tube was not discolored on the day of the inspection.

EPA and IDEM provided a brief closing conference at Outfall 001 and then exited the area at 2:30 P.M.

3. DOCUMENTS RECEIVED FROM FACILITY

- Process Flow Diagram Temporary BFRS TRMT (2022)

4. AREAS OF CONCERN

A. The BFCWPS Operator Cyanide and Ammonia Sampling Cheat Sheets are not being utilized in a standard way. There is missing information and varying degrees of completeness.
B. Using the BFCWPS Operator Cyanide and Ammonia Sampling Cheat Sheets, it appears that sampling frequency was not increased in December 2021 when cyanide levels were at or above 3.0 mg/L. This is a requirement in the Consent Decree, but the Consent Decree was not entered until May 6, 2022.

5. LIST OF ATTACHMENTS

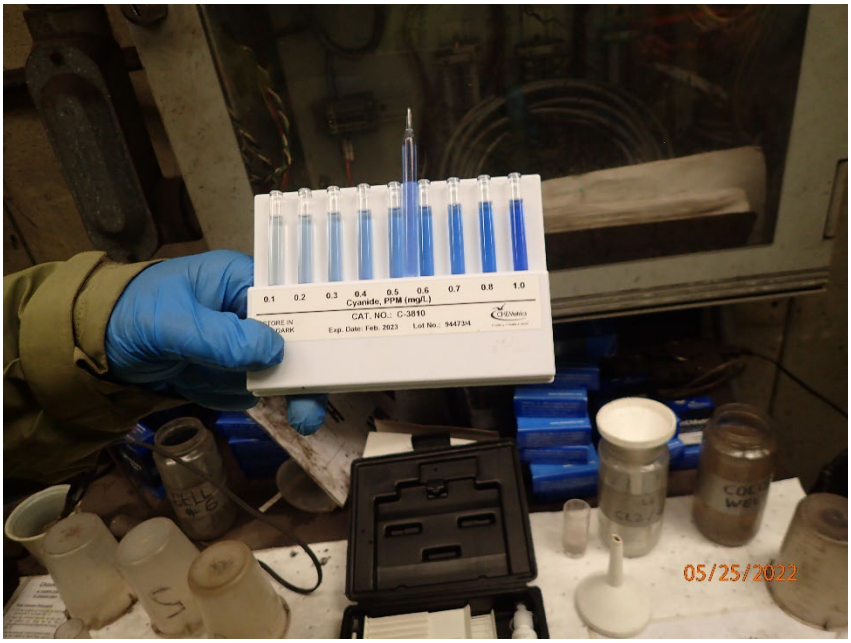
A) Photolog

Cleveland-Cliffs Burns Harbor
EPA Inspection May 25, 2022
All photos taken by Joan Rogers, Environmental Scientist/Inspector, U.S. EPA
Camera: Olympus Tough TG-4

1: P5250254
Description: The Deerfield Pond is holding 61” of water.
Location: North of the Deerfield Pond.
Camera Direction: Southeast.
Date/Time: May 25, 2022/11:18 A.M.

2: P5250255
Description: The centrifuges (circled with a yellow circle) at the Ammonia Treatment System are used to dewater the solids from the clarifiers.
Location: Ammonia Treatment System.
Camera Direction: Northwest.
Date/Time: May 25, 2022/11:33 A.M.

3: P5250256
Description: Cell #4, the last cell for the blowdown before it goes to the SWTP.
Location: Ammonia Treatment System.
Camera Direction: West.
Date/Time: May 25, 2022/11:37 A.M.



4: P5250257
Description: Sample vial is compared with colorimeter tubes. Sample taken during the inspection appeared to show 0.6 mg/L of cyanide.
Location: Blast Furnace Recycle System Control Room.
Camera Direction: West.
Date/Time: May 25, 2022/12:18 P.M.

5: P5250258
Description: The boom has been moved inside the Outfall 002 structure.
Location: Outfall 002.
Camera Direction: West.
Date/Time: May 25, 2022/12:37 P.M.

6: P5250259
Description: There was a substance on the surface to the right of the boom at Outfall 003.
Location: Outfall 003.
Camera Direction: Northwest.
Date/Time: May 25, 2022/1:15 P.M.

7: P5250260
Description: The substance at Outfall 003 is piled up at the boom and a small amount is swirled in the water.
Location: Outfall 003.
Camera Direction: North and Down
Date/Time: May 25, 2022/1:16 P.M.

8: P5250261
Description: The intake end of the composite sampler tube is entangled with the stream vegetation (circled with a yellow circle).
Location: Outfall 011.
Camera Direction: South and Down.
Date/Time: May 25, 2022/1:45 P.M.

9: P5250262
Description: Looking upstream from the sample location for Outfall 001.
Location: Outfall 001.
Camera Direction: Northwest.
Date/Time: May 25, 2022/2:07 P.M.