pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

SOUTHWEST REGIONAL OFFICE
CLEAN WATER PROGRAM

Application Type	**New**	Application No.	**PA0219088**
Facility Type	**Industrial**	APS ID	**356519**
Major / Minor	**Minor**	Authorization ID	**367236**

NPDES PERMIT FACT SHEET ADDENDUM

Applicant and Facility Information

Applicant Name	**Cleveland Cliffs Steel Corp.**	Facility Name	**Bridgeville Plant**
Applicant Address	9227 Centre Pointe Drive	Facility Address	Vanadium Road
	West Chester, OH 45069-4822		Bridgeville, PA 15017
Applicant Contact	James Kemp	Facility Contact	James Kemp
Applicant Phone	(513) 425-6177	Facility Phone	(513) 425-6177
Client ID	160114	Site ID	552072
SIC Code	4953	Municipality	Collier Township
SIC Description	Trans. & Utilities - Refuse Systems	County	Allegheny
Date Published in PA Bulletin	June 27, 2020	EPA Waived?	Yes
Comment Period End Date	August 8, 2020	If No, Reason	

Purpose of Application: Application for a new NPDES permit for discharge of treated Industrial

Internal Review and Recommendations

The Department of Environmental Protection (DEP) published notice of draft Authorization to Discharge Under The National Pollutant Discharge Elimination System (NPDES) on June 27, 2020 to AK Steel Corporation for the AK Steel Corporation Bridgeville Plant site. On June 30, 2020, the Department received a request for extension of the comment period by 15 days and the comment period was extended until August 8, 2020. On August 7, 2020, the Department received comments from AK Steel Corporation on the draft NPDES Permit. The Department received an application for amendment due to name change of the Client for the site. On February 2, 2021, AK Steel Corporation changed its name to Cleveland-Cliffs Steel Corporation. The transaction did not result in any ownership or operational changes with respect to the facility. The name of the facility in eFACTS has been updated from AK Steel Bridgeville Plant to Cleveland Cliffs Steel Corp., Bridgeville Plant.

The Department addressed the August 7, 2020 comments provided by Cleveland Cliffs Steel Corp. A pre-draft of The Draft Permit No.2 was provided to Cleveland Cliffs Steel Corp. on September 27, 2021. On November 29, 2021, the Department received comments to the pre-draft of the 2nd Draft Permit. As a result of the discussions that followed issuance of the original Draft Permit on June 27, 2020, the Department is issuing another Draft Permit (No. 2) to Cleveland Cliffs Steel Corporation prior to finalizing the permit. The purpose of this document is to present DEP's responses to the comments received on the June 2020 Draft Permit (i.e., Draft Permit 1), explain how the comments were considered in preparing the current Draft Permit, and incorporate additional permitting considerations per the requirements of PAG-02 NPDES General Permit for Discharges of Stormwater Associated with Construction Activities.

Approve	Return	Deny	Signatures	Date
X			Curtis Holes, P.E. / Environmental Engineer	December 01, 2022
X			Michael E. Fifth, P.E. / Environmental Engineer Manager	December 2, 2022
X			Christopher Kriley, P.E. / Program Manager	December 7, 2022

Internal Review and Recommendations

August 8, 2020 Comments and Responses

Technology-Based Effluent Limitations

In the fact sheet, the Department asserts that the Effluent Limitation Guidelines for RCRA Subtitle C Hazardous Waste Landfills at 40 CFR Part 445 Subpart A (40 CFR 445.11) are applicable to the site. However, the Department both mischaracterizes the site materials and its regulatory status and misapplies the rules to develop the NPDES permit effluent monitoring and limitation requirements. In summary, (1) the site has not received hazardous waste and, thus, is not a RCRA Subtitle C Hazardous Waste Landfill, (2) the site only received materials directly generated by the industrial operation associated with the site, and (3) Appendices A and C of the PAG-03 General Permit are not applicable to AK Steel's stormwater discharges. A detailed discussion follows.

It seems as the Department is suggesting that the similarity of the site's seep characteristics to the hazardous waste maximum concentrations found at 261.3(c)(2)(ii)(C)(1) are enough to include the 13 metals found in Table 1 of the fact sheet as technology based requirements in the NPDES permit. But again, these maximum concentrations only relate to the exclusion of HTMR non-wastewater material, which has no basis to the material at the site. In addition, a material is not a "hazardous waste" just because it may share some concentrations with an exempt material. Even if these HTMR exclusion maximum concentrations did apply, with the exception of total chromium, the remaining 12 metals are at least 5 time lower than the *exclusion* levels.

Department Response:

The Department agrees with the three (3) points presented in the Technology-Based Effluent Limitations comment. (1) The site has not received hazardous waste and, thus, is not a RCRA Subtilte C Hazardous Waste Landfill. (2) The site only received materals directly generated by the industrial operation associated with the site. (3) Appendices A and C of the PAG-03 General Permit are not applicable to the site stormwater discharges.

Technology-based effluent limitations (TBELs) for the Cleveland Cliffs Bridgeville site should be developed based on case-by-case BPJ basis in which only the relevant parameters based on Bridgeville site's history/operations would need to be monitored or limited.

Table 2 in the 1st Draft Permit's Fact Sheet presents effluent limitations for the hazardous landfill point source category. The parameters include BOD_5, TSS, ammonia (as N), α-terpineol, aniline, benzoic acid, naphthalene, p-cresol, phenol, pyridine, arsenic, chromium, zinc, and pH. After additional research, the Department concludes that the following parameters are not identified as relevant in the vanadium based steel alloy production: α-terpineol, aniline, p-cresol, and pyridine.

Benzoic acid is used in steel anodization process, however not specifically confirmed in this case. Cleveland Cliffs Steel Corporation sampled for Benzoic acid between January 19 and February 2, 2022. The three (3) sample results yielded non-detect concentrations for Benzoic Acid. Benzoic Acid is not present in the facility discharge of IMP 101, therefore the monitoring requirements included in the first Draft NPDES permit have been removed.

Cleveland-Cliff's maximum daily BOD_5 discharge concentration is less than 2.0 mg/L which is significantly lower than the limits specified in Table 2 of the Draft Permit-1 Fact Sheet. Therefore, the BOD_5 limit will be removed from the IMP 101 monitoring requirements.

Cleveland-Cliff's maximum daily TSS discharge is 18 mg/L which is approximately 8% of the maximum daily limit specified in Table 2 of the Draft Permit Fact Sheet. Since the concentration is less than 10% of the TBEL, the limit will be removed from the permit per *Standard Operating Procedure (SOP) for Clean Water Program – Establishing Effluent Limitations for Individual Industrial Permits (SOP No. BPNPSM-PMT-032)*. Monitoring of TSS will be required due to the proposed earth disturbance for construction activities. Monitoring of TSS after construction will ensure that E&S site stabilization BMP-based limits will be applied in the permit as discussed later in current Fact Sheet.

The TBEL for ammonia-nitrogen will also be removed from the IMP 101 monitoring requirements since the discharge concentration is significantly lower than the TBEL limit.

Internal Review and Recommendations

For naphthalene, Cleveland-Cliff's maximum daily discharge concentration is less than 0.055 µg/L which is significantly lower than the TBEL (i.e., 0.059 mg/L) specified in Table 2 of the Draft Permit Fact Sheet. Therefore, the limit and monitoring requirement for naphthalene will be removed from the permit.

For phenol, Cleveland-Cliff's maximum daily discharge concentration is 0.091 µg/L which is significantly lower than the TBEL (i.e., 0.048 mg/L) specified in Table 2 of the Draft Permit Fact Sheet. Therefore, the limit and monitoring requirement for phenol will be removed from the permit.

There were **thirteen (13) changes** to the 1st Draft Permit pertaining to this comment. The monitoring requirements for parameters α-terpineol, Aniline, p-cresol, Pyridine, BOD_5, Ammonia-Nitrogen, Naphthalene, Phenol, Total Cyanide, Total Lead, Total Silver, Benzoic Acid along with Total Zinc have been removed from the permit.

Water-Quality Based Effluent Limits (WQBELs)

Cleveland-Cliff is questioning some of the PENTOXSD Modeling inputs (Design Discharge Flow, Q_{7-10}, Stream Slope, and Discharge and Receiving Stream Hardness)

Department Response:

Since the 1st Draft NPDES Permit, the Department has transitioned from the PENTOXSD Model to the Toxics Management Spreadsheet (TMS) Model for WQBELs. The WQBELs were reevaluated using the update Department TMS Model version 1.3. The model inputs have been revised as detailed in Table 1, below.

Table 1: Summary of WQBEL Model Inputs

Input Parameter	PENTOXSD (Original Model)	TMS (Updated Model)
Design Discharge Flow (MGD)	0.074	0.0155
Q_{7-10} (cfs)	0.0552	0.175
Stream Slope (ft/ft)	0.0001	0.002
Discharge Hardness (mg/L)	100	160
Receiving Stream Hardness (mg/L)	--	360
pH	7.0	7.98
Low Flow Yield	0.1	0.014

Table 2 presents a screenshot of the TMS recommended pollutant limits and/or monitoring requirements. The details of the analysis are presented in Appendix B.

Table 2. TMS Recommended WQBELs

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	3,989	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Antimony	Report	Report	Report	Report	Report	µg/L	46.5	THH	Discharge Conc > 10% WQBEL (no RP)
Total Arsenic	0.011	0.017	83.0	129	207	µg/L	83.0	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Cadmium	Report	Report	Report	Report	Report	µg/L	5.51	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Chromium (III)	0.25	0.39	1,929	3,010	4,823	µg/L	1,929	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	0.011	0.017	86.3	135	216	µg/L	86.3	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	218	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	12,447	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Mercury	Report	Report	Report	Report	Report	µg/L	0.41	THH	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	41.4	CFC	Discharge Conc > 10% WQBEL (no RP)
Trichloroethylene	Report	Report	Report	Report	Report	µg/L	41.1	CRL	Discharge Conc > 25% WQBEL (no RP)
Total Vanadium	0.11	0.17	830	1,295	2,075	µg/L	830	CFC	Discharge Conc ≥ 50% WQBEL (RP)

The WQBEL monitoring requirements of the 1st Draft NPDES Permit have been updated to reflect the TMS model recommendations.

Internal Review and Recommendations

Monitoring Frequency

The monitoring frequency for all pollutants is listed as twice per month in the draft permit. With the exception of Radium-226, AK Steel requests that the monitoring frequency be established as once per month until the cap is installed and increased to twice per month after the remedy is installed and fully functional for the following reasons:

- The planned remedy for the site is to eliminate the discharge, and the remedy will be implemented regardless of the current discharge characteristics;
- If there is any remaining discharge after the remedy is fully implemented, the site discharge will be substantially different from pre-remedy conditions, and the pre-remedy data will have no value; and
- The site is not staffed, and the sampling requirement will impose a significant burden on AK Steel's resources without bringing any meaningful environmental benefit during the interim period or achieving the final remedy.

Monitoring once per month prior to the completion of the remedial action is more than adequate considering that the rate and nature of the discharge will change considerably after the remedial plan construction is completed. Therefore, AK Steel proposes once per month monitoring for the first 42 months of the NPDES permit, twice per month monitoring from 42 months going forward, and that final effluent limits become effective 59 months from the permit effective date. The 42-month time frame is intended to provide 36 months to complete the site cap and six months for the cap to become fully established and for site conditions to normalize.

AK Steel requests that the monitoring frequency for Radium-226 analysis be changed from twice per month to once per quarter. The methodology used to analyze for Radium-226 can require upwards of 21 days to complete, and this time does not include time for quality control and reporting, which could require an additional seven days.

As this is a longer term analytical method, a reduction in monitoring frequency to once per month would not be sufficient. Requiring a monthly, let alone twice per month, analysis could pose compliance concerns if analytical results are not received from the contracted environmental laboratory prior the due date of the discharge monitoring report. Further, given the length of time needed for the analysis, no margin for error is given to account for possible failures within the analytical method and the need to resample within the monitoring period. In essence, if every step of the process is not completed perfectly from analysis to report distribution, AK Steel risks potential noncompliance through no fault of its own.

As such, AK Steel requests that the monitoring frequency for Radium-226 be reduced to once per quarter to allow sufficient time for the analysis and reporting and to correct any unforeseen issues that might arise that are outside of AK Steel's control.

Response:

The Department acknowledges and agrees to the reduction of monitoring frequency to once per month as listed in Table 1 of the current Fact Sheet. The final permit limits will be effective 59 months from the permit effective date, instead of 36 months as mentioned in the Draft Permit.

Cleveland Cliffs submitted analytical data for Radium-226 for a sample collected on July 20, 2020 which showed the presence of Radium-226 with a concentration of 0.0536 pCi/L. The monitoring frequency for Radium-226 will be reduced to once per quarter.

Internal Review and Recommendations

Schedule

AK Steel believes that construction of the cap can be completed within three years from the permit effective date. However, a three year period is insufficient to complete construction of the cap, establish the vegetative layer, monitor the remaining discharge and make an assessment as to whether coverage under the general industrial storm water permit, modifications to the individual NPDES permit, or other actions would be necessary or appropriate. A period of time following completion of the cap, and prior to final effluent limits becoming effective, will provide the following:

- Time for the vegetative cover to be fully established;
- Time for the site to stabilize and reach its new hydraulic equilibrium;
- Time necessary to monitor the site discharges after the vegetative cover is established, and site has hydraulically stabilized;
- An opportunity to collect data over a number of seasons;
- Time for assessment of those collected data by AK Steel and the Department; and
- Time for the Department to evaluate and process any requested change in NPDES permitting made by AK Steel.

In order to perform these steps, AK Steel requests that the compliance schedule to achieve final effluent limits[9] contained in the NPDES permit be 59 months from the permit effective date.

Additionally, the permit needs to allow for schedule adjustments, as necessary. Due to the nature of the proposed project, various items are likely to occur through the course of acquiring permits, gaining site access/authorizations, and construction activities that could impact the schedule and that are beyond the control of AK Steel. AK Steel will exercise reasonable effort to manage unforeseen circumstances and items outside of its control in order to remain on schedule. However, the permit will need to incorporate flexibility that allows for schedule adjustment for items beyond AK Steel's control.

Response:

The compliance period has been modified from "three years following the permit effective date" to "59 months following the permit effective date" in the current Draft Permit. The Department believes this extension would give Cleveland Cliffs ample opportunity to acquire the necessary permits, gain site access/authorizations, and complete the construction activities that are required as part of the Cleveland Cliffs Bridgeville Site Remedial Plan. The Part C permit condition has been modified as shown below:

The final effluent limitations from Part A for discharges via IMP 101 (and Outfall 001) to Chartiers Creek are effective upon completion of construction activities, but no later than 59 months following the Permit Effective Date. If the permittee fails to complete construction activities within 59 months following the Permit Effective Date, a written notice of non-compliance, i.e., failure to complete construction of treatment technologies necessary to achieve compliance with the Part A effluent limits, shall be submitted to the Department no later than 14 calendar days following 59 months from the Permit Effective Date. The notice of non-compliance shall include the following information:

1. A short description of the non-compliance.
2. A description of any actions taken or proposed by the permittee to comply with the construction schedule.
3. A description of any factors which tend to explain or mitigate the non-compliance.
4. An estimate of the date that compliance with the requirement will be achieved.

Internal Review and Recommendations

Summary of Changes to Draft NPDES Permit

Based on all of the comments provided above, AK Steel's requested monitoring requirements and final effluent limits are included in Attachment D. Table D-1 of Attachment D contains the Department's draft NPDES permit effluent limits, notated by AK Steel where changes are requested. Tables D-2A, D-2B, and D-2C of Attachment D contain AK Steel's proposed effluent limits and monitoring requirements. PENTOXSD input and output sheets based on the revisions described above are also included in Attachment D.

AK Steel believes that the requested changes to the permit will still provide a very thorough and robust monitoring of the appropriate parameters and provide discharge limitations that will assure protection of the environment.

Closing

AK Steel requests that the Department reconsider issuing an Industrial NPDES permit at this time for the reasons stated previously: avoiding wasted effort in processing/issuing an unnecessary industrial discharge permit, eliminating redundant work in modifying the permit to reflect actual site discharges after the remedy is in place, avoiding potential schedule and compliance conflicts with the COA, and eliminating additional administrative burden of managing two discharge permits (industrial and construction) for the same activities and discharge.

AK Steel recommends entering into a COA for the site with a NPDES stormwater construction permit followed by an industrial stormwater permit. We believe this is a better, more effective, and more efficient mechanism to facilitate execution of the remedial plan while still providing the Department assurance that AK Steel achieves a compliant discharge.

Finally, if the Department insists on issuing the Industrial NPDES permit, it is imperative that the permit and COA be negotiated, harmonized, and finalized together to eliminate any potential conflicts. This includes a simple means for effectuating agreed upon changes to both documents. As was previously stated, AK Steel has not received a draft of the COA as of the date of this letter.

Response:

The Department will include requirements from the NPDES stormwater construction permit within the individual industrial permit to eliminate the need for a separate construction permit from DEP's Waterways and Wetland's Program and to avoid the potential for overlapping permitting conditions from two different Department entities. The Department expects the Consent Order and Agreement (COA) and the IW Individual Permit to be in harmony to eliminate any potential conflicts.

Internal Review and Recommendations

Summary of Changes to 2nd Draft Permit

1) Schedule for achieving final effluent limits.

The draft NPDES permit provides a compliance schedule of 59 months to achieve the effluent limits for Outfall 101. However, presumably unintentionally, Part C.I.F was drafted inconsistent with this compliance schedule.

- NPDES Permit Part A page 4 contains a 59-month compliance schedule to achieve the final effluent limits.
- However, the draft NPDES permit at Part C.I.F. (page 26) states that the effluent limits are "effective upon completion of construction activities but not longer than 59 months". It is possible that compliance with the final effluent limits will not be achieved immediately following "completion of construction activities". For example, as explained in our August 7, 2020 NPDES permit comment letter, time following completion of construction will be necessary to allow for the following:
    - Time for the vegetative cover to be fully established.
    - Time for the site to stabilize and reach its hydraulic equilibrium.
    - Time to monitor and characterize the site discharges for a number of seasons after the vegetative cover is established and the site has hydraulically equalized.
    - Time for assessment of those collected data by Cleveland-Cliffs Steel and the Department; and
    - Time for the Department to evaluate and process any requested change in NPDES permitting made by Cleveland-Cliffs Steel.

To resolve this issue, the NPDES permit at Part C.I.F. should be revised to state that compliance with the effluent limits is "required as soon as practicable, but not longer than 59 months"; and then to require annual status reports on the progress toward achieving the final effluent limits. A modified Part C.I.F. is provided below.

F. The final effluent limitations from Part A for discharges via IMP 101 (and Outfall 001) to Chartiers Creek ~~are effective upon completion of construction activities, but no later than 59 months following the Permit Effective Date~~ **are to be achieved as soon as practicable, but not longer than 59 months from the Permit Effective Date**. If the permittee fails to complete construction activities within 59 months following the Permit Effective Date, a written notice of non-compliance, i.e., failure to complete construction of treatment technologies necessary to achieve compliance with the Part A effluent limits, shall be submitted to the Department no later than 14 calendar days following 59 months from the Permit Effective Date. The notice of non-compliance shall include the following information:

1. A short description of the non-compliance.
2. A description of any actions taken or proposed by the permittee to comply with the construction schedule.
3. A description of any factors which tend to explain or mitigate the non-compliance.
4. An estimate of the date that compliance with the requirement will be achieved.

The permittee shall submit annual reports to the PADEP Southwest Regional Office Clean Water Program Manager on the progress made toward achieving the final effluent limits. The first report is due no later than 12 months following the Permit Effective Date and subsequent reports are due annually thereafter.

Internal Review and Recommendations

Response:

The Department agrees with the above referenced edits to Part C.I.F of the Draft Permit No.2. **Two (2) changes** to the Draft Permit No.2 Part C.I.F were completed pertaining to this comment. The final effluent limitations from Part A for discharges via IMP101 to Chartiers Creek **are to be achieved as-soon-as practicable, but not longer than 59 months from the Permit Effective Date**. The second edits to Part C.I.F included discussion of the submission of Annual Reports to the Department on the progress made toward achieving the final effluent limits. The first annual report is due 12-months from the effective date and annually thereafter.

2) Monitoring Location for Outfall 101

Upon the effective date of the NPDES permit, Cleveland-Cliffs will be collecting samples for "Outfall 101" at the physical location where the most recent NPDES permit renewal sampling was conducted. That is, location "RR-1" which currently includes all site discharges (see attached map labeled Attachment A).

In accordance with the remedial plan, a new site outfall will be constructed from the site detention pond, and any seeps downstream of this pond will be eliminated by virtue of the remedial plan once the lined cover system is placed and fully established and the site has stabilized as described above. All site discharge is intended to be discharged via this detention pond outfall.

To address this circumstance, Cleveland-Cliffs proposes the following:

- "Outfall 101" will be monitored at the "RR-1" location upon the permit effective date
- Once the following are completed, the "Outfall 101" monitoring location will change to the outlet of the site detention pond:
  - The site lined cover system is placed,
  - All site features to direct all site water to the detention pond are in service,
  - The detention pond outlet is constructed and
  - The detention pond is placed into service,
- Upon switching of the Outfall 101 monitoring location, Cleveland-Cliffs will inspect the site quarterly for any seeps that are not captured in the detention pond outlet, consistent with site inspection frequency contained in the remedial plan.
- If seeps are identified that are not captured in the pond outlet monitoring location 42 months from the permit effective date, Cleveland-Cliffs will submit a plan to address these discharges 48 months from the permit effective date. The periods of 42 and 48 months is considered adequate for site construction to be completed and allows for a required plan to be developed within the permit term, if necessary.

Long term, continued monitoring at location "RR-1" is not desirable for the following reasons:

- Safety concerns with its proximity to rail-road tracks
- Long term access issues
- The location receives run-off / discharges from off-site that are beyond the control of Cleveland-Cliffs.

The approach outlined above addresses these issues while providing assurance than any remaining seeps not directed to the outfall will be addressed. As suggested during prior communication with the Department, difficult permitting circumstances such as this can be avoided if the remedial plan were allowed to proceed, and after implementation and characterization of the remaining discharge, an NPDES permit is developed to address the discharge "that is left".

Response:

The IMP101 interim sampling location will remain unchanged as detailed in Part A.1.A to ensure that all potential facility discharges are captured. Once remediation and site stabilization are completed, the IMP 101 sampling location will be the principle spillway discharge of the Detention Pond, approximate location of 40° 22' 05", -80° 05' 48".

Two (2) changes to the Draft Permit No.2 were completed pertaining to this comment. The Latitude and Longitude identifiers of IMP 101 have been updated to 40° 22' 05", -80° 05' 48" in Part A.I.B along with sampling location description changes from at IMP 101 to at the principle spillway discharge of the Detention Pond.

Internal Review and Recommendations

3) PCB Monitoring and Discharge Prohibition

The September 27, 2021 draft permit contains a monitoring requirement (monthly) for Aroclor-1248 whereas the June 2020 draft permit did not. As currently written, any detection of PCBs under the draft permit can be interpreted as non-compliance because of the following permit condition (see draft permit Part C. I. D.): *There shall be no discharge of polychlorinated biphenyl (PCB) compounds such as those commonly used for transformer fluid at any time.*

The monitoring requirement and discharge prohibition for PCBs as currently contained in the draft permit must be removed for the following reasons:

- As currently written, the combination of the monitoring requirement and discharge prohibition could place Cleveland-Cliffs into immediate non-compliance with the permit.
- A remedial plan for the site intended to eliminate the existing discharge has been conditionally approved, so no action other than implementation of the remedial plan to eliminate the discharge can reasonably be expected to occur.
- The current discharge characteristics will not be representative of the planned future conditions. That is, collecting Aroclor-1248 discharge data at this time will not provide any real benefit as the current discharge is planned to be eliminated.

Response:

Review of the historic sample data of facility from 1987 detected Aroclor-1248. Aroclor-1248 is synonymous for PCB-1248 and the Department is unaware of any additional PCB data for the facility. Cleveland Cliffs Steel Corporation sampled for PCB-1248 between January 19 and February 2, 2022. The three (3) sample results yielded trace concentrations of PCB-1248. The monitoring requirements contained in Part A.I.A and B along with the Part C.I.D condition will be maintained.

The Chartiers Creek has a TMDL for PCBs and Chlordane. The TMDL outlines a plan to achieve water quality standards in the water body. The TMDL goal is for levels of PCB and chlordane in the water column to be equal to or less than the Commonwealth's water quality criteria. The production and use of PCB in the United States was banned in July of 1979. While it is now illegal to manufacture, distribute, or use PCB in the United states, these synthetic oils were used in the past. PCB was introduced into the environment while use was unrestricted, as is the case with this facility. The site has been shown to have PCBs in its discharge. The TMDL required that all discharges that are known to contain PCBs have effluent limitations and a requirement of "not detectable" for limits lower than detection. To be consistent with this assumption with respect to 40 CFR 122.44(d)(1)(vii)(B) and the Department permitting procedures, the permit's WQBEL for Anchor-1248 will be equal to the water quality criterion. Compliance with the PCB WQBELs will be evaluated based on the achievement of the Department's quantitation limits (QLs). Table 3 summarizes the TMDL WQBELs for Outfall 101.

Table 3. PCB WQBELs

	Effluent Limits as Specified in Part A of the Permit (µg/L)		Effluent Limits as Specified on DMRs/eDMR for Compliance Evaluations (µg/L)	
Parameter	**Average Monthly**	**Daily Maximum**	**Average Monthly**	**Daily Maximum**
PCB-1248	0.00004	0.00004	<0.25	<0.25

One change to the Draft permit was completed pertaining to this comment. A special condition has been added to Part C.II. of the NPDES permit regarding Water Quality Quantitation Limits.

Internal Review and Recommendations

4) Chapter 102 Permitting Requirements - Construction storm water permitting provisions.

Cleveland-Cliffs recognizes the Department's efforts to streamline the permitting process by including general construction storm water and erosion and sediment control provisions into this individual NPDES permit, thereby not requiring coverage under the PAG-02 general construction storm water permit. See Fact Sheet page 22. Cleveland Cliffs requests the following changes to draft permit:

- Remove the following sections of the draft permit
  - Part A. I. E.
  - Part A. I. F.
  - Part C. I. G
  - Part C. I. H.
- Place the following language at Part A. I. E. of the permit as a replacement for the above sections.

  - *Parts A. I. and II. and Parts C. II to XVI of the Pennsylvania General Construction Storm Water Permit (PAG-02) are hereby incorporated by reference upon written notice by the permittee to the PADEP Southwest Regional Office that it intends to begin construction.*

  - *Cleveland Cliffs shall secure an approved Erosion and Sedimentation (E&S) Control Plan, Pollution, Prevention, and Contingency (PPC) plan, and a Post-Construction Stormwater Management (PCSM) plan prior to the commencement of earth disturbance activities. The copies bearing the approval stamps shall be maintained ~~onsite~~ by the permittee through the duration of the construction project.*

  - *During the construction project proposed in the Cleveland Cliffs Bridgeville Site Remedial Plan, Cleveland Cliffs shall meet the effluent limitations as indicated in Part A of the NPDES permit (considering the compliance schedule).*

  - *If modifications to the construction plan are made in the future, a copy of the final approval-stamped E&S Control Plan shall be submitted to the Clean Water Program. The amended or future E&S plans must be followed during all phases of construction work. Cleveland Cliffs shall ensure any required permits or amendments with the Department or the Allegheny County Conservation District have been secured prior to the commencement of earth disturbance.*

  - *The referenced sections of PAG-02 are no longer applicable and no longer incorporated by reference upon submittal of a letter containing the components of a "Notice of Termination" as described in Subject IV of PAG-02 and approval of the "NOT letter" by PADEP.*

Cleveland Cliffs' primary concern is to ensure a mechanism exists to terminate the "construction storm water" requirements at the appropriate time, and to ensure such requirements do not extend for the entire individual NPDES industrial permit term when unnecessary.

In the alternate to the requested changes above, Cleveland-Cliffs is amenable to removing Parts A. I. E., A. I. F. C. I. G. and C. I. F. from the individual permit and addressing construction storm water permitting and E&S control requirements through the typical permitting and approval avenues.

Response:

The Draft Permit includes requirements from the Chapter 102 construction permit to streamline the permitting process. To properly incorporate the Chapter 102 permit into the NPDES permit, conditions from Part A and C of the 102 permit are added to Part A and C of the NPDES permit. The Part A conditions are both identified as applicable during construction. Once construction is completed and site E&S is stabilized these two conditions are no longer applicable. The Part C conditions are identified as Construction and Additional Requirements Related to Earth Disturbance Activities
No changes to the Draft permit are completed pertaining to this comment.

Internal Review and Recommendations

5) **Best Professional Judgement (BPJ) Technology-Based Effluent Limits (TBELs)**

In the absence of applicable Effluent Limitation Guidelines, the permitting authority may develop site-specific technology-based effluent limits on a BPJ basis in accordance with 40 CFR Part 125.3(c) and (d). The Department has applied TBELs on a BPJ basis for arsenic, total chromium and zinc for the Outfall 101 discharge. The Department's BPJ analysis is both unnecessary and flawed for the following reasons.

BPJ TBELs are unnecessary in this case

- The current discharge for which the Department has assigned BPJ TBELs is planned to be eliminated, making development of BPJ TBELs unnecessary. Obvious changes to the site are planned and required through implementation of the conditionally approved remedial plan, making development of BPJ TBELs based on the current site characteristics moot, as the site characteristics will obviously change. Revisions to any BPJ TBELs because of any "substantial alterations to facility" are expressly authorized under 40 CFR 122.44(l)(2) / 40 CFR 122.62. Substantial alterations will clearly occur, again making BPJ TBELs developed at this time inappropriate because it is known that the site characteristics will change. Should a discharge other than "un-impacted storm water" occur following implementation of the remedial plan, appropriate permit conditions or effluent limits should be considered at that time (see comment 2 above).

The Department's BPJ analysis is flawed

When developing BPJ effluent limits, a technology basis and corresponding achievable effluent limits based on that technology are identified in accordance with 40 CFR Part 125.3(c)(2) and through consideration of the factors at 40 CFR Part 125.3(d).

- Under 40 CFR 125.3(c)(2)(ii) the Department is required to consider any unique factors relating to the applicant. In this case, the planned elimination of the current discharge is a "unique factor", rendering the development of any BPJ TBELs unnecessary at this time.
- The Department selected the hazardous waste landfill ELGs for arsenic, total chromium, and zinc as the BPJ TBELs. As established in Cleveland Cliffs' prior comments and as acknowledged by the Department, the site is not a hazardous waste landfill. By way of applying the hazardous waste landfill ELG concentrations, PADEP has chosen flow equalization, chemical precipitation, activated sludge biological treatment and multi-media filtration as the technology basis for the BPJ effluent limits, as that is the technology basis for the hazardous waste landfill ELGs. While

the draft permit Fact Sheet lists the factors at 40 CFR 125.3(d), the analysis contains no assessment as to the appropriateness of these technologies on a site-specific basis to the Bridgeville site (e.g., unstaffed, planned discharge elimination, etc.).

For the reasons identified above, Cleveland-Cliffs believes that developing BPJ TBELs for the site unnecessary and inappropriate at this time.

Response:

Effluent limitations for Arsenic and Total Chromium are WQBEL recommendations from the TMS model not Technology-Based Limits. The BPJ evaluation does not factor into the effluent limitations for Arsenic and Total Chromium. The effluent limitations for Arsenic and Total Chromium will remain in the Draft Permit.

The application reported a Total Zinc concentration of 16 $\mu g/L$. The treatability limit for Total Zinc is 500 $\mu g/L$. The concentration level reported in the application would not trigger the need to evaluate Total Zinc for BPJ limits. The WQBEL evaluation of Total Zinc is ≤10% of WQBEL, therefore no effluent limitation required. The monitoring requirement of Total Zinc has been removed from the Draft Permit.

Two (2) changes have been completed pertaining to this comment. Monitoring required of Total Zinc has been removed from the Draft Permit Part A.I.A and B.

Internal Review and Recommendations

6) **Unnecessary monitoring**

Monitoring for the following pollutants should be removed from the permit: COD, total cyanide, silver and benzoic acid. Available information and data do not support monitoring requirements for these pollutants. A table containing the Department's stated basis for including the parameters and containing the reasons for removal of these pollutants is provided below.

Pollutant to remove	Department's basis for including in permit	Basis for removal
COD	PAG-03 general industrial storm water permit for TSDFs (Appendix A) and "landfills" (Appendix C).	PADEP's application of PAG-03 Appendices A and C is inappropriate. The site is not a landfill from which COD is a pollutant of concern, and the site is not a TSDF. COD is not present in significant concentrations in the site discharge (average result of < 15 mg/L; maximum result of 26 mg/L)
T. CN	PAG-03 general industrial storm water permit for TSDFs (Appendix A)	All results for the 2019 permit application sampling were non-detect at the Department's Target QL (all results < 0.002 mg/L). PADEP's application of PAG-03 Appendix A is inappropriate because the facility is not a TSDF.
Silver	PAG-03 general industrial storm water permit for TSDFs (Appendix A)	Sampling results are < 10% of the preliminary WQBEL. PADEP's application of PAG-03 Appendix A is inappropriate because the facility is not a TSDF.
Benzoic Acid	Used in steel anodizing process. No effluent data available.	PADEP provided no evidence that steel anodizing was performed at the site or that the pollutant would be present in the site discharge.

Response:

The application concentrations for COD, Total Cyanide, and Silver are below threshold values that would trigger a WQBEL monitoring requirement. The monitoring requirement of COD, Total Cyanide and Silver have been removed from the Draft Permit.

Through review of historic industrial activities and waste disposed at the facility, it is unclear if Benzoic Acid is a parameter of concern. The Department does not have any analytical data to eliminate Benzoic Acid as a parameter of concern. The Department will allow Cleveland Cliffs Steel Corporation the opportunity to sample for Benzoic Acid during the 30-day Draft Permit public comment period. If new analytical results verify that Benzoic Acid is not present in the facility discharge of IMP 101 at the Department's minimum quantitation limits, the benzoic acid monitoring requirements contained in Part A.I.A and B will be eliminated prior to Final permit issuance.

Six (6) changes have been completed to the 1st Draft NPDES permit pertaining to this comment. Monitoring required of COD, Total Cyanide and Silver have been removed from the Draft Permit Part A.I.A and B.

7) **Outfall 001**

The draft permit includes "Outfall 001" as the final discharge to "Painters Run" with no monitoring requirements and contains the following statement: *"Discharges from Outfall 001 shall consist entirely of regulated discharges from IMP 101, uncontaminated stormwater runoff, and offsite sources not regulated by this NPDES permit."*

Cleveland-Cliffs does not have control over the "Outfall 001" final discharge location and the location is impacted by other discharges. Accordingly, Cleveland-Cliffs requests that Outfall 001 be removed from

Internal Review and Recommendations

the permit and the receiving water for Outfall 101 be identified as "Chartier's Creek[1] via off-site storm water conveyance".

Response:

In general, an industrial outfall is the point where a point source industrial activity discharges wastewater to waters of the Commonwealth or a municipal separate storm sewer system (MS4). When discharge is to an MS4, the actual receiving waterbody may be some distance away from the industrial site allowing the discharge to comingle with other facility discharges and roadway discharges along the way to the receiving stream. When the facility discharges to an MS4, the outfall location can be defined as the location where the discharge exits the facility property.

Cleveland-Cliff's discharge does not flow directly to the receiving stream. The discharge is to a stormwater conveyance channel that other industrial facilities also discharge to. Since the Cleveland-Cliff discharge comingles with other industrial facility discharges, Cleveland-Cliff's Outfall 001 location will be changed to the location the discharge exits the facility property. This will also eliminate the need of an Internal Monitoring Point.

IMP 101, as detailed in Part A.I.A of the Draft permit, will be changed to Outfall 001. Once the site is stabilized, the location of Outfall 001 will be relocated to the sedimentation pond's principal spillway. On the CEC drawing titled NPDES Sampling Location, this location is identified as "Future Outfall 001 once site is established" and is the location at which the discharge exists Cleveland-Cliff's property. Refer to Appendix A for the NPDES Sampling Locations drawing.

Two (2) changes to the Draft NPDES permit have been completed pertaining to this comment. IMP 101 has been removed and Outfall 001's location has been revised to the location where the discharge exits the Cleveland-Cliff property.

Summary of Final Limits to be effective in the Final Permit

Table 3 presents a summary of the most stringent limits and/or monitoring requirements that are applied at Outfall 001. The limits for total arsenic, total chromium, hexavalent chromium, and total vanadium, will be applied at the final phase upon construction and installation of the cap (i.e., 59 months following the permit effective date).

Internal Review and Recommendations

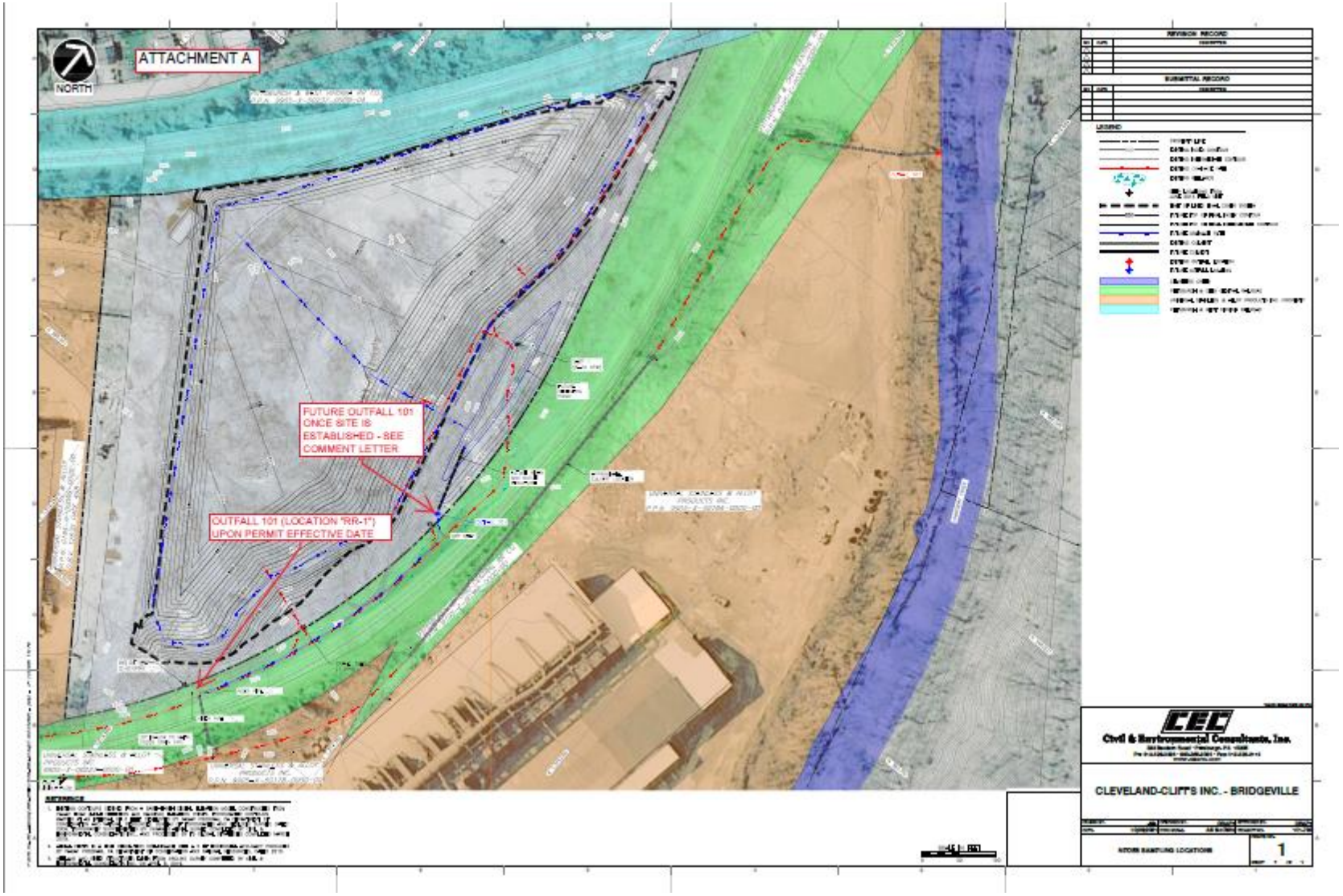
Table 3. Final Monitoring and/or Limitation Requirements for Outfall 001

Parameter	Instant. Minimum	Average Monthly	Daily Maximum	Instantaneous Maximum	Sample Frequency	Sample Type
Flow (MGD)	-	-	Report	-	1/month	Measured
pH	6.0	-	-	9.0	1/month	Grab
Total Suspended Solids (mg/L)	-	-	Report	-	1/month	Grab
Total Dissolved Solids (mg/L)	-	-	Report	-	1/month	Grab
Sulfate (mg/L)	-	-	Report	-	1/month	Grab
Chloride (mg/L)	-	-	Report	-	1/month	Grab
Bromide (mg/L)	-	-	Report	-	1/month	Grab
Total Aluminum (µg/L)	-	-	Report	-	1/month	Grab
Total Antimony (µg/L)	-	-	Report	-	1/month	Grab
Total Arsenic (µg/L)	-	-	129.0	-	1/month	Grab
Total Cadmium (µg/L)	-	-	Report	-	1/month	Grab
Total Chromium (µg/L)	-	-	3,010	-	1/month	Grab
Hexavalent Chromium (µg/L)	-	-	135.0	-	1/month	Grab
Total Copper (µg/L)	-	-	Report	-	1/month	Grab
Total Iron (µg/L)	-	-	Report	-	1/month	Grab
Total Mercury (µg/L)	-	-	Report	-	1/month	Grab
Total Selenium (µg/L)	-	-	Report	-	1/month	Grab
Total Vanadium (µg/L)	-	-	1,295	-	1/month	Grab
Trichloroethylene (µg/L)	-	-	Report	-	1/month	Grab
Benzoic Acid (µg/L)	-	-	Report	-	1/month	Grab
Radium-226 (pCi/L)	-	-	Report	-	1/quarter	Grab
PCB-1248 (µg/L)	-	-	Report	-	1/month	Grab

APPENDIX A – NPDES Sampling Locations

APPENDIX B – TMS Model Output

APPENDIX A – NPDES Sampling Locations


ATTACHMENT A
NORTH
FUTURE OUTFALL 101
ONCE SITE IS
ESTABLISHED - SEE
COMMENT LETTER
OUTFALL 101 (LOCATION "RR-1")
UPON PERMIT EFFECTIVE DATE
REVISION RECORD
SUBMITTAL RECORD
LEGEND
CEC
Civil & Environmental Consultants, Inc.
CLEVELAND-CLIFFS INC. - BRIDGEVILLE
1

APPENDIX B – TMS Model Output

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Toxics Management Spreadsheet
Version 1.3, March 2021

Discharge Information

Instructions | Discharge | Stream

Facility: **Cleveland Cliffs Steel Corp Bridgeville Plant** NPDES Permit No.: **PA0219088** Outfall No.: **IMP 101**

Evaluation Type: **Major Sewage / Industrial Waste** Wastewater Description: **Leachate and stormwater**

Discharge Characteristics								
Design Flow (MGD)*	Hardness (mg/l)*	pH (SU)*	Partial Mix Factors (PMFs)				Complete Mix Times (min)	
			AFC	CFC	THH	CRL	Q_{7-10}	Q_h
0.0155	160	7.98						

					0 if left blank		0.5 if left blank		0 if left blank			1 if left blank	
	Discharge Pollutant	Units	Max Discharge Conc		Trib Conc	Stream Conc	Daily CV	Hourly CV	Strea m CV	Fate Coeff	FOS	Criteri a Mod	Chem Transl
Group 1	Total Dissolved Solids (PWS)	mg/L		920000									
	Chloride (PWS)	mg/L		50000									
	Bromide	mg/L		87									
	Sulfate (PWS)	mg/L		140000									
	Fluoride (PWS)	mg/L		3600									
Group 2	Total Aluminum	µg/L		1400									
	Total Antimony	µg/L		17									
	Total Arsenic	µg/L		89									
	Total Barium	µg/L		18									
	Total Beryllium	µg/L		0.14									
	Total Boron	µg/L		530									
	Total Cadmium	µg/L		0.85									
	Total Chromium (III)	µg/L		1300									
	Hexavalent Chromium	µg/L		1100									
	Total Cobalt	µg/L		1.9									
	Total Copper	µg/L		29									
	Free Cyanide	µg/L											
	Total Cyanide	µg/L		0.002									
	Dissolved Iron	µg/L		140									
	Total Iron	µg/L		1600									
	Total Lead	µg/L		5.2									
	Total Manganese	µg/L		96									
	Total Mercury	µg/L		0.1									
	Total Nickel	µg/L		28									
	Total Phenols (Phenolics) (PWS)	µg/L		0.091									
	Total Selenium	µg/L		11									
	Total Silver	µg/L		0.22									
	Total Thallium	µg/L		0.12									
	Total Zinc	µg/L		16									
	Total Molybdenum	µg/L		4100									
	Acrolein	µg/L	<	1.8									
	Acrylamide	µg/L	<										
	Acrylonitrile	µg/L	<	2.5									
	Benzene	µg/L	<	0.6									
	Bromoform	µg/L	<	0.98									

Group 3	Carbon Tetrachloride	µg/L	<	0.88										
	Chlorobenzene	µg/L		0.5										
	Chlorodibromomethane	µg/L	<	0.84										
	Chloroethane	µg/L	<	0.9										
	2-Chloroethyl Vinyl Ether	µg/L	<	1.7										
	Chloroform	µg/L	<	0.6										
	Dichlorobromomethane	µg/L	<	0.64										
	1,1-Dichloroethane	µg/L	<	0.63										
	1,2-Dichloroethane	µg/L	<	0.57										
	1,1-Dichloroethylene	µg/L	<	0.55										
	1,2-Dichloropropane	µg/L	<	0.66										
	1,3-Dichloropropylene	µg/L	<	0.59										
	1,4-Dioxane	µg/L	<											
	Ethylbenzene	µg/L	<	0.51										
	Methyl Bromide	µg/L	<	0.89										
	Methyl Chloride	µg/L	<	0.9										
	Methylene Chloride	µg/L	<	0.89										
	1,1,2,2-Tetrachloroethane	µg/L	<	0.6										
	Tetrachloroethylene	µg/L	<	0.47										
	Toluene	µg/L	<	0.46										
	1,2-trans-Dichloroethylene	µg/L	<	0.67										
	1,1,1-Trichloroethane	µg/L	<	0.6										
	1,1,2-Trichloroethane	µg/L	<	0.45										
	Trichloroethylene	µg/L	<	13										
	Vinyl Chloride	µg/L	<	0.16										
Group 4	2-Chlorophenol	µg/L	<	0.059										
	2,4-Dichlorophenol	µg/L	<	0.047										
	2,4-Dimethylphenol	µg/L	<	0.038										
	4,6-Dinitro-o-Cresol	µg/L	<	1.4										
	2,4-Dinitrophenol	µg/L	<	1.4										
	2-Nitrophenol	µg/L	<	0.056										
	4-Nitrophenol	µg/L	<	0.13										
	p-Chloro-m-Cresol	µg/L	<	0.056										
	Pentachlorophenol	µg/L	<	0.22										
	Phenol	µg/L	<	0.091										
	2,4,6-Trichlorophenol	µg/L	<	0.063										
Group 5	Acenaphthene	µg/L	<	0.06										
	Acenaphthylene	µg/L	<	0.06										
	Anthracene	µg/L	<	0.045										
	Benzidine	µg/L	<	4.1										
	Benzo(a)Anthracene	µg/L	<	0.069										
	Benzo(a)Pyrene	µg/L	<	0.049										
	3,4-Benzofluoranthene	µg/L	<	0.09										
	Benzo(ghi)Perylene	µg/L	<	0.064										
	Benzo(k)Fluoranthene	µg/L	<	0.081										
	Bis(2-Chloroethoxy)Methane	µg/L	<											
	Bis(2-Chloroethyl)Ether	µg/L	<	0.037										
	Bis(2-Chloroisopropyl)Ether	µg/L	<	0.054										
	Bis(2-Ethylhexyl)Phthalate	µg/L	<	4.3										
	4-Bromophenyl Phenyl Ether	µg/L	<	0.058										
	Butyl Benzyl Phthalate	µg/L	<	0.43										
	2-Chloronaphthalene	µg/L	<	0.055										
	4-Chlorophenyl Phenyl Ether	µg/L	<	0.056										
	Chrysene	µg/L	<	0.075										
	Dibenzo(a,h)Anthrancene	µg/L	<	0.067										
	1,2-Dichlorobenzene	µg/L	<	0.047										
	1,3-Dichlorobenzene	µg/L	<	0.045										
	1,4-Dichlorobenzene	µg/L	<	0.056										
	3,3-Dichlorobenzidine	µg/L	<	0.54										
	Diethyl Phthalate	µg/L	<	0.53										
	Dimethyl Phthalate	µg/L	<	0.052										
	Di-n-Butyl Phthalate	µg/L	<	0.69										
	2,4-Dinitrotoluene	µg/L	<	0.047										

	2,6-Dinitrotoluene	µg/L	<	0.056										
	Di-n-Octyl Phthalate	µg/L	<	0.63										
	1,2-Diphenylhydrazine	µg/L	<	0.045										
	Fluoranthene	µg/L	<	0.056										
	Fluorene	µg/L	<	0.064										
	Hexachlorobenzene	µg/L	<	0.052										
	Hexachlorobutadiene	µg/L	<	0.064										
	Hexachlorocyclopentadiene	µg/L	<	0.46										
	Hexachloroethane	µg/L	<	0.057										
	Indeno(1,2,3-cd)Pyrene	µg/L	<	0.079										
	Isophorone	µg/L	<	0.05										
	Naphthalene	µg/L	<	0.055										
	Nitrobenzene	µg/L	<	0.015										
	n-Nitrosodimethylamine	µg/L	<	0.062										
	n-Nitrosodi-n-Propylamine	µg/L	<	0.066										
	n-Nitrosodiphenylamine	µg/L	<	0.11										
	Phenanthrene	µg/L	<	0.051										
	Pyrene	µg/L	<	0.05										
	1,2,4-Trichlorobenzene	µg/L	<	0.048										
Group 6	Aldrin	µg/L	<											
	alpha-BHC	µg/L	<											
	beta-BHC	µg/L	<											
	gamma-BHC	µg/L	<											
	delta BHC	µg/L	<											
	Chlordane	µg/L	<											
	4,4-DDT	µg/L	<											
	4,4-DDE	µg/L	<											
	4,4-DDD	µg/L	<											
	Dieldrin	µg/L	<											
	alpha-Endosulfan	µg/L	<											
	beta-Endosulfan	µg/L	<											
	Endosulfan Sulfate	µg/L	<											
	Endrin	µg/L	<											
	Endrin Aldehyde	µg/L	<											
	Heptachlor	µg/L	<											
	Heptachlor Epoxide	µg/L	<											
	PCB-1016	µg/L	<											
	PCB-1221	µg/L	<											
	PCB-1232	µg/L	<											
	PCB-1242	µg/L	<											
	PCB-1248	µg/L	<											
	PCB-1254	µg/L	<											
	PCB-1260	µg/L	<											
	PCBs, Total	µg/L	<											
	Toxaphene	µg/L	<											
	2,3,7,8-TCDD	ng/L	<											
Group 7	Gross Alpha	pCi/L												
	Total Beta	pCi/L	<											
	Radium 226/228	pCi/L	<											
	Total Strontium	µg/L	<											
	Total Uranium	µg/L	<											
	Osmotic Pressure	mOs/kg												
	Total Vanadium	µg/L		52000										

Stream / Surface Water Information

Cleveland Cliffs Steel Corp Bridgeville Plant, NPDES Permit No. PA0219088, Outfall IMP 001

Instructions | Discharge | *Stream*

Receiving Surface Water Name: Painters Run

No. Reaches to Model: 1

- (●) Statewide Criteria
- ( ) Great Lakes Criteria
- ( ) ORSANCO Criteria

Location	Stream Code*	RMI*	Elevation (ft)*	DA (mi^2)*	Slope (ft/ft)	PWS Withdrawal (MGD)	Apply Fish Criteria*
Point of Discharge	036777	12.56	1083	12.5	0.002		Yes
End of Reach 1	036777	12.06	1078	12.9	0.002		Yes

Q_{7-10}

Location	RMI	LFY (cfs/mi^2)*	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness*	pH*	Hardness	pH
Point of Discharge	12.56	0.014	0.175									360	7		
End of Reach 1	12.06	0.014	0.181												

Q_h

Location	RMI	LFY (cfs/mi^2)	Flow (cfs)		W/D Ratio	Width (ft)	Depth (ft)	Velocity (fps)	Travel Time (days)	Tributary		Stream		Analysis	
			Stream	Tributary						Hardness	pH	Hardness	pH	Hardness	pH
Point of Discharge	12.56														
End of Reach 1	12.06														

Model Results

Cleveland Cliffs Steel Corp Bridgeville Plant, NPDES Permit No. PA0219088, Outfall IMP 001

Instructions | *Results* | RETURN TO INPUTS | SAVE AS PDF | PRINT | (●) All | ( ) Inputs | ( ) Results | ( ) Limits

☐ ***Hydrodynamics***

☑ ***Wasteload Allocations***

☑ ***AFC*** CCT (min): 9.093 PMF: 1 Analysis Hardness (mg/l): 335.9 Analysis pH: 7.05

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	750	750	6,224	
Total Antimony	0	0		0	1,100	1,100	9,128	
Total Arsenic	0	0		0	340	340	2,821	Chem Translator of 1 applied
Total Barium	0	0		0	21,000	21,000	174,262	
Total Boron	0	0		0	8,100	8,100	67,215	
Total Cadmium	0	0		0	6.531	7.31	60.7	Chem Translator of 0.893 applied
Total Chromium (III)	0	0		0	1536.947	4,864	40,360	Chem Translator of 0.316 applied
Hexavalent Chromium	0	0		0	16	16.3	135	Chem Translator of 0.982 applied
Total Cobalt	0	0		0	95	95.0	788	
Total Copper	0	0		0	42.089	43.8	364	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	234.574	382	3,168	Chem Translator of 0.614 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	1.400	1.65	13.7	Chem Translator of 0.85 applied
Total Nickel	0	0		0	1305.078	1,308	10,852	Chem Translator of 0.998 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	Chem Translator of 0.922 applied
Total Silver	0	0		0	25.852	30.4	252	Chem Translator of 0.85 applied
Total Thallium	0	0		0	65	65.0	539	
Total Zinc	0	0		0	327.123	334	2,776	Chem Translator of 0.978 applied
Acrolein	0	0		0	3	3.0	24.9	

Acrylonitrile	0	0		0	650	650	5,394	
Benzene	0	0		0	640	640	5,311	
Bromoform	0	0		0	1,800	1,800	14,937	
Carbon Tetrachloride	0	0		0	2,800	2,800	23,235	
Chlorobenzene	0	0		0	1,200	1,200	9,958	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	18,000	18,000	149,368	
Chloroform	0	0		0	1,900	1,900	15,767	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	15,000	15,000	124,473	
1,1-Dichloroethylene	0	0		0	7,500	7,500	62,237	
1,2-Dichloropropane	0	0		0	11,000	11,000	91,280	
1,3-Dichloropropylene	0	0		0	310	310	2,572	
Ethylbenzene	0	0		0	2,900	2,900	24,065	
Methyl Bromide	0	0		0	550	550	4,564	
Methyl Chloride	0	0		0	28,000	28,000	232,350	
Methylene Chloride	0	0		0	12,000	12,000	99,578	
1,1,2,2-Tetrachloroethane	0	0		0	1,000	1,000	8,298	
Tetrachloroethylene	0	0		0	700	700	5,809	
Toluene	0	0		0	1,700	1,700	14,107	
1,2-trans-Dichloroethylene	0	0		0	6,800	6,800	56,428	
1,1,1-Trichloroethane	0	0		0	3,000	3,000	24,895	
1,1,2-Trichloroethane	0	0		0	3,400	3,400	28,214	
Trichloroethylene	0	0		0	2,300	2,300	19,086	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	560	560	4,647	
2,4-Dichlorophenol	0	0		0	1,700	1,700	14,107	
2,4-Dimethylphenol	0	0		0	660	660	5,477	
4,6-Dinitro-o-Cresol	0	0		0	80	80.0	664	
2,4-Dinitrophenol	0	0		0	660	660	5,477	
2-Nitrophenol	0	0		0	8,000	8,000	66,386	
4-Nitrophenol	0	0		0	2,300	2,300	19,086	
p-Chloro-m-Cresol	0	0		0	160	160	1,328	
Pentachlorophenol	0	0		0	9.169	9.17	76.1	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	460	460	3,817	
Acenaphthene	0	0		0	83	83.0	689	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	300	300	2,489	
Benzo(a)Anthracene	0	0		0	0.5	0.5	4.15	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	30,000	30,000	248,946	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	4,500	4,500	37,342	
4-Bromophenyl Phenyl Ether	0	0		0	270	270	2,241	
Butyl Benzyl Phthalate	0	0		0	140	140	1,162	

2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	820	820	6,805	
1,3-Dichlorobenzene	0	0		0	350	350	2,904	
1,4-Dichlorobenzene	0	0		0	730	730	6,058	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	4,000	4,000	33,193	
Dimethyl Phthalate	0	0		0	2,500	2,500	20,746	
Di-n-Butyl Phthalate	0	0		0	110	110	913	
2,4-Dinitrotoluene	0	0		0	1,600	1,600	13,277	
2,6-Dinitrotoluene	0	0		0	990	990	8,215	
1,2-Diphenylhydrazine	0	0		0	15	15.0	124	
Fluoranthene	0	0		0	200	200	1,660	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	10	10.0	83.0	
Hexachlorocyclopentadiene	0	0		0	5	5.0	41.5	
Hexachloroethane	0	0		0	60	60.0	498	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	10,000	10,000	82,982	
Naphthalene	0	0		0	140	140	1,162	
Nitrobenzene	0	0		0	4,000	4,000	33,193	
n-Nitrosodimethylamine	0	0		0	17,000	17,000	141,069	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	300	300	2,489	
Phenanthrene	0	0		0	5	5.0	41.5	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	130	130	1,079	
Total Vanadium	0	0		0	510	510	4,232	

☑ ***CFC*** CCT (min): 9.093 PMF: 1 Analysis Hardness (mg/l): 335.9 Analysis pH: 7.05

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	220	220	1,826	
Total Arsenic	0	0		0	150	150	1,245	Chem Translator of 1 applied
Total Barium	0	0		0	4,100	4,100	34,023	
Total Boron	0	0		0	1,600	1,600	13,277	
Total Cadmium	0	0		0	0.570	0.66	5.51	Chem Translator of 0.858 applied
Total Chromium (III)	0	0		0	199.925	232	1,929	Chem Translator of 0.86 applied
Hexavalent Chromium	0	0		0	10	10.4	86.3	Chem Translator of 0.962 applied

Total Cobalt	0	0		0	19	19.0	158	
Total Copper	0	0		0	25.220	26.3	218	Chem Translator of 0.96 applied
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	1,500	1,500	12,447	WQC = 30 day average; PMF = 1
Total Lead	0	0		0	9.141	14.9	123	Chem Translator of 0.614 applied
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	0.770	0.91	7.52	Chem Translator of 0.85 applied
Total Nickel	0	0		0	144.954	145	1,206	Chem Translator of 0.997 applied
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	4.600	4.99	41.4	Chem Translator of 0.922 applied
Total Silver	0	0		0	N/A	N/A	N/A	Chem Translator of 1 applied
Total Thallium	0	0		0	13	13.0	108	
Total Zinc	0	0		0	329.799	334	2,776	Chem Translator of 0.986 applied
Acrolein	0	0		0	3	3.0	24.9	
Acrylonitrile	0	0		0	130	130	1,079	
Benzene	0	0		0	130	130	1,079	
Bromoform	0	0		0	370	370	3,070	
Carbon Tetrachloride	0	0		0	560	560	4,647	
Chlorobenzene	0	0		0	240	240	1,992	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	3,500	3,500	29,044	
Chloroform	0	0		0	390	390	3,236	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	3,100	3,100	25,724	
1,1-Dichloroethylene	0	0		0	1,500	1,500	12,447	
1,2-Dichloropropane	0	0		0	2,200	2,200	18,256	
1,3-Dichloropropylene	0	0		0	61	61.0	506	
Ethylbenzene	0	0		0	580	580	4,813	
Methyl Bromide	0	0		0	110	110	913	
Methyl Chloride	0	0		0	5,500	5,500	45,640	
Methylene Chloride	0	0		0	2,400	2,400	19,916	
1,1,2,2-Tetrachloroethane	0	0		0	210	210	1,743	
Tetrachloroethylene	0	0		0	140	140	1,162	
Toluene	0	0		0	330	330	2,738	
1,2-trans-Dichloroethylene	0	0		0	1,400	1,400	11,617	
1,1,1-Trichloroethane	0	0		0	610	610	5,062	
1,1,2-Trichloroethane	0	0		0	680	680	5,643	
Trichloroethylene	0	0		0	450	450	3,734	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	110	110	913	
2,4-Dichlorophenol	0	0		0	340	340	2,821	
2,4-Dimethylphenol	0	0		0	130	130	1,079	
4,6-Dinitro-o-Cresol	0	0		0	16	16.0	133	
2,4-Dinitrophenol	0	0		0	130	130	1,079	
2-Nitrophenol	0	0		0	1,600	1,600	13,277	

4-Nitrophenol	0	0		0	470	470	3,900	
p-Chloro-m-Cresol	0	0		0	500	500	4,149	
Pentachlorophenol	0	0		0	7.035	7.03	58.4	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	91	91.0	755	
Acenaphthene	0	0		0	17	17.0	141	
Anthracene	0	0		0	N/A	N/A	N/A	
Benzidine	0	0		0	59	59.0	490	
Benzo(a)Anthracene	0	0		0	0.1	0.1	0.83	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	6,000	6,000	49,789	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	910	910	7,551	
4-Bromophenyl Phenyl Ether	0	0		0	54	54.0	448	
Butyl Benzyl Phthalate	0	0		0	35	35.0	290	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	160	160	1,328	
1,3-Dichlorobenzene	0	0		0	69	69.0	573	
1,4-Dichlorobenzene	0	0		0	150	150	1,245	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	800	800	6,639	
Dimethyl Phthalate	0	0		0	500	500	4,149	
Di-n-Butyl Phthalate	0	0		0	21	21.0	174	
2,4-Dinitrotoluene	0	0		0	320	320	2,655	
2,6-Dinitrotoluene	0	0		0	200	200	1,660	
1,2-Diphenylhydrazine	0	0		0	3	3.0	24.9	
Fluoranthene	0	0		0	40	40.0	332	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	2	2.0	16.6	
Hexachlorocyclopentadiene	0	0		0	1	1.0	8.3	
Hexachloroethane	0	0		0	12	12.0	99.6	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	2,100	2,100	17,426	
Naphthalene	0	0		0	43	43.0	357	
Nitrobenzene	0	0		0	810	810	6,722	
n-Nitrosodimethylamine	0	0		0	3,400	3,400	28,214	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	59	59.0	490	
Phenanthrene	0	0		0	1	1.0	8.3	
Pyrene	0	0		0	N/A	N/A	N/A	

1,2,4-Trichlorobenzene	0	0		0	26	26.0	216	
Total Vanadium	0	0		0	100	100.0	830	

☑ ***THH*** CCT (min): 9.093 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	500,000	500,000	N/A	
Chloride (PWS)	0	0		0	250,000	250,000	N/A	
Sulfate (PWS)	0	0		0	250,000	250,000	N/A	
Fluoride (PWS)	0	0		0	2,000	2,000	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	5.6	5.6	46.5	
Total Arsenic	0	0		0	10	10.0	83.0	
Total Barium	0	0		0	2,400	2,400	19,916	
Total Boron	0	0		0	3,100	3,100	25,724	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	300	300	2,489	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	1,000	1,000	8,298	
Total Mercury	0	0		0	0.050	0.05	0.41	
Total Nickel	0	0		0	610	610	5,062	
Total Phenols (Phenolics) (PWS)	0	0		0	5	5.0	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	0.24	0.24	1.99	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	3	3.0	24.9	
Acrylonitrile	0	0		0	N/A	N/A	N/A	
Benzene	0	0		0	N/A	N/A	N/A	
Bromoform	0	0		0	N/A	N/A	N/A	
Carbon Tetrachloride	0	0		0	N/A	N/A	N/A	
Chlorobenzene	0	0		0	100	100.0	830	
Chlorodibromomethane	0	0		0	N/A	N/A	N/A	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	N/A	N/A	N/A	
Dichlorobromomethane	0	0		0	N/A	N/A	N/A	
1,2-Dichloroethane	0	0		0	N/A	N/A	N/A	
1,1-Dichloroethylene	0	0		0	33	33.0	274	
1,2-Dichloropropane	0	0		0	N/A	N/A	N/A	

1,3-Dichloropropylene	0	0		0	N/A	N/A	N/A	
Ethylbenzene	0	0		0	68	68.0	564	
Methyl Bromide	0	0		0	100	100.0	830	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	N/A	N/A	N/A	
1,1,2,2-Tetrachloroethane	0	0		0	N/A	N/A	N/A	
Tetrachloroethylene	0	0		0	N/A	N/A	N/A	
Toluene	0	0		0	57	57.0	473	
1,2-trans-Dichloroethylene	0	0		0	100	100.0	830	
1,1,1-Trichloroethane	0	0		0	10,000	10,000	82,982	
1,1,2-Trichloroethane	0	0		0	N/A	N/A	N/A	
Trichloroethylene	0	0		0	N/A	N/A	N/A	
Vinyl Chloride	0	0		0	N/A	N/A	N/A	
2-Chlorophenol	0	0		0	30	30.0	249	
2,4-Dichlorophenol	0	0		0	10	10.0	83.0	
2,4-Dimethylphenol	0	0		0	100	100.0	830	
4,6-Dinitro-o-Cresol	0	0		0	2	2.0	16.6	
2,4-Dinitrophenol	0	0		0	10	10.0	83.0	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	N/A	N/A	N/A	
Phenol	0	0		0	4,000	4,000	33,193	
2,4,6-Trichlorophenol	0	0		0	N/A	N/A	N/A	
Acenaphthene	0	0		0	70	70.0	581	
Anthracene	0	0		0	300	300	2,489	
Benzidine	0	0		0	N/A	N/A	N/A	
Benzo(a)Anthracene	0	0		0	N/A	N/A	N/A	
Benzo(a)Pyrene	0	0		0	N/A	N/A	N/A	
3,4-Benzofluoranthene	0	0		0	N/A	N/A	N/A	
Benzo(k)Fluoranthene	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroethyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Chloroisopropyl)Ether	0	0		0	200	200	1,660	
Bis(2-Ethylhexyl)Phthalate	0	0		0	N/A	N/A	N/A	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	0.1	0.1	0.83	
2-Chloronaphthalene	0	0		0	800	800	6,639	
Chrysene	0	0		0	N/A	N/A	N/A	
Dibenzo(a,h)Anthrancene	0	0		0	N/A	N/A	N/A	
1,2-Dichlorobenzene	0	0		0	1,000	1,000	8,298	
1,3-Dichlorobenzene	0	0		0	7	7.0	58.1	
1,4-Dichlorobenzene	0	0		0	300	300	2,489	
3,3-Dichlorobenzidine	0	0		0	N/A	N/A	N/A	
Diethyl Phthalate	0	0		0	600	600	4,979	
Dimethyl Phthalate	0	0		0	2,000	2,000	16,596	

Di-n-Butyl Phthalate	0	0		0	20	20.0	166	
2,4-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
2,6-Dinitrotoluene	0	0		0	N/A	N/A	N/A	
1,2-Diphenylhydrazine	0	0		0	N/A	N/A	N/A	
Fluoranthene	0	0		0	20	20.0	166	
Fluorene	0	0		0	50	50.0	415	
Hexachlorobenzene	0	0		0	N/A	N/A	N/A	
Hexachlorobutadiene	0	0		0	N/A	N/A	N/A	
Hexachlorocyclopentadiene	0	0		0	4	4.0	33.2	
Hexachloroethane	0	0		0	N/A	N/A	N/A	
Indeno(1,2,3-cd)Pyrene	0	0		0	N/A	N/A	N/A	
Isophorone	0	0		0	34	34.0	282	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	10	10.0	83.0	
n-Nitrosodimethylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodi-n-Propylamine	0	0		0	N/A	N/A	N/A	
n-Nitrosodiphenylamine	0	0		0	N/A	N/A	N/A	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	20	20.0	166	
1,2,4-Trichlorobenzene	0	0		0	0.07	0.07	0.58	
Total Vanadium	0	0		0	N/A	N/A	N/A	

☑ ***CRL*** CCT (min): 2.833 PMF: 1 Analysis Hardness (mg/l): N/A Analysis pH: N/A

Pollutants	Stream Conc (µg/L)	Stream CV	Trib Conc (µg/L)	Fate Coef	WQC (µg/L)	WQ Obj (µg/L)	WLA (µg/L)	Comments
Total Dissolved Solids (PWS)	0	0		0	N/A	N/A	N/A	
Chloride (PWS)	0	0		0	N/A	N/A	N/A	
Sulfate (PWS)	0	0		0	N/A	N/A	N/A	
Fluoride (PWS)	0	0		0	N/A	N/A	N/A	
Total Aluminum	0	0		0	N/A	N/A	N/A	
Total Antimony	0	0		0	N/A	N/A	N/A	
Total Arsenic	0	0		0	N/A	N/A	N/A	
Total Barium	0	0		0	N/A	N/A	N/A	
Total Boron	0	0		0	N/A	N/A	N/A	
Total Cadmium	0	0		0	N/A	N/A	N/A	
Total Chromium (III)	0	0		0	N/A	N/A	N/A	
Hexavalent Chromium	0	0		0	N/A	N/A	N/A	
Total Cobalt	0	0		0	N/A	N/A	N/A	
Total Copper	0	0		0	N/A	N/A	N/A	
Dissolved Iron	0	0		0	N/A	N/A	N/A	
Total Iron	0	0		0	N/A	N/A	N/A	
Total Lead	0	0		0	N/A	N/A	N/A	
Total Manganese	0	0		0	N/A	N/A	N/A	
Total Mercury	0	0		0	N/A	N/A	N/A	

Total Nickel	0	0		0	N/A	N/A	N/A	
Total Phenols (Phenolics) (PWS)	0	0		0	N/A	N/A	N/A	
Total Selenium	0	0		0	N/A	N/A	N/A	
Total Silver	0	0		0	N/A	N/A	N/A	
Total Thallium	0	0		0	N/A	N/A	N/A	
Total Zinc	0	0		0	N/A	N/A	N/A	
Acrolein	0	0		0	N/A	N/A	N/A	
Acrylonitrile	0	0		0	0.06	0.06	4.11	
Benzene	0	0		0	0.58	0.58	39.8	
Bromoform	0	0		0	7	7.0	480	
Carbon Tetrachloride	0	0		0	0.4	0.4	27.4	
Chlorobenzene	0	0		0	N/A	N/A	N/A	
Chlorodibromomethane	0	0		0	0.8	0.8	54.8	
2-Chloroethyl Vinyl Ether	0	0		0	N/A	N/A	N/A	
Chloroform	0	0		0	5.7	5.7	391	
Dichlorobromomethane	0	0		0	0.95	0.95	65.1	
1,2-Dichloroethane	0	0		0	9.9	9.9	679	
1,1-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,2-Dichloropropane	0	0		0	0.9	0.9	61.7	
1,3-Dichloropropylene	0	0		0	0.27	0.27	18.5	
Ethylbenzene	0	0		0	N/A	N/A	N/A	
Methyl Bromide	0	0		0	N/A	N/A	N/A	
Methyl Chloride	0	0		0	N/A	N/A	N/A	
Methylene Chloride	0	0		0	20	20.0	1,371	
1,1,2,2-Tetrachloroethane	0	0		0	0.2	0.2	13.7	
Tetrachloroethylene	0	0		0	10	10.0	685	
Toluene	0	0		0	N/A	N/A	N/A	
1,2-trans-Dichloroethylene	0	0		0	N/A	N/A	N/A	
1,1,1-Trichloroethane	0	0		0	N/A	N/A	N/A	
1,1,2-Trichloroethane	0	0		0	0.55	0.55	37.7	
Trichloroethylene	0	0		0	0.6	0.6	41.1	
Vinyl Chloride	0	0		0	0.02	0.02	1.37	
2-Chlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dichlorophenol	0	0		0	N/A	N/A	N/A	
2,4-Dimethylphenol	0	0		0	N/A	N/A	N/A	
4,6-Dinitro-o-Cresol	0	0		0	N/A	N/A	N/A	
2,4-Dinitrophenol	0	0		0	N/A	N/A	N/A	
2-Nitrophenol	0	0		0	N/A	N/A	N/A	
4-Nitrophenol	0	0		0	N/A	N/A	N/A	
p-Chloro-m-Cresol	0	0		0	N/A	N/A	N/A	
Pentachlorophenol	0	0		0	0.030	0.03	2.06	
Phenol	0	0		0	N/A	N/A	N/A	
2,4,6-Trichlorophenol	0	0		0	1.5	1.5	103	
Acenaphthene	0	0		0	N/A	N/A	N/A	
Anthracene	0	0		0	N/A	N/A	N/A	

Benzidine	0	0		0	0.0001	0.0001	0.007	
Benzo(a)Anthracene	0	0		0	0.001	0.001	0.069	
Benzo(a)Pyrene	0	0		0	0.0001	0.0001	0.007	
3,4-Benzofluoranthene	0	0		0	0.001	0.001	0.069	
Benzo(k)Fluoranthene	0	0		0	0.01	0.01	0.69	
Bis(2-Chloroethyl)Ether	0	0		0	0.03	0.03	2.06	
Bis(2-Chloroisopropyl)Ether	0	0		0	N/A	N/A	N/A	
Bis(2-Ethylhexyl)Phthalate	0	0		0	0.32	0.32	21.9	
4-Bromophenyl Phenyl Ether	0	0		0	N/A	N/A	N/A	
Butyl Benzyl Phthalate	0	0		0	N/A	N/A	N/A	
2-Chloronaphthalene	0	0		0	N/A	N/A	N/A	
Chrysene	0	0		0	0.12	0.12	8.23	
Dibenzo(a,h)Anthrancene	0	0		0	0.0001	0.0001	0.007	
1,2-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,3-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
1,4-Dichlorobenzene	0	0		0	N/A	N/A	N/A	
3,3-Dichlorobenzidine	0	0		0	0.05	0.05	3.43	
Diethyl Phthalate	0	0		0	N/A	N/A	N/A	
Dimethyl Phthalate	0	0		0	N/A	N/A	N/A	
Di-n-Butyl Phthalate	0	0		0	N/A	N/A	N/A	
2,4-Dinitrotoluene	0	0		0	0.05	0.05	3.43	
2,6-Dinitrotoluene	0	0		0	0.05	0.05	3.43	
1,2-Diphenylhydrazine	0	0		0	0.03	0.03	2.06	
Fluoranthene	0	0		0	N/A	N/A	N/A	
Fluorene	0	0		0	N/A	N/A	N/A	
Hexachlorobenzene	0	0		0	0.00008	0.00008	0.005	
Hexachlorobutadiene	0	0		0	0.01	0.01	0.69	
Hexachlorocyclopentadiene	0	0		0	N/A	N/A	N/A	
Hexachloroethane	0	0		0	0.1	0.1	6.85	
Indeno(1,2,3-cd)Pyrene	0	0		0	0.001	0.001	0.069	
Isophorone	0	0		0	N/A	N/A	N/A	
Naphthalene	0	0		0	N/A	N/A	N/A	
Nitrobenzene	0	0		0	N/A	N/A	N/A	
n-Nitrosodimethylamine	0	0		0	0.0007	0.0007	0.048	
n-Nitrosodi-n-Propylamine	0	0		0	0.005	0.005	0.34	
n-Nitrosodiphenylamine	0	0		0	3.3	3.3	226	
Phenanthrene	0	0		0	N/A	N/A	N/A	
Pyrene	0	0		0	N/A	N/A	N/A	
1,2,4-Trichlorobenzene	0	0		0	N/A	N/A	N/A	
Total Vanadium	0	0		0	N/A	N/A	N/A	

☑ ***Recommended WQBELs & Monitoring Requirements***

No. Samples/Month: 4

	Mass Limits		*Concentration Limits*						
Pollutants	AML (lbs/day)	MDL (lbs/day)	AML	MDL	IMAX	Units	Governing WQBEL	WQBEL Basis	Comments
Total Aluminum	Report	Report	Report	Report	Report	µg/L	3,989	AFC	Discharge Conc > 10% WQBEL (no RP)
Total Antimony	Report	Report	Report	Report	Report	µg/L	46.5	THH	Discharge Conc > 10% WQBEL (no RP)
Total Arsenic	0.011	0.017	83.0	129	207	µg/L	83.0	THH	Discharge Conc ≥ 50% WQBEL (RP)
Total Cadmium	Report	Report	Report	Report	Report	µg/L	5.51	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Chromium (III)	0.25	0.39	1,929	3,010	4,823	µg/L	1,929	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Hexavalent Chromium	0.011	0.017	86.3	135	216	µg/L	86.3	CFC	Discharge Conc ≥ 50% WQBEL (RP)
Total Copper	Report	Report	Report	Report	Report	µg/L	218	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Iron	Report	Report	Report	Report	Report	µg/L	12,447	CFC	Discharge Conc > 10% WQBEL (no RP)
Total Mercury	Report	Report	Report	Report	Report	µg/L	0.41	THH	Discharge Conc > 10% WQBEL (no RP)
Total Selenium	Report	Report	Report	Report	Report	µg/L	41.4	CFC	Discharge Conc > 10% WQBEL (no RP)
Trichloroethylene	Report	Report	Report	Report	Report	µg/L	41.1	CRL	Discharge Conc > 25% WQBEL (no RP)
Total Vanadium	0.11	0.17	830	1,295	2,075	µg/L	830	CFC	Discharge Conc ≥ 50% WQBEL (RP)

☑ ***Other Pollutants without Limits or Monitoring***

The following pollutants do not require effluent limits or monitoring based on water quality because reasonable potential to exceed water quality criteria was not determined and the discharge concentration was less than thresholds for monitoring, or the pollutant was not detected and a sufficiently sensitive analytical method was used (e.g., <= Target QL).

Pollutants	Governing WQBEL	Units	Comments
Total Dissolved Solids (PWS)	N/A	N/A	PWS Not Applicable
Chloride (PWS)	N/A	N/A	PWS Not Applicable
Bromide	N/A	N/A	No WQS
Sulfate (PWS)	N/A	N/A	PWS Not Applicable
Fluoride (PWS)	N/A	N/A	PWS Not Applicable
Total Barium	19,916	µg/L	Discharge Conc ≤ 10% WQBEL
Total Beryllium	N/A	N/A	No WQS
Total Boron	13,277	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cobalt	158	µg/L	Discharge Conc ≤ 10% WQBEL
Total Cyanide	N/A	N/A	No WQS
Dissolved Iron	2,489	µg/L	Discharge Conc ≤ 10% WQBEL
Total Lead	123	µg/L	Discharge Conc ≤ 10% WQBEL
Total Manganese	8,298	µg/L	Discharge Conc ≤ 10% WQBEL
Total Nickel	1,206	µg/L	Discharge Conc ≤ 10% WQBEL
Total Phenols (Phenolics) (PWS)		µg/L	PWS Not Applicable
Total Silver	162	µg/L	Discharge Conc ≤ 10% WQBEL
Total Thallium	1.99	µg/L	Discharge Conc ≤ 10% WQBEL
Total Zinc	1,779	µg/L	Discharge Conc ≤ 10% WQBEL
Total Molybdenum	N/A	N/A	No WQS
Acrolein	16.0	µg/L	Discharge Conc < TQL
Acrylonitrile	4.11	µg/L	Discharge Conc < TQL
Benzene	39.8	µg/L	Discharge Conc ≤ 25% WQBEL
Bromoform	480	µg/L	Discharge Conc ≤ 25% WQBEL

Carbon Tetrachloride	27.4	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorobenzene	830	µg/L	Discharge Conc ≤ 25% WQBEL
Chlorodibromomethane	54.8	µg/L	Discharge Conc ≤ 25% WQBEL
Chloroethane	N/A	N/A	No WQS
2-Chloroethyl Vinyl Ether	29,044	µg/L	Discharge Conc < TQL
Chloroform	391	µg/L	Discharge Conc ≤ 25% WQBEL
Dichlorobromomethane	65.1	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethane	N/A	N/A	No WQS
1,2-Dichloroethane	679	µg/L	Discharge Conc ≤ 25% WQBEL
1,1-Dichloroethylene	274	µg/L	Discharge Conc ≤ 25% WQBEL
1,2-Dichloropropane	61.7	µg/L	Discharge Conc ≤ 25% WQBEL
1,3-Dichloropropylene	18.5	µg/L	Discharge Conc ≤ 25% WQBEL
Ethylbenzene	564	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Bromide	830	µg/L	Discharge Conc ≤ 25% WQBEL
Methyl Chloride	45,640	µg/L	Discharge Conc ≤ 25% WQBEL
Methylene Chloride	1,371	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2,2-Tetrachloroethane	13.7	µg/L	Discharge Conc ≤ 25% WQBEL
Tetrachloroethylene	685	µg/L	Discharge Conc < TQL
Toluene	473	µg/L	Discharge Conc < TQL
1,2-trans-Dichloroethylene	830	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,1-Trichloroethane	5,062	µg/L	Discharge Conc ≤ 25% WQBEL
1,1,2-Trichloroethane	37.7	µg/L	Discharge Conc < TQL
Vinyl Chloride	1.37	µg/L	Discharge Conc < TQL
2-Chlorophenol	249	µg/L	Discharge Conc < TQL
2,4-Dichlorophenol	83.0	µg/L	Discharge Conc < TQL
2,4-Dimethylphenol	830	µg/L	Discharge Conc < TQL
4,6-Dinitro-o-Cresol	16.6	µg/L	Discharge Conc < TQL
2,4-Dinitrophenol	83.0	µg/L	Discharge Conc < TQL
2-Nitrophenol	13,277	µg/L	Discharge Conc < TQL
4-Nitrophenol	3,900	µg/L	Discharge Conc < TQL
p-Chloro-m-Cresol	851	µg/L	Discharge Conc < TQL
Pentachlorophenol	2.06	µg/L	Discharge Conc < TQL
Phenol	33,193	µg/L	Discharge Conc < TQL
2,4,6-Trichlorophenol	103	µg/L	Discharge Conc < TQL
Acenaphthene	141	µg/L	Discharge Conc < TQL
Acenaphthylene	N/A	N/A	No WQS
Anthracene	2,489	µg/L	Discharge Conc < TQL
Benzidine	0.007	µg/L	Discharge Conc < TQL
Benzo(a)Anthracene	0.069	µg/L	Discharge Conc < TQL
Benzo(a)Pyrene	0.007	µg/L	Discharge Conc < TQL
3,4-Benzofluoranthene	0.069	µg/L	Discharge Conc < TQL
Benzo(ghi)Perylene	N/A	N/A	No WQS
Benzo(k)Fluoranthene	0.69	µg/L	Discharge Conc < TQL
Bis(2-Chloroethyl)Ether	2.06	µg/L	Discharge Conc < TQL
Bis(2-Chloroisopropyl)Ether	1,660	µg/L	Discharge Conc < TQL

Bis(2-Ethylhexyl)Phthalate	21.9	µg/L	Discharge Conc < TQL
4-Bromophenyl Phenyl Ether	448	µg/L	Discharge Conc < TQL
Butyl Benzyl Phthalate	0.83	µg/L	Discharge Conc < TQL
2-Chloronaphthalene	6,639	µg/L	Discharge Conc < TQL
4-Chlorophenyl Phenyl Ether	N/A	N/A	No WQS
Chrysene	8.23	µg/L	Discharge Conc < TQL
Dibenzo(a,h)Anthrancene	0.007	µg/L	Discharge Conc < TQL
1,2-Dichlorobenzene	1,328	µg/L	Discharge Conc < TQL
1,3-Dichlorobenzene	58.1	µg/L	Discharge Conc < TQL
1,4-Dichlorobenzene	1,245	µg/L	Discharge Conc < TQL
3,3-Dichlorobenzidine	3.43	µg/L	Discharge Conc < TQL
Diethyl Phthalate	4,979	µg/L	Discharge Conc < TQL
Dimethyl Phthalate	4,149	µg/L	Discharge Conc < TQL
Di-n-Butyl Phthalate	166	µg/L	Discharge Conc < TQL
2,4-Dinitrotoluene	3.43	µg/L	Discharge Conc < TQL
2,6-Dinitrotoluene	3.43	µg/L	Discharge Conc < TQL
Di-n-Octyl Phthalate	N/A	N/A	No WQS
1,2-Diphenylhydrazine	2.06	µg/L	Discharge Conc < TQL
Fluoranthene	166	µg/L	Discharge Conc < TQL
Fluorene	415	µg/L	Discharge Conc < TQL
Hexachlorobenzene	0.005	µg/L	Discharge Conc < TQL
Hexachlorobutadiene	0.69	µg/L	Discharge Conc < TQL
Hexachlorocyclopentadiene	8.3	µg/L	Discharge Conc < TQL
Hexachloroethane	6.85	µg/L	Discharge Conc < TQL
Indeno(1,2,3-cd)Pyrene	0.069	µg/L	Discharge Conc < TQL
Isophorone	282	µg/L	Discharge Conc < TQL
Naphthalene	357	µg/L	Discharge Conc < TQL
Nitrobenzene	83.0	µg/L	Discharge Conc < TQL
n-Nitrosodimethylamine	0.048	µg/L	Discharge Conc < TQL
n-Nitrosodi-n-Propylamine	0.34	µg/L	Discharge Conc < TQL
n-Nitrosodiphenylamine	226	µg/L	Discharge Conc < TQL
Phenanthrene	8.3	µg/L	Discharge Conc < TQL
Pyrene	166	µg/L	Discharge Conc < TQL
1,2,4-Trichlorobenzene	0.58	µg/L	Discharge Conc < TQL